FINAL

WORK PLAN
Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center)
Alameda Point, Alameda, California

Environmental Remedial Action
Contract Number N62474-98-D-2076
Contract Task Order 0107

Document Control Number 8947
Revision 0

March 7, 2005

Submitted to:

Base Realignment and Closure
Program Management Office West
1230 Columbia Street, Suite 1100
San Diego, California 92101

Submitted by:

Shaw Environmental, Inc.
4005 Port Chicago Highway
Concord, California 94520-1120

Shaw Environmental, Inc.

SHAW TRANSMITTAL/DELIVERABLE RECEIPT

CONTRACT : N62474-98-D-2076 **DOCUMENT CONTROL NUMBER : 8947.0**

TO: Administrative Contract Officer
Base Realignment and Closure
Program Management Office West
Ronald Fuller, AQE.RF
1230 Columbia Street, Suite 1100
San Diego, CA 92101

Date : March 10, 2005

CTO : 0107

Location: Alameda

FROM:
John McGuire
Project Manager

DESCRIPTION OF ENCLOSURE : ***Final Work Plans for Time Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center) Alameda Point, Alameda, Dated March 7, 2005***

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Date/Time Received _____ / _____

DEPARTMENT OF THE NAVY
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5090
Ser BPMOW.DN\0498
March 9, 2005

Ms. Anna-Marie Cook
US EPA
Region 9
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Ms. Cook:

This letter transmits the *Draft Action Memorandum, Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center) Alameda Point, Alameda, California*, and the *Final Work Plan, Time-Critical Removal Action at IR Site 30 (Miller school/Woodstock Child Development Center) Alameda Point, Alameda, California.*

These documents identify: the method for implementing field work, and a Time Critical Removal Action (TCRA) interim remedy for soil at Installation Restoration Site 30; the George P. Miller Elementary School and Woodstock Child Development Center.

If you have any questions, please call Mr. Darren Newton, Remedial Project Manager at (619) 532-0963.

Sincerely,

THOMAS L. MACCHIARELLA
BRAC Environmental Coordinator
By direction of the Director

Encl: (1) Draft Action Memorandum, Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center) Alameda Point, Alameda, California, (2 copies)

(2) Final Work Plan, Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center) Alameda Point, Alameda, California (2 copies)

5090
Ser BPMOW.DN\0498
March 9, 2005

Copy to:
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FINAL

WORK PLAN

Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center)
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Approved By: _____ Date: March 1, 2005

John McGuire
Shaw Environmental, Inc.
Project Manager

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Acronyms and Abbreviations

µg/kg	microgram(s) per kilogram
B(a)P	benzo(a)pyrene
BCT	Base Realignment and Closure Cleanup Team
Cal EPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSO	Caretaker Site Office
CTO	Contract Task Order
IR	Installation Restoration
IT	IT Corporation
Miller School	George P. Miller Elementary School
Navy	U.S. Department of the Navy
PAH	polynuclear aromatic hydrocarbon
RAB	Restoration Advisory Board
RI	remedial investigation
ROICC	Resident Officer in Charge of Construction
SWDiv	Southwest Division
TCRA	time-critical removal action
U.S. EPA	U.S. Environmental Protection Agency
U.S.C.	U.S. Code
WCDC	Woodstock Child Development Center

1.0 Introduction

This Work Plan describes the approach and field activities for a time-critical removal action (TCRA) to mitigate the risk of potential human health exposure to polynuclear aromatic hydrocarbons (PAHs) at Installation Restoration (IR) Site 30 in Alameda Point, Alameda, California (Figure 1). The *Draft, Action Memorandum, Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center) Alameda Point, Alameda, California* (Shaw Environmental, Inc., 2005a), documents, for the Administrative Record, the decision of the U.S. Department of the Navy (Navy) to undertake this TCRA. Shaw has prepared this plan on behalf of the Southwest Division (SWDiv) of the Navy under Remedial Action Contract Number N62474-98-D-2076, Contract Task Order (CTO) 0107. Because of the urgency of the situation, field implementation of the removal action was executed at the site prior to completion of this plan. The Navy undertook the action pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response actions, including removal actions, under 42 U.S. Code (U.S.C.) Section 9604 and 10 U.S.C. Section 2705, which is consistent with the National Oil and Hazardous Substances Pollution Contingency Plan, 40 Code of Federal Regulations Part 300. The authority to undertake CERCLA response actions by the Department of Defense was granted via Federal Executive Order 12580.

IR Site 30 is occupied by the Woodstock Child Development Center (WCDC), the George P. Miller Elementary School (Miller School), and a temporary structure. Investigations conducted at the site indicated the presence of PAH concentrations above 620 micrograms per kilogram (µg/kg), a human-health screening criterion, in the soil. The source of the PAHs in the soil may have been originated from former petroleum-related industrial activities occurring in the region before the Navy occupied the area.

Potential on-site receptors to the PAH concentrations in soil are primarily the children who attend WCDC and Miller School and the adults who work there. Since there are unpaved areas where the children have unrestricted access, the presence of PAH concentrations in the underlying soil in some of these areas would pose a potential threat to the health of the children at the site. As such, a removal action was deemed necessary to reduce this potential threat of exposure to PAHs.

This Work Plan is organized as follows:

- **Section 1.0: Introduction**
  - Discusses project objectives and outlines the organization of this Work Plan

- **Section 2.0: Site Conditions and Background**
  - Provides a site description and general background information on the site
- **Section 3.0: Field Activities**
  - Describes support, and removal and construction activities
- **Section 4.0: Environmental Protection**
  - Describes actions to protect environmental resources
- **Section 5.0: Project Management**
  - Discusses key SWDiv and Shaw project personnel
- **Section 6.0: Submittals**
  - Presents submittal requirements
- **Section7.0: References**
  - Lists cited documents within this Work Plan

Since no sampling and analyses are associated with this work, no Sampling and Analysis Plan has been prepared. The requirements described in the *Internal Draft, Site Health and Safety Plan, Time-Critical Removal Action at Installation Restoration Site 30, George P. Miller School and Woodstock Child Development Center, Alameda Point, Alameda, California* (Shaw, 2004), with current activity hazard analyses, and the *Final Quality Control Plan, Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center) Alameda Point, Alameda, California,* (Shaw, 2005b) will be followed during field work.

2.0 Site Conditions and Background

This section describes the site location, site characteristics, releases or threatened releases of a hazardous substance or contaminant into the environment, the site's National Priorities List status, other actions taken at the site to date, and the role of state and local authorities at the site (Shaw, 2005a).

2.1 Site Description

IR Site 30 is located in the northeastern section of Alameda Point, California and covers approximately 7 acres of land (Figure 1). Much of the site is paved open space and was historically used for storage and parking. The site is currently occupied by WCDC, Miller School, and a temporary structure of unknown use. The entire site is fenced, with gated access for personnel and vehicles. Surrounding the site are mostly residential dwellings. The subsurface is sand- to silt-dominated artificial fill. Ground elevation in this region is approximately 10 feet above mean sea level.

The site is situated within developed areas of Alameda Point (Figure 2). On the north end of the site is Singleton Avenue that separates IR Site 30 from IR Site 25. IR Site 31 borders the site on the south and the west.

2.2 Removal Site Evaluation

The site was included in the IR program after results of sampling conducted as part of a remedial investigation (RI) at IR Site 25 (an adjacent IR site) suggested PAH contamination at the properties of WCDC and Miller School. Subsequent investigation findings confirmed the presence of PAHs at the site. PAH concentrations, expressed as benzo(a)pyrene (B[a]P) equivalents, were detected above 620 µg/kg at the site during the basewide PAH assessment conducted in 2002. The concentration value is the lower bound of a basewide human-health screening criteria range established in 2001.

Unpaved ground surface exists in various locations, such as the play areas. These areas are frequently used by the children. As such, potential exposure by children to PAHs in the soil in these areas could occur via direct contact and ingestion of contaminated soil and inhalation of contaminated dust particles. Therefore, it is critical to eliminate these potential exposure pathways to reduce the threat to the health of the children.

2.3 Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant, or Contaminant

Historical site investigations and sampling results confirmed the presence of PAHs in on-site soil. During an RI conducted at the nearby IR Site 25 in May 2001, soil samples collected in an area between WCDC and Miller School contained PAH concentrations. In 50 percent of the samples analyzed, concentrations of PAHs above 620 µg/kg were detected. In a site inspection conducted in 2003 at IR Site 30, soil sampling results identified an area of concern within the IR site where elevated PAH concentrations were found in the previous investigation. In the same year, a PAH-specific assessment performed at 19 IR sites and 3 parcels at Alameda Point confirmed the presence of PAHs in the soil at IR Site 30, with 19 percent of B(a)P equivalent concentrations that were calculated from the site sampling results above 620 µg/kg.

2.4 Other Actions to Date

Other actions conducted to date at the site include the performance of an RI to determine the nature and extent of soil contamination by non-PAH chemical substances and an ongoing investigation of a regional groundwater contamination on and off site.

2.5 Federal, State, and Local Authorities' Roles

Alameda Point is part of a federal facility. Section 120(f) of CERCLA and 10 U.S.C. Section 2705 require that the Navy gives appropriate federal, state, and local officials the opportunity to participate in the planning and selection of remedial actions at Naval facilities. The Navy and U.S. Environmental Protection Agency (U.S. EPA) have entered into a Federal Facilities Agreement for Alameda Point. The Navy is the lead agency while the U.S. EPA is the lead regulatory agency. The U.S. EPA reviews and comments on the Navy's CERCLA response activities at Alameda Point. Implementation of this TCRA has been in consultation with the U.S. EPA.

Regulatory oversight of the Navy's environmental restoration program at Alameda Point is also provided by California Environmental Protection Agency (Cal EPA). The Department of Toxic Substances Control, Regional Water Quality Control Board, San Francisco Bay Region, Cal EPA, U.S. EPA and the Navy are members of the Base Realignment and Closure Cleanup Team (BCT), which provides concurrence and technical input during the planning and implementation of site investigation, feasibility studies, removal actions, and remediation activities. The BCT has been involved in the oversight of this TCRA.

Implementation of the TCRA has also been conducted in close coordination with the Alameda Unified School District and the Alameda Point Restoration Advisory Board (RAB). The Alameda Point RAB consists of members of the community who advise the BCT on environmental cleanup issues and strategies at Alameda Point.

3.0 Field Activities

Field activities include support, and removal and construction activities as discussed in the following sections.

3.1 Support Activities

The following activities will be conducted, as necessary, to support the removal and construction activities:

- Planning and notification
- Fencing
- Underground utility clearance
- Decontamination
- Demobilization

3.1.1 Planning and Notification

Planning and agency notifications are key phases needed for field activity preparation. Planning activities for field work may consist of meetings with the regulatory agencies and the Navy prior to field activities. The Alameda Unified School District, and WCDC and Miller School staffs will be kept informed of progress, as required.

3.1.2 Fencing

Temporary chain-link fences with locked gates will be placed around work areas to prevent child and unauthorized access will be erected. The driveway at WCDC will be partially fenced off to provide a staging and lay down area. Existing permanent fences may be disassembled to provide adequate access to work areas, as necessary. These fences will be restored to their original condition prior to demobilization.

3.1.3 Underground Utility Clearance

Although removal activities will occur in shallow areas and in areas believed to be free of underground utilities, Underground Service Alert will be contacted to mark subsurface utilities.

3.1.4 Decontamination

Equipment and material decontamination will be performed, as necessary, in accordance with IT Corporation (IT) Standard Operating Procedure 6.2, "Drilling and Heavy Equipment Decontamination" (IT, 2000). Equipment will be dry-decontaminated, if possible. This may include scrapping off gross contamination and wiping surfaces clean.

3.1.5 Demobilization

Upon completion of removal and construction activities, the site will be returned to its original condition, as reasonable. Special attention will be paid to ensure site cleanliness and safety to protect the children. Temporary fencing will be removed.

3.2 Removal and Construction Activities

Removal and construction will accomplished as described in these sections. No compaction testing is required. Work hours may be restricted around WCDC and Miller School hours, which may include weekend and holiday work.

3.2.1 Removal

Two rectangular play areas at WCDC and two play areas at Miller School are filled with an average of approximately 6 to 14 inches of woodchips (Figure 3). All of these woodchips will be removed and disposed. The circular play area at WCDC is filled with approximately 12 inches of play sand, which will be removed and disposed. Vegetation and 6 inches of soil in the unpaved perimeter areas on the north, west, and south of the WCDC building will be removed and disposed of, except that the trees along the north and west, and the bush in the southwest corner are to remain. The irrigation system in this area will be removed and later restored. Vegetation and 2 feet of soil will be removed and disposed of from a 5-foot by 5-foot area centered on a previous soil boring (C3S030B068) location south of the WCDC building.

3.2.2 Construction

The two rectangular play areas at WCDC will be restored with playground woodchips. After the existing woodchips have been removed, the exposed soil will be compacted, if necessary, and graded level. A water permeable liner will be placed over the soil. Woodchips will then be filled to pavement level.

Half of the circular play area at WCDC and both play areas at Miller School will be backfilled, compacted and graded with bedding sand to 4 inches below existing grade. A total of 3,000 pounds per square inch of concrete will be poured and finished to match surrounding concrete pavement. Since these play areas are limited to pedestrian traffic, dowels, matting or reinforcement bars, and construction joints will not be installed. The unpaved half of the circular play area will be restored with playground sand. The exposed soil will be compacted, if necessary, and graded level. A water permeable liner will be placed over the soil. Playground sand will then be added to fill the circular play area to pavement level.

The unpaved perimeter on the north, west and south of the WCDC building will be restored with synthetic turf. The exposed soil will be compacted, if necessary, and graded level. A water permeable liner will be placed over the soil. The irrigation system will be restored from the

existing supply lines to the remaining trees along the north and west, and the bush in the southwest corner. Wood planter boxes will be installed around these trees and bush and partially filled with playground woodchips. Bedding sand will be placed, compacted and graded over the water permeable liner to a level required by the synthetic turf manufacturer's installation instructions. The remainder of the subgrade, and the synthetic turf and its components will be installed per the manufacturer's installation instructions.

3.3 Waste Management

All removed solid waste (wood chips, play sand, soil and vegetation) will be disposed of as non-hazardous solid waste. Other solid waste, including playground equipment and waste generated during construction activities will disposed of as general trash. It is anticipated that no liquid waste will be generated.

4.0 Environmental Protection

Work will be performed in a manner that minimizes the pollution of air, water, and land resources and complies with federal, state, and local regulations. For the purpose of this project, environmental protection is defined as maintaining the environment in its current state and enhancing or restoring the appearance of disturbed sites after construction activities are completed. This includes protection of air, water, and land resources. Also included are management of noise; visual aesthetic; natural, historical, and archeological resources; and liquid and solid wastes. Appendix A serves as the Environmental Conditions Report.

4.1 Protection of Air Resources

Removal and construction activities will be conducted in a manner that minimizes the release of airborne particulates.

4.1.1 Dust Control and Particulate Control

Work will be performed in accordance with applicable California and Federal air pollution regulations. If necessary, water will be sprayed on excavated areas, stockpiles, equipment, and other dusty surfaces to control fugitive dust.

4.1.2 Burning

The Site Health and Safety Specialist will issue hot work permits for work, which requires an open flame or poses a potential fire hazard. The Caretaker Site Office (CSO), Resident Officer in Charge of Construction (ROICC), and the local fire department will be kept informed, as necessary.

4.1.3 Noise Standards

Personnel in the work areas will comply with Occupational Safety and Health Administration and applicable state noise standards and will wear appropriate hearing protection. Efforts will be made to locate operating equipment, such as the generators, away from personnel working in the vicinity.

4.2 Protection of Surface and Groundwater Resources

Activities will be conducted in a manner that will significantly reduce the likelihood of discharge of pollutants and will minimize the impact to water resources and soil within and outside the work areas.

4.2.1 Spill Prevention

Although potentially contaminated liquids are not expected to be released, the following spill prevention measures will be undertaken, if required:

- All equipment, hoses, and piping will be periodically monitored visually for leaks and drips.
- Equipment decontamination with water will occur in a lined and bermed area that is designated specifically for decontamination.
- Decontamination water will be stored in drums or other regulation containers within lined, bermed areas.

4.2.2 Spill Response

Shaw will maintain an inventory of the following equipment and materials for use in the event of a hazardous material spill or release:

- Absorbent pads
- Granular absorbent material (noncombustible)
- Polyethylene sheeting
- 55-gallon drums
- Shovels and assorted hand tools

In the event of a release or spill of hazardous material that may impact air, soil, or water (on site or off site), CSO and ROICC representatives and the local fire department or hazardous materials unit will be immediately notified. An assessment will be made of the magnitude and potential impact of the release. If it is safe to do so, site personnel will attempt to locate the source of the release, prevent further release, and contain the spilled materials as follows:

- The spill area will be approached cautiously. The material and associated hazards will be identified based on available information from witnesses to determine the proper personal protection levels, methods, and equipment necessary for the response.
- The source of the spill will be controlled by shutting off pumps, plugging or closing valves, righting containers or drums, or transferring contents of leaking tanks or drums will be implemented immediately.
- If fuel is spilled, Shaw personnel will impose a 50-foot-radius rule, and all sources of ignition will be eliminated.
- If possible, spill containment will be made, initially, without entering the immediate release area.
- Spill containment and collection will be performed by using absorbent materials and constructing temporary dikes.

- Collected material will be properly characterized and disposed, if necessary.

If Shaw personnel cannot safely and sufficiently respond to an environmental release, assistance from the fire department hazardous material unit will be employed.

4.3 Storm Water Management

As a precaution against runoff and sedimentation entering storm drains, Shaw personnel will place temporary seals (plastic and geotextile) over storm drain inlets that could be affected. Where large volumes of runoff are expected, secondary containment (e.g., hay bales, waddles) will be installed around work areas or stockpiles.

4.4 Protection of Land Resources

The impact to land resources within and outside the work areas will be minimized.

4.4.1 Landscape Protection

If any land resources that require preservation are identified, they will be marked and isolated with fencing, barriers, or other physical protection, as needed.

4.4.2 Historical and Archeological Finds

Shaw is not aware of any structures and/or artifacts of historical importance within the work area. If any item is discovered that could be of historical or archeological interest, it will be carefully preserved in an undisturbed state. The Project Superintendent will immediately report any findings to the CSO and ROICC so that proper authorities may be notified.

4.4.3 Animals

In the developed areas, typical urban wildlife, such as California ground squirrels, scrub jays, and American robins, may be observed. Although some federal- and state-designated threatened or endangered species may be present at Alameda Point, none are expected to nest or frequent the site. If observed, the Project Superintendent will immediately report any findings to the CSO and ROICC so that proper authorities may be notified.

5.0 Project Management

Ms. Darren Newton, of SWDiv, is the Remedial Project Manager and has overall responsibility for coordinating the efforts of Shaw. He is responsible for interfacing with the regulatory agencies and Navy management, and ensuring the overall quality of the work.

Mr. John McGuire is the Shaw Project Manager for this TCRA. Shaw is responsible for working with the Navy to develop the technical approach in support of the project objectives and implementing the field work for this Work Plan.

6.0 Submittals

This section summarizes the documentation and submittals that will be generated as part of this CTO.

6.1 Action Memorandum

Shaw will submit Action Memoranda to SWDiv as follows:

- Preliminary Draft, 45 days after contract award
- Draft, 7 days after receipt of Navy comments
- Draft Final, 30 days after receipt of agency comments
- Final, 60 days after receipt of agency comments on Draft Final

6.2 Project Plans

Shaw will submit this Work Plan, the Site Health and Safety Plan, and the Quality Control Plan to SWDiv.

6.3 Project Closeout Report

Shaw will submit Project Closeout Reports to SWDiv as follows:

- Internal Draft, 30 days after completion of field work
- Final, 30 days after receipt of Navy comments

7.0 References

IT Corporation, 2000, *Standard Operating Procedures Manual*, August.

Shaw Environmental, Inc., 2004, *Internal Draft, Site Health and Safety Plan, Time-Critical Removal Action at Installation Restoration Site 30, George P. Miller School and Woodstock Child Development Center, Alameda Point, Alameda, California*, November 16.

Shaw Environmental, Inc., 2005a, *Draft, Action Memorandum, Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center) Alameda Point, Alameda, California*, March 7.

Shaw Environmental, Inc., 2005b, *Final Quality Control Plan, Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center) Alameda Point, Alameda, California*, March 7.

Figures

IMAGE	X-REF	OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
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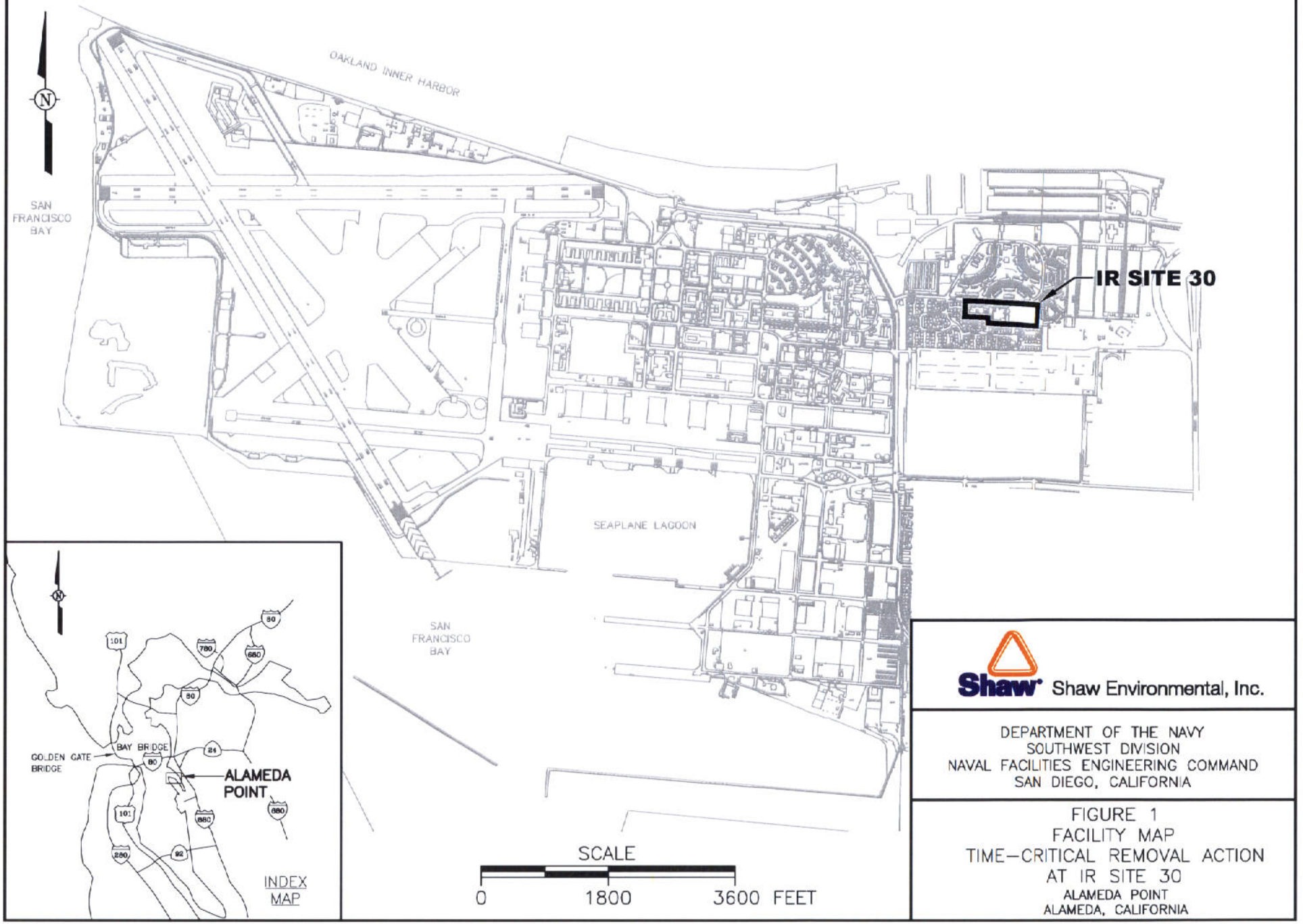

Shaw Environmental, Inc.

DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

FIGURE 1
FACILITY MAP
TIME-CRITICAL REMOVAL ACTION
AT IR SITE 30
ALAMEDA POINT
ALAMEDA, CALIFORNIA

IMAGE	X-REF	OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
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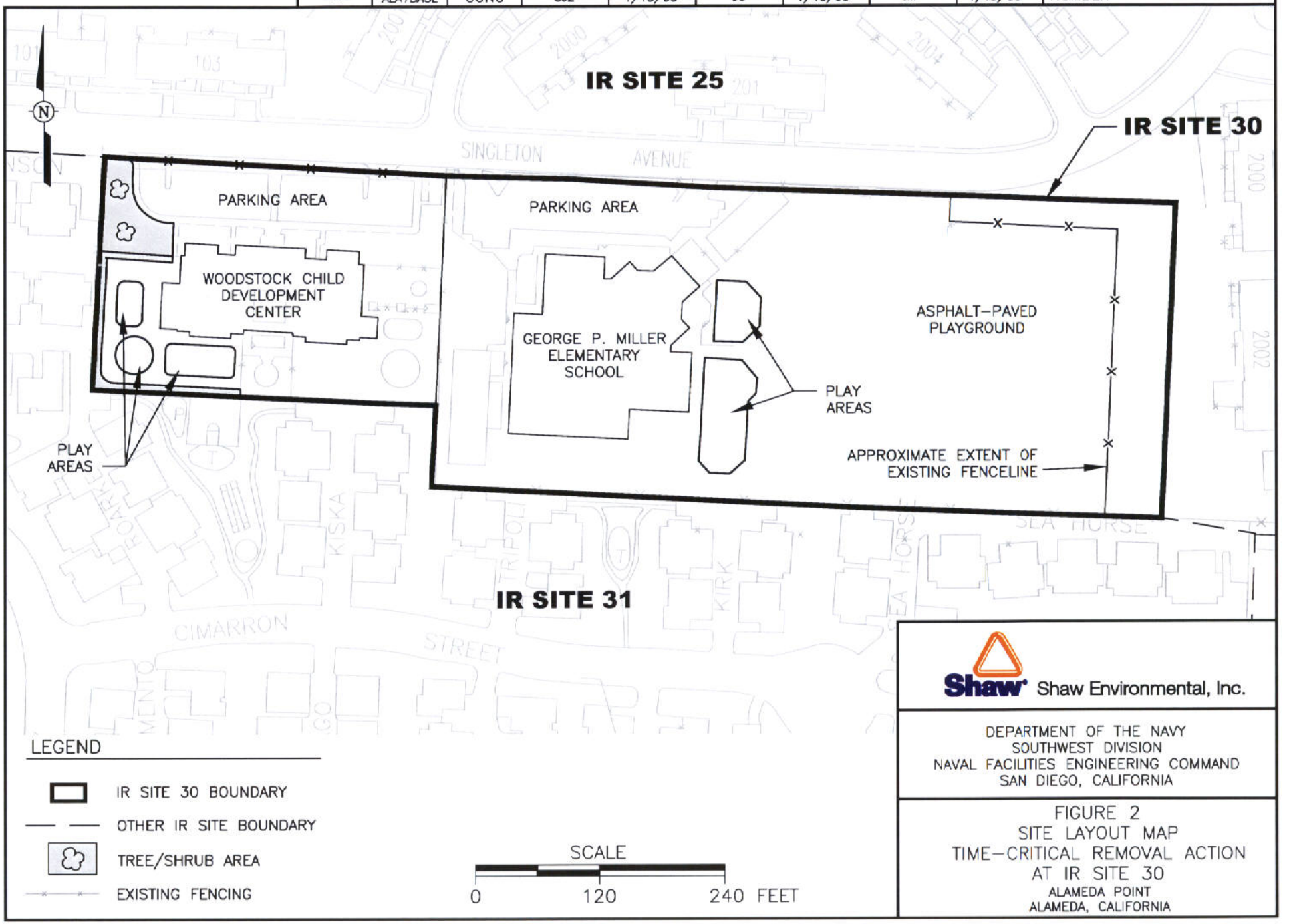

Shaw Environmental, Inc.

DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

FIGURE 2
SITE LAYOUT MAP
TIME-CRITICAL REMOVAL ACTION
AT IR SITE 30
ALAMEDA POINT
ALAMEDA, CALIFORNIA

IMAGE	X-REF	OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
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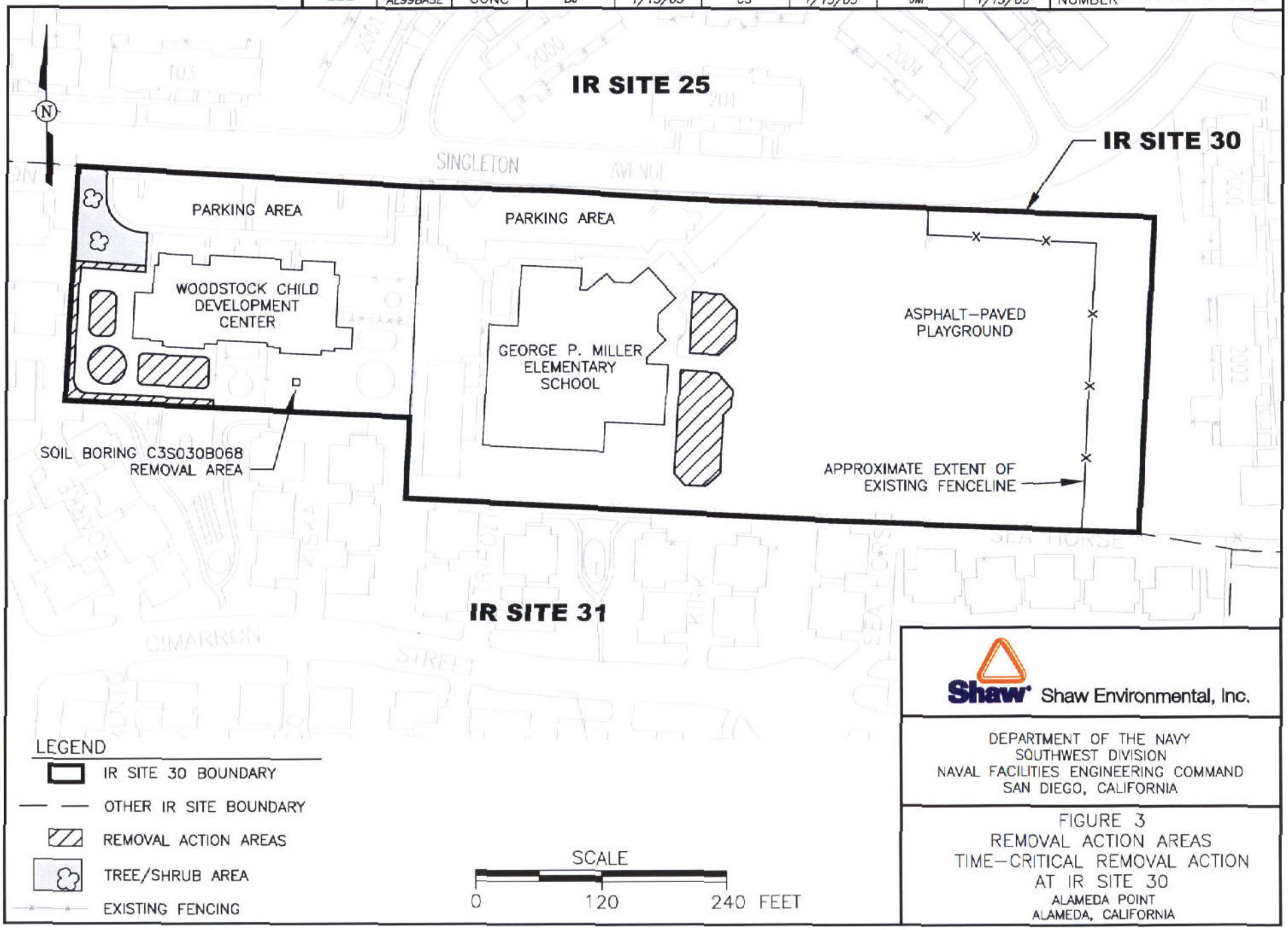

Shaw Environmental, Inc.

DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
SAN DIEGO, CALIFORNIA

FIGURE 3
REMOVAL ACTION AREAS
TIME-CRITICAL REMOVAL ACTION
AT IR SITE 30
ALAMEDA POINT
ALAMEDA, CALIFORNIA

Appendix A
Environmental Conditions Report

Environmental Conditions Report

Photo No. 1: Front Woodchip Play Area at WCDC, looking northwest.

Photo No. 2: Western Perimeter Area at WCDC, looking south.

Photo No. 3: Circular Play Area at WCDC, looking east.

Photo No. 4: Back Woodchip Play Area at WCDC, looking east.

Photo No. 5: Southern Perimeter Area at WCDC, looking east.

Photo No. 6: Play Areas at Miller School, looking south.

Photo No. 7: Northern Play Area at Miller School, looking northeast.

Photo No. 8: Southern Play Area at Miller School, looking north.

FINAL

SITE HEALTH AND SAFETY PLAN
Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center)
Alameda Point, Alameda, California

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Submitted to:

Base Realignment and Closure
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Revision 0

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Approved by: _____ Date: March 1, 2005
John McGuire
Shaw Environmental, Inc.
Shaw Project Manager

Approved by: _____ Date: March 2, 2005
Fredrick J. Mlakar, CIH
Shaw Program Certified Industrial Hygienist

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List of Attachments

Abbreviations and Acronyms

CIH	Certified Industrial Hygienist
CPR	cardiopulmonary resuscitation
CTO	Contract Task Order
Miller School	George P. Miller Elementary School
MSDS	material safety data sheet
PS	Project Superintendent
SHSS	Site Health and Safety Specialist
SHSP	Site Health and Safety Plan
WCDC	Woodstock Child Development Center

Policy Statement

Shaw Environmental, Inc., maintains a policy of providing a safe and healthful work environment for all employees and subcontractors. No phase of operations or administration is afforded greater importance than injury and illness prevention. Safety takes precedence over expediency or shortcuts, and all reasonable precautions will be taken to reduce the possibility of injuries, illnesses, or accidents.

This Site Health and Safety Plan (SHSP), in conjunction with the *Program Health and Safety Plan for Environmental Remedial Actions* (Contract No. N62474-98-D-2076), describes the procedures that Shaw will follow during project operations. Operational changes that could affect the health or safety of personnel, the community, or the environment will not be made without the prior approval of Shaw's Program Certified Industrial Hygienist (CIH). The provisions of this SHSP are mandatory for all Shaw personnel, Project Managers, and subcontractor personnel working on this project.

Objective

The objective of this SHSP is to provide the guidelines for the contract task orders (CTOs) issued under contract with the Department of the Navy, Engineering Field Activity (EFA)–West. The procedures and guidelines presented herein are based on the best information available at the time of plan preparation. This SHSP describes the specific health and safety requirements and procedures that Shaw will use while conducting fieldwork.

An SHSP is developed for each CTO. In combination with the *Program Health and Safety Plan for Environmental Remediation Actions* and the Shaw *Health and Safety Policies and Procedures Manual*, this SHSP serves as the *Code of Safe Work Practices.* All of these documents are required to be on site and available for immediate reference. Collectively, these documents present the essential elements of the health and safety program for each project site. Section 1.0 of this SHSP describes the project site and the scope of work.

Changes to the SHSP must be approved by the Site Health and Safety Specialist (SHSS), the CIH, and the Project Manager or Project Superintendent and documented on the Site-Specific Health and Safety Plan Amendment Form (Attachment 1). The Navy Technical Representative may acknowledge the change but is not required to sign the form.

Site Health and Safety Plan Acknowledgment _____

I understand and agree to abide by the provisions detailed in the Program Health and Safety Plan and this SHSP for the activities described in the project work plans. I understand that failure to comply with these provisions could lead to disciplinary action, which could include dismissal from the work site, termination of employment, or termination of subcontractors' contracts.

Printed Name	Company	Signature	Date

1.0 Site Description and Scope of Work

This Site Health and Safety Plan (SHSP) presents the policies and procedures established to protect workers and the public from potential hazards posed by site work. Shaw Environmental, Inc. considers safety the highest priority during work at a site containing potentially hazardous conditions and has established a policy of minimizing exposure that must be upheld on all projects. Although the SHSP focuses on the planned work activities, it must remain flexible because of the nature of the work. Changes to the SHSP must be approved by the Site Health and Safety Specialist (SHSS), Program Certified Industrial Hygienist (CIH), Project Manager or Project Superintendent (PS), and must be recorded on the Site-Specific Health and Safety Plan Amendment Form provided in Attachment 1.

1.1 Site Description

Shaw on behalf of the United States Department of the Navy, has developed this outline for this field activity at Alameda Point, California. The work is to be preformed at the George P. Miller Elementary School (Miller School) and Woodstock Child Development Center (WCDC), located within the Coast Guard Housing development

The work at the Miller School shall consist of removing the surrounding fences, wood chips and underlying soil. It will then be brought up to 4 inches below existing grade, using bedding sand. 3,000 pounds per square inch concrete will be used to complete the area. Shaw personnel will complete all construction and removal activities. A concrete subcontractor will complete the concrete work.

The work to be completed at the WCDC involves the removal of sand in the covered circular play area. Two rectangular areas adjacent to the play area will have the existing wood chips removed then refilled with clean child-safe wooden chips. A form will be constructed through the center of the sandbox, dividing it into two halfs. One half will be filled with new clean sand and the other half will be filled with new-formed concrete. The soil and grass areas along the fence lines and around the eastern wood chip area will be removed to a depth of approximately 6 inches. This area will be restored with synthetic turf. The subgrade will be prepared per the manufacturer's installation instructions, including bedding sand and a water permeable liner. Benches shall be constructed around each of the trees that are along the fence line.

1.2 Scope of Work

This project is to perform a time-critical removal action at Miller School and the WCDC, Alameda Point, California. Multiple mobilizations will be required. These mobilizations will

include the removal of existing playground sand and lawn areas, installation of concrete and synthetic grass, wood tree benches, new playground sand and wood chips.

2.0 Responsibilities

Project personnel are responsible for their own health and safety, for completing tasks in a safe manner, and for reporting any unsafe acts or conditions to their supervisor and the PS. All persons on site are responsible for continuous adherence to health and safety procedures during the performance of any project work. In no case may work be performed in a manner that conflicts with the intent of, or the inherent safety precautions expressed in this SHSP. After due warning, persons who violate procedures or work rules may be dismissed from the site, be terminated, or have their contract revoked. Blatant disregard or repeated infractions of health and safety policies are grounds for disciplinary action up to, and including, dismissal and/or removal from the project.

All Shaw and subcontractor personnel are required to read and acknowledge their understanding of this SHSP. All project personnel are expected to abide by the requirements of this SHSP and to cooperate with project management and safety representatives to ensure a safe and healthful work site. Site personnel are required to immediately report any of the following to the PS:

- Accidents and injuries, no matter how minor
- Expected or uncontrolled release of chemical substances
- Any sign or symptoms of chemical exposure
- Any unsafe or malfunctioning equipment
- Any changes in site conditions that could affect the health and safety of project personnel

Key project personnel and emergency phone numbers are identified in Attachment 2 of this SHSP.

3.0 Project Hazard Analysis

This section summarizes hazards associated with site activities.

3.1 Activity Hazard Analysis

Activity hazard analyses detailing each activity, associated hazards, and recommended control measures are presented in Attachment 3. The various removal actions may include one or more of the following major tasks:

- Backfilling and Compaction
- Clearing and Grubbing of Vegetation
- Excavation and Placement of Clean Fill
- Excavation of Overlying Soil
- Removal of Debris
- Site Restoration
- Utility Clearance/Surveying
- Welding, Cutting, and Grinding

3.2 Chemical Contaminants of Concern

All data indicate low part per million levels of polycyclic aromatic hydrocarbons in the soil. These concentrations are too low to be hazardous to site workers.

3.3 Material Safety Data Sheets

Material safety data sheets (MSDS) are provided as Attachment 4 for each material that could be used during the course of the project.

3.4 Confined Spaces

Confined-space entry is not expected.

4.0 Personal Protective Equipment

The personal protective equipment required for all project tasks is Level D. Protective equipment is specified in the activity hazard analyses presented in Attachment 3.

5.0 Site Control

This section describes access control mechanisms, briefing requirements, and tracking mechanisms that will be instituted to maintain site control.

5.1 Work Zones

Each site will be set up separately taking into consideration the working space, and the activities to be performed. Access control could require fences, barricades, traffic control devices, flaggers, caution tape, or other means to keep the site secure and to provide a visual barrier to help keep the curious or the public from entering the site.

5.2 Hazard Briefing

No person will be allowed on the site during site operations without first being given a site hazard briefing. In general, the briefing will consist of a review of the SHSP and the tailgate safety meeting. All persons on the site, including visitors, must sign the SHSP acknowledgment sheet and the tailgate safety meeting form. Tailgate safety meetings will be held daily before site activities begin.

5.3 Visitor Access

The following steps should be taken with respect to site visitors.

5.3.1 Approach

If unannounced visitors arrive on site, employees should approach the visitors, introduce themselves, and respectfully ask the visitors to identify themselves and state their business. Employees shall distinguish between Shaw workers and subcontractors and those whom Shaw is not responsible for when enforcing health and safety rules on job sites. For example, hard hats and safety glasses may be a requirement on the site, but to enforce the same on all visitors may not be necessary. A gentle explanation of what areas to avoid may be all that is necessary.

5.3.2 Unauthorized visitors

If visitors are unauthorized, employees should explain to the visitors that entry to the site is restricted. Employees should point out the site boundaries and any other relevant restrictions.

5.3.3 Visitors Authorized to View the Site from the Support Zone

If the client authorizes visitors, employees shall do the following:

- Review the tailgate safety meeting form with them and ask them to sign it.
- Provide the visitors with hard hats, safety glasses, and orange vests, if applicable.

6.0 Decontamination

6.1 Personnel Hygiene and Decontamination Facilities and Procedures

Portable toilets, hand wash facilities, and other standard personnel hygiene facilities will be provided at the project site. Site employees will be encouraged to wash hands before eating, drinking, or smoking.

7.0 Site Monitoring

This section describes the monitoring requirements for airborne contaminants and physical hazards.

7.1 Air Monitoring

As previously stated site contaminants are too low in concentration to pose a significant hazard to site workers. Nevertheless, airborne dust will be monitored visually on a continual basis. If airborne dust can be seen in workers breathing zone, it will be immediately suppressed with water spray or other dust control methods.

8.0 Employee Training

This section describes training requirements for personnel who will be performing fieldwork or other on-site activities.

8.1 Tailgate Safety Meetings

Prior to the start of the project, all personnel will participate in an initial tailgate safety meeting. During the initial tailgate safety meeting, this SHSP will be discussed. The PS will ensure that expected site hazards are summarized and explained to all personnel and that personnel are aware of the precautions they must take to minimize potential exposure to the hazards. Tailgate safety meetings will be held at the start of each work shift. All new employees will be required to attend a site health and safety orientation. Attendance records and meeting notes will be maintained with the project files.

8.2 Hazard Communication

All personnel performing field activities will receive basic hazard communication training. The training will involve a review of the written hazard communication program (Procedure HS060), the MSDS for each chemical used on site, container labeling, and chemical health hazards. An MSDS will be obtained for each material purchased or brought on site that requires an MSDS and will be kept on site with this SHSP.

8.3 Site-Specific Training

For site-specific training, the SHSS will present an initial review of the SHSP and daily tailgate safety meetings. Attendance for such training will be tracked by obtaining signatures of all attendees and will be documented in the project files. Additional job- or function-specific training requirements are specified in the activity hazard analyses (Attachment 3).

8.4 First Aid and Cardiopulmonary Resuscitation

At least two employees with current certificates in first aid and cardiopulmonary resuscitation (CPR) will be assigned to the project, and at least one of these will be on the site whenever field activities are being conducted. If multiple work groups are dispersed throughout a project site, more than two employees will have current certification in first aid and CPR. The extent of coverage will be determined relative to the number of employee groups. Personnel trained in first aid will also be trained in blood borne pathogen hazards. The SHSS will be current and certified in first-aid and CPR training.

9.0 Emergency Response Plan and Contingency Procedures

Site personnel must be prepared to respond and act quickly in the event of an emergency. Emergency preparedness and response procedures will aid in protecting site workers and the surrounding environment. Preplanning measures will include employee training, fire and explosion prevention and protection, chemical spill and discharge prevention and protection, and safe work practices to avoid personal injury or exposure. These issues will be discussed in the daily tailgate safety meetings.

9.1 Project Superintendent

A designated PS will be present on the site at all times during scheduled work activities. The PS will be responsible for implementing any emergency response or contingency procedures. Depending the circumstances and time permitting, the PS will review proposed response actions with the SHSS. The Project Superintendent is Norm Hanelt.

9.2 Site Health and Safety Specialist

The SHSS is responsible for implementing, communicating, and enforcing health and safety policies and procedures during the course of the project. The SHSS will also assist in the evaluation of health and safety concerns with respect to environmental releases and emergency response actions. The SHSS is Jim Wright

9.3 List of Emergency Contacts and Notification

The PS and SHSS will be notified immediately in the event of an emergency. The PS will immediately evaluate the incident and, if necessary, notify the fire department and other emergency contacts listed in Attachment 2.

9.4 Fire Control

In the event of a fire or explosion, or imminent danger of fire or explosion, all activities will halt and the fire department listed in Attachment 2 will be notified immediately. If it is safe to do so, site personnel can use fire-fighting equipment available on site to remove and isolate flammable or other hazardous materials that could contribute to the fire.

The following measures will be implemented during site activities to minimize the risk of fire and/or explosion:

- Smoking will be prohibited on site except in designated smoking areas.
- Good housekeeping procedures will be required on site.

- Material storage methods will comply with manufacturers' recommendations.
- Flammable liquids will be stored only in approved containers.
- All storage, handling, or use of flammable and combustible materials will be conducted only by trained personnel.
- Entry and exit pathways will be kept clear of debris or obstacles.
- Work areas will be cleared of excess vegetation and obstructions.
- Hot work permits will be required on site.

9.5 Site Evacuation Procedures

Before the start of field activities, the PS will determine emergency evacuation routes and discuss them with all field personnel. Initial planning includes establishing emergency warning signals and evacuation routes in case of an emergency. The site map and route to the nearest hospital is presented in Attachment 5. The initial evacuation assembly points are shown on the map in Attachment 6. These areas are usually located upwind of project areas. As work progresses, the SHSS could alter these assembly areas depending on site and weather conditions. The site-specific evacuation procedures will be discussed in detail at the daily safety tailgate meeting.

The authority to order personnel to evacuate the work area rests with the PS and the SHSS. If site evacuation is required, a continuous, uninterrupted air horn or vehicle horn (backup) will be sounded for approximately 10 seconds. Personnel will immediately make their way to the assembly point for a head count.

The evacuation route and emergency equipment locations are included on the map presented in Attachment 6. This map will be posted on site. During an emergency, the evacuation routes noted on the map are to be followed. If conditions such as wind direction or physical hazards do not allow access to the prescribed evacuation routes, personnel are to evacuate by the safest route available.

9.6 Medical Emergency Response

If a severe physical or chemical injury occurs, the fire department listed in Attachment 2 will be summoned for emergency medical treatment and ambulance service. Once an initial assessment is made by the emergency medical technicians, the decision to use ground or air transportation for the victims will be made. Qualified first-aid providers will treat minor injuries on site. If additional treatment beyond first aid is required, the injured personnel will be transported to the designated hospital. Transportation routes and maps will be placed in each site vehicle before field activities begin. The hospital route map is presented in Attachment 5.

9.7 Personal Exposure or Injury

In the event of personal exposure to contaminants, the following general guidelines will be implemented:

- ***Contact/Absorption***—Copious amounts of distilled or tap water will be used to flush contaminants from the skin for at least 20 minutes. Flushing will be started while removing contaminated clothing. If irritation persists, flushing will be repeated. The condition of the individual will be assessed, and transport to a medical center will be arranged if necessary. The victim will not be transported unless the recommended flushing period has been completed or flushing can be continued during transport.
- ***Inhalation***—The victim will be moved immediately to an area providing fresh air. The victim will be decontaminated and provided artificial respiration if necessary. The condition of the individual will be assessed, and transport to a medical center will be arranged if necessary.
- ***Ingestion***—The local poison control center will be contacted immediately. The victim will be decontaminated, if necessary, and transported to a medical facility.

9.8 List of Emergency Contacts and Notifications

The SHSS will immediately evaluate the incident and, if necessary, notify emergency support services. If not previously notified, the project manager and project contact will be advised of the situation. Telephone numbers for emergency personnel are listed in Attachment 2. This list will be kept up to date with current contacts and will be maintained along with other emergency phone numbers in each site vehicle.

The information provided to the notified person should include the nature of the incident and the exact location and suspected materials involved. The following information is to be reported to the emergency operator:

- Name and telephone number of the individual reporting the incident
- Location and type of incident
- Nature of the incident (fire, explosion, spill, or release) and substances involved
- Number and nature of medical injuries
- Movement or direction of spill/vapor/smoke
- Response actions currently in progress
- Estimate of quantity of any released materials
- Status of incident
- Other pertinent information

10.0 References

Shaw Environmental, Inc., *Health and Safety Policies and Procedures Manual* (most recent issue).

Shaw Environmental, Inc., 2003, *Program Health and Safety Plan for Environmental Remediation Actions*, Contract No. N62474-98-D-2076, Revision No. 1, April 2003.

Attachment 1
Site-Specific Health and Safety Plan Amendment Form

SITE-SPECIFIC HEALTH & SAFETY PLAN AMENDMENT DOCUMENTATION

Project Name: _____ **Project No:** _____

Amendment No: _____ **Date:** _____

Amendment Revises: Page:_____ **Section:** _____

Task(s) Amendment Affects[a]**:** _____

_____

[a]*Attach new/revised job safety analyses.*

Reason For Amendment:

_____

_____

_____

_____

Amendment:
(Attach separate sheets as necessary)

_____

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Completed by:_____ **Approved by:** _____

Attachment 2
Emergency Phone Numbers

EMERGENCY PHONE NUMBERS

Contact	Phone Number
Alameda Point Fire Department Emergency Non-Emergency	911 (from land line)
Alameda Point Police/Security Department Emergency Non-Emergency	911 (from land line) 1-510-337-8340
Alameda Point HAZMAT Response Emergency Non-Emergency	911 (from land line)
Hospital : Alameda Hospital Emergency Room Information Directions To Medical Care: See Attachment 5.	1-510-523-4357
Key Project and Shaw Personnel	
Shaw Program Manager: Jim Franklin	1-619-446-4517
Program CIH: Fred Mlakar, CIH	(949) 660-5413 direct (949) 981-1450 cell
Project Manager: John McGuire	1-925-288-2220
Site Health & Safety Specialist : Jim Wright	1-925-383-7646
Project Superintendent: Norm Hanelt	1-925-383-8622
Occupational Physician: Health Resources	(800) 350-4511
Medical Incident Reporting: Health Resources	(508) 651-8939
Navy Contact SWDiv: Ms. Glenna Clark	1-619-532-0951
Navy Contact ROICC : Gregory Grace	1-510-749-5940
Navy Contact ROICC Alternate : Bob Perricone	1-510-749-5942
Navy On-Scene Coordinator: Doug Delong	1-510-772-8832 cell

CIH denotes Certified Industrial Hygienist.

HAZMAT denotes hazardous materials.

ROICC denotes Resident in Charge of Construction.

Attachment 3
Activity Hazard Analyses

ACTIVITY HAZARD ANALYSIS FOR BACKFILLING AND COMPACTION				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
Backfilling and Compact Soils	Slips, Trips, Falls	• Clear walkways, work areas of equipment, tools, construction debris and other materials. • Mark, identify, or barricade other obstructions.		
	Handling Heavy Objects	• Observe proper lifting techniques. • Obey sensible lifting limits (60-pound. maximum per person manual lifting). • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads.		
	Struck by/ Against Heavy Equipment, Flying Debris, Protruding Objects	• Wear reflective warning vests when exposed to vehicular traffic. • Isolate equipment swing areas. • Make eye contact with operators before approaching equipment. • Barricade or enclose the work area. • Restrict work area entry to authorized personnel only during construction activities. • Wear hard hats, safety glasses with side shields, and steel-toe safety boots. • Understand and review hand signals.	Warning vests, Hard hat, Safety glasses, Steel-toe work boots	
	Vibration	• Rotate compaction tasks to minimize worker exposure to equipment vibration. • Use compactors with vibration dampening devices.	Anti-vibration gloves	
	High Noise Levels	• Use hearing protection when exposed to excessive noise levels (greater than 85 decibels, A-scale (dBA) over an 8-hour work period). • Assess noise level with sound level meter if possibility exists that level may exceed 85 dBA time-weighted average.	Ear plugs	Sound Level Meter
	High/Low Ambient Temperature	• Monitor for Heat/Cold stress in accordance with IT Health and Safety Procedures # HS400, HS401. • Provide fluids to prevent worker dehydration. • Follow project work/rest schedule.	Insulated Clothing (subject to ambient temperature)	Meteorological Equipment

ACTIVITY HAZARD ANALYSIS FOR CLEARING AND GRUBBING OF VEGETATION				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
Clearing, Grubbing	Struck By/ Against Heavy Equipment	• Wear reflective warning vests worn when exposed to vehicular traffic. • Isolate equipment swing areas. • Make eye contact with operators before approaching equipment. • Understand and review hand signals.	Warning vests, Hard hat, safety glasses, Steel-toe work boots	
	Slips, Trips, Falls	• Clear walkways work areas of equipment, tools, vegetation, excavated material and debris. • Mark, identify, or barricade other obstructions. • Maintain 3 point contact when ascending/descending ladders/ mounting/dismounting from heavy equipment. • Halt exterior work in high winds, lightning, severe weather.		
	Handling Heavy Objects	• Observe proper lifting techniques. • Obey sensible lifting limits (60-pound maximum per person manual lifting). • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads.		
	Eye Injuries	• Wear face shield, goggles when operating powered clearing / grubbing equipment.	Face shield, goggles	
	Sharp Objects	• Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects. • Maintain all hand and power tools in a safe condition • Keep guards in place during use. • Close doors, windows on heavy equipment to prevent injuries from tree branches and other vegetation.	Leather gloves	
	High Noise Levels	• Use hearing protection when exposed to excessive noise levels (greater than 85 decibels, A-scale (dBA_ over an 8-hour work period). • Assess noise level with sound level meter if possibility exists that level may exceed 85 dB A time-weighted average.	Ear plugs	Sound Level Meter

ACTIVITY HAZARD ANALYSIS FOR CLEARING AND GRUBBING OF VEGETATION				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
Clearing, Grubbing (Continued)	Insect/ Snake Bites	• Review injury potential and types of snakes with workers • Avoid insect nests areas, likely habitats of snakes outside work areas. • Emphasize The Buddy System where such injury potential exists. • Use insect repellant, wear personal protective equipment (PPE) to protect against sting/bite injuries.	Tyvek® coveralls, duct tape bottom of coveralls to boots or latex boot covers	
	Contact Dermatitis	• Wear PPE to avoid skin contact with contaminated soil, plants, or other skin irritants. • Identify and review poisonous plants with workers. • Apply protective cream/lotion to exposed skin to prevent poison ivy or similar reactions.	Tyvek® coveralls, duct tape bottom of coveralls to boots or latex boot covers (See Section 4.0 SHSP)	
	Operations of power clearing tools (brush saws, weed wackers)	• Wear eye, face, hand, and hearing protection when operating power clearing equipment. • Shut-off / idle power tools walking between work areas. • Store flammable liquids in well ventilated areas, away from work areas. • Shut off equipment during re-fueling. • Allow equipment to cool before re-fueling. • Use funnels to avoid fuel spillage. • Prohibit smoking while operating clearing equipment. • Provide ABC (or equivalent) fire extinguishers for all work areas.	Face shield, goggles, cloth gloves, ear plugs, Steel-toe work boots	
	High/Low Ambient Temperature	• Monitor for Heat/Cold stress in accordance with Shaw Health and Safety Procedures # HS400, HS401. • Provide fluids to prevent worker dehydration. • Follow project work/rest schedule.	Insulated Clothing (subject to ambient temperature)	Meteorological Equipment

ACTIVITY HAZARD ANALYSIS FOR EXCAVATION AND PLACEMENT OF CLEAN FILL		
Activity	**Potential Hazards**	**Recommended Controls**
Excavation	Underground utilities	All underground utilities will be located prior to excavating.
	Open excavations	Shaw Procedure HS307 - "Excavation and Trenching" will be adhered to at all times.
	Noise	Noise levels above 85 decibels, A-scale (dBA) mandates hearing protection.
	Heavy equipment operations	Before any machinery or mechanized equipment is placed into service, it shall be inspected and tested by a competent mechanic and certified to be in safe operating condition. Equipment shall be inspected before being placed into service and at the beginning of each shift. Preventive maintenance procedures recommended by the manufacturer shall be followed. A lockout - tagout procedure shall be used for equipment found to be faulty or undergoing maintenance. Machinery and mechanized equipment shall be operated only by designated personnel. Getting off or on any equipment while it is in motion is prohibited. Machinery or equipment requiring an operator shall not be permitted to run unattended. Machinery or equipment will not be operated in a manner that will endanger persons or property nor will the safe operating speeds or loads be exceeded. All machinery or equipment will be shut down and positive means taken to prevent its operation while repairs or manual lubrications are being done. All repairs on machinery or equipment will be made at a location that provides protection from traffic for repair persons. Bulldozer and scraper blades, end-loader buckets, and similar equipment will be either fully lowered or blocked when being repaired or when not in use. All self-propelled construction equipment shall be equipped with a back-up alarm.
	Fire	Each bulldozer, backhoe, or other similar equipment will be equipped with at least one dry chemical fire extinguisher having a minimum Underwriters Laboratories, Inc. rating of 1A5BC.

ACTIVITY HAZARD ANALYSIS FOR EXCAVATION AND PLACEMENT OF CLEAN FILL		
Activity	**Potential Hazards**	**Recommended Controls**
Excavation (Continued)	Contact with potentially contaminated materials	Real-time air monitoring will take place. Proper personal protective clothing and equipment will be utilized. Good housekeeping will be stressed to safe guard against cross contamination of surrounding areas and eliminate safety hazards. All site personnel will practice good personal hygiene. The work area will be demarcated. All unnecessary personnel will be kept out of the work area and in an upwind location.
	Carbon dioxide poisoning	Use diesel-fired equipment.
	Noise	Noise levels above 85 dBA mandates hearing protection.
	Slip, trip, and fall hazards	Good housekeeping, keep work area picked up and as clean as feasible. Continually inspect the work area for slip, trip and fall hazards.
	Pinch points	Keep feet and hands clear of moving/suspended materials and equipment. Beware of contact points. Stay alert at all times!
	Strains and sprains	Use proper lifting techniques, lifts greater than 60 pounds requires assistance or mechanical equipment; size up the lift.
	Slip, trip, and fall hazards	Good housekeeping, keep work area picked up and as clean as feasible. Continually inspect the work area for slip, trip and fall hazards.
	Cut hazards	Wear adequate hand protection.
	Traffic	Work area will be barricaded off.
	Traffic	Personnel will wear reflective vests for high visibility.
	Hazard communication	Obtain material safety data sheet for materials used on site. Label all containers as to contents.

ACTIVITY HAZARD ANALYSIS FOR EXCAVATION AND PLACEMENT OF CLEAN FILL		
Activity	**Potential Hazards**	**Recommended Controls**
Excavation (Continued)	Electrical	Use ground fault current interrupters on all 110-volt circuits. Refer to Shaw Procedure HS308 for minimum clearance from energized overhead electric lines
Equipment to be Used	**Inspection Requirements**	**Training Requirements**
• Heavy equipment • Barricades • Shoring devices • Flotation devices	• Pre- and post-maintenance • Visual prior to use • CESPD Form 150 R	• Tailgate Safety Meeting • Site-specific orientation • Hazardous waste operations • Hazard communication • Water Hazard • Excavation safety

ACTIVITY HAZARD ANALYSIS FOR EXCAVATION OF OVERLYING SOIL		
Activity	**Potential Hazards**	**Recommended Controls**
Excavation	Underground utilities	All underground utilities will be located prior to excavating.
	Open excavations	Shaw Procedure HS307 - "Excavation and Trenching" will be adhered to at all times.
	Noise	Noise levels above 85 decibels, A-scale (dBA) mandates hearing protection.
	Heavy equipment operations	Before any machinery or mechanized equipment is placed into service, it shall be inspected and tested by a competent mechanic and certified to be in safe operation condition. Equipment shall be inspected before being placed into service and at the beginning of each shift. Preventive maintenance procedures recommended by the manufacturer shall be followed. A lockout - tagout procedure shall be used for equipment found to be faulty or undergoing maintenance. Machinery and mechanized equipment shall be operated only by designated personnel. Getting off or on any equipment while it is in motion is prohibited. Machinery or equipment requiring an operator shall not be permitted to run unattended. Machinery or equipment will not be operated in a manner that will endanger persons or property nor will the safe operating speeds or loads be exceeded. All machinery or equipment will be shut down and positive means taken to prevent its operation while repairs or manual lubrications are being done. All repairs on machinery or equipment will be made at a location which provides protection from traffic for repair persons. All machinery or equipment will be shut down and positive means taken to prevent its operation while repairs or manual lubrications are being done. All repairs on machinery or equipment will be made at a location which provides protection from traffic for repair persons. Bulldozer and scraper blades, end-loader buckets, and similar equipment will be either fully lowered or blocked when being repaired or when not in use. All self-propelled construction equipment shall be equipped with a back-up alarm.

ACTIVITY HAZARD ANALYSIS FOR EXCAVATION OF OVERLYING SOIL		
Activity	**Potential Hazards**	**Recommended Controls**
Excavation (Continued)	Fire	Each bulldozer, backhoe, or other similar equipment will be equipped with at least one dry chemical fire extinguisher having a minimum UL rating of 1A:5B:C.
	Contact with potentially contaminated materials	Real-time air monitoring will take place. Proper personal protective clothing and equipment will be utilized. Good housekeeping will be stressed to safe guard against cross contamination of surrounding areas and eliminate safety hazards. All site personnel will practice good personal hygiene. The work area will be demarcated. All unnecessary personnel will be kept out of the work area and in an upwind location.
	CO poisoning	Use diesel-fired equipment
	Noise	Noise levels above 85 dBA mandates hearing protection.
	Slip, trip, and fall hazards	Good housekeeping, keep work area picked up and as clean as feasible. Continually inspect the work area for slip, trip and fall hazards.
	Pinch points	Keep feet and hands clear of moving/suspended materials and equipment. Beware of contact points. Stay alert at all times!
	Cut hazards	Wear adequate hand protection.
	Traffic	Work area will be barricaded off.
	Traffic	Personnel will wear reflective vests for high visibility.
	Hazard communication	Obtain material safety data sheet for materials used on site. Label all containers as to contents.
	Electrical	Use ground fault current interrupters on all 110-volt circuits. Refer to Shaw Procedure HS308 for minimum clearance from energized overhead electric lines
	Drowning	Pump out excavation.

ACTIVITY HAZARD ANALYSIS FOR EXCAVATION OF OVERLYING SOIL		
Activity	**Potential Hazards**	**Recommended Controls**
Excavation (Continued)	Drowning (Continued)	Barricade area with barricades that can withstand a 200-pound force applied in any downward or lateral direction. Have flotation devices available with rope attached.
Equipment to be Used	**Inspection Requirements**	**Training Requirements**
• Heavy equipment • Barricades	• Pre- and post-maintenance • Visual prior to use	• Tailgate Safety Meeting • Site-specific orientation • Hazardous waste operations • Hazard communication • Water Hazard • Excavation safety

ACTIVITY HAZARD ANALYSIS FOR REMOVAL OF DEBRIS		
Activity	**Potential Hazards**	**Recommended Controls**
Removal of debris	Heavy equipment operations	Before any machinery or mechanized equipment is placed into service, it shall be inspected and tested by a competent mechanic and certified to be in safe operating condition.
	Areas on or adjacent to contaminated material	Implement appropriate level of protection. Equipment shall be inspected before being placed into service and at the beginning of each shift. Preventative maintenance procedures recommended by the manufacturer shall be followed. Machinery or equipment will not be operated in a manner that will endanger persons or property nor will the safe operating speeds or loads be exceeded.
	Overhead power lines	See distances
	Fire	Each bulldozer, backhoe, or other similar equipment will be equipped with at least one dry chemical fire extinguisher having a minimum Underwriters Laboratories, Inc. rating of 1A5BC.
	Dump tuck operations	Dump truck bodies shall be fully lowered or blocked when maintenance is being performed or when not in use.
Equipment to be Used	**Inspection Requirements**	**Training Requirements**
• Hand tools • Personal Protective Equipment • Heavy equipment	• Pre- and post-maintenance • Visual prior to use • CESPD Form 150-R	• Tailgate Safety Meeting • Site-specific orientation • Hazardous waste operations • Hazard communication

ACTIVITY HAZARD ANALYSIS FOR SITE RESTORATION		
Activity	**Potential Hazards**	**Recommended Controls**
Site restoration	Areas on or adjacent to contaminated material	Implement appropriate level of protection. A lockout/tagout procedure shall be used for equipment found to be faulty of undergoing maintenance. Bulldozer and scraper blades, end-loader buckets, and similar equipment will be either fully lowered or blocked when being repaired or when not in use. All self-propelled construction equipment shall be equipped with a back-up alarm.
	Fire	Each bulldozer, backhoe, or other similar equipment will be equipped with at least one dry chemical fire extinguisher having a minimum Underwriters Laboratories, Inc. rating of 1A5BC.
	Open excavations	Shaw Procedure HS307 "Excavation and Trenching" will be adhered to at all times. Excavations will be backfilled as soon as possible.
	Dump truck operations	Dump truck bodies shall be fully lowered or blocked when maintenance is being performed or when not in use. A signal person will be used when the point of operation is not in full view of the vehicle, machine or equipment operator; vehicles are backed more than 100 feet; terrain is hazardous; or 2 or more vehicles are backing in the same area.
	Contact with moving equipment	Ground personnel shall wear reflective vests.
	Noise	Noise levels above 85 decibels, A-scale mandate the use of hearing protection
Final Grading	Noise hazards	Administer hearing protection.
	Heavy equipment, travel	Use qualified operators.
	Mechanical moving parts, pinch, paint, etc.	Have all grounding in place. Use lockout/tagout for maintenance. Ensure that all emergency stop switches are working.

Equipment to be Used	Inspection Requirements	Training Requirements
• Hand tools • Personal Protective Equipment • Sampling equipment	• Pre- and post-maintenance • Visual prior to use	• Tailgate Safety Meeting • Site-specific orientation • Hazardous waste operations • Hazard communication

ACTIVITY HAZARD ANALYSIS FOR UTILITY CLEARANCE/SURVEYING		
Activity	**Potential Hazards**	**Recommended Controls**
Surveying	Slips, trips, and falls	Good housekeeping, keep work area picked up and as clean as feasible. Continually inspect the work areas for slip, trip, and fall hazards. When working on uneven surfaces, take care when stepping. Watch where you walk.
	Moving vehicles	The wearing of high-visibility vests is required in areas where vehicle traffic may be encountered. Flaggers and traffic control devices such as cones and barricades may be needed when working in traffic.
Equipment to be Used	**Inspection Requirements**	**Training Requirements**
• Survey Equipment • Personal Protective Equipment	• None	• Tailgate safety meeting • Site-specific orientation • Hazard communications

ACTIVITY HAZARD ANALYSIS FOR WELDING, CUTTING, AND GRINDING				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
Welding, Cutting, and Grinding	Fire Hazards	• Hot Work permit must be available and properly completed. (Shaw HS314, Hot Work in Hazardous Locations) • Provide a fire watch equipped with a fire extinguisher during and 30 minutes after welding / cutting. • Test atmosphere in enclosed space to be cut or welded for flammable/toxic vapors • Flush lines prior to cutting, welding or grinding. • If a tank must be inerted prior to cutting or welding contact Shaw HS 309. • Prohibit smoking in welding / cutting area. • Combustible materials must be screened from slag, heat and sparks. • All torch valves and gas supply shut off when work is suspended. • When work is suspended, hoses, torch, etc., shall be removed from confined spaces. • The valve wrench or wheel shall be in operating position when cylinder is in use. • Cylinders shall be stored in well-ventilated locations. • Oxygen cylinders in storage and fuel gases shall be separated by a fire resistive wall or by a distance of 20 feet. • Oxygen shall not be used to blow dust out of clothes, hair, or to cool off. • "No Smoking" signs shall be posted around cylinder storage area. • The pressure on the working side of the acetylene regulator should not be greater than 15 pounds per square inch gauge. • Proper measures shall be taken for fire control. • Compressed gas cylinders shall be separated from flammable or combustible material by at least 40 feet. • All oxygen-fuel gas cutting or welding shall be equipped with reverse-flow check valves between torch and hoses.		Lower Explosive Level (LEL)/Oxygen (O_2) meter

ACTIVITY HAZARD ANALYSIS FOR WELDING, CUTTING, AND GRINDING				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
Welding, Cutting, and Grinding (Continued)	Fire Hazard (Continued)	• Provide ABC (or equivalent) fire extinguishers • Store flammable liquids in well ventilated areas • Prohibit storage of flammable liquids in plastic containers • Store combustible materials away from flammables • Separate flammables and oxidizers by 20 feet minimum		
	Equipment Failure / Damage	• Proper site-specific safety training for operator and crew • Inspect the welding equipment daily: • Do not interchange oxygen and acetylene hoses; oxygen is coded green and acetylene is coded red. • Do not force connections or strike or force valve wheels. • Before connecting cylinders, read the label to ensure that the proper gas is being used. • Cylinders must not be placed where they might form part of an electrical circuit. Keep cylinders away from grating, layout tables and piping systems that may be used for the grounding or electrical welding circuits. • Do not store tools or equipment in the recessed top of an acetylene cylinder, and do not allow water to accumulate there. • Inspect the welding hose for defects before each use. • All pressure gauges and regulators shall be in proper working order. • The electric welding unit shall be shutdown when leads are unattended. • Frames of electric powered welders shall be grounded.		
	Inhalation and Contact with Hazardous Substances	• If surface to be cut or welded contains hazardous materials, e.g., lead-based or chromate paint, ensure that medical and personal protective equipment programs are in place as required. • Provide workers proper skin, eye and respiratory protection based on the exposure hazards present.	Tyvek® coveralls, nitrile gloves, latex or neoprene boots	Flame ionization detector (FID)/Photoionization detector (PID), LEL/O_2 meter

ACTIVITY HAZARD ANALYSIS FOR WELDING, CUTTING, AND GRINDING				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
Welding, Cutting, and Grinding (Continued)	Inhalation and Contact with Hazardous Substances (Continued)	• Review hazardous properties of site contaminants with workers before welding / cutting operations begin.		
	Eye Injury / Burns	• Proper helmets, goggles, aprons, and gloves shall be available for welding and cutting operations. • Workers and the public shall be shielded from rays, flashes, sparks, molten metal and slag. • Identify all equipment that may have hot surfaces. • Allow objects to cool or cover hot surfaces with non-combustible material to protect workers from burns. • Never lay work that is to be heated or welded on a concrete floor because when sufficiently heated, concrete may splash and fly with danger of injury.	American National Standards Institute-approved welding helmet (and cutting goggles, for cutting), aprons, and gloves, steel-toed boots, safety glasses/goggles	
	Electric Shock	• Splices, repaired insulation, etc., must be within 10 feet of the rod holder. • Leads must not be in contact with metal parts supporting suspended scaffolds. • Leads shall not be placed near high voltage wires.		
	Struck by/ Against Flying Particles, Protruding Objects, Liquid Splash	• Wear hard hats, safety glasses with side shields and steel-toed safety boots at all times • When stored, in transit, or regulator is not in place; the valve must be protected with cap. • All compressed gas cylinders shall be kept upright at all times, except when being hoisted. • Upright cylinders shall be secured against falling. • Keep all unauthorized personnel out of the welding area. • When welding, cutting or grinding, caution tape off area so that bystanders know that there is a hazard present. • Keep all guards and safety shields on grinding equipment.	Hard hat, safety glasses, safety boots	

ACTIVITY HAZARD ANALYSIS FOR WELDING, CUTTING, AND GRINDING				
Task Breakdown	**Potential Hazards**	**Critical Safety Practices**	**Personal Protective Clothing and Equipment**	**Monitoring Devices**
Welding, Cutting, and Grinding (Continued)	Struck by/ Against Flying Particles, Protruding Objects, Liquid Splash (Continued)	• Keep all unauthorized personnel out of the welding area. • When welding, cutting or grinding, caution tape off area so that bystanders know that there is a hazard present.		
	Musculoskeletal Disorders (MSD)	• Observe proper lifting techniques • Obey sensible lifting limits (60-pound maximum per person manual lifting) • Use mechanical lifting equipment (hand carts, trucks) or more than one person to move large, awkward loads		
	Heat / Cold Stress	• Monitor for Heat/Cold stress in accordance with Shaw Health and Safety Procedures HS400 and HS401 • Provide fluids to prevent worker dehydration • Give frequent breaks		Wet Bulb Globe Thermometer OR Oral thermometer and pulse
	Caught In / Between Moving Parts	• Identify and understand parts of equipment which may cause crushing, pinching, rotating or similar injuries • Assure guards are in place to protect from these parts of equipment during operation • Provide and use proper work gloves when the possibility of pinching, or other injury may be caused by moving/ handling large or heavy objects • Maintain all equipment in a safe condition • Keep all guards in place during use • De-energize and lock-out machinery before maintenance	Leather gloves	
	High Noise Levels	• Use hearing protection when exposed to excessive noise levels (greater than 85 decibels, A-scale (dBA) over an 8-hour work period). • Assess noise level with sound level meter if possibility exists that level may exceed 85dBA time-weighted average.	Ear plugs	Sound Level Meter

Equipment Required	Inspection Requirements	Training Requirements
• Welding machines and grinders • Compressed fuel gasses • Hoses • Personal protective equipment • Ladders • Hand tools • Extension cords and generator • Fire extinguishers, eye wash, emergency shower and first aid kit • LEL/O_2, PID/FID meters	• Daily equipment inspections as per manufacturers requirements • Inspection of all emergency equipment (i.e.: first aid kits, fire extinguishers)	• Review Job Site Analysis with all task personnel • Review site-specific Health and Safety Plan. • Review operations/safety manuals for all equipment utilized • Review Shaw Procedure 314 Hot Work in Hazardous Locations • Review Shaw Procedure HS315 for all Lockout/Tagout procedures • Review Shaw Procedures HS400 & HS401-Heat Stress, Cold Stress.

Attachment 4
Material Safety Data Sheets

Material Safety Data Sheet
[OSHA 29 CFR 1910.1200]

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Road, Suite 1300
Atlanta, GA 30329

Emergency Telephone Number
(770) 216-9580

Information Telephone Number
(770) 216-9580

Revision: July 2003

MSDS J

SECTION I: PRODUCT IDENTIFICATION

Product Types: QUIKRETE® DRY PACKAGED PORTLAND CEMENT BASED PRODUCTS (SERIES 1)

QUIKRETE® Product Name	Code #	QUIKRETE® Product Name	Code #
CONCRETE MIX	1101	FENCE POST MIX	1005
FIBER REINFORCED CONCRETE	1006	CRACK RESISTANT CONCRETE	1006-80
QUIKRETE® 5000	1007	LIGHT WEIGHT CONCRETE	1008
FAST SETTING CONCRETE	1004	RIP RAP	1129
SAND MIX	1103	VINYL CONCRETE PATCHER	1133, 1132
BASIC CONCRETE MIX	1015-60	HANDI-CRETE CONCRETE	1141
LIGHT WEIGHT SAND MIX	1103-51	HANDI-CRETE SAND MIX	1143
HIGH YIELD CONCRETE	1100	B-CRETE	1101-81
COMMERCIAL GRADE FASTSET™ CEMENT			1124-92
COMMERCIAL GRADE FASTSET™ NON SHRINK GROUT			1585-09
COMMERCIAL GRADE FASTSET™ REPAIR MORTAR			1241-60
COMMERCIAL GRADE FASTSET™ CONCRETE			1004-51
COARSE & FINE CORE FILL GROUTS (MASONRY GROUTS)			SR-9003, SR-9006
(ALSO APPLIES TO CUSTOM BLENDED AND PRIVATE LABEL CONCRETES AND MORTARS)			

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Components	CAS No.	PEL (OSHA) mg/M^3	TLV (ACGIH) mg/M^3
Silica Sand, crystalline	14808-60-7	$\frac{10}{\% SiO_2 + 2}$	0.05 (respirable)
Portland Cement	65997-15-1	5	5
Lime	01305-62-0	5	5
May contain one or more of the following:			
Amorphous Silica (From Fly Ash)	07631-86-9	$\frac{80\ mg/M^3}{\% SiO_2}$	10
Alumina (From Fly Ash)	01344-28-1	5	5
Limestone Dust	01317-65-3	5	5
Calcium Sulfate	10101-41-4 or 13397-24-5	5	5
Calcium Sulfo Aluminate	65997-16-2	15	10

Other Limits: NIOSH has recommended that the permissible exposure limit be changed to 50 micrograms respirable free silica per cubic meter of air (50 ug/M^3) averaged over a work shift of up to 10 hours per day, 40 hours per week. The NIOSH Criteria Document for Crystalline Silica should be consulted for more detailed information.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance: Gray to gray-brown colored powder. Some products contain coarse aggregate. (QUIKRETE Vinyl Concrete Patcher available in white)

Specific Gravity:	2.6 to 3.15	**Melting Point:**	>2700 °F	**Boiling Point:**	>2700 °F
Vapor Pressure:	None	**Vapor Density:**	None	**Evaporation Rate:**	None
Solubility in Water:	Slight	**Odor:**	None	**Solubility in Water:**	Slight

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Non combustible and not explosive.

SECTION V - REACTIVITY DATA

Stability: Stable.
Incompatibility (Materials to Avoid): Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, oxygen difluoride, may cause fires.
Hazardous Decomposition or Byproducts: Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas - silicon tetrafluoride.
Hazardous Polymerization: Will not occur.
Condition to Avoid: Keep dry until used to preserve product utility.

SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation?	Yes
	Skin?	Yes
	Ingestion?	Yes

Acute Exposure: Product becomes alkaline when exposed to moisture. Exposure can dry the skin, cause alkali burns and effect the mucous membranes. Dust can irritate the eyes and upper respiratory system. Toxic effects noted in animals include, for acute exposures, alveolar damage with pulmonary edema.
Chronic Exposure: Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs and possibly cancer. There is evidence that exposure to respirable silica or the disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders.

Carcinogenicity Listings:	NTP:	Known carcinogen
	OSHA:	Not listed as a carcinogen
	IARC Monographs:	Group 1 Carcinogen
	California Proposition 65:	Known carcinogen

NTP: The National Toxicology Program, in its "Ninth Report on Carcinogens" (released May 15, 2000) concluded that "Respirable crystalline silica (RCS), primarily quartz dusts occurring in industrial and occupational settings, is *known to be a human carcinogen*, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to RCS and increased lung cancer rates in workers exposed to crystalline silica dust (reviewed in IAC, 1997; Brown *et al.*, 1997; Hind *et al.*, 1997)

IARC: The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz or cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans (*Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances or studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates..." (1997)

Signs and Symptoms of Exposure: Symptoms of excessive exposure to the dust include shortness of breath and reduced pulmonary function. Excessive exposure to skin and eyes especially when mixed with water can cause caustic burns as severe as third degree.

Medical Conditions Generally Aggravated by Exposure: Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure.

Emergency First Aid Procedures:

Eyes: Immediately flush eye thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

Skin: Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment if irritation or inflammation develops or persists. Seek immediate medical treatment in the event of burns.

Inhalation: Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek medical help if coughing and other symptoms do not subside. Inhalation of large amounts of portland cement require immediate medical attention.

Ingestion: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Spills: If spilled, use dustless methods (vacuum) and place into covered container for disposal or use if not contaminated or wet. Use adequate ventilation.

Waste Disposal Method: The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under RCRA or CERCLA.

SECTION VIII - CONTROL MEASURES

Inhalation: DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator is recommended. Local exhaust can be used, if necessary, to control airborne dust levels.

Eyes: Wear tight fitting goggles.

Skin: The use of barrier creams or impervious gloves, boots and clothing to protect the skin from contact is recommended. Following work, workers should shower with soap and water. Precautions must be observed because burns occur with little warning -- little heat is sensed.

WARN EMPLOYEES AND/OR CUSTOMERS OF THE HAZARDS AND REQUIRED OSHA PRECAUTIONS ASSOCIATED WITH THE USE OF THIS PRODUCT.

NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects, which may be caused by exposure to silica contained in our products.

MATERIAL SAFETY DATA SHEET

ALDON CORPORATION
221 Rochester Street
Avon, New York 14414-9409
(585) 226-6177

MSDS No.: SS0090
Effective Date: May 23, 2002

SECTION I NAME

Product	SAND
Chemical Synonyms	Silicon Dioxide; Quartz; Crystalline Silica
Formula	SiO_2
Unit Size	Up to 12 Kg.
C.A.S. No.	14808-60-7

24 HOUR EMERGENCY ASSISTANCE

CHEMTREC
800-424-9300
Day 585-226-6177

NFPA / HMIS *

Health	1
Fire	0
Reactivity	0

HAZARD RATING

MINIMAL	SLIGHT	MODERATE	SEVERE	EXTREME
0	1	2	3	4

SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
Sand - Ottawa, Sea; White, Yellow	> 99%	TWA: 0.1 mg/m^3
Aquarium; Fine, Coarse		

CAUTION! PROLONGED INHALATION MAY CAUSE PERMANENT LUNG DAMAGE.

SECTION III PHYSICAL DATA

Melting Point (°F)	1610°C (3110°F)	Specific Gravity (H_2O = 1)	2.65
Boiling Point (°F)	2230°C (4046°F)	Percent Volatile by Volume (%)	N/A
Vapor Pressure (mm Hg)	N/A	Evaporation Rate (Butyl acetate =1)	N/A
Vapor Density (Air=1)	N/A		
Solubility in Water	Insoluble.		
Appearance & Odor	White, yellow, tan crystals or granules; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Flammable Limits in Air % by Volume	Lower	Upper
Non-flammable.			

Extinguisher Media: Use any media suitable for extinguishing supporting fire.

SPECIAL FIREFIGHTING PROCEDURES

None required. Will not burn or support fire.
Used in extinguishing fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS

None known.

D.O.T. NON-REGULATED.

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20

SECTION V HEALTH HAZARD DATA

SS0090

Threshold Limited Value

(ACGIH 1992-93). TLV TWA: 0.1 mg/m^3 (respirable dust) crystalline quartz.

Effects of Overexposure

Prolonged inhalation of the dust may cause scarring of the lungs, with cough and shortness of breath. A delayed lung injury, silicosis, may result from breathing free silica. Silicosis is a form of disabling, progressive and sometimes fatal pulmonary fibrosis characterized by the presence of typical modulation in the lungs. Crystalline free silica has been classified as a carcinogen to humans (NTP, IARC). Target organs: Lungs.

Emergency and First Aid Procedures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person. **EYES:** Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention. **SKIN:** Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention. **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTION VI REACTIVITY DATA

Stability			Conditions to Avoid
	Unstable		None specifically known.
	Stable	X	

Incompatibility (Materials to Avoid): Contact with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, oxygen difluoride, may cause fires.

Hazardous Decomposition Products: Will dissolve in Hydroflouric acid and produce a corrosive gas- Silicon tetraflouride.

Hazardous Polymerization		Conditions to Avoid
May Occur	Will Not Occur	Not applicable.
	X	

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled

Avoid creating dusty conditions. Sweep up and recycle or place in a suitable container for proper disposal.

Waste Disposal Method

Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only.

Uncontaminated material may be disposed of in a sanitary landfill. Check local codes.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type): None should be required for normal laboratory use. If dusty conditions prevail, use a NIOSH/MSHA approved respirator.

Ventilation				
	Local Exhaust	Yes, if dusty.	Special	No.
	Mechanical (General)	No.	Other	No.

Protective Gloves	No.	Eye Protection	Chemical safety glasses.

Other Protective Equipment: Goggles, lab coat, eye wash station, ventilation hood.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing

Keep container tightly closed when not in use.

Wash thoroughly after handling.

Other Precautions

Read label on container before using. Do not wear contact lenses when working with chemicals. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

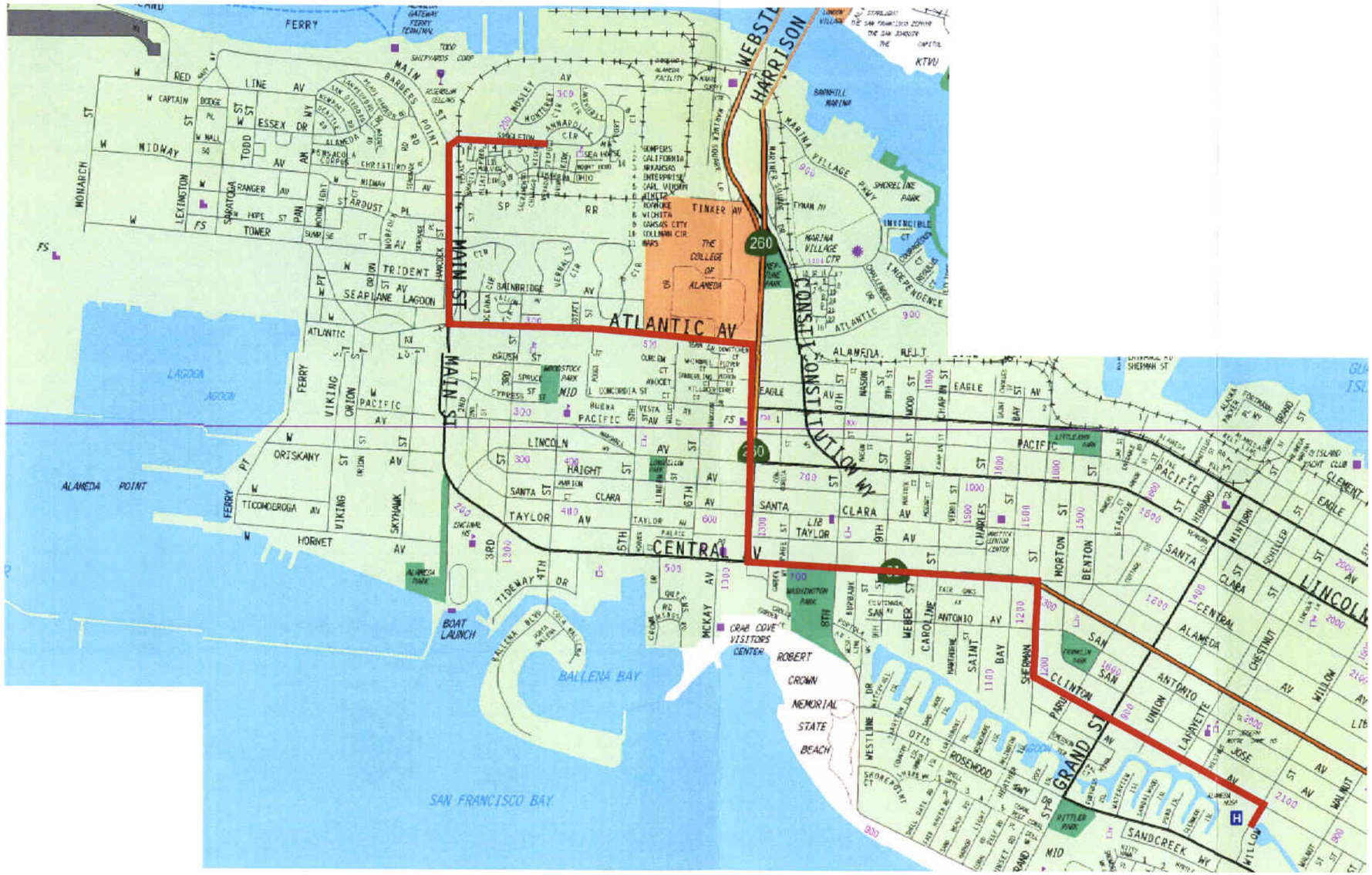
Avoid inhalation of dust. Remove and wash contaminated clothing.

Revision No. 10	Date 05/23/02	Approved Michael Raszeja	Chemical Safety Coordinator MR

Attachment 5
Site and Hospital Route Map

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
SCHAEFFER 11/16/04	---	---	844918-B17

IMAGE	X-REF	OFFICE
PH1.JPG PH2.JPG		Concord



ALAMEDA HOSPITAL
2070 CLINTON AVE.
(510) 523-4357

REFERENCE:
THOMAS BROS. MAPS

NOT TO SCALE

DIRECTIONS TO ALAMEDA HOSPITAL

FROM MILLER/WOODSTOCK SCHOOL,
TURN LEFT (WEST) ON SINGLETON AVENUE.
FROM SINGLETON AVENUE, TURN LEFT (SOUTH) ON MAIN STREET.
FROM MAIN STREET, TURN LEFT (EAST) ON ATLANTIC AVENUE.
FROM ATLANTIC AVENUE, TURN RIGHT (SOUTH) ON WEBSTER STREET.
FROM WEBSTER STREET, TURN LEFT (EAST) ON CENTRAL AVENUE.
FROM CENTRAL AVENUE, TURN RIGHT (SOUTH) ON SHERMAN STREET.
FROM SHERMAN STREET, TURN LEFT (EAST) ON CLINTON AVENUE.
FROM CLINTON AVENUE, TURN RIGHT (SOUTH) ON WILLOW STREET.
ALAMEDA HOSPITAL IS ON THE CORNER OF CLINTON AVENUE AND WILLOW STREET.

Shaw® Shaw Environmental, Inc.

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
SOUTHWEST DIVISION
SAN DIEGO, CALIFORNIA

SITE AND HOSPITAL ROUTE MAP

WOODSTOCK AND MILLER SCHOOLS
ALAMEDA, CALIFORNIA

Attachment 6
Exclusion Zone Evacuation Map

IMAGE	X-REF	OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
SCHOOLS	---	Concord	SCHAEFFER	11/16/04	---	---	---	---	844918-A24

LEGEND

⊗ MUSTER POINT

EVACUATION ROUTE

SCALE

0 100 200 FEET

N

Shaw™ Shaw Environmental, Inc.

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
SOUTHWEST DIVISION
SAN DIEGO, CALIFORNIA

EXCLUSION ZONE EVACUATION MAP

WOODSTOCK AND MILLER SCHOOLS
ALAMEDA, CALIFORNIA

FINAL

QUALITY CONTROL PLAN
Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center)
Alameda Point, Alameda, California

Environmental Remedial Action
Contract Number N62474-98-D-2076
Contract Task Order 0107

Document Control Number 8947
Revision 0

March 7, 2005

Submitted to:

Base Realignment and Closure
Program Management Office West
1230 Columbia Street, Suite 1100
San Diego, California 92101

Submitted by:

Shaw Environmental, Inc.
4005 Port Chicago Highway
Concord, California 94520-1120

FINAL

QUALITY CONTROL PLAN

Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center)
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Document Control Number 8947
Revision 0

March 7, 2005

Approved by: _____ Date: March 1, 2005

John McGuire
Shaw Environmental, Inc.
Project Manager

Approved by: _____ Date: March 2, 2005

Stephen Massey
Shaw Environmental, Inc.
Program Quality Control Manager

Table of Contents

List of Attachments

List of Acronyms and Abbreviations

IR	Installation Restoration
IT	IT Corporation
QCP	Quality Control Plan
QC	quality control
QCPP	Quality Control Program Plan
SOP	Standard Operating Procedures
SQP	Standard Quality Procedures
TCRA	time-critical removal action

1.0 Introduction

This Quality Control Plan (QCP) has been prepared to describe the quality control (QC) actions that Shaw Environmental, Inc. will implement during the time-critical removal action (TCRA) to mitigate the risk of potential human health exposure to polynuclear aromatic hydrocarbons at Installation Restoration (IR) Site 30 in Alameda Point, Alameda, California.

This QCP will be used in conjunction with the IT Corporation (IT) Quality Control Program Plan (QCPP) (IT, 2000a) that Shaw has prepared for work under Remedial Action Contract Number N62474-98-D-2076 and with IT Standard Quality Procedures (SQP)/Standard Operating Procedures (SOP) (IT, 2000b), as applicable. Section 2.0 of this QCP describes the sections of the QCPP that are applicable to this project and any site-specific modifications to the QCPP that are required. Section 3.0 of this QCP lists the IT SQPs and SOPs that are applicable. Attachments 1 through 6 present the following supporting documents for the site-specific QC activities that Shaw will perform throughout the execution of this project:

- **Attachment 1:** Project QC Manager Letter of Designation
- **Attachment 2:** Alternate Project QC Manager Letter of Designation
- **Attachment 3:** Quality Control Organization Chart
- **Attachment 4:** Definable Features of Work Matrix
- **Attachment 5:** Testing Plan and Log
- **Attachment 6:** Submittal Register

2.0 Quality Control Program Plan

The following portions of the QCPP are applicable to the work conducted under this project with modifications as noted:

- Management Policy Statement: applicable in its entirety
- **Section 1.0** – Introduction: applicable in its entirety
- **Section 2.0** – Organization and Responsibilities: applicable with the following modification:
  - The QC organization will be as shown in the QC Organization Chart, presented in Attachment 3
- **Section 3.0** – Quality Control Management: applicable in its entirety
- **Section 5.0** – Instructions, Procedures, and Drawings: applicable in its entirety
- **Section 6.0** – Document Control: applicable in its entirety
- **Section 7.0** – Procurement: applicable in its entirety
- **Section 8.0** – Chemical Data Quality: not applicable
- **Section 9.0** – Field Sampling: not applicable
- **Section 10.0** – Laboratory Analysis: not applicable
- **Section 11.0** – Report Preparation: applicable in its entirety
- **Section 12.0** – Review of Work Activities: applicable in its entirety
- **Section 13.0** – Inspections: applicable in its entirety
- **Section 14.0** – Calibration and Maintenance of Measuring and Test Equipment: applicable in its entirety
- **Section 15.0** – Test Control: applicable in its entirety
- **Section 16.0** – Nonconformance Control and Corrective Actions: applicable in its entirety
- **Section 17.0** – Change Control: not applicable. Refer to the Working Draft Project Management Guidelines
- **Section 18.0** – Audits and Surveillance: applicable with the following modification:

- Subsections 18.1 through 18.8 do not apply

- **Section 19.0** – Records Management: applicable in its entirety

3.0 Procedures

The following sections list the Standard Quality and Operating Procedures for this project.

3.1 Standard Quality Procedures

The following IT SQPs have been determined to be applicable to this project:

- **SQP 1.1** – Contractor Quality Control Program
- **SQP 3.2** – Indoctrination and Training
- **SQP 4.1** – Document Control
- **SQP 4.2** – Records Management
- **SQP 5.1** – Preparation, Revision, and Approval of Plans and Procedures
- **SQP 6.1** – Preparation, Review, and Approval of Procurement Documents
- **SQP 7.1** – Quality Inspections and Inspection Records
- **SQP 7.2** – Receipt Inspection
- **SQP 8.2** – Calibration and Maintenance of Measuring and Test Equipment
- **SQP 10.1** – Nonconformance Control
- **SQP 10.2** – Corrective Action

3.2 Standard Operating Procedures

The following IT SOP has been determined to be applicable to this project:

- **SOP 6.2** – Drilling and Heavy Equipment Decontamination

4.0 References

IT Corporation, 2000, *Quality Control Program Plan for Environmental Remedial Actions,* August.

IT Corporation, 2000, *Standard Quality Procedures and Standard Operating Procedures Manual,* August.

Attachment 1
Project Quality Control Manager Letter of Designation

Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center)
Alameda Point, Alameda, California
Contract Task Order 0107

Project QC Manager
Letter of Designation
March 7, 2005

Mr. Eric Watabayashi:

This letter will serve to assign you as Shaw Environmental, Inc.'s Project Quality Control (QC) Manager for the above-captioned contract task order. In the case where you are not able to perform the Project QC Manager's duties, Mr. Lee Laws or Mr. Norm Hanelt will serve as your Alternate Project QC Manager. In the role of Project QC Manager, you will have the responsibilities and authorities designated in Section 2.1.3 of the Quality Control Program Plan (QCPP). Additionally, you are granted stop work authority and will exercise this authority consistent with the QCPP, Section 16.4. You are granted the authority to approve Shaw Environmental, Inc.-approved submittals, which have been certified by qualified submittal reviewers, as identified in the QC Organization Chart for this contract task order, to ensure the quality of the work, and to direct the removal and/or replacement of nonconforming materials or work. In this capacity, you will report directly to me and will administer the established requirements of the contract task order QC Plan.

If you have any questions or require additional information, please contact me at (619) 446-4522.

Sincerely,
Shaw Environmental, Inc.

Stephen Massey
Program QC Manager

Attachment 2
Alternate Project Quality Control Manager Letter of Designation

Time-Critical Removal Action at IR Site 30 (Miller School/Woodstock Child Development Center)
Alameda Point, Alameda, California
Contract Task Order 0107

Alternate Project QC Manager
Letter of Designation
March 7, 2005

Mr. Lee Laws and Mr. Norm Hanelt:

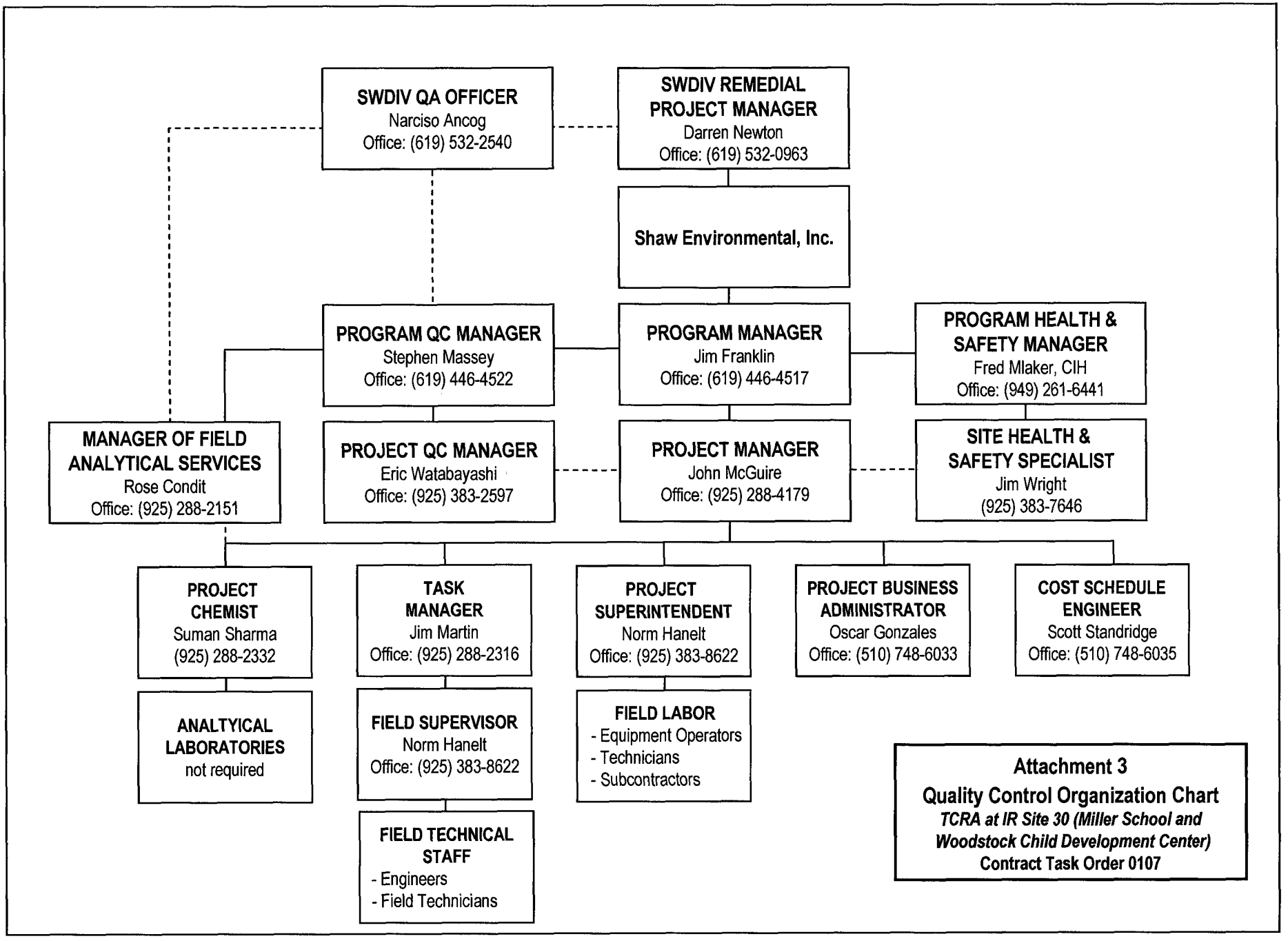
This letter will serve to assign you as Shaw Environmental, Inc.'s Alternate Project Quality Control (QC) Manager for the above-captioned contract task order. In the case where the designated Project QC Manager, Mr. Eric Watabayashi, is unable to perform the Project QC Manager's duties, you will serve in that capacity. In this role, you will have the responsibilities and authorities designated in Section 2.1.3 of the Quality Control Program Plan (QCPP). Additionally, you will have stop work authority and will exercise this authority consistent with the QCPP, Section 16.4. You are granted the authority to approve Shaw-approved submittals, which have been certified by qualified submittal reviewers, as identified on the QC Organization Chart for this contract task order, to ensure the quality of the work, and to direct the removal and/or replacement of nonconforming materials or work. You will be authorized to act as an alternate for 14 consecutive working days or 30 non-consecutive working days at a maximum. You will report directly to me and will administer the established requirements of the contract task order QC Plan.

If you have any questions or require additional information, please contact me at (619) 446-4522.

Sincerely,
Shaw Environmental, Inc.

Stephen Massey
Program QC Manager

Attachment 3
Quality Control Organization Chart


SWDIV QA OFFICER
Narciso Ancog
Office: (619) 532-2540
SWDIV REMEDIAL PROJECT MANAGER
Darren Newton
Office: (619) 532-0963
Shaw Environmental, Inc.
PROGRAM QC MANAGER
Stephen Massey
Office: (619) 446-4522
PROGRAM MANAGER
Jim Franklin
Office: (619) 446-4517
PROGRAM HEALTH & SAFETY MANAGER
Fred Mlaker, CIH
Office: (949) 261-6441
MANAGER OF FIELD ANALYTICAL SERVICES
Rose Condit
Office: (925) 288-2151
PROJECT QC MANAGER
Eric Watabayashi
Office: (925) 383-2597
PROJECT MANAGER
John McGuire
Office: (925) 288-4179
SITE HEALTH & SAFETY SPECIALIST
Jim Wright
(925) 383-7646
PROJECT CHEMIST
Suman Sharma
(925) 288-2332
TASK MANAGER
Jim Martin
Office: (925) 288-2316
PROJECT SUPERINTENDENT
Norm Hanelt
Office: (925) 383-8622
PROJECT BUSINESS ADMINISTRATOR
Oscar Gonzales
Office: (510) 748-6033
COST SCHEDULE ENGINEER
Scott Standridge
Office: (510) 748-6035
ANALTYICAL LABORATORIES
not required
FIELD SUPERVISOR
Norm Hanelt
Office: (925) 383-8622
FIELD LABOR
- Equipment Operators
- Technicians
- Subcontractors
FIELD TECHNICAL STAFF
- Engineers
- Field Technicians
Attachment 3
Quality Control Organization Chart
TCRA at IR Site 30 (Miller School and Woodstock Child Development Center)
Contract Task Order 0107

Attachment 4
Definable Features of Work Matrix

TIME-CRITICAL REMOVAL ACTION AT IR SITE 30 (MILLER SCHOOL AND WOODSTOCK CHILD DEVELOPMENT CENTER)
DEFINABLE FEATURES OF WORK MATRIX
Alameda Point, Alameda California
Contract Task Order 0107

Reference	Section No.	Feature of Work	Task Lead	Preparatory Meeting	Preparatory Inspection	Initial Inspection	Follow-Up Inspection	Completion Inspection
Work Plan	3.2.1	Woodchip, Sand, Soil Removal	Jim Martin	Jim Martin	Jim Martin	Jim Martin	Eric Watabayashi	Eric Watabayashi
Work Plan	3.2.2	Construction	Jim Martin	Jim Martin	Jim Martin	Jim Martin	Eric Watabayashi	Eric Watabayashi

Attachment 5
Testing Plan and Log

TESTING PLAN AND LOG

Contract No. N62474-98-D-2076 Contract Task Order No. 0107			Time-Critical Removal Action at IR Site 30 (Miller School and Woodstock Child Development Center) Alameda Point, Alameda California							Contractor: Shaw Environmental, Inc.	
SPECIFICATION SECTION AND PARAGRAPH NUMBER	TEST PROCEDURE	TEST NAME	ACCREDITED/ APPROVED LAB YES	 NO	SAMPLED BY	LOCATION OF TEST ON SITE	 OFF SITE	FREQUENCY OF TEST	DATE COMPLETE	DATE FORWARDED TO CONTR. OFF	REMARKS
**											

*** No testing activities have been identified for field activities under this CTO*

Attachment 6
Submittal Register

SUBMITTAL REGISTER

CONTRACT NUMBER
N62474-98-D-2076
CTO 0107

TITLE AND LOCATION: Time-Critical Removal Action at IR Site 30 (Miller School and Woodstock Child Development Center), Alameda Point, Alameda, CA

CONTRACTOR
Shaw Environmental, Inc.

SPECIFICATION SECTION
Base Contract

TRANS-MITTAL NO.	ITEM NO.	SPECIFICATION PARAGRAPH NO.	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL									CLASSI-FICATION		REVIEWER	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION		REMARKS
				DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFORMATION ONLY	GOVERNMENT APPROVED		SUB-MIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	CODE	DATE	
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y
	01	N/A	Work Plan, SD-08					X						X										
	02	4.2	Waste Management Plan, SD-08					X						X										In Work Plan
	03	4.2, 4.3.1	Environmental Protection Plan, SD-08					X						X										In Work Plan
	04	4.2, 4.3.2	Environmental Conditions Report, SD-18									X	X											In Work Plan
	05	5.3.2	Site Health and Safety Plan, SD-08					X						X										
	06	6.7	Quality Control Plan, SD-08					X						X										

(1) Days are based on a five-day workweek.

N/A denotes not applicable.

SUBMITTAL REGISTER

CONTRACT NUMBER
N62474-98-D-2076
CTO 0107

TITLE AND LOCATION: Time-Critical Removal Action at IR Site 30 (Miller School and Woodstock Child Development Center), Alameda Point, Alameda, CA

CONTRACTOR
Shaw Environmental, Inc.

SPECIFICATION SECTION
Work Plan

TRANS-MITTAL NO.	ITEM NO.	SPECIFICATION PARAGRAPH NO.	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL									CLASSI-FICATION		REVIEWER	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION		REMARKS
				DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFORMATION ONLY	GOVERNMENT APPROVED		SUB-MIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	CODE	DATE	
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y
	01	5.1	Preliminary Draft Action Memorandum, SD-08					X						X										45 days after contract award
	02	5.1	Draft Action Memorandum, SD-08					X						X										7 days after Navy comments
	03	5.1	Draft Final Action Memorandum, SD-08					X						X										30 days after agency comments
	04	5.1	Final Action Memorandum, SD-08					X					X											60 days after agency comments
	05	5.3	Internal Draft Project Closeout Report, SD-18									X		X										30 days after field work completion
	06	5.3	Final Project Closeout Report, SD-18									X	X											30 days after Navy comments