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HEALTH AND SAFETY PLAN FOR POINCIANA HOUSING QUARTERLY GROUNDWATER
SAMPLING NAS KEY WEST FL
4/1/2000
TETRA TECH NUS

Health and Safety Plan
for
**Poinciana Housing Quarterly
Groundwater Sampling**

Naval Air Station Key West
Key West, Florida



Southern Division
Naval Facilities Engineering Command
Contract No. N62467-94-D-0888
Contract Task Order 0032

April 2000

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FOR
POINCIANA HOUSING QUARTERLY
GROUNDWATER SAMPLING**

**Naval Air Station Key West
Key West, Florida**

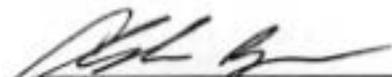
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April 2000

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1.0 INTRODUCTION

The objective of this Health and Safety Plan (HASP) is to provide the minimum safety practices and procedures for Tetra Tech NUS (TtNUS) personnel conducting groundwater sampling activities to support Base Re-Alignment and Closure (BRAC) activities at Poinciana Housing, Naval Air Station (NAS) Key West, located in Key West, Florida.

This HASP has been prepared using the latest available information regarding known or suspected chemical contaminants and potential and foreseeable physical hazards associated with the planned work at NAS Key West. This HASP has been designed to be used in accordance TtNUS Health and Safety Guidance Manual. The Guidance Manual provides detailed information pertaining to procedures to be performed on site as directed by the HASP, as well as TtNUS standard operating procedures.

The Health and Safety Guidance Manual and this HASP have been developed to be used together. It is recommended that both documents be present at the site to comply with the requirements stipulated in the Occupational Safety and Health Administration (OSHA) standard 29 CFR 1910.120.

This HASP has been written to support proposed tasks and techniques associated with the scope of work as presented in Section 4.0. Should the proposed work site conditions and/or suspected hazards change, or if new information becomes available, this document will be modified. All changes to the HASP will be made with the approval of the TtNUS CLEAN Health and Safety Manager (HSM) and the Task Order Manager (TOM). The TOM will notify all affected personnel of all changes.

The elements of this HASP are in compliance with the requirements established by OSHA 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response" (HAZWOPER). The information contained in this plan, as well as policies on conducting on site operations, have been obtained from the TtNUS Health and Safety Program and NAS Key West policies and procedures.

1.1 AUTHORITY

This work is authorized under the Comprehensive Long - Term Environmental Action Navy (CLEAN) contract, administered through the U.S. Navy Southern Division Naval Facilities Engineering Command, as defined under Contract No. N62467-94-D-0888; Contract Task Order Number 0032.

1.2 KEY PROJECT PERSONNEL AND ORGANIZATION

This section defines responsibilities for site safety and health for TtNUS and subcontractor employees conducting environmental sampling and other field activities. Personnel assigned to these positions shall exercise the primary responsibility for all on site health and safety. These persons will be the primary point of contact for any questions regarding the safety and health procedures and the selected control measures.

- The TtNUS TOM is responsible for the overall direction and implementation of health and safety for this work.
- The TtNUS Field Operations Leader (FOL) is responsible for implementation of this HASP. The FOL manages field activities, executes the work plan, and enforces safety procedures, as applicable to the work plan. Specifically, the FOL will:
 - Verify training and medical status of on-site personnel in relation to site activities.
 - Assist and represent TtNUS with emergency services (if needed).
 - Provide elements site-specific training for all on site personnel.
- The TtNUS Site Safety Officer or their representative supports the FOL concerning all aspects of health and safety including, but not limited to:
 - Coordinating all health and safety activities
 - Selecting, applying, inspecting, and maintaining personal protective equipment
 - Establishing work zones and control points
 - Implementing air monitoring procedures
 - Implementing hazard communication, respiratory protection, and other associated safety and health programs
 - Coordinating emergency services
 - Providing elements of site-specific training
- Compliance with these requirements is monitored by the Project Health and Safety Officer (PHSO) and is coordinated through the HSM.

1.3 SITE INFORMATION AND PERSONNEL ASSIGNMENTS

Site Name: Naval Air Station (NAS) Key West **Address:** Key West, Florida

Site Point of Contact: Mr. Michael Stanka **Phone Number:** (305)293-2030

Purpose of Site Visit: TtNUS will conduct groundwater sampling activities to supporting Base Re-Alignment and Closure activities at NAS Key West. See Sections 3.0 and 4.0 for details concerning the site background and scope of work.

Proposed Dates of Work: April 2000 – April 2001

Project Team:

Tetra Tech NUS Personnel:

Mr. Chuck Bryan
Mr. Marty Ray/Ms. Emily Harrison (alternate)
Matthew M. Soltis, CIH, CSP
James K. Laffey
Nate Reel/Paul Halverson
Marty Ray
Rick Offsanko

Discipline/Tasks Assigned:

Task Order Manager (TOM)
Field Operations Leader (FOL)
Health and Safety Manager (HSM)
Project Health and Safety Officer (PHSO)
Sampler
Site Safety Officer (SSO)
Geologist

Subcontractor Personnel:

Discipline/Tasks Assigned:

Hazard Assessment (for purpose of 29 CFR 1910.132) for HASP preparation has been conducted by:

Marty Ray and James K. Laffey

2.0 EMERGENCY ACTION PLAN

2.1 INTRODUCTION

This section has been developed as part of a preplanning effort to direct and guide field personnel in the event of an emergency. However, given the nature of the work planned significant emergencies are not anticipated. Also, since a majority of potential emergency situations will require assistance from outside emergency responders, TtNUS personnel will not provide emergency response support for emergency events beyond the capabilities of on site personnel. In the event of emergencies that cannot be handled by personnel, an evacuation will be initiated. In an evacuation, site personnel will move to a safe place of refuge and the appropriate emergency response agencies will be notified. The emergency response agencies listed in this plan are capable of providing the most effective response, and as such, will be designated as the primary responders. These agencies are located within a reasonable distance from the area of operations, which ensures adequate emergency response time. This emergency action plan conforms to the requirements of OSHA Standard 29 CFR 1910.38(a), as allowed in OSHA 29 CFR 1910.120(I)(1)(ii).

TtNUS personnel will, through the necessary actions, provide incidental response measures for incidents such as:

- Incipient Fire and spill prevention and response
- Removal of personnel from emergency situations
- Provision of initial medical support for injury/illnesses requiring only first-aid level support
- Provision of site control and security measures, as necessary

2.2 PRE-EMERGENCY PLANNING

Through the initial hazard/risk assessment effort, there is very minor potential for injury or illnesses resulting from exposure to chemical, physical, or other hazards, and subsequently little likelihood of emergency situations (See Attachment I Injury and Illness Procedure and Report Form). To further minimize or eliminate potential emergency situations, pre-emergency planning activities associated with this project shall be implemented. The FOL is responsible for:

- Coordinating response actions with NAS Key West Emergency Services personnel to ensure that TtNUS emergency action activities are compatible with existing facility emergency response procedures.
- Identifying a chain of command for emergency action.
- Educating site workers to the hazards and control measures associated with planned activities at the site, and providing early recognition and prevention, where possible.

2.3 EMERGENCY RECOGNITION AND PREVENTION

2.3.1 Recognition

Foreseeable emergency situations that may be encountered during site activities will generally be recognizable by visual observation. Visual observation will be the principal method of identifying any hazards that may be associated with the proposed scope of work. These potential hazards, the activities with which they have been associated, and the recommended control methods are discussed in detail in Sections 5.0 and 6.0 of this document.

2.3.2 Prevention

TtNUS personnel will minimize the potential for emergencies by ensuring compliance with the HASP, the Health and Safety Guidance Manual, applicable OSHA regulations, and by following directions given by those persons responsible for the health, safety, and welfare of personnel.

2.4 SAFE DISTANCES AND PLACES OF REFUGE

In the event that the site must be evacuated, all personnel will immediately stop activities and report to a pre-determined safe place of refuge. The safe place of refuge may also serve as the telephone communication point, as communication with emergency response agencies may be necessary. Telephone communication points and safe places of refuge will be determined prior to the commencement of site activities and will be conveyed to personnel as part pre-site training. Upon reporting to the refuge location, personnel will remain there until directed otherwise by the TtNUS FOL or the On-Scene Incident Commander. The FOL will take a head count at this location to confirm the presence of all site personnel. Emergency response agencies will be notified of any unaccounted for personnel.

2.5 EVACUATION ROUTES AND PROCEDURES

Once an evacuation is initiated, personnel will terminate site activities and proceed immediately to the designated place of refuge, unless doing so would further jeopardize the welfare of workers. In such an event, personnel will proceed to a designated alternate location and remain there until further notification from the FOL. The use of these locations as assembly points provides communication and a direction point for emergency services, should they be needed.

2.5.1 Decontamination Procedures/Emergency Medical Treatment

During any site evacuation, decontamination procedures will be performed only if doing so does not further jeopardize the welfare of site workers. Decontamination will not be performed if the incident warrants immediate evacuation. However, it is unlikely that an evacuation would occur which would require workers to evacuate the site without first performing the necessary decontamination procedures.

TtNUS personnel will perform removal of personnel from emergency situations and may provide initial medical support for injury/illnesses requiring only first-aid level support. Medical attention above that level will require assistance and support from the designated emergency response agencies. Attachment I provides the procedure to follow when reporting an injury/illness, and the form to be used for this purpose. **If the emergency involves personnel exposures to chemicals, follow the steps provided in Figure 2-1.**

FIGURE 2-1
Emergency Response Protocol

The purpose of this protocol is to provide guidance for the medical management of exposure situations.

In the event of a personnel exposure to a hazardous substance or agent:

- Rescue, when necessary, employing proper equipment and methods.
- Give attention to emergency health problems -- breathing, cardiac function, bleeding, and shock.
- Transfer the victim to the medical facility designated in this HASP by suitable and appropriate conveyance (i.e. ambulance for serious events)
- Obtain as much exposure history as possible (a Potential Exposure report is attached).
- If the exposed person is a TtNUS employee, call the medical facility and advise them that the patient(s) is/are being sent and that they can anticipate a call from the WorkCare physician. WorkCare will contact the medical facility and request specific testing which may be appropriate. The care of the victim will be monitored by WorkCare physicians. Site officers and personnel should not attempt to get this information, as this activity leads to confusion and misunderstanding.
- Call WorkCare at 1-800-455-6155 (enter Ext. 109), or follow the voice prompt for after hours and weekend notification, and be prepared to provide:
 - Any known information about the nature of the exposure.
 - As much of the exposure history as was feasible to determine in the time allowed.
 - Name and phone number of the medical facility to which the victim(s) has/have been taken.
 - Name(s) of the exposed Tetra Tech NUS, Inc. employee(s).
 - Name and phone number of an informed site officer who will be responsible for further investigations.
 - Fax appropriate information (e.g., MSDS) to WorkCare at (714) 456-2154.
- Contact Corporate Health and Safety Department (Matt Soltis) at 1-800-245-2730.

As environmental data is gathered and the exposure scenario becomes more clearly defined, this information should be forwarded to WorkCare.

WorkCare will compile the results of all data and provide a summary report of the incident. A copy of this report will be placed in each victim's medical file in addition to being distributed to appropriately designated company officials.

Each involved worker will receive a letter describing the incident but deleting any personal or individual comments. This generalized summary will be accompanied by a personalized letter describing the individual's findings/results. A copy of the personal letter will be filed in the continuing medical file maintained by WorkCare.

**FIGURE 2-1 (CONTINUED)
POTENTIAL EXPOSURE REPORT**

Name: _____ Date of Exposure: _____

Social Security No.: _____ Age: _____ Sex: _____

Client Contact: _____ Phone No.: _____

Company Name: _____

I. Exposing Agent

Name of Product or Chemicals (if known): _____

Characteristics (if the name is not known)

Solid Liquid Gas Fume Mist Vapor

II. Dose Determinants

What was individual doing? _____

How long did individual work in area before signs/symptoms developed? _____

Was protective gear being used? If yes, what was the PPE? _____

Was there skin contact? _____

Was the exposing agent inhaled? _____

Were other persons exposed? If yes, did they experience symptoms? _____

III. Signs and Symptoms (check off appropriate symptoms)

Immediately With Exposure:

Burning of eyes, nose, or throat
Tearing
Headache
Cough
Shortness of Breath

Chest Tightness / Pressure
Nausea / Vomiting
Dizziness
Weakness

Delayed Symptoms:

Weakness
Nausea / Vomiting
Shortness of Breath
Cough

Loss of Appetite
Abdominal Pain
Headache
Numbness / Tingling

IV. Present Status of Symptoms (check off appropriate symptoms)

Burning of eyes, nose, or throat
Tearing
Headache
Cough
Shortness of Breath
Chest Tightness / Pressure
Cyanosis

Nausea / Vomiting
Dizziness
Weakness
Loss of Appetite
Abdominal Pain
Numbness / Tingling

Have symptoms: (please check off appropriate response and give duration of symptoms)
Improved: _____ Worsened: _____ Remained Unchanged: _____

V. Treatment of Symptoms (check off appropriate response)

None: _____ Self-Medicated: _____ Physician Treated: _____

2.6 EMERGENCY ALERTING AND ACTION/RESPONSE PROCEDURES

Since TtNUS personnel will be working in close proximity to each other, voice commands will comprise the mechanisms to alert site personnel of an emergency. If an incident occurs, site personnel will initiate the following procedures:

- Initiate incident alerting procedures (if needed) verbally.
- Describe to the FOL (who will serve as the Incident Coordinator) what has occurred and provide as many details as possible.
- If the FOL determines that the situation is beyond the capabilities of the site personnel emergency services will be contacted using the emergency reference information listed in Table 2-1. Explain the situation and the appropriate emergency services will be dispatched. **Stay on the phone and follow the instructions of the emergency contact.**

2.7 EMERGENCY CONTACTS

Prior to performing work at the site, all personnel will be thoroughly briefed on the emergency procedures to be followed in the event of an accident. As indicated earlier, Table 2-1 provides a list of emergency contacts and their corresponding telephone numbers. This table will be made readily available to all site personnel.

**TABLE 2-1
EMERGENCY REFERENCE
NAS KEY WEST, FLORIDA**

AGENCY	TELEPHONE
Key West Police/Rescue Services	911 or (305) 293-2971
NAS Key West Point of Contact Michael Stanka	(305)293-2030
Base Police	(305)293-2114
Base Fire Department Boca Chica	(305)293-3333
Hospital: Lower Florida Keys Health System	(305)294-5531
Base Officer of the Day (OOD)	(305)293-2971
Chemtrec National Response Center	(800)424-9300 (800)424-8802
Project Specific Contacts:	
TtNUS, Aiken Office	(803)649-7363
Task Order Manager Chuck Bryan	(803)649-7963 x345
Field Operations Leader Marty Ray	(803)649-7963 x340
TtNUS, Pittsburgh Office	(800)245-2730
Health and Safety Manager Matthew M. Soltis, CIH, CSP	(412)921-8912
Project Health and Safety Officer James K. Laffey	(412)921-8678

2.8 EMERGENCY ROUTE TO HOSPITAL

The closest hospital to NAS Key West is Lower Florida Keys Health System. An area map showing the proximity of NAS Key West to the hospital is incorporated into this HASP as Figure 2-1. Directions are as follows:

From Poinciana Housing, use the DUCK STREET GATE EXIT and proceed 2 blocks to FLAGLER STREET. Turn LEFT and proceed to the road ends. Turn LEFT and proceed to U.S. 1. Turn RIGHT and proceed off island of Key West to first traffic light at JUNIOR COLLEGE ROAD. Turn LEFT and proceed on JUNIOR COLLEGE ROAD and you will see HOSPITAL SIGN. Follow road to HOSPITAL which will be on the RIGHT. Hospital is located at 5900 COLLEGE ROAD ON STOCK ISLAND.

3.0 SITE BACKGROUND

NAS Key West is in southern Monroe County, Florida. The U.S. Navy manages 6,323 acres of land divided into twenty separate tracts in the lower Florida Keys, concentrated around Key West and Boca Chica Key. The Naval Station at Key West was disestablished in 1974, resulting in the relocation of several units. At present, NAS Key West is proceeding with realignment of aviation operations, a research laboratory, communications intelligence, counternarcotics air surveillance operations, a weather service, and several other activities on Key West. In addition to the Naval activities and units, other Department of Defense (DOD) and Federal agencies at NAS Key West include the U.S. Air Force, U.S. Army, and U.S. Coast Guard.

Several installations in various parts of the lower Florida Keys comprise the Naval Complex at Key West. Most of these are on Key West and Boca Chica Key. Key West, one of the two westernmost major islands of the Florida Keys, is approximately 150 miles southwest of Miami and 90 miles north of Havana, Cuba. Key West is connected to the mainland by the Overseas Highway (U.S. Highway No. 1). The topography at the NAS Key West is generally flat.

3.1 ZONE G (POINCIANA HOUSING)

Poinciana Housing is situated on 33 acres on the east-end of Key West and consists of 212 townhouse-type units constructed in 1966. The site is located in a residential/commercial area with recreational areas nearby including boating, a sports complex, malls, etc. Since 1942, the property has been used as residential housing with the Navy acquiring the property in 1947.

In 1998 the Poinciana Housing Site Inspection (SI) detected arsenic in excess of the Florida Maximum Contaminant Level (MCL) of 50 micrograms per liter ($\mu\text{g/L}$) in monitoring well G02-MW-01 (B&R Environmental, 1998). Quarterly monitoring in 1998 and 1999 also detected arsenic in excess of the MCL in the same well. In 1999 the Poinciana Housing Supplemental Site Inspection (SSI) identified two locations where arsenic in subsurface soils (greater than 2 feet below land surface) exceeded the NAS Key West Partnering Team selected action level of 2.7 milligrams per kilogram (mg/kg) (TtNUS, 1999). However, a 95-percent-confidence level was calculated showing arsenic does not exceed the 2.7 mg/kg action level in surface soil (zero to 2 feet below land surface) at Poinciana Housing (TtNUS, 1999).

4.0 SCOPE OF WORK

This section of the HASP addresses all proposed site activities that are to be conducted while performing the Quarterly Monitoring at the NAS Key West. If tasks other than those identified are to be performed at this site this HASP will be modified accordingly.

The investigative methods to be conducted include, but may not be limited to:

- Mobilization/Demobilization
- Decontamination of sampling associated equipment
- Monitoring well development and purging
- Groundwater sampling and chemical analysis for arsenic
- Investigation derived waste (IDW) if necessary

The activities will be performed to monitor site contamination. Any tasks to be conducted outside of the elements listed here will be considered a change in scope requiring modification of this document. All requested modifications to this document will be submitted to the HSM by the TOM or a designated representative.

5.0 TASKS/HAZARDS/ASSOCIATED CONTROL MEASURES SUMMARIZATION

Table 5-1 of this section serves as the primary portion of the site-specific HASP which identifies the tasks that are to be performed as part of the scope of work. This table will be modified and incorporated into this document as new or additional tasks are performed at the site. The anticipated hazards, recommended control measures, air monitoring recommendations, required Personal Protective Equipment (PPE), and decontamination measures for each site task are discussed in detail. This table and the associated control measures shall be changed, if the scope of work, contaminants of concern, or other conditions change.

Through using the table, site personnel can determine which hazards are associated with each task and at each site, and what associated control measures are necessary to minimize potential exposure or injuries related to those hazards. The table also assists field team members in determining which PPE and decontamination procedures to use based on proper air monitoring techniques and site-specific conditions.

As discussed earlier, a Health and Safety Guidance Manual accompanies this table and HASP. The manual is designed to further explain supporting programs and elements for other site -specific aspects as required by 29 CFR 1910.120. The Guidance Manual should be referenced for additional information regarding air monitoring instrumentation, decontamination activities, emergency response, hazard assessments, hazard communication and hearing conservation programs, medical surveillance, PPE, respiratory protection, site control measures, standard work practices, and training requirements. Many TtNUS SOPs are also provided in this Guidance Manual.

Safe Work Permits issued for all activities (See Section 9.4) will use elements defined in Table 5-1 as it's primary reference. The FOL and/or the SSO completing the Safe Work Permit will add additional site-specific information. In situations where the Safe Work Permit is more conservative than the direction provided in Table 5-1 due to the incorporation of site-specific elements, the Safe Work Permit will be followed.

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**TABLE 5-1
TASKS/HAZARDS/CONTROL MEASURES COMPENDIUM FOR
NAVAL AIR STATION KEY WEST, KEY WEST, FLORIDA
PAGE 1 OF 2**

Tasks/Operation/ Locations	Anticipated Hazards	Recommended Control Measures	Hazard Monitoring	Personal Protective Equipment <i>Items in italics are deemed optional as conditions or the FOL or SSO dictate.</i>	Decontamination Procedures
Groundwater Sampling and Monitoring well development and purging. IDW handling.	<p>Chemical Hazards:</p> <ol style="list-style-type: none"> 1) Air/particulate/water borne contaminants including metals primarily arsenic. Further information on these contaminants is presented in Table 6-1. 2) Transfer of contamination into clean areas <p>Physical hazards:</p> <ol style="list-style-type: none"> 3) Lifting (muscle strains and pulls) 4) Pinches and compressions 5) Slip, trips, and falls 6) Natural hazards (Insect/animal bites and stings) 7) Inclement weather 	<ol style="list-style-type: none"> 1) Use PPE to control exposures to potentially contaminated media. 2) Decontaminate all equipment and supplies between sampling locations and prior to leaving the site. 3) Use machinery or multiple personnel for heavy lifts. When handling IDW drums use a two-wheel drum cart or 4 wheeled dolly. Use proper lifting techniques 4) When moving drums watch placement of hands. Be careful not to catch fingers in between drums. Always use the buddy system when moving heavy drums. 5) Preview work locations for unstable/uneven terrain. Barricade all excavations and other associated drop off points at least 3 feet from the edge. 6) Avoid nesting areas, use commercially available insect repellents. Report potential hazards to the SSO. 7) Suspend or terminate operations until directed otherwise by SSO 	Monitoring instrumentation will be used as specified in the Sampling and Analysis Plan to bias samples.	<p>Level D - (Minimum Requirements)</p> <ul style="list-style-type: none"> - Standard field attire (sleeved shirt; long pants) - Tyvek coveralls and disposable boot covers if surface contamination is present or if the potential for soiling work attire exists. - Nitrile gloves with surgical style inner gloves for soil and groundwater sampling - Steel toe safety shoes - Safety glasses - <i>Hardhat (when overhead hazards exists, or identified as a operation requirement)</i> - <i>Reflective vest for high traffic areas</i> - <i>Hearing protection for high noise areas, or as required based on the noise level at each operation.</i> <p>Note: The Safe Work Permit(s) for this task (see Attachment II) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>	<p>Personnel Decontamination will consist of a soap/water wash and rinse for outer protective equipment (e.g. boots, gloves, PVC splash suits, etc.). This function will take place at a satellite location. Disposable PPE will be bagged between sampling events. This procedure will consist of</p> <ul style="list-style-type: none"> - Sample acquisition - Clean (Deionized water spray) the outside of the sample containers/label/bag <p>This decontamination procedure for Level D protection will consist of</p> <ul style="list-style-type: none"> - Equipment drop - Soap/water wash and rinse of outer boots and outer gloves, as applicable - Soap/water wash and rinse of the outer splash suit, as applicable - Wash hands and face, leave contamination reduction zone
Mobilization/ Demobilization	<p>Physical Hazards:</p> <ol style="list-style-type: none"> 1) Lifting (muscle strains and pulls) 2) Pinches and compressions 3) Slip, trips, and falls 4) Moving machinery 5) Natural hazards (Insect/animal bites and stings) 6) Vehicular and foot traffic 	<ol style="list-style-type: none"> 1) Use machinery or multiple personnel for heavy lifts. Use proper lifting techniques. 2) Use pinch bars or other equipment if caught in the machine point of operation. 3) Preview work locations for unstable/uneven terrain. Barricade all excavations from access closer than two feet from the edge. 4) All equipment will be <ul style="list-style-type: none"> - Inspected in accordance with OSHA, and manufacturers design. (See Attachment II of this HASP or Section 10.0 of the TtNUS Health and Safety Guidance Manual). - Operated by qualified operators, and knowledgeable ground crew. 5) Avoid nesting areas, use commercially available repellents. Report potential hazards to the SSO. 6) Traffic and equipment considerations are to include the following: <ul style="list-style-type: none"> - Establish safe zones of approach (i.e. Boom + 3 feet). - Secure all loose articles to avoid possible entanglement. - All equipment shall be equipped with movement warning systems. - Employ safety belts and follow the site traffic rules. <p>Traffic patterns will be dictated supporting onsite activities. However, regulated patterns in and about the work zones and support thereof will be established to safely control moving equipment, vehicles, and pedestrians around the area of operation.</p>	Not required	<p>Level D - (Minimum Requirements)</p> <ul style="list-style-type: none"> - Standard field attire (Sleeved shirt; long pants) - Steel toe safety shoes - <i>Safety glasses</i> - <i>Hardhat (when overhead hazards exists, or identified as a operation requirement)</i> - <i>Reflective vest for high traffic areas</i> - <i>Hearing protection for high noise areas, or as required based on the noise level at each operation.</i> <p>Note: The Safe Work Permit(s) for this task (see Attachment II) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>	Not required

**TABLE 5-1
TASKS/HAZARDS/CONTROL MEASURES COMPENDIUM FOR
NAVAL AIR STATION KEY WEST, KEY WEST, FLORIDA
PAGE 2 OF 2**

Tasks/Operation/ Locations	Anticipated Hazards	Recommended Control Measures	Hazard Monitoring	Personal Protective Equipment <i>Items in italics are deemed optional as conditions or the FOL or SSO dictate.</i>	Decontamination Procedures
Decontamination of Sampling Equipment	<p>Chemical Hazards:</p> <p>1) Air/particulate/water borne contaminants including metals primarily arsenic. Further information on these contaminants is presented in Table 6-1.</p> <p>2) Decontamination fluids - Liquinox (detergent), acetone or methanol, and hexane</p> <p>Physical Hazards:</p> <p>3) Lifting (muscle strains and pulls) 4) Pinches and compressions 5) Inclement weather</p>	<p>1) and 2) Use protective equipment to minimize contact with site contaminants and hazardous decontamination fluids. Obtain manufacturer's MSDS for any decontamination solvents used onsite. Use appropriate PPE as identified on MSDS.</p> <p>3) Use multiple persons where necessary for lifting and handling sampling equipment for decontamination purposes.</p> <p>4) Provide stacking racks for air drying of decontaminated equipment to prevent unstable drying stacks of equipment from collapsing.</p> <p>5) Suspend or terminate operations until directed otherwise by SSO</p>	Use visual observation, and real-time monitoring instrumentation to ensure all equipment has been properly cleaned of contamination and dried.	<p>For sampling equipment, the following PPE is required</p> <p>Level D Minimum requirements -</p> <ul style="list-style-type: none"> - Standard field attire (Sleeved shirt; long pants) - Steel toe safety shoes - Nitrile outer gloves, cotton liners - Safety glasses underneath a splash shield <p>Note: The Safe Work Permit(s) for this task (see Attachment II) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>	<p>Personnel Decontamination: This decontamination procedure for Level D protection will consist of:</p> <ul style="list-style-type: none"> - Soap/water wash and rinse of outer gloves - Soap/water wash and rinse of the outer splash suit, as applicable - Wash hands and face, leave contamination reduction zone <p>Equipment Decontamination</p> <p>Sampling equipment will be decontaminated as per the requirements in the Sampling and Analysis Plan and/or Work Plan.</p> <p>MSDS for any decon solutions (Alconox, methanol, isopropanol, hexane, etc.) will be obtained and used to determine proper handling / disposal methods and protective measures (PPE, first-aid, etc.).</p> <p>The FOL or the SSO will be responsible for evaluating equipment arriving onsite and that which is to leave the site. No equipment will be authorized access or exit without this evaluation</p>

6.0 HAZARD ASSESSMENT AND CONTROLS

This section provides reference information regarding the chemical and physical hazards which may be associated with activities that are to be conducted as part of the scope of work. Table 6-1 provides specific information related to the various chemical hazards that may be present at the planned project areas within NAS Key West. Specifically, toxicological information, exposure limits, symptoms of exposure, physical properties, and air monitoring and sampling data are discussed in the table.

6.1 CHEMICAL HAZARDS

Information provided regarding previous site activities and potential sources of contamination indicates the primary contaminant of concern is Arsenic.

Exposure to chemical hazards while performing the elements identified within the scope of work is considered to be minimal even though the activity is intrusive. This assessment is based on the number of locations to be investigated, the method of extraction, and the contaminant concentrations identified during prior sampling programs.

6.2 PHYSICAL HAZARDS

The following is a list of physical hazards that may be encountered at the site or maybe present during the performance of site activities associated with the scope of work.

- Slip, trip, and fall hazards
- Strain/muscle pulls from manual lifting
- Contact with energized sources (aboveground and underground)
- Ambient temperature extremes
- Inclement weather
- Natural Hazards (ticks, snakes, plants, etc.)

Many of these physical hazards are discussed in detail in Section 4.0 of the Health and Safety Guidance Manual. Additional information regarding physical hazards associated with the site is provided in Table 5-1 of this HASP.

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7.0 AIR MONITORING

Direct reading instruments (Photoionization Detector or Flame Ionization Detector) will not detect Arsenic.

The greatest potential for exposure to these contaminants generally would be as a result of inhalation or ingestion of contaminant-laden particulates (i.e., dusts). As a result, any observations of airborne particulates will indicate a potential for exposure, and will require control measures such as area wetting, upgrade of PPE, or evacuation. Given the proposed activities, however, it is not anticipated that airborne particulates will be generated any appreciable concentrations to present a significant health hazard.

8.0 TRAINING/MEDICAL SURVEILLANCE REQUIREMENTS

8.1 INTRODUCTORY/REFRESHER/SUPERVISORY TRAINING

This section is included to specify health and safety training and medical surveillance requirements for TtNUS personnel participating in on site activities. All TtNUS personnel must complete 40 hours of introductory hazardous waste site training prior to performing work at the NAS Key West. TtNUS personnel who have had introductory training more than 12 months prior to site work must have completed 8 hours of refresher training within the past 12 months before being cleared for site work. In addition, 8-hour supervisory training in accordance with 29 CFR 1910.120(e)(4) will be required for site supervisory personnel.

Documentation of TtNUS introductory, supervisory, and refresher training as well as site-specific training will be maintained at the site. Copies of certificates or other official documentation will be used to fulfill this requirement.

8.1.1 Requirements For Subcontractors

Identified TtNUS subcontractor personnel must have completed introductory hazardous waste site training or equivalent work experience as defined in OSHA Standard 29 CFR 1910.120(e) and 8 hours of refresher training meeting the requirements of 29 CFR 1910.120(e)(8) prior to performing field work at the NAS Key West. TtNUS subcontractors must certify that each employee has had such training by sending TtNUS a letter, on company letterhead, containing the information in the example letter provided in Figure 8-1. This letter will be accompanied by training certificates or some other form of official documentation for all subcontractor personnel participating in site activities.

8.2 SITE-SPECIFIC TRAINING

TtNUS will provide site-specific training to all TtNUS personnel who will perform work on this project. Site-specific training will include:

- Names of designated personnel and alternates responsible for site safety and health
- Safety, health, and other hazards present on site
- Use of personal protective equipment

The following statements must be typed on company letterhead and signed by an officer of the company and accompanied by copies of personnel training certificates:

LOGO
XYZ CORPORATION
555 E. 5th Street
Nowheresville, Kansas 55555

Month, day, year

Mr. Chuck Bryan
Task Order Manager
Tetra Tech NUS
900 Trail Ridge Road
Aiken, South Carolina 29803

Subject: HAZWOPER Training for Naval Air Station Key West (NAS Key West), Key West, Florida

Dear Mr. Bryan:

As an officer of XYZ Corporation, I hereby state that I am aware of the potential hazardous nature of the subject project. I also understand that it is our responsibility to comply with all applicable occupational safety and health regulations, including those stipulated in Title 29 of the Code of Federal Regulations (CFR), Parts 1900 through 1910 and Part 1926.

I also understand that Title 29 CFR 1910.120, entitled "Hazardous Waste Operations and Emergency Response," requires an appropriate level of training for certain employees engaged in hazardous waste operations. In this regard, I hereby state that the following employees have had 40 hours of introductory hazardous waste site training or equivalent work experience as required by 29 CFR 1910.120(e) and have had 8 hours of refresher training as required by 29 CFR 1910.120(e)(8) and site supervisory personnel have had training in accordance with 29 CFR 1910.120(e)(4).

LIST FULL NAMES OF EMPLOYEES AND THEIR SOCIAL SECURITY NUMBERS HERE.

Should you have any questions, please contact me at (555) 555-5555.

Sincerely,

(Name and Title of Company Officer)

Enclosed - Copies of Training Certificates

FIGURE 8-1. EXAMPLE TRAINING LETTER

- Work practices to minimize risks from hazards
- Medical surveillance requirements
- Contents of the Health and Safety Plan
- Signs and symptoms of overexposure to site contaminants
- Contents of the Health and Safety Plan
- Emergency response procedures (evacuation and assembly points)
- Spill response procedures
- Review of the contents of relevant Material Safety Data Sheets
- Emergency response procedures (evacuation and assembly points)
- Associated hazards and restricted areas within the NAS Key West.

Site-specific training documentation will be established through the use of Figure 8-2.

8.3 MEDICAL SURVEILLANCE

All TtNUS personnel participating in project field activities will have had a physical examination meeting the requirements of TtNUS medical surveillance program. Documentation for medical clearances will be maintained in the TtNUS Aiken office and made available, as necessary.

8.3.1 Medical Surveillance Requirements For Subcontractors

Identified subcontractors are required to obtain a certificate of their ability to perform hazardous waste site work and to wear respiratory protection. The "Subcontractor Medical Approval Form" provided in Figure 8-3 shall be used to satisfy this requirement, providing it is properly completed and signed by a licensed physician.

Subcontractors who have a company medical surveillance program meeting the requirements of paragraph (f) of OSHA 29 CFR 1910.120 can substitute "Subcontractor Medical Approval Form" with a letter, on company letterhead, containing all of the information in the example letter presented in Figure 8-4 of this HASP.

For employees of _____
Company Name

Participant Name: _____ Date of Exam: _____

Part A

The above-named individual has:

1. Undergone a physical examination in accordance with OSHA Standard 29 CFR 1910.120, paragraph (f), and was found to be medically -
 qualified to perform work at the Naval Air Station Key West; Key West, Florida
 not qualified to perform work at the Naval Air Station Key West; Key West, Florida
and,
2. Undergone a physical examination in accordance with OSHA 29 CFR 1910.134(b)(10) and was found to be medically -
 qualified to wear respiratory protection
 not qualified to wear respiratory protection

My evaluation has been based on the following information, as provided to me by the employer.

- A copy of OSHA Standard 29 CFR 1910.120 and appendices.
- A description of the employee's duties as they relate to the employee's exposures.
- A list of known/suspected contaminants and their concentrations (if known).
- A description of any personal protective equipment used or to be used.
- Information from previous medical examinations of the employee that is not readily available to the examining physician.

Part B

I, _____, have examined _____
Physician's Name (print) Participant's Name (print)

and have determined the following information:

FIGURE 8-3. SUBCONTRACTOR MEDICAL APPROVAL FORM

1. Results of the medical examination and tests (excluding finding or diagnoses unrelated to occupational exposure):

2. Any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health:

3. Recommended limitations upon the employee's assigned work:

I have informed this participant of the results of this medical examination and any medical conditions which require further examination or treatment.

Based on the information provided to me, and in view of the activities and hazard potentials involved at the Naval Air Station Key West; Key West, Florida, this participant

- may
- may not

perform his/her assigned task.

Physician's Signature _____

Address _____

Phone Number _____

NOTE: Copies of test results are maintained and available at:

Address

**FIGURE 8-3. SUBCONTRACTOR MEDICAL APPROVAL FORM
PAGE TWO**

The following statements must be typed on company letterhead and signed by an officer of the company:

LOGO
XYZ CORPORATION
555 E. 5th Street
Nowheresville, Kansas 55555

Month, day, year

Mr. Chuck Bryan
Task Order Manager
Tetra Tech NUS
900 Trail Ridge Road
Aiken, South Carolina 29803

Subject: Medical Surveillance for Naval Air Station Key West (NAS Key West), Key West, Florida

Dear Mr. Bryan:

As an officer of XYZ Corporation, I hereby state that the persons listed below participate in a medical surveillance program meeting the requirements contained in paragraph (f) of Title 29 of the Code of Federal Regulations (CFR), Part 1910.120, entitled "Hazardous Waste Operations and Emergency Response: Final Rule." I further state that the persons listed below have had physical examinations under this program within the past 12 months and that they have been cleared, by a licensed physician, to perform hazardous waste site work and to wear positive and negative pressure respiratory protection. I also state that, to my knowledge, no person listed below has any medical restriction that would preclude him/her from working at the NAS Key West, Key West, Florida.

LIST FULL NAMES OF EMPLOYEES AND THEIR SOCIAL SECURITY NUMBERS HERE.

Should you have any questions, please contact me at (555) 555-5555.

Sincerely,

(Name and Title of Company Officer)

FIGURE 8-4. EXAMPLE MEDICAL SURVEILLANCE LETTER

8.3.2 Requirements for All Field Personnel

Each field team member, including subcontractors and visitors, entering the exclusion zone(s) shall be required to complete and submit a copy of the Medical Data Sheet found in the TtNUS Health and Safety Guidance Manual. This shall be provided to the SSO, prior to participating in site activities. The purpose of this document is to provide site personnel and emergency responders with additional information that may be necessary in order to administer medical attention.

8.4 SUBCONTRACTOR EXCEPTIONS

In situations in which the exclusion zone is not entered or when there is no potential for exposure to site contaminants, subcontractor personnel may be exempt from some of the training and medical surveillance requirements. All subcontractors and visiting personnel are required to receive site-specific training (as discussed in Section 8.2) regarding information provided in this HASP. Examples of subcontractors who may be exempt from training and medical surveillance requirements may include surveyors who perform surveying activities at the site perimeters or in areas where there is no potential for exposure to site contaminants, and in this case the subcontractor providing concrete coring services.

The use of the subcontractor exception is strictly limited to the authority of the CLEAN Health and Safety Manager.

9.0 SITE CONTROL

This section outlines the means by which TtNUS will delineate work zones and use these work zones in conjunction with decontamination procedures to prevent the spread of contaminants into previously unaffected areas of the site. It is anticipated that a fractured three-zone approach will be used during work at this site. This three zone approach will utilize an exclusion zone, a contamination reduction zone, and a support zone. It is also anticipated that this control measure will be used to control access to site work areas. Use of such controls will restrict the general public, minimize the potential for the spread of contaminants, and protect individuals who are not cleared to enter work areas.

9.1 EXCLUSION ZONE

The exclusion zone will be considered those areas of the site of known or suspected contamination. It is not anticipated that significant amounts of surface contamination are present in the proposed work areas of this site. It is anticipated that this will remain so unless contaminants are brought to the surface by intrusive activities, such as when conducting the soil boring and sampling as slated for this statement of work. Furthermore, once intrusive activities have been completed and surface contamination has been removed, the potential for exposure is again diminished and the area can then be reclassified as part of the contamination reduction zone. Therefore, the exclusion zones for this project will be limited to those areas of the site where active work is being performed plus a designated area surrounding the point of operation (see Table 5-1 for a list of specific operations). The exclusion zone for most site activities will be fragmented to represent the areas where the soils are disturbed through soil boring or sampling activities. All exclusion zones will be delineated using barrier tape, cones, and postings to inform and direct facility personnel.

9.1.1 Exclusion Zone Clearance

A pre-startup site visit will be conducted by members of the identified field team in an effort to identify proposed subsurface investigation locations, conduct utility clearances, and provide upfront notices concerning scheduled activities within the facility.

In all cases, no subsurface activities will proceed without utility clearance. In the event that a utility is struck during a subsurface investigative activity, the emergency numbers provided in Section 2.7, Table 2-1, will be notified.

When base personnel are working within the proximity of this investigation, they will be moved or their operation temporarily discontinued to remove them from potential hazards associated with this operation.

9.2 CONTAMINATION REDUCTION ZONE

The contamination reduction zone (CRZ) will be a buffer area between the exclusion zone and any area of the site where contamination is not suspected. This area will also serve as a focal point in supporting exclusion zone activities. This area will be delineated using barrier tape, cones, and postings to inform and direct facility personnel. Decontamination will be conducted at a central location. All equipment potentially contaminated will be bagged and taken to that location for decontamination. Given this consideration, equipment required to complete this operation may include hand augers and stainless steel bowls and spatulas for each location.

9.3 SUPPORT ZONE

The support zone for this project will include a staging area where site vehicles will be parked, equipment will be unloaded, and where food and drink containers will be maintained. In all cases, the support zones will be established at areas of the site where exposure to site contaminants would not be expected during normal working conditions or foreseeable emergencies.

9.4 SAFE WORK PERMITS

All exclusion zone activities conducted in support of this project will be done so using this HASP as a reference guide and Safe Work Permits to incorporate site-specific information to guide and direct field crews on a task by task basis. An example of the Safe Work Permit to be used during site activities is illustrated in Figure 9-1.

All permits will be issued by the SSO or his/her on site representative in the morning prior to the commencement of on site activities. Partially completed Safe Work Permits are located in Attachment II of this HASP.

Safe Work Permits are to be completed in accordance with the specifications contained in Table 5-1, and the other sections of the HASP as appropriate. All personnel identified on the permit as participating in the task will be made aware of its contents by the supervisor accepting the permit. Any problems which occurred throughout the task will be documented by the supervisor on the permit.

All permits will be returned to the FOL or the SSO at the end of the day.

9.5 SITE VISITORS

Site visitors for the purpose of this document are identified as representing the following groups of individuals:

- Personnel invited to observe or participate in operations by TtNUS
- Regulatory personnel (i.e., DOD, EPA, OSHA)
- Southern Division Navy Personnel
- Other authorized visitors

All non-DOD personnel working on this project are required to gain initial access to the base by coordinating with the TtNUS FOL or designee and following established base access procedures.

Once access to the base is obtained, all personnel who require site access into areas of ongoing operations will be required to obtain permission from the FOL and the Base Contact. Upon gaining access to the site, all site visitors wishing to observe operations in progress will be escorted by a TtNUS representative and shall be required to meet the minimum requirements discussed below:

- All site visitors will be routed to the FOL, who will sign them into the field logbook. Information to be recorded in the logbook will include the individual's name (proper identification required), the entity which they represent, and the purpose of the visit.
- All site visitors will be required to produce the necessary information supporting clearance to the site. This shall include information attesting to applicable training and medical surveillance as stipulated in Section 8.0 of this document. In addition, to enter the site operational zones during planned activities, all visitors will be required to first go through site-specific training covering the topics stipulated in Section 8.2 of this HASP.

Once the site visitors have completed the above items, they will be permitted to enter the operational zone. All visitors are required to observe the protective equipment and site restrictions in effect at the site at the time of their visit. All visitors entering the exclusion zones during ongoing operations will be accompanied by a TtNUS representative. Any and all visitors not meeting the requirements, as stipulated in this plan, for site clearance will not be permitted to enter the site operational zones during planned activities. Any incidence of unauthorized site visitation will cause the termination of all on site activities until the unauthorized visitor is removed from the premises. Removal of unauthorized visitors will be accomplished with support from the Base Contact. If necessary, the Base Contact will be notified of any unauthorized visitors.

9.6 SITE SECURITY

Site security will be accomplished using TtNUS field personnel. TtNUS will retain complete control over active operational areas. As this activity takes place at a Navy facility open to public access, the first line of security will take place using exclusive zone barriers, site work permits, and any existing barriers at the site to restrict the general public. The second line of security will take place at the work site referring interested parties to the Base Contact. The Base Contact will serve as a focal point for base personnel, interested parties, and serve as the final line of security and the primary enforcement contact.

9.7 SITE MAP

Once the areas of contamination, access routes, topography, and dispersion routes are determined, a site map will be generated and adjusted as site conditions change. These maps will be posted to illustrate up-to-date collection of contaminants and adjustment of zones and access points.

9.8 BUDDY SYSTEM

Personnel engaged in on site activities will practice the "buddy system" to ensure the safety of all personnel involved in this operation.

9.9 MATERIAL SAFETY DATA SHEET (MSDS) REQUIREMENTS

TtNUS and subcontractor personnel will provide MSDSs for all chemicals brought on site. The contents of these documents will be reviewed by the SSO with the user(s) of the chemical substances prior to any actual use or application of the substances on site. A chemical inventory of all chemicals used on site will be developed using the Health and Safety Guidance Manual. The MSDSs will then be maintained in a central location (i.e., temporary office) and will be available for anyone to review upon request.

9.10 COMMUNICATION

As personnel will be working in proximity to one another during field activities, a supported means of communication between field crews members will not be necessary. External communication will be accomplished by using the telephones at predetermined and approved locations. External communication will primarily be used for the purpose of resource and emergency resource communications. Prior to the commencement of activities at the NAS Key West, the FOL will determine and arrange for telephone communications.

10.0 SPILL CONTAINMENT PROGRAM

10.1 SCOPE AND APPLICATION

It is anticipated that quantities of bulk potentially hazardous materials (greater than 55-gallons) will not be handled during the site activities. It is possible, however, that as the job progresses disposable PPE and other non-reusable items may be generated. As needed, 55-gallon drums will be used to contain unwanted items generated during sampling activities. The drum(s) will be labeled with the site name and address, the type of contents, and the date the container was filled as well as an identified contact person. As warranted, samples will be collected and analyzed to characterize the material and determine appropriate disposal measures. Once characterized the drum(s) will be removed from the staging area and disposed of in accordance with Federal, State and local regulations. Given the likely solid nature of drum contents, a comprehensive Spill Containment Program is not necessary. The following discussion is provided as contingency information only.

10.2 POTENTIAL SPILL AREAS

Should drums contain liquid wastes, potential spill areas will be monitored in an ongoing attempt to prevent and control further potential contamination of the environment. Areas designated for handling, loading, and unloading of potentially contaminated waters and debris present limited potential for leaks or spills.

10.2.1 Site Drums/Containers

All drums/containers used for containing liquids will be sealed, labeled, and staged within a centralized area awaiting shipment or disposal.

10.3 LEAK AND SPILL DETECTION

To establish an early detection of potential spills or leaks, periodic inspections by the SSO will be conducted during working hours to visually determine that containers are not leaking. If a leak is detected, the first approach will be to transfer the container contents using a hand pump into a new container. Other provisions for the transfer of container contents will be made and appropriate emergency contacts will be notified, if necessary. In most instances, leaks will be collected and contained using absorbents such as Oil-dry, vermiculite, and/or sand, which may be stored at the staging area in a conspicuously marked

drum. This material too, will be containerized for disposal pending analyses. All inspections will be documented in the Project Logbook.

10.4 PERSONNEL TRAINING AND SPILL PREVENTION

All personnel will be instructed on the procedures for spill prevention, containment, and collection of hazardous materials in the site-specific training. The FOL and/or the SSO will serve as the Spill Response Coordinator for this operation should the need arise.

10.5 SPILL PREVENTION AND CONTAINMENT EQUIPMENT

The following represents the types of equipment that may be maintained at the staging area for the purpose of supporting this Spill Containment Program (depending on the likelihood that drums and/or liquid wastes are generated).

- Sand, clean fill, vermiculite, or other noncombustible absorbent (oil-dry)
- Drums (55-gallon U.S. DOT 17-E or 17-H)
- Shovels, rakes, and brooms
- Labels

10.6 SPILL CONTROL PLAN

This section describes the procedures the TtNUS field crewmembers will employ upon the detection of a spill or leak.

- 1) Notify the SSO or FOL immediately.

- 2) Take immediate actions to stop the leak or spill by plugging or patching the drum or raising the leak to the highest point. Avoid contacting drum contents. Spread the absorbent material in the area of the spill covering completely.

It is not anticipated that a spill will occur in which the field crews cannot handle. Should this occur; however, the FOL or SSO will notify appropriate emergency response agencies.

11.0 CONFINED-SPACE ENTRY

It is not anticipated, under the proposed scope of work, that confined space and permit-required confined space activities will be conducted. **Therefore, personnel under the provisions of this HASP are not allowed, under any circumstances, to enter confined spaces.** A confined space is defined as an area which has one or more of the following characteristics:

- Is large enough and so configured that an employee can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
- Is not designed for continuous employee occupancy.

A Permit-Required Confined Space is one that:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material that has the potential to engulf an entrant.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized, serious, safety or health hazard.

For further information on confined space, consult the Health and Safety Guidance Manual or call the PHSO. If confined space operations are to be performed as part of the scope of work, detailed procedures and training requirements will have to be addressed.

12.0 MATERIALS AND DOCUMENTATION

The TtNUS FOL shall ensure the following materials/documents are taken to the project site and used when required.

- A complete copy of this HASP
- Health and Safety Guidance Manual
- Incident Reports
- Medical Data Sheets
- Material Safety Data Sheets for all chemicals brought on site, including decon solutions, fuels, lime, sample preservatives, calibration gases, etc.
- A full-size OSHA Job Safety and Health Poster (posted in the site trailers)
- Training/Medical Surveillance Documentation Form (Blank)
- Emergency Reference Information (Section 2.0, extra copy for posting)

12.1 MATERIALS TO BE POSTED OR MAINTAINED AT THE SITE

The following documentation is to be posted or maintained at the site for quick reference purposes. In situations where posting these documents is not feasible, (such as no office trailer), these documents should be separated and immediately accessible.

Chemical Inventory Listing (posted) - This list represents all chemicals brought on-site, including decontamination solutions, sample preservations, fuel, etc.. This list should be posted in a central area.

Material Safety Data Sheets (MSDS) (maintained) - The MSDSs should also be in a central area accessible to all site personnel. These documents should match all the listings on the chemical inventory list for all substances employed on-site. It is acceptable to have these documents within a central folder and the chemical inventory as the table of contents.

The OSHA Job Safety & Health Protection Poster (posted) - this poster, as directed by 29 CFR 1903.2 (a)(1), should be conspicuously posted in places where notices to employees are normally posted. Each FOL shall ensure that this poster is not defaced, altered, or covered by other material.

Site Clearance (maintained) - This list is found within the training section of the HASP (See Figure 8-2). This list identifies all site personnel, dates of training (including site-specific training), and medical surveillance. The lists indicates not only clearance but also status. If personnel do not meet these requirements, they do not enter the site while site personnel are engaged in activities.

Emergency Phone Numbers and Directions to the Hospital(s) (posted) - This list of numbers and directions will be maintained at all phone communications points and in each site vehicle.

Medical Data Sheets/Cards (maintained) - Medical Data Sheets will be filled out by on-site personnel and filed in a central location. The Medical Data Sheet will accompany any injury or illness requiring medical attention to the medical facility. A copy of this sheet or a wallet card will be given to all personnel to be carried on their person.

Hearing Conservation Standard (29 CFR 1910.95) (posted) - this standard will be posted anytime hearing protection or other noise abatement procedures are employed.

Personnel Monitoring (maintained) - All results generated through personnel sampling (levels of airborne toxins, noise levels, etc.) will be posted to inform individuals of the results of that effort.

Placards and Labels (maintained) - Where chemical inventories have been separated because of quantities and incompatibilities, these areas will be conspicuously marked using DOT placards and acceptable (Hazard Communication 29 CFR 1910.1200(f)) labels.

The purpose of maintaining or posting this information, as stated above, is to allow site personnel quick access. Variations concerning location and methods of presentation are acceptable, providing the objection is accomplished.

13.0 ACRONYMS / ABBREVIATIONS

CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CSP	Certified Safety Professional
DRI	Direct Reading Instrument
EBS	Environmental Baseline Survey
FOL	Field Operations Leader
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSM	Health and Safety Manager
IDW	Investigation Derived Waste
NAS	Naval Air Station
N/A	Not Available
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PCB	Polychlorinated Biphenyls
PHSO	Project Health and Safety Officer
PPE	Personal Protective Equipment
SVOCs	Semi-Volatile Organic Compounds
TBD	To be determined
TOM	Task Order Manager
VOCs	Volatile Organic Compounds

14.0 REFERENCES

B&R Environmental, 1998, Site Inspection Report for Poinciana Housing BRAC Parcel, for Naval Air Station, Key West, Florida, April.

TtNUS, 1999, Supplemental Site Inspection Report for Poinciana Housing, Naval Air Station, Key West, Florida, June.

ATTACHMENT I

**INJURY/ILLNESS PROCEDURE
AND REPORT FORM**

**TETRA TECH NUS, INC.****INJURY/ILLNESS PROCEDURE
WORKER'S COMPENSATION PROGRAM**

WHAT YOU SHOULD DO IF YOU ARE INJURED OR DEVELOP AN ILLNESS AS A RESULT OF YOUR EMPLOYMENT:

- If injury is minor, obtain appropriate first aid treatment.
- If injury or illness is severe or life threatening, obtain professional medical treatment at the nearest hospital emergency room.
- If incident involves a chemical exposure on a project work site, follow instructions in the Health & Safety Plan.
- Immediately report any injury or illness to your supervisor or office manager. In addition, you must contact your Human Resources representative, Marilyn Diethorn at (412) 921-8475, and the Corporate Health and Safety Manager, Matt Soltis at (412) 921-8912 within 24 hours. You will be required to complete an Injury/Illness Report (attached). You may also be required to participate in a more detailed investigation from the Health Sciences Department.
- If further medical treatment is needed, The Hartford Network Referral Unit will furnish a list of network providers customized to the location of the injured employee. These providers are to be used for treatment of Worker's Compensation injuries subject to the laws of the state in which you work. Please call Marilyn Diethorn at (412) 921-8475 for the number of the Referral Unit.

ADDITIONAL QUESTIONS REGARDING WORKER'S COMPENSATION:

Contact your local human resources representative, corporate health and safety coordinator, or Corporate Administration in Pasadena, California, at (626) 351-4664.

Worker's compensation is a state-mandated program that provides medical and disability benefits to employees who become disabled due to job related injury or illness. Tetra Tech, Inc. and its subsidiaries (Tetra Tech or Company) pay premiums on behalf of their employees. The type of injuries or illnesses covered and the amount of benefits paid are regulated by the state worker's compensation boards and vary from state to state. Corporate Administration in Pasadena is responsible for administering the Company's worker's compensation program. The following is a general explanation of worker's compensation provided in the event that you become injured or develop an illness as a result of your employment with Tetra Tech or any of its subsidiaries. Please be aware that the term used for worker's compensation varies from state to state.

WHO IS COVERED:

All employees of Tetra Tech, whether they are on a full-time, part-time or temporary status, working in an office or in the field, are entitled to worker's compensation benefits. All employees must follow the above injury/illness reporting procedures. Consultants, independent contractors, and employees of subcontractors are not covered by Tetra Tech's Worker's Compensation plan.



CASE NO. _____

WHAT IS COVERED:

If you are injured or develop an illness caused by your employment, worker's compensation benefits are available to you subject to the laws of the state you work in. Injuries do not have to be serious; even injuries treated by first aid practices are covered and must be reported. Please note that if you are working out-of-state and away from your home office, you are still eligible for worker's compensation benefits.



CASE NO. _____

**TETRA TECH NUS, INC.
INJURY/ILLNESS PROCEDURE
WORKER'S COMPENSATION PROGRAM**

To: Corporate Health and Safety Manager
Human Resource Administrator

Prepared by: _____

Position: _____

Project Name: _____

Office: _____

Project No. _____

Telephone: _____

Information Regarding Injured or Ill Employee:

Name: _____

Office: _____

Home address: _____

Gender: M F No. of dependents: _____

Marital status: _____

Home telephone: _____

Date of birth: _____

Occupation (regular job title): _____

Social Security No.: _____

Department: _____

Date of Accident: _____**Time of Accident:** _____**Location of Accident** Was place of accident or exposure on employer's premises Yes No

Street address: _____

City, state, and zip code: _____

County: _____

Narrative Description of How Accident Occurred: (Be specific. Explain what the employee was doing and how the accident occurred.)



**TETRA TECH, INC.
INJURY/ILLNESS REPORT**

Did employee die? Yes No

Was employee performing regular job duties? Yes No

Was safety equipment provided? Yes No

Was safety equipment used? Yes No

Note: Attach any police reports or related diagrams to this accident report.

Witness(es):

Name: _____

Address: _____

Telephone: _____

Describe the Illness or Injury and Part of Body Affected:

Name the Object or Substance which Directly Injured the Employee:

Medical Treatment Required:

No Yes First Aid Only

Physician's Name: _____

Address: _____

Hospital or Office Name: _____

Address: _____

Telephone No.: _____

Lost Work Days:

No. of Lost Work Days _____

Last Date Worked _____

Time Employee Left Work _____

Date Employee Returned to Work _____

No. of Restricted Work Days _____

None

Corrective Action(s) Taken by Unit Reporting the Accident:

Corrective Action Still to be Taken (by whom and when):

Name of Tetra Tech employee the injury or illness was first reported to: _____

Date of Report: _____ **Time of Report:** _____

	Printed Name	Signature	Telephone No.	Date
Project or Office Manager				
Site Safety Coordinator				
Injured Employee				

To be completed by Human Resources:

Date of hire:

Hire date in current job:

Wage information: \$ _____ per _____ (hour, day, week, or month)

Position at time of hire:

Shift hours:

State in which employee was hired:

Status: Full-time Part-time Hours per week: _____ Days per week: _____

Temporary job end date:

To be completed during report to workers' compensation insurance carrier:

Date reported:

Reported by:

TeleClaim phone number:

TeleClaim account number:

Location code:

Confirmation number:

Name of contact:

Field office of claims adjuster:

ATTACHMENT II

SAFE WORK PERMITS

**SAFE WORK PERMIT
MOBILIZATION AND DEMOBILIZATION ACTIVITIES
NAS KEY WEST, FLORIDA**

Permit No. _____ Date: _____ Time: From _____ to _____

SECTION I: General Job Scope

- I. Work limited to the following (description, area, equipment used): Mobilization and demobilization activities
activities.
- II. Required Monitoring Instruments: None
- III. Field Crew: _____
- IV. On-site inspection conducted Yes No Initials of Inspector TtNUS

SECTION II: General Safety Requirements (To be filled in by permit issuer)

- | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IV. Protective equipment required
Level D <input checked="" type="checkbox"/> Level B <input type="checkbox"/>
Level C <input type="checkbox"/> Level A <input type="checkbox"/>
Detailed on Reverse | Respiratory equipment required
Full face APR <input type="checkbox"/>
Half face APR <input type="checkbox"/>
SKA-PAC SAR <input type="checkbox"/>
Skid Rig <input type="checkbox"/> | Escape Pack <input type="checkbox"/>
SCBA <input type="checkbox"/>
Bottle Trailer <input type="checkbox"/>
None <input checked="" type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, or coveralls, safety glasses and safety footwear. Hard hats and hearing protection will be worn when working near operating equipment

V. Chemicals of Concern	Action Level(s)	Response Measures
<u>None anticipated given the nature of surveying activities and limited contact w/ media.</u>	_____	_____

- VI. Additional Safety Equipment/Procedures
- | | | |
|-------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Hard-hat | <input type="checkbox"/> Yes <input type="checkbox"/> No | Hearing Protection (Plugs/Muffs) <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Safety Glasses | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Safety belt/harness <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Chemical/splash goggles | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Radio <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Splash Shield | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Barricades <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Splash suits/coveralls | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Gloves (Type - Nitrile) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Steel toe Work shoes or boots | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Work/rest regimen <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

Modifications/Exceptions: Tyvek coverall to protect against natural hazards (e.g., ticks). If working in areas where snakes are a threat, wear snake chaps to protect against bites.

- | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VII. Procedure review with permit acceptors
Safety shower/eyewash (Location & Use).....
Procedure for safe job completion.....
Contractor tools/equipment/PPE inspected..... | Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/> | Emergency alarms.....
Evacuation routes.....
Assembly points..... | Yes <input checked="" type="checkbox"/> NA <input type="checkbox"/>
Yes <input checked="" type="checkbox"/> NA <input type="checkbox"/>
Yes <input checked="" type="checkbox"/> NA <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- | | |
|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VIII. Equipment Preparation
Equipment drained/depressurized | Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/>
Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/> |
|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- IX. Additional Permits required (Hot work, confined space entry, excavation etc.)..... Yes No
If yes, complete permit required or contact Health Sciences, Pittsburgh Office

X. Special instructions, precautions: Preview work locations to identify potential hazards (slips, trips, and falls, natural hazards, etc.) Avoid potential nesting areas. Wear light colored clothing so that ticks and other biting insects can be easily visible and can be removed. Inspect clothing and body for ticks. Minimize contact with potentially contaminated media. Suspend site activities in the event of inclement weather.

Permit Issued by: _____ Permit Accepted by: _____

**SAFE WORK PERMIT
MULTI-MEDIA SAMPLING
NAS KEY WEST, FLORIDA**

Permit No. _____ Date: _____ Time: From _____ to _____

SECTION I: General Job Scope

- I. Work limited to the following (description, area, equipment used): Multi media sampling including soils (surface and sub surface); sediments; groundwater and IDW.
- II. Required Monitoring Instrument(s): PID with 10.6 eV (or higher) lamp source
- III. Field Crew: _____
- IV. On-site inspection conducted Yes No Initials of Inspector TINUS

SECTION II: General Safety Requirements (To be filled in by permit issuer)

- | | | |
|------------------------------------------------------------------------------|----------------------------------------|------------------------------------------|
| IV. Protective equipment required | Respiratory equipment required | |
| Level D <input checked="" type="checkbox"/> Level B <input type="checkbox"/> | Full face APR <input type="checkbox"/> | Escape Pack <input type="checkbox"/> |
| Level C <input type="checkbox"/> Level A <input type="checkbox"/> | Half face APR <input type="checkbox"/> | SCBA <input type="checkbox"/> |
| Detailed on Reverse | SKA-PAC SAR <input type="checkbox"/> | Bottle Trailer <input type="checkbox"/> |
| | Skid Rig <input type="checkbox"/> | None <input checked="" type="checkbox"/> |

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, safety footwear, safety glasses and nitrile gloves. Hard hats and hearing protection will be worn when working near operating equipment and or when required by the facility.

V. Chemicals of Concern	Action Level(s)	Response Measures
Site contaminants include _____	Any sustained readings _____	Suspend site activities and _____
VOC, SVOC, PCB, _____	above background in worker _____	report to an unaffected area. _____
Pesticides and Metals _____	breathing zones. _____	

Hard-hat	<input type="checkbox"/> Yes <input type="checkbox"/> No	Hearing Protection (Plugs/Muffs) <input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Glasses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Safety belt/harness <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Chemical/splash goggles	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Radio <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Splash Shield	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Barricades <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Splash suits/coveralls	<input type="checkbox"/> Yes <input type="checkbox"/> No	Gloves (Type - Nitrile) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Steel toe Work shoes or boots	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Work/rest regimen <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Modifications/Exceptions: Tyvek coverall if there is a potential for soiling work cloths and PVC or PE coated Tyvek if saturation or work cloths may occur.

VII. Procedure review with permit acceptors	Yes	NA	Yes	NA
Safety shower/eyewash (Location & Use)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Emergency alarms	<input checked="" type="checkbox"/> <input type="checkbox"/>
Procedure for safe job completion	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Evacuation routes	<input checked="" type="checkbox"/> <input type="checkbox"/>
Contractor tools/equipment/PPE inspected	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Assembly points	<input checked="" type="checkbox"/> <input type="checkbox"/>

VIII. Equipment Preparation	Yes	NA
Equipment drained/depressurized	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Equipment purged/cleaned	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Isolation checklist completed	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Electrical lockout required/field switch tested	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Blinds/misalignments/blocks & bleeds in place	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hazardous materials on walls/behind liners considered	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- IX. Additional Permits required (Hot work, confined space entry, excavation etc.)..... Yes No
If yes, complete permit required or contact Health Sciences, Pittsburgh Office

X. Special instructions, precautions: _____

Permit Issued by: _____ Permit Accepted by: _____