

CONFIRMATION STUDY
NAVAL AIR STATION, ALAMEDA
SAFETY PLAN FOR 1943-1956 DISPOSAL AREA
VERIFICATION STEP-FIELD WORK
(K/J 4032; Wahler NAV-112A)
27 August 1984

INTRODUCTION

This Safety Plan has been prepared for use during the Verification Step of the Confirmation Study at the Naval Air Station, Alameda (NAS, Alameda). The Plan represents the joint effort of the contractor, Wahler Associates, and the subcontractors, Kennedy/Jenks Engineers and Thomas J. Walker, Inc. The purpose of the Safety Plan is to describe procedures to be implemented during the Verification Step-Field Work to protect the health and safety of the employees performing the work.

Wahler Associates will assign either a safety officer or a field supervisor to implement this safety plan. Wahler Associates and Thomas J. Walker Inc. will train this safety officer or field supervisor in appropriate industrial hygiene and safety information, including but not limited to: training in safety awareness and response; use of respiratory protection equipment; qualitative fit testing of respiratory protection equipment; explosive conditions and lower explosive limits; confined space entry; eye and head protection; skin protection and use of impervious clothing. Before work at a site begins, the safety officer will review the site safety plan to acquaint himself with the hazards and emergency response plans for that site. This person will remain on-site during investigation activities in order to assess changing exposure conditions and to initiate emergency response plans when warranted.

SECTION 1 - MEDICAL PROGRAM

Programs of medical surveillance are often required when exposures of employees to toxic chemicals and physical stresses are known to or are likely to exceed 50 percent of the exposure level regulated by Federal and State OSHA. In addition, programs of medical surveillance are often recommended when such exposures exceed guidelines established by recognized authorities, such as the American Conference of Governmental Industrial Hygienists, who do not have regulatory authority. Since exposure levels are not anticipated to exceed such regulations and guidelines, a complete medical surveillance of employees will not be established.

Since workers may wear respirators while collecting samples at the 1943-1956 disposal area site, they will be evaluated by a licensed physician to determine whether they can wear respirators. The physician will determine what health and physical conditions are

pertinent, including lung function, perforated ear drum, claustrophobia, and so forth.

In the event that unusual circumstances arise during the performance of the field work, the safety officer will interview involved employees at the site to determine whether any exposure may have occurred and if the employees are experiencing any symptoms which may be related to the exposure. If the employees indicate any adverse effects or in the judgement of the safety officer such adverse effects are apparent or probable, the safety officer will require each of the involved employees to be evaluated by competent medical personnel. Such evaluation will be noted in the safety officer's field notes. Emergency care will be provided as described in Section 3.

SECTION 2 - EDUCATION AND TRAINING

Each employee involved in the Verification Step-Field Work will be trained in the necessary health and safety precautions related to his particular job function during the field work. As the safety requirements for this type of work are dependent largely on the professional judgement of the safety officer who has been trained in conducting this type of investigation, he, or another qualified individual designated by Wahler Associates, will be responsible for training each of the field personnel to the appropriate level for their job function. This training will include the purpose and use of safety and health equipment and its maintenance including respiratory protection, waste control and collection, cleaning equipment and devices, and equipment used for hazard recognition and evaluation.

The safety officer will also be responsible for training work party members in the recognition of hazards and in protecting themselves from adverse effects of hazards. The initial assessment study identified hazardous materials which might reasonably be anticipated at each of the sites to be studied under this verification step. This training will include the physical and chemical characteristics of the materials identified, as well as the hazards which are known and the precautions to be taken if such materials are encountered during field work.

Employees will also be required to report any unexpected or irregular occurrences which may be encountered during the Verification Step-Field Work.

Specific field procedures are included in Appendix A attached hereto.

SECTION 3 - EMERGENCY CONTINGENCY PLAN

Key Personnel Responsible for Health and Safety

The safety officer designated by Wahler Associates will be present at sampling sites during all drilling and environmental sampling

operations. This person will be knowledgeable in expected contaminants, hazards and risks, and will be responsible for coordinating emergency responses. He will also be responsible for informing and training the work party members before the work begins at a site about the risks that may be encountered, and how to minimize exposures from these hazardous materials. He will also implement the safety plan, hold safety meetings with employees, and evaluate employees understanding of risks and preventive measures. Before site work begins, this person will notify those services that will be called upon to respond to emergency situations, and will brief them on the nature of anticipated hazards and potential emergency scenarios. The groups to be notified will include local clinics and/or hospitals, and Naval activity medical, fire, and security personnel.

Severe Casualties

In the event of a serious medical emergency requiring immediate medical attention, the base ambulance will be contacted for assistance (on-base telephone number 4444; off-base telephone number 869-4444). If the casualty requires transfer to a hospital, the primary hospital will be Alameda Hospital (telephone number 522-3700; emergency room 523-4357), located near the intersection of Willow Avenue and Clinton Avenue.

Minor Injury

Personnel receiving minor injuries may go to the Industrial Medicine Clinic, Building 5, (on-base telephone number 3173; off-base telephone number 869-3173), or Alameda Hospital to receive medical attention. If personnel have been exposed to contaminated material, a sample of material will be taken for immediate analysis.

Fire

In the event of a fire or a threat to the general area requiring a coordinated response or evacuation, the base fire department will be called (on-base telephone number 333; off-base telephone number 869-333).

SECTION 4 - 1943-56 DISPOSAL AREA SITE SAFETY PLAN

Specific Hazards and Risks

Materials associated with wartime activity may have been disposed of in this area (see Figure 1) although no mention of such materials was made in the initial assessment study. To reduce the risk of drilling into possibly explosive or toxic materials, drilling will be restricted to peripheral areas, and suspected disposal areas will be avoided. Even with this precaution, explosive materials may be present in peripheral areas; therefore, the safety officer will terminate drilling immediately when evidence of industrial disposal is uncovered.



Soils in the area are suspected of containing heavy metals, oils, solvents, and low-level radiological wastes. The major pathways for contaminant exposure are skin contact with hazardous materials and inhalation of vapors or aerosols containing hazardous materials during drilling and well development operations. In addition, some radioactive materials, if encountered, may pose an inhalation hazard from radioactive dust producing alpha emissions, or a whole or partial body hazard from gamma radiation. Therefore, the safety officer will use a Geiger counter to monitor radiation and to assess the needs for special precautions if radiation is encountered.

The work party will also be exposed to the risks and hazards inherent in any land-based drilling operation occurring in an industrially developed area where subsurface conditions are uncertain. Conventional safety considerations associated with land-based drilling operations are addressed in Appendix A.

Drilling will not be conducted at the end of or adjacent to runways where drilling rig masts pose a hazard. The Base Commander will review drilling locations prior to initiating work in this area in order to comply with runway obstruction height restrictions. There are no potentially hazardous, fixed overhead impediments to drilling in the area.

Personal Protection

A board certified industrial hygienist (CIH) provided by Thomas J. Walker, Inc. will evaluate the hazards and risks associated with this site and will recommend specific personal protective equipment to be worn by the work party members. Specific equipment which will provide protection at Level C will be chosen to minimize injury from engine-driven drilling equipment and to minimize illnesses from inhalation and skin contact of chemicals. (Level C protection is described in the U.S. EPA Interim Standards Operating Safety Guide obtained from NEESA.) Personal protective equipment will include at a minimum the following:

- Double cartridge respirator for radionuclides and organic vapors.
- Escape mask
- Underwear - cotton
- Coveralls - chemical resistant
- Apron - PVC, butyl rubber, or other material impervious to chemicals
- Gloves - PVC or other material impervious to chemicals
- Safety Boots - neoprene or other material impervious to chemicals
- Booties - impervious to chemicals
- Hard hat with face shield
- Safety glasses when face shield not used

Work Zone

A work area of 50 feet will be maintained around sampling and drilling activity. It will be the responsibility of the safety officer to restrict access to the work zone by non-authorized personnel and any personnel not properly equipped.

Decontamination

Drilling cuttings not returned to the bore hole will be placed in drums or plastic bags and identified as to types of potential contaminants, i.e., solvent, oil, etc., contained therein. Drums and bags containing wastes will be disposed of by Navy personnel as hazardous material. Drilling augers will be steam cleaned within the 1943-1956 Disposal Area boundaries in a field located behind Building 379A (See Figure 1).

Steam cleaning will be performed over a plastic liner in the designated area on Figure 1. Cuttings, condensed steam, and liner will then be drummed and disposed of as hazardous material by Navy personnel.

Tools and rubber protective garments will be washed at the site. The wastewater will be disposed of on the ground adjacent to bore holes as necessary. Disposable protective wear will be placed in a plastic bag that will be sealed and provided with a label describing the bag's contents before work party members leave the sampling area. Plastic bags will be disposed of by Navy personnel as hazardous material.

Personnel

The work party is expected to include three to five members working at a single location at any time.

Emergency Procedures

The safety officer shall be notified in the event of an emergency. Drilling operations will terminate and the safety officer will determine appropriate responses. Drilling sites are located in an unencumbered field and telephones can be accessed in two directions.

Telephones readily accessible during working hours can be found in Building 524 (on-base telephone) and in the vicinity of Building 473 (off-base telephone). Building 379A has a base telephone but daily arrangements must be made with the personnel in the building for access (See Figure 1).

Air and Radiation Monitoring

The safety officer shall monitor or have monitored ambient concentrations of radiation and organic vapor using a Geiger counter and organic

vapor indicator near the bore hole during drilling. The safety officer shall be notified when radiation levels or organic vapor levels exceed ambient concentrations. Drilling will cease, equipment will be shut down, and personnel shall withdraw from the area if any of the following conditions occur:

1. the organic vapor concentrations in the operator's breathing zone exceeds 10 ppm;
2. the organic vapor concentration two feet above the bore hole exceeds 5,000 ppm or 50% of the lower explosive limit;
3. a Geiger counter reading taken two feet above the bore hole exceeds 10.0 milliroentgens per hour.

The safety officer will determine when personnel may return to the work area.

In case low levels of radiation or organic vapors are detected, personnel shall wear appropriate respirators until drilling at the location is completed. The safety officer shall attempt to identify the nature and source of the vapors; if industrial debris is apparent in the boring, drilling at this location shall be terminated.

These precautions follow the guidelines presented in a draft U.S. EPA document (provided by NEESA) covering occupational health and safety hazards at hazardous waste site investigations and environmental spill responses. Mr. Thomas J. Walker, CIH, CSP, and PE has reviewed the guidelines and has recommended the procedures outlined in this section.

Sampling Procedures

Bore holes will be drilled by the hollow stem auger method. Water samples of any water in bore holes or completed wells will be collected after drilling is completed, and samples placed in sealed containers. To the extent possible, cuttings will be returned to the bore hole, and excess cuttings will be contained for disposal by Navy personnel.

APPENDIX A

LAND-BASED DRILLING AND SAMPLING

In accordance with the policy described in Wahler Associates' Manual No. 16, "Manual of Observation and Testing Procedures for Field Engineers/Technicians," all Wahler personnel involved in field operations at NAS, Alameda are required to be conversant with the contents of the "OSHA Manual for Soil and Foundation Engineering Firms," published by the Association of Soil and Foundation Engineers, and the "Safety Manual Pertaining to the Soil Testing Profession," published by the Soil and Foundation Engineers Association.

In addition to adhering to the principles described in the two publications mentioned above, Wahler Associates' personnel performing field operations at NAS, Alameda will be required to follow certain specific rules with respect to conventional safety considerations. Some of these rules apply to all field operations, while others apply only to those involving engine-driven equipment.

At the beginning of each phase of field work (that is, each time a new type of activity is begun), a safety meeting will be held between the Project Manager, or designated safety officer, and all personnel involved in that phase of work. The purpose of the safety meeting will be to discuss the specific hazards associated with the work phase, to describe the appropriate means of dealing with those hazards (including the use of specific equipment or procedures), and to ensure that everyone clearly understands the steps to be taken in an emergency situation. During the safety meeting, the location of phones for emergency use, appropriate telephone numbers to call for various types of emergency assistance, and other site-specific safety data will be confirmed. This information will be confirmed again in the field at each site. The number of people involved in the overall Verification Step field work is not expected to exceed 10, including drilling subcontractors, Navy personnel, etc., and it is anticipated that the Project Manager will be physically present during a significant percentage of the work. Therefore, it is anticipated that direct personal supervision will constitute a major element of the conventional aspects of the safety plan. Because of the professional-level experience of all personnel proposed for this work, no special training needs are anticipated for the conventional safety aspects of the field work.

Field personnel will check in and out daily with the appropriate NAS, Alameda office, or as requested by the Base Commander, to confirm that the proposed day's work can be safely and efficiently carried out in the context of overall base operations and to keep base personnel apprised of any changes in field scheduling which might affect planned base activities. When entering each study area, personnel are required

to carefully observe what other personnel and equipment are operating in the area, which might affect the field work.

All personnel working in the vicinity of engine-driven drilling or sampling equipment are required to wear a hard hat, steel-toed footwear, and appropriate safety glasses, goggles, or face shields at all times when the sampling or drilling engines are running, or, in the case of a conventional drill rig, at any time that the mast is raised. Loose clothing and jewelry (including finger rings, but excepting wrist watches and bona-fide Medic Alert bracelets) are not to be worn around engine-driven equipment. Appropriate protective gloves are to be used when handling heavy or rough objects. An appropriate first-aid kit will be maintained at the work site.

Personnel on the site shall not possess or use alcohol or any other drugs which may have an adverse effect on their ability to operate their equipment safely and efficiently. Likewise, work will not be permitted when weather conditions or the state of health (including fatigue) of the personnel involved are likely to contribute to unsafe or inefficient operations. Bad weather is not expected to be a problem during the Verification Step, so a conservative approach is unlikely to have an adverse effect on program efficiency.

Before any equipment is raised or any excavation with power equipment, below a depth of 12 inches, is begun, the specific site shall be visually inspected by at least two persons for overhead utilities and shall be checked and approved by the appropriate authorities for underground utilities. In addition, all locations where power drilling or sampling is to take place shall be previously hand-probed for utilities to the extent practical.

Persons not directly connected with the field program will not be permitted in the vicinity of the work. Barricades, cones, ropes, or other visual barriers may be employed as necessary to discourage bystanders from approaching the active work zone. In addition, if normal local traffic flow may pose a threat at a specific work site, vehicle or other barriers may be used to route traffic around the active work zone.



CONFIRMATION STUDY
NAVAL AIR STATION, ALAMEDA
SAFETY PLAN FOR SEAPLANE LAGOON
VERIFICATION STEP-FIELD WORK
(K/J 4032; Wahler NAV-112A)
27 August 1984

INTRODUCTION

This Safety Plan has been prepared for use during the Verification Step of the Confirmation Study at the Naval Air Station, Alameda (NAS, Alameda). The Plan represents the joint effort of the contractor, Wahler Associates, and the subcontractors, Kennedy/Jenks Engineers and Thomas J. Walker, Inc. The purpose of the Safety Plan is to describe procedures to be implemented during the Verification Step-Field Work to protect the health and safety of the employees performing the work.

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SECTION 1 - MEDICAL PROGRAM

Programs of medical surveillance are often required when exposures of employees to toxic chemicals and physical stresses are known to or are likely to exceed 50 percent of the exposure level regulated by Federal and State OSHA. In addition, programs of medical surveillance are often recommended when such exposures exceed guidelines established by recognized authorities, such as the American Conference of Governmental Industrial Hygienists, who do not have regulatory authority. Since exposure levels are not anticipated to exceed such regulations and guidelines a complete medical surveillance of employees will not be established.

In the event that unusual circumstances arise during the performance of the field work, the safety officer will interview involved employees at the site to determine whether any exposure may have occurred and if the employees are experiencing any symptoms which may be related to the



exposure. If the employees indicate any adverse effects or in the judgement of the safety officer such adverse effects are apparent or probable, the safety officer will require each of the involved employees to be evaluated by competent medical personnel. Such evaluation will be noted in the safety officer's field notes. Emergency care will be provided as described in Section 3.

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The safety officer will also be responsible for training work party members in the recognition of hazards and in protecting themselves from adverse effects of hazards. The initial assessment study identified hazardous materials which might reasonably be anticipated at each of the sites to be studied under this verification step. This training will include the physical and chemical characteristics of the materials identified, as well as the hazards which are known and the precautions to be taken if such materials are encountered during field work.

Employees will also be required to report any unexpected or irregular occurrences which may be encountered during the Verification Step-Field Work.

SECTION 3 - EMERGENCY CONTINGENCY PLAN

Key Personnel Responsible for Health and Safety

The safety officer designated by Wahler Associates will be present at sampling sites during all drilling and environmental sampling operations. This person will be knowledgeable in expected contaminants, hazards and risks, and will be responsible for coordinating emergency responses. He will also be responsible for informing and training the work party members before the work begins at a site about the risks that may be encountered, and how to minimize exposures from these hazardous materials. He will also implement the safety plan, hold safety meetings with employees, and evaluate employees understanding of risks and preventive measures. Before site work begins, this person will notify those services that will be called upon to respond to emergency



situations, and will brief them on the nature of anticipated hazards and potential emergency scenarios. The groups to be notified will include local clinics and/or hospitals, and Naval activity medical, fire, and security personnel.

Severe Casualties

In the event of a serious medical emergency requiring immediate medical attention, the base ambulance will be contacted for assistance (on-base telephone number 4444; off-base telephone number 869-4444). If the casualty requires transfer to a hospital, the primary hospital will be Alameda Hospital (telephone number 522-3700; emergency room 523-4357), located near the intersection of Willow Avenue and Clinton Avenue.

Minor Injury

Personnel receiving minor injuries may go to the Industrial Medicine Clinic, Building 5, (on-base telephone number 3173; off-base telephone number 869-3173), or Alameda Hospital to receive medical attention. If personnel have been exposed to contaminated material, a sample of material will be taken for immediate analysis.

Fire

In the event of a fire or a threat to the general area requiring a coordinated response or evacuation, the base fire department will be called (on-base telephone number 333; off-base telephone number 869-333).

SECTION 4 - SEAPLANE LAGOON SITE SAFETY PLAN

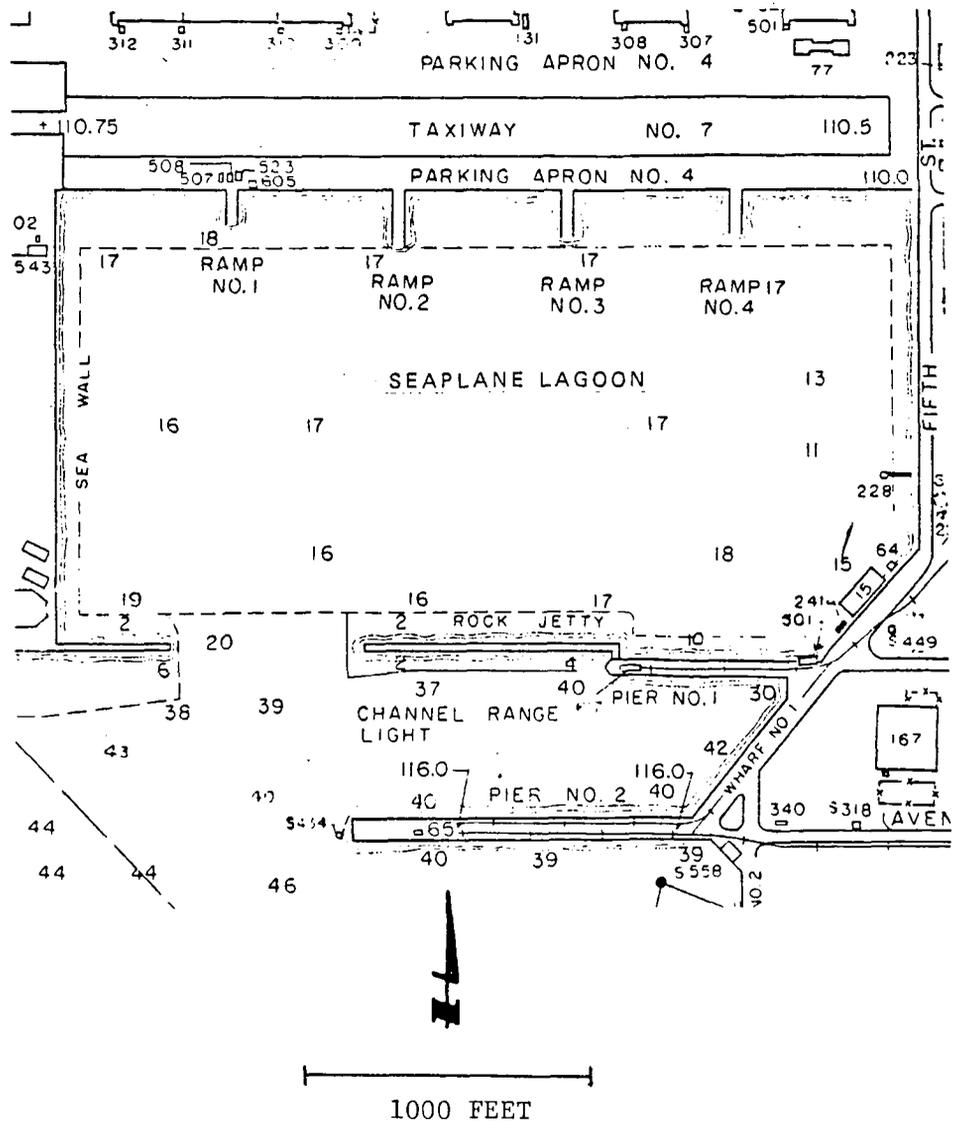
Specific Hazards and Risks

Sediments in the seaplane lagoon (Figure 1) will be sampled from a Navy boat using a Ponar grab sampler. Work party members will be under the direction of Navy personnel and will comply with Navy safety requirements and specific instructions of the Captain of the vessel.

Sediments are suspected of containing heavy metals and PCBs. The major potential pathway for exposure is expected to be adsorption through the skin by direct contact with contaminated sediments.

Personal Protection

A board certified industrial hygienist (CIH) provided by Thomas J. Walker, Inc. will evaluate the hazards and risks associated with this site and will recommend specific personal protective equipment to be worn by the work party members. Specific equipment which will provide protection at Level D will be chosen to minimize illnesses from skin contact of chemicals to members of the team in the sampling boat.



 <p>Wahler Associates PALO ALTO • NEWPORT BEACH • DENVER</p>	<p>NAS ALAMEDA CONFIRMATION STUDY VERIFICATION STEP</p>		<p>SAFETY PLAN SEAPLANE LAGOON</p>		
	<p>PROJECT NO. NAV-112A</p>	<p>DATE AUG. 7, 1984</p>	<p>FIGURE NO. B-1</p>		

(Level D protection is described in the U.S. EPA Interim Standards Operating Safety Guide obtained from NEESA.)

Personal protective equipment will include at a minimum the following:

- Underwear - cotton
- Coveralls - chemical resistant
- Gloves - PVC or other material impervious to chemicals
- Safety Boots - neoprene or other material impervious to chemicals
- Safety glasses

During work from boats in the lagoon, workers shall wear lifevests approved by the U.S. Coast Guard.

Work Zone

The work party will operate from a Navy vessel, and the designated work area is unknown at this time.

Decontamination

Sediment samples will be removed from the Ponar grab sampler over a bucket to minimize spillage onto the vessel deck. At the end of sampling, the bucket will be emptied into the lagoon and, if possible, sediments will be washed off the vessel deck into the lagoon.

Tools and rubber protective garments will be washed at the dock. The wastewater will be disposed of on the ground adjacent to wash area as necessary. Disposable protective wear will be placed in a plastic bag that will be sealed and provided with a label describing the bag's contents before work party members leave the dockside area. Plastic bags will be disposed of by Navy personnel as hazardous material.

Personnel

The work party will include three to four members, excluding Navy personnel operating the vessel.

Emergency Procedures

The work party will comply with Navy safety requirements and with specific instructions of the Captain of the vessel.

Air Monitoring

Air monitoring will not be required since ambient contaminant levels are not expected to increase due to sampling activity.



Sampling Procedures

Sediments from the Ponar grab sampler will be placed in sealed containers. Minimal amounts of excess sediment will be rinsed off the sampler, captured in a bucket, and returned to the lagoon. After the last sample is taken, disposable protective wear will be placed in a plastic bag that will be immediately sealed and disposed of by Navy personnel.



CONFIRMATION STUDY
NAVAL AIR STATION, ALAMEDA
SAFETY PLAN FOR AREA 97
VERIFICATION STEP-FIELD WORK
(K/J 4032; Wahler NAV-112A)
27 August 1984

INTRODUCTION

This Safety Plan has been prepared for use during the Verification Step of the Confirmation Study at the Naval Air Station, Alameda (NAS, Alameda). The Plan represents the joint effort of the contractor, Wahler Associates, and the subcontractors, Kennedy/Jenks Engineers and Thomas J. Walker, Inc. The purpose of the Safety Plan is to describe procedures to be implemented during the Verification Step-Field Work to protect the health and safety of the employees performing the work.

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Programs of medical surveillance are often required when exposures of employees to toxic chemicals and physical stresses are known to or are likely to exceed 50 percent of the exposure level regulated by Federal and State OSHA. In addition, programs of medical surveillance are often recommended when such exposures exceed guidelines established by recognized authorities, such as the American Conference of Governmental Industrial Hygienists, who do not have regulatory authority. Since exposure levels are not anticipated to exceed such regulations and guidelines, a complete medical surveillance of employees will not be established.

Since workers may wear respirators while working in Area 97, they will be evaluated by a licensed physician to determine whether they can wear respirators. The physician will determine what health and physical

conditions are pertinent, including lung function, perforated ear drum, claustrophobia, and so forth.

In the event that unusual circumstances arise during the performance of the field work, the safety officer will interview involved employees at the site to determine whether any exposure may have occurred and if the employees are experiencing any symptoms which may be related to the exposure. If the employees indicate any adverse effects or in the judgement of the safety officer such adverse effects are apparent or probable, the safety officer will require each of the involved employees to be evaluated by competent medical personnel. Such evaluation will be noted in the safety officer's field notes. Emergency care will be provided as described in Section 3.

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Employees will also be required to report any unexpected or irregular occurrences which may be encountered during the Verification Step-Field Work.

Specific field procedures are included in Appendix A attached hereto.

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Key Personnel Responsible for Health and Safety

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operations. This person will be knowledgeable in expected contaminants, hazards and risks, and will be responsible for coordinating emergency responses. He will also be responsible for informing and training the work party members before the work begins at a site about the risks that may be encountered, and how to minimize exposures from these hazardous materials. He will also implement the safety plan, hold safety meetings with employees, and evaluate employees understanding of risks and preventive measures. Before site work begins, this person will notify those services that will be called upon to respond to emergency situations, and will brief them on the nature of anticipated hazards and potential emergency scenarios. The groups to be notified will include local clinics and/or hospitals, and Naval activity medical, fire, and security personnel.

Severe Casualties

In the event of a serious medical emergency requiring immediate medical attention, the base ambulance will be contacted for assistance (on-base telephone number 4444; off-base telephone number 869-4444). If the casualty requires transfer to a hospital, the primary hospital will be Alameda Hospital (telephone number 522-3700; emergency room 523-4357), located near the intersection of Willow Avenue and Clinton Avenue.

Minor Injury

Personnel receiving minor injuries may go to the Industrial Medicine Clinic Building 5 (on-base telephone number 3173; off-base telephone number 869-3173), or Alameda Hospital to receive medical attention. If personnel have been exposed to contaminated material, a sample of material will be taken for immediate analysis.

Fire

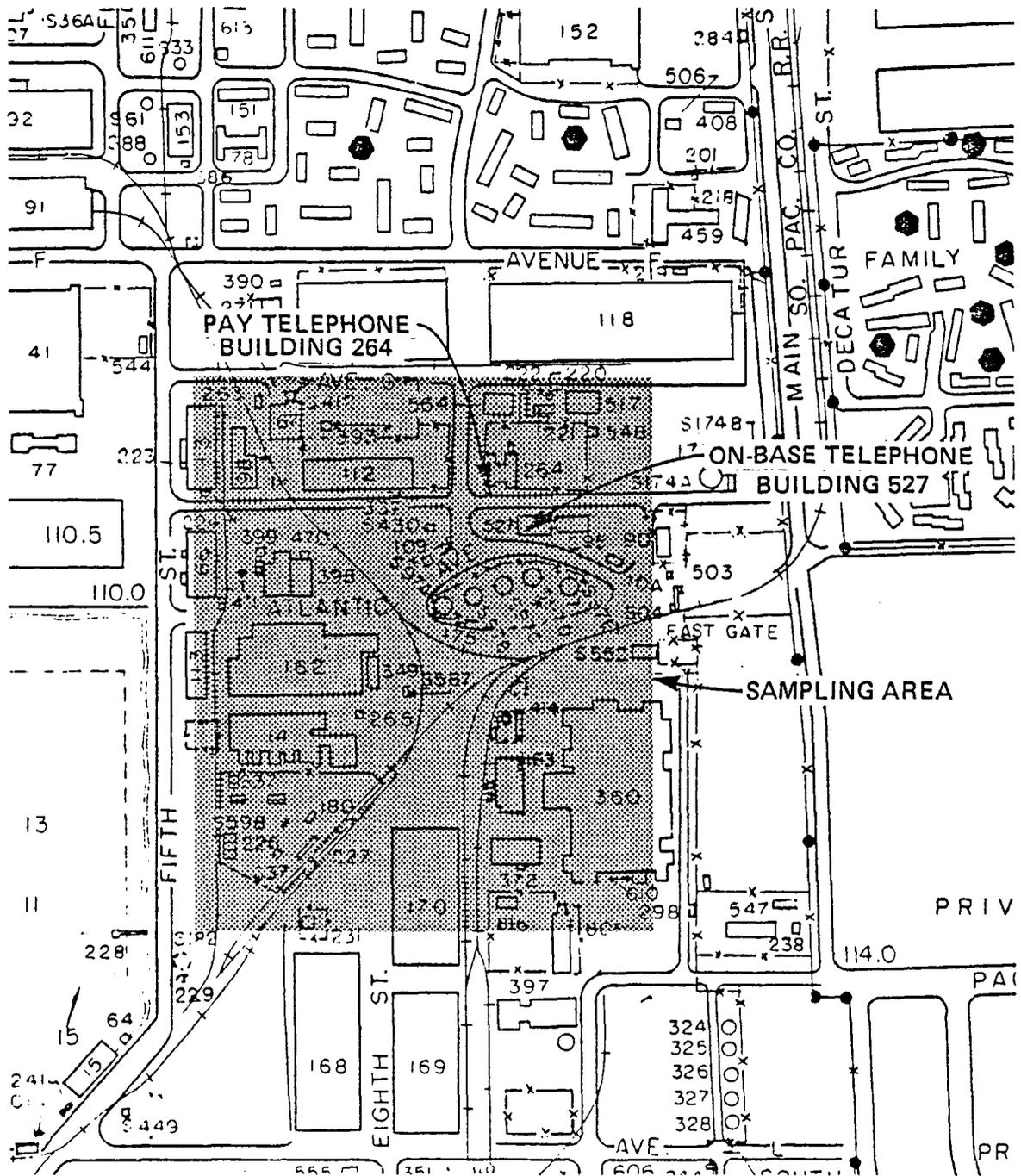
In the event of a fire or a threat to the general area requiring a coordinated response or evacuation, the base fire department will be called (on-base telephone number 333; off-base telephone number 869-333).

SECTION 4 - AREA 97 SITE SAFETY PLAN

Specific Hazards and Risks

Soils in the area are suspected of containing aviation gasoline (115/145 AVGAS) and the major hazards are those associated with land-based drilling operations and fire due to combustible vapors. The proposed sampling area is shown on Figure 1.

The work party will also be exposed to the risks and hazards inherent in any land-based drilling operation occurring in an industrially developed area where subsurface conditions are uncertain. Conventional



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SAFETY PLAN
AREA 97

PROJECT NO.	DATE	FIGURE NO.
NAV-112A	AUG. 7, 1984	C-1

safety considerations associated with land-based drilling operation are addressed in Appendix A.

Personal Protection

A board certified industrial hygienist (CIH) provided by Thomas J. Walker, Inc. will evaluate the hazards and risks associated with this site and will recommend specific personal protective equipment to be worn by the work party members. Specific equipment which will provide protection at a modified Level C will be chosen to minimize injury from engine-driven drilling equipment and to minimize illnesses from inhalation and skin contact of chemicals. (Level C protection is described in the U.S. EPA Interim Standards Operating Safety Guide obtained from NEESA.) Personal protective equipment will include at a minimum the following:

Double cartridge respirator for radionuclides and organic vapors.

Underwear - cotton

Coveralls - chemical resistant

Gloves - PVC or other material impervious to chemicals

Safety Boots - neoprene or other material impervious to chemicals

Hard hat with face shield

Safety glasses when face shield not used

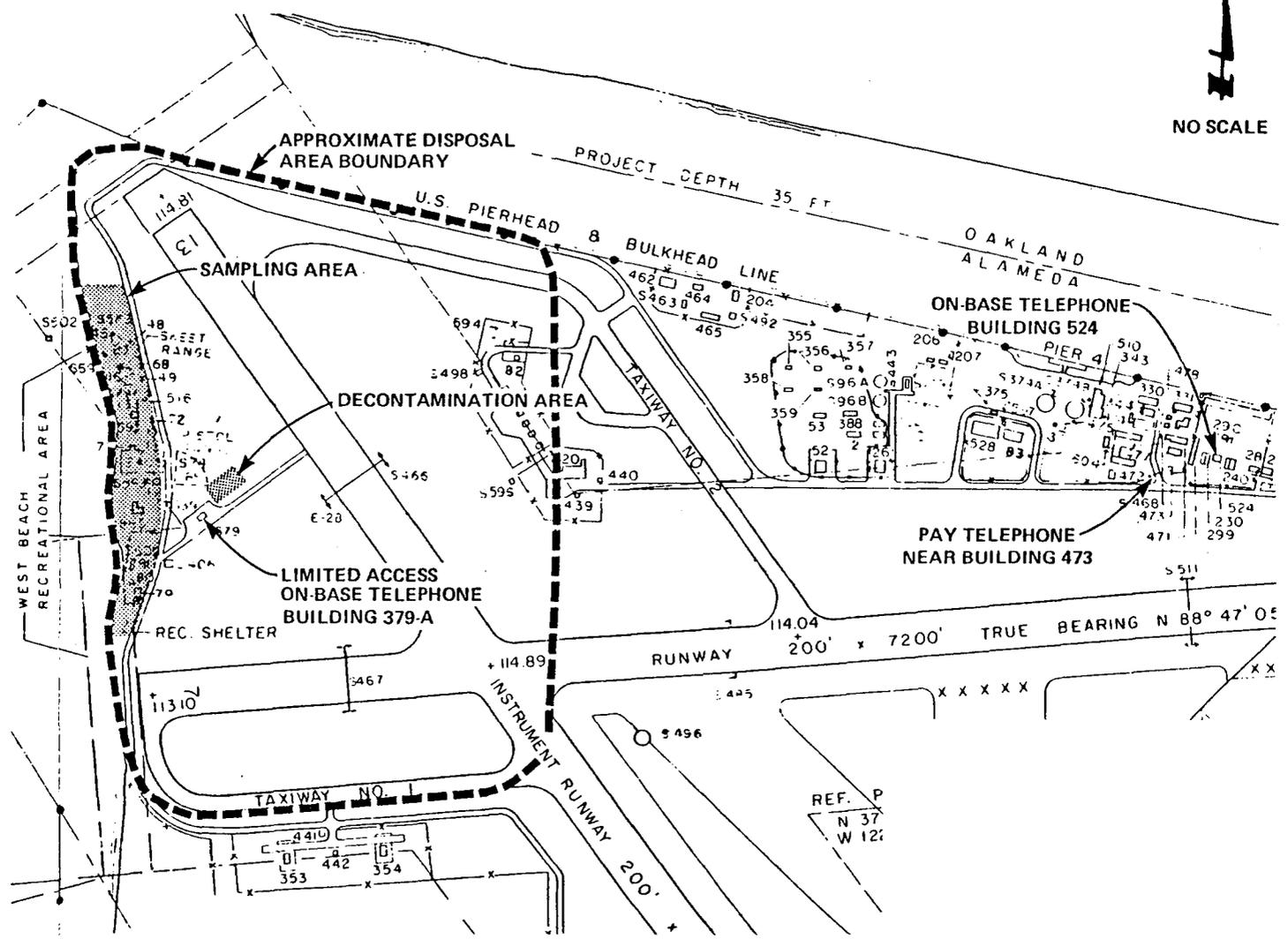
Work Zone

Portions of the site include parking lots with a moderate amount of automobile traffic (Figure 1). Contaminant exposures to nearby individuals is expected to be minimal during drilling activity; a 25-foot radius work area will be maintained to protect against injuries due to drilling operations. It will be the responsibility of the safety officer to restrict access to the work zone by non-authorized personnel and any personnel not properly equipped.

Decontamination

Drilling cuttings not returned to the bore hole will be placed in drums or plastic bags and identified as to types of contaminants, i.e., solvent, oil, etc., contained therein. Drums or bags containing wastes will be disposed of by Navy personnel as hazardous material. Drilling augers will be steam cleaned at the 1943-1956 Disposal Area decontamination area located in a field behind Building 379A (Figure 2).

Steam cleaning will be performed over a plastic liner in the designated area on Figure 2. Cuttings, condensed steam, and liner will then be drummed and disposed of as hazardous material by Navy personnel.



Wahler Associates

NAS ALAMEDA
 CONFIRMATION STUDY
 VERIFICATION STEP

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SAFETY PLAN
 AREA 97

DATE
 AUG. 7, 1984

FIGURE NO.
 C-2

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Tools and rubber protective garments will be washed at the site. The wastewater will be disposed of on the ground adjacent to bore holes as necessary. Disposable protective wear will be placed in a plastic bag that will be sealed and provided with a label describing the bag's contents before work party members leave the sampling area. Plastic bags will be disposed of by Navy personnel as hazardous material.

Personnel

The work party is expected to include three to five members working at a single location at any time.

Emergency Procedures

The major site-specific hazard is fire due to combustible vapors of AVGAS. In the event of a fire, the base fire department will be notified. Telephones are located at the base credit union building, Building 527, (on-base telephone) and in the vicinity of Building 264 (off-base telephone).

Air Monitoring

The safety officer shall monitor or have monitored ambient concentrations of radiation and organic vapor using a Geiger counter and organic vapor indicator near the bore hole during drilling. The safety officer shall be notified when organic vapor levels exceed ambient concentrations. Drilling will cease, equipment will be shut down, and personnel shall withdraw from the area if any of the following conditions occur:

1. the organic vapor concentrations in the operator's breathing zone exceeds 10 ppm;
2. the organic vapor concentration two feet above the bore hole exceeds 5,000 ppm or 50% of the lower explosive limit;

The safety officer will determine when personnel may return to the work area.

In case low levels of radiation or organic vapors are detected, personnel shall wear appropriate respirators until drilling at the location is completed. The safety officer shall attempt to identify the nature and source of the vapors.

These precautions follow the guidelines presented in a draft U.S. EPA (provided by NEESA) covering occupational health and safety hazards at hazardous waste site investigations and environmental spill responses. Mr. Thomas J. Walker, CIH, CSP, and PE has reviewed the guidelines and has recommended the procedures outlined in this section.



Sampling Procedures

In certain locations, temporary test borings may be drilled by the hollow stem auger method. Water samples of any water in bore holes will be collected immediately after drilling is completed and samples placed in sealed containers. After sample collection, cuttings will be returned to the bore hole and excess material will be contained for disposal by Navy personnel.

In other locations, existing monitoring wells will be used to obtain groundwater samples. However, these wells may require pumping for rehabilitation and purging so that they can produce representative groundwater samples. If groundwater pumped from these wells is found to contain AVGAS, the safety officer shall be notified and pumping will cease until adequate containers can be obtained for collection of development water for disposal by the Navy.



APPENDIX A

LAND-BASED DRILLING AND SAMPLING

In accordance with the policy described in Wahler Associates' Manual No. 16, "Manual of Observation and Testing Procedures for Field Engineers/Technicians," all Wahler personnel involved in field operations at NAS, Alameda are required to be conversant with the contents of the "OSHA Manual for Soil and Foundation Engineering Firms," published by the Association of Soil and Foundation Engineers, and the "Safety Manual Pertaining to the Soil Testing Profession," published by the Soil and Foundation Engineers Association.

In addition to adhering to the principles described in the two publications mentioned above, Wahler Associates' personnel performing field operations at NAS, Alameda will be required to follow certain specific rules with respect to conventional safety considerations. Some of these rules apply to all field operations, while others apply only to those involving engine-driven equipment.

At the beginning of each phase of field work (that is, each time a new type of activity is begun), a safety meeting will be held between the Project Manager, or designated safety officer, and all personnel involved in that phase of work. The purpose of the safety meeting will be to discuss the specific hazards associated with the work phase, to describe the appropriate means of dealing with those hazards (including the use of specific equipment or procedures), and to ensure that everyone clearly understands the steps to be taken in an emergency situation. During the safety meeting, the location of phones for emergency use, appropriate telephone numbers to call for various types of emergency assistance, and other site-specific safety data will be confirmed. This information will be confirmed again in the field at each site. The number of people involved in the overall Verification Step field work is not expected to exceed 10, including drilling subcontractors, Navy personnel, etc., and it is anticipated that the Project Manager will be physically present during a significant percentage of the work. Therefore, it is anticipated that direct personal supervision will constitute a major element of the conventional aspects of the safety plan. Because of the professional-level experience of all personnel proposed for this work, no special training needs are anticipated for the conventional safety aspects of the field work.

Field personnel will check in and out daily with the appropriate NAS, Alameda office, or as requested by the Base Commander, to confirm that the proposed day's work can be safely and efficiently carried out in the context of overall base operations and to keep base personnel apprised of any changes in field scheduling which might affect planned base activities. When entering each study area, personnel are required



to carefully observe what other personnel and equipment are operating in the area, which might affect the field work.

All personnel working in the vicinity of engine-driven drilling or sampling equipment are required to wear a hard hat, steel-toed footwear, and appropriate safety glasses, goggles, or face shields at all times when the sampling or drilling engines are running, or, in the case of a conventional drill rig, at any time that the mast is raised. Loose clothing and jewelry (including finger rings, but excepting wrist watches and bona-fide Medic Alert bracelets) are not to be worn around engine-driven equipment. Appropriate protective gloves are to be used when handling heavy or rough objects. An appropriate first-aid kit will be maintained at the work site.

Personnel on the site shall not possess or use alcohol or any other drugs which may have an adverse effect on their ability to operate their equipment safely and efficiently. Likewise, work will not be permitted when weather conditions or the state of health (including fatigue) of the personnel involved are likely to contribute to unsafe or inefficient operations. Bad weather is not expected to be a problem during the Verification Step, so a conservative approach is unlikely to have an adverse effect on program efficiency.

Before any equipment is raised or any excavation with power equipment, below a depth of 12 inches, is begun, the specific site shall be visually inspected by at least two persons for overhead utilities and shall be checked and approved by the appropriate authorities for underground utilities. In addition, all locations where power drilling or sampling is to take place shall be previously hand-probed for utilities to the extent practical.

Persons not directly connected with the field program will not be permitted in the vicinity of the work. Barricades, cones, ropes, or other visual barriers may be employed as necessary to discourage bystanders from approaching the active work zone. In addition, if normal local traffic flow may pose a threat at a specific work site, vehicle or other barriers may be used to route traffic around the active work zone.

CONFIRMATION STUDY
NAVAL AIR STATION, ALAMEDA
SAFETY PLAN FOR BUILDINGS 301 AND 389
VERIFICATION STEP-FIELD WORK
(K/J 4032; Wahler NAV-112A)
27 August 1984

INTRODUCTION

This Safety Plan has been prepared for use during the Verification Step of the Confirmation Study at the Naval Air Station, Alameda (NAS, Alameda). The Plan represents the joint effort of the contractor, Wahler Associates, and the subcontractors, Kennedy/Jenks Engineers and Thomas J. Walker, Inc. The purpose of the Safety Plan is to describe procedures to be implemented during the Verification Step-Field Work to protect the health and safety of the employees performing the work.

Wahler Associates will assign either a safety officer or a field supervisor to implement this safety plan. Wahler Associates and Thomas J. Walker Inc. will train this safety officer or field supervisor in appropriate industrial hygiene and safety information, including but not limited to: training in safety awareness and response; use of respiratory protection equipment; qualitative fit testing of respiratory protection equipment; explosive conditions and lower explosive limits; confined space entry; eye and head protection; skin protection and use of impervious clothing. Before work at a site begins, the safety officer will review the site safety plan to acquaint himself with the hazards and emergency response plans for that site. This person will remain on-site during investigation activities in order to assess changing exposure conditions and to initiate emergency response plans when warranted.

SECTION 1 - MEDICAL PROGRAM

Programs of medical surveillance are often required when exposures of employees to toxic chemicals and physical stresses are known to or are likely to exceed 50 percent of the exposure level regulated by Federal and State OSHA. In addition, programs of medical surveillance are often recommended when such exposures exceed guidelines established by recognized authorities, such as the American Conference of Governmental Industrial Hygienists, who do not have regulatory authority. Since exposure levels are not anticipated to exceed such regulations and guidelines, a complete medical surveillance of employees will not be established.

In the event that unusual circumstances arise during the performance of the field work, the safety officer will interview involved employees at the site to determine whether any exposure may have occurred and if the employees are experiencing any symptoms which may be related to the

exposure. If the employees indicate any adverse effects or in the judgement of the safety officer such adverse effects are apparent or probable, the safety officer will require each of the involved employees to be evaluated by competent medical personnel. Such evaluation will be noted in the safety officer's field notes. Emergency care will be provided as described in Section 3.

SECTION 2 - EDUCATION AND TRAINING

Each employee involved in the Verification Step-Field Work will be trained in the necessary health and safety precautions related to his particular job function during the field work. As the safety requirements for this type of work are dependent largely on the professional judgement of the safety officer who has been trained in conducting this type of investigation, he, or another qualified individual designated by Wahler Associates, will be responsible for training each of the field personnel to the appropriate level for their job function. This training will include the purpose and use of safety and health equipment and its maintenance including respiratory protection, waste control and collection, cleaning equipment and devices, and equipment used for hazard recognition and evaluation.

The safety officer will also be responsible for training work party members in the recognition of hazards and in protecting themselves from adverse effects of hazards. The initial assessment study identified hazardous materials which might reasonably be anticipated at each of the sites to be studied under this verification step. This training will include the physical and chemical characteristics of the materials identified, as well as the hazards which are known and the precautions to be taken if such materials are encountered during field work.

Employees will also be required to report any unexpected or irregular occurrences which may be encountered during the Verification Step-Field Work.

SECTION 3 - EMERGENCY CONTINGENCY PLAN

Key Personnel Responsible for Health and Safety

The safety officer designated by Wahler Associates will be present at sampling sites during all drilling and environmental sampling operations. This person will be knowledgeable in expected contaminants, hazards and risks, and will be responsible for coordinating emergency responses. He will also be responsible for informing and training the work party members before the work begins at a site about the risks that may be encountered, and how to minimize exposures from these hazardous materials. He will also implement the safety plan, hold safety meetings with employees, and evaluate employees understanding of risks and preventive measures. Before site work begins, this person will notify those services that will be called upon to respond to emergency

situations, and will brief them on the nature of anticipated hazards and potential emergency scenarios. The groups to be notified will include local clinics and/or hospitals, and Naval activity medical, fire, and security personnel.

Severe Casualties

In the event of a serious medical emergency requiring immediate medical attention, the base ambulance will be contacted for assistance (on-base telephone number 4444; off-base telephone number 869-4444). If the casualty requires transfer to a hospital, the primary hospital will be Alameda Hospital (telephone number 522-3700; emergency room 523-4357), located near the intersection of Willow Avenue and Clinton Avenue.

Minor Injury

Personnel receiving minor injuries may go to the Industrial Medicine Clinic, Building 5, (on-base telephone number 3173; off-base telephone number 869-3173), or Alameda Hospital to receive medical attention. If personnel have been exposed to contaminated material, a sample of material will be taken for immediate analysis.

Fire

In the event of a fire or a threat to the general area requiring a coordinated response or evacuation, the base fire department will be called (on-base telephone number 333; off-base telephone number 869-333).

SECTION 4 - BUILDINGS 301 AND 389 SITE SAFETY PLAN

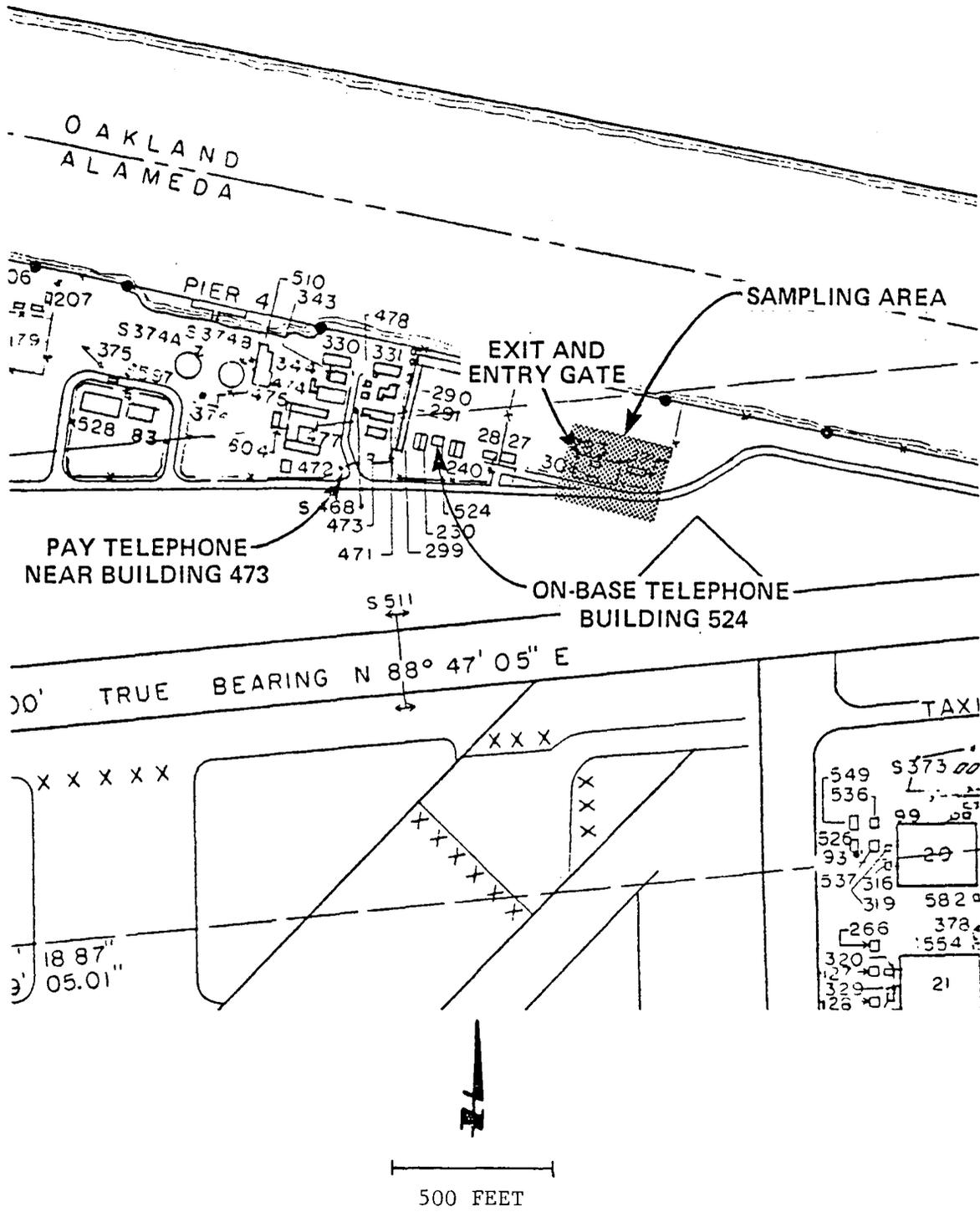
Specific Hazards and Risks

Soils in the area (see Figure 1) are suspected of containing PCBs. Minimal amounts of air-borne contaminants are expected to be generated during soil sampling. The primary potential pathway for exposure is expected to be absorption through the skin by direct contact with contaminated soil.

Hand augers or push tube samplers will be used to obtain shallow sub-surface soil samples. Eye protection will be required, particularly when push tube samplers are used, due to the hazards associated with hammer-driven tools.

Drums containing unknown chemicals, believed to be solvents, were stored on the surface near probable sampling locations at the site. Drums should be avoided during sampling.





	NAS ALAMEDA CONFIRMATION STUDY VERIFICATION STEP	SAFETY PLAN BUILDINGS 301 & 389		
		PROJECT NO. NAV - 112A	DATE AUG. 7, 1984	FIGURE NO. D-1

Personal Protection

A board certified industrial hygienist (CIH) provided by Thomas J. Walker, Inc. will evaluate the hazards and risks associated with this site and will recommend specific personal protective equipment to be worn by the work party members. Specific equipment which will provide protection at Level D will be chosen to minimize illnesses from skin contact of chemicals (Level D protection is described in the U.S. EPA Interim Standards Operating Safety Guide obtained from NEESA.) Personal protective equipment will include at a minimum the following:

- Underwear - cotton
- Coveralls - chemical resistant
- Gloves - PVC or other material impervious to chemicals
- Safety Boots - neoprene or other material impervious to chemicals
- Hard hat with face shield
- Safety glasses when face shield not used

Work Zone

The area to be sampled includes open space and a fenced-in area with a single gate for entry and exit (Figure 1). A 25-foot work area will be maintained around the work party to prevent non-authorized personnel from passing near sampling activity. The amount of air borne contaminants generated during sampling is expected to be minimal.

Decontamination

Soil removed during hand boring will be returned to the bore hole after samples are withdrawn. Excess soil is expected to be minimal and will be left at the site.

Tools and rubber protective garments will be washed at the site. The wastewater will be disposed of on the ground adjacent to bore holes as necessary. Disposable protective wear will be placed in a plastic bag that will be sealed and provided with a label describing the bag's contents before work party members leave the sampling area. Plastic bags will be disposed of by Navy personnel as hazardous material.

Personnel

The work party is expected to include two or three members.

Emergency Procedures

There is only a single gate for entry and exit from the fenced-in area as shown on Figure 1. However, when the site was last visited, no obstacles were observed impeding a rapid exit in case of an emergency.

Site escape routes will be identified in the field by the safety officer prior to the start of field work at this site.

Hazards associated with sampling in this area are expected to be minimal, and the emergency contingency plan presented in Section 3 should be adequate.

Telephones are located in Building 524 (on-base telephone) and in the vicinity of Building 473 (off-base telephone).

Air Monitoring

Air monitoring will not be required since ambient contaminant levels are not expected to increase due to sampling activity.

Sampling Procedures

Samples will be taken from the surface with scoops or from shallow sub-surface zones using a hand auger or push tube sampler. Samples will be removed from the sampler and put directly in sealed containers. Bore holes will be backfilled with excavated soil immediately after soil samples are withdrawn.



CONFIRMATION STUDY
NAVAL AIR STATION, ALAMEDA
SAFETY PLAN FOR CAN-2 AREA
VERIFICATION STEP-FIELD WORK
(K/J 4032; Wahler NAV-112A)
27 August 1984

INTRODUCTION

This Safety Plan has been prepared for use during the Verification Step of the Confirmation Study at the Naval Air Station, Alameda (NAS, Alameda). The Plan represents the joint effort of the contractor, Wahler Associates, and the subcontractors, Kennedy/Jenks Engineers and Thomas J. Walker, Inc. The purpose of the Safety Plan is to describe procedures to be implemented during the Verification Step-Field Work to protect the health and safety of the employees performing the work.

Wahler Associates will assign either a safety officer or a field supervisor to implement this safety plan. Wahler Associates and Thomas J. Walker Inc. will train this safety officer or field supervisor in appropriate industrial hygiene and safety information, including but not limited to: training in safety awareness and response; use of respiratory protection equipment; qualitative fit testing of respiratory protection equipment; explosive conditions and lower explosive limits; confined space entry; eye and head protection; skin protection and use of impervious clothing. Before work at a site begins, the safety officer will review the site safety plan to acquaint himself with the hazards and emergency response plans for that site. This person will remain on-site during investigation activities in order to assess changing exposure conditions and to initiate emergency response plans when warranted.

SECTION 1 - MEDICAL PROGRAM

Programs of medical surveillance are often required when exposures of employees to toxic chemicals and physical stresses are known to or are likely to exceed 50 percent of the exposure level regulated by Federal and State OSHA. In addition, programs of medical surveillance are often recommended when such exposures exceed guidelines established by recognized authorities, such as the American Conference of Governmental Industrial Hygienists, who do not have regulatory authority. Since exposure levels are not anticipated to exceed such regulations and guidelines, a complete medical surveillance of employees will not be established.

In the event that unusual circumstances arise during the performance of the field work, the safety officer will interview involved employees at the site to determine whether any exposure may have occurred and if the employees are experiencing any symptoms which may be related to the



exposure. If the employees indicate any adverse effects or in the judgement of the safety officer such adverse effects are apparent or probable, the safety officer will require each of the involved employees to be evaluated by competent medical personnel. Such evaluation will be noted in the safety officer's field notes. Emergency care will be provided as described in Section 3.

SECTION 2 - EDUCATION AND TRAINING

Each employee involved in the Verification Step-Field Work will be trained in the necessary health and safety precautions related to his particular job function during the field work. As the safety requirements for this type of work are dependent largely on the professional judgement of the safety officer who has been trained in conducting this type of investigation, he, or another qualified individual designated by Wahler Associates, will be responsible for training each of the field personnel to the appropriate level for their job function. This training will include the purpose and use of safety and health equipment and its maintenance including respiratory protection, waste control and collection, cleaning equipment and devices, and equipment used for hazard recognition and evaluation.

The safety officer will also be responsible for training work party members in the recognition of hazards and in protecting themselves from adverse effects of hazards. The initial assessment study identified hazardous materials which might reasonably be anticipated at each of the sites to be studied under this verification step. This training will include the physical and chemical characteristics of the materials identified, as well as the hazards which are known and the precautions to be taken if such materials are encountered during field work.

Employees will also be required to report any unexpected or irregular occurrences which may be encountered during the Verification Step-Field Work.

Specific field procedures are included in Appendix A attached hereto.

SECTION 3 - EMERGENCY CONTINGENCY PLAN

Key Personnel Responsible for Health and Safety

The safety officer designated by Wahler Associates will be present at sampling sites during all drilling and environmental sampling operations. This person will be knowledgeable in expected contaminants, hazards and risks, and will be responsible for coordinating emergency responses. He will also be responsible for informing and training the work party members before the work begins at a site about the risks that may be encountered, and how to minimize exposures from these hazardous materials. He will also implement the safety plan, hold safety meetings with employees, and evaluate employees understanding of risks

and preventive measures. Before site work begins, this person will notify those services that will be called upon to respond to emergency situations, and will brief them on the nature of anticipated hazards and potential emergency scenarios. The groups to be notified will include local clinics and/or hospitals, and Naval activity medical, fire, and security personnel.

Severe Casualties

In the event of a serious medical emergency requiring immediate medical attention, the base ambulance will be contacted for assistance (on-base telephone number 4444; off-base telephone number 869-4444). If the casualty requires transfer to a hospital, the primary hospital will be Alameda Hospital (telephone number 522-3700; emergency room 523-4357), located near the intersection of Willow Avenue and Clinton Avenue.

Minor Injury

Personnel receiving minor injuries may go to the Industrial Medicine Clinic, Building 5 (on-base telephone number 3173; off-base telephone number 869-3173), or Alameda Hospital to receive medical attention. If personnel have been exposed to contaminated material, a sample of material will be taken for immediate analysis.

Fire

In the event of a fire or a threat to the general area requiring a coordinated response or evacuation, the base fire department will be called (on-base telephone number 333; off-base telephone number 869-333).

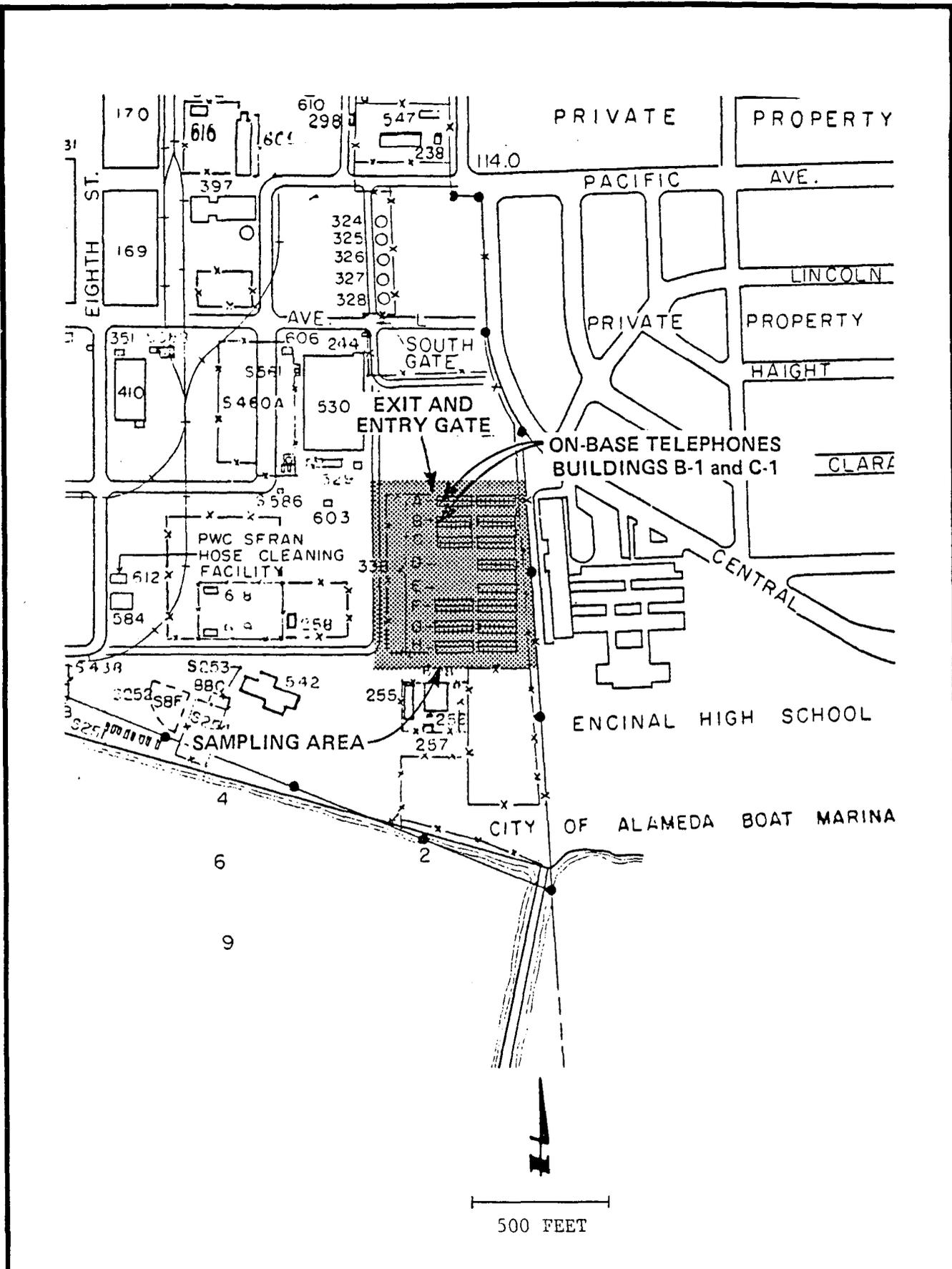
SECTION 4 - CAN-2 AREA SITE SAFETY PLAN

Specific Hazards and Risks

Soils in this area (see Figure 1) are suspected of containing PCBs, heavy metals, pesticides, and solvents. Minimal amounts of air borne contaminants are expected to be generated during soil sampling. The primary potential pathway for exposure is expected to be by absorption through the skin by direct contact with contaminated soil.

In certain locations, hand augers or push tube samplers will be used to obtain shallow subsurface soil samples. Eye protection will be required, particularly when push tube samplers are used, due to the hazards associated with hammer-driven tools.

A monitoring well will also be installed in this area. During drilling operations, the work party will also be exposed to the risks and hazardous inherent in any land-based drilling operation occurring in an industrially developed area where subsurface conditions are uncertain.



<p>Wahler Associates</p>	<p>NAS ALAMEDA CONFIRMATION STUDY VERIFICATION STEP</p> <p>PALO ALTO • NEWPORT BEACH • DENVER</p>	<p>SAFETY PLAN CAN-2 AREA</p>		
		<p>PROJECT NO. NAV-112A</p>	<p>DATE AUG. 7, 1984</p>	<p>FIGURE NO. E-1</p>

Conventional safety considerations associated with land-based drilling operations are addressed in Appendix A.

The site is used as a general storage area for the base and drums containing unknown chemicals may be stored on the surface in the area. Drums should be avoided during sampling.

Personal Protection

A board certified industrial hygienist (CIH) provided by Thomas J. Walker, Inc. will evaluate the hazards and risks associated with this site and will recommend specific personal protective equipment to be worn by the work party members. Specific equipment which will provide protection at Level D will be chosen to minimize illnesses from skin contact of chemicals. (Level D protection is described in the U.S. EPA Interim Standards Operating Safety Guide obtained from NEESA.) Personal protective equipment will include at a minimum the following:

- Underwear - cotton
- Coveralls - chemical resistant
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Work Zone

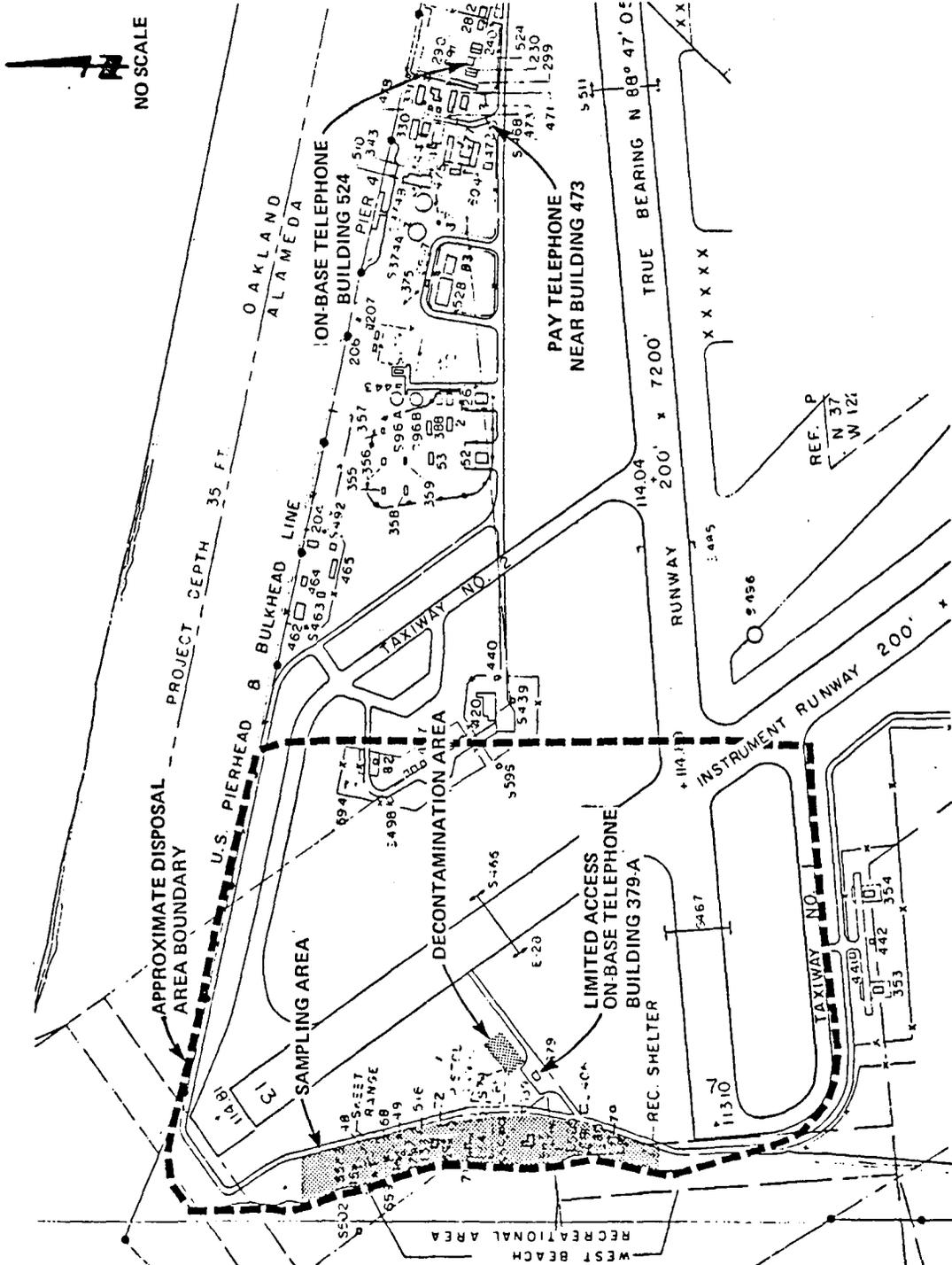
The area to be sampled is located within a large fenced-in storage area with a single gate for entry and exit (Figure 1). A 25-foot work area will be maintained around the work party to prevent non-authorized personnel from passing near sampling activity. The amount of air borne contaminants generated during sampling is expected to be minimal.

Decontamination

Drilling cuttings not returned to the bore hole will be placed in drums or plastic bags and identified as to types of potential contaminants, i.e., solvent, oil, etc., contained therein. Drums and bags containing wastes will be disposed of by Navy personnel as hazardous material. Drilling augers will be steam cleaned within the 1943-1956 Disposal Area boundaries in a field located behind Building 379A (See Figure 2).

Steam cleaning will be performed over a plastic liner in the designated area on Figure 2. Cuttings, condensed steam, and liner will then be drummed and disposed of as hazardous material by Navy personnel.

Soil removed during hand boring will be returned to the bore hole after samples are withdrawn. Excess soil is expected to be minimal and will be left at the site.



Wahler Associates

**NAS ALAMEDA
CONFIRMATION STUDY
VERIFICATION STEP**

**SAFETY PLAN
CAN-2 AREA**

PALO ALTO • NEWPORT BEACH • DENVER

PROJECT NO.
NAV-112A

DATE
AUG. 7, 1984

FIGURE NO.
E-2

Tools and rubber protective garments will be washed at the site. The washwater will be disposed of on the ground adjacent to bore holes as necessary. Disposable protective wear will be placed in a plastic bag that will be sealed and provided with a label describing the bag's contents before work party members leave the sample area. Plastic bags will be disposed of by Navy personnel as hazardous material.

Personnel

The work party is expected to include two or three members.

Emergency Procedures

The site is located within a large, fenced-in storage area with a single gate for entry and exit. The location of items stored within the area is subject to change, so a map showing escape routes from specific locations within the area is not appropriate. However, when last visited, there appeared to be sufficient amount of open space within the area so that a work party would be able to rapidly reach the exit gate in the event of an emergency. Site escape routes will be identified in the field by the Safety Officer prior to the start of field work at this site.

Hazards associated with sampling in this area are expected to be minimal and the emergency contingency plan presented in Section 3 should be adequate. On-base telephones are available in Buildings B-1 and C-1 as shown on Figure 1.

Air Monitoring

Air monitoring will not be required since ambient contaminant levels are not expected to increase due to sampling activity.

Sampling Procedures

Samples will be taken from the surface with scoops or from shallow sub-surface zones using a hand auger or push tube sampler. Samples will be removed from the sampler and put directly in sealed containers. Bore holes will be backfilled with excavated soil immediately after soil samples are withdrawn.



APPENDIX A

LAND-BASED DRILLING AND SAMPLING

In accordance with the policy described in Wahler Associates' Manual No. 16, "Manual of Observation and Testing Procedures for Field Engineers/Technicians," all Wahler personnel involved in field operations at NAS, Alameda are required to be conversant with the contents of the "OSHA Manual for Soil and Foundation Engineering Firms," published by the Association of Soil and Foundation Engineers, and the "Safety Manual Pertaining to the Soil Testing Profession," published by the Soil and Foundation Engineers Association.

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Field personnel will check in and out daily with the appropriate NAS, Alameda office, or as requested by the Base Commander, to confirm that the proposed day's work can be safely and efficiently carried out in the context of overall base operations and to keep base personnel apprised of any changes in field scheduling which might affect planned base activities. When entering each study area, personnel are required

to carefully observe what other personnel and equipment are operating in the area, which might affect the field work.

All personnel working in the vicinity of engine-driven drilling or sampling equipment are required to wear a hard hat, steel-toed footwear, and appropriate safety glasses, goggles, or face shields at all times when the sampling or drilling engines are running, or, in the case of a conventional drill rig, at any time that the mast is raised. Loose clothing and jewelry (including finger rings, but excepting wrist watches and bona-fide Medic Alert bracelets) are not to be worn around engine-driven equipment. Appropriate protective gloves are to be used when handling heavy or rough objects. An appropriate first-aid kit will be maintained at the work site.

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Before any equipment is raised or any excavation with power equipment, below a depth of 12 inches, is begun, the specific site shall be visually inspected by at least two persons for overhead utilities and shall be checked and approved by the appropriate authorities for underground utilities. In addition, all locations where power drilling or sampling is to take place shall be previously hand-probed for utilities to the extent practical.

Persons not directly connected with the field program will not be permitted in the vicinity of the work. Barricades, cones, ropes, or other visual barriers may be employed as necessary to discourage bystanders from approaching the active work zone. In addition, if normal local traffic flow may pose a threat at a specific work site, vehicle or other barriers may be used to route traffic around the active work zone.