Remedial Action Work Plan

31 South Street LLC
100 Pearl Street
Mount Vernon, N.Y. 10550

Submitted to: New York State Department of
Environmental Conservation
625 Broadway
Albany, New York 12233-7014

Attn: Mr. James Candiloro
Division of Environmental Remediation

Date: March 17, 2004

31 South Street, LLC

100 Pearl Street

Mt. Vernon, NY 10550

March 17, 2004

Mr. James Candiloro
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7014

Re: Voluntary Cleanup Agreement
31 South Street, Mt. Vernon, NY
Site #: V00645-3
Index #: W3-0955-03-04

Dear Mr. Candiloro,

In accordance with the requirements of the Voluntary Cleanup Agreement, the effective date of which is September 29, 2003, we hereby submit a Remedial Action Work Plan, which allows for the site's remediation to cleanup levels sufficient to allow for unrestricted use. We have incorporated your comments of December 30, 2003 and February 20, 2004.

Thank you for your continued assistance in this matter.

Sincerely,

31 South Street, LLC.

Frank S. Calfa, Jr., P.E.

Cc: Gary Litwin w/enc. 2 copies
Alali M. Tamuno w/enc.

31 South Street LLC

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31 South Street LLC

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aaae
Antonucci & Associates, Architects & Engineers, LLP
Building Technology Services
Email : info@aa-ae.com Web : http://www.aa-ae.com

REMEDIAL ACTION WORK PLAN

for

31 SOUTH STREET LLC
31 SOUTH STREET, MT. VERNON, NY

SITE NUMBER V00645-3
INDEX NUMBER W3-0955-03-04

March 17, 2004

Prepared by

Antonucci & Associates
Architects & Engineers, LLP

50 Fifth Avenue, Pelham, New York 10803 ■ Tel: (914) 636-4000 ■ Fax: (914) 636-4002

We have not submitted an Investigation Work Plan because we have performed site investigations of the nature and extent of contamination at the site before participating in the VCP. These results are valid and usable. A copy of the July 5, 2000 investigation performed by Arcadis Geraghty & Miller, Inc. appears in Appendix I.

We do not plan to submit an IRM Work Plan, as we propose no interim remedial measures.

We do not plan an OM&M Work Plan, as we propose a final abatement process which does not require any post remedial construction operation, maintenance, and/or monitoring.

The contents of our Remedial Action Work Plan are as follows:

1. Introduction & Purpose

a. Site Description

The site is a 24 foot by 28 foot area in the middle of a complex of buildings bound by Cortlandt, Pearl and South Streets in the City of Mount Vernon, Westchester County, New York. This site is also known as Building No. 2 (See Appendix II).

There are no residences within a 100 foot radius of the site, nor are there any exposed individuals co-located at the site.

The site is immediately underlain by approximately 15 to 18 feet of fine to medium sand with traces of gravel. Beneath this unconsolidated material is bedrock of the Hartland Formation consisting of gray and gray-weathering, thinly laminated muscovitive-biotite-quartz schist with minor garnet. No water exists in the unconsolidated material beneath the site and apparently no groundwater wells that withdraw water from the bedrock exist in the area around the site. Potable water is supplied to Westchester County residents from impounded water reservoirs north and west of the site.

b. Site History

Prior to the purchase of this property by the Owner/Operator/Volunteer, the facility was used for the design, manufacture and testing of electrical equipment including motor controllers, relays, rheostats, contactors and switchgear for the US Navy, as well as private industry.

The facilities operations generally included machining, sheet metal fabrication, surface coating, degreasing, electroplating, brazing, smelting, assembly, and pottery manufacturing, as well as electrical and mechanical testing.

A plating operation existed in a small room on the site, which included zinc and silver plating and chromate conversion coating. In addition, cadmium plating was formerly conducted prior to the early 1980's. Spent acid and caustic solutions were drummed for off-site disposal; however, rinse water was discharged to the municipal sewer system by draining it into two concrete bottomed sumps.

c. Previous Investigations

A copy of the July 5, 2000 investigation performed by Arcadis Geraghty & Miller, Inc. appears in Appendix I.

Soil samples were taken within the plating room and submitted to the laboratory for analysis. Metal concentrations were evaluated by comparing detected concentrations to recommended soil cleanup objectives (TAGM 4046) and site background values.

d. Summary of Environmental Conditions

Although the concentration of metals varied from boring to boring, cadmium and chromium were detected above recommended soil cleanup objectives in each sample submitted for analysis. The following total metals were detected above recommended soil cleanup objectives or site background values in one or more samples: antimony, arsenic, cadmium, chromium, copper, lead, nickel, silver, sodium and zinc. Although the metals detected and their concentrations varied from boring to boring, cadmium and chromium were detected above recommended soil cleanup objectives in each sample submitted for analysis.

Only one VOC, trichlorethene (TCE) was detected above method detection limits and it was only detected above recommended soil cleanup objectives in one sample. Only cadmium was detected above the maximum TCLP value of 1 mg/L defined in 40 CFR 261.24 for the determination of hazardous waste. Cadmium concentrations ranged from <0.10 to 11.5 milligrams per liter (mg/L).

e. Summary of Remedy

The proposed remedy will consist of excavating the entire site to bedrock and the disposal of all fill within the area in an approved manner and the refilling of the area with clean, approved material.

f. Contemplated Use

The contemplated use of the site is for unrestricted uses in accordance with the local zoning regulations.

2. Engineering Evaluation of the Remedy

We propose to excavate the entire area to sound bedrock. This will involve underpinning the adjacent buildings to the south and west. Underpinning pits will be shored in accordance with OSHA regulations. As there are continuous footings on the adjacent buildings with uniform loads to the footings, sequential underpinning in four foot intervals at twelve feet on center will be implemented along the length of the foundation walls.

This remedy is preferred as it is permanent and does not produce any significant threats, exposure, pathways or risks to the public or environment as their is no remaining wastes or treated residuals.

We will then refill the excavation with clean fill, compacted in lifts satisfactory to all municipal agencies.

Our engineering remedy involves excavation and filling at the site using hand and machine methods. We anticipate two laborers on the site with a Case Model #235 excavator and one operator.

All contaminated material will be carted away and disposed of by a properly licensed facility.

Below explains how the remedy would be protective of public health and the environment. The analysis will address the following:

2.1 Protection of Human Health and the Environment

a. The proposed remedy achieves each of the remedial action objectives (RAO's). Existing contamination as identified in the July 5, 2000 Arcadis Geraghty & Miller, Inc. report will be removed by excavating and disposal of all soil within the site to bedrock.

b. There are three groups of potentially exposed human populations: site workers, employees of nearby tenants, visitors to nearby tenants. These groups will have varied potential exposures during remedial operations to contaminated soil via ingestion, dermal contact or inhalation.

2.2 Standards, Criteria & Guidance (SCG)

a. Excavation and removal activities will be conducted in accordance with NYSDEC/DOH-approved, site-specific health and safety, community air monitoring, and soil excavation management plans. Sampling of the excavation faces will be evaluated by comparing metal concentrations to NYS DEC Technical and Administrative Guidance Memorandum 4046 Recommended Soil Cleanup Objectives and will meet those objectives.

b. The proposed remedy complies with the above.

2.3 Short-term Effectiveness & Impacts

a. Risks to the community, workers and environment that result from excavation and removal activities:

1. Site workers: Those persons involved with excavation, foundation work, backfilling and final grading. The most exposed workers would be those involved with excavation. The excavation and foundation portion of work is estimated at 37 days. Present at the site would be a field superintendent, one machine operator, and two laborers and during underpinning an additional laborer and two carpenters will be utilized.

2. Community: Tenants adjacent to the site would be exposed during excavation. Visitors would be exposed while visiting locations adjacent to the site during excavation.

3. Environment: Individuals such as occupants of neighboring properties, drivers and pedestrians near the sites are considered partial receptors. However, due to the limited time of exposure, their total exposure would be much less than that of the site workers and the nearby community.

Risks to the site workers, community and environment would be during excavation from inhalation of particulates, dermal contact with soil and incidental ingestion of soil.

b. These risks will be controlled by implementing health and safety, community air monitoring and soil excavation management plans described in Paragraph 5, Health and Safety Plans.

c. It is our opinion that these controls are reliable as they are standard for this type of abatement.

d. Our Schedule in Appendix VI indicates completion of excavation, underpinning and fill replacement in five months.

2.4 Long-term Effectiveness & Performance

a. The long term remedy is permanent and does not rely upon containment.

b. The ability of the remedy to achieve RAO's is independent of time.

c. After completion, there will be no significant threats, exposure pathways or risks to the public or environment as there are no remaining wastes or residuals.

2.5 Reduction of Toxicity, Mobility or Volume

a. All the contamination will be treated for the soil media. We do not believe there is ground water at the site and we do not propose any treatment for this. However, if ground water is found, it will be tested.

b. The excavation will be to bedrock over the entire site and is therefore a complete irreversible abatement.

c. The contaminants will be removed, and carted to an engineered land fill for proper disposal, i.e., they will no longer be on site and therefore have no potential for mobility.

2.6 Implementability

a. We do not anticipate any potential construction and O&M difficulties.

b. (Not applicable)

c. Services and materials required in our RAWP are readily available and require no special equipment.

d. We anticipate no problems coordinating with other agencies. We will obtain any required permit from the City of Mount Vernon Building Department for excavation, fill placement, and underpinning.

3. Project Plans and Specification

Project plans and specifications are attached and noted in Appendix III.

4. Institutional Controls

As this work plan is for unrestricted use, we do not anticipate any institutional controls at this time.

5. Health and Safety Plans

5.1 A comprehensive safety plan will be fully implemented, see Appendix IV.

Continuous air monitoring will be required during all excavation activities for particulate levels. All readings will be recorded and be available for State (DEC and DOH) personnel to review.

As a dust protection technique, the site will be intermittently wet-down by hose applied water to minimize atmospheric dust.

All on site personnel will be fitted daily with respirators approved for dust control.

There will be hand washing facilities on site for all site personnel to be utilized before lunch and after the work day.

5.2 Groundwater sampling will be as follows:
If soil contamination is not evident, either visually or analytically at bedrock, then installation of bedrock groundwater monitoring wells will not be done. However, if it is evident that contamination has migrated to the bedrock, and potentially the groundwater, at least one bedrock monitoring well will be installed in order to assess groundwater quality.

5.3 Qualitative Human Health Exposure Assessments

Identification of Exposure Pathways

a. Contaminant source – soil at the site

b. Release and transport mechanism – for the soil in situ, any groundwater would transport the contaminant from the soil to where people could be exposed. This is remote, however, since (1) there may be no groundwater under the site as none has been

discovered in borings; (2) there are no active wells in the vicinity. For the soil during excavation, dust or physical contact would be the transport mechanism.

c. The point of exposure would be at the site location when the soil is in situ or within the area when in the form of dust. Routes of exposure would be none in situ as removal will achieve 100% abatement. During excavation, routes of exposure could be by inhalation or ingestion of dust, and dermal absorption.

d. The receptor population are primarily workers or adjacent neighbors would be less affected during excavation, since excavation is at a lower elevation.

Site conditions will be characterized to evaluate whether the site poses an existing or potential hazard to the exposed or potentially exposed population. We will review soil sample data on site during excavation. We will review any sample data groundwater encountered. We will review any sample data at the downwind perimeter of the designated work area when excavation is in progress at the site.

5.4 NYSDOH Community Air Monitoring Plan (CAMP)

a. Particulate concentrations shall be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 micrograms per cubic meter above the

upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 micrograms per cubic meter above the upwind level, work will be stopped and reevaluation of activities initiated. Work will only resume when dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 micrograms per cubic meter of the upwind level and preventing visible dust migration.

b. VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measure at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less – but in no

case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All readings will be recorded and be available for State (DEC and DOH) personnel to review.

6. QA/QC Plan

We have not submitted a separate Quality Assurance Plan since the following quality insurance points have been provided:

6.1 The project description and project goals have been fully described.

6.2 The project organization has been described in Item No. 9. Resumes of the Project Manager and Quality Assurance Officer have been included in Appendix V.

6.3 We propose to excavate down to an approximate four foot depth at all four sides of the site or to bottom of adjacent footings, whichever is greater. We will take soil samples from each face of that excavation for a total of four samples. We will then proceed to a midway point at an approximate depth of ten feet and take an additional four soil samples from the excavation face. We will then proceed downward to top of bedrock where we will then perform four more soil samples.

Addition samples consisting of one groundwater sample (if any is found) and one bedrock sample (if obvious signs of contamination are noted at the bedrock soil interface) will be performed. If the water or rock is contaminated we will install a monitoring well.

A site map that show previous sampling and results has been included in Appendix No. 1.

6.4 The proposed laboratory is:

South Mall Analytical Labs
26 North Mall
Plainview, NY 11803

516-293-2191
516-293-3152 (Fax)

Joseph Shaulys, Director

6.5 Standard Operating Procedures:

a. Sample Collection Procedure:

Field technicians will be outfitted with protective clothing, i.e. face masks, hard hats, gloves, tyvek suites, etc. The samples will be hand collected using an appropriate method , such as trowels, scoops or shovels. The samples will be placed in a sterilized container with an air tight lid, placed in a sealed plastic bag. The samples will be delivered immediately to the ELAP certified laboratory as specified in section 6.4

Collected samples will be described, and any staining or odors will be noted. Samples will be submitted for laboratory analysis of VOC's, and Total and Toxicity Characteristic Leaching Procedure (TCLP) Target Analyte List (TAL) Metals based upon both visual observation (evidence of staining) and PID readings.

Total metal concentrations will be evaluated by comparing detected concentrations to New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum (TAGM) 4046 Recommended soil Cleanup Objectives, or site background values. TAGM 4046 recommends cleanup of the soils if detected concentrations exceed cleanup objectives or site background values. TCLP metal concentrations will be evaluated by comparing the detected concentrations to the Maximum TCLP values defined in the Code of Federal Regulations (40 CFR 261.24). The concentrations of metals detected in leachate produced by the TCLP will be compared to the Maximum TCLP values to determine if a material is a hazardous waste. Total VOC concentrations will be evaluated by comparing them to recommended soil cleanup objectives (TAGM 4046).

b. Decontamination Procedures:

Shovels, trowels, clothing, etc will be cleaned with clean water and collected in a 55 gallon drum. Alconox will be used to sterilize any equipment exposed to the containments. The collected water will be tested by the approved ELAP certified laboratory. If the water is found to be contaminated, it will be disposed of in an engineered land fill.

Excavating equipment will be cleaned with a pressure washer. An area of the site shall be prepared with the use of lumber and heavy plastic to create a reservoir sufficient to contain the potentially

contaminated water. The collected water will be tested by the approved ELAP certified laboratory. If the water is found to be contaminated, it will be disposed of in an engineered land fill.

6.6 Data validation:

The data will be verified via the QA/QC, consisting of duplicates, spikes, MS/MSD and surrogate recoveries, where apropos. The laboratory will be following the New York State Department of Health ELAP guidelines.

7. Schedule

We have attached the schedule in Appendix VI.

8. Reporting

Within 90 days after completion of remediation, we shall submit a final engineering report and as-built drawing that include all changes made to the final design during construction. The report, drawings and certification shall be prepared, signed and sealed by a Professional Engineer. The certification shall be made, as required by DEC.

9 Project Organization

Key Personnel:

Project Executive	Frank S. Calfa, Jr., P.E.	NYS License No.: 62032
QA/QC	Robert Antonucci, P.E.	NYS License No.: 57411
Project Manager	Robert D. Anzilotti	

Resumes of the key personnel can be found in Appendix V.

The Project Organizational Chart is in Appendix VII

ARCADIS GERAGHTY & MILLER

ARCADIS Geraghty & Miller, Inc.
88 Duryea Road
Melville
New York 11747
Tel 631 249 7600
Fax 631 249 7610

Jon R. Carter
President
Ward Leonard Electric Company
31 South Street
Mount Vernon, NY 10550

ENVIRONMENTAL

Subject:
Supplemental Plating Room Data,
Environmental Assessment of the Ward Leonard Electric Company Facility,
Mount Vernon, New York.
ARCADIS Geraghty & Miller Project No. NY0001281.0001.00003

Melville,
5 July 2000

Dear Mr. Carter:

Contact:
Robert Porsche

Extension:
631 391 5233

Introduction

This report has been prepared as an addendum to our report of May 22, 2000 that summarized our investigation of the referenced facility. This report summarizes the results of a supplemental investigation of environmental impacts beneath the Plating Room of the referenced facility. Complete site background information, as well as a discussion of other Area's of Concern investigated at the referenced site is presented in the May 22, 2000 report.

Purpose

As a supplement to the due diligence review of the facility conducted for the purpose of property transfer, this additional investigation focused on the assessment of the nature and extent of environmental impacts related to the historical Plating Area operations. Specifically, the investigation was designed to assess the horizontal and vertical extent of metals and volatile organic compound (VOC) impacts to the unconsolidated materials underlying the Plating Room floor.

Analytical results of soil samples collected as part of this investigation are provided in Tables 1, 2 and 3. Figure 1 provides schematic representations of sample locations. Drilling logs are provided in Attachment A. Copies of laboratory reports are provided in Attachment B.

Site Geology

The site is immediately underlain by approximately 15 to 18 feet of unconsolidated fine to medium sand with traces of gravel. Beneath this unconsolidated (overburden) material in this portion of Westchester County is bedrock of the Hartland Formation consisting of gray and gray-weathering, thinly laminated muscovite-biotite-quartz schist with minor amounts of garnet. No water exists in the overburden beneath the site, and apparently groundwater wells that withdraw water from the bedrock do not exist in the area around the site. Potable water is supplied to Westchester County residents from surface water reservoirs north and west of the site.

Plating Area

The plating operations are located east of the machine shop. Plating operations currently include zinc and silver plating and chromate conversion coating. In addition, cadmium plating was formerly conducted prior to the early 1980s. Spent acid and caustic solutions are drummed for off-site disposal, however, rinse water is discharged to the municipal sewer system by draining it into two concrete-bottomed sumps, which fill until the fluids overflow into an open drainpipe that leads to the municipal sewer system.

Methodology

Soil sample locations are shown on Figure 1. Five soil borings were drilled through the Plating Room floor. Soil Borings SB6, SB8, SB9 and SB10 were drilled to bedrock (approximately 17 feet below grade [ft bg]); soil boring SB7 was abandoned after encountering what appeared to be a metal plate or pipe at approximately 14 inches below grade. A split spoon sampler was used to collect continuous soil samples (from the Plating Room floor to full depth) at each boring location, which were field screened with a photoionization detector (PID) for VOC vapors. The materials collected in each split spoon were described and any staining or odors were noted. Samples were submitted for laboratory analysis of VOCs, and Total and Toxicity Characteristic Leaching Procedure (TCLP) Target Analyte List (TAL) Metals based upon both visual observations (evidence of staining) and PID readings. If VOC impacts were not detected by the PID, and no staining was observed, the deepest sample from each borehole was submitted. Otherwise, the most significantly stained sample, or the sample with the strongest odor or PID reading was submitted for laboratory analysis. Analytical results for Total Metals, TCLP Metals and VOCs are shown on Tables 1, 2, and 3, respectively.

ARCADIS GERAGHTY & MILLER

Analytical Results

Total metal concentrations were evaluated by comparing detected concentrations to New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum (TAGM) 4046 Recommended Soil Cleanup Objectives, or site background values. Site background concentrations for metals were determined by collecting three soil samples from the Cortlandt Street alley, and analyzing the samples for TAL Metals. The highest concentration detected for each metal was selected as the site background value (discussed in greater detail in May 22, 2000 report). TAGM 4046 recommends cleanup of the soils if detected concentrations exceed cleanup objectives or site background values. TCLP metal concentrations were evaluated by comparing the detected concentrations to the Maximum TCLP values defined in the Code of Federal Regulations (40 CFR 261.24). The concentrations of metals detected in leachate produced by the TCLP are compared to the Maximum TCLP values to determine if a material is a hazardous waste. In addition, detection of any metals above the method detection limit in the leachate indicates that the metal has the potential to leach from the soil, potentially impacting groundwater. Total VOC concentrations were evaluated by comparing them to recommended soil cleanup objectives (TAGM 4046).

Although the concentration of metals varied from boring to boring, cadmium, and chromium were detected above recommended soil cleanup objectives in each sample submitted for analysis (Table 1). The following total metals were detected above recommended soil cleanup objectives or site background values in one or more samples: antimony, arsenic, cadmium, chromium, copper, lead, nickel, silver, sodium, and zinc. Although the metals detected and their concentrations varied from boring to boring, cadmium, and chromium were detected above recommended soil cleanup objectives in each sample submitted for analysis. Antimony concentrations ranged from <6.2 to 7.7 milligrams per kilogram (mg/kg), arsenic concentrations ranged from <1.2 to 10.9 mg/kg, cadmium concentrations ranged from 1.5 to 731 mg/kg, chromium concentrations ranged from 28.5 to 1,690 mg/kg, copper concentrations ranged from 52 to 795 mg/kg, lead concentrations ranged from 4.1 to 2,010 mg/kg, nickel concentrations ranged from 5.8 to 73 mg/kg, silver concentrations ranged from <1.0 to 31.5 mg/kg, sodium ranged from <515 to 609 mg/kg, and zinc concentrations ranged from 47.4 to 1,910 mg/kg.

Only one VOC, trichloroethene (TCE) was detected above method detection limits and it was only detected above recommended soil cleanup objectives in one sample (SB6 at 6 to 7 ft bg).

ARCADIS GERAGHTY&MILLER

The following TCLP Metals were detected above method detection limits: aluminum, cadmium, calcium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium and zinc. Only cadmium was detected above the maximum TCLP value of 1 mg/L defined in 40 CFR 261.24 for the determination of hazardous waste. Cadmium concentrations ranged from <0.10 to 11.5 milligrams per liter (mg/L).

Please do not hesitate to call with any questions or comments.

Sincerely,

ARCADIS Geraghty & Miller, Inc.

Robert Porsche
Project Manager

Michael F. Wolfert
Project Director

Copies:
David Farer, Farer Fersko

ARCADIS GERAGHTY&MILLER

Supplemental Plating Room Analytical Results (Total Metals)

Table 1. Analytical Results for Total Metals by EPA Methods 6010 and 7471, Ward Leonard Electric Company, Mount Vernon, New York.

Parameters (units in mg/kg)	Recommended Soil Cleanup Objectives (1)	Site Background (2)	Sample ID: SB6 Sample Date: 5/15/00 Sample Location: Northwest Sump Sample Depth (ft): 6-7	SB-8 5/15/00 Northwest Sump 4-6	SB-8 5/15/00 Northwest Sump 10-12	SB-8 5/16/00 Northwest Sump 14-16	SB9 5/16/00 Southeast Sump 2-4
Aluminum	SB	14,000	4,000	3,640	6,940	10,800	5,110
Antimony	SB	<7.0	<7.0	<6.4	<7.1	<6.9	**7.7**
Arsenic	7.5 or SB	5.9	5.5	1.7	1.2	1.8	**10.9**
Barium	300 or SB	150	50.7	89.3	59.7	78.2	75.3
Beryllium	0.16 or SB	<0.59	<0.58	<0.53	<0.59	<0.57	<0.60
Cadmium	1 or SB	0.65	**17.7**	**18.8**	**17.2**	**31.7L**	**731**
Calcium	SB	17,500	4,340	1,800	1,140	1,550	2,310
Chromium	10 or SB	24	**133**	**49.4**	**241**	**61.0**	**1,690**
Cobalt	30 or SB	19	<5.8	<5.3	<5.9	10.3	<6.0
Copper	25 or SB	56	**155**	**322**	**795**	**518**	**433**
Iron	2,000 or SB	27,100	13,300	9,790	15,400	19,200	16,500
Lead	SB	125	**309**	6.0	4.1	9.2L	**2,010**
Magnesium	SB	7,110	1,400	1,620	3,700	5,990	1,760
Manganese	SB	489	124	135	185	256	120
Mercury	0.1	0.4	<0.12	<0.11	<0.12	<0.11	<0.12
Nickel	13 or SB	26	7.0	17.2	**73.0**	**47.1**	10.8
Potassium	SB	7,020	1,350	1,250	2,030	4,520	1,090
Selenium	2 or SB	<0.59	<0.58	<0.53	<0.59	<0.57	<0.60
Silver	SB	<1.2	**18.9**	<1.1	<1.2	<1.1	**31.5**
Sodium	SB	<567	<580	<530	<589	<573	**609**
Thallium	SB	1.2	<1.2	<1.1	<1.2	1.1	<1.2
Vanadium	150 or SB	34	19.5	13.9	21.5	30.9	24.2
Zinc	20 or SB	241	94.5	449	346	**250L**	**1,910**

Samples analyzed by Severn Trent Laboratories, North Canton, Ohio.

(1) Appendix A, Table 4, Technical and Adminsitrative Guidance Memorandum HWR-94-4046, New York State Department of Environmental Conservation, Revised January 24, 1994.

SB Site background.

(2) Site Background is the highest metal concentration detected in soil samples CS1, CS2, and CS3, as presented on Table 2 of the May 22, 2000 report.

mg/kg milligrams per kilogram = parts per million.

L Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present.

Bold values exceed Recommended Soil Cleanup Objectives or Site Background, whichever is higher.

ARCADIS GERAGHTY&MILLER

Supplemental Plating Room Analytical Results (Total Metals)

Table 1. Analytical Results for Total Metal Compounds by EPA Methods 6010 and 7471, Ward Leonard Electric Company, Mount Vernon, New York.

Parameters (units in mg/kg)	Recommended Soil Cleanup Objectives (1)	Site Background (2)	Sample ID: SB9 Sample Date: 5/16/00 Sample Location: Southeast Sump Sample Depth (ft): 4-6	Sample ID: SB9 Sample Date: 5/16/00 Sample Location: Southeast Sump Sample Depth (ft): 14-16	Sample ID: SB10 Sample Date: 5/16/00 Sample Location: Southeast Sump Sample Depth (ft): 6-8	Sample ID: SB10 Sample Date: 5/16/00 Sample Location: Southeast Sump Sample Depth (ft): 14-18
Aluminum	SB	14,000	2,870	8,330	3,190	8,200
Antimony	SB	<7.0	<6.2	<7.0	<6.6	<7.4
Arsenic	7.5 or SB	5.9	1.9	<1.2	2.2	1.2
Barium	300 or SB	150	24.5	60.7	44.7	92.9
Beryllium	0.16 or SB	<0.59	<0.51	<0.58	<0.55	<0.62
Cadmium	1 or SB	0.65	**124**	**19.8**	**54.9**	**1.5**
Calcium	SB	17,500	6,910	1,900	836	1,020
Chromium	10 or SB	24	**28.5**	**178**	**309**	**183**
Cobalt	30 or SB	19	<5.1	6.7	<5.5	6.7
Copper	25 or SB	56	52.0	**166**	**155**	53.1
Iron	2,000 or SB	27,100	6,970	16,800	15,400	21,500
Lead	SB	125	47.4	25.0	**441**	48.1
Magnesium	SB	7,110	1100	4,630	1,030	6,020
Manganese	SB	489	97.6	159	85.2	198
Mercury	0.1	0.4	<0.10	<0.12	<0.11	<0.12
Nickel	13 or SB	26	5.8	19.5	8.8	14.1
Potassium	SB	7,020	707	2,900	1,030	3,470
Selenium	2 or SB	<0.59	<0.51	<0.58	<0.55	<0.62
Silver	SB	<1.2	<1.0	<1.2	**3.0**	<1.2
Sodium	SB	<567	<515	<581	<546	<617
Thallium	SB	1.2	<1.0	<1.2	<1.1	<1.2
Vanadium	150 or SB	34	9.0	26.3	13.4	33.1
Zinc	20 or SB	241	62.3	104	94.5	47.4

Samples analyzed by Severn Trent Laboratories, North Canton, Ohio.

(1) Appendix A, Table 4, Technical and Adminsitrative Guidance Memorandum HWR-94-4046, New York State Department of Environmental Conservation, Revised January 24, 1994.

SB Site background.

(2) Site Background is the highest metal concentration detected in soil samples CS1, CS2, and CS3, as presented on Table 2 of the May 22, 2000 report.

mg/kg milligrams per kilogram = parts per million.

L Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present.

Bold values exceed Recommended Soil Cleanup Objectives or Site Background, whichever is higher.

ARCADIS GERAGHTY&MILLER

Supplemental Plating Room Analytical Results (TCLP Metals)

Table 2. Analytical Results for TCLP Metals by EPA Methods 6010 and 7471, Ward Leonard Electric Company, Mount Vernon, New York.

Parameters (units in mg/L)	Sample ID: / Sample Date: / Sample Location: / Sample Depth (ft):	SB6 5/15/00 Northwest Sump 6-7	SB-8 5/15/00 Northwest Sump 4-6	SB-8 5/15/00 Northwest Sump 10-12	SB-8 5/16/00 Northwest Sump 14-16	SB9 5/16/00 Southeast Sump 2-4
	Maximum Toxicity Characteristic Leaching Procedure Values (1)					
Aluminum	--	1.6	1.1	0.80	0.50	5.0
Antimony	--	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
Arsenic	5.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Barium	100.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Beryllium	--	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cadmium	1.0	0.81	**1.5**	0.16	0.75	**11.5**
Calcium	--	238	101	< 5.0	19.4	50.4
Chromium	5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cobalt	--	0.081	< 0.50	< 0.050	< 0.050	< 0.050
Copper	--	< 1.0	5.0	2.3	1.8	< 1.0
Iron	--	7.1	1.8	< 0.10	0.44	0.12
Lead	5.0	0.13	0.0078	< 0.0030	0.0043	1.2
Magnesium	--	11.2	< 5.0	< 5.0	< 5.0	< 5.0
Manganese	--	0.62	0.36	0.061	0.76	0.16
Mercury	0.2	0.0043	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Nickel	--	0.054	0.14	0.072	0.059	< 0.040
Potassium	--	5.4L	< 5.0	< 5.0	6.1	5.4
Selenium	1.0	< 0.0050	0.0061	< 0.0050	0.0056	0.0066
Silver	5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Thallium	--	< 0.010	< 0.10	< 0.010	< 0.010	< 0.010
Vanadium	--	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Zinc	--	1.7	11.0	< 1.0	1.5	1.8

Samples analyzed by Severn Trent Laboratories, North Canton, Ohio.

(1) Code of Federal Regulations 40 CFR 261.24, Table 1, Determination of Hazardous Waste.

mg/L milligrams per Liter = parts per million.

L Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present.

Bold values exceed Maximum Toxicity Characteristic Leaching Procedure Values.

ARCADIS GERAGHTY&MILLER

Supplemental Plating Room Analytical Results (TCLP Metals)

Table 2. Analytical Results for TCLP Metal Compounds by EPA Methods 6010 and 7471, Ward Leonard Electric Company, Mount Vernon, New York.

Parameters (units in mg/L)	Sample ID: / Sample Date: / Sample Location: / Sample Depth (ft):	SB9 5/16/00 Southeast Sump 4-6	SB9 5/16/00 Southeast Sump 14-16	SB10 5/16/00 Southeast Sump 6-8	SB10 5/16/00 Southeast Sump 14-18
	Maximum Toxicity Characteristic Leaching Procedure Values (1)				
Aluminum	--	1.1	0.60	0.57	0.60
Antimony	--	< 0.30	< 0.30	< 0.30	< 0.30
Arsenic	5.0	< 0.010	< 0.010	< 0.010	< 0.010
Barium	100.0	< 10.0	< 10.0	< 10.0	< 10.0
Beryllium	--	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cadmium	1.0	**4.2**	0.21	0.58	< 0.10
Calcium	--	272	7.9	8.9	< 5.0
Chromium	5.0	< 0.50	< 0.50	< 0.50	< 0.50
Cobalt	--	< 0.050	< 0.050	< 0.050	< 0.050
Copper	--	< 1.0	< 1.0	< 1.0	< 1.0
Iron	--	0.94	1.1	< 0.10	0.29
Lead	5.0	0.017	0.0045	0.42	< 0.0030
Magnesium	--	< 5.0	< 5.0	< 5.0	< 5.0
Manganese	--	0.30	0.11	0.041	0.039
Mercury	0.2	< 0.0020	< 0.0020	< 0.0020	< 0.0020
Nickel	--	0.041	< 0.040	< 0.040	< 0.040
Potassium	--	< 5.0	10.1	< 5.0	< 5.0
Selenium	1.0	0.005	0.0060	0.0056	0.0055
Silver	5.0	< 0.50	< 0.50	< 0.50	< 0.50
Thallium	--	< 0.010	< 0.010	< 0.010	< 0.010
Vanadium	--	< 0.050	< 0.050	< 0.050	< 0.050
Zinc	--	< 1.0	< 1.0	< 1.0	< 1.0

Samples analyzed by Severn Trent Laboratories, North Canton, Ohio.

(1) Code of Federal Regulations 40 CFR 261.24, Table 1, Determination of Hazardous Waste.

mg/L milligrams per Liter = parts per million.

L Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present.

Bold values exceed Maximum Toxicity Characteristic Leaching Procedure Values.

ARCADIS GERAGHTY & MILLER

Supplemental Plating Room Analytical Results (VOCs)

Table 3. Analytical Results for Volatile Organic Compounds by EPA Method 8260, Ward Leonard Electric Company, Mount Vernon, New York.

Parameters (units in ug/kg)	Sample ID: / Sample Date: / Sample Location: / Sample Depth (ft):	Recommended Soil Cleanup Objectives (1)	SB6 5/15/00 Northwest Sump 6-7	SB8 5/15/00 Northwest Sump 4-6	SB8 5/15/00 Northwest Sump 10-12	SB8 5/16/00 Northwest Sump 14-16
Chloromethane		--	< 2900	< 11	< 12	< 11
Bromomethane		--	< 1400	< 11	< 12	< 11
Vinyl chloride		200	< 1400	< 11	< 12	< 11
Chloroethane		1900	< 1400	< 11	< 12	< 11
Methylene chloride		100	< 720	< 5.3	< 5.9	< 5.7
Acetone		200	< 2900	< 21	< 24	< 23
Carbon disulfide		2,700	< 720	< 5.3	< 5.9	< 5.7
1,1-Dichloroethene		400	< 720	< 5.3	< 5.9	< 5.7
1,1-Dichloroethane		200	< 720	< 5.3	< 5.9	< 5.7
1,2-Dichloroethene (total)		300	< 720	< 5.3	< 5.9	< 5.7
Chloroform		300	< 720	< 5.3	< 5.9	< 5.7
1,2-Dichloroethane		100	< 720	< 5.3	< 5.9	< 5.7
2-Butanone		300	< 2900	< 21	< 24	< 23
1,1,1-Trichloroethane		800	< 720	< 5.3	< 5.9	< 5.7
Carbon tetrachloride		600	< 720	< 5.3	< 5.9	< 5.7
Bromodichloromethane		--	< 720	< 5.3	< 5.9	< 5.7
1,2-Dichloropropane		--	< 720	< 5.3	< 5.9	< 5.7
cis-1,3-Dichloropropene		--	< 720	< 5.3	< 5.9	< 5.7
Trichloroethene		700	**7,100**	20	140	16
Dibromochloromethane		NA	< 720	< 5.3	< 5.9	< 5.7
1,1,2-Trichloroethane		--	< 720	< 5.3	< 5.9	< 5.7
Benzene		60	< 720	< 5.3	< 5.9	< 5.7
trans-1,3-Dichloropropene		--	< 720	< 5.3	< 5.9	< 5.7
Bromoform		--	< 720	< 5.3	< 5.9	< 5.7
4-Methyl-2-pentanone		1,000	< 2900	< 21	< 24	< 23
2-Hexanone		--	< 2900	< 21	< 24	< 23
Tetrachloroethene		1,400	< 720	< 5.3	< 5.9	< 5.7
1,1,2,2-Tetrachloroethane		600	< 720	< 5.3	< 5.9	< 5.7
Toluene		1,500	< 720	< 5.3	< 5.9	< 5.7
Chlorobenzene		1,700	< 720	< 5.3	< 5.9	< 5.7
Ethylbenzene		5,500	< 720	< 5.3	< 5.9	< 5.7
Styrene		--	< 720	< 5.3	< 5.9	< 5.7
Xylenes (total)		1,200	< 720	< 5.3	< 5.9	< 5.7

Samples analyzed by Severn Trent Laboratories, North Canton, Ohio.

(1) Table 1, Technical and Administrative Guidance Memorandum HWR-94-4046, New York State Department of Environmental Conservation, Revised January 24, 1994.

ug/kg Micrograms per kilogram= parts per billion.

Bold values exceed Recommended Soil Cleanup Objectives.

Supplemental Plating Room Analytical Results (VOCs)

Table 3. Analytical Results for Volatile Organic Compounds by EPA Method 8260, Ward Leonard Electric Company, Mount Vernon, New York.

Parameters (units in ug/kg)	Sample ID: / Sample Date: / Sample Location: / Sample Depth (ft):	SB9 5/16/00 Southeast Sump 2-4	SB9 5/16/00 Southeast Sump 4-6	SB9 5/16/00 Southeast Sump 14-16	SB10 5/16/00 Southeast Sump 6-8
	Recommended Soil Cleanup Objectives (1)				
Chloromethane	--	< 12	< 10	< 12	< 11
Bromomethane	--	< 12	< 10	< 12	< 11
Vinyl chloride	200	< 12	< 10	< 12	< 11
Chloroethane	1900	< 12	< 10	< 12	< 11
Methylene chloride	100	< 6.0	< 5.1	< 5.8	< 5.5
Acetone	200	< 24	< 21	< 23	< 22
Carbon disulfide	2,700	< 6.0	< 5.1	< 5.8	< 5.5
1,1-Dichloroethene	400	< 6.0	< 5.1	< 5.8	< 5.5
1,1-Dichloroethane	200	< 6.0	< 5.1	< 5.8	< 5.5
1,2-Dichloroethene (total)	300	< 6.0	< 5.1	< 5.8	< 5.5
Chloroform	300	< 6.0	< 5.1	< 5.8	< 5.5
1,2-Dichloroethane	100	< 6.0	< 5.1	< 5.8	< 5.5
2-Butanone	300	< 24	< 21	< 23	< 22
1,1,1-Trichloroethane	800	< 6.0	< 5.1	< 5.8	< 5.5
Carbon tetrachloride	600	< 6.0	< 5.1	< 5.8	< 5.5
Bromodichloromethane	--	< 6.0	< 5.1	< 5.8	< 5.5
1,2-Dichloropropane	--	< 6.0	< 5.1	< 5.8	< 5.5
cis-1,3-Dichloropropene	--	< 6.0	< 5.1	< 5.8	< 5.5
Trichloroethene	700	7.5	< 5.1	6.7	16
Dibromochloromethane	NA	< 6.0	< 5.1	< 5.8	< 5.5
1,1,2-Trichloroethane	--	< 6.0	< 5.1	< 5.8	< 5.5
Benzene	60	< 6.0	< 5.1	< 5.8	< 5.5
trans-1,3-Dichloropropene	--	< 6.0	< 5.1	< 5.8	< 5.5
Bromoform	--	< 6.0	< 5.1	< 5.8	< 5.5
4-Methyl-2-pentanone	1,000	< 24	< 21	< 23	< 22
2-Hexanone	--	< 24	< 21	< 23	< 22
Tetrachloroethene	1,400	< 6.0	< 5.1	< 5.8	< 5.5
1,1,2,2-Tetrachloroethane	600	< 6.0	< 5.1	< 5.8	< 5.5
Toluene	1,500	< 6.0	< 5.1	< 5.8	< 5.5
Chlorobenzene	1,700	< 6.0	< 5.1	< 5.8	< 5.5
Ethylbenzene	5,500	< 6.0	< 5.1	< 5.8	< 5.5
Styrene	--	< 6.0	< 5.1	< 5.8	< 5.5
Xylenes (total)	1,200	< 6.0	< 5.1	< 5.8	< 5.5

Samples analyzed by Severn Trent Laboratories, North Canton, Ohio.

(1) Table 1, Technical and Administrative Guidance Memorandum HWR-94-4046, New York State Department of Environmental Conservation, Revised January 24, 1994.

ug/kg Micrograms per kilogram= parts per billion.

Bold values exceed Recommended Soil Cleanup Objectives.

Supplemental Plating Room Analytical Results (VOCs)

Table 3. Analytical Results for Volatile Organic Compounds by EPA Method 8260, Ward Leonard Electric Company, Mount Vernon, New York.

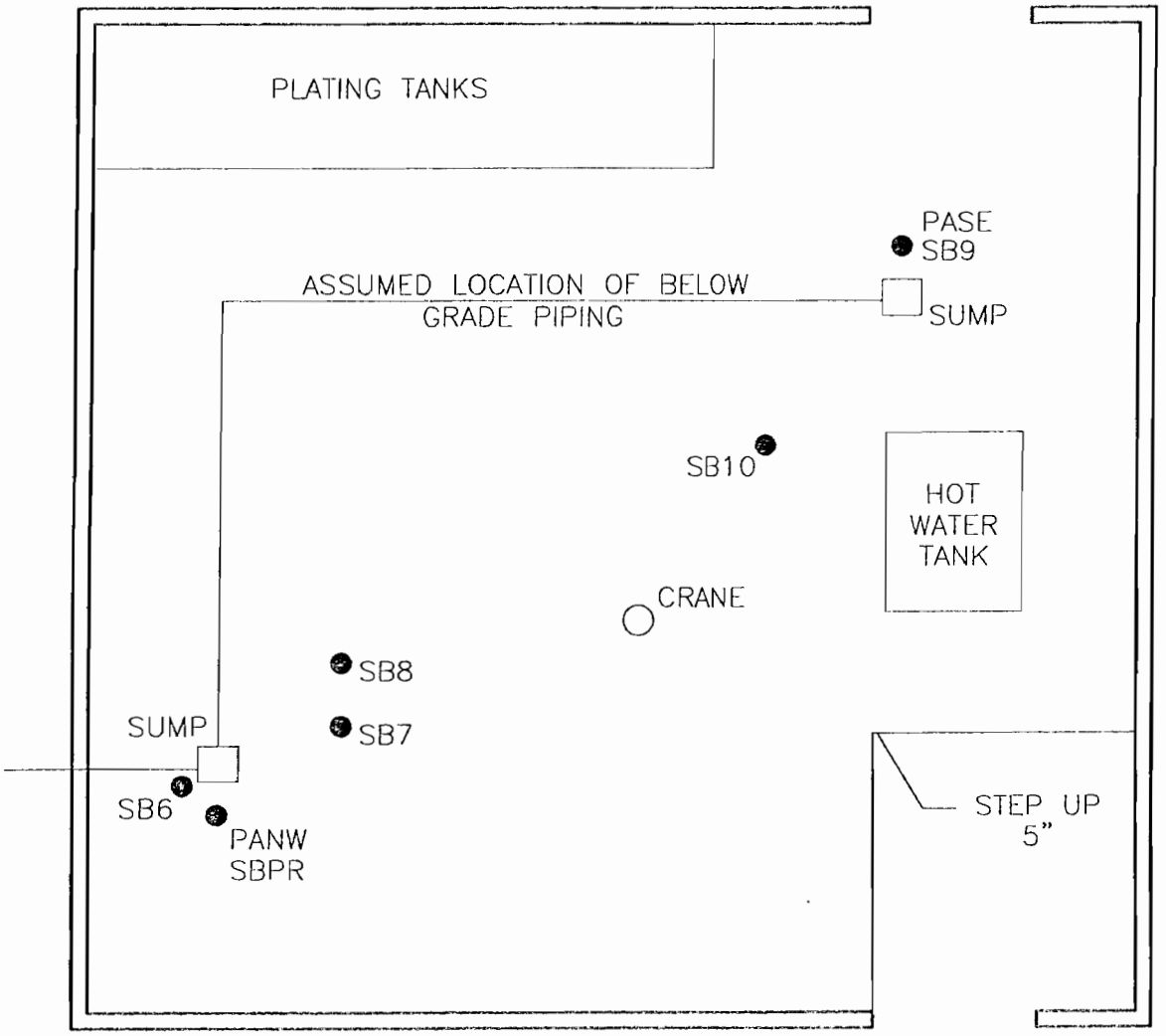
Parameters (units in ug/kg)	Sample ID:	SB10
	Sample Date:	5/16/00
	Sample Location:	Southeast Sump
	Sample Depth (ft):	14-18

	Recommended Soil Cleanup Objectives (1)		
Chloromethane	--	<	12
Bromomethane	--	<	12
Vinyl chloride	200	<	12
Chloroethane	1900	<	12
Methylene chloride	100	<	6.2
Acetone	200	<	25
Carbon disulfide	2,700	<	6.2
1,1-Dichloroethene	400	<	6.2
1,1-Dichloroethane	200	<	6.2
1,2-Dichloroethene (total)	300	<	6.2
Chloroform	300	<	6.2
1,2-Dichloroethane	100	<	6.2
2-Butanone	300	<	25
1,1,1-Trichloroethane	800	<	6.2
Carbon tetrachloride	600	<	6.2
Bromodichloromethane	--	<	6.2
1,2-Dichloropropane	--	<	6.2
cis-1,3-Dichloropropene	--	<	6.2
Trichloroethene	700		45
Dibromochloromethane	NA	<	6.2
1,1,2-Trichloroethane	--	<	6.2
Benzene	60	<	6.2
trans-1,3-Dichloropropene	--	<	6.2
Bromoform	--	<	6.2
4-Methyl-2-pentanone	1,000	<	25
2-Hexanone	--	<	25
Tetrachloroethene	1,400	<	6.2
1,1,2,2-Tetrachloroethane	600	<	6.2
Toluene	1,500	<	6.2
Chlorobenzene	1,700	<	6.2
Ethylbenzene	5,500	<	6.2
Styrene	--	<	6.2
Xylenes (total)	1,200	<	6.2

Samples analyzed by Severn Trent Laboratories, North Canton, Ohio.

(1) Table 1, Technical and Administrative Guidance Memorandum HWR-94-4046, New York State Department of Environmental Conservation, Revised January 24, 1994.

ug/kg Micrograms per kilogram= parts per billion.



LEGEND

PANW PLATING AREA NORTHWEST SAMPLE LOCATION
PASE PLATING AREA SOUTHEAST SAMPLE LOCATION
SBPR SOIL BORING PLATING ROOM

0' 5 10

SCALE: 1" = 5'

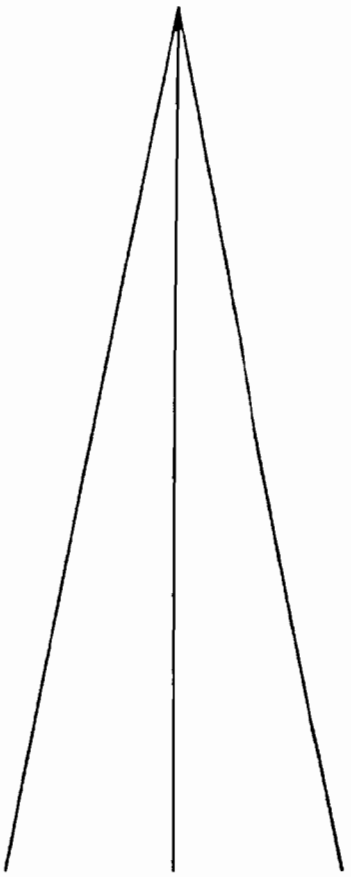
NO.	DATE	REVISION DESCRIPTION	BY / CKD

ARCADIS GERAGHTY&MILLER

DRAWN	DATE	PROJECT MANAGER	DEPARTMENT MANAGER
A.G.	5/9/00		
LOCATIONS OF PLATING ROOM BORINGS WARD LEONARD ELECTRIC CO. MT. VERNON, NEW YORK		LEAD DESIGN PROF.	CHECKED R.P.
		PROJECT NUMBER NY01281.01.03	DRAWING NUMBER 1

SOILTESTING, INC.

TO Arcadis Gerathty & Miller Inc. DATE May 18, 2000
ADDRESS 88 Duryea Road - Melville, New York 11747
SITE LOCATION Ward Leonard Electric - 31 South Street - Mount Vernon, New York
REPORT SENT TO Robert Porsche
SAMPLES SENT TO Picked up @ site by client



140 Oxford Road
Oxford, Connecticut 06478
203-888-4531

Branch Office:
White Plains, New York 10607
914-946-4850

JOB NO. 5872

SOILTESTING, INC.	CLIENT: Arcadis Geraghty & Miller Inc.	SHEET 1 OF 1
140 OXFORD RD.		HOLE NO. B-6
OXFORD, CT 06478	PROJECT NO. E51-5872-00	
CT (203) 888-4531	PROJECT NAME	BORING LOCATIONS
NY (914) 946-4850	Ward Leonard Electric Co.	as directed
FOREMAN - DRILLER	LOCATION	
WC/ld	31 South Street - Mount Vernon, NY	
INSPECTOR		OFFSET
GROUND WATER OBSERVATIONS	TYPE: CASING HSA; SAMPLER SS; CORE BAR MAS.	DATE START 5-15-00
AT none FT AFTER 0 HOURS	SIZE I.D.: 2 1/2" / 1 3/8" / 8"	DATE FINISH 5-15-00
AT FT AFTER HOURS	HAMMER WT.: 140# BIT	SURFACE ELEV.
	HAMMER FALL: 30" dia.	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												10"	CONCRETE
												2'0"	BRICK
		1	ss	24"	12"	5'0"	5	12			dry		Brn F-M SAND,lit C-sand,tr silt
5							4	2			compact	5'0"	
		2	ss	16"	3"	6'4"	50/4				dry		Red BRICK
												7'0"	AUGER REFUSAL E.O.B.
10													
15													
20													
25													
30													
35													E.O.B. 7'0"
40													

GROUND SURFACE TO _____FT. USED _____CASING THEN _____CASING TO _____FT. HOLE NO B-6

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Arcadis Geraghty & Miller Inc.	SHEET 1 OF 1 HOLE NO. B-7
	PROJECT NO. E51-5872-00	
	PROJECT NAME Ward Leonard Electric Co.	BORING LOCATIONS as directed
FOREMAN - DRILLER WC/ld	LOCATION 31 South Street - Mount Vernon, NY	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS / MAS.	DATE START 5-15-00
GROUND WATER OBSERVATIONS	SIZE I.D.: 2 1/2" / 1 3/8" / 8"	DATE FINISH 5-15-00
AT none FT AFTER 0 HOURS	HAMMER WT.: — / 140# / BIT	SURFACE ELEV.
AT FT AFTER HOURS	HAMMER FALL: — / 30" / dia.	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										12"	CONCRETE
										1'1"	REFUSAL-METAL PLATE E.O.B.
5											
10											
15											
20											
25											
30											
35											E.O.B. 1'1"
40											

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO B-7

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Arcadis Geraghty & Miller Inc.	SHEET 1 OF 1 HOLE NO. B-8
	PROJECT NO. E51-5872-00	
	PROJECT NAME Ward Leonard Electric Co.	BORING LOCATIONS as directed
FOREMAN - DRILLER WC/ld	LOCATION 31 South Street - Mount Vernon, NY	
INSPECTOR	CASING / SAMPLER / CORE BAR	OFFSET
	TYPE: HSA / SS / MAS.	DATE START 5-16-00
GROUND WATER OBSERVATIONS	SIZE I.D.: 2 1/2" / 1 3/8" / 8"	DATE FINISH 5-16-00
AT none FT AFTER 0 HOURS	HAMMER WT.: / 140# / BIT	SURFACE ELEV.
AT FT AFTER HOURS	HAMMER FALL: / 30" / dia.	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												12"	CONCRETE
		1	ss	9"	5"	2'9"	7	50/3			dry v-dense	3'6"	Brn F-M SAND & SILT,sm ash or clay
												4'0"	CONCRETE
5		2	ss	24"	18'	6'0"	16	17			dry dense		Brn F-M SAND
							15	15			dry		
		3	ss	24"	20'	8'0"	15	22			dense		
							17	16			dry	8'0"	SAME
		4	ss	24"	18"	10'0"	15	16			dense		Lt-brn F-SAND,lit M-sand
10							18	16			dry		
		5	ss	24'	18'	12'0"	15	15			dense moist		SAME
							17	17			dense		
		6	ss	24'	16'	14'0'	12	13			moist		
							12	11			compact	14'0"	SAME
15		7	ss	24"	12"	16'0"	25	25			v-moist	14'6"	Brn VF-SAND,sm silt
							35	47			v-dense		Brn F-C GRAVEL,decomposed rock,
		8	ss	6"	6'	16'6'	90/6				v-dense		sm F-C sand
												16'6"	DECOMPOSED ROCK E.O.B.
20													
25													
30													
35													E.O.B. 16'6"
40													

GROUND SURFACE TO _____FT. USED _____ CASING THEN _____ CASING TO _____FT. HOLE NO B-8

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC.
140 OXFORD RD.
OXFORD, CT 06478
CT (203) 888-4531
NY (914) 946-4850

CLIENT: Arcadis Geraghty & Miller Inc.

SHEET 1 OF 1
HOLE NO. B-9

PROJECT NO. E51-5872-00

PROJECT NAME
Ward Leonard Electric Co.

BORING LOCATIONS
as directed

FOREMAN - DRILLER
WC/ld

LOCATION
31 South Street - Mount Vernon, NY

INSPECTOR

	CASING	SAMPLER	CORE BAR
TYPE	HSA	SS	MAS.
SIZE I.D.	2 1/2"	1 3/8"	8"
HAMMER WT.		140#	BIT
HAMMER FALL		30"	dia.

OFFSET
DATE START 5-16-00
DATE FINISH 5-16-00
SURFACE ELEV.
GROUND WATER ELEV.

GROUND WATER OBSERVATIONS
AT 16' FT AFTER 0 HOURS
AT FT AFTER HOURS

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0-6	6-12	12-18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												6"	TOPSOIL
		1	ss	15"	15"	3'3"	17	18			dry v-dense		Brn F-M SAND,lit C-sand,F-gravel,tr silt
							80/3					3'3"	
												3'8"	CONCRETE
5		2	ss	24"	18"	6'0"	12	13			dry compact		Brn F-M SAND
							12	12			dry		
		3	ss	24'	13'	8'0"	12	12			compact		SAME
							12	14			dry		
		4	ss	24'	18'	10'0"	12	17			dense		SAME
10							13	14			dry		
		5	ss	24"	18'	12'0"	12	17			dense		SAME
							22	25			dry		
		6	ss	24"	13'	14'0"	25	39			v-dense		
							42	22			v-moist	14'0"	SAME
15		7	ss	24"	17"	16'0"	22	19			dense	15'6"	Brn VF-F SAND,lit silt
							20	20			wet		Brn F-M SAND & F-C GRAVEL,decomposed
												16'0"	rock frags E.O.B.
20													
25													
30													
35													E.O.B. 16'0"

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO B-9

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST
WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS
SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER
PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE
M = MEDIUM
F = FINE

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Arcadis Geraghty & Miller Inc.	SHEET 1 OF 1 HOLE NO. B-10
	PROJECT NO. E51-5872-00	
	PROJECT NAME Ward Leonard Electric Co.	BORING LOCATIONS as directed
FOREMAN - DRILLER WC/ld	LOCATION 31 South Street - Mount Vernon, NY	
INSPECTOR	CASING / SAMPLER / CORE BAR TYPE: HSA / SS / MAS. SIZE I.D.: 2 1/2" / 1 3/8" / 8" HAMMER WT.: / 140# / BIT HAMMER FALL: / 30" / dia.	OFFSET DATE START 5-15-00 DATE FINISH 5-15-00 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT 14' FT AFTER 0 HOURS AT FT AFTER HOURS		

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0-6	6-12	12-18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												8"	CONCRETE
		1	ss	24"	10"	4'0"	3	3			moist		Brn F-SAND & SILT,lit M-C sand,F-M gravel
							2	3			loose	4'0"	
5		2	ss	24"	12"	6'0"	3	4			dry		
							6	8			loose	6'0"	SAME:tr brick frags
		3	ss	24"	6"	8'0"	13	11			dry		Brn F-M SAND
							9	10			compact		
		4	ss	24"	14"	10'0"	10	22			dry		SAME
10							44	14			v-dense		
		5	ss	24"	16"	12'0"	11	12			dry		SAME
							15	15			compact		
		6	ss	24'	13'	14'0"	19	22			wet		
							25	32			dense	14'0"	SAME
15		7	ss	9"	8'	14'9"	24	100/3			wet		Brn VF-F SAND,sm silt,decomposed rock frags
											v-dense	14'9"	AUGER REFUSAL E.O.B.
20													
25													
30													
35													E.O.B. 14'9"

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO B-10

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB6 6-7

GC/MS Volatiles

Lot-Sample #...: A0E160196-001 Work Order #...: DD8HV101 Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
Prep Date.....: 05/17/00 Analysis Date..: 05/17/00
Prep Batch #...: 0139162
Dilution Factor: 1
% Moisture.....: 14 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2900	ug/kg
Benzene	ND	720	ug/kg
Bromodichloromethane	ND	720	ug/kg
Bromoform	ND	720	ug/kg
Bromomethane	ND	1400	ug/kg
2-Butanone	ND	2900	ug/kg
Carbon disulfide	ND	720	ug/kg
Carbon tetrachloride	ND	720	ug/kg
Chlorobenzene	ND	720	ug/kg
Dibromochloromethane	ND	720	ug/kg
Chloroethane	ND	1400	ug/kg
Chloroform	ND	720	ug/kg
Chloromethane	ND	1400	ug/kg
1,1-Dichloroethane	ND	720	ug/kg
1,2-Dichloroethane	ND	720	ug/kg
1,1-Dichloroethene	ND	720	ug/kg
1,2-Dichloroethene (total)	ND	720	ug/kg
1,2-Dichloropropane	ND	720	ug/kg
cis-1,3-Dichloropropene	ND	720	ug/kg
trans-1,3-Dichloropropene	ND	720	ug/kg
Ethylbenzene	ND	720	ug/kg
2-Hexanone	ND	2900	ug/kg
Methylene chloride	ND	720	ug/kg
4-Methyl-2-pentanone	ND	2900	ug/kg
Styrene	ND	720	ug/kg
1,1,2,2-Tetrachloroethane	ND	720	ug/kg
Tetrachloroethene	ND	720	ug/kg
Toluene	ND	720	ug/kg
1,1,1-Trichloroethane	ND	720	ug/kg
1,1,2-Trichloroethane	ND	720	ug/kg
Trichloroethene	**7100**	**720**	**ug/kg**
Vinyl chloride	ND	1400	ug/kg
Xylenes (total)	ND	720	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(59 - 138)
1,2-Dichloroethane-d4	94	(61 - 130)
Toluene-d8	107	(60 - 143)
4-Bromofluorobenzene	99	(47 - 158)

(Continued on next page)

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB6 6-7

GC/MS Volatiles

Lot-Sample #...: A0E160196-001 Work Order #...: DD8HV101 Matrix.....: SO

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB6 6-7

TOTAL Metals

Lot-Sample #...: A0E160196-001 Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
% Moisture.....: 14

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0138092						
Aluminum	4000	23.2	mg/kg	SW846 6010B	05/17/00	DD8HV106
		Dilution Factor: 1				
Arsenic	5.5	1.2	mg/kg	SW846 6010B	05/17/00	DD8HV102
		Dilution Factor: 1				
Lead	309	0.35	mg/kg	SW846 6010B	05/17/00	DD8HV103
		Dilution Factor: 1				
Antimony	ND	7.0	mg/kg	SW846 6010B	05/17/00	DD8HV107
		Dilution Factor: 1				
Barium	50.7	23.2	mg/kg	SW846 6010B	05/17/00	DD8HV108
		Dilution Factor: 1				
Selenium	ND	0.58	mg/kg	SW846 6010B	05/17/00	DD8HV104
		Dilution Factor: 1				
Beryllium	ND	0.58	mg/kg	SW846 6010B	05/17/00	DD8HV109
		Dilution Factor: 1				
Thallium	ND	1.2	mg/kg	SW846 6010B	05/17/00	DD8HV105
		Dilution Factor: 1				
Cadmium	17.7	0.58	mg/kg	SW846 6010B	05/17/00	DD8HV10A
		Dilution Factor: 1				
Calcium	4340	580	mg/kg	SW846 6010B	05/17/00	DD8HV10C
		Dilution Factor: 1				
Chromium	133	1.2	mg/kg	SW846 6010B	05/17/00	DD8HV10D
		Dilution Factor: 1				
Cobalt	ND	5.8	mg/kg	SW846 6010B	05/17/00	DD8HV10E
		Dilution Factor: 1				
Copper	155	2.9	mg/kg	SW846 6010B	05/17/00	DD8HV10F
		Dilution Factor: 1				
Iron	13300	11.6	mg/kg	SW846 6010B	05/17/00	DD8HV10G
		Dilution Factor: 1				

(Continued on next page)

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB6 6-7

TOTAL Metals

Lot-Sample #...: A0E160196-001 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	1400	580	mg/kg	SW846 6010B	05/17/00	DD8HV10H
		Dilution Factor: 1				
Manganese	124	1.7	mg/kg	SW846 6010B	05/17/00	DD8HV10J
		Dilution Factor: 1				
Nickel	7.0	4.6	mg/kg	SW846 6010B	05/17/00	DD8HV10K
		Dilution Factor: 1				
Potassium	1350	580	mg/kg	SW846 6010B	05/17/00	DD8HV10L
		Dilution Factor: 1				
Silver	18.9	1.2	mg/kg	SW846 6010B	05/17/00	DD8HV10M
		Dilution Factor: 1				
Sodium	ND	580	mg/kg	SW846 6010B	05/17/00	DD8HV10N
		Dilution Factor: 1				
Vanadium	19.5	5.8	mg/kg	SW846 6010B	05/17/00	DD8HV10P
		Dilution Factor: 1				
Zinc	94.5	2.3	mg/kg	SW846 6010B	05/17/00	DD8HV10Q
		Dilution Factor: 1				
Mercury	ND	0.12	mg/kg	SW846 7471A	05/17-05/18/00	DD8HV10R
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB6 6-7

General Chemistry

Lot-Sample #...: A0E160196-001 Work Order #...: DD8HV Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
% Moisture.....: 14

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	38.6	5.8	mg/kg	SW846 9012A	05/18-05/20/00	0140313
	Dilution Factor: 10					
Percent Solids	86.2	0.10	%	MCAWW 160.3 MOD	05/17-05/18/00	0138122
	Dilution Factor: 1					

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 4-6

GC/MS Volatiles

Lot-Sample #...: A0E160196-002 Work Order #...: DD8J1101 Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
Prep Date.....: 05/17/00 Analysis Date..: 05/17/00
Prep Batch #...: 0139145
Dilution Factor: 1
% Moisture.....: 5.6 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	11	ug/kg
Bromomethane	ND	11	ug/kg
Vinyl chloride	ND	11	ug/kg
Chloroethane	ND	11	ug/kg
Methylene chloride	ND	5.3	ug/kg
Acetone	ND	21	ug/kg
Carbon disulfide	ND	5.3	ug/kg
1,1-Dichloroethene	ND	5.3	ug/kg
1,1-Dichloroethane	ND	5.3	ug/kg
1,2-Dichloroethene (total)	ND	5.3	ug/kg
Chloroform	ND	5.3	ug/kg
1,2-Dichloroethane	ND	5.3	ug/kg
2-Butanone	ND	21	ug/kg
1,1,1-Trichloroethane	ND	5.3	ug/kg
Carbon tetrachloride	ND	5.3	ug/kg
Bromodichloromethane	ND	5.3	ug/kg
1,2-Dichloropropane	ND	5.3	ug/kg
cis-1,3-Dichloropropene	ND	5.3	ug/kg
Trichloroethene	**20**	**5.3**	**ug/kg**
Dibromochloromethane	ND	5.3	ug/kg
1,1,2-Trichloroethane	ND	5.3	ug/kg
Benzene	ND	5.3	ug/kg
trans-1,3-Dichloropropene	ND	5.3	ug/kg
Bromoform	ND	5.3	ug/kg
4-Methyl-2-pentanone	ND	21	ug/kg
2-Hexanone	ND	21	ug/kg
Tetrachloroethene	ND	5.3	ug/kg
1,1,2,2-Tetrachloroethane	ND	5.3	ug/kg
Toluene	ND	5.3	ug/kg
Chlorobenzene	ND	5.3	ug/kg
Ethylbenzene	ND	5.3	ug/kg
Styrene	ND	5.3	ug/kg
Xylenes (total)	ND	5.3	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	119	(59 - 138)
1,2-Dichloroethane-d4	114	(61 - 130)
Toluene-d8	122	(60 - 143)
4-Bromofluorobenzene	119	(47 - 158)

(Continued on next page)

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 4-6

GC/MS Volatiles

Lot-Sample #...: A0E160196-002 Work Order #...: DD8J1101 Matrix.....: SO

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 4-6

TOTAL Metals

Lot-Sample #...: A0E160196-002 Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
% Moisture.....: 5.6

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0138092						
Aluminum	3640	21.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J1106
Arsenic	1.7	1.1 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J1102
Lead	6.0	0.32 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J1103
Antimony	ND	6.4 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J1107
Barium	89.3	21.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J1108
Selenium	ND	0.53 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J1104
Beryllium	ND	0.53 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J1109
Thallium	ND	1.1 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J1105
Cadmium	18.8	0.53 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J110A
Calcium	1800	530 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J110C
Chromium	49.4	1.1 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J110D
Cobalt	ND	5.3 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J110E
Copper	322	2.6 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J110F
Iron	9790	10.6 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J110G

(Continued on next page)

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 4-6

TOTAL Metals

Lot-Sample #...: A0E160196-002 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	1620	530	mg/kg	SW846 6010B	05/17/00	DD8J110H
		Dilution Factor: 1				
Manganese	135	1.6	mg/kg	SW846 6010B	05/17/00	DD8J110J
		Dilution Factor: 1				
Nickel	17.2	4.2	mg/kg	SW846 6010B	05/17/00	DD8J110K
		Dilution Factor: 1				
Potassium	1250	530	mg/kg	SW846 6010B	05/17/00	DD8J110L
		Dilution Factor: 1				
Silver	ND	1.1	mg/kg	SW846 6010B	05/17/00	DD8J110M
		Dilution Factor: 1				
Sodium	ND	530	mg/kg	SW846 6010B	05/17/00	DD8J110N
		Dilution Factor: 1				
Vanadium	13.9	5.3	mg/kg	SW846 6010B	05/17/00	DD8J110P
		Dilution Factor: 1				
Zinc	449	2.1	mg/kg	SW846 6010B	05/17/00	DD8J110Q
		Dilution Factor: 1				
Mercury	ND	0.11	mg/kg	SW846 7471A	05/17-05/18/00	DD8J110R
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 4-6

General Chemistry

Lot-Sample #...: A0E160196-002 Work Order #...: DD8J1 Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
% Moisture.....: 5.6

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	21.5	2.6	mg/kg	SW846 9012A	05/18-05/19/00	0140313
	Dilution Factor: 5					
Percent Solids	94.4	0.10	%	MCAWW 160.3 MOD	05/17-05/18/00	0138122
	Dilution Factor: 1					

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 10-12

GC/MS Volatiles

Lot-Sample #...: A0E160196-003 Work Order #...: DD8J5101 Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
Prep Date.....: 05/17/00 Analysis Date..: 05/17/00
Prep Batch #...: 0139145
Dilution Factor: 1
% Moisture.....: 15 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	12	ug/kg
Bromomethane	ND	12	ug/kg
Vinyl chloride	ND	12	ug/kg
Chloroethane	ND	12	ug/kg
Methylene chloride	ND	5.9	ug/kg
Acetone	ND	24	ug/kg
Carbon disulfide	ND	5.9	ug/kg
1,1-Dichloroethene	ND	5.9	ug/kg
1,1-Dichloroethane	ND	5.9	ug/kg
1,2-Dichloroethene (total)	ND	5.9	ug/kg
Chloroform	ND	5.9	ug/kg
1,2-Dichloroethane	ND	5.9	ug/kg
2-Butanone	ND	24	ug/kg
1,1,1-Trichloroethane	ND	5.9	ug/kg
Carbon tetrachloride	ND	5.9	ug/kg
Bromodichloromethane	ND	5.9	ug/kg
1,2-Dichloropropane	ND	5.9	ug/kg
cis-1,3-Dichloropropene	ND	5.9	ug/kg
Trichloroethene	**140**	5.9	**ug/kg**
Dibromochloromethane	ND	5.9	ug/kg
1,1,2-Trichloroethane	ND	5.9	ug/kg
Benzene	ND	5.9	ug/kg
trans-1,3-Dichloropropene	ND	5.9	ug/kg
Bromoform	ND	5.9	ug/kg
4-Methyl-2-pentanone	ND	24	ug/kg
2-Hexanone	ND	24	ug/kg
Tetrachloroethene	ND	5.9	ug/kg
1,1,2,2-Tetrachloroethane	ND	5.9	ug/kg
Toluene	ND	5.9	ug/kg
Chlorobenzene	ND	5.9	ug/kg
Ethylbenzene	ND	5.9	ug/kg
Styrene	ND	5.9	ug/kg
Xylenes (total)	ND	5.9	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	121	(59 - 138)
1,2-Dichloroethane-d4	113	(61 - 130)
Toluene-d8	121	(60 - 143)
4-Bromofluorobenzene	116	(47 - 158)

(Continued on next page)

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 10-12

GC/MS Volatiles

Lot-Sample #...: A0E160196-003 Work Order #...: DD8J5101 Matrix.....: SO

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 10-12

TOTAL Metals

Lot-Sample #...: A0E160196-003 Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
% Moisture.....: 15

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0138092						
Aluminum	6940	23.5 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J5106
Arsenic	1.2	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J5102
Lead	4.1	0.35 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J5103
Antimony	ND	7.1 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J5107
Barium	59.7	23.5 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J5108
Selenium	ND	0.59 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J5104
Beryllium	ND	0.59 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J5109
Thallium	ND	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J5105
Cadmium	17.2	0.59 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J510A
Calcium	1140	589 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J510C
Chromium	241	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J510D
Cobalt	ND	5.9 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J510E
Copper	795	2.9 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J510F
Iron	15400	11.8 Dilution Factor: 1	mg/kg	SW846 6010B	05/17/00	DD8J510G

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 10-12

TOTAL Metals

Lot-Sample #...: A0E160196-003 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	3700	589	mg/kg	SW846 6010B	05/17/00	DD8J510B
		Dilution Factor: 1				
Manganese	185	1.8	mg/kg	SW846 6010B	05/17/00	DD8J510J
		Dilution Factor: 1				
Nickel	73.0	4.7	mg/kg	SW846 6010B	05/17/00	DD8J510K
		Dilution Factor: 1				
Potassium	2030	589	mg/kg	SW846 6010B	05/17/00	DD8J510L
		Dilution Factor: 1				
Silver	ND	1.2	mg/kg	SW846 6010B	05/17/00	DD8J510M
		Dilution Factor: 1				
Sodium	ND	589	mg/kg	SW846 6010B	05/17/00	DD8J510N
		Dilution Factor: 1				
Vanadium	21.5	5.9	mg/kg	SW846 6010B	05/17/00	DD8J510P
		Dilution Factor: 1				
Zinc	346	2.4	mg/kg	SW846 6010B	05/17/00	DD8J510Q
		Dilution Factor: 1				
Mercury	ND	0.12	mg/kg	SW846 7471A	05/17-05/18/00	DD8J510R
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 10-12

General Chemistry

Lot-Sample #...: A0E160196-003 Work Order #...: DD8J5 Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	3.8	0.59	mg/kg	SW846 9012A	05/18-05/19/00	0140313
	Dilution Factor: 1					
Percent Solids	84.9	0.10	%	MCAWW 160.3 MOD	05/17-05/18/00	0138122
	Dilution Factor: 1					

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 14-16

GC/MS Volatiles

Lot-Sample #...: A0E170114-001 Work Order #...: DD9AW101 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
Prep Date.....: 05/17/00 Analysis Date..: 05/17/00
Prep Batch #...: 0139145
Dilution Factor: 1
% Moisture.....: 13 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	11	ug/kg
Bromomethane	ND	11	ug/kg
Vinyl chloride	ND	11	ug/kg
Chloroethane	ND	11	ug/kg
Methylene chloride	ND	5.7	ug/kg
Acetone	ND	23	ug/kg
Carbon disulfide	ND	5.7	ug/kg
1,1-Dichloroethene	ND	5.7	ug/kg
1,1-Dichloroethane	ND	5.7	ug/kg
1,2-Dichloroethene (total)	ND	5.7	ug/kg
Chloroform	ND	5.7	ug/kg
1,2-Dichloroethane	ND	5.7	ug/kg
2-Butanone	ND	23	ug/kg
1,1,1-Trichloroethane	ND	5.7	ug/kg
Carbon tetrachloride	ND	5.7	ug/kg
Bromodichloromethane	ND	5.7	ug/kg
1,2-Dichloropropane	ND	5.7	ug/kg
cis-1,3-Dichloropropene	ND	5.7	ug/kg
Trichloroethene	**16**	**5.7**	**ug/kg**
Dibromochloromethane	ND	5.7	ug/kg
1,1,2-Trichloroethane	ND	5.7	ug/kg
Benzene	ND	5.7	ug/kg
trans-1,3-Dichloropropene	ND	5.7	ug/kg
Bromoform	ND	5.7	ug/kg
4-Methyl-2-pentanone	ND	23	ug/kg
2-Hexanone	ND	23	ug/kg
Tetrachloroethene	ND	5.7	ug/kg
1,1,2,2-Tetrachloroethane	ND	5.7	ug/kg
Toluene	ND	5.7	ug/kg
Chlorobenzene	ND	5.7	ug/kg
Ethylbenzene	ND	5.7	ug/kg
Styrene	ND	5.7	ug/kg
Xylenes (total)	ND	5.7	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	118	(59 - 138)
1,2-Dichloroethane-d4	110	(61 - 130)
Toluene-d8	121	(60 - 143)
4-Bromofluorobenzene	115	(47 - 158)

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 14-16

GC/MS Volatiles

Lot-Sample #...: A0E170114-001 Work Order #...: DD9AW101 Matrix.....: SO

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 14-16

TOTAL Metals

Lot-Sample #...: A0E170114-001 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 13

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0138256						
Aluminum	10800	22.9	mg/kg	SW846 6010B	05/18/00	DD9AW10
		Dilution Factor: 1				
Arsenic	1.8	1.1	mg/kg	SW846 6010B	05/18/00	DD9AW10
		Dilution Factor: 1				
Lead	9.2 L	0.34	mg/kg	SW846 6010B	05/18/00	DD9AW10
		Dilution Factor: 1				
Antimony	ND	6.9	mg/kg	SW846 6010B	05/18/00	DD9AW107
		Dilution Factor: 1				
Barium	78.2	22.9	mg/kg	SW846 6010B	05/18/00	DD9AW108
		Dilution Factor: 1				
Selenium	ND	0.57	mg/kg	SW846 6010B	05/18/00	DD9AW104
		Dilution Factor: 1				
Beryllium	ND	0.57	mg/kg	SW846 6010B	05/18/00	DD9AW109
		Dilution Factor: 1				
Thallium	1.1	1.1	mg/kg	SW846 6010B	05/18/00	DD9AW105
		Dilution Factor: 1				
Cadmium	31.7 L	0.57	mg/kg	SW846 6010B	05/18/00	DD9AW10A
		Dilution Factor: 1				
Calcium	1550	573	mg/kg	SW846 6010B	05/18/00	DD9AW10C
		Dilution Factor: 1				
Chromium	61.0	1.1	mg/kg	SW846 6010B	05/18/00	DD9AW10D
		Dilution Factor: 1				
Cobalt	10.3	5.7	mg/kg	SW846 6010B	05/18/00	DD9AW10R
		Dilution Factor: 1				
Copper	518	2.9	mg/kg	SW846 6010B	05/18/00	DD9AW10F
		Dilution Factor: 1				
Iron	19200	11.5	mg/kg	SW846 6010B	05/18/00	DD9AW10G
		Dilution Factor: 1				

(Continued on next page)

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 14-16

TOTAL Metals

Lot-Sample #...: A0E170114-001 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	5990	573	mg/kg	SW846 6010B	05/18/00	DD9AW10I
		Dilution Factor: 1				
Manganese	256	1.7	mg/kg	SW846 6010B	05/18/00	DD9AW10J
		Dilution Factor: 1				
Nickel	47.1	4.6	mg/kg	SW846 6010B	05/18/00	DD9AW10K
		Dilution Factor: 1				
Potassium	4520	573	mg/kg	SW846 6010B	05/18/00	DD9AW10L
		Dilution Factor: 1				
Silver	ND	1.1	mg/kg	SW846 6010B	05/18/00	DD9AW10M
		Dilution Factor: 1				
Sodium	ND	573	mg/kg	SW846 6010B	05/18/00	DD9AW10N
		Dilution Factor: 1				
Vanadium	30.9	5.7	mg/kg	SW846 6010B	05/18/00	DD9AW10P
		Dilution Factor: 1				
Zinc	250 L	2.3	mg/kg	SW846 6010B	05/18/00	DD9AW10Q
		Dilution Factor: 1				
Mercury	ND	0.11	mg/kg	SW846 7471A	05/18/00	DD9AW10R
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

L Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 14-16

General Chemistry

Lot-Sample #...: A0E170114-001 Work Order #...: DD9AW Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	3.1	0.57	mg/kg	SW846 9012A	05/18-05/19/00	0140313
		Dilution Factor: 1				
Percent Solids	87.2	0.10	%	MCAWW 160.3 MOD	05/17-05/18/00	0138212
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 2-4

GC/MS Volatiles

Lot-Sample #...: A0E170114-002 Work Order #...: DD9AX101 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
Prep Date.....: 05/17/00 Analysis Date..: 05/17/00
Prep Batch #...: 0139145
Dilution Factor: 1
% Moisture.....: 16 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	12	ug/kg
Bromomethane	ND	12	ug/kg
Vinyl chloride	ND	12	ug/kg
Chloroethane	ND	12	ug/kg
Methylene chloride	ND	6.0	ug/kg
Acetone	ND	24	ug/kg
Carbon disulfide	ND	6.0	ug/kg
1,1-Dichloroethene	ND	6.0	ug/kg
1,1-Dichloroethane	ND	6.0	ug/kg
1,2-Dichloroethene (total)	ND	6.0	ug/kg
Chloroform	ND	6.0	ug/kg
1,2-Dichloroethane	ND	6.0	ug/kg
2-Butanone	ND	24	ug/kg
1,1,1-Trichloroethane	ND	6.0	ug/kg
Carbon tetrachloride	ND	6.0	ug/kg
Bromodichloromethane	ND	6.0	ug/kg
1,2-Dichloropropane	ND	6.0	ug/kg
cis-1,3-Dichloropropene	ND	6.0	ug/kg
Trichloroethene	7.5	6.0	ug/kg
Dibromochloromethane	ND	6.0	ug/kg
1,1,2-Trichloroethane	ND	6.0	ug/kg
Benzene	ND	6.0	ug/kg
trans-1,3-Dichloropropene	ND	6.0	ug/kg
Bromoform	ND	6.0	ug/kg
4-Methyl-2-pentanone	ND	24	ug/kg
2-Hexanone	ND	24	ug/kg
Tetrachloroethene	ND	6.0	ug/kg
1,1,2,2-Tetrachloroethane	ND	6.0	ug/kg
Toluene	ND	6.0	ug/kg
Chlorobenzene	ND	6.0	ug/kg
Ethylbenzene	ND	6.0	ug/kg
Styrene	ND	6.0	ug/kg
Xylenes (total)	ND	6.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	120	(59 - 138)
1,2-Dichloroethane-d4	112	(61 - 130)
Toluene-d8	121	(60 - 143)
4-Bromofluorobenzene	115	(47 - 158)

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 2-4

GC/MS Volatiles

Lot-Sample #...: A0E170114-002 Work Order #...: DD9AX101 Matrix.....: SO

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 2-4

TOTAL Metals

Lot-Sample #...: A0E170114-002 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 16

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0138256						
Aluminum	5110	23.9 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX10(
Arsenic	10.9	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX102
Lead	2010	1.8 Dilution Factor: 5	mg/kg	SW846 6010B	05/18-05/19/00	DD9AX103
Antimony	7.7	7.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX107
Barium	75.3	23.9 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX108
Selenium	ND	0.60 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX104
Beryllium	ND	0.60 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX109
Thallium	ND	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX105
Cadmium	731	3.0 Dilution Factor: 5	mg/kg	SW846 6010B	05/18-05/19/00	DD9AX10A
Calcium	2310	599 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX10(
Chromium	1690	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX10I
Cobalt	ND	6.0 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX10E
Copper	433	3.0 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX10F
Iron	16500	12.0 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9AX10(

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 2-4

TOTAL Metals

Lot-Sample #...: A0E170114-002 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	1760	599	mg/kg	SW846 6010B	05/18/00	DD9AX10
		Dilution Factor: 1				
Manganese	120	1.8	mg/kg	SW846 6010B	05/18/00	DD9AX10
		Dilution Factor: 1				
Nickel	10.8	4.8	mg/kg	SW846 6010B	05/18/00	DD9AX10
		Dilution Factor: 1				
Potassium	1090	599	mg/kg	SW846 6010B	05/18/00	DD9AX10
		Dilution Factor: 1				
Silver	31.5	1.2	mg/kg	SW846 6010B	05/18/00	DD9AX10
		Dilution Factor: 1				
Sodium	609	599	mg/kg	SW846 6010B	05/18/00	DD9AX10
		Dilution Factor: 1				
Vanadium	24.2	6.0	mg/kg	SW846 6010B	05/18/00	DD9AX10
		Dilution Factor: 1				
Zinc	1910	12.0	mg/kg	SW846 6010B	05/18-05/19/00	DD9AX10
		Dilution Factor: 5				
Mercury	ND	0.12	mg/kg	SW846 7471A	05/18/00	DD9AX10
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 2-4

General Chemistry

Lot-Sample #...: A0E170114-002 Work Order #...: DD9AX Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 16

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	93.0	12.0	mg/kg	SW846 9012A	05/18-05/20/00	0140313
	Dilution Factor: 20					
Percent Solids	83.5	0.10	%	MCAWW 160.3 MOD	05/17-05/18/00	0138212
	Dilution Factor: 1					

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 4-6

GC/MS Volatiles

Lot-Sample #...: A0E170114-003 Work Order #...: DD9C0101 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
Prep Date.....: 05/17/00 Analysis Date..: 05/17/00
Prep Batch #...: 0139145
Dilution Factor: 1
% Moisture.....: 2.8 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	10	ug/kg
Bromomethane	ND	10	ug/kg
Vinyl chloride	ND	10	ug/kg
Chloroethane	ND	10	ug/kg
Methylene chloride	ND	5.1	ug/kg
Acetone	ND	21	ug/kg
Carbon disulfide	ND	5.1	ug/kg
1,1-Dichloroethene	ND	5.1	ug/kg
1,1-Dichloroethane	ND	5.1	ug/kg
1,2-Dichloroethene (total)	ND	5.1	ug/kg
Chloroform	ND	5.1	ug/kg
1,2-Dichloroethane	ND	5.1	ug/kg
2-Butanone	ND	21	ug/kg
1,1,1-Trichloroethane	ND	5.1	ug/kg
Carbon tetrachloride	ND	5.1	ug/kg
Bromodichloromethane	ND	5.1	ug/kg
1,2-Dichloropropane	ND	5.1	ug/kg
cis-1,3-Dichloropropene	ND	5.1	ug/kg
Trichloroethene	ND	5.1	ug/kg
Dibromochloromethane	ND	5.1	ug/kg
1,1,2-Trichloroethane	ND	5.1	ug/kg
Benzene	ND	5.1	ug/kg
trans-1,3-Dichloropropene	ND	5.1	ug/kg
Bromoform	ND	5.1	ug/kg
4-Methyl-2-pentanone	ND	21	ug/kg
2-Hexanone	ND	21	ug/kg
Tetrachloroethene	ND	5.1	ug/kg
1,1,2,2-Tetrachloroethane	ND	5.1	ug/kg
Toluene	ND	5.1	ug/kg
Chlorobenzene	ND	5.1	ug/kg
Ethylbenzene	ND	5.1	ug/kg
Styrene	ND	5.1	ug/kg
Xylenes (total)	ND	5.1	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	123	(59 - 138)
1,2-Dichloroethane-d4	115	(61 - 130)
Toluene-d8	121	(60 - 143)
4-Bromofluorobenzene	116	(47 - 158)

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 4-6

GC/MS Volatiles

Lot-Sample #...: A0E170114-003 Work Order #...: DD9C0101 Matrix.....: SO

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 4-6

TOTAL Metals

Lot-Sample #...: A0E170114-003 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 2.8

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0138256						
Aluminum	2870	20.6 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C0106
Arsenic	1.9	1.0 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C0102
Lead	47.4	0.31 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C0103
Antimony	ND	6.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C0107
Barium	24.5	20.6 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C0108
Selenium	ND	0.51 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C0104
Beryllium	ND	0.51 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C0109
Thallium	ND	1.0 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C0105
Cadmium	124	0.51 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C010A
Calcium	6910	515 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C010C
Chromium	28.5	1.0 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C010D
Cobalt	ND	5.1 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C010E
Copper	52.0	2.6 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C010F
Iron	6970	10.3 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C010G

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 4-6

TOTAL Metals

Lot-Sample #...: A0E170114-003 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	1100	515	mg/kg	SW846 6010B	05/18/00	DD9C010
		Dilution Factor: 1				
Manganese	97.6	1.5	mg/kg	SW846 6010B	05/18/00	DD9C010
		Dilution Factor: 1				
Nickel	5.8	4.1	mg/kg	SW846 6010B	05/18/00	DD9C010
		Dilution Factor: 1				
Potassium	707	515	mg/kg	SW846 6010B	05/18/00	DD9C010
		Dilution Factor: 1				
Silver	ND	1.0	mg/kg	SW846 6010B	05/18/00	DD9C010M
		Dilution Factor: 1				
Sodium	ND	515	mg/kg	SW846 6010B	05/18/00	DD9C010N
		Dilution Factor: 1				
Vanadium	9.0	5.1	mg/kg	SW846 6010B	05/18/00	DD9C010P
		Dilution Factor: 1				
Zinc	62.3	2.1	mg/kg	SW846 6010B	05/18/00	DD9C010Q
		Dilution Factor: 1				
Mercury	ND	0.10	mg/kg	SW846 7471A	05/18/00	DD9C010R
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 4-6

General Chemistry

Lot-Sample #...: A0E170114-003 Work Order #...: DD9C0 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 2.8

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	27.8	5.1	mg/kg	SW846 9012A	05/18-05/20/00	0140313
	Dilution Factor: 10					
Percent Solids	97.2	0.10	%	MCAWW 160.3 MOD	05/17-05/18/00	0138212
	Dilution Factor: 1					

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 14-16

GC/MS Volatiles

Lot-Sample #...: A0E170114-004 Work Order #...: DD9C1101 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
Prep Date.....: 05/17/00 Analysis Date..: 05/17/00
Prep Batch #...: 0139145
Dilution Factor: 1
% Moisture.....: 14 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	12	ug/kg
Bromomethane	ND	12	ug/kg
Vinyl chloride	ND	12	ug/kg
Chloroethane	ND	12	ug/kg
Methylene chloride	ND	5.8	ug/kg
Acetone	ND	23	ug/kg
Carbon disulfide	ND	5.8	ug/kg
1,1-Dichloroethene	ND	5.8	ug/kg
1,1-Dichloroethane	ND	5.8	ug/kg
1,2-Dichloroethene (total)	ND	5.8	ug/kg
Chloroform	ND	5.8	ug/kg
1,2-Dichloroethane	ND	5.8	ug/kg
2-Butanone	ND	23	ug/kg
1,1,1-Trichloroethane	ND	5.8	ug/kg
Carbon tetrachloride	ND	5.8	ug/kg
Bromodichloromethane	ND	5.8	ug/kg
1,2-Dichloropropane	ND	5.8	ug/kg
cis-1,3-Dichloropropene	ND	5.8	ug/kg
Trichloroethene	**6.7**	**5.8**	**ug/kg**
Dibromochloromethane	ND	5.8	ug/kg
1,1,2-Trichloroethane	ND	5.8	ug/kg
Benzene	ND	5.8	ug/kg
trans-1,3-Dichloropropene	ND	5.8	ug/kg
Bromoform	ND	5.8	ug/kg
4-Methyl-2-pentanone	ND	23	ug/kg
2-Hexanone	ND	23	ug/kg
Tetrachloroethene	ND	5.8	ug/kg
1,1,2,2-Tetrachloroethane	ND	5.8	ug/kg
Toluene	ND	5.8	ug/kg
Chlorobenzene	ND	5.8	ug/kg
Ethylbenzene	ND	5.8	ug/kg
Styrene	ND	5.8	ug/kg
Xylenes (total)	ND	5.8	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	123	(59 - 138)
1,2-Dichloroethane-d4	112	(61 - 130)
Toluene-d8	122	(60 - 143)
4-Bromofluorobenzene	118	(47 - 158)

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 14-16

GC/MS Volatiles

Lot-Sample #...: A0E170114-004 Work Order #...: DD9C1101 Matrix.....: SO

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 14-16

TOTAL Metals

Lot-Sample #...: A0E170114-004 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 14

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0138256						
Aluminum	8330	23.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C1106
Arsenic	ND	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C1102
Lead	25.0	0.35 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C1103
Antimony	ND	7.0 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C1107
Barium	60.7	23.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C1108
Selenium	ND	0.58 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C1104
Beryllium	ND	0.58 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C1109
Thallium	ND	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C1105
Cadmium	19.8	0.58 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C110A
Calcium	1900	581 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C110C
Chromium	178	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C110D
Cobalt	6.7	5.8 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C110E
Copper	166	2.9 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C110F
Iron	16800	11.6 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C110G

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 14-16

TOTAL Metals

Lot-Sample #...: A0E170114-004 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	4630	581	mg/kg	SW846 6010B	05/18/00	DD9C110H
		Dilution Factor: 1				
Manganese	159	1.7	mg/kg	SW846 6010B	05/18/00	DD9C110J
		Dilution Factor: 1				
Nickel	19.5	4.6	mg/kg	SW846 6010B	05/18/00	DD9C110K
		Dilution Factor: 1				
Potassium	2900	581	mg/kg	SW846 6010B	05/18/00	DD9C110L
		Dilution Factor: 1				
Silver	ND	1.2	mg/kg	SW846 6010B	05/18/00	DD9C110M
		Dilution Factor: 1				
Sodium	ND	581	mg/kg	SW846 6010B	05/18/00	DD9C110N
		Dilution Factor: 1				
Vanadium	26.3	5.8	mg/kg	SW846 6010B	05/18/00	DD9C110P
		Dilution Factor: 1				
Zinc	104	2.3	mg/kg	SW846 6010B	05/18/00	DD9C110Q
		Dilution Factor: 1				
Mercury	ND	0.12	mg/kg	SW846 7471A	05/18/00	DD9C110R
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 14-16

General Chemistry

Lot-Sample #...: A0E170114-004 Work Order #...: DD9C1 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 14

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	ND	0.58	mg/kg	SW846 9012A	05/18-05/19/00	0140313
		Dilution Factor: 1				
Percent Solids	86.1	0.10	%	MCAWW 160.3 MOD	05/17-05/18/00	0138212
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 6-8

GC/MS Volatiles

Lot-Sample #...: A0E170114-005 Work Order #...: DD9C4101 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
Prep Date.....: 05/17/00 Analysis Date..: 05/17/00
Prep Batch #...: 0139145
Dilution Factor: 1
% Moisture.....: 8.4 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	11	ug/kg
Bromomethane	ND	11	ug/kg
Vinyl chloride	ND	11	ug/kg
Chloroethane	ND	11	ug/kg
Methylene chloride	ND	5.5	ug/kg
Acetone	ND	22	ug/kg
Carbon disulfide	ND	5.5	ug/kg
1,1-Dichloroethene	ND	5.5	ug/kg
1,1-Dichloroethane	ND	5.5	ug/kg
1,2-Dichloroethene (total)	ND	5.5	ug/kg
Chloroform	ND	5.5	ug/kg
1,2-Dichloroethane	ND	5.5	ug/kg
2-Butanone	ND	22	ug/kg
1,1,1-Trichloroethane	ND	5.5	ug/kg
Carbon tetrachloride	ND	5.5	ug/kg
Bromodichloromethane	ND	5.5	ug/kg
1,2-Dichloropropane	ND	5.5	ug/kg
cis-1,3-Dichloropropene	ND	5.5	ug/kg
Trichloroethene	**16**	**5.5**	**ug/kg**
Dibromochloromethane	ND	5.5	ug/kg
1,1,2-Trichloroethane	ND	5.5	ug/kg
Benzene	ND	5.5	ug/kg
trans-1,3-Dichloropropene	ND	5.5	ug/kg
Bromoform	ND	5.5	ug/kg
4-Methyl-2-pentanone	ND	22	ug/kg
2-Hexanone	ND	22	ug/kg
Tetrachloroethene	ND	5.5	ug/kg
1,1,2,2-Tetrachloroethane	ND	5.5	ug/kg
Toluene	ND	5.5	ug/kg
Chlorobenzene	ND	5.5	ug/kg
Ethylbenzene	ND	5.5	ug/kg
Styrene	ND	5.5	ug/kg
Xylenes (total)	ND	5.5	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	123	(59 - 138)
1,2-Dichloroethane-d4	115	(61 - 130)
Toluene-d8	118	(60 - 143)
4-Bromofluorobenzene	117	(47 - 158)

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 6-8

GC/MS Volatiles

Lot-Sample #...: A0E170114-005 Work Order #...: DD9C4101 Matrix.....: SO

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 6-8

TOTAL Metals

Lot-Sample #...: A0E170114-005 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 8.4

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0138256						
Aluminum	3190	21.8	mg/kg	SW846 6010B	05/18/00	DD9C4106
		Dilution Factor: 1				
Arsenic	2.2	1.1	mg/kg	SW846 6010B	05/18/00	DD9C4102
		Dilution Factor: 1				
Lead	441	0.33	mg/kg	SW846 6010B	05/18/00	DD9C4103
		Dilution Factor: 1				
Antimony	ND	6.6	mg/kg	SW846 6010B	05/18/00	DD9C4107
		Dilution Factor: 1				
Barium	44.7	21.8	mg/kg	SW846 6010B	05/18/00	DD9C4108
		Dilution Factor: 1				
Selenium	ND	0.55	mg/kg	SW846 6010B	05/18/00	DD9C4104
		Dilution Factor: 1				
Beryllium	ND	0.55	mg/kg	SW846 6010B	05/18/00	DD9C4109
		Dilution Factor: 1				
Thallium	ND	1.1	mg/kg	SW846 6010B	05/18/00	DD9C4105
		Dilution Factor: 1				
Cadmium	54.9	0.55	mg/kg	SW846 6010B	05/18/00	DD9C410A
		Dilution Factor: 1				
Calcium	836	546	mg/kg	SW846 6010B	05/18/00	DD9C410C
		Dilution Factor: 1				
Chromium	309	1.1	mg/kg	SW846 6010B	05/18/00	DD9C410D
		Dilution Factor: 1				
Cobalt	ND	5.5	mg/kg	SW846 6010B	05/18/00	DD9C410E
		Dilution Factor: 1				
Copper	155	2.7	mg/kg	SW846 6010B	05/18/00	DD9C410F
		Dilution Factor: 1				
Iron	15400	10.9	mg/kg	SW846 6010B	05/18/00	DD9C410G
		Dilution Factor: 1				

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 6-8

TOTAL Metals

Lot-Sample #...: A0E170114-005 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	1030	546	mg/kg	SW846 6010B	05/18/00	DD9C410H
		Dilution Factor: 1				
Manganese	85.2	1.6	mg/kg	SW846 6010B	05/18/00	DD9C410J
		Dilution Factor: 1				
Nickel	8.8	4.4	mg/kg	SW846 6010B	05/18/00	DD9C410K
		Dilution Factor: 1				
Potassium	1030	546	mg/kg	SW846 6010B	05/18/00	DD9C410L
		Dilution Factor: 1				
Silver	3.0	1.1	mg/kg	SW846 6010B	05/18/00	DD9C410M
		Dilution Factor: 1				
Sodium	ND	546	mg/kg	SW846 6010B	05/18/00	DD9C410N
		Dilution Factor: 1				
Vanadium	13.4	5.5	mg/kg	SW846 6010B	05/18/00	DD9C410P
		Dilution Factor: 1				
Zinc	94.5	2.2	mg/kg	SW846 6010B	05/18/00	DD9C410Q
		Dilution Factor: 1				
Mercury	ND	0.11	mg/kg	SW846 7471A	05/18/00	DD9C410R
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 6-8

General Chemistry

Lot-Sample #...: A0E170114-005 Work Order #...: DD9C4 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 8.4

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	9.8	1.1	mg/kg	SW846 9012A	05/18-05/19/00	0140313
		Dilution Factor: 2				
Percent Solids	91.6	0.10	%	MCAWW 160.3 MOD	05/17-05/18/00	0138212
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 14-18

GC/MS Volatiles

Lot-Sample #...: A0E170114-006 Work Order #...: DD9C5101 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
Prep Date.....: 05/17/00 Analysis Date..: 05/17/00
Prep Batch #...: 0139145
Dilution Factor: 1
% Moisture.....: 19 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	12	ug/kg
Bromomethane	ND	12	ug/kg
Vinyl chloride	ND	12	ug/kg
Chloroethane	ND	12	ug/kg
Methylene chloride	ND	6.2	ug/kg
Acetone	ND	25	ug/kg
Carbon disulfide	ND	6.2	ug/kg
1,1-Dichloroethene	ND	6.2	ug/kg
1,1-Dichloroethane	ND	6.2	ug/kg
1,2-Dichloroethene (total)	ND	6.2	ug/kg
Chloroform	ND	6.2	ug/kg
1,2-Dichloroethane	ND	6.2	ug/kg
2-Butanone	ND	25	ug/kg
1,1,1-Trichloroethane	ND	6.2	ug/kg
Carbon tetrachloride	ND	6.2	ug/kg
Bromodichloromethane	ND	6.2	ug/kg
1,2-Dichloropropane	ND	6.2	ug/kg
cis-1,3-Dichloropropene	ND	6.2	ug/kg
Trichloroethene	**45**	**6.2**	**ug/kg**
Dibromochloromethane	ND	6.2	ug/kg
1,1,2-Trichloroethane	ND	6.2	ug/kg
Benzene	ND	6.2	ug/kg
trans-1,3-Dichloropropene	ND	6.2	ug/kg
Bromoform	ND	6.2	ug/kg
4-Methyl-2-pentanone	ND	25	ug/kg
2-Hexanone	ND	25	ug/kg
Tetrachloroethene	ND	6.2	ug/kg
1,1,2,2-Tetrachloroethane	ND	6.2	ug/kg
Toluene	ND	6.2	ug/kg
Chlorobenzene	ND	6.2	ug/kg
Ethylbenzene	ND	6.2	ug/kg
Styrene	ND	6.2	ug/kg
Xylenes (total)	ND	6.2	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	117	(59 - 138)
1,2-Dichloroethane-d4	110	(61 - 130)
Toluene-d8	120	(60 - 143)
4-Bromofluorobenzene	117	(47 - 158)

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 14-18

GC/MS Volatiles

Lot-Sample #...: A0E170114-006 Work Order #...: DD9C5101 Matrix.....: SO

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 14-18

TOTAL Metals

Lot-Sample #...: A0E170114-006 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 19

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0138256						
Aluminum	8200	24.7 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C5106
Arsenic	1.2	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C5102
Lead	48.1	0.37 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C5103
Antimony	ND	7.4 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C5107
Barium	92.9	24.7 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C5108
Selenium	ND	0.62 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C5104
Beryllium	ND	0.62 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C5109
Thallium	ND	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C5105
Cadmium	1.5	0.62 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C510A
Calcium	1020	617 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C510C
Chromium	183	1.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C510D
Cobalt	6.7	6.2 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C510E
Copper	53.1	3.1 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C510F
Iron	21500	12.3 Dilution Factor: 1	mg/kg	SW846 6010B	05/18/00	DD9C510G

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 14-18

TOTAL Metals

Lot-Sample #...: A0E170114-006 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	6020	617	mg/kg	SW846 6010B	05/18/00	DD9C510H
		Dilution Factor: 1				
Manganese	198	1.9	mg/kg	SW846 6010B	05/18/00	DD9C510J
		Dilution Factor: 1				
Nickel	14.1	4.9	mg/kg	SW846 6010B	05/18/00	DD9C510K
		Dilution Factor: 1				
Potassium	3470	617	mg/kg	SW846 6010B	05/18/00	DD9C510L
		Dilution Factor: 1				
Silver	ND	1.2	mg/kg	SW846 6010B	05/18/00	DD9C510M
		Dilution Factor: 1				
Sodium	ND	617	mg/kg	SW846 6010B	05/18/00	DD9C510N
		Dilution Factor: 1				
Vanadium	33.1	6.2	mg/kg	SW846 6010B	05/18/00	DD9C510P
		Dilution Factor: 1				
Zinc	47.4	2.5	mg/kg	SW846 6010B	05/18/00	DD9C510Q
		Dilution Factor: 1				
Mercury	ND	0.12	mg/kg	SW846 7471A	05/18/00	DD9C510R
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 14-18

General Chemistry

Lot-Sample #...: A0E170114-006 Work Order #...: DD9C5 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/17/00
% Moisture.....: 19

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total	1.5	0.62	mg/kg	SW846 9012A	05/18-05/19/00	0140313
	Dilution Factor: 1					
Percent Solids	81.0	0.10	%	MCAWW 160.3 MOD	05/17-05/18/00	0138212
	Dilution Factor: 1					

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB6 6-7

TCLP Metals

Lot-Sample #...: A0E310104-001 Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
Leach Date.....: 06/02/00 Leach Batch #..: P015404

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0154198						
Aluminum	1.6	0.20	mg/L	SW846 6010B	06/02-06/05/00	DDXQ7107
		Dilution Factor: 1				
Beryllium	ND	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQ7108
		Dilution Factor: 1				
Calcium	238	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ7109
		Dilution Factor: 1				
Cobalt	0.081	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710A
		Dilution Factor: 1				
Copper	ND	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710C
		Dilution Factor: 1				
Iron	7.1	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710D
		Dilution Factor: 1				
Potassium	5.4 L	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710E
		Dilution Factor: 1				
Magnesium	11.2	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710F
		Dilution Factor: 1				
Manganese	0.62	0.015	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710G
		Dilution Factor: 1				
Nickel	0.054	0.040	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710J
		Dilution Factor: 1				
Antimony	ND	0.30	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710K
		Dilution Factor: 1				
Thallium	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQ7103
		Dilution Factor: 1				
Vanadium	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710L
		Dilution Factor: 1				
Zinc	1.7	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710M
		Dilution Factor: 1				

(Continued on next page)

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB6 6-7

TCLP Metals

Lot-Sample #...: A0E310104-001 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQ7104
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710N
		Dilution Factor: 1				
Cadmium	0.81	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710P
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710Q
		Dilution Factor: 1				
Lead	0.13	0.0030	mg/L	SW846 6010B	06/02-06/05/00	DDXQ7105
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQ7106
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQ710R
		Dilution Factor: 1				
Prep Batch #...: 0158148						
Mercury	0.0043	0.0020	mg/L	SW846 7470A	06/06/00	DDXQ7202
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

L Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present.

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 4-6

TCLP Metals

Lot-Sample #...: A0E310104-002 Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
Leach Date.....: 06/02/00 Leach Batch #..: P015404

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0154198						
Aluminum	1.1	0.20 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ8107
Beryllium	ND	0.0050 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ8108
Calcium	101	5.0 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ8109
Cobalt	ND	0.050 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810A
Copper	5.0	1.0 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810C
Iron	1.8	0.10 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810D
Potassium	ND	5.0 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810E
Magnesium	ND	5.0 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810F
Manganese	0.36	0.015 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810G
Nickel	0.14	0.040 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810J
Antimony	ND	0.30 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810K
Thallium	ND	0.010 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ8103
Vanadium	ND	0.050 Dilution Factor: 1	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810L
Zinc	11.0	2.0 Dilution Factor: 2	mg/L	SW846 6010B	06/02-06/06/00	DDXQ810M

(Continued on next page)

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 4-6

TCLP Metals

Lot-Sample #...: A0E310104-002 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQ8104
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810N
		Dilution Factor: 1				
Cadmium	1.5	0.20	mg/L	SW846 6010B	06/02-06/06/00	DDXQ8101
		Dilution Factor: 2				
Chromium	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810Q
		Dilution Factor: 1				
Lead	0.0078	0.0030	mg/L	SW846 6010B	06/02-06/05/00	DDXQ8105
		Dilution Factor: 1				
Selenium	0.0061	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQ8106
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQ810R
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	06/02-06/04/00	DDXQ8102
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 10-12

TCLP Metals

Lot-Sample #...: A0E310104-003 Matrix.....: SO
Date Sampled...: 05/15/00 Date Received..: 05/16/00
Leach Date.....: 06/02/00 Leach Batch #..: P015404

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0154198						
Aluminum	0.80	0.20	mg/L	SW846 6010B	06/02-06/05/00	DDXQ9107
		Dilution Factor: 1				
Beryllium	ND	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQ9108
		Dilution Factor: 1				
Calcium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ9109
		Dilution Factor: 1				
Cobalt	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910A
		Dilution Factor: 1				
Copper	2.3	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910C
		Dilution Factor: 1				
Iron	ND	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910D
		Dilution Factor: 1				
Potassium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910E
		Dilution Factor: 1				
Magnesium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910F
		Dilution Factor: 1				
Manganese	0.061	0.015	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910G
		Dilution Factor: 1				
Nickel	0.072	0.040	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910J
		Dilution Factor: 1				
Antimony	ND	0.30	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910K
		Dilution Factor: 1				
Thallium	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQ9103
		Dilution Factor: 1				
Vanadium	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910L
		Dilution Factor: 1				
nc	ND	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910M
		Dilution Factor: 1				

(Continued on next page)

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 10-12

TCLP Metals

Lot-Sample #...: A0E310104-003 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQ9104
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910N
		Dilution Factor: 1				
Cadmium	0.16	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910P
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910Q
		Dilution Factor: 1				
Lead	ND	0.0030	mg/L	SW846 6010B	06/02-06/05/00	DDXQ9105
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQ9106
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQ910R
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	06/02-06/04/00	DDXQ9102
		Dilution Factor: 1				

NOTE(S) :

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 14-16

TCLP Metals

Lot-Sample #...: A0E310104-004 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/16/00
Leach Date.....: 06/02/00 Leach Batch #..: P015404

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0154198						
Aluminum	0.50	0.20	mg/L	SW846 6010B	06/02-06/05/00	DDXQA107
		Dilution Factor: 1				
Beryllium	ND	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQA108
		Dilution Factor: 1				
Calcium	19.4	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQA109
		Dilution Factor: 1				
Cobalt	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10A
		Dilution Factor: 1				
Copper	1.8	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10C
		Dilution Factor: 1				
Iron	0.44	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10D
		Dilution Factor: 1				
Potassium	6.1	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10E
		Dilution Factor: 1				
Magnesium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10F
		Dilution Factor: 1				
Manganese	0.76	0.015	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10G
		Dilution Factor: 1				
Nickel	0.059	0.040	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10J
		Dilution Factor: 1				
Antimony	ND	0.30	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10K
		Dilution Factor: 1				
Thallium	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQA103
		Dilution Factor: 1				
Vanadium	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10L
		Dilution Factor: 1				
Zinc	1.5	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10M
		Dilution Factor: 1				

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB8 14-16

TCLP Metals

Lot-Sample #...: A0E310104-004 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQA104
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10N
		Dilution Factor: 1				
Cadmium	0.75	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10P
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10Q
		Dilution Factor: 1				
Lead	0.0043	0.0030	mg/L	SW846 6010B	06/02-06/05/00	DDXQA105
		Dilution Factor: 1				
Selenium	0.0056	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQA106
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQA10R
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	06/02-06/04/00	DDXQA102
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 2-4

TCLP Metals

Lot-Sample #...: A0E310104-005 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/16/00
Leach Date.....: 06/02/00 Leach Batch #..: P015404

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0154198						
Aluminum	5.0	0.20	mg/L	SW846 6010B	06/02-06/05/00	DDXQC107
		Dilution Factor: 1				
Beryllium	ND	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQC108
		Dilution Factor: 1				
Calcium	50.4	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQC109
		Dilution Factor: 1				
Cobalt	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10A
		Dilution Factor: 1				
Copper	ND	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10C
		Dilution Factor: 1				
Iron	0.12	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10D
		Dilution Factor: 1				
Potassium	5.4	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10E
		Dilution Factor: 1				
Magnesium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10F
		Dilution Factor: 1				
Manganese	0.16	0.015	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10G
		Dilution Factor: 1				
Nickel	ND	0.040	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10J
		Dilution Factor: 1				
Antimony	ND	0.30	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10K
		Dilution Factor: 1				
Thallium	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQC103
		Dilution Factor: 1				
Vanadium	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10L
		Dilution Factor: 1				
Zinc	1.8	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10M
		Dilution Factor: 1				

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 2-4

TCLP Metals

Lot-Sample #...: A0E310104-005 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQC104
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10N
		Dilution Factor: 1				
Cadmium	11.5	2.0	mg/L	SW846 6010B	06/02-06/06/00	DDXQC10P
		Dilution Factor: 20				
Chromium	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10Q
		Dilution Factor: 1				
Lead	1.2	0.0030	mg/L	SW846 6010B	06/02-06/05/00	DDXQC105
		Dilution Factor: 1				
Selenium	0.0066	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQC106
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQC10R
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	06/02-06/04/00	DDXQC102
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 4-6

TCLP Metals

Lot-Sample #...: A0E310104-006 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/16/00
Leach Date.....: 06/02/00 Leach Batch #..: P015404

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0154198						
Aluminum	1.1	0.20	mg/L	SW846 6010B	06/02-06/05/00	DDXQD107
		Dilution Factor: 1				
Beryllium	ND	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQD108
		Dilution Factor: 1				
Calcium	272	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQD109
		Dilution Factor: 1				
Cobalt	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10A
		Dilution Factor: 1				
Copper	ND	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10C
		Dilution Factor: 1				
Iron	0.94	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10D
		Dilution Factor: 1				
Potassium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10E
		Dilution Factor: 1				
Magnesium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10F
		Dilution Factor: 1				
Antimony	ND	0.30	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10K
		Dilution Factor: 1				
Thallium	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQD103
		Dilution Factor: 1				
Manganese	0.30	0.015	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10G
		Dilution Factor: 1				
Nickel	0.041	0.040	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10J
		Dilution Factor: 1				
Vanadium	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10L
		Dilution Factor: 1				
nc	ND	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10M
		Dilution Factor: 1				

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 4-6

TCLP Metals

Lot-Sample #...: A0E310104-006 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQD104
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10N
		Dilution Factor: 1				
Cadmium	4.2	0.50	mg/L	SW846 6010B	06/02-06/06/00	DDXQD10P
		Dilution Factor: 5				
Chromium	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10Q
		Dilution Factor: 1				
Lead	0.017	0.0030	mg/L	SW846 6010B	06/02-06/05/00	DDXQD105
		Dilution Factor: 1				
Selenium	0.0050	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQD106
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQD10R
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	06/02-06/04/00	DDXQD102
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 14-16

TCLP Metals

Lot-Sample #...: A0E310104-007 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/16/00
Leach Date.....: 06/02/00 Leach Batch #..: P015404

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0154198						
Aluminum	0.60	0.20	mg/L	SW846 6010B	06/02-06/05/00	DDXQE107
		Dilution Factor: 1				
Beryllium	ND	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQE108
		Dilution Factor: 1				
Calcium	7.9	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQE109
		Dilution Factor: 1				
Cobalt	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10A
		Dilution Factor: 1				
Copper	ND	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10C
		Dilution Factor: 1				
Iron	1.1	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10D
		Dilution Factor: 1				
Potassium	10.1	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10E
		Dilution Factor: 1				
Magnesium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10F
		Dilution Factor: 1				
Manganese	0.11	0.015	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10G
		Dilution Factor: 1				
Nickel	ND	0.040	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10J
		Dilution Factor: 1				
Antimony	ND	0.30	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10K
		Dilution Factor: 1				
Thallium	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQE103
		Dilution Factor: 1				
Vanadium	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10L
		Dilution Factor: 1				
Zinc	ND	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10M
		Dilution Factor: 1				

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ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB9 14-16

TCLP Metals

Lot-Sample #...: A0E310104-007 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQE104
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10N
		Dilution Factor: 1				
Cadmium	0.21	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10P
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10Q
		Dilution Factor: 1				
Lead	0.0045	0.0030	mg/L	SW846 6010B	06/02-06/05/00	DDXQE105
		Dilution Factor: 1				
Selenium	0.0060	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQE106
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQE10R
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	06/02-06/04/00	DDXQE102
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 6-8

TCLP Metals

Lot-Sample #...: A0E310104-008 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/16/00
Leach Date.....: 06/02/00 Leach Batch #..: P015404

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0154198						
Aluminum	0.57	0.20	mg/L	SW846 6010B	06/02-06/05/00	DDXQG107
		Dilution Factor: 1				
Cobalt	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10A
		Dilution Factor: 1				
Beryllium	ND	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQG108
		Dilution Factor: 1				
Calcium	8.9	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQG109
		Dilution Factor: 1				
Copper	ND	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10C
		Dilution Factor: 1				
Iron	ND	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10D
		Dilution Factor: 1				
Potassium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10E
		Dilution Factor: 1				
Magnesium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10F
		Dilution Factor: 1				
Manganese	0.041	0.015	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10G
		Dilution Factor: 1				
Nickel	ND	0.040	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10J
		Dilution Factor: 1				
Antimony	ND	0.30	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10K
		Dilution Factor: 1				
Thallium	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQG103
		Dilution Factor: 1				
Vanadium	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10L
		Dilution Factor: 1				
Zinc	ND	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10M
		Dilution Factor: 1				

(Continued on next page)

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 6-8

TCLP Metals

Lot-Sample #...: A0E310104-008 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQG104
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10N
		Dilution Factor: 1				
Cadmium	0.58	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10P
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10Q
		Dilution Factor: 1				
Lead	0.42	0.0030	mg/L	SW846 6010B	06/02-06/05/00	DDXQG105
		Dilution Factor: 1				
Selenium	0.0056	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQG106
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQG10R
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	06/02-06/04/00	DDXQG102
		Dilution Factor: 1				

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 14-18

TCLP Metals

Lot-Sample #...: A0E310104-009 Matrix.....: SO
Date Sampled...: 05/16/00 Date Received..: 05/16/00
Leach Date.....: 06/02/00 Leach Batch #..: P015404

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0154198						
Aluminum	0.60	0.20	mg/L	SW846 6010B	06/02-06/05/00	DDXQH107
		Dilution Factor: 1				
Beryllium	ND	0.0050	mg/L	SW846 6010B	06/02-06/05/00	DDXQH108
		Dilution Factor: 1				
Calcium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQH109
		Dilution Factor: 1				
Cobalt	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10A
		Dilution Factor: 1				
Copper	ND	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10C
		Dilution Factor: 1				
Iron	0.29	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10D
		Dilution Factor: 1				
Potassium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10E
		Dilution Factor: 1				
Magnesium	ND	5.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10F
		Dilution Factor: 1				
Manganese	0.039	0.015	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10G
		Dilution Factor: 1				
Nickel	ND	0.040	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10J
		Dilution Factor: 1				
Antimony	ND	0.30	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10K
		Dilution Factor: 1				
Thallium	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQH103
		Dilution Factor: 1				
Vanadium	ND	0.050	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10L
		Dilution Factor: 1				
Zinc	ND	1.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10M
		Dilution Factor: 1				

(Continued on next page)

ARCADIS GERAGHTY & MILLER INC

Client Sample ID: SB10 14-18

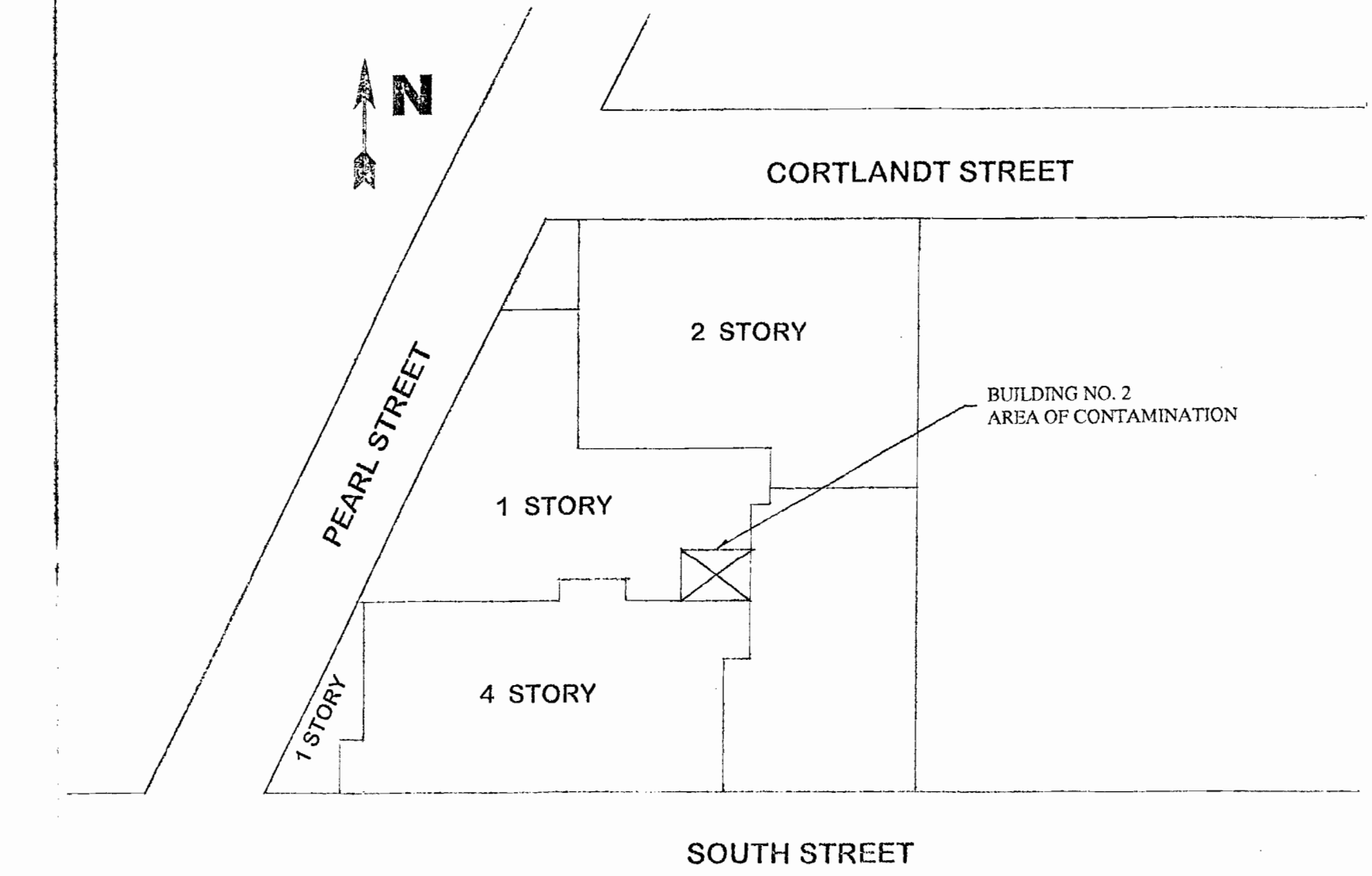
TCLP Metals

Lot-Sample #...: A0E310104-009 Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic	ND	0.010	mg/L	SW846 6010B	06/02-06/05/00	DDXQH104
		Dilution Factor: 1				
Barium	ND	10.0	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10N
		Dilution Factor: 1				
Cadmium	ND	0.10	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10P
		Dilution Factor: 1				
Chromium	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10Q
		Dilution Factor: 1				
Lead	ND	0.0030	mg/L	SW846 6010B	06/02-06/05/00	DDXQH105
		Dilution Factor: 1				
Selenium	**0.0055**	**0.0050**	**mg/L**	**SW846 6010B**	**06/02-06/05/00**	**DDXQH106**
		Dilution Factor: 1				
Silver	ND	0.50	mg/L	SW846 6010B	06/02-06/05/00	DDXQH10R
		Dilution Factor: 1				
Mercury	ND	0.0020	mg/L	SW846 7470A	06/02-06/04/00	DDXQH102
		Dilution Factor: 1				

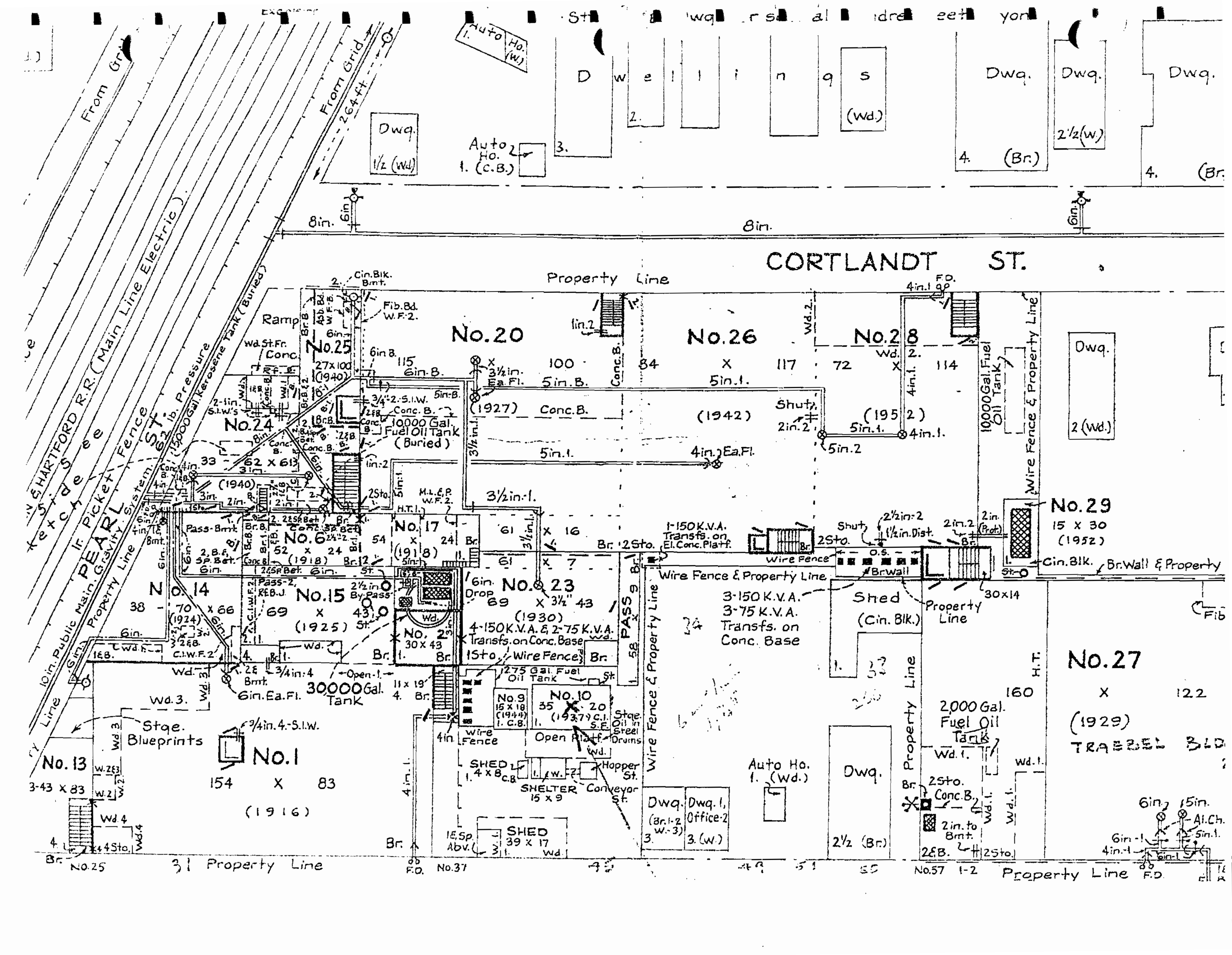
NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

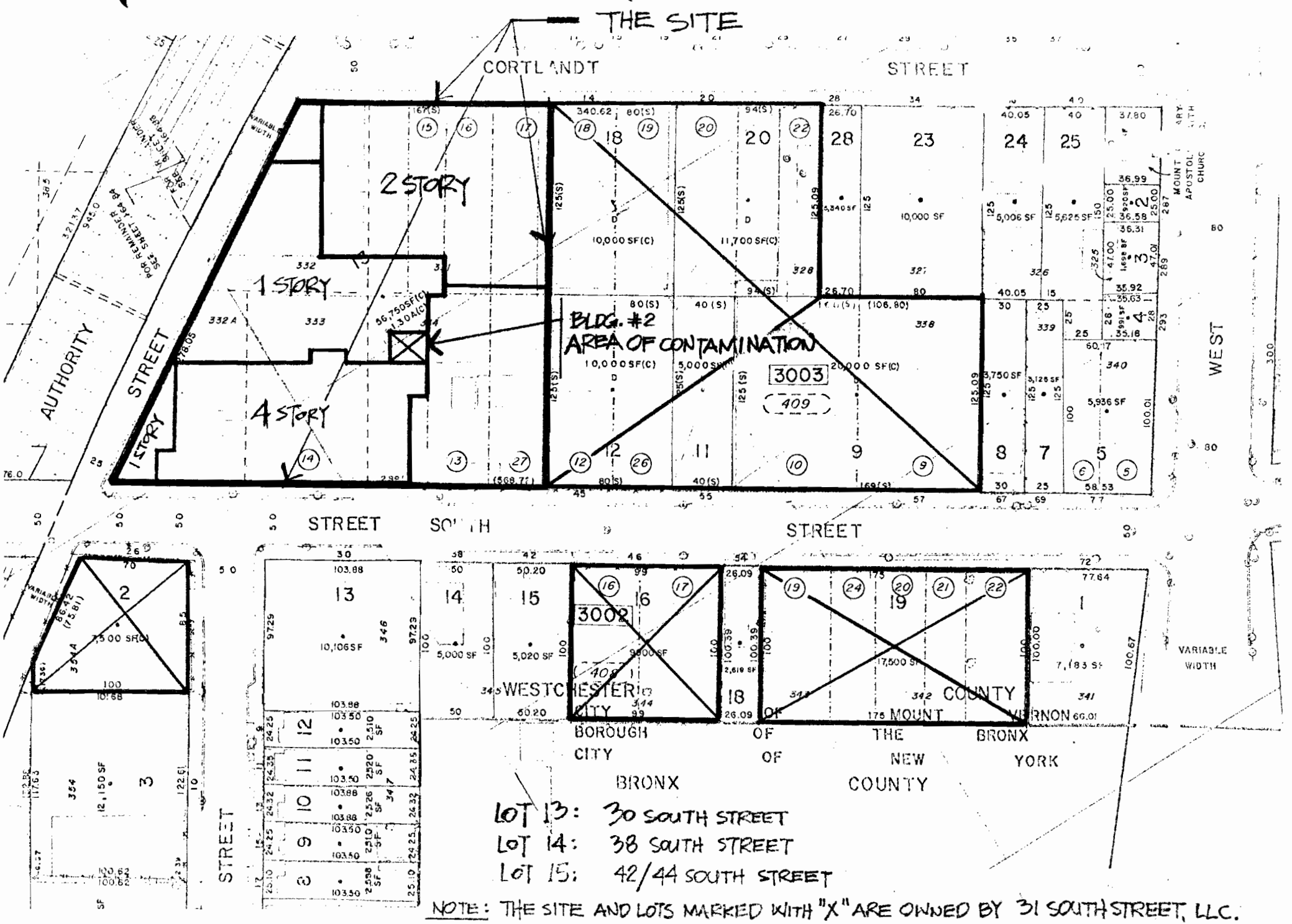


ATTACHMENT NO. 1
31 SOUTH STREET

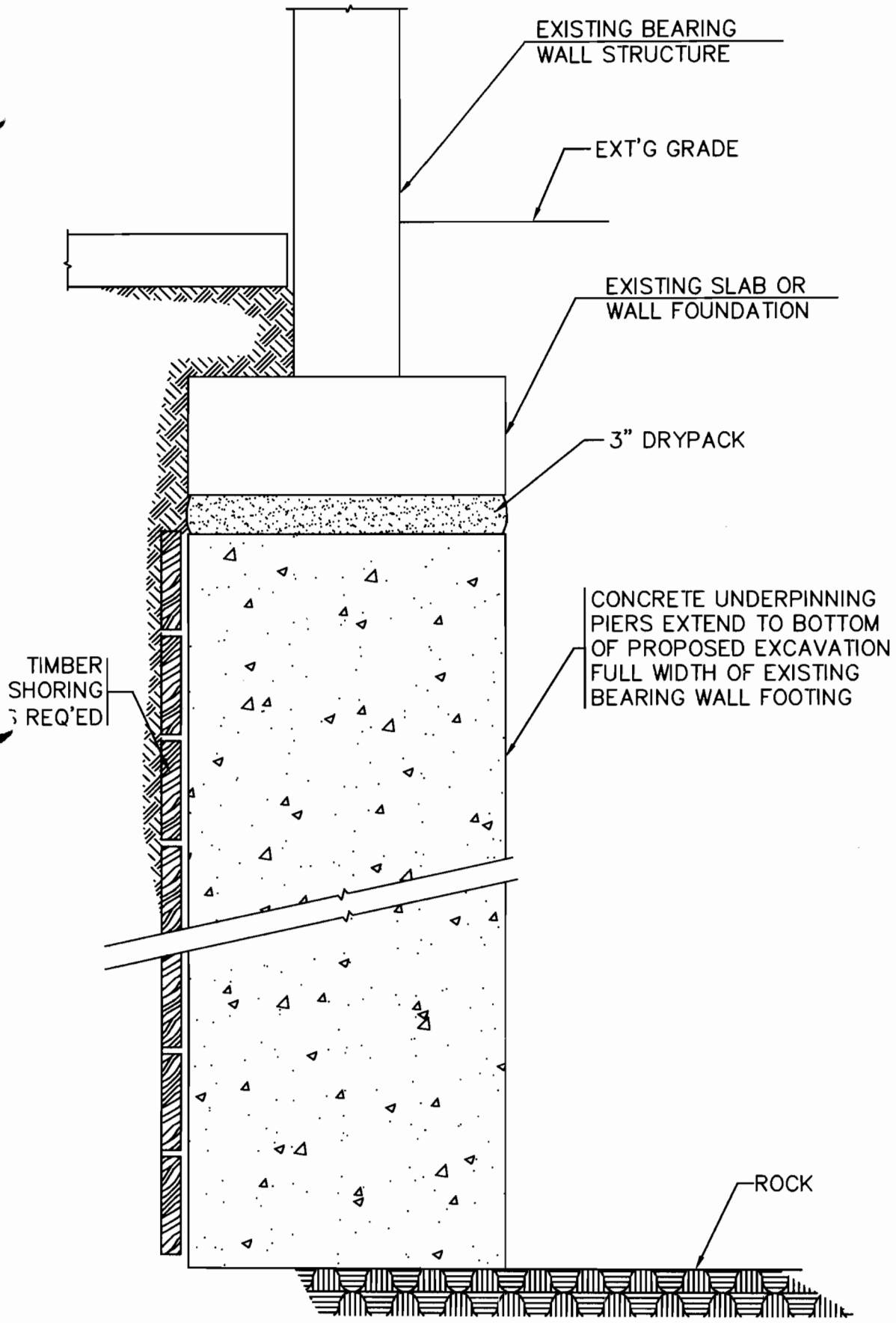
BLOCK 3003
LOT 13



CORTLANDT ST.
PEARL ST.
Dwellings
No. 20
No. 26
No. 28
No. 29
No. 27
No. 25
No. 24
No. 6
No. 17
No. 23
No. 15
No. 14
No. 1
No. 13
No. 10
No. 9
Property Line
Wire Fence & Property Line
10000 Gal. Fuel Oil Tank (Buried)
10000 Gal. Fuel Oil Tank
30000 Gal. Tank
2,000 Gal. Fuel Oil Tank
275 Gal. Fuel Oil Tank
Shed (Cin. Blk.)
Auto Ho.
SHELTER 15 x 9
SHED 39 x 17
Stge. Blueprints
3-150 K.V.A. 3-75 K.V.A. Transfs. on Conc. Base
1-150 K.V.A. Transfs. on El. Conc. Platf.
4-150 K.V.A. & 2-75 K.V.A. Transfs. on Conc. Base
PASS
& HARTFORD R.R. (Main Line Electric)
From Grid
10 in. Public Main. Gravity System
Picket Fence
TRAEBEL BLD



NOTE: THE SITE AND LOTS MARKED WITH "X" ARE OWNED BY 31 SOUTH STREET, LLC.



TYPICAL UNDERPINNING DETAIL

1" = 1'-0"

UNDERPINNING PROCEDURE:

1. EXCAVATE TO WITHIN 6 IN. ABOVE THE BOTTOM OF THE EXISTING LOAD BEARING MASONRY WALL FOOTING OR SLAB.

2. EXCAVATE A 3 FT. WIDE APPROACH PIT SUPPORTED BY 2 X 8 DRESSED LUMBERS. THE SIZE OF THE PIT SHALL BE AS REQUIRED TO ALLOW LABORERS ADEQUATE ROOM TO EXCAVATE AND INSTALL THE PIT BOARDS.

3. AFTER THE APPROACH PIT IS COMPLETED, EXTEND THE EXCAVATION 24 IN. UNDER THE WALL FOOTING AND PLACE HORIZONTAL WOOD SHEETING.

4. EXTEND THE UNDERPINNING PIT TO A DEPTH EQUAL TO THE ELEVATION OF THE BOTTOM OF THE FOUNDATION FOR THE PROPOSED BUILDING.

5. REMOVE ALL LOOSE MASONRY, CONCRETE AND DIRT FROM THE BOTTOM OF THE EXISTING WALL FOUNDATION.

6. INSTALL FORMWORK IN THE APPROACH PIT TO FACILITATE THE PLACEMENT OF THE CONCRETE UP TO WITHIN 3 IN. OF THE BOTTOM OF THE EXISTING FOUNDATION.

7. INSTALL DRYPACK BETWEEN THE BOTTOM OF THE EXISTING FOUNDATION AND TOP OF THE NEW CONCRETE, NOT LESS THAN 12 HOURS AFTER THE CONCRETE IS PLACED.

NOTE: THE SEQUENCE OF THE INSTALLATION OF THE UNDERPINNING PITS UNDER THE EXISTING MASONRY WALL FOUNDATION SHALL BE SUCH AS NO PITS CLOSER THAN 12 FT. ON CENTER SHOULD BE OPENED AT THE SAME TIME.

UNDERPINNING AND CONCRETE NOTES:

1. ALL UNDERPINNING PIERS HAVE BEEN DESIGNED BASED UPON AN ASSUMED SOIL BEARING PRESSURE OF 4,000 PSF. ALL PIERS SHALL BEAR ON UNDISTURBED, FIRM NATURAL SOIL.

2. BOTTOM OF UNDERPINNING PIERS ELEVATION SHALL BE AT THE SAME ELEVATION OF THE BOTTOM OF THE PROPOSED NEW FOUNDATIONS AS SHOWN ON THE BUILDING'S FOUNDATION DRAWINGS.

3. UNDERPINNING PIERS FOR COLUMN FOOTING SHALL HAVE THE SAME DIMENSIONS AS THE COLUMNS FOOTINGS.

4. ALL UNDERPINNING CONCRETE SHALL OBTAIN A 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI, AND SHALL BE AIR ENTRAINED TO 5% (+ 1%) WITH AN ADMIXTURE THAT CONFORMS TO ASTM C–260.

5. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE BUILDINGS". HOT WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305. COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 306.

6. NO UNBALANCED BACKFILLING SHALL BE DONE AGAINST UNDERPINNING PIERS UNLESS THEY ARE SECURELY BRACED AGAINST OVERTURNING, EITHER BY TEMPORARY BRACING OR BY PERMANENT CONSTRUCTION.

7. PRIOR TO COMMENCING ANY FOUNDATION WORK, COORDINATE WORK WITH ANY EXISTING UTILITIES.

8. PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE TO THE ENGINEER.
THE ENGINEER SHALL OBSERVE AND CERTIFY THE WORK ACCORDING TO THE REQUIREMENT OF THE DEPARTMENT OF BUILDINGS.

31 South Street, LLC

CORPORATE SAFETY PLAN

FOR

2003

Corporate Headquarters

31 South Street, LLC

100 Pearl Street
Mt. Vernon, New York 10550

Executives in Charge

Frank Calfa Jr. ***Member***

Robert Anzilotti ***Member***

Paul Anzilotti ***EEO Officer***

Michael Davila ***Operations Manager***
Safety Officer

31 South Street, LLC

Corporate Safety Plan
Lead Safety Plan
Site Specific Safety Plan

- STATEMENT OF POLICY
- TRAINING
- THE ABC'S OF SAFETY
- THE MOST COMMON ACCIDENTS
- HARD HATS
- EYE PROTECTION
- GOGGLES & GLOVES
- PROTECTING THE PUBLIC
- PREVENTING FALLS
- FALL PROTECTION
- SAFETY HARNESSES
- FALL PROTECTION REQUIRED AT DIFFERENT LEVELS
- HAZARD COMMUNICATION PROGRAM
- MATERIAL SAFETY DATA SHEETS
- CO-ORDINATION WITH UTILITIES
- OVERHEAD STRUCTURES
- CRANE BOOMS AND POWER LINES
- WORK ZONE / TRAFFIC CONTROL
- EXCAVATION PROTECTION
- TRENCHING HAZARDS
- TRENCHING & SHORING
- WORKING ON OR AROUND SCAFFOLDS
- SCAFFOLDING
- LADDER SAFETY
- WORKING SAFELY WITH CONCRETE
- ELECTRICAL SAFETY
- GROUND FAULT CIRCUIT INTERRUPTER
- PORTABLE POWER TOOLS
- FOREMAN'S TOOL BOX SAFETY MEETINGS
- CONFINED SPACE ENTRY PROGRAM
- FLAGGING HANDBOOK
- FIRST AID
- EMERGENCY TREATMENT FOR THERMAL INJURIES
- EMERGENCY TREATMENT FOR STEAM INJURIES
- ACCIDENT REPORTS

31 South Street, LLC

STATEMENT OF POLICY

Employees of 31 South Street, LLC are considered valuable assets; their safety is of vital concern. Recognizing its needs and responsibility for the safety of its employees, 31 South Street, LLC considers accident prevention an important and integral part of every operation undertaken.

Safety will be given primary importance in planning and operating all company activities in order to protect employees against occupational injuries and illness, and to protect 31 South Street, LLC against any unnecessary financial burden and reduced efficiency.

Each member of management is responsible for the safety, well being and safe work conduct of all persons who report to or are assigned to him.

To carry out this policy, 31 South Street, LLC will:

1. **Furnish, within reason, the best available mechanical safeguards and personal protective equipment where needed.**

2. **Maintain safe and healthful working conditions.**
3. **Maintain an active and aggressive program in which all members of management will participate to promote safety awareness among its employees.**
4. **Provide adequate medical and first aid facilities for work caused injuries and illness.**
5. **Maintain a continuous education program in safety regulations and procedures.**
6. **Insight that all employees observe established safety regulations and practices and use the safety provided.**

_____ **Date:** _____

31 South Street, LLC
Frank S. Calfa, Jr., Member

31 South Street, LLC

TRAINING

All employees of 31 South Street, LLC **and our sub-contractors are required to attend Safety Seminars. These seminars may be through** 31 South Street, LLC**,** 31 South Street, LLC's **insurance company or any other outside agency deemed suitable by** 31 South Street, LLC.

Weekly Tool Box Safety Meetings are mandatory, they are held to help reinforce, educate and monitor all safety requirements.

At the start of contract work, all employees will be required to read the safety requirements of the "Owner", all employees will be required to sign off on the training.

Any and all injuries, accidents or violations of "Safety regulations" must be reported regardless of consequence. Report all incidents to the Superintendent or Foreman.

31 South Street, LLC

FOREMAN'S TOOL BOX / SAFETY MEETINGS

THE FOLLOWING PAGES ARE INTENDED FOR YOUR USE.
ODD Weeks- use Topics Supplied

EVEN WEEKS- SEE PARAGRAPH BELOW

You will find 26 general topics for tools box discussion, Every other week, please use on site examples to implement the topics supplied.

On ODD WEEKS use the 31 South Street, LLC **sheet provided.**

31 South Street, LLC

FOREMANS TOOLS BOX / SAFETY MEETINGS (ODD WEEKS)

FOREMANS NAME_____ **DATE** _____ **TIME**_____

JOB NAME_____ **# IN CREW**_____ **# ATTENDING**_____

Subjects discussed:

Suggestions made:

Action taken:

Signatures of those attending:

Superintendents signature:_____

31 South Street, LLC

WEEKLY

SAFETY

MEETINGS

2003

31 South Street, LLC

CORPORATE

SAFETY

PLAN

2003

SAFETY INDOCTRINATION CHECKLIST
FOR
EMPLOYEES ON A NEW JOB

Employee's Name_____ Supervisor_____ Emp. No._____
Date Started to Work_____ Job No._____ Shift_____

This employee has received general safety indoctrination by_____ on_____. Employee has been introduced to property-wide safety practices. Specific safety practices, peculiar to employee's position, have been covered.

1. Indicated by check mark, the protective equipment which the employee's job requires:

_____ mandatory eye protection
_____ ear plugs
gloves
_____ foot protection
_____ breathing masks
_____ wearing apparel
_____ hard hat
_____ others, list:_____
_____

Check the general items you have covered with the new employee:

_____ fire & evacuation procedure
_____ location of exits
_____ location of extinguishers
_____ location of safety shower (eye wash)
_____ reporting unsafe conditions
_____ smoking
_____ housekeeping
_____ location of FIRST AID KITS
_____ obey posted signs
_____ no running - walk
_____ no horse play
_____ emergency procedures for fire or accidents
_____ others, list: _____
_____

AFETY INDOCTRINATION CHECKLIST

2

3. Check the items you have covered in connection with the employee's specific job:

_____ moving equipment
_____ equipment operation
_____ gases, cyls., regulators
_____ toxic chemicals
solvent
_____ lifting
_____ lockout/tagout
_____ disposal of solvents
and chemicals

_____ electrical hazards
_____ tools
_____ welding & cutting
_____ material handling and storage
_____ ladders
_____ scaffolds
_____ others, list: _____
_____

Training Coordinator's Signature _____ Date__

Employee's signature _____ Date__

er completion of this form, route it to: Safety & Health Department

WORKPLACE HAZARD ORIENTATION

_____ New Assignment
_____ New Hires
_____ Temp
_____ Transfer
_____ Non-routine Task

Check off appropriate category

This form is to be filled out by the Supervisor/Team Leader of a department when an employee satisfies any one of the above categories.

Employee Name_____ Dept._____ Supervisor #_____

Date began in position_____ Description_____

_____ (Supervisor/Team Leader) has reviewed the departmental MSDS notebook with employee, going through chemicals listed in department or tasks in which specific chemicals are used.

Instruction was given on:

____ Proper job procedures/tasks in which chemicals are used

____ Methods and observation to detect presence of release of a hazardous chemical in the work area (monitoring devices, visual appearance or odor)

____ Physical and health hazards of the chemicals in work area

____ Specific procedures to limit exposure

- Appropriate work practices
- Emergency procedures
- Personal protective equipment

Any problems or questions should be brought to supervisor's attention immediately

Employee:_____ Date:_____

Supervisor:_____ Date:_____

This section for new hires only:

Details of hazard communication program-labeling system - explanation of MSDS and use of system explained at new employee orientation program.

Date_____ Initials_____

INTRODUCTION

OSHA standard 1926.21(b)(2) calls for employers to instruct their employees in the recognition and avoidance of unsafe conditions. Even if this were not Federal law, it would still be an excellent idea, because no safety effort can succeed where the workers are not aware of the hazards that surround them or they are not motivated to correct them.

With this in mind, the problem facing an employer is, "What is the best and most effective way to instruct our employees?" There are two basic secrets in the accomplishing of this goal. The first is to provide instruction a little at a time and do it often; the second is to let them get actively involved in their own instruction process. These two principals can easily be incorporated into the traditional "tool box" safety talks which should be conducted as often as necessary but normally once a week.

Let's take a closer look at tool box safety talks. Somewhere in the distant past, a supervisor stopped his workers as they were getting their tools out of their tool boxes and gave them a talk on safety and this tradition was born. As good as the idea is however, the problem is that such talks are ingredients of good tool box safety meetings:

1. **Hold them early in the week.** Information given late in the week does not carry over well into the next week.

2. **Have a definite subject for instruction at meeting.** Do not try to cover a multitude of safety rules at a time.

3. **Keep the groups small.** Ten or twelve in a group is plenty. If the groups are large, you do not get the participation that you want and need.

4. **Use the question and answer technique.** This causes your workers to think, to participate, and publicly make a commitment to safety.

5. **Have the workers sign the Safety Training Guide.** This is splendid evidence in the event of an OSHA citation.

6. **Devote a portion of each tool box meeting to current safety problems.** This alerts everyone to the particular hazards that they may encounter in the coming week.

The object, of course, is to prevent accidents and injuries. This is where cost savings will be realized, not after an injury has occurred. By training our people to prevent accidents, we are taking a significant step in controlling those costs, both direct and indirect that continue long after the injuries have healed.

GENERAL SAFETY RULES

Use good judgement in doing your work. Do not take unnecessary chances.

1. HARD HATS must be worn at all times; any exceptions must be approved by the Safety Director.

2. SAFETY GLASSES must be worn at all times; any exceptions must be approved by the Safety Director. GOGGLES are compulsory when drilling, burning, chipping, grinding, gas welding, grouting and where otherwise required by your foreman.

3. Use SAFETY HARNESS & LANYARDS when within six feet of open edges.

4. SHIRTS with sleeves are to be worn at all times by all personnel while on company time; any exceptions must be approved by the job foreman. Shorts, tanktops, loose or ragged clothing will not be permitted.

5. FINGER RINGS AND WRISTWATCHES are a constant hazard and all employees are encouraged to remove them while working.

6. WELDING HELMETS are mandatory for all arc welders and safety spectacles must be worn under the helmet.

7. GLOVES are to be worn when handling material with sharp or rough edges or as directed by your supervisor.

8. AUTOMATIC SUSPENSION: the committing of any of the following items will subject you to suspension and/or discharge:

   A. Disobeying a supervisor's request to utilize personal protective equipment, or instructions on safe performance of a specific job or task.

   B. Removing a barricade, guard or other safety device designed to prevent injury.

   C. Unfit for duty - coming to the job or presenting oneself in a condition non-conducive for safe work; working while under the influence, or in possession of narcotics or intoxicating liquors, or consumption of any narcotics or intoxicating liquors during working hours.

   D. Sleeping during working hours.

   E. Fighting or provoking a fight.

F. Stealing - unauthorized removal, attempted removal or possession of property belonging to someone else or to the company.

G. HORSE PLAY in any form - scuffling, pranks, wrestling, throwing material at others, etc.

9. VIOLATIONS of company rules will result in the following:

1st offense - Verbal and/or written warning
2nd offense - Written warning.
3rd offense - Termination of employment.

** All written warnings will be placed in the employee's personnel file.

10. THE SOURCE OF POWER MUST BE DISCONNECTED whenever it is necessary to repair a piece of power-driven equipment. In the case of electrical equipment, the cord must be disconnected or the switch pulled and locked out, if possible. It is not sufficient to merely turn off the operating button of the equipment. NOTE: Only authorized persons are to repair electrical equipment.

11. KEEP YOUR WORK PLACE CLEAN: Good housekeeping promotes safe and efficient work. Do not allow trash, scrap or boards with nails to accumulate in your work area.

12. ALL LADDERS MUST BE INSPECTED prior to the start of each job and this practice is to be repeated frequently throughout the term of the job. Extreme care should be exercised in placing the ladder on a firm and level foundation. In all cases, the ladder must either have ladder feet or spikes and be lashed (tied off) or hooked to the structure.

13. LADDERS BUILT ON THE JOB must be built of No. 1 grade lumber, free of knots and have the cleats capped, blocked, wired or stripped. LADDERS SHOULD NEVER BE PAINTED. (List specific requirements)

14. GUARDS, GUARDRAIL, AND BARRICADES. Guards and safety devices shall be used on mechanical equipment such as power saws, grinders, etc. Guards for belts or chain drives, drive shafts, etc. shall be kept in place while equipment is operating. Guardrails, barricades or ropes should be used at all times around excavations, floor openings, stairways and any other places where personnel may be exposed to falls.

15. NEVER CLIMB or descend a ladder with anything in your hands or sticking out of your pockets. Use a hand line for tools and equipment. Ladders used to reach higher or lower elevations must extend at least 3 feet above landing.

16. ELECTRIC WIRES, where we have the capability of being within 20' of live power lines, either physically or with equipment; the foreman, superintendent and manager will be advised before work begins. Further, we will not operate where our equipment can come within 10' of a live power line without approval and knowledge of utility company.

17. ALL ELECTRICAL EQUIPMENT must be grounded. Three-pronged plugs and receptacles are required. Electric power from public supply or generators must pass through Ground Fault Interrupter, (G.F.I.). Refer to OSHA 1926.404.

18. HAND TOOLS such as hammers, punches, picks, chisels, etc., should be inspected for faulty handles, mushroomed heads, etc., prior to the start of each job and will be reinspected at weekly intervals throughout the term of the job.

19. CABLES, ROPES, SHEAVES, SHACKLES, BOOMS, LIFTING EQUIPMENT, ETC. should be checked each day. Worn or frayed items are to be replaced or repaired at once.

20. STAY OUT FROM UNDER AND IN FRONT OF LOADS on cranes, etc. Do not cause or permit a load to be carried over a workman who is unaware of it or cannot get clear. Red Tape around Crane & Lift.

21. NO EMPLOYEE is permitted to ride the "Headache" ball or any piece of steel being moved or lifted by a crane or other equipment, or man baskets.

22. NO EMPLOYEE is permitted to walk on building purlins or girts or perform aerial work unless he is wearing a safety harness and Lanyard that is fastened to fixed members.

23. GASOLINE may be handled or stored only in approved and properly labeled safety cans. All gasoline and diesel engines must be shut off and cooled before and during refueling.

24. THE MISUSE OF OXYGEN AND ACETYLENE EQUIPMENT can be extremely dangerous. Unless you are qualified and authorized to use this equipment, leave it alone. Common misuses of this equipment are rough handling of bottles or of torches, permitting oil to get into oxygen fittings and burning without regard to nearby combustibles. All compressed air and gas bottles must be secured in an upright position.

25. COMPRESSED AIR HOSES should never be pointed at yourself or anyone else. Compressed air must be used for the prescribed operations only. Pressures should be kept as low as possible for doing the job adequately. Maximum of 30 lbs. psi for cleaning.

26. CEMENT BURNS are a constant hazard in construction work, particularly in warmer weather. Be sure cement does not get inside your boots or gloves. Wash off any cement or concrete that gets on you, as soon as possible. Report any burns, no matter how slight, to your foreman.

27. EXCAVATIONS must be guarded at all times by barriers and at night must have red or amber warning lights. Openings in the floor or ground, into which someone might step or fall, must be railed off, covered, or properly identified with warning lights.

28. RIDING. No more than three men may ride in a cab of any truck at one time. No one will ride outside of truck cab. Seat belts must be worn by all persons riding in truck cab. Only the operator will ride on construction equipment except as assigned. NO PASSENGERS.

29. ALL construction equipment will have operating back up alarms. Inoperative equipment will be reported immediately.

30. DO NOT ATTEMPT TO LIFT objects that are too heavy for you to lift alone. Ask for help!

31. IF YOU RECEIVE AN INJURY, no matter how slight, report it to your foreman immediately.

32. All employees will be required to attend and participate in safety meetings. You will be advised of the time and place of your meeting.

33. Glass-bottled soft drinks will not be permitted on the project.

34. Know the materials you are working with and read all labels. All chemical hazard warnings and means for protection should be understood and followed.

35. All scaffolding will be built and maintained under the supervision of a competent person in accordance with OSHA standards.

36. NO EMPLOYEE shall operate specialized equipment unless they have received OSHA required training.

All employees are required to correct and/or report any unsafe job conditions and/or any unsafe act to their foreman. Suggestions for improving job safety are welcome. All suggestions and recommendations will be given careful consideration by Management. Superintendents and general foremen will cooperate fully in putting into effect all practical suggestions that will reduce job hazards.

Each employee must comply with the safety requirements set forth in this booklet, along with the safe practices and methods inherent to the craft. Safety will be an integral part of each job and each employee shall be responsible for the safety phase of his work just as much as he is for any other phase. Employees should exercise good judgement in carrying out the safety program. Appropriate disciplinary action will be taken for violations.

Warning to:

Thalle Employee ____
Thalle Subcontractor ____
Other Subcontractor ____

First Warning ____
Second Warning ____

SAFETY RULE VIOLATION

ON_____ AT _____AM/PM _____
date time name of employee

AN EMPLOYEE OF _____ WAS OBSERVED TO
Company Name

BE IN VIOLATION OF THE FOLLOWING SAFETY RULE(S):

_____
brief description

THE SPECIFIC ACT OR OMMISSION OCCURRED AT: _____
_____
job site location

AND CONDISTED OF THE FOLLOWING: (DETAILED EXPLANATION)
_____
_____
_____

CORRECTIVE ACTION TAKEN: _____

AS THE GENERAL CONTRACTOR FOR THE ABOVE NAMED PROJECT WE HAVE A RESPONSIBILITY TO INSURE THE SAFETY OF EVERYONE ON OR NEAR THE SITE. THIS INCLUDES OUR EMPLOYEES, ALL SUB-CONTRACTOR PERSONNEL AND THE GENERAL PUBLIC. ACCORDINGLY, INFRACTORS SUCH AS THOSE NOTED ABOVE CANNOT AND WILL NOT BE TOLERATED. ANY FURTHER VIOLATIONS BY YOU MAY RESULT IN YOUR REMOVAL FROM THIS PROJECT. .

_____
Supervisor

THE COST OF ACCIDENTAL INJURIES

Accidents are expensive. They cost the company money in many ways, but the real loser is the employee who is injured. Workers Compensation is a poor substitute for working every day and earning a full paycheck. By asking the following questions you will be able to see if your workers have even given this subject much thought.

Question: **Both the company and the injured employee pay for an accident. First of all, what thing does the company pay?**

Answers:
1. The hospital bills, ambulance service, doctor bills, pharmacy.
2. Weekly disability income payments to the injured employee out of work.
3. Possible payments for permanent injuries - loss of a finger, hand or eye.
4. The cost of insurance.
5. Many hidden costs which result in loss of production.

Question: **In what ways does the injured employee pay?**

Answers:
1. Loss of wages. Weekly insurance checks never come close to equaling regular wages.
2. Possible permanent physical or mental damage for which there can never be full compensation.
3. The employee may have to take a lower paying job when he goes back to work, meaning the loss of a lot of dollars over the years.
4. Pain and suffering - hard to measure in terms of money.
5. A disabled person at home has a serious effect on the family. The longer the disability, the more serious it becomes.

Question: **We mentioned hidden costs. What are some of them?**

Answers:
1. The cost of employees who stop work out of curiosity or to help the injured worker.
2. The cost of an interference in the work, delay in the schedule, or delay of other contractors or trades.
3. Possible damage to equipment, tools and materials. Include the cost of down-time on the equipment.
4. Cost of all paperwork, investigating the accident, etc.

Question: **Why should an employee be concerned with how much it is going to cost the company?**

Answers:
1. A company with a poor record of accidents, cost becomes less competitive and may not be able to offer future employment.
2. A company with a lot of accidents cannot attract the best craftsmen nor do high quality work that we like to be associated with.

TRAINING

Safety training of personnel is fundamental in a loss control program. Federal legislation has made it imperative that employers apprise their employees of:

- all hazards to which they are exposed.
- relevant symptoms and appropriate emergency treatment.
- proper conditions and precautions for safe use of exposure.

Effective educational methods used to train personnel include group meetings, specific job safety training, company orientation, individual safety contracts and various promotional ideas.

SPECIFIC JOB SAFETY TRAINING

The control of losses is dependent upon the ability of people to perform their job tasks correctly. Specific job safety training is a proven method of instructing employees how to do the job for which they were hired. It should be given with the assignment of every new or different tasks. The following steps should be taken to assure understanding and learning.

1. Each employee, new and existing, must be instructed in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury.

2. Each employee required to handle potentially harmful substances must be instructed in their safe handling and use, and be made aware of proper protective measures to follow.

3. Each employee required to handle flammable or potentially toxic material should be instructed in their safe handling and use and be made aware of proper protective measures to follow.

4. Each employee required to enter a new department must be instructed as to the potential hazards which may exist: possible contaminated air, etc., and be made aware of the proper protective measures to follow and clothing to wear.

5. The job site will have available a suitable first aid kit, adequate for treating minor injuries.

6. A continuing safety and health awareness program will be maintained through weekly Safety Meetings, work area signs and posters, etc.

7. Each employee will be instructed to report all injuries, no matter how minor.

8. The safety indoctrination checklist will be completed and sent to the Thalle office.

JOB TRAINING IS A MUST

Reams and reams of paper have been used in efforts to convey to all concerned the full responsibility of those at the supervisor level for the prevention of accidents in construction. Included in supervisory responsibility, and with high priority, is the training of the new employee for the work he or she is to perform.

All too often new employees are hired, given their assignment, and are then expected to perform efficiently and safely without adequate job instruction. Even new employees with previous experience often need retraining and reorientation if job efficiency is to be maintained, for all skills and work habits the worker must possess must be taught to him or her. Training begins when the employee is hired if our efforts are to be most effective.

Who, then should be responsible for training the new employee? We believe and it is generally agreed the logical person to impart the required knowledge and technique required for the job is the safety supervisor or the worker's immediate supervisor. They are in the best position to give actual on-the-job instruction and, in addition, they are the person to whom the employee will be directly responsible. This accomplishes two things: First, it makes for job efficiency and Second, it manifests interest in the employee's welfare.

What should we teach and what procedures should the supervisor follow? Quite logically, the supervisor's task is to instruct the worker on the job to be done so he or she can produce it in as short a time as possible. Yet, safety precautions should be taught by the safety supervisor prior to beginning the job. Specific job hazards should be pointed out in connection with each phase of the job, and instruction should be given on specific safe work practices that will help him avoid these hazards. Poor instruction or none at all results in injuries and production inefficiencies due to the supervisors not organizing all the important parts of the job clearly before actually giving instruction.

Many organizations have found from experience that effective job training is a must if an efficient operation is to be maintained. Proper job training means efficiency with safety. Efficiency and safety get the desire results -- quality and production.

THE ABC'S OF SAFETY

Attitude, Behavior, and Control

Safety is more than just following your company's guidelines while on the job. Safety is actually a combination of safe attitude, behavior, and control both on and off the job. Attitude means your frame of mind - the way in which you approach a given situation. Behavior means what you do about it - how you react to a situation. Control refers to making your surroundings - where you do what you do - safe. Safe attitude, behavior and control add up to a safer, more productive you.

Attitude

When it comes to safety, attitude isn't exactly everything, but its darn near close. A safe attitude means staying alert and focused on the job at hand, taking safety guidelines and practices seriously, never horsing around on the job, and not letting emotions like anger and frustration get in the way of job performance.

Behavior

How you react to a situation is an important part of being safe. Following established safety guidelines and procedures, refusing to take "short-cuts", using personal protection equipment, asking questions when you need more information about the task at hand - all these are safe behaviors. Safe behavior also means helping friends, co-workers, and family members understand the importance of safe practices at work, home or play.

Control

Control means taking responsibility for making your work site, home or recreational facility, a safe place to be. You can help keep your surrounding areas from potential hazards by keeping them clean and orderly. Keep machines in good repair, clean up spills and debris (or report them to the appropriate person), and make sure that walkways are free from obstacles. Store chemicals properly (both at home and on the job) and never switch containers. At work, be sure to report faulty equipment, ventilation, or any potential hazards to your supervisor.

ABC's - Easy as 1-2-3

Attitude, behavior, and control are the three most important (and perhaps the simplest) aspects of personal safety both on an off the job. Take a moment to review your safety ABC's to see if you're doing all you can to prevent yourself, your co-workers, and your loved ones from careless, needless injury.

THE MOST COMMON ACCIDENTS

The purpose of this discussion is to cause everyone to think about accidents in general and to try to relate to the whole accident scene. It is interesting to see how well your workers can define the basic types of accidents that are most likely to happen. It is not enough, however, to know what the types are; they also need to know what preventive steps to take. As your workers offer their opinions on basic accident types, be sure they include some preventative measures, but move quickly as there is not enough time to go into detail on all of them.

Question: What, in your opinion, are the basic types of accidents that might happen to you, and what can be done to prevent them?

Answers:

1. Falls on the same level. **Prevention**: Better housekeeping, pick up tools, clean up spilled liquids, keep passageways clear, wear good shoes, provide enough light.

2. Falls to different level. **Prevention**: The ladders, guardrails on scaffolds, barricade floor openings, guard perimeters, use safety belts/nets.

3. Getting caught in or between. **Prevention**: Keep trenching shoring, use tag lines, stay away from loads in close places, guards on exposed moving parts, no lock-on switches on hand-held tools.

4. Getting an electrical shock. **Prevention**: Keep booms away from power lines, proper grounds, 3-wire cords, tools in good repair, label circuits.

5. Muscle strain-slips & trips. **Prevention**: Improve housekeeping, proper body position or lifting, get help when lifting heavy/awkward object.

6. Striking against an object. **Prevention**: Remove protruding nails, guard the ends of rebar, flags on objects that cause hazardous exposure, barricade areas below overhead work, keep objects away from edges.

7. Being struck by a falling object. **Prevention**: Install toeboards on scaffolds, floor openings, and perimeters, wear hard hats, barricade areas below overhead work, keep objects away from edges.

8. Being struck by a moving object. **Prevention**: Proper blocking of piled material, use back-up alarms, flagmen for traffic, goggles to protect against flying object and dust.

9. Breathing or absorbing containment. **Prevention**: Water down dusty areas, exhaust fumes from areas , require respirators as needed, wear protective clothing, gloves, boots, etc.

10. Exposure to temperature extremes. **Prevention**: Provide welding protection, insulate hot pipes and exhaust lines, avoid prolongs exposure, wear suitable clothing.

HARD HATS

Hard hats and safety vests for visibility are required for all Sub Contractors and Thalle Construction personnel working on the Metro-North contract.

The average safety hard hat weighs about 14 ounces. The average man's head weights 14 ounces. So there's an ounce of safety for every pound of head--provided the head protection is properly worn and maintained.

The brain is the control center of the body. The slightest damage to any part of the brain will cause malfunction of some area of the body. The skull, under normal circumstances, protects the brain, but when a possibility of injury from falling or flying objects exists, additional protection is required.

Hard hats not only reduce the chances of serious injury resulting from falling objects, but protect you when you bump your head on things -- like machinery, ductwork, ceiling tie wires forms. Non-conductive hard hats protect you from electrical shock and burns. Never wear metal hard hats around electrical work.

HOW TO CARE FOR HARD HATS

The better care you take of your hard hat, the better it will take care of you. Here are some suggestions:

1. Properly adjust suspension systems to maintain clearance between your head and the shell of the hat.
2. Don't cut holes for ventilation. Don't heat and bend.
3. Don't substitute a "bump cap". They aren't strong enough.
4. Don't paint your hard hat.
5. Don't put anything under it except your head; this includes cigarettes or notebooks.
6. Don't wear it backwards.

SOME COMMON COMPLAINTS AND THE REAL TRUTH

We sometimes hear the following about hard hats, but is there any real basis for them?

"It's too heavy." Hard hats are only a few ounces heavier than a cloth cap, but the extra protection you get is worth the extra weight.

"It's too hot." Measurements taken in hot weather show that the temperature under a hard hat is often cooler than it is outside.

"It gives me a headache." A thump on the head from something which has fallen two floors will give you a worse one. There is, however, no medical reason why a properly adjusted hard hat should cause a headache. Don't alter the suspension system or the hard hat, because you won't get the designed protection.

"It won't stay on." You're right, it won't in a high wind. A chin strap will solve this problem. Otherwise, you will find that a hard hat stays put no matter how much stooping or bending you have to do -- if it's fitted properly.

"It's noisy." That's your imagination. In fact, tests show that properly worn hard hats will shield your ears from noise to some extent.

NO HELP UNLESS YOU WEAR IT

The hard hat is a useful piece of safety equipment. But like any other protective device, it must be properly adjusted and worn and kept in good condition to give you maximum protection.

Don't be a hard head -- get in the hard hat habit.

HARD HATS

Hard hats are not just head protection - they are more than that. They have become symbols of construction safety. It should never be left up to a workman whether or not to wear a hard hat, but the men should understand why the hard hat rule is being enforced. The following questions and answers should help everyone to know why a company insists on hard hats.

Question: **Who should wear hard hats and when and where should they wear them?**

Answers:
1. Every employee of every contractor on the job, salesmen, visitors, inspectors, architects, etc. must wear a hard hat.
2. Hard hats must be worn at all times in all work areas during work hours because your head is always exposed to some kind of hazard during this time.

Question: **Why is a had hat important?**

Answer:
1. Because the brain controls the whole body, and a bad head injury could either kill you or ruin your life.

Question: **Why do some workmen object to wearing hard hats?**

Answers:
1. "They are too heavy". Actually a hard hat only weighs about 14 ounces which is very light. A World War II helmet weighed 3 lbs. but there was very little objection to them.
2. "They are cold in the winter". Sure they are, but this is what liners are for and there are some very warm ones available.
3. "They are too hot in the summer". Recent tests showed that in 100 degree heat, the temperature inside a hard hat was 5 to 12 degrees cooler than the outside, much better than a cloth or felt cap.
4. "They give me a headache". If this is true, it may be that the hat does not fit well. This can easily be corrected.

Question: **How can you tell a good hard hat?**

Answers:
1. It is made of hard, tough plastic, not fiber-glass or metal.
2. It has not been changed in any way such as having holes drilled in it or having holes drilled in it or having been exposed to high heat or chemical action.
3. It has a good suspension system, solidly anchored and well fitted.

EYE PROTECTION

You can walk on an artificial leg, but you will have a tough time seeing through an artificial eye. This point is that our eyes are not replaceable so we must do everything possible to keep them out of trouble. Eye injuries are among the most common in the construction industry so we need to be thinking seriously about what to do to stop them.

Question: **What are the most common causes of eye injuries in construction?**

Answers:

1. Cleaning with compresses air-chips and dust flying.
2. Using a pneumatic chipping hammer and particles getting in the eye.
3. Scraping and cleaning metal surfaces, particularly if they are rusty.
4. Pouring concrete and having it splash back in your eyes.
5. Mushroomed heads on chisels. The metal pieces break off with great force.
6. Nails that fly when they are not hit squarely on the head.
7. Windy weather with excessive dust and other particles in the air.
8. Grinding. Shards and metal fragments are a constant hazard.
9. Fumes such as those from many welding operations or from the kettle which melts tar for roofing.
10. Welding flash burns from looking at the area with the naked eye.

Question: **What are the types of protective devices?**

Answers:

1. Clear goggles. They should be closely fitting, comfortable and well ventilated.
2. Welding and cutting goggles. These have intended lenses. They may be the cup type or the type that covers spectacles.
3. Safety glasses or spectacles. The lenses are hardened glass and usually have plastic side shields. They may have clear or tinted glass.
4. Face shield. Not as convenient as glass but covers and protects the entire face.
5. Welding helmet. Absolutely necessary for any welding.

Question: **What should be done in case of an eye injury?**

Answer:

1. Do not try to take care of it yourself. Refrain from rubbing it and seek first aid immediately. You will be referred to professional treatment if necessary.

GOGGLES - GLOVES

GOGGLES

There is nothing new abut wearing goggles for eye protection. Every job is using them to greater or lesser degree. Every job is using them to a greater or lesser degree. But the question always arises as to who should not be asked to wear eye protection.

There is no job throughout construction that does not carry a potential eye hazard. In analyzing eye injury cases, it is found that the most common are caused from foreign bodies in the eye, flying objects, dust and horseplay. The jobs include office workers, laborers, operators, warehousemen, millwrights, drivers, mechanics, carpenters, and so on down the line.

Actual reported cases describe accidents in which a laborer was cleaning out one thing or another when some of the contents of a chemical nature splashed in his eyes and resulted in the loss of his sight. Goggles were not worn, since they were not considered necessary for that type of work or worker. But follow this injury and others like it and you will find that most could have been prevented if the right eye protection had been used.

There's No Such Thing As Being Too Safe!

GLOVES

Your hands are your wage-earners.

Hands are hurt more often than any other part of the body.

Hand injuries don't have to occur. As talented as your hands are, they can't think, they're your servants, and it is up to you to think and keep them out of trouble.

Be sure you wear the right kind of gloves for the particular kind of work you are doing.

When you wear gloves, you aren't trusting to luck and you're not taking unnecessary chances.

Wear gloves when you are going a job that needs them, but not around moving machinery.

Time spent in preparing your hands for the job will not only save trouble for you but will probably save time in doing the job.

PROTECTING THE PUBLIC

There is no question about the fact that a construction site of any kind is full of dangerous conditions. Workers generally know about these conditions, but the general public does not. The law calls a construction project an "attractive hazard". This is why we have to be concerned with members of the public as well as our company.

WE ARE RESPONSIBLE FOR THE WELL BEING OF NON-EMPLOYEES.

1. By building on this site, we are creating hazards that were not here before. People who have reason to be around here are not used to these conditions.
2. The general public is not always aware of construction-type hazards.
3. The law makes contractors responsible to protect the public.

OUR BIGGEST PROBLEM:

1. The elderly. Older people are not as agile as they used to be. They fall more easily and they fall hard. They are not very alert to danger and definitely need protection.
2. Children. A construction site is like a circus to them and much more dangerous. Signs are not effective. Children must be kept out.
3. Sightseers. People become overly curious and venture into areas where their well being is in danger.

SOME PRECAUTIONS TO TAKE FOR THE PROTECTION OF THE PUBLIC:

1. Where pedestrians walk by, provide a covered walk with an even non-skid surface and lighting at night.
2. Barricades must be used around excavations, trenches, holes or any surface condition that could cause a fall or other injury.
3. Plenty of signs should be used so there is no excuse for adults not knowing of the hazards and warned to stay out.
4. All unnecessary power should be turned off at night and turned on again the next morning.
5. Where vehicles are frequently entering and leaving the site, a flagman should be used.
6. Many injuries and much property damage has been caused by loose materials blowing off a building. Secure material properly.

PREVENTING FALLS

Falls are the biggest cause of injuries in the construction industry. It just makes good sense that if we can cut down on the number of falls, we will make every valuable contribution to the overall safety effort. Get your men to answer the following questions. You can also help out with some answers from those provided below:

Question: **What are the things that cause people to fall on a construction project?**

Answers:

1. Tripping over trash, scrap lumber and metal, tools, hoses, etc.
2. Running or jumping.
3. Walking on slick surfaces or muddy ground.
4. Climbing on loose or poorly stacked material.
5. Working on make - shift platforms.
6. Allowing open - sided floors and floor holes
7. Wearing defective shoes or pant legs that are too long.

Question: **Where do you find the most dangerous conditions on a project that could lead to workers falling?**

Answers:

1. Stairways. Running, carrying objects that block your view of the steps, not using handrails, bad lighting, not paying attention, and objects left lying on the steps are some of the things that cause falls.
2. Housekeeping. If a man's footing is secure, he is not likely to fall and good housekeeping will help assure his footing. Carelessly dropped nails, welding rod ends, grease, oil, trash, etc. lead to certain falls.
3. Ladders. Be sure you select a ladder that suits the job and is in good condition. Secure it properly. Face the ladder and hold on when going up or down. Do not try to reach too far out when working. Never stand on top of a stepladder.
4. Scaffolds. Never erect a weak or inadequate scaffold. Even if the scaffold is to be used only a short time, it should be solidly built according to OSHA standards with guardrails, midrails and toeboards.
5. Floor Openings. Floor openings must be protected either by standard guardrails or by covers that are large enough and heavy enough to walk on. Covers must be fastened down to prevent displacement and marked with a warning sign. A common accident for a worker to remove a cover and step into the hole while the cover itself blocks his view of it.

FALL PROTECTION

1. OSHA 1926.106 - WORKING OVER OR NEAR WATER

A. Employees working over or near water, where the danger of drowning exists, shall be provided with U.S. Coast Guard - approved life jacket or buoyant work vests.

B. Prior to and after each use, the buoyant work vests or life preservers shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used.

C. Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.

D. At least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water.

2. OSHA 1926.753 SAFETY NETS

A. Safety nets shall be provided when workplaces are more than 25 feet above the ground or water surface, or other surfaces where ladders, scaffolds, catch platforms, temporary floors, safety lines, or safety belts is impractical.

B. Where safety net protection is required by this part, operations shall not be undertaken until the net is in place and has been tested.

C1. Nets shall extend 8 feet beyond the edge of the work surface where employees are exposed and shall be installed as close under the work surface as practical but in no case more than 25 feet below such work surface. Nets shall be hung with sufficient clearance to prevent user's contact with the surfaces or structures below. Such clearances shall be determined by impact load testing.

C2. It is intended that only one level of nets be required for bridge construction.

D. The mesh size of nets shall not exceed six (6) inches by six (6) inches. All new nets shall meet accepted performance standards of 17,500 foot-pounds minimum impact resistance as determined and certified by the manufacturers, and shall bear a label of proof test. Edge ropes shall provide a minimum breaking strength of 5,000 pounds.

E. Forged steel safety hooks or shackles shall be used to fasten the net to its support.

F. Connections between net panels shall develop the full strength of the net.

3. DEFINITIONS

A. Lanyard

Lanyard means a rope, suitable for supporting one person. One end is fastened to a safety belt or harness and the other end is secured to a substantial object or a safety line.

B. Lifeline

Lifeline means a rope, suitable for supporting one person, to which a lanyard or safety belt (or harness) is attached.

C. O.D.

O.D. means optical density and refers to the light refractive characteristics of a lens.

D. Radiant Energy

Radiant energy means energy that travels outward in all directions from its sources.

E. Safety Belt

Safety belt means a device, usually worn around the waist which, by reason of its attachment to a lanyard and lifeline or a structure, will prevent a worker from falling.

F. Site Specific Procedures:

This project includes work that may require exposure of workers to risks associated with elevated work locations. By issuance of this Special Note, Contractors are on notice that the provision of fall protection for all workers, in full compliance with OSHA Part 1926, is mandatory on all Department contracts, including this contract. The Contractor is further placed on notice that the proposed procedures to meet the fall protection requirements must be identified in the Project Safety and Health Plan, as required under Section 107-05 of the Standard Specifications.

The requirements of all applicable OSHA regulations notwithstanding, the minimum fall protection requirements on this project shall include the following:

1. When used, safety belts, lifelines and lanyards must meet the requirements of 1926.500.

2. For situations where lifelines are interrupted, double lanyards are necessary to ensure that the worker is continuously protected from falling by attaching one lanyard ahead of the discontinuity prior to unhooking the trailing lanyard.

3. Ladders or stairways are required at all points of personnel access where there is a change in elevation of 19 inches or more, and no ramp, runway, sloped embankment, or personnel hoist is provided. These devices must meet the the requirements of Part 1926 Subpart X. Climbing on forms, falsework, or the structure to gain access to work areas is expressly prohibited. However, it is not intended to prohibit the use of ladders for access to work areas, provided the operation is in compliance with OSHA Part 1926 Subpart X and other relevant requirements.

4. Where scaffolds are necessary to provide temporary access to work areas, they must be in compliance with 1926.451. Scaffolds must include a top rail, mid rail, and toe board in compliance with 1926.451, on all open sides and ends. Lifelines, belts and lanyards or equivalent means are required to protect workers during installation and removal of the railings, and in situations where physical restrictions preclude installation of a standard railing.

5. Suspend scaffolds may be used for bridge painting or other purposes only if personnel lifts, scaffolds, or other means are not practical, and only if they meet all requirements of 1926.451. Specifically, the scaffold must be secured to the suspension cables at all times. All persons working on a suspended scaffold must be provided fall protection by means of safety nets meeting the requirements of 1926.105, independent lifelines, belts and lanyard (1926.500), or other means meeting the requirements of 1926.

6. Fall protection is required for open sides or ends of floors or bridge decks, and for openings in floors or bridge decks, as required in 1926.500. In no case shall a height of fall of greater than 6 ft. from the side, end, or opening in a floor or bridge deck remain unprotected.

7. All workers in approved personnel aerial lifts must wear a body belt or harness with a lanyard attached to the boom or basket, as required by OSHA 1926.556.

8. Because falls from structural members constitute a serious and clearly recognizable hazard, fall protection for all steel or concrete beams and other structural elements must be in place prior to erection to provide fall protection for workers involved in the initial erection and in subsequent operations until deck forms are in place. This fall protection shall consist of lifelines with belts and lanyards, safety nets, or other means meeting the requirements of Part 1926. During the initial connection of structural elements, workers exposed to moving members shall be required to tie off only if they are not exposed to a greater risk from the moving member. Initial connection is defined as that period during placement or removal of structural members when the member is supported by a crane or other lifting device.

9. During the installation of bridge deck forms, either wood or stay-in-place corrugated metal (SIP), all workers must be protected from falls exceeding 6 ft. in height by means of lifelines, belts and lanyards, safety nets, temporary shielding, or other means meeting the requirements of Part 1926.

10. Instances in which it is impossible to provide fall protection for workers are rare. Where an individual worker must rig the fall protection system, and it cannot be accomplished from an aerial lift or by tying-off to the existing structure, momentary exposure to a fall hazard may be unavoidable. Likewise, ironworkers making initial connections during steel erection or removal may at times not be able to tie off, or otherwise by protected because they need to remain mobile. It is essential that adequate planning of construction procedures minimize such occurrence of unprotected exposure to fall hazards. It is equally essential that the fall protection systems utilized actually enhance safety, rather than creating a secondary hazard.

The following listing summarizes commonly encountered situations where fall protection is required, the heights above which fall protection must be provided, and provides the OSHA reference for that requirement.

Situation	Height Requiring Fall Protection	OSHA Reference
Scaffold-wider than 45 in.	10 ft.	1926.451 (a) (b)
Scaffold-45 in. or less	4 ft.	1926.451 (a) (4)
Impalement Hazard	any exposure	1926.500 (d) (5)
Bridge Decks-Exposed Sides, Ends	6 ft.	1926.500 (d) (1)
Structural Steel	10 ft.	P.L.91-595 5 (a,1)
Aerial Lifts	all situations	1926.556 (b,2,v)
Swinging Scaffolds (Painter's Scaffold)	6 ft.	1926.451 (i) (8)
Safety Nets	25 ft. (if other means are impractical)	1926.105
SIP Form Installation	6 ft.	1926.500 (d) (1)
Ladders	varies	1926 Subpart X
Any Situation Resulting in tripping, impalement, or other severe hazards	any height	1926.20 (a) (1) 1926.28 (a) P.L. 91-596 (a, 1)

"Presence of mind" means absence of accidents.

SLIPS AND FALLS

Each year too many construction workers are injured by slips and falls.

Slipping on the floor is bad enough, but falling from a height can be disastrous.

How can falls be prevented?

Keep your eyes open!

When working at heights, proper guard rails must be used and, where necessary, safety belts that are properly tied off.

Scaffolding must rest on firm footing and should have all the bracing installed. When using multi-level staging, the scaffolding must also be anchored to the structure. First quality cleated planks, completely covering the working level, are a necessity.

Orderliness plays a big part in preventing slips and falls. Debris lying around on floors and working areas is an open invitation to accident. Weather increases hazards, particularly in winter when debris becomes snow covered and cannot be seen. Ice conditions create additional dangers. Sand and/or calcium should be applied to icy areas.

Wet weather causes muddy feet which contribute in turn to slips and falls. Wipe your feet before climbing steps or entering a work area.

When climbing a ladder, hold on with both hands. When walking down stairs use the guard rail.

REMEMBER! Your eyes are your best defense against slips and falls. Watch your step and look where you are going.

FALLS

Falls are the leading killer in the construction industry. How many times have we read about a worker who was killed from a fall at a jobsite? The answer is too many times! OSHA estimates that a minimum of 300 workers die annually. OSHA issued a Final Rule for Fall Protection in the Construction Industry in August, and this new standard goes into effect February 6, 1995. As with any standard there are changes and this one is no exception. Fall protection rules are becoming more strict. Whether you are an employee or an employer, you need to know the new rules.

Subpart M - Fall Protection sets forth requirements and criteria for fall protection in construction workplaces. Your employer must determine if walking/working surfaces on which you work have the strength and structural integrity to support you safely. Each walking/working surface with an unprotected side or edge, 6 feet or more above a lower level, where employees are working must be protected by a guard rail system, safety net system or personal fall arrest system. A fall arrest system consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline or suitable combination of these. The use of a body belt for personal fall arrest and the use of non-locking snaphooks will be prohibited as of January 1, 1998; body belts will only be allowed as positioning devices. Employees must also be protected from falling or tripping into or through holes or skylights by the systems mentioned above or by secure covers. Hole or skylight covers must protect workers from falling objects as well. As a construction worker you will be required to be trained by your employer to recognize the hazards of falling and what steps need to be taken to minimize or eliminate these hazards.

On leading edge work, precast concrete erection and residential construction, that an employer determines cannot meet the requirements of this new standard, because it is not feasible or would create a greater hazard, the employer has the option to develop a "site specific" fall protection plan. The plan must meet the requirements of paragraph (k) of Standard 1926.502. This subpart does not apply when employees are making an inspection, investigation or assessment of workplace conditions prior to the start or after completion of all construction work. The only way to be safe from falls is to avoid them! Let's explore just a few of the factors contributing to falls and their serious results. Here are some to think about.

Scaffolds - Never erect a temporary scaffold. Even if the job will last only a very short time, the scaffold should be erected as if you were going to use it indefinitely. Make sure you install all the cross braces both vertically and horizontally, be sure the scaffold is built on a level surface and fully decked, and don't forget to provide proper access.

Ladders - Select the right ladder for the job. Is it the right size, did you tie it off, did you inspect it prior to use? Always face the ladder when you climb and avoid carrying tools in your hand when climbing - one slip could send you down - use a hand line or pouch for the tools. Never stand on the top two steps.

Floor Openings - Any floor opening measuring 12 inches across or larger must be covered or protected by a standard guard rail with toeboard. A cover must be large enough and strong enough to prevent failure and be marked so that everyone on the job will be aware of its purpose. Guard rails must meet minimum strength requirements (See OSHA Standard 1926.500). Toeboards will prevent tools or materials from falling through the opening and injuring workers below.

Stairways - Slow down - don't run up or down. Avoid carrying objects that block your view of the steps. To help eliminate falls on stairways take your time, look where you step and use the handrail. Keep stairways free of clutter to prevent tripping.

Housekeeping - A secure footing is a positive step in avoiding falls and good housekeeping is essential to secure footing. Debris, trash, oil and water left to accumulate on stairs, walkways, etc. will lead to certain falls. A clean worksite is a safer worksite.

Watch your step! Stay alert! Avoidance and prevention is your first line of defense.

Safety Reminder: **Be on the lookout for slipper surfaces and walkways. Winter's frost, snow and ice increase your chances of slipping.**

Other points to think about are:

1. The strength of the support if you're piling material on a floor, platform or scaffold.

2. The stability of the ground if you're piling a heavy load.

3. The height of the pile so it won't topple.

4. The need for building racks if it's pipe or rods you have to stack.

5. The wisdom of waiting for the proper equipment to handle structural steel and other heavy material.

We all know the value of good lighting in job housekeeping. Poor lighting and accidents go together. When you find a light out, report it and get a replacement.

It's not hard to keep a job clean if all useless materials, boxes, scrap lumber and other trash are picked up and removed regularly. Remember, if they're allowed to accumulated for even a few days, the job becomes a messy and unsafe place to work.

SAFETY HARNESS

A safety harness looks very simple, but actually a lot of research has gone into the design of a good safety harness. The best ones combine lightness, durability and strength to give us the most comfortable as well as safest possible belt. A safety belt is like a fire engine - you may not need it very often, but when you do, there is not time for making repairs or adjustments. It has to be ready for use instantly. Let's look at ideas for the use of harnesses.

Question: **Where there is the danger of a fall, when should you use a safety harness?**

Answers:
1. When it is possible to fall more than 6 feet.
2. When there is no way to build a guardrail around where you are working.
3. When there are no nets under you.
4. When you are working on a swinging stage.

Question: **How long should the trail line or lanyard be, and where should you tie it off?**

Answers:
1. It doesn't matter how long it is, but you should not be able to fall more than six feet before it catches you and stops the fall.
2. You should tie off as close to your work as possible and still have some room to move around.
3. Tie off above your head if possible. This will reduce the amount of slack in your line.
4. Tie off to something permanent - never to the scaffold that you are standing on.

Question: **What are your responsibility as a user, to the safety harness?**

Answers:
1. To use it very time it is required.
2. To inspect it every day to be sure it is in good, safe condition.
3. To keep the harness and the layout away from fire or other sources of heat.
4. To keep it clean and dry.
5. If the belt or line gets cuts or abrasions or damaged hardware, turn it in for replacement or repair.
6. If anyone actually falls and the harness catches them and holds them, OSHA regulations say that the belt must be taken out of service and never used for employee protection again.

FALL PROTECTION REQUIRED AT DIFFERENT LEVELS

2'-8"	A handrail is required on steps that have four risers or more. The 2'-8" assumes that the risers average 8". It could be less. OSHA 1926.500 (3)(1).
4'-0"	Runways must have standard guardrail if they are 4'-0" or more above the net lower level. OSHA 196.500 (d)(2).
4'-0"	Wall openings such as windows must have a guardrail if there is drop of more than 4'-0" and the bottom of the opening is less than 33'-0" from the working surface. OSHA 1926.500 (c)(1).
6'-0"	On reinforcing steel (rebar work) the employee shall be provided with a safety belt if he is working 6'-0" or more above the next lower surface. OSHA 1926.451 (a)(4).
10'-0"	All scaffolds more than 10'-0" in height must be guarded by a standard guardrail. OSHA 1926.500(d)(1).
16'-0"	Roof having ground-to-eave height of 16'-0" or more must have fall protection of some kind such as a catch platform, guardrails, nets, warning lines, safety belts, etc. OSHA 1965.500 (g)(1).
25'-0"	Safety nets must be installed where methods are not practical and where the fall distance is 25'-0" or more. OSHA 1926.105 (a) and OSHA 1926.750 (b)(2).
30'-0"	During steel erection, a substantial floor must be maintained no more than 30'-0" below where bolting, welding, painting, etc. is being done. A railing of 2/2" wire rope or equal must be installed around such floor. OSHA 1926.750 (b)(2).

HAZARD COMMUNICATION PROGRAM

MSDS sheets and fire extinguishers are kept in the Superintendents and or Foreman's vehicles on the various job sites.

Hazard Communication Right To Know Program is a way to ensure that information is necessary for the safe use, handling and storage of hazardous materials provided to and made available to all Thalle Construction Company, Inc. employees.

INVENTORY

A chemical inventory will be made at the beginning of each job. This inventory will include all hazardous materials supplied to employees by Thalle Construction Company, Inc. This will be available to all Thalle Construction Company, Inc. employees from the job site superintendent. The inventory will be included with the hazard communication program.

MSDS

Material Safety Data Sheets will be kept for each chemical found on Thalle Construction Company, Inc. chemical inventory. These Material Safety Data Sheets are available from the job site superintendent and can also be found in the job site trailer or with the superintendent's vehicle.

LABELS

As part of this program, all containers will be labeled with the contents. Any material that is being transferred from a large container to a small container for disbursement, such as from oil to a spray can, will have both containers properly labeled with the identity of the contents. Any container found on a job site without proper labeling, will be reported to the job superintendent.

WRITTEN PROGRAM

The written program can be found on each Thalle Construction Company, Inc. job site along with the formal safety program. The written program also can be made available by each job site superintendent.

EMPLOYEE TRAINING

Safety talks that you are now participating in is an example of the employee training that is required under Thalle Construction Company, Inc. Hazard Communication program is available from all job site trailers or when a trailer is not on site, the program will be available from the job site superintendent's vehicle.

THE MATERIAL SAFETY DATA SHEET

MSDS

Material Safety Data Sheets or MSDS, if read and followed, are a powerful means of controlling chemical exposures.

MSDS are written by chemical manufacturers for the chemical they produce or import. The purpose of the MSDS is to communicate information on the recommended safe use and handling procedures for that chemical.

CATEGORIES

MSDS may look different, yet the Occupational Safety and Health Administration (OSHA) requires that all MSDS must provide certain categories of information about the chemical substance or mixture.

- identification (physical and chemical)
- hazardous ingredients,
- emergency and first aid procedures,
- recommended control measures,
- physical and health hazards,
- safe handling precautions,
- date of preparation/revision,
- manufacturer's name, address, and phone number.

Your employer is being required to assemble and provide unhindered access to a MSDS collection for all of the chemicals found in your work area. Know where this MSDS collection is located. Read and follow the MSDS recommendations.

IDENTIFICATION

What product/chemical is this MSDS for?

HAZARDOUS INGREDIENTS

How much of this material can I safely be exposed to?

How will I know if I am overexposed to this chemical?

EMERGENCIES AND FIRST AID PROCEDURES

What first aid steps should I follow?

What will happen to me if this chemical...
- ...is swallowed?
- ...gets onto my skin?
- ...is breathed in?
- ...gets into my eyes?

Recommended PREVENTION *Measures*

What type of control measures should I use to protect myself?

What should I do if there is a spill or leak?

Physical hazards

What are the physical hazards posed by this chemical?

If it catches fire, what should I use to put it out?

Are there conditions or materials that this chemical should not come into contact with?

HEALTH HAZARDS

What are the health hazards posed by this chemical?

SAFE HANDLING PRECAUTIONS

What is the proper way to safely handle this chemical?

MANUFACTURER'S NAME, ADDRESS, PHONE

Who made/imported this chemical?

COORDINATION WITH UTILITIES

Thalle Construction Co., Inc. will coordinate all work with various utility owners involved with the project and shall verify utility information found in the contract documents.

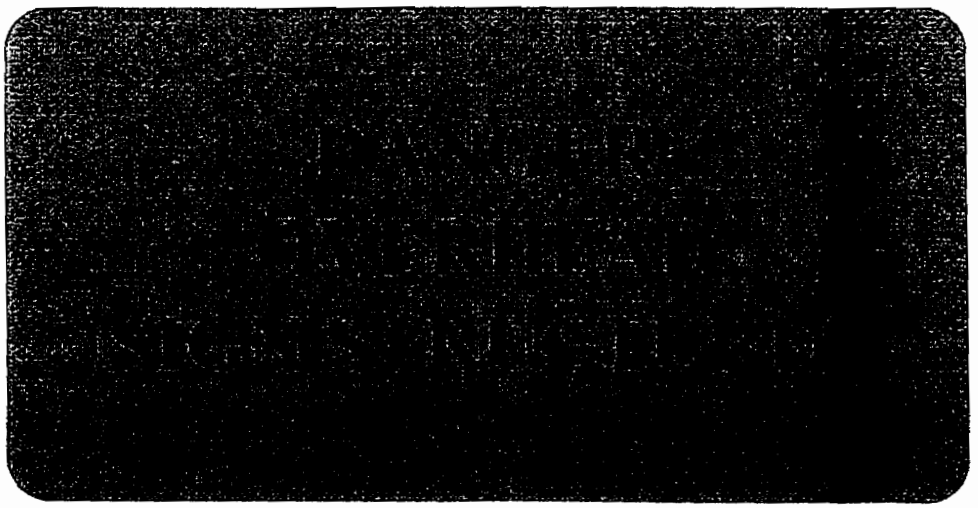
Where existing utilities are located within the contract limits, Thalle Construction Co., Inc. will give the proper bureaus and the various owning companies at least 72 hours notice before doing any work, in accordance with New York State Industrial Code Part (Rule No.) 53 relating to construction, excavation and demolition operations at or near underground facilities.

Thalle Construction Co., Inc. will verify when possible the exact location of utility lines both overhead and below ground and shall protect and support in a suitable manner.

OVERHEAD STRUCTURES

Thalle Construction Co., Inc. will place traffic signs in accordance with NYS DOT and MUTCD at all overhead structures which may be a hazard to or hit by construction equipment.

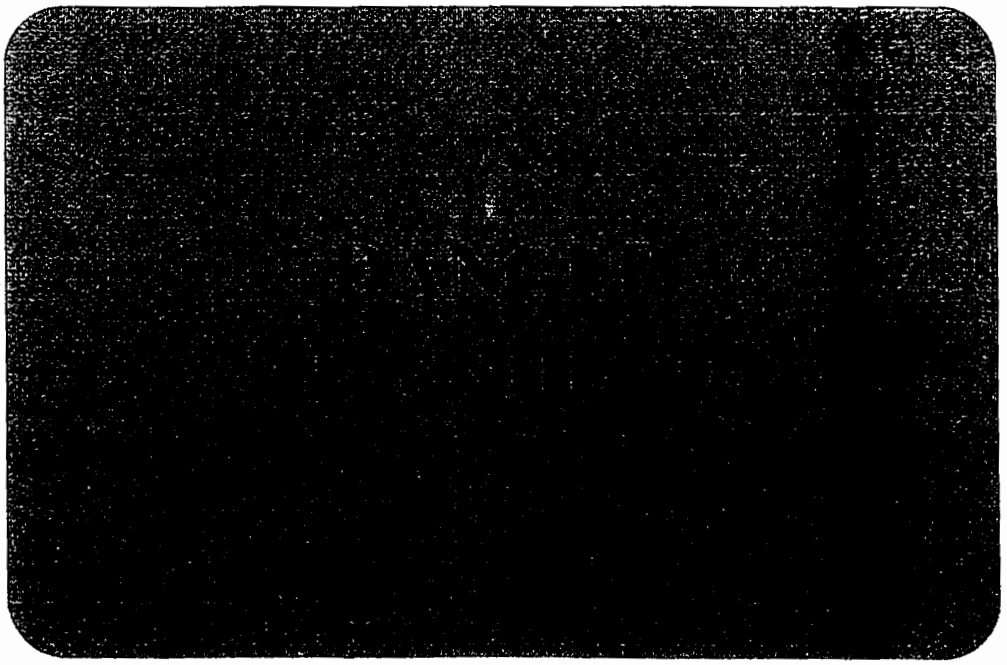
Example of Sign



OVERHEAD UTILITIES

Thalle Construction Co., Inc. will place traffic signs in accordance with NYSDOT and MUTCD at all overhead wires which may be a hazard to or hit by construction equipment. Thalle Construction Co., Inc. will work closely with the utility owners, to ensure the safety of all on this project.

Example of sign



CRANE BOOMS & POWER LINES

This safety topic is about electrocution -- not the legal kind. but the accidental electrocution of workers when a crane boom comes into contact with power lines.

Anyone who has spent much time in heavy construction knows of someone who has died or was severely shocked and burned as a result of an electrical accident. The cause of such an occurrence is generally poor judgment or forgetfulness on the part of the individual or crew.

When a job is being planned, power lines must be located or provisions made to either have the current shut off or institute job procedures that minimize the exposure.

If the foreman forgets to explain the job procedures fully, an accident may result. Likewise. of one for the crew fails to follow his or her part of the job procedure or forgets that he or she is working near an energized line, an accident will surely result.

Forgetfulness which leads to serious injury or damage is bad enough, but poor judgment is even worse. That old saying, "It's better to be safe than sorry," is just a short way of reminding us that good judgment can prevent a deadly short circuit.

Here's an example of poor judgment. A change of work area on a job made it necessary to track a crane under a power line. With the stick in the air, the crane was rolled forward and stopped a distance supposedly far enough away to allow the boom to be lowered without hitting the wires. But the boom didn't clear. Who was guilty of poor judgment? The answer is, the whole crew -- the worker who guided the movement and gave the signals and the operator, too.

What should the worker have done? The answer to that one is easy. They should have stopped the crane further back. Also, they should have kept close watch on the block as the boom was being lowered and should have signaled the crane operator to stop when it became evident that the boom was going to hit the power line. Had they done so. the crane could have been backed off and the boom lowered safely.

Then there's the operator. He or she knows the length of the boom and the arc it makes when it's being raised and lowered. He should have allowed enough distance to provide clearance, regardless of the ground person's lack of judgment. He or she also failed to follow the safe practice of swinging the boom parallel with the power line when he or she lowered the boom.

All members of a crew share in the responsibility of preventing accidents to themselves and to one another. In situations such as the one we're talking about. everyone must be on their toes at all times; first, to protect themselves and second, to protect the other worker. When somebody seems to be "goofing off" through a lapse of memory or inattention, wake them up.

When you're working close to a power line, remember that crane contacts will kill.
Use good judgment and keep boom, cable, block, and tag line at least 10 feet away from any power line. Remember, to, that an accident can result even if no direct contact is made.

WORK ZONE / TRAFFIC CONTROL

All work zones and traffic control will be set up and in compliance with MUTCD (Manual Uniform Traffic Control Devices) or as directed by the engineer. All site specific work zones will be as per contract drawings. Any revisions to the work zone patterns will be reviewed with the EIC on an as needed basis. Daily monitoring will be performed by the designated traffic control employee. Flag personnel will be instructed prior to be given the responsibility of flagging. A copy of the U.S. Department of Transportation - Flagging Hand Book is a supplemental information (on all job sites) for training. A qualified Thalle employee(s) will inspect the work zone periodically through the day.

EXCAVATION PROTECTION

Any time construction people disturb the natural contour of the earth, there must be some hazards involved and the bigger and deeper we go, the more concerned we have to be. We have various definitions of an excavation but for our purposes, it is a man-made hole in the ground that is at least five feet deep and wider than its depth. In this way it differs from a trench which is generally long and narrow. The safety procedures also differ. Let's examine these aspects of excavation safety.

Question: **What safety measures should be taken before starting an excavation?**

Answers:

1. Check to see if there are any underground utility lines such as sewer, water gas, telephone or power.
2. If there are such lines running through the property, contact the utility companies involved and advise.
3. Remove surface hazards such as trees, boulders, and small structures.

Question: **When and under what conditions should the walls of an excavation be shored?**

Answers:

1. When they cannot be sloped back enough to be safe. This slope is called the angle of repose. In hard compact soil the angle would naturally be steeper than for losses in sandy soil.
2. Some protection, either sloping or shoring is required by law at depths of over five feet.
3. When there is heavy water content of the surrounding earth.
4. When there are possible changes in the soil condition brought about by freezing.
5. When the walls are subject to vibration from equipment, blasting or traffic.
6. When the excavation wall is next to a building, sidewalk, street or other structure. Also when it is necessary to store material close to the edge.

Question: **In addition to sloping or shoring, what other things must be done to protect the public and the employees?**

Answers:

1. Build sound, strong walkways, ramps, steps, and barricades around the excavation as needed.
2. Be sure walkways and sidewalks are kept clear of excavated materials.
3. Everyone must stay clear of the vehicles that are being loaded with excavated materials from front end loaders, shovels, etc.
4. Excavated materials must be kept back at least two feet from the edge.
5. Materials used for support must be in good condition. These include sheeting, sheet piling, cribbing, pipe, beams and timbers.

TRENCHING HAZARDS

Trenching on this Metro-North contract is at the minimal depth and therefore within the OSHA regulations and does not require shoring.

Injuries to workers caught in cave-ins are so serious that statistics show that one out of twelve die. The temptation is strong to say that the trench will only be open a short time and then it will be back filled and the danger will be over, but this kind of thinking is a disaster. Ask your men these questions to find out if they are really aware of trenching hazards.

Question: **What are the main causes of trenching accidents?**

Answers:

1. Because no shoring at all had been used.
2. Because the shoring was not put in right or there was not enough of it.
3. The spoil dirt was piled too close to the edge of the trench.
4. Buried utility lines got broken.
5. Because no safety warnings were posted on the bank.

Question: **What are some of the things to look for that might mean that a bank or trench is about to collapse?**

Answers:

1. Ground cracks running parallel to the trench. There may be some distance from the trench wall if the trench is deep.
2. Bulging of sheeting or bending of walls and struts.
3. Ground heave in the bottom of the trench along with a depressed area on one or both sides of the bottom of the trench.
4. Flaking or spilling of trench walls.
5. Water seepage.

Question: **What are the most common methods of trench protection?**

Answers:

1. Sloping the walls back to the angle or repose. The angle varies with the type of soil. The more compact the soil, the less slope is required.
2. Good, sound timbers spaced along the trench walls and held apart by stringers of wood or trench jacks. Timbers should not be more than six feet apart.
3. Continuous sheeting of wood, concrete or steel piles, in case the soil is very soft or unstable.
4. Trench shields or trench boxes. These are steel plates with braces welded or bolted together which can be moved as the work progresses.

TRENCHING AND SHORING

Because of the various types of soil and their angle of repose, trenching without bracing, shoring or proper sloping is hazardous. Even in hard soil a cave-in can occur. If such a failure does occur, persons in the trench can be buried, usually resulting in serious injury or death. Improper or careless installation of bracing and shoring can cause similar tragedies.

Let's review the hazards of trenching and the safety requirements of shoring and bracing.

It's essential in the excavation of trenches 5 feet or more in depth that the exposed faces of these trenches be supported and held firmly in place by adequate bracing. This requirement must be complied with for all trenching, except:

- Trenches that are in rock or hard shale that have been shown to be geologically self supporting of an unsupported vertical face.

- Trenches with exposed faces sloped to the angle of repose for the type of soil in which the excavation is being made or properly benched to an equivalent of the angle of repose.

- Trenches in which trench shields or boxes are used.

REMEMBER: Before entering a trench, inspect all shoring at least daily, after weather changes, blasting or any other activity which might affect the shoring system.

Under no conditions should bracing or shoring be omitted, regardless of the length of time that the trench will be open.

To prevent placing an additional load on the trench face wall, excavated material must be placed no less than 2 feet from the edge of the trench.

At no time should an individual be permitted to work within the area of operation of any piece of equipment that is excavating the trench.

Employees should never ride the bucket to the bottom of the excavation. Ladders should be used at all times.

In all bracing and shoring operations, management is responsible for the type of bracing, the material size and proper installation. You are responsible for the safe handling of the material and safe installation.

By being proficient in the installation of proper bracing, the application of safety precautions and the knowledge of soil conditions, you can eliminate the hazards involved in trenching operations.

WORKING ON AND AROUND SCAFFOLD

This discussion is not so much on how to build a scaffold but how to use them for the safety of everyone concerned.

THE TWO MOST COMMON TYPES OF ACCIDENTS INVOLVING SCAFFOLDS:

1. A worker falling either on or from a scaffold.
2. Objects falling from a scaffold onto people below.

SOME RULES THAT WILL HELP US TO PREVENT FALLS FROM SCAFFOLDS:

1. Inspect the scaffold you are going to work on before you climb it.
2. If you use a ladder to get to the work platform, observe good ladder safety practices.
3. Be sure that any portable access ladder extends at least 3 feet above the platform that it serves. It must be tied off at the top and set on a level base.
4. Do not carry material up or down the ladder heightening on or off the scaffold.
5. Keep scaffolds free of waste materials which can cause tripping or falling accidents.
6. Be sure that top rails, midrails, or toeboards are present and secure. Do not forget the ends of the scaffold. Guardrails here are just as important as those in back of you.
7. Never use a make shift scaffold such as a box or a scaffold plank laid across bricks or blocks.
8. Never jump from the scaffold to the ground.

HOW CAN WE CUT DOWN ON THE HAZARDS OF FALLING OBJECTS?

1. Observe good housekeeping rules on work platforms - keep them free from debris.
2. Make sure toeboards are in place continuously along the scaffold to prevent material from rolling off on from being kicked off.
3. Do not allow tools to lie loose on the platform. Lay them in a box when not in use.
4. If there is anyone working above you, there should be overhead protection on your scaffold. This, plus your hard hat, will protect you against falling objects.

SCAFFOLDING

It's a terrible thing to realize that hardly a work day goes by without a construction worker falling off scaffold to his death. And those who survive scaffold falls are often crippled for the remainder of their lives.

These tragedies are sometimes caused by faulty design or poor construction. But in most cases the basic cause is poor maintenance or improper use-something that you can do something about.

Practical, foresighted people "keep both feet on the ground." And practical foresighted construction workers keep both feet on the ground." And practical foresighted construction workers keep both feet on the scaffold. Here's how you can be sure to keep your feet there

- Inspect scaffold daily before you trust your life to them. Check guardrails, connectors, fastened.
- Don't stockpile materials on scaffolds. Remove all tools and left-over materials at the end of the day.
- Never overload scaffolds. Pile necessary materials over ledger and bearer points.
- Ground yourself during storms or high winds. In winter, clear platforms of all ice and snow before using. Sand wet planking for sure footing.
- Help protect scaffolds; don't bang into them with equipment or materials. When hoisting material from the ground, control it with a tagline.
- Keep platforms and area near scaffold clear of debris, unneeded equipment or material, and anything else that might cause you to slip or trip.

Give a scaffold the respect it deserves and it'll serve you as a convenient work-platform -- not as a launching pad to send you hurtling to "The Great Beyond."

LADDER SAFETY

Ladders are some of the most valuable tools on the work site, but they can also be the cause of many an accident if used improperly. We need to examine some of the features of good ladder safety.

Question: **What should we look for before trusting ourselves to a ladder?**

Answers:

1. Loose, cracked split, or broken steps, rungs, side rails, or braces.
2. Slivers on side rails where we hold on.
3. Loose nails, screws, or bolts.
4. Loose, bent or broken spreaders on hinges on a stepladder.
5. Missing extension locks or locks that do not steal properly when ladder is extended.

Question: **How do you set a ladder properly?**

Answers:

1. A stepladder should be opened all the way with the spreaders locked. Have a firm base under all four legs.
2. Never lean a stepladder against anything and use it like a straight ladder.
3. A straight ladder should be set on a solid, level, base. The distance from the wall to the foot of the ladder should be one fourth the height of the ladder.
4. Tie the top of the ladder to keep it from slipping.

Question: **What are some of the things to remember about the safe use of a ladder?**

Answers:

1. Face the ladder and use both hands when going up or down a ladder.
2. Clean mud and grease from your shoes before using a ladder.
3. Carry small tools in suitable pockets, not in your hands. Hoist larger tools and other objects with a rope and bucket.
4. Never use a ladder as a guy, brace, skid or scaffold member.
5. Never go all the way to the top of a stepladder or straight ladder.
6. Work facing the ladder. Do not reach out more than an easy arm's length from the side rail.
7. When carrying a ladder, look out for other people, especially at doors and corners.
8. Do not splice short ladders together.
9. Report all unsafe ladders immediately.

WORKING SAFELY WITH CONCRETE

The forming, placing and finishing of concrete is basic to the construction industry. It also happens to be dangerous. There are many ways that a person can be injured before concrete is finally functional so we need to ask questions in several categories. Remember, the ones who recognize the hazards are the ones who can prevent the accidents.

Question: **What kinds of personal protection are necessary in working around and with concrete?**

Answers:

1. Shirts, gloves and boots because exposure of the skin to either wet or dry concrete can cause chemical burns.
2. Goggles or face shields if you are doing chipping, wire brushing or using rotary or impact tools.
3. Respirators, if you are sandblasting concrete. These should have supplied air and a hood.

Question: **What about safety around reinforcing steel?**

Answers:

1. Anybody working from the steel without the benefit of a scaffold, shall wear a safety belt properly secured.
2. No worker should work over rebar sticking straight up unless the ends are covered to prevent impalment.
3. Never use a single choker to hoist a bundle of rebar. Be sure rigging is done correctly. Use tag line on long bundles.

Question: **What are some rules to remember in the actual placement of concrete?**

Answers:

1. Check the framework. Be sure it is supported, braced and checked during the pour to prevent form failure.
2. It is forbidden to ride the bucket for any reason. Also, workmen should stay out from under the bucket as much as possible.
3. Use an experienced signal man if the crane operator cannot see the bucket at all times.
4. Concrete buckets shall have a positive safety latch to prevent accidental or premature dumping.
5. Concrete trucks shall have back-up alarms or shall have a competent signal man when backing up.

ELECTRICAL SAFETY

The following rules apply only to electrical installations used on the jobsites, both temporary and permanent:

1. Extension cords used with portable electrical tools and appliances shall be of three-wire tapes. Grounds are never to be removed from the extension cords.

2. Temporary lights shall be equipped with guards to prevent accidental contact with the bulb. Guards are not required when the reflector is constructed in such a way that the bulb is deeply recessed.

3. Temporary lights shall be suspended by their electric cords unless cords and lights are designed for this means of suspension.

4. Splices shall have insulation equal to that of the cable.

5. Electrical and extension cords or cables are not to be laid on floors, in walkways, etc., unless it is impractical to do otherwise. They should be suspended or secured in such a way as not to block or hang in walkways, doorways or work areas.

6. Panel boxes shall have a cover on them at all times, except when being serviced and when a temporary cover is in place it should be marked "HOT" to denote live current.

7. Explain to the employees which ground fault system is being used, either GROUND FAULT CIRCUIT INTERRUPTERS OR ASSURED EQUIPMENT GROUNDING CONDUCTOR PROGRAM.

With electricity we are dealing with something that cannot be seen and is still the most useful power controlled by man. It is useful but can be a very destructive power to both man and material if the proper precautions are not taken. The danger is always there and we must know what means of protection can be used to eliminate the hazards.

PORTABLE POWER TOOLS

In construction portable power tools with defective wiring can cause many injuries. The following safe practices are recommended:

1. Use tools with three wire plug and make sure connections are tight.
2. Check tool, equipment and cables frequently for safe condition.
3. Disconnect tool before making adjustments or repairs.
4. When using power tools in a wet area, use caution. The shock hazard is increased.

ELECTRICAL OUTLETS

BEFORE USING - make a safety check for loose cable connections, bare wires, cracked outlets and missing or damaged face plates.

WHEN USING - be sure plug fits firmly and check for any signs of heating caused by faulty connections.

TO REMOVE CORD - GRAB AT PLUG

YANKING A CORD FROM AN OUTLET CAN:

Break cord insulation and wires

Pull loose wore connections

Bend plug prongs

Spread clips inside outlet

ABOUT THE THREE (3) PRONG PLUG

Guard it! It is your shock LIFEGUARD. Never cut off the third prong to fit an older two-hole outlet. Never use a two-wire extension cord with this three prong plug. If using an adapter at a two-hole outlet, be sure the pigtail is attached to face plate screw. (NOTE: Screw must be tested for known "ground source").

GROUND - FAULT CIRCUIT INTERRUPTER

The GFCI, as it is commonly called, it is simply a fast acting circuit breaker that will cut off the electricity to a power tool with a 1/40th of a second if it detects that there is a fault with the grounding system. Faults can occur when there is insulation damage to cords, receptacles, connectors, etc. It may be caused by dragging the cords over rough edges, fastening with nails or staples, overheating or simply by aging. When these things happen, it allows current to leak out of its normal circuit. The GFCI monitor this current and protects the user from electrocution by interrupting the power before it can do any harm.

One disadvantage of this protection is that it is sometimes overly sensitive to moisture and humidity. On rainy or damp days, the GFCI units will occasionally cause what we call "nuisance" tripping. The temptation then is to by pass the GFCI so we can get on with our work. This is not only unwise, but violation of OSHA standards. OSHA requires GFCI protection on all 120 volt, single phase, 15 and 20 ampere circuits on construction sites, which are not part of the permanent wiring of the building or structure. With these things in mind:

1. Be sure that all temporary wiring is installed complete with GFCI protection.
2. Do not let anyone tamper with or by pass the GFCI unit.
3. To minimize nuisance tripping, keep cords out of water and use water tight or sealable connectors where possible.

PORTABLE POWER TOOLS

Portable power tools such as saber saws, circular saws, grinder, regular and heavy-duty drills, etc. make our jobs easier and our work more productive but they can also be dangerous. We may have the finest tools that money will buy, but they can cause injury in the hands of a careless operator. To have a good safety training session, you should have some sample tools with you as you ask the questions.

Question: **There are four general rules for power tool safety. What are they?**

Answers:
1. Select the proper tool for the job.
2. Be sure it is in good condition.
3. Use it correctly and safely.
4. Put it away properly.

Question: **What should consider when you are sizing up a job and choosing the tool to use?**

Answers:
1. Continuous work or extra tough jobs require higher capacity tools.
2. If tools are to be used around flammable vapors or gases, make sure they are designed for such use.
3. After you have selected the tool, check it over to be sure that: (a) the trigger switch is not loose, (b) the power cord has no breaks or cuts, (c) there are no sparking brushes in the motor (d) it has ground wire (third prong on the plug).

Question: **What about actually using the tool? What rules should you remember?**

Answers:
1. When using heavy duty torque tools, brace yourself well and be prepared for sudden twisting motion if the tool breaks or slips, especially on a ladder.
2. Always push in line with the drill to prevent bending and over-loading.
3. Do not use a lop-sided abrasive disc or wheel. It may cause the roof to wobble, pull off the work, or maybe throw you off balance.
4. Always wear goggles. When dust is stirred up, wear a respirator.
5. Keep guards in place. Portable saws have guards that are designed to operate freely in all cutting positions.
6. Carry tools by their handles, never by the cord.

INTRODUCTION

This program is intended to help employees and management:

- Recognize a confined space and the hazards it may present;
- Take adequate measures to ensure their own and their employees safety when entering a confined space.

WHAT IS A CONFINED SPACE

A confined space may be defined as a space which is not intended for continuous occupancy by people; has limited openings for entry and exits; and has one or more of the following characteristics:

- Limited natural ventilation;
- Contains, or could product, dangerous air contaminants;
- Has the potential for engulfment by particulate matter or by a liquid

EXAMPLES OF A CONFINED SPACE ARE:

- Tanks, tanker trucks/ cars, vats, caissons, vapor degreasers, silos;
- Boilers, reactor vessels, cold storage facilities, chimneys;
- Any area of such physical configuration that a person would have difficulty in escaping should an emergency occur.

WHY DO PEOPLE DIE IN CONFINED SPACES?

They do not recognize a confined space when they see one. They simply do not know that the space could be dangerous.

They trust their senses. They think that if a space looks safe, it is safe. But most hazardous atmospheres are invisible. you cannot see, taste, or smell most toxic or deadly atmospheres.

They underestimate the dangers. They think they can get in and out before a hazard affects them. They do not realize how quickly they can be overcome by a deadly atmosphere or buried alive.

they try to rescue other people. It is human nature to try to help a person in trouble. However, the sad fact is that untrained rescuers usually die along with the victim the are trying to save.

HAZARDS OF CONFINED SPACE

A. ATMOSPHERIC HAZARDS

Confined spaces must be tested for oxygen levels. Mechanical ventilation should be used to maintain the oxygen level within the permissible range. The spaces must also be tested for flammable or toxic gases, if they contain these materials. mechanical ventilation should be used to reduce the concentrations to permissible levels, if these tests indicate the presence of hazardous levels of gases/vapors. Persons entering confined spaces have to wear appropriate personal protective equipment (respirators, or full body clothing for example) if the hazardous gas concentrations cannot be reduced to permissible levels.

B. ENGULFMENT HAZARDS

Loose materials such as fine coal, flyash, sawdust, or grains can get in breathing passages very quickly, causing suffocation. persons entering silos and similar spaces must use a harness that is connected to a lifeline and monitored by an observer. These areas should be considered high hazards.

C. ELECTRICAL AND MECHANICAL HAZARDS

Confined spaces rarely have permanent electrical services. People entering these spaces must usually carry a portable light source. This source should be low voltage lights with shielding cages or flashlights. If voltage higher than 24 volts in used, the equipment must be operated on a circuit equipped with a ground fault circuit interrupter.

D. MISCELLANEOUS HAZARDS

Liquids, including hazardous chemicals, may accidentally be introduced into a confined space while a person is inside it. Standard isolation procedures include:

- Disconnecting lines entering the space;
- Inserting a blank in a line to block it completely;
  Double block and bleed (closing and locking or tagging, or both at least two valves in the piping leading to the confined space, and locking and tagging open to atmosphere a drain valve between the two closed valves).
- The "Human Factor". People tend to underestimate the danger by trusting their senses. An area may look safe by most hazards are invisible, tasteless and odorless.

Additional hazards are created when any "hot" work is performed inside a confined space. Welding fumes have to be exhausted from the area and combustible materials have to be removed.

This handbook has been developed consistent with the 1978 edition of the Manual on Uniform Traffic Control Devices (MUTCD), and in cooperation with various State Highway Agencies, FHWA Regional and Headquarters offices and certain other agencies and associations. Special recognition is given to the Washington State Department of Highways, The American Road and Transportation Builders Association and The Associated General Contractors of America for their timely interest and helpful comments.

Introduction

To You, The Flagger

You have been chosen for the job of Flagger, because your supervisor feels you are physically able, mentally alert and sufficiently commanding in appearance to properly control traffic through construction maintenance and utility work areas. As a Flagger, your duties are to protect project personnel and provide safe, courteous and authoritative directions to traffic seeking passage through the work area. Yours is an important position to be carried out with authority and dignity.

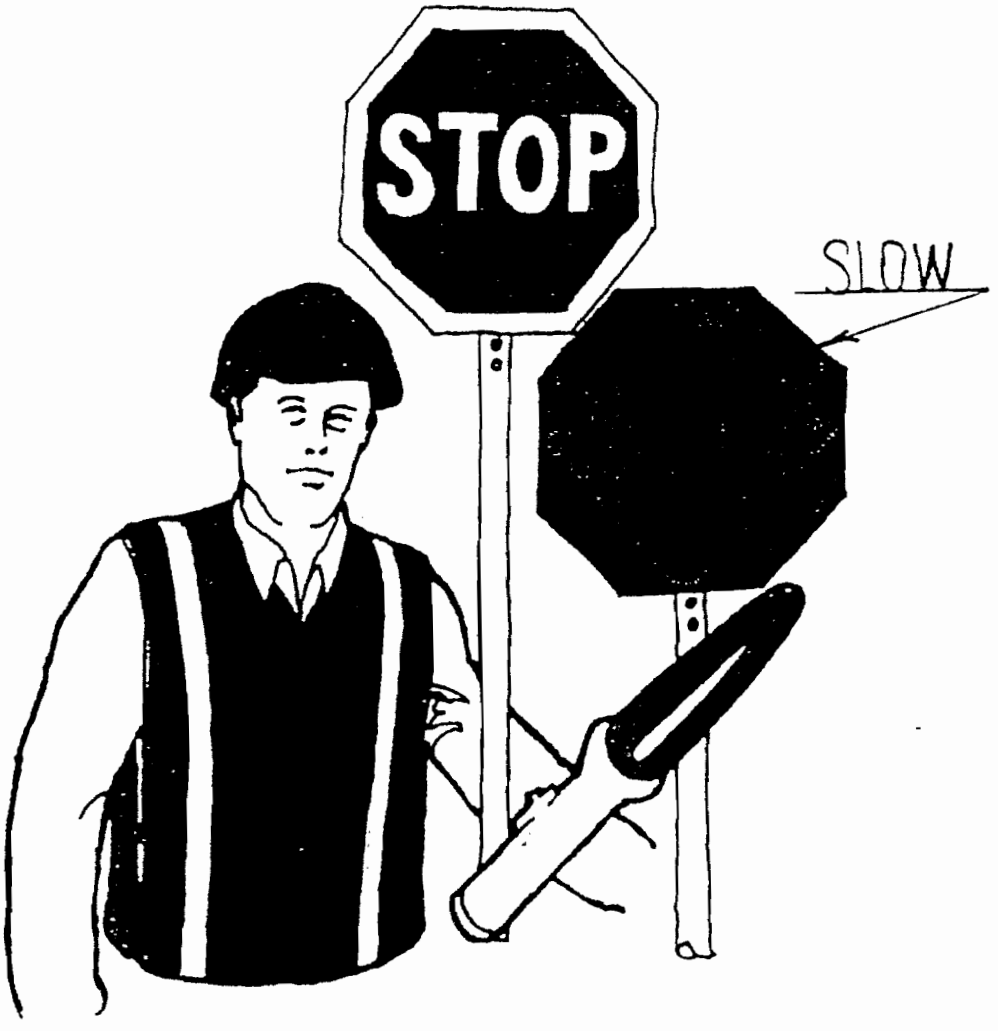
This handbook has been prepared to assist you in understanding your duties and is to be properly studied and available for ready reference. Remember, *they* (your working associates and the traveling public) *depend on you.*

Equipment

Clothing

As a flagger, you should always wear bright orange clothing such as a vest, shirt or jacket and an orange hat to improve your visibility. When you are serving as a replacement, even for a short time, you must also be properly dressed.

Immodest or sloppy dress should not be permitted! Remember, a neat appearance helps gain respect and makes your job more effective.



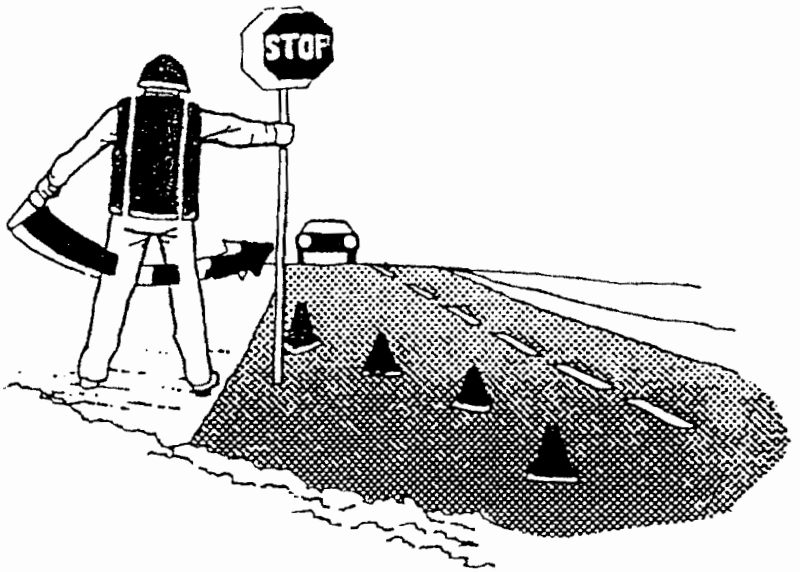
Tools

As a flagger you should be equipped with the standard combination "STOP"/"SLOW" hand paddle or pole type paddle signs at least 18 inches in width or a bright red flag at least 24 inches by 24 inches in size.

Night-time flagging requires proper illumination of flagger and equipment. A well lighted flagging station and/or a reflectorized paddle sign plus a flashlight, lantern or other lighted signal that will display a red warning light shall be used.

Flagger's Position

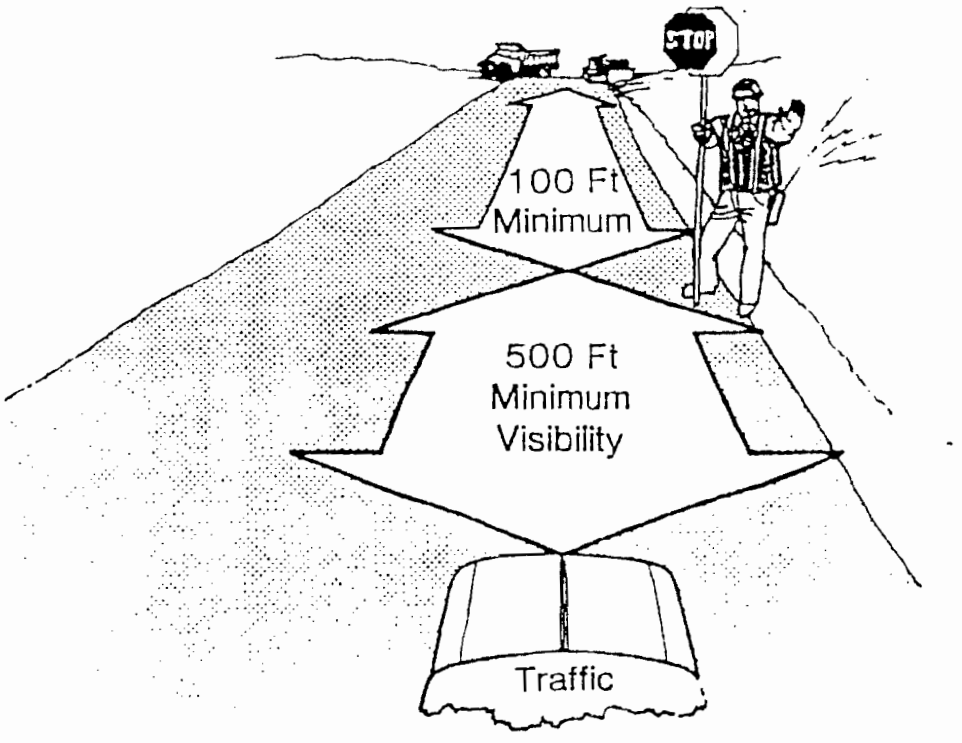
While on duty as a flagger you must be alert at all times and be on your feet facing oncoming traffic. Always stand in a highly visible location but never directly in the path of an approaching vehicle. Approaching traffic must be able to see you in plenty of time to react safely (see Figure 9). Generally, flagger stations should be located about 200 feet in advance of



the work site. Factors such as visibility, speed and volume of traffic, condition of the road, and the work being done should be considered in determining your proper location.

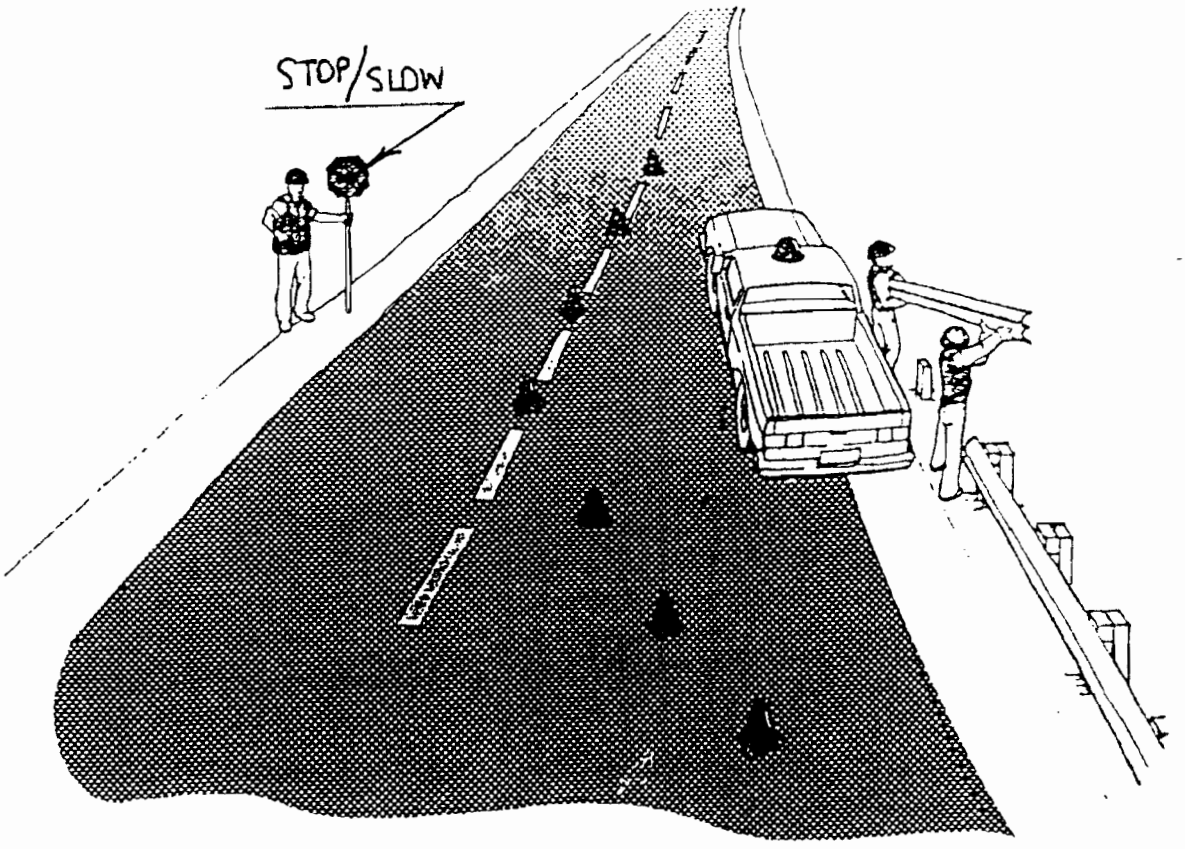
When two flaggers are working together (one on either end of the work area) they should always be able to see each other or use two way radios for proper communication. In such cases one flagger is always in charge and the other flagger must coordinate his or her activities accordingly.

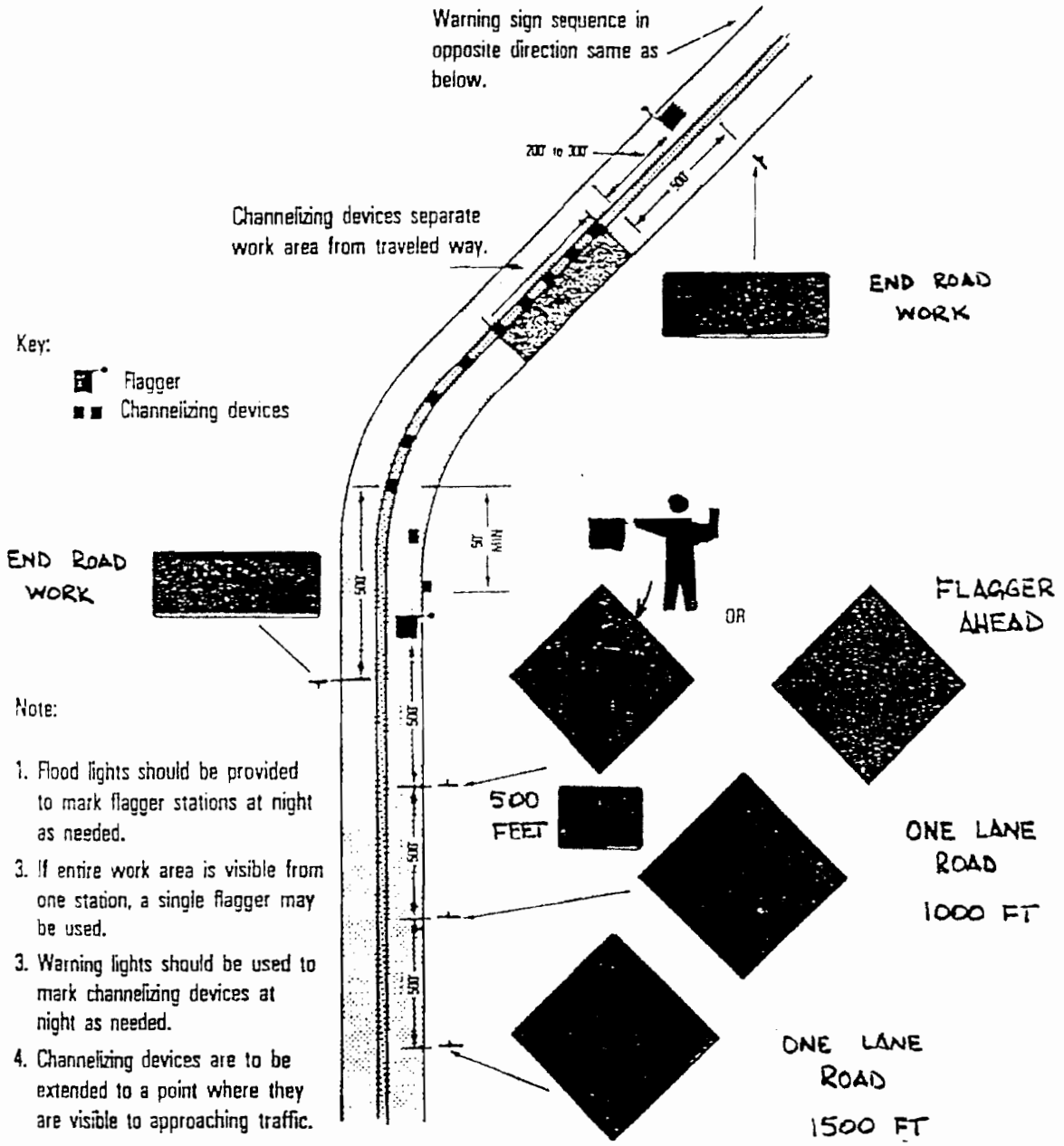
When performing as a flagger always stand alone; never mingle with the work crew, the traveling public, or other people. To avoid hindering the sight distance for motorists or causing other obstructions, flaggers should park their personal vehicles well off the roadway.



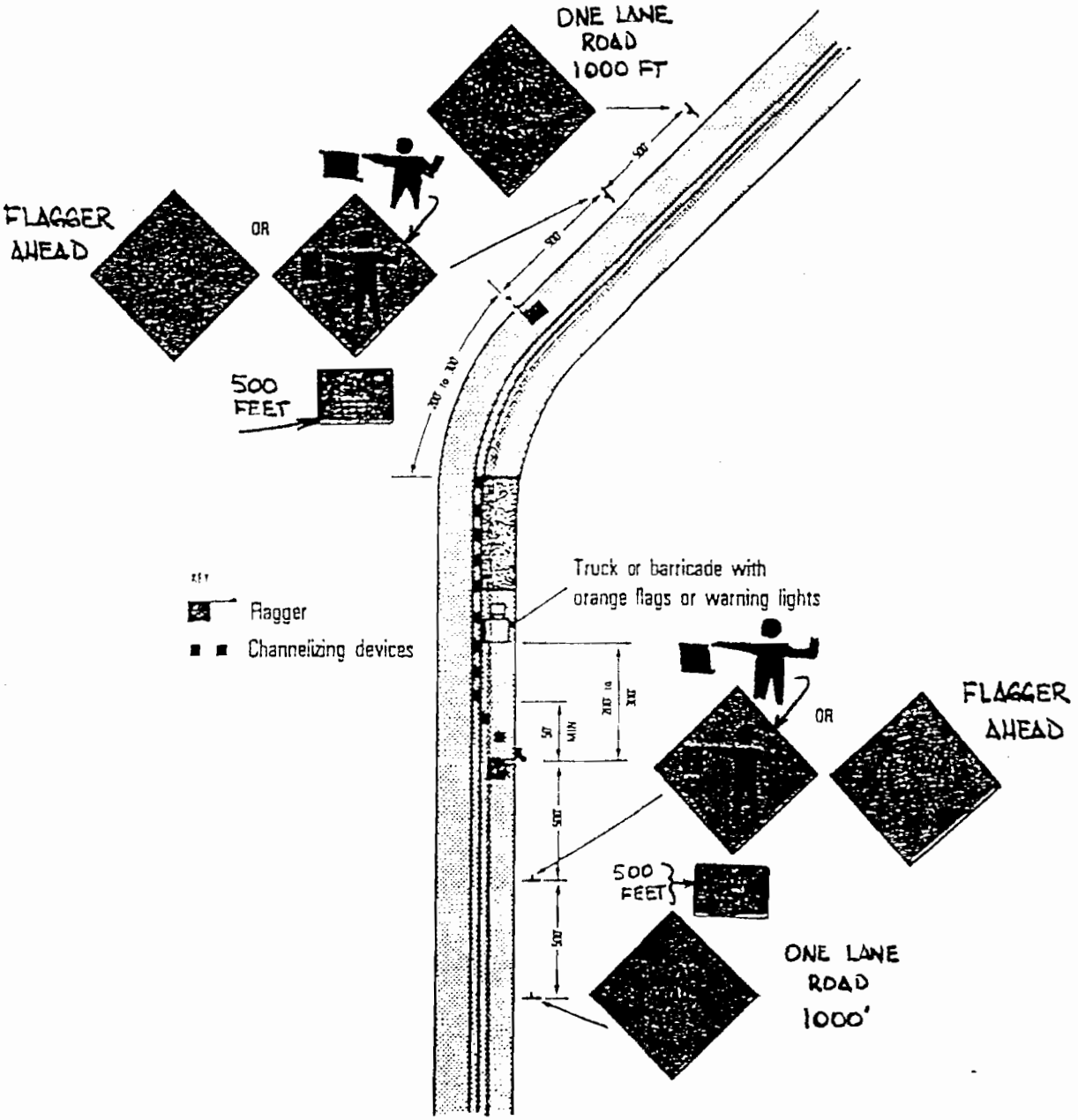
In certain instances the nature of the work may be such that only one flagger is required (minor shoulder repair, guard rail installation, or other work conditions where the length of the work area is short and traffic approaching from either direction can easily see the flagger). In such instances you, as a "single flagger," should generally operate from the roadway shoulder, directly opposite from the work area and in a position highly visible to approaching traffic from either direction.

The following figures (5 and 6) show typical flagger positions. Where the color orange is shown or stated in this handbook, it should be noted that the Manual on Uniform Traffic Control Devices permits the use of materials having fluorescent red-orange or yellow-orange colors.





Typical applications of traffic control devices on 2–lane highway where one lane is closed and flagging is provided.



Typical application — daytime maintenance operations of short duration on a 2–lane roadway and flagging is provided

Advance Flagger

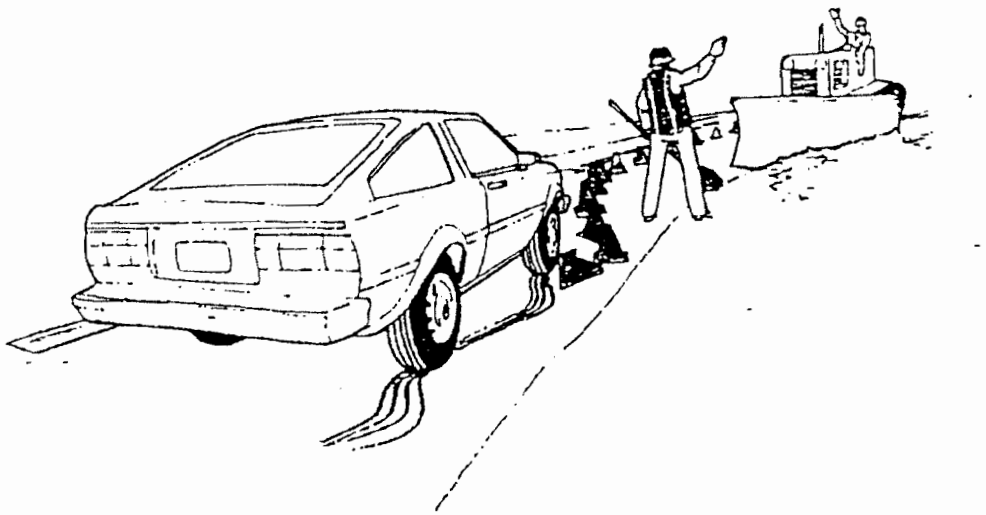
Certain situations may require that "advance flaggers" also be used where there is limited sight distance to the work area, or when traffic volume is such that the distance between the first vehicle in line and the last vehicle in line is great.

The decision to use an advance flagger should be made at the Foreman or Supervisor level consistent with the agency or organization traffic control plan.

As an advance flagger, you should stop each vehicle as it approaches and advise the driver of the work ahead and actions required such as: "fresh oil ahead, drive slowly," "keep to the right and stay in line," etc. Be considerate and alert, and avoid unnecessary conversation.

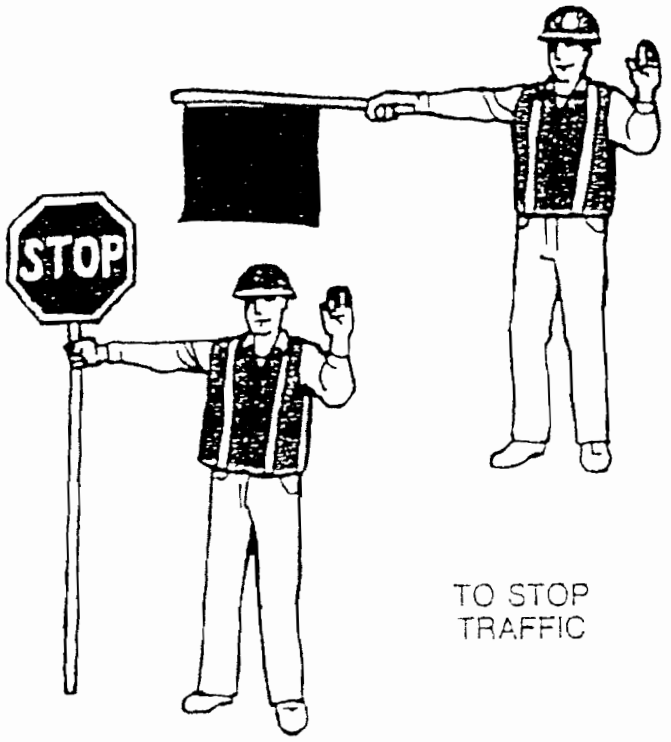
Pay Attention to Your Job

Remember, your job is handling traffic. Do not otherwise assist the work crew, watch construction operations instead of traffic, or



engage in any other activity in addition to your duties as a flagger.

If you need a break tell your supervisor so that a proper replacement may be brought in.



TO STOP TRAFFIC

To Stop Traffic

Hold the stop sign erect and away from your body, look directly at the approaching driver, and with the free arm upraised and the palm of the hand exposed to the driver, bring the first vehicle to a full stop. *Do not wave the paddle!*

After the first vehicle has been stopped, move to a spot where you can be seen by other approaching vehicles, preferably near the centerline of the roadway, and stop all remaining cars in the same manner. Remain in this position with the "STOP" sign facing traffic

until you can permit travel through the work area. Remember, never stand in the path of an approaching vehicle, and never turn your back on traffic.

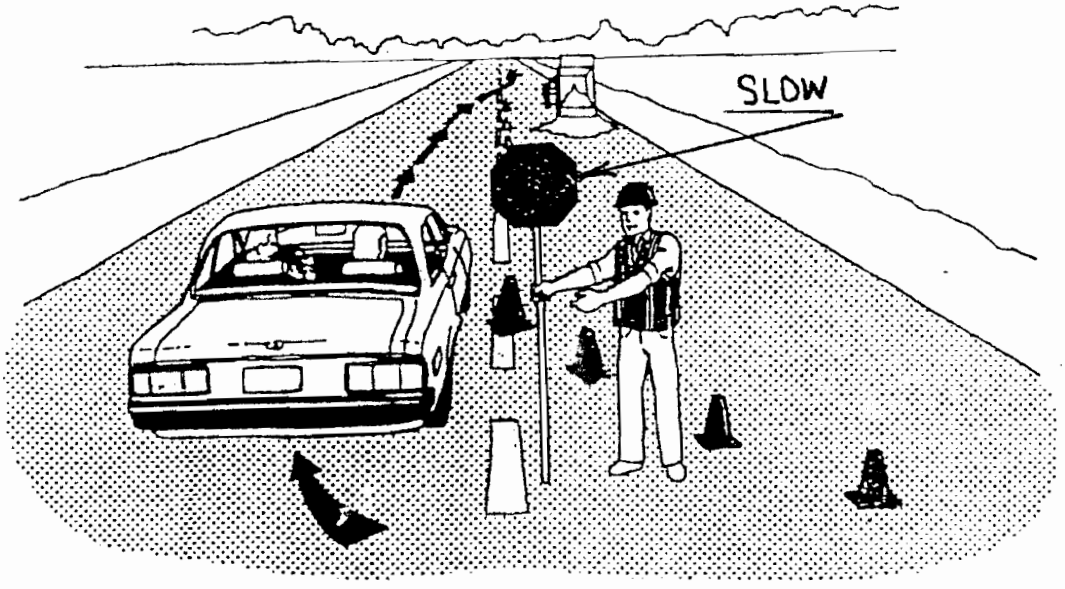
When flagging at night, wave a flashlight or lantern in a semi-circle arc in order to attract the driver's attention and illuminate the sign paddle (see Figure 2). A well lighted flagging station should be provided for your use if practical.

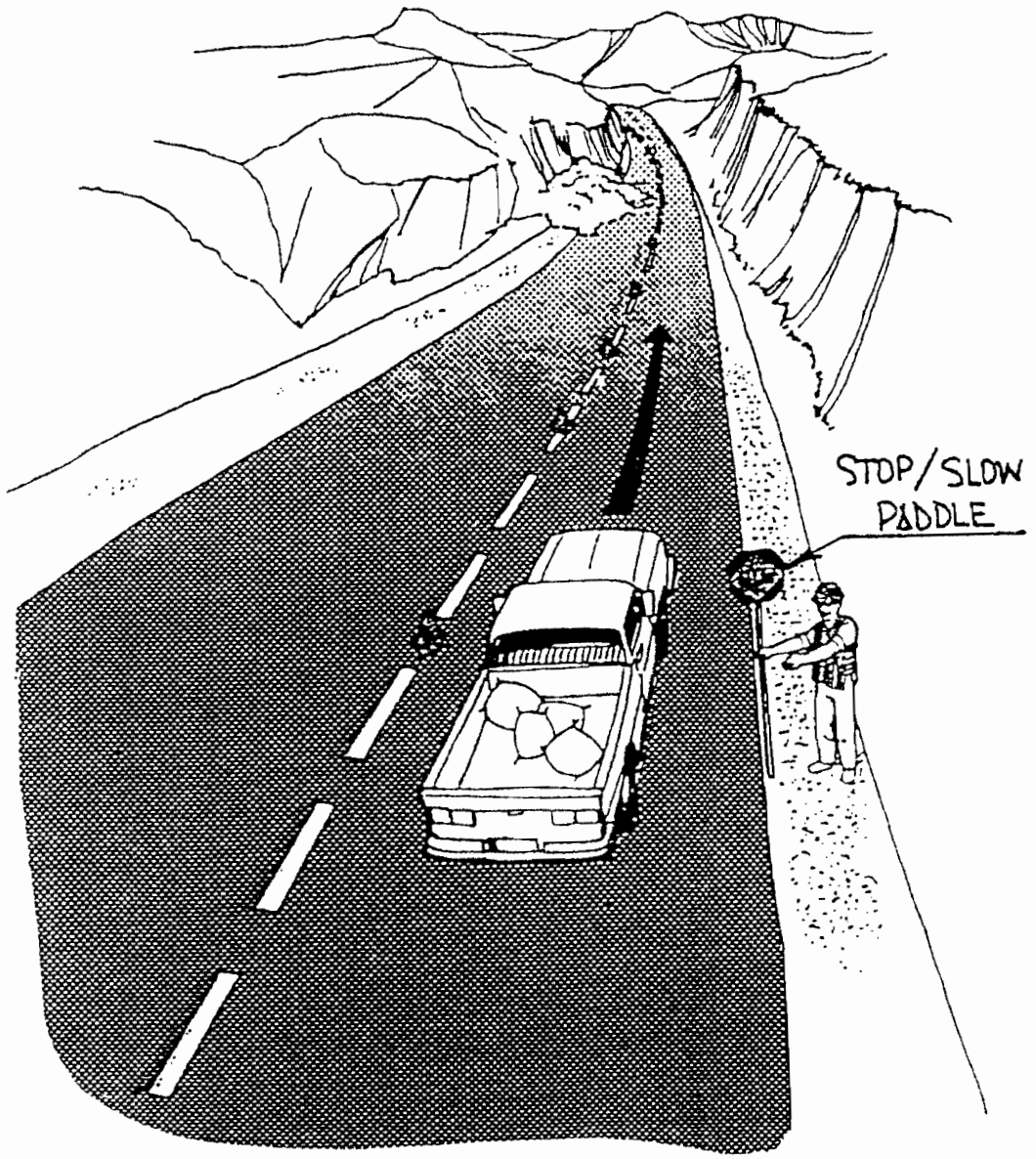
Remember that a motorist requires considerable time to see and understand your signals; therefore, make clear and precise signals that can be easily seen and understood.

Release of Traffic

To Release Traffic into Left Lane (One Way Traffic)

While standing to the front and right of stopped traffic, turn the "SLOW" side of the sign to face the vehicles and with your free arm signal the drivers to proceed in the left lane.





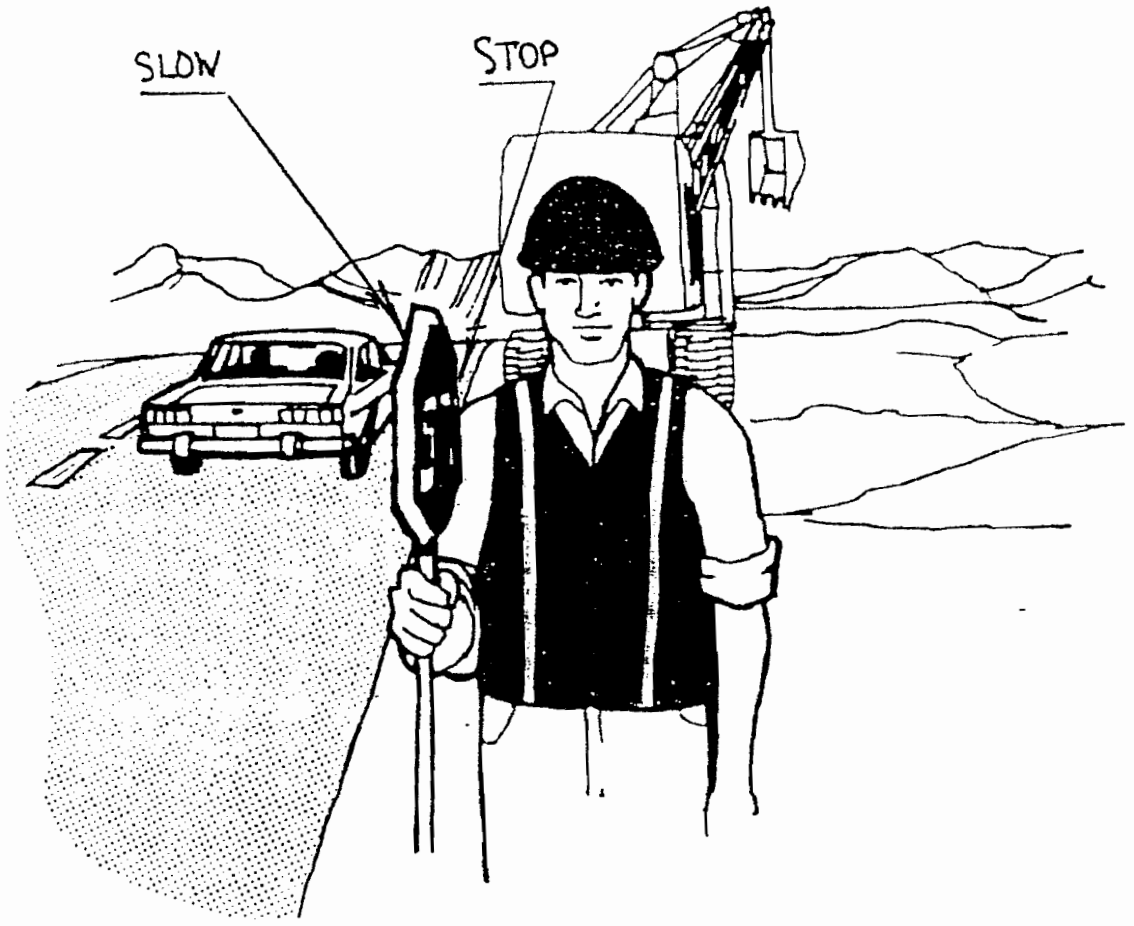
Never wave the sign! After all the vehicles have passed, return to your original position on the shoulder to await the next vehicle.

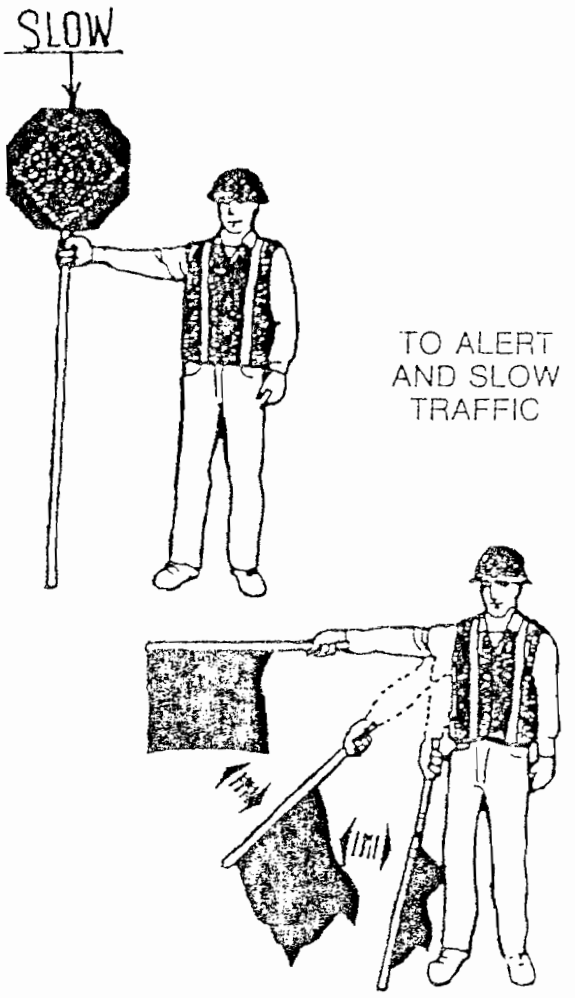
To Release Traffic into Right Lane (One Way Traffic)

Return to your position on the shoulder, display the slow sign to the drivers and with your free arm, motion the drivers to proceed.

To Release Traffic on Right Lane (Two Way Traffic)

When releasing traffic on a two-lane highway where traffic is stopped temporarily in only one lane, (such as for loading or unloading operations), the sign standard should be turned a quarter-turn so that the letters "STOP" face you as the flagger. In this position, the sign should be parallel to the shoulder of the road so that neither "STOP" nor "SLOW" can be read by motorists approaching from either direction. The "STOP" message then will not confuse continuous traffic traveling the opposite direction.





Use of hand signaling devices by flagger.

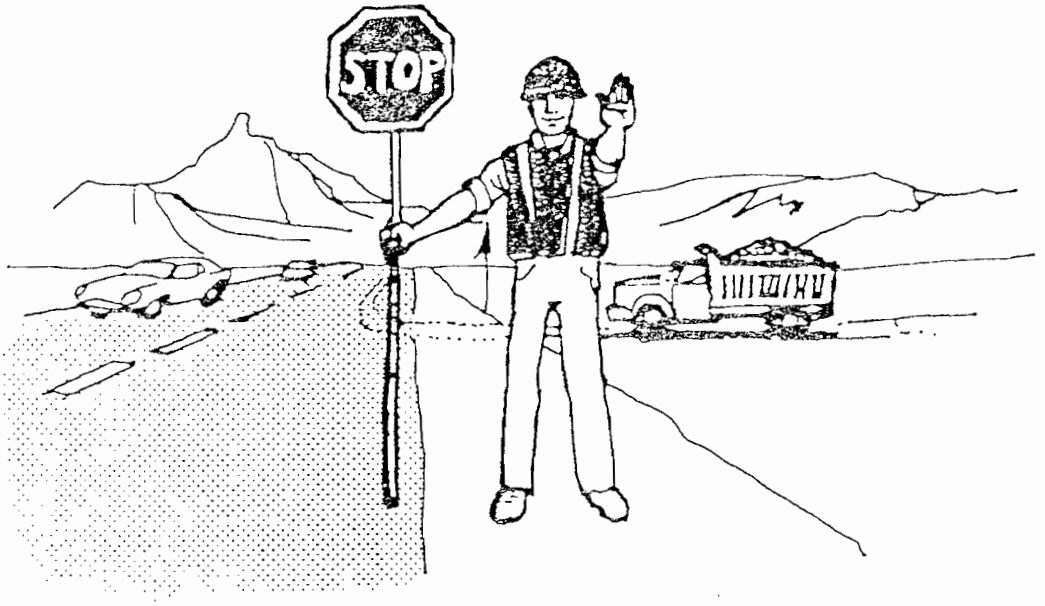
To Slow Traffic

When slowing traffic or funneling traffic into other lanes, only the "SLOW" side of the paddle should be shown to approaching traffic, then motion with your free hand for the motorists to proceed. You should operate from the shoulder of the roadway when no approaching traffic lanes are closed. Never stand in the path of oncoming traffic.

In cases of temporary lane closures, a transition consisting of cones, barricades, or other channelizing devices designating the work area should be established.

Traffic Control at Haul Road Intersections

Generally, traffic control procedures are the same for haul road intersections as for other work areas. Should trucks be making a right turn onto the highway only one flagger would be required. If trucks have the right of way and are crossing the highway or making a left turn, two flaggers will be necessary to control traffic from each direction.



Flag Carrying

Flag carrying may be effective when the route is well defined and non-hazardous. It should be used only when the one way traffic is confined to a relatively short section of roadway, usually not more than 1 mile in length.

The driver of the last vehicle proceeding into the one lane section is given a clean dry red flag (or other item) and instructed to deliver it to the flagger at the other end. The opposite flag-

ger, upon receipt of the flag, then knows it is safe to allow traffic to move in the other direction. Never allow another vehicle to play "catch up" with the flag carrier. Hold all traffic until the flag is returned to you or the "all clear" signal is given.

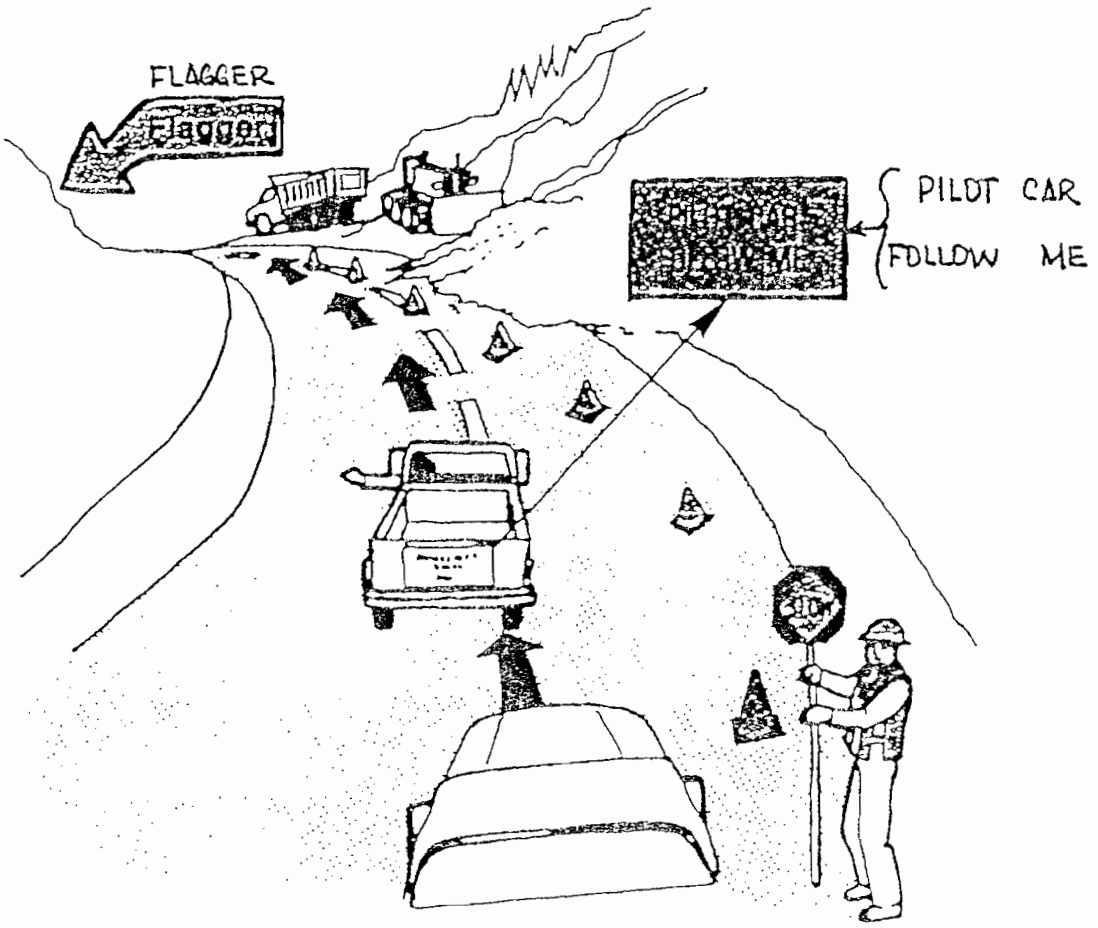
A variation of the above flag carrying method is the use of an "official" vehicle which always follows the last vehicle through the work area. The use of an official car eliminates the possibility of losing the flag or of the flag carrying car passing other vehicles.

Flagging for Pilot Car Operation

Work is often performed over a long section of highway. When the flagger at the opposite end is not visible to you, a pilot car may be used to escort vehicles through the work area. You are to stop vehicles in the approved manner as they approach, and detain them until the pilot car arrives from the opposite direction.

After stopping the first vehicle, move to a position near the centerline of the roadway so as to be easily seen by approaching drivers. Be alert to prevent vehicles from pulling out of line and trying to pass other waiting vehicles, as this would seriously congest the traffic holding area and endanger or impede opposing traffic.

After the pilot car arrives and has pulled into position at the head of your column, step back onto the shoulder and, with the "SLOW" sign extended, motion the pilot car driver and others to proceed. Unless otherwise instructed, stop the last car in the column and give the driver a flag (or other item) with instructions to deliver it



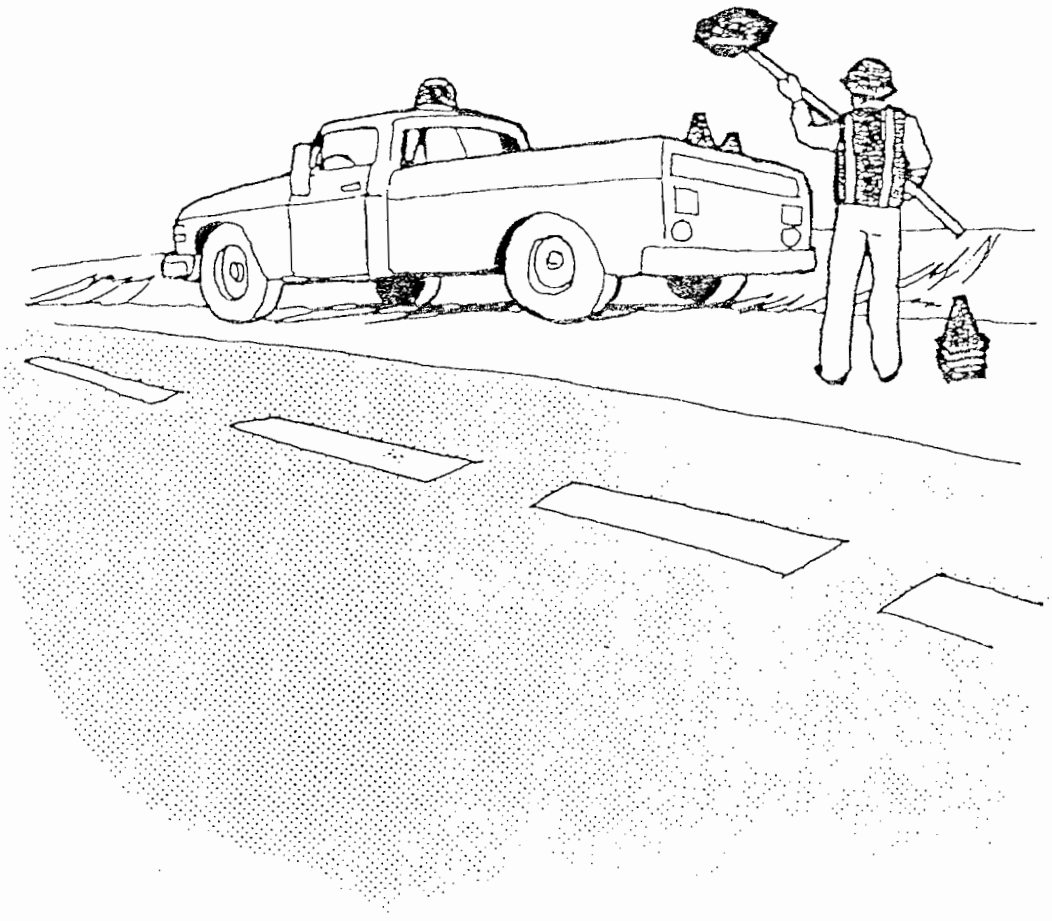
to the flagger at the other end of the work area. Release the vehicle, then assume your proper position for stopping the next vehicle as before.

Additional Aids

Where companion flaggers are far apart or out of sight of each other, walkie-talkie communications between the stations can be very beneficial. Also, two-way radio communications with the work crew supervisor may be helpful (communicating periodic road closings of short duration, new caution instructions to be given motorists regarding road conditions, etc.).

Always use appropriate advance warning signs, giving particular attention to sign visibility, legibility and placement.

Remember, always remove signs or completely cover the sign messages when they do not apply to present traffic control conditions.



Rules of Conduct

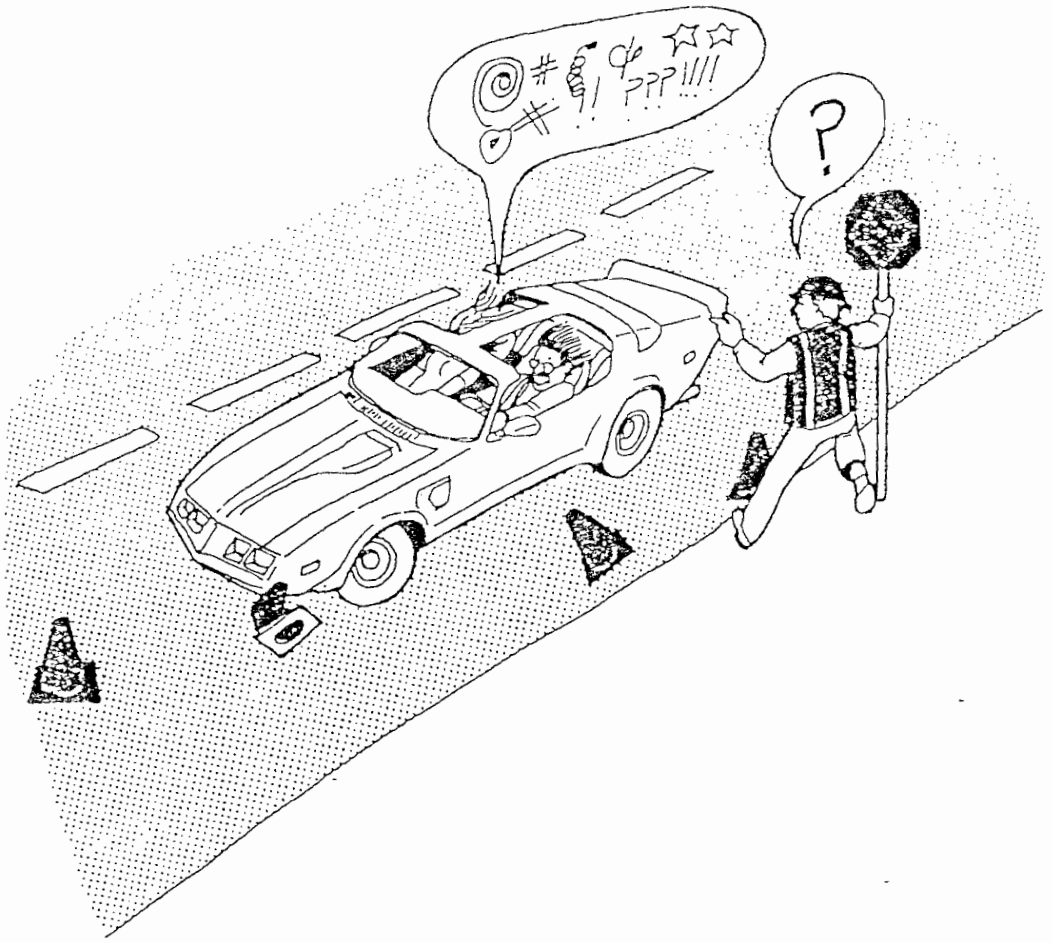
1. If the instruction to the motorist is to "STOP," you should tell the first driver the reason for the delay if it is not apparent. (Do not abandon your post at the head of the traffic line to advise other drivers. This duty should be taken care of by an "advance flagger" if deemed necessary by your supervisor.) Information should be given in a few brief but courteous words, such as, "There is a culvert out ahead," "We have a motorgrader working just around the corner," etc.

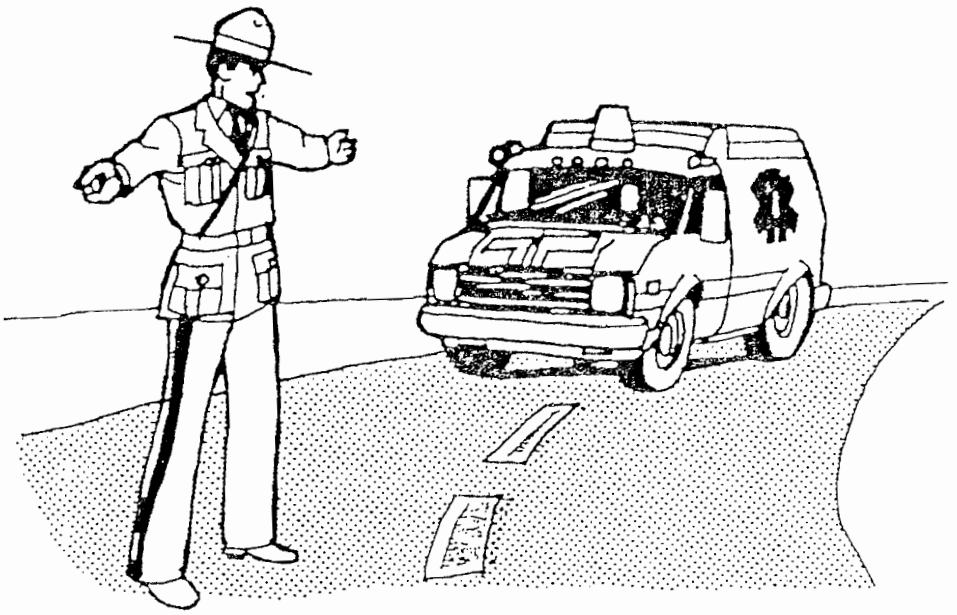
2. Do not lean on the vehicles and talk to the occupants. Be friendly and polite but do not become preoccupied with small talk. Your job demands full and complete concentration.

3. Never engage in arguments with the occupants of a vehicle. It is important that you be courteous, yet brief and factual in your conversation with them.

4. If a driver refuses to obey instructions you shall record a general description of the car and driver, the vehicle license number and the circumstances involved, then report this information to the supervisor as soon as possible without deserting your post.

5. All signs indicating a flagger is on duty must be removed or covered when you or your replacement are not actually flagging.





6. You should always be alert to the needs of emergency vehicles and crews. Special care should be used to allow safe passage of such vehicles and crews, and other vehicular or pedestrian traffic as possible. Remember, however, that these "priority rights" should never ignore the basic rules of *safety first.* (A wrecked ambulance is usually worse than no ambulance at all).

Each agency or organization should have developed a standard emergency vehicle and safety plan of operation. Discuss with your supervisor what you should do in case of emergencies.

For The Supervisor

Successful execution of traffic control is dependent upon proper supervision. One of the first and most important steps in supervision is the issuance of all necessary instructions to the foreman, crewchief and flagger who must undertake the responsibility for traffic control. It must not be assumed that employees will

understand their duties without careful and complete instructions. An uninformed flagger can cause confusion and accidents instead of preventing them. On the other hand, proper instructions will increase his or her interest, encourage better performance, develop sound judgment for use in difficult situations, and enhance better public relations.

Remember that lasting impressions are made, and public opinion is quickly formed, during the brief contact the motorist has with our maintenance, construction and engineering forces.

It is impractical to attempt in this booklet to cover the vast number of situations that will arise during the course of work that may require special traffic control. We must therefore depend upon supervisory personnel to plan each particular action and supervise the placement of signs, other traffic control devices, and flaggers. The safety of the work crew and the motoring public is more important than the construction or maintenance operations you are performing.

As a reminder of a few of the more important things to consider, and in an effort to obtain more uniformity of traffic control, the following standards are established.

1. The supervisor shall decide which situations require a flagger or flaggers. The common complaint that flaggers are not available because of insufficient help is not an acceptable excuse for exposing workers and highway users to the danger of being maimed or killed.

2. The selection of persons to be employed as flaggers and the assignment of persons already employed in this duty are clearly the responsibility of the supervisor. The supervisor shall choose only those who possess the following minimum qualifications.

a. Average intelligence and mentally alert.

b. Good physical condition including sight and hearing.

c. Courteous and pleasing personality.

d. Neat appearance.

e. Sense of responsibility for safety of public and crew.

3. Flaggers must be thoroughly instructed in the importance of the work they are to perform before being allowed to assume full responsibility for directing traffic. In addition to oral instructions the flagger is to be handed a copy of this manual and made to understand that it is his or her duty to read it and to follow its instructions. (It may be necessary to conduct formalized training sessions or certification programs for all persons who are assigned traffic control responsibilities.)

4. Traffic control should be handled in a uniform manner throughout your area of supervision.

5. Flaggers should be relieved periodically during the course of work to provide ample rest breaks or diversions. This is very important to maintain proficient flagging operations.

6. Those in charge of work must make certain that all required warning signs, warning flares, barricades, flags, flaggers, and equipment are in place, and that all precautionary measures to safeguard the public and employees have been taken before work is started. They shall see that such warnings are properly placed and maintained during the progress of the work.

7. Each work project will require special study before a flagger is placed to be sure that he or she is properly located. It is important that the flagger stand where he or she can see the workers if possible, and where the approaching driver can see the flagger in plenty of time to interpret and react to the signals to slow down or stop if required.

8. When the traffic control devices and flaggers have been established, the supervisor should, as soon as possible, drive through the work area at the anticipated speed of the motorists in order to determine the effectiveness of the total traffic control system.

9. Should a flagger report that a close call or near accident has occurred after the control has been set up, you will take it as a warning that something is wrong and investigate at once. After the necessary adjustments have been made, do not leave the job until you have studied the behavior of traffic to assure yourself that the problem has been corrected.

10. Serious traffic control violations should be reported to the police as soon as possible. Provide them with the license number, descrip-

tion of vehicle, type and time of violation, and description of driver.

11. "Crew Working," "Survey Crew," "Flaggers Ahead," etc., signs shall be removed or covered during the noon hour, at quitting time, and any other time when work is interrupted and the equipment is clear of the traveled way. The confidence of the traveling public in these warning devices must be maintained.

12. Advance warning signs and traffic control "paddles" shall be turned in for repainting or replacement when the colors become dull or worn.

13. All traffic control signs should be in accordance with the Manual on Uniform Traffic Control Devices. "Home made" or poorly repaired signs are often confusing and lead to disrespect for our traffic control efforts.

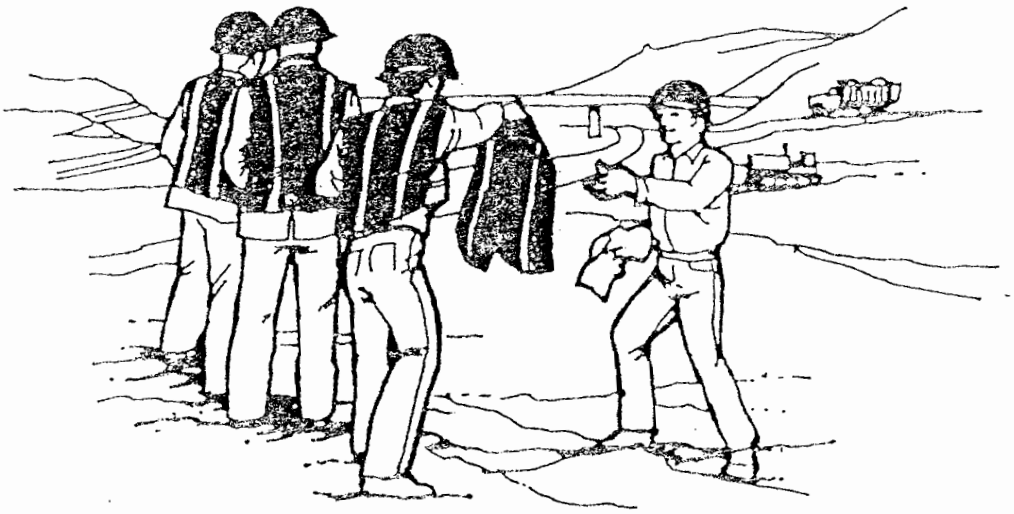
14. A pilot car should be used in addition to the flagger where traffic must be kept in line or at reduced speed over particularly hazardous, or long sections of roadway. The pilot car driver should travel at a speed that is safe and that can be maintained by all vehicles in the convoy. Extreme caution must be used in turning around. Wait until all vehicles have cleared. Pilot car vehicles must have as much visibility as possible. Only passenger cars, carryalls or open pickups are to be used.

It is the duty of the supervisors to see that the instructions in this booklet are followed. You and your crew should not hesitate to identify and correct any carelessness or case of neglect that may lead to an accident.

Before work begins, the safety measures to be taken should be discussed and formulated in detail with immediate supervisors by the supervisor in charge of the work. The selection of persons suitable for traffic control operations should be included in this discussion.

The project traffic plan should provide specific instructions for traffic control throughout the project limits. Particular attention should be given to proper training and awareness of each individual responsible for the traffic control; and to special items such as the proper treatment of emergency vehicles and crews, the correct response to an accident (both with and without bodily injury), etc.

Be proud of your position as a supervisor and be proud of your flaggers and the job they are doing. Be effective in your decisions and continue to give our "boss," the travelling public, the safest and most efficient system of highways possible.



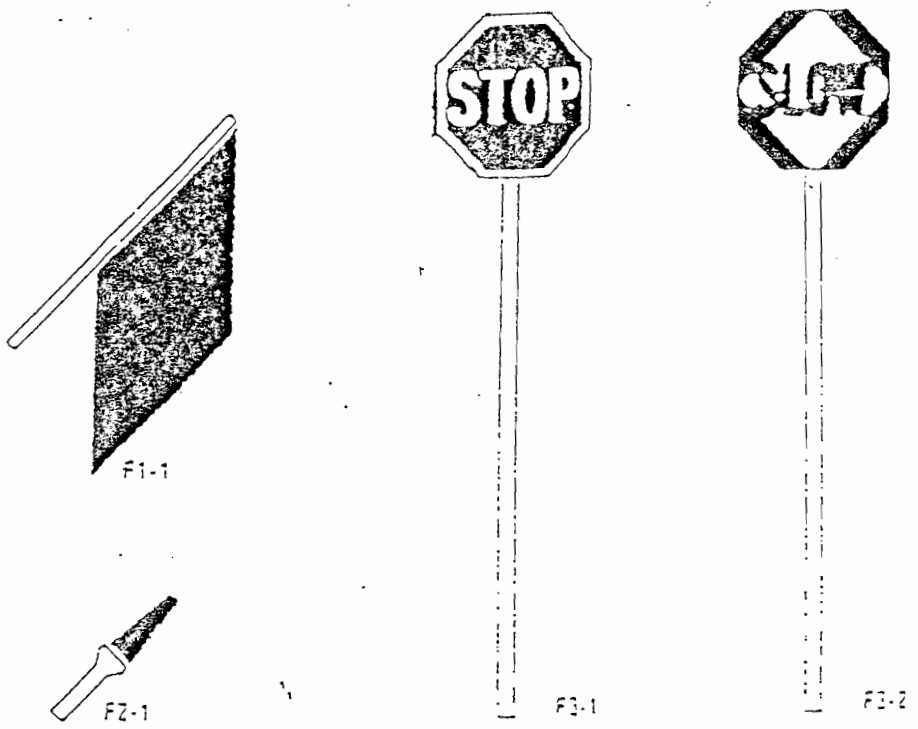
FLAGGING OPERATION

1. SECTION 293.1 - GENERAL

Hand signaling devices are used by flaggers to regulate and warn traffic by indicating whether approaching traffic is required to stop, reduce speed, or proceed.

NYSDOT requires the use of signal paddles, but flags & other devices may be utilized at the discretion of the project E.I.C.

2. SECTION 293.2 - SIGNALING DEVICES



A. APPLICATION

1. The F1-1 signal flag is for use during daylight hours by flaggers to issue signals to oncoming traffic. It may also be used during hours of darkness at a floodlighted flagging station.

2. The F2-1 signal light is for use during hours of darkness by flaggers to issue signals to oncoming traffic.

3. The F3 signal paddle may be used as a substitute for the F1-1 signal flag and F2-1 signal light. However, it shall not be used at locations where display of the F3-2 "slow" paddle face or the F3-1 "stop" paddle face in the opposite direction would be inappropriate or misleading.

B. DESIGN

1. The F2-1 signal flag shall consist of a suitable red material, at least twenty-four (24) inches by twenty-four (24) inches, securely fastened to a staff approximately three (3) feet long. The free edge should be weighted to assure that the flag will hang essentially vertical in moderately windy conditions.

2. The F2-1 signal light shall consist of a steady burning red light visible to approaching traffic for at least five hundred (500) feet. Battery powered flashlight wands are recommended.

3. The F3 signal paddle shall consist of an octagonal panel, at least eighteen (18) inches wide, securely fastened to a staff that will support it at a height of at least five (5) feet. The F3-1 "stop" legend shall be applied to one paddle face in six (6) inch series C white reflectorized letters on a red reflectorized background, with a one-half (1/2) inch white reflectorized border at the edge of the panel. The F3-2 "slow" legend shall be applied to the reverse paddle face in six (6) inch series B black letters on an orange reflectorized diamond-shape background. The portions of the octagon panel beyond the limit of the orange diamond should be black.

C. RELATED DEVICES

Flagger sign (see Section 238.7)

3. SECTION 293.2 - SIGNALING PROCEDURES

A. GENERAL

Subdivisions B through E of this section provide guidance on how to direct traffic. The text and illustrations are directly applicable to situations where only one direction of approaching traffic is controlled. When controlling traffic approaching in both directions, the flagger may adapt the guidelines, as necessary, to effectively control traffic in each direction. When controlling traffic at an intersection, the flagger may adapt the guidelines, as necessary, to effectively control traffic from the various approaches.

B. SIGNALING TRAFFIC TO STOP

1. The flagger should face traffic being directed to stop, holding the signaling device in the hand closer to the traffic flow path.

(a) When an F1-1 red flag is used, it should be extended horizontally and then held in a stationary position over the affectei travel path so that the full flag area is visible below the staff.

(b) When an F2-1 red light is used, it should be extended horizontally and then held in a stationary position so the red light is visible to approaching traffic.

(c) When an F3 paddle is used, it should be turned to display the F3-1 "stop" paddle face toward traffic being directed to stop and then held in a stationary position with the paddle staff resting on the ground.

2. For emphasis, the flagger's free arm may be raised with the open palm of the hand facing traffic being directed to stop.

3. When traffic has compiled with the stop signal, the flagger must display other signals to other traffic approaches before directing the stopped traffic to proceed.

C. SIGNALING TRAFFIC TO PROCEED

1. When an F1-1 red flag or F2-1 red light is used, the flagger should lower the flag or light to a rest position by his or her side, turn his or her body parallel to traffic flow, and direct traffic to proceed with a horizontal motion of the free hand along the traffic flow direction.

2. When an F3 paddle is used, it should be turned to display the F3-2 "slow" paddle face toward traffic being directed to proceed and then held in a stationary position with the paddle staff resting on the ground. For emphasis, the flagger may also direct traffic to proceed with a horizontal motion of the free hand along the traffic flow direction. When traffic in both directions is controlled with an F3 paddle, the flagger should turn to face traffic being directed to stop when the paddle is rotated. When that traffic has complied with the stop signal, the flagger should turn to make the optional "proceed" motion to traffic viewing the F3-2 "slow" paddle face.

D. SIGNALING TRAFFIC TO REDUCE SPEED

1. The flagger should face approaching traffic being directed to reduce speed, holding the signalling device in the hand closer to the traffic flow path.

(a) When an F1-1 red flag or F2-1 red light is used, it should be moved slowly back and forth in an arc between a vertical downward position and a horizontal extended position. The arm should not be raised above shoulder height.

(b) When and F3 paddle is used, the F3-2 "slow" face should be turned toward approaching traffic.

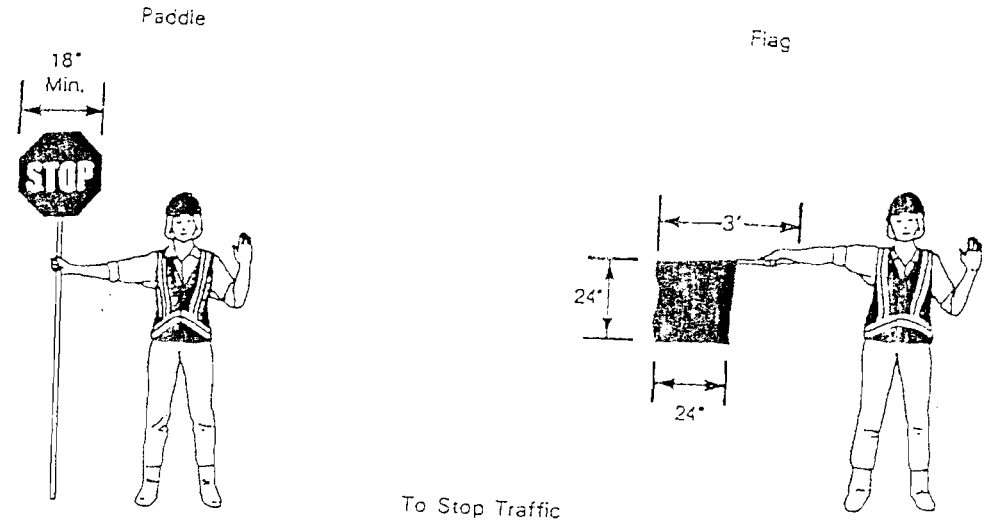
2. For emphasis, the flagger may slowly raise and lower the free hand with the palm down.

E. NO SIGNAL INTENDED

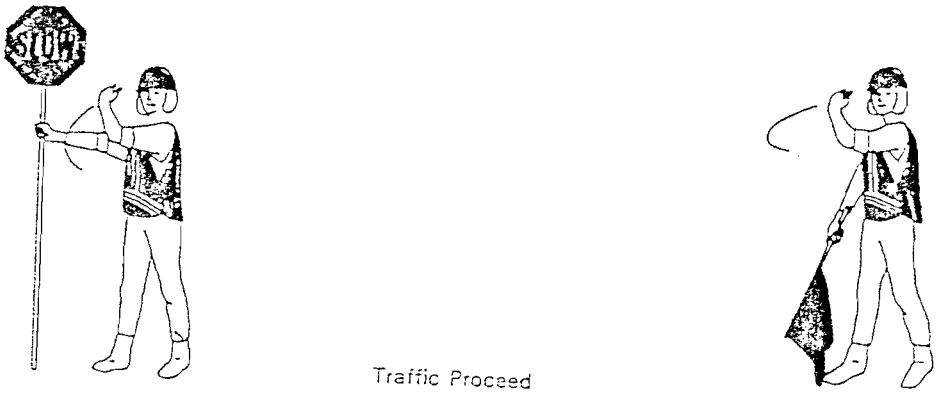
1. When a flagger using an F1-1 flag is not directing traffic, the flag should be held at rest, with the staff in a vertical position at his or her side.

2. When a flagger using an F2-1 red light is not directing traffic, the light should be extinguished or held at rest in a verticle position at his or her side.

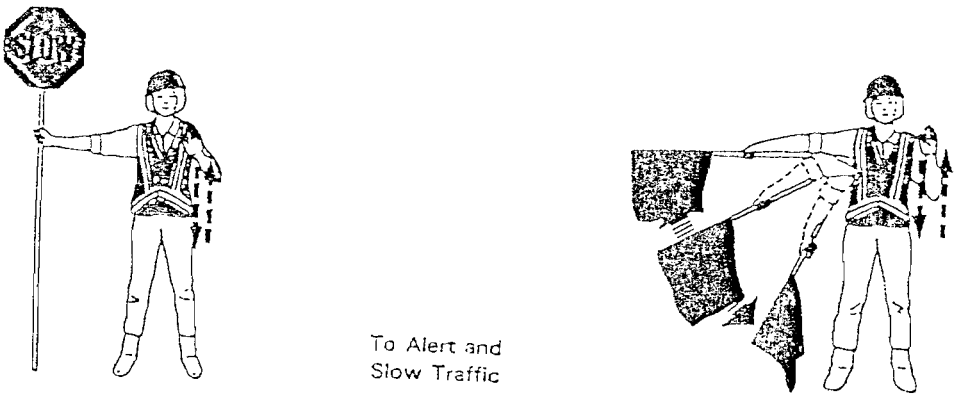
3. When a flagger using an F3 paddle is not directing traffic, the paddle should be removed from view of approaching traffic.



To Stop Traffic



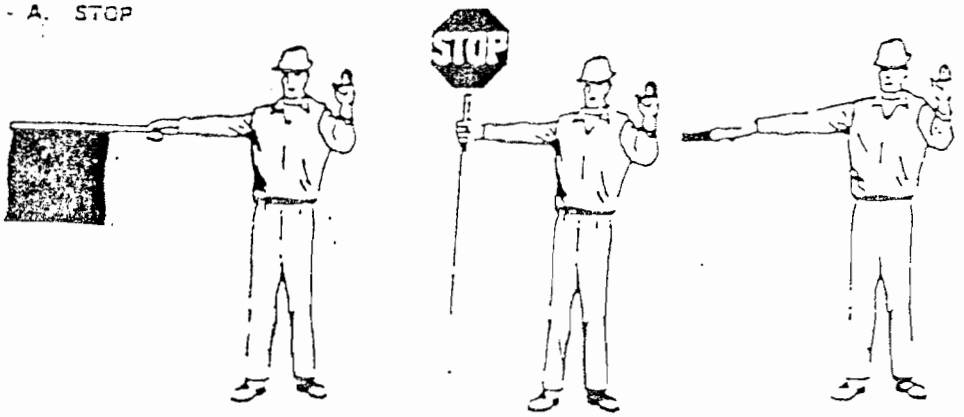
Traffic Proceed



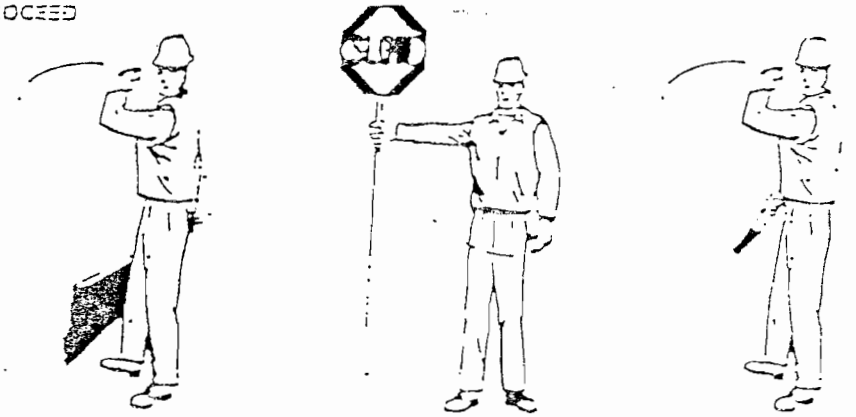
To Alert and
Slow Traffic

Figure VI-4. Use of hand signaling devices by flagger.

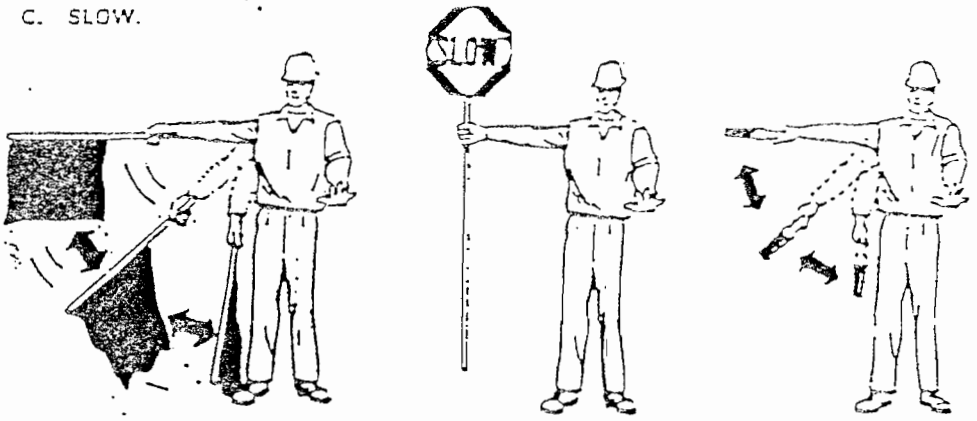
A. STOP



B. PROCEED



C. SLOW.



FIRST AID

First Aid kits are kept in both the Superintendents and Forman's vehicles, that are always on the various Metro-North job sites.

It's an excellent idea for construction workers and for everyone to know first aid fundamentals: how to stop bleeding, start breathing, start a stopped heart beating again, and give any other virtually needed care until professional help arrives.

Whether or not you've had any first aid training, you should know this principle that is too often forgotten in many emergencies: DON'T MOVE ANYONE WHO APPEARS TO BE SERIOUSLY INJURED. Well meaning people often have the impulse to hoist an accident victim to a sitting position, or pointlessly move them from here to there...or from there to here.

The victim of a bad fall, or of some other accident on your project, might have internal injuries or a fractured spine; if so, trying to move him/her needlessly might aggravate the injury -- might permanently cripple, or even kill them!

Wait until experts arrive who will transport the victim to a hospital with a minimum of danger. If the person must be moved to save them from additional danger, try to work a blanket or coat under them, then pull them gently along the ground to a safe location. If they must be lifted, support each part of his/her body so that his/her entire frame is kept in a straight line.

Good first aid is not only knowing what to do--how to stop excessive bleeding, or restore breathing, it's also knowing what not to do--not to move a seriously injured person unless absolutely necessary.

So if someone is ever seriously hurt on the job, see that professional help is called right away--then see that what needs to be done is done...and that what needs not to be done isn't done.

EMERGENCY TREATMENT FOR THERMAL INJURIES

STOP THE BURNING PROCESS!
Extinguish flames - "STOP, DROP, AND ROLL",
- Smother with a blanket
- Douse with water
Remove from source of exposure (avoid self injury).

ASSESS THE NEED FOR CPR and INITIATE if NECESSARY!

CALL EMERGENCY MEDICAL SERVICES!

REMOVE ALL BURNED CLOTHING
Clothing may retain heat and cause further injury.
If clothing sticks to the skin, cut around it.

COOL THE BURNED AREA WITH COOL WATER FOR 3-5 MINUTES.
Do not use ice, it can further the injury or cause the victim to become hypothermic.
If chemicals are present, brush off any dry chemicals and then pour large amounts of cool water over affected areas for 30-40 minutes. (You want to be sure to remove the chemical and not increase its area of contamination).
Use caution to prevent self contamination.

REMOVE ALL JEWELRY AND TIGHT CLOTHING
Burned areas will begin to swell.

COVER BURNS WITH CLEAN, DRY, SHEETS

KEEP THE VICTIM WARN (VERY IMPORTANT)
Apply blankets

CONTINUALLY ASSESS THE NEED FOR CPR UNTIL MEDICAL PERSONNEL ARE PRESENT.

EMERGENCY TREATMENT OF STEAM INJURIES

FOLLOW THERMAL INJURY TREATMENT INSTRUCTIONS.

*WATCH FOR SIGNS OF RESPIRATORY DISTRESS FROM INHALATION OF STEAM:

Hoarseness of voice
Wheezing
Excessive coughing
Swelling of lips and tongue
Burns to face or neck

EMERGENCY TREATMENT OF TAR BURNS

Tar burns are considered "contact burns". The bitumen compound itself is not absorbed and is not toxic.
Removal of tar is not an emergency.
Once the victim is removed from the source, the areas covered with molten tar should be cooled with cool water to reduce the contained heat.

STRUCTURAL CONTRACTING SERVICES, INC.

RESUME

Frank S. Calfa, Jr., P.E.
President
Structural Contracting Services, Inc.

BRIEF OVERVIEW

Mr. Calfa is a Professional Engineer with a background in concrete repair, construction project management and structural design. He is the president and co-founder of Structural Contracting Services, Inc. and is responsible for the management of all structural repair and related specialty work.

Structural repair work includes expertise in various types of repairs to cast-in-place concrete, precast & post-tension concrete, structural steel, heavy timber and masonry. Specialty work includes various surface repair techniques, replacement of traffic bearing expansion joint systems, overlays, strengthening, repairs to failed post-tension cables, chemical grout injection, epoxy injection, compaction grouting, permeation grouting, soil stabilization, exploratory investigations and the installation of various waterproof deck membranes, floor coatings and sealers including epoxies, urethanes, cements and silanes. The repair work has been performed on various facilities including, high rise buildings, parking structures, bridges, tunnels, dams, piers, mass transit facilities, power generating plants, industrial plants, stadiums, airports and treatment plants.

EDUCATION

B.S. Civil Engineering, Polytechnic Institute of New York, June 1981
Cumulative Grade Point Average: **3.78**/4.00
Graduated with honors, Summa Cum Laude
Received the "Theodore Clinton Towl" Award given
to the outstanding graduate in Civil Engineering
Deans List 1978-1981

PROFESSIONAL EMPLOYMENT HISTORY

Structural Contracting Services, Inc., Mt. Vernon, New York		Specialty Contractor
1994-	President	
Structural Preservation Systems, Inc., Hackensack, New Jersey		Specialty Contractor
1991-1994	Division Manager	
1990-1991	Project Manager	
P.J.A. Construction Corporation, Old Westbury, New York		General Contractor
1986-1990	Operations Manager	
1985-1986	Project Manager	
1984-1985	Project Engineer	
Andrews & Clark, Inc., New York, NY		Consulting Engineers
1982-1984	Structural Project Engineer	
1982	Civil Engineer	
Bechtel Power Corporation, Gaithersburg, Maryland		Design/Build Firm
1981-1982	Civil/Structural Engineer	Engineering Division
Ferris-Heck Associates, New York, New York		Consulting Engineers
1979-1981	Assistant Engineer	

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FAX (914) 699-5983
100 PEARL STREET · MT. VERNON, NY 10550-1725

PRINCIPAL EXPERIENCE

- Experienced in the area of structural repair and strengthening including full member replacements, member enlargements, post-tension cable repair, external post-tensioning, bearing modifications, void grouting, masonry anchoring, steel plate bonding and various concrete surface repair techniques.

- Full range of grouting experiences which include the following: Chemical grouting of numerous building foundations, dams, tunnels and tanks using grouts such as urethane gels and foams, acrylates, vinylesters and silicates. Epoxy injection of many structural components such as reinforced concrete beams, girders, walls, flat slab and waffle slabs, as well as heavy timber beams, girders and trusses. Cement grouting has included void filling in block walls & voids below settled concrete floors, penetration grouting, compaction grouting, underpinning and the installation of "mini" piles.

- Waterproofing experience includes the replacement of traffic bearing expansion joint systems, installation of cathodic protection systems, removal & replacement of joint sealants, routing & sealing of cracks and the installation of various waterproof deck membranes, floor coatings and sealers including epoxies, urethanes, cements and silanes.

- Experiences in all aspects of project management including bidding & estimating, control negotiations, contract writing, planning & scheduling, purchasing, quality control and overall job safety.

- Supervised multiple building projects from start to completion as a General Contractor. Duties included supervision of all trades including site work, foundations, structural steel, masonry, carpentry, plumbing, electrical and HVAC.

- Structural Project Engineer involved in preparing plans and specifications for various highway and railroad bridge rehabilitation projects. Work included supervision of junior engineers, technicians and draftsman and the project level. Performed and reviewed engineering computations of structural bridge components in both structural steel and reinforced concrete.

- Prepared plans for pavement reconstruction and railroad work including highway pavement design, horizontal alignment, vertical alignment, pavement striping and signing layout, drainage design and Engineer's estimate.

- Accomplished various engineering functions on Nuclear Power Plants, which included performing analysis and design of many structural components at the division office and inspection and supervision in the field.

- Worked on numerous Engineering Condition Inspection reports for high-rise and low rise buildings. These reports included architectural, structural, mechanical and electrical evaluations on the structures involved.

PROFESSIONAL REGISTRATIONS

Licensed Professional Engineer	New York	No. 62032
Licensed Professional Engineer	New Jersey	No. 34179
Licensed Professional Engineer	Pennsylvania	No. 39414
Licensed Professional Engineer	Maryland	No. 17507
Licensed Professional Engineer	Massachusetts	No. 34893
Licensed Professional Engineer	New Hampshire	No. 7716
Licensed Professional Engineer	Vermont	No. 5762

PROFESSIONAL AFFILIATIONS

Member The National Society of Professional Engineers (NSPE)
Member The New York State Society of Professional Engineers (NYSSPE)
Member The American Society of Civil Engineers (ASCE)
Member National Council of Examiners for Engineering and Surveying (NCEES)
Member Tau Beta Pi, The National Engineering Honor Society (Chapter President 1980-1981)
Member Chi Epsilon, The National Civil Engineering Honor Society (Chapter President 1980-1981)

OTHER AFFILIATIONS

Member Domus Board of Directors, Domus is a group home for youths in need (1996-Present)
Member Assistant Scoutmaster, Troop 78, Rockland County (3/2000-6/2003)
Scoutmaster, Troop 78, Rockland County (6/2003- Present)

STRUCTURAL CONTRACTING SERVICES, INC.

RESUME

Robert D. Anzilotti
Vice-President
Structural Contracting Services, Inc.

BRIEF OVERVIEW

Mr. Anzilotti is a civil engineer and has specialized in the reinforced concrete industry for the past 25 years. He is the Vice-President and co-founder of Structural Contracting Services, Inc. and is responsible for all concrete work related to new construction.

His experience spans all types of concrete construction work from foundations to superstructures, utilizing steel and reinforced concrete designs. Mr. Anzilotti's expertise is in plain, reinforced and post tension concrete construction using various techniques including, precast and poured in place concrete, metal decking, stick forming, gang forming and exposed concrete forming. He worked for the largest high-rise concrete contractor in the 1980's which gave him the knowledge to master the two day cycle. The structures which were built utilizing these methods include high-rise superstructures ranging in size from 36 to 75 stories, low rise structures including parking garages, schools, municipal buildings and hotels.

EDUCATION

M.S. Civil Engineering, Columbia University, New York, N.Y., 1982-1984
Cumulative Grade Point Average: **3.17**/4.00

Foreign Studies, University of Bologna, Italy 1981-1982

B.S. Fordham University, Bronx, N.Y. 1977-1981
Cumulative Grade Point Average: **3.47**/4.00

PROFESSIONAL EMPLOYMENT HISTORY

Structural Contracting Services, Inc., Mt. Vernon, N.Y.		
1994 -	Vice-President	Specialty Contractor
R.C.A. Developers, Inc., Mt. Vernon, N.Y.		
1986 - Present	Owner/President	Builder/General Contractor
Premiere Concrete Structures, Inc., Bronx, N.Y.		Concrete High Rise
1990 - 1992	Secretary-Treasurer	Specialty Contractor
S & A Concrete Co., Inc., Bronx, N.Y.		Concrete High Rise
1984 - 1990	Project Manager	Specialty Contractor
1981 - 1984	Asst. Project Manager	
1977 - 1981	Asst. Superintendent	

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PRINCIPAL EXPERIENCE

Position/Company	Job Name/ Address	G.C. and/or Owner	Description	Year
Asst. Superintendent S & A Concrete	Trump Plaza 63rd St & 3rd	HRH Donald Trump	36 stories Reinforced Concrete	1981
Superintendent S & A Concrete	59th & 10th	LMB Dan Brodsky	55 stories Reinforced Concrete	1985
	City Spire 56th St & 7th	Tishman Bruce Eichner	75 stories Reinforced Concrete	1987
	57th St & Columbus Ave. Reinforced Concrete	HRH	53 stories 1987	
	Metropolis 46th St & B'way	Turner Const. Bruce Eichner	52 stories Metal Deck	1989
Secretary-Treasurer Premiere Concrete	23rd St & 3rd	Rockrose Const. Fred Elghanian	$3.6 million Reinforced Concrete	1990
	Ramada 2 Times Square	HRH Sherwood Equities	$5.8 million Reinforced Concrete	1991
	Transitional Housing	Morris Park Cont. NY Dept Gen. Svs.	$1.4 million Reinforced Concrete	1991
	107th Precinct	Morris Park Cont. NY Dept Gen. Svs.	$1.1 million Reinforced Concrete	1992
Owner-President RCA Developers	P.S. 314 Brooklyn	Herbert Const. NYC S.C.A	$ 680,000 Reinforced Concrete	1993
	John Paul II Apts Harlem	Herbert Const. H.U.D.	$650,000 Reinforced Concrete	1993
	Phillipse Towers Yonkers	Struct. Pres. Sys.	$756,000 Post Tensioned Conc	1993

Antonucci & Associates
Architects & Engineers, LLP
444 Bedford Road
Pleasantville, New York 10570-3031
(914) 773-7740 (212) 244-5060
FAX (914) 773-7739

Robert Antonucci, P.E.
Partner-In-Charge

Robert Antonucci received a Bachelor of Engineering (Mechanical) in 1974 and a Masters of Engineering (Civil) in 1978 from City College of New York. He is a licensed professional engineer in New York, New Jersey and Connecticut. He directly supervises the firm's civil and structural engineering work.

His previous professional work history as an Engineer is as follows:

The State of New York Department of Labor from 1974 to 1975.
The U.S. Department of Labor from 1975 to 1976.
The City of Yonkers Bureau of Housing and Buildings from 1976 to 1981.
He founded Antonucci and Lawless Architects and Engineers, LLP in 1981.
He founded Antonucci & Associates Architects & Engineers, LLP in 1998.

The firm has a staff of twenty-six employees. The firm's Civil/Structural engineers bring to the firm a wide range of experience and design capability.

The office provides structural investigations and analysis, designs and contract administration for both building and civil projects.

Civil Engineering: Environmental projects, soil remediation, retaining systems, shoring, roads, sewers and water supply, subdivisions and bridge restoration and repair.

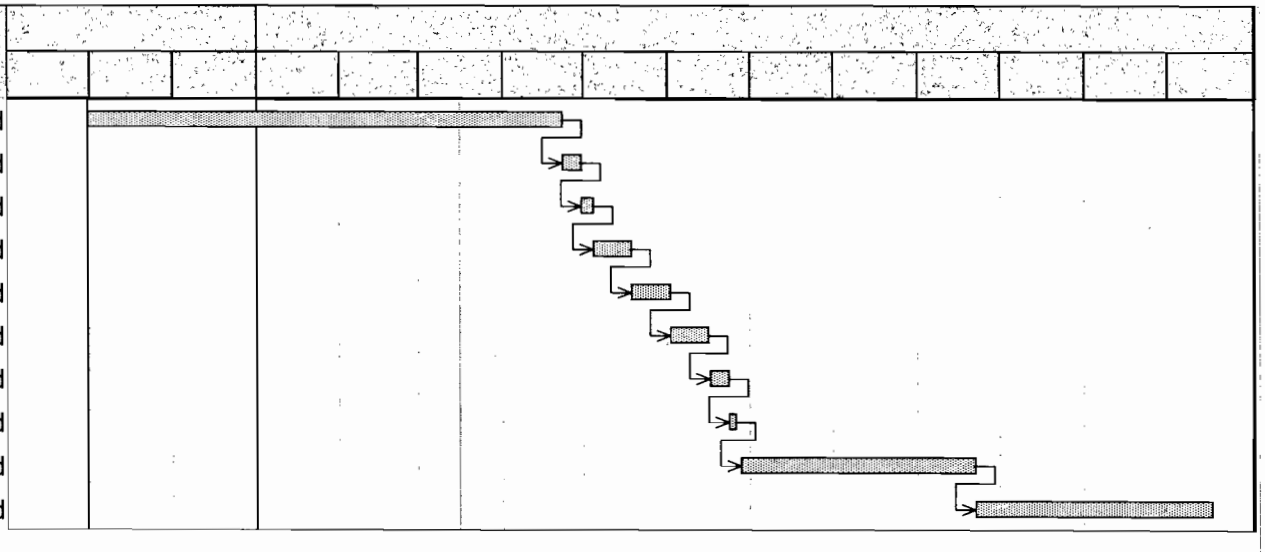
Building Engineering: New steel, concrete, lift slab and post tensioned systems for various building types. Renovations and repairs to the structural systems of existing buildings including facades and windows, and restoration of concrete and steel parking garages.

Clients include municipalities, schools, parking garage owners and operators, apartment house owners, office and retail owners and contractors.

This office is supervised by Robert Antonucci, the Partner in Charge, and is committed to the goal of client satisfaction. Particular attention is paid to providing cost effective and efficient project designs, detailing and to meeting project schedules and budgets.

Preliminary Schedule
Remedial Action Work Plan
31 South Street LLC

Remedial Action Work Plan Approved	120.00d
Prepare Site for Remedial Work	5.00d
Excavation to EL -4'-0"	2.00d
Underpinning to Bedrock Pour "A"	10.00d
Underpinning to Bedrock Pour "B"	10.00d
Underpinning to Bedrock Pour "C"	10.00d
Excavation to Bedrock	5.00d
Placement of Suitable Fill	3.00d
Issuance of Final report	60.00d
Remediation Approval	60.00d



(914) 668-5812 fax (914) 699-5983

31 South Street, LLC

100 Pearl Street - Mt. Vernon, NY 10550-1725

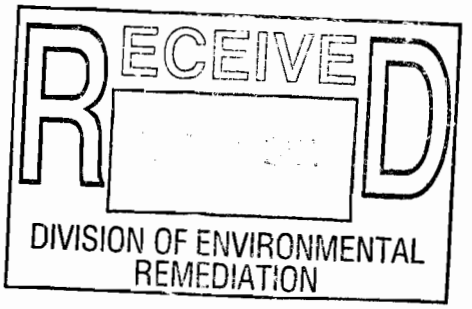
DATE: 17-Mar-04

TRANSMITTAL

PROJECT: 31 South Street, LLC Voluntary Cleanup Agreement

To: Mr. James Candiloro
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7014

GENTLEMEN:



- [X] We Are Enclosing
- [ ] We Are Sending Under Separate Cover
- [ ] For Approval
- [ ] Revised
- [ ] For Final Approval
- [ ] For Your Use
- [ ] Approved As Noted
- [ ] For Correction
- [ ] At Your Request
- [ ] Approved
- [ ] Resubmission
- [ ] For Distribution
- [ ] Disapproved
- [ ] Samples
- [ ] For Your Information

No. Copies	Drawing No.	Dates	Prepared By	TITLE
3		17-Mar		Remedial Action Work Plan

REMARKS:

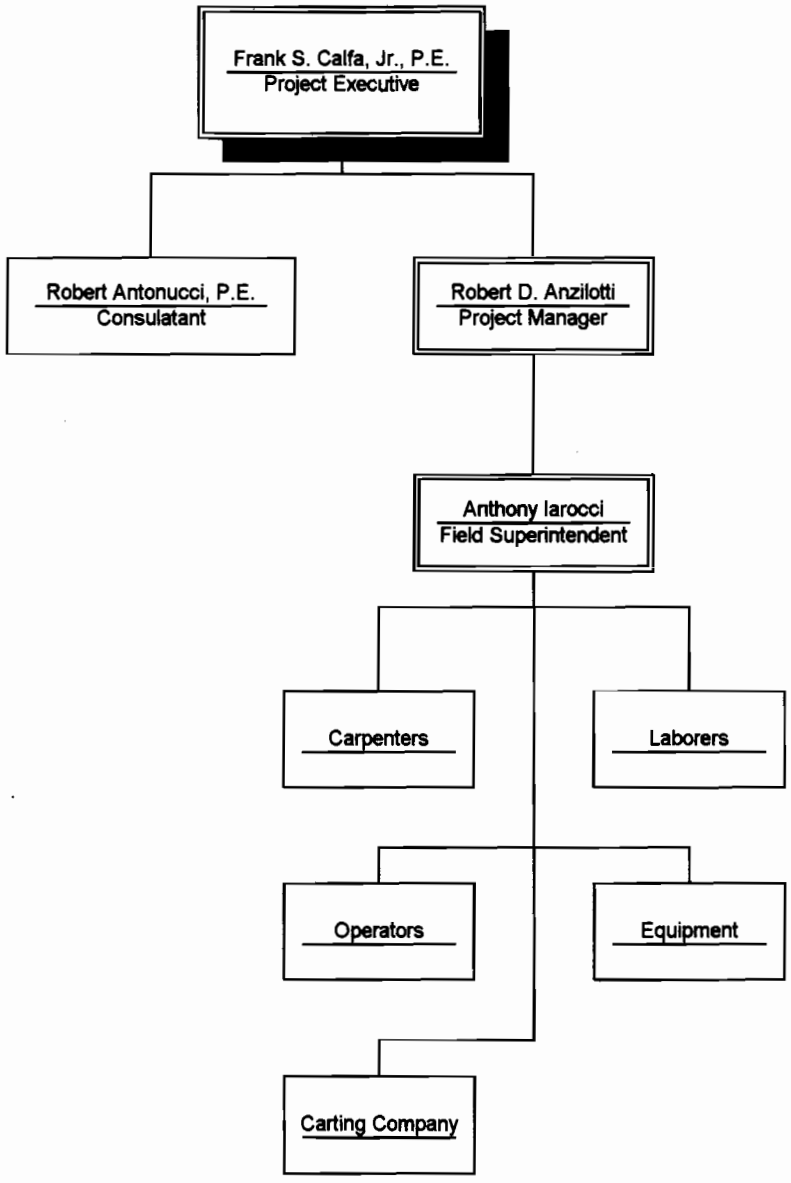
BY: Frank S. Calfa, Jr., P.E.

Voluntary Cleanup Program

31 South Street, Mt. Vernon, NY [redacted]

Site Number V00645-3

Index Number W3-0955-03-04



31 South Street LLC.

Remedial Action Work Plan
Project Organizational Chart

Oct 29, 2003