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NAS CECIL FIELD, FL  
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HEALTH AND SAFETY PLAN ADDENDUM FOR BASE REALIGNMENT AND CLOSURE SITE  
INVESTIGATIONS AT POTENTIAL SOURCE OF CONTAMINATION 40 NAS CECIL FIELD FL  
11/1/2000  
TETRA TECH NUS INC

**Health and Safety Plan Addendum**  
for  
**Base Realignment and Closure**  
**Site Investigations**  
at  
**PSC 40**

**Naval Air Station Cecil Field**  
Jacksonville, Florida



**Southern Division**  
**Naval Facilities Engineering Command**  
Contract No. N62467-94-D-0888  
Contract Task Order 0078

November 2000

**HEALTH AND SAFETY PLAN ADDENDUM  
FOR  
BASE REALIGNMENT AND CLOSURE SITE INVESTIGATIONS  
AT PSC 40**

**NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

**COMPREHENSIVE LONG-TERM  
ENVIRONMENTAL ACTION NAVY CONTRACT**

**Submitted to:  
Southern Division  
Naval Facilities Engineering Command  
2155 Eagle Drive  
North Charleston, South Carolina 29406**

**Submitted by:  
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**CONTRACT NO. N62467-94-D-0888  
CONTRACT TASK ORDER 0078**

November 2000

**PREPARED UNDER THE SUPERVISION OF:**

**APPROVED FOR SUBMITTAL BY:**

  
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## 1.0 INTRODUCTION

The following information represents modifications to the Health and Safety Plan (HASP) for the Base Realignment and Closure Site Investigation (BRAC) for Naval Air Station Cecil Field (NAS Cecil Field), Jacksonville, Florida. This document will be incorporated as an Addendum to the aforementioned HASP dated March 2000. These modifications have been generated to address the additional activity of soil boring, monitoring well installation and development, along with ground, surface water, and sediment sampling at PSC 40.

Where potential hazards associated with the planned activities have been identified, the necessary actions to be taken to mitigate these hazards have also been identified.

The following sections and tables of the HASP are addended by this document. It is the responsibility of the Task Order Manager (TOM) to forward copies of this Addendum to the field crew to be inserted into the field copies of the HASP. It is the FOL's responsibility to ensure that all members of the field crew review this Addendum. The FOL will ensure all field crew members sign the site-specific training documentation sheet (Attachment I of this Addendum), indicating they have reviewed the elements of this Addendum and the HASP, understand its requirements, and any questions they may have had have been answered to their satisfaction.

Section 3.3 Site Description

Section 4.0 Scope of Work

Table 5.1 Tasks/Hazards/Control Measures Compendium

Attachment I Site-Specific Training Documentation

Attachment II Safe Work Permits

The modifications to the individual sections are as follows.

### **3.3 SITE DESCRIPTION**

Site A-4 is the abandoned Wastewater Treatment Plant removed in 1974. While in operation the site included an imhoff tank, a subsurface concrete vault, two sludge drying pits, and two wastewater impound lagoons. Previous sampling has detected metals (Vanadium Pentoxide, Copper) in the soil.

### **4.0 SCOPE OF WORK**

PSC 40 – soil boring, monitoring well installation and development along with collection of soil, surface water and sediment samples.

While the installation and development of monitoring wells along with the collection of surface soil, water samples, and sediment samples was included in the HASP, it was not discussed regarding work at the above listed PSC. The tasks to be conducted are discussed in the attached Table 5-1. Additionally, Safe Work Permits for these tasks are also included in Attachment II.

### **5.0 TASKS/HAZARDS/ASSOCIATED CONTROL MEASURES SUMMARIZATION**

The tasks to be conducted at this site are discussed in Table 5-1 (Attachment II). Additionally, Safe Work Permits for these tasks are also included as Attachment III.

### **6.0 HAZARD ASSESSMENT**

The activities to be conducted under this Addendum involve some chemicals that were not included in Table 6-1 of the March 2000 R 1-HASP. A revised Table 6-1, including all site contaminants associated with this task, is included as Attachment IV.

**ATTACHMENT I**  
**SITE-SPECIFIC TRAINING DOCUMENTATION**



**ATTACHMENT II**

**TABLE 5-1**

**TASKS/HAZARDS/CONTROL MEASURES COMPENDIUM**

**TABLE 5-1  
TASKS/HAZARDS/CONTROL MEASURES COMPENDIUM  
PSC 40  
NAS CECIL FIELD, JACKSONVILLE, FLORIDA  
PAGE 1 OF 2**

Task/Operation/Location	Anticipated Hazards	Recommended Control Measures	Hazard Monitoring	Personal Protective Equipment	Decontamination Procedures
<p>Multi-media sampling, including surface soil (ss), sediment (s) (Plastic, disposable trowels will be used to collect soil samples), groundwater (gw) (Low Flow peristaltic pump equipped with PE tubing), and surface water (sw) (beaker, direct pour).</p>	<p><b>Chemical hazards:</b></p> <p>1) Prior sampling data and/or site histories have identified the following compounds as the primary contaminants of concern at this site.</p> <ul style="list-style-type: none"> <li>• PSC 40 metals (copper and vanadium)</li> </ul> <p>None of the contaminants, are anticipated to be present in sufficient concentrations to present an inhalation hazard. Nonetheless it is recommended that exposure (via inhalation, ingestion, or skin contact) to media (soil, water, etc.) contaminated with these contaminants should be avoided whenever possible.</p> <p>Further information on these contaminants and other potential contaminants is presented in Table 6-1.</p> <p>2) Transfer of contamination into clean areas or onto persons.</p> <p><b>Physical hazards:</b></p> <p>3) Slips, trips, and falls 4) Ambient temperature extremes (heat stress) 5) Vehicular and equipment traffic</p> <p><b>Natural hazards</b></p> <p>6) Insect/animal bites and stings, poisonous plants, etc.</p>	<p><b>Chemical hazards:</b></p> <p>1) Use appropriate safe work practices and PPE to minimize the potential for exposure. The potential contaminants of concern are likely to be present in the form of particulates or bound to particulates. Real-time air monitoring instruments are ineffective for detecting these contaminants. Therefore, generation of dusts should be minimized. If airborne dusts are observed, area-wetting methods will be used. If area-wetting methods are not feasible or are ineffective, task activities will be terminated to minimize exposure to excessive airborne dusts.</p> <p>2) Restrict the cross use of equipment and supplies between sampling locations without first going through a suitable decontamination.</p> <p><b>Physical hazards:</b></p> <p>3) Preview work locations for unstable/uneven terrain. 4) Observe site personnel for signs and symptoms of heat stress related disorders. Provide liquids (preferably containing electrolytes) for fluid replenishment. If necessary implement work/rest regimens in accordance with ACGIH recommendations (provided in the Health and Safety Guidance Manual). 5) Traffic and equipment considerations are to include the following: - A traffic control plan will be developed prior to working in traffic areas and followed by all personnel. - All equipment shall be equipped with movement warning systems. - All personnel working in high equipment traffic areas are required to wear reflective vests for high visibility. - Use safety belts and follow the site traffic rules.</p> <p>6) Wear appropriate clothing and PPE. Avoid potential nesting areas and suspicious vegetation (poison ivy, poison oak, etc.). When feasible and necessary, use commercially available insect repellents. Tape ankle and wrist areas to prevent tick, chiggers, etc. from getting under clothing and attaching to skin. Wear light colored clothing so that ticks and other insects can be easily visible. Refer to the Health and Safety Guidance Manual additional information.</p> <p>The presence of alligators is not an immediate concern in this area, the field crew will inspect the area prior to entrance looking for alligators at the work site. If alligators are observed work will not be conducted until the site has been cleared.</p>	<p>It is anticipated that for most BRAC sites potential contaminant concentrations at outdoor locations will be below levels that could present a health hazard.</p> <p>Site contaminants may adhere to or be part of airborne dusts or particulates generated during site activities. Generation of dusts should be minimized to the greatest extent possible to avoid inhalation of contaminated dusts or particulates. Evaluation of dust concentrations will be qualitative by observing work conditions for visible dust clouds or accumulations. Potential exposure to contaminants attached to dust particles will be controlled by using water to suppress dusts or by avoiding dust plumes.</p> <p>Site contaminants are non-detectable using a Photoionization Detector (w/ 10.2 eV) or Flameionization Detector, for this reason monitoring instruments will not be required at this site.</p>	<p>All sampling activities are to be initiated in level D protection, which includes the following minimum protection:</p> <ul style="list-style-type: none"> <li>- Standard field dress (long pants, sleeved shirts)</li> <li>- Steel toe/ safety shoes or boots</li> <li>- Layered surgical style nitrile gloves, or nitrile gloves if necessary with a cotton liner,</li> <li>- <i>Hardhat and safety glasses if working near overhead hazards or flying projectiles/eye hazards are present.</i></li> <li>- <i>Tyvek coveralls and impermeable boot covers will be worn if there is a possibility of soiling work attire or if muddy conditions exist</i></li> <li>- <i>PVC or PE coated Tyvek will be incorporated if there is a potential for splash or saturation of work attire.</i> (Items in italics are deemed optional as conditions or the FOL or SSO dictate.)</li> </ul> <p>Note: A Safe Work Permit for this task is included in Attachment III. The permit 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><b>Personnel Decontamination</b> - Will consist of a soap/water wash and rinse for outer protective equipment (boots, gloves, coveralls, etc.), if applicable.</p> <p>The decontamination procedure for Level D protection will consist of</p> <ul style="list-style-type: none"> <li>- Equipment drop</li> <li>- PPE will be bagged and the use of hygienic wipes will be used until access to a soap/water wash, rinse, removal and disposal of outer reusable gloves and boots, as applicable</li> <li>- Soap/water wash, rinse, removal and disposal of the outer splash suit, as applicable</li> <li>- Removal and disposal of non-reusable PPE</li> <li>- Wash hands and face, leave contamination reduction zone</li> </ul> <p><b>Equipment:-</b></p> <ul style="list-style-type: none"> <li>- Plastic trowels remove gross contamination and dispose in plastic bag.</li> <li>- Tubing - dispose of in a plastic bag.</li> </ul>

TABLE 5-1  
**TASKS/HAZARDS/CONTROL MEASURES COMPENDIUM**  
PSC 40  
**NAVAL AIR STATION - CECIL FIELD, JACKSONVILLE, FLORIDA**  
PAGE 2 OF 2

Tasks/ Operation Location	Anticipated Hazards	Recommended Control Measures	Hazard Monitoring	Personal Protective Equipment	Decontamination Procedures
<p>Soil boring activities (using hollow-stem augers, hand augers, and mud rotary techniques)</p> <p>This task also includes monitoring well installation (when applicable).</p>	<p><b>Chemical hazards:</b></p> <p>1) Prior sampling data and/or site histories have identified the following compounds as the primary contaminants of concern at PSC 40 metals (copper and vanadium)</p> <ul style="list-style-type: none"> <li>- MSDS will be provided for the well construction materials.</li> </ul> <p>2) Visual airborne dusts indicate atmospheric concentrations of approximately 2 mg/m<sup>3</sup>.</p> <p>2) Transfer of contamination into clean areas or onto persons</p> <p><b>Physical hazards:</b></p> <p>3) Contact/entanglement with rotating equipment or machinery</p> <p>4) Noise in excess of 85 dBA</p> <p>5) Contact with underground or overhead utilities (electric lines, gas lines, water lines, etc.)</p> <p>6) Strain/muscle pulls from heavy lifting</p> <p>7) Slips, trips, and falls</p> <p>8) Vehicular and equipment traffic</p> <p>9) Ambient temperature extremes (heat stress)</p> <p>10) Inclement weather</p> <p><b>Natural hazards</b></p> <p>11) Insect/animal bites or stings, poisonous plants, etc.</p>	<p><b>Chemical hazards:</b></p> <p>1) Use real-time air monitoring instrumentation (PID or FID) and established Action Levels to detect and identify exposures to potentially contaminated media. Use appropriate safe work practices and PPE to minimize the potential for exposure. Some of the potential contaminants of concern are likely to be present in the form of particulates or bound to particulates. Real-time air monitoring instruments are ineffective for detecting these contaminants. Therefore, generation of dusts should be minimized to the greatest extent possible. If airborne dusts are observed, area wetting methods will be used. If area wetting methods are not feasible or are ineffective, task activities will be terminated to minimize exposure to excessive airborne dusts</p> <p>2) Decontaminate all equipment and supplies between drilling events as well as prior to leaving the site.</p> <p><b>Physical hazards:</b></p> <p><b>The following apply to soil borings using hand augers</b></p> <p>3) - Keeps hands and feet away from pinch points. Work areas will be kept clear of clutter.</p> <p><b>The following apply to soil borings using drill rigs (hollow-stem auger and mud rotary techniques) and Geoprobos</b></p> <p>3) All equipment used will be:</p> <ul style="list-style-type: none"> <li>- Inspected in accordance with Federal safety and transportation guidelines, OSHA (1926.600, 601, 602), and manufacturer's design.</li> <li>- Operated by knowledgeable operators and ground crew.</li> <li>- Only manufacturer approved equipment may be used in conjunction with equipment repair procedures (e.g., pins for auger flights).</li> </ul> <p>In addition to the equipment considerations, the following standard operating procedures will be used:</p> <ul style="list-style-type: none"> <li>- All personnel not directly supporting the drilling operation will remain at least 25 feet from the point of operation (drill point) or the height of the drill mast which ever is greater.</li> <li>- Drilling, drill masts, or other projecting devices shall be at least 20 feet from overhead power sources and a minimum of 3 feet from underground utilities.</li> <li>- Keep any machine guarding in place. Avoid moving parts. Secure loose clothing, jewelry, or long hair that could become entangled.</li> <li>- Hand signals will be established prior to the commencement of drilling activities.</li> <li>- The driller and helper can simultaneously handle moving cores, augers, or flights only when there is a standby person to activate the emergency stop device.</li> <li>- The driller must never leave the controls while equipment is operating unless all personnel are clear of the equipment.</li> <li>- Keeps hands and feet away from pinch points.</li> <li>- A remote sampling device must be used to sample cuttings near rotating or moving tools.</li> <li>- Work areas will be kept clear of clutter.</li> <li>- All self propelled equipment shall be equipped with movement warning systems.</li> <li>- All personnel will be instructed in the location and operations of the emergency shut off device(s). This device will be tested initially (and then periodically) to ensure its operational status.</li> <li>- Areas will be inspected prior to the movement of site equipment and support vehicles to eliminate any physical hazards. This will be the responsibility of the FOL and/or SSO.</li> <li>- Drill rig and support vehicles will be moved no closer than 3 feet to banks, ditches, and other excavations unless the wall is supported with a sidewall retaining device.</li> <li>- Excessive noise levels will be mitigated through the use of hearing protection.</li> </ul> <p>5) All utility clearances shall be obtained in writing prior to subsurface activities. The locations of all underground utilities will be identified and marked prior to all subsurface investigations. Where the clearance cannot be obtained in a reasonable period, or not located, soil boring shall proceed with extreme caution by hand for the first 6 feet.</p> <ul style="list-style-type: none"> <li>- Projecting devices of site equipment shall be at least 20 feet from overhead power lines and a minimum of 3 feet from identified underground locations.</li> </ul> <p><b>The following apply to all soil borings activities</b></p> <p>6) Use machinery or multiple personnel for heavy lifts. Use proper lifting techniques.</p> <p>7) Preview work location for uneven/unstable terrain.</p> <p>8) Traffic and equipment considerations are to include the following:</p> <ul style="list-style-type: none"> <li>- A traffic control plan will be developed prior to working in traffic areas and followed by all personnel.</li> <li>- All equipment shall be equipped with movement warning systems.</li> <li>- Use safety belts and follow the site traffic rules.</li> <li>- All personnel working in high equipment traffic areas are required to wear reflective vests for high visibility.</li> </ul> <p>9) Observe site personnel for signs and symptoms of temperature extremes. For heat stress related disorders, provide liquids (preferably containing electrolytes) for fluid replenishment. If necessary implement work/rest regimens in accordance with ACGIH recommendations (provided in the Health and Safety Guidance Manual).</p> <p>10) Suspend or terminate operations until directed otherwise by SSO</p> <p>11) Wear appropriate clothing and PPE. Avoid potential nesting areas and suspicious vegetation (poison ivy, poison oak, etc.). When feasible and necessary, use commercially available insect repellents. Tape ankle and wrist areas to prevent tick, chiggers, etc. from getting under clothing and attaching to skin. Wear light colored clothing so that ticks and other insects can be easily visible. Refer to the Health and Safety Guidance Manual and Attachment I of the HASP for additional information.</p>	<p><b>It is anticipated that for most BRAC sites potential contaminant concentrations at outdoor locations will be below levels that could present a health hazard.</b></p> <p>A Photoionization Detector w/ 10.6 eV UV lamp source or Flameionization Detector will be used to screen samples. The following general guidance applies:</p> <p>Source (e.g., borehole) monitoring will be conducted at regular intervals determined by the SSO. The SSO will also monitor the breathing zone (BZ) of all potentially affected employees. Workers must evacuate to a safe area if sustained BZ concentrations exceed the background level readings.</p> <p>Site contaminants may adhere to or be part of airborne dusts or particulates generated during site activities. Generation of dusts should be minimized to the greatest extent possible to avoid inhalation of contaminated dusts or particulates. Evaluation of dust concentrations will be qualitative by observing work conditions for visible dust clouds or accumulations. Potential exposure to contaminants attached to dust particles will be controlled by using water to suppress dusts or by avoiding dust plumes.</p>	<p>All soil boring installations are to be initiated in Level D protection, which includes the following minimum protection:</p> <ul style="list-style-type: none"> <li>- Standard field dress (long pants; sleeved shirts)</li> <li>- Steel toe/ safety shoes or boots</li> <li>- Nitrile gloves with a cotton liner or layered surgical style nitrile gloves.</li> <li>- Hardhat, safety glasses, and earplugs or muffs (for drill rig and Geoprobe operations).</li> <li>- Tyvek coveralls and impermeable boot covers will be worn if there is a possibility of soiling work attire or if muddy conditions exist</li> <li>- PVC or PE coated Tyvek will be incorporated if there is a potential for saturation of work attire.</li> </ul> <p><b>Note: A Safe Work Permit(s) for this task will be developed and included in Attachment III.</b> The permits 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><b>Personnel Decontamination</b> - Will consist of a soap/water wash and rinse for outer protective equipment (boots, gloves, coveralls, etc.) as applicable. This function will take place at an area adjacent to the soil boring or well installation operations bordering the support zone.</p> <p>This decontamination procedure for well consist of</p> <ul style="list-style-type: none"> <li>- Equipment drop</li> <li>- Soap/water wash and rinse of outer reusable gloves and outer boots, as applicable</li> <li>- Soap/water wash and rinse of the outer splash suit, as applicable</li> <li>- Outer suit, boot covers, outer glove removal, as applicable</li> <li>- Removal and disposal of non-reusable PPE</li> <li>- Wash hands and face, leave contamination reduction zone</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>- Auger Flights - wrapped in polyethylene sheeting and transported to central decontamination locations.</li> <li>- Pressure Washer (soap/water 1500 psi) with an isopropanol and ionized water rinse.</li> <li>- Visual evaluation to determine decontamination effectiveness</li> </ul>

**ATTACHMENT III  
SAFE WORK PERMIT**

## SAFE WORK PERMIT FOR MULTI-MEDIA SAMPLING

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 groundwater, surface waters, sediments and soils.
- II. Required Monitoring Instrument(s): PID or FID for screening, although site contaminants are not detectable.
- 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<br>Level D <input checked="" type="checkbox"/> Level B <input type="checkbox"/><br>Level C <input type="checkbox"/> Level A <input type="checkbox"/><br>Detailed on Reverse | Respiratory equipment required<br>Full face APR <input type="checkbox"/> Escape Pack <input type="checkbox"/><br>Half face APR <input type="checkbox"/> SCBA <input type="checkbox"/><br>SKA-PAC SAR <input type="checkbox"/> Bottle Trailer <input type="checkbox"/><br>Skid Rig <input type="checkbox"/> None <input checked="" type="checkbox"/> |
|---|---|

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, safety shoes, surgical style gloves, and safety glasses. Hard hats and hearing protection will be worn when working near operating equipment or when required by SSO. Coveralls and snake chaps will be worn near insect/snake areas.

- |   |                           |                                      |
|---|---------------------------|--------------------------------------|
| V. Chemicals of Concern   | Action Level(s)           | Response Measures                    |
| <u>Site contaminants include and metals (copper and vanadium)</u> | <u>Visible dust cloud</u> | <u>Employ area water suppression</u> |

- |  |   |  |  |
|--|---|--|--|
| VI. Additional Safety Equipment/Procedures |   |  |  |
| Hard-hat.....                              | <input type="checkbox"/> Yes            | <input checked="" type="checkbox"/> No | Hearing Protection (Plugs/Muffs) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Safety Glasses .....                       | <input type="checkbox"/> Yes            | <input checked="" 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 checked="" type="checkbox"/> Yes <input 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 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: <u>NONE</u>      |   |  |  |

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

- |  |                          |                          |
|--|--------------------------|--------------------------|
| VIII. Equipment Preparation                                | Yes                      | NA                       |
| Equipment drained/depressurized.....                       | <input type="checkbox"/> | <input type="checkbox"/> |
| Equipment purged/cleaned.....                              | <input type="checkbox"/> | <input type="checkbox"/> |
| Isolation checklist completed.....                         | <input type="checkbox"/> | <input type="checkbox"/> |
| Electrical lockout required/field switch tested.....       | <input type="checkbox"/> | <input type="checkbox"/> |
| Blinds/misalignments/blocks & bleeds in place.....         | <input type="checkbox"/> | <input type="checkbox"/> |
| Hazardous materials on walls/behind liners considered..... | <input type="checkbox"/> | <input 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: Avoid areas of known or suspected insect/animal nesting or habitat. When sampling work is being conducted on PSC 40.

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

# SAFE WORK PERMIT FOR SOIL BORINGS AT PSC 40

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

**SECTION I: General Job Scope**

I. Work limited to the following (description, area, equipment used): Soil borings using hollow-stem auger techniques at PSC 40 (this task includes installation of monitoring wells)

II. Required Monitoring Instrument(s): None Required

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"/>
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Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, safety footwear, and nitrile gloves. Safety glasses and hard hats will be worn.

V. Chemicals of Concern	Action Level(s)	Response Measures
<u>Site contaminants include and metals (copper and vanadium)</u>	<u>Visible dust cloud</u>	<u>Employ area water suppression</u>

VI. Additional Safety Equipment/Procedures			
Hard-hat.....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hearing Protection (Plugs/Muffs)	<input checked="" 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 checked="" type="checkbox"/> Yes <input 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: Reflective vests for high traffic areas. Tyvek coverall if there is a potential for soiling work clothes and PVC or PE coated Tyvek if saturation or work clothes may occur.

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

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

**ATTACHMENT IV**

**TABLE 6-1**

**CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA**

**TABLE 6-1**  
**CHEMICAL, PHYSICAL AND TOXICOLOGICAL DATA**  
**PCS 40**  
**NAS CECIL FIELD, JACKSONVILLE, FLORIDA**  
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	<b>GAS No</b>	<b>Air Monitoring/Sampling Information</b>		<b>Exposure Limits</b>	<b>Warning Property Rating</b>	<b>Physical Properties</b>	<b>Health Hazard Information</b>
<b>Vanadium Peroxide</b>	7440-62-2 as V metal  1314-62-1 as vanadium pentoxide	Particulate form - This substance is unable to be detected by PID/FID.	Air sample using a particulate filter; tetrahydrofuran desorption; XRD detection. Sampling and analytical protocol shall proceed in accordance with NIOSH Method #7300.	ACGIH: 0.05 mg/m <sup>3</sup> (Vanadium Peroxide)  OSHA, NIOSH: 0.05 mg/m <sup>3</sup> (Ceiling) BET -Vanadium in urine	No identifiable warning properties to indicate presence and thereby detection.  <b>Recommended APR Cartridge:</b> Suitable for dust and fume. Organic vapor acid gases with HEPA filter.  <b>Recommended gloves:</b> This is in the particulate form. Therefore any glove suitable to prevent skin contact (Nitrile has been the one most widely used for the other substances).	<b>Boiling Pt:</b> 3182 (Decomposes) <sup>o</sup> F; 1736 <sup>o</sup> C <b>Melting Pt:</b> 1274 <sup>o</sup> F; 690 <sup>o</sup> C <b>Solubility:</b> Insoluble <b>Flash Pt:</b> Not available (Airborne dust may burn or explode when exposed to heat, flame, or incompatible chemicals) <b>LEL/LFL:</b> Not available <b>UEL/UFL:</b> Not available <b>Vapor Density:</b> Not available <b>Vapor Pressure:</b> 0 mmHg <b>Specific Gravity:</b> 3.36 <b>Incompatibilities:</b> Strong acids, lithium, oxidizers, chlorine <b>Appearance and odor:</b> Yellow orange powder	Symptoms of overexposure to this substance may include conjunctivitis, rhinitis, green tongue metallic taste, irritation to the respiratory tract, coughing, rales, dyspnea, bronchitis, bronchospasms, with asthma-like diseases in more severe cases, anemia, loss of skin pallor, and GI disturbances.
<b>Copper and Copper Oxide</b>	7440-50-8 (Cu) 1317-38-0 (CuO)	Substance is not volatile. Unable to be detected by PID or FID.	Air sample using a mixed cellulose ester filter; inductively coupled plasma/atomic emission spectroscopy. Sampling and analytical protocol shall proceed in accordance with NIOSH Method #7300.	NIOSH; OSHA: 0.10 mg/m <sup>3</sup>  ACGIH: 0.2 mg/m <sup>3</sup>	The use of an air-purifying full-face respirator with a high efficiency particulate air filter.  <b>Recommended gloves:</b> This is in the particulate form. Therefore any glove suitable to prevent skin contact (Nitrile has been the one most widely used for the other substances).	<b>Boiling Pt:</b> 4703 <sup>o</sup> F; 2595 <sup>o</sup> C <b>Melting Pt:</b> 1981 <sup>o</sup> F; 1083 <sup>o</sup> C <b>Solubility:</b> Insoluble <b>Flash Pt:</b> Not applicable (Airborne dust may burn or explode when exposed to heat, flame, or incompatible chemicals) <b>LEL/LFL:</b> Not applicable <b>UEL/UFL:</b> Not applicable <b>Vapor Pressure:</b> 0 mmHg <b>Specific Gravity:</b> 8.94 <b>Incompatibilities:</b> Oxidizers, alkalis, sodium azide, acetylene, bromates, chlorates, iodates, and acids. <b>Appearance and Odor:</b> Metal: Reddish, lustrous malleable, odorless solid. Fume: Finely divided black particulate dispersed in air.	Irritation to the nose, throat, and respiratory tract. Metallic taste. Discoloration of skin (potential dermatitis) and hair. Chronic exposure may result in dermatitis and damage to the liver and kidneys. Overexposure to fumes causes symptoms characteristic of the flu (headaches, chills, muscle aches, nausea, vomiting, diarrhea). Ingestion may cause burning in the mouth, throat, and stomach. Metallic taste with colicky abdominal pain. Individuals with Wilson's disease are at greater risk of chronic exposure as a result of the bodies tendency to absorb and retain copper.