

Final
IR-07/18 Soil Gas Survey Radiological Support Work Instruction
Revision 0
March 10, 2005
DCN FWSD-RAC-05-0695

AR_N00217_004117
HUNTERS POINT
SSIC NO. 5090.3.A

SES-TECH is performing a soil gas survey to evaluate the potential for methane gas generation within Installation Restoration Sites 07 and 18 (IR-07/18) located at Hunters Point Shipyard (HPS), San Francisco, California. The objectives of this soil gas survey are to assess if the fill material in IR-07/18 is generating methane gas, and if so, to determine the distribution, extent, and concentrations. Proposed work includes installing temporary soil gas monitoring probes using direct push technology (DPT) and conducting soil gas sampling using field instrumentation. The soil gas survey will be performed in two phases. Phase I will consist of the initial soil gas sampling for methane and total volatile organic compounds using field instrumentation at locations across IR-07/18. Phase II will consist of a second round of sampling that will be implemented approximately one week later. At each location, soil gas samples will be collected at a depth of about 5 feet below ground surface. After the data are reviewed by the regulatory agencies, the temporary soil gas probes will be removed.

IR-07/18 have been designated as radiologically impacted sites and, consequently, it is possible that portions of IR-07/18 are contaminated. The radionuclides of concern are radium-226, cesium-137, strontium-90, and plutonium-239. Previous surveys have been conducted in limited areas at both sites. Sandblast grit was encountered and sampled at one location, which identified elevated levels of naturally occurring radioactivity. Basic radiation survey protocols will be implemented during the work SES-TECH will perform in this area. The work activities SES-TECH will perform include:

- Installing temporary soil gas sampling probes using DPT.
- Collecting soil gas samples.
- Removing the temporary sampling probes and backfilling the sample boreholes with bentonite.

TtFW will provide basic radiation protocols during this work by:

- Providing a radiation safety briefing to SES-TECH staff assigned to the project.
- Performing incoming equipment and material surveys.
- Providing radiological monitoring of each planned DPT location prior to installing the temporary soil gas sampling probes.
- Performing radiological surveys of equipment and materials prior to decontamination of equipment and materials.
- Performing personnel surveys while the work is being performed.
- Performing radiological release surveys on outgoing equipment and material, including temporary probe materials removed from each sampling location at the conclusion of the project.

The survey activities performed under this work instruction will be conducted in accordance with the general approach and methodologies that are given in the Base-wide Radiological Work Plan (Base-wide Plan), and the Base-wide Radiological Control Plan (RCP) and associated Standard Operating Procedures (SOPs). The survey activities will conform to the requirements of the Base-wide Health and Safety Plan (HSP) and the Building-specific Health and Safety Plan (BHASP) prepared for the site.

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Incoming equipment and materials will be surveyed for radioactivity prior to being placed into service on the jobsite. Surveys will be conducted in accordance with SOP HPO-Tt-006, Radiation and Contamination Surveys.

Radiological surface scans will be conducted in the immediate area where probe installation and soil gas sampling will be performed to ensure that existing radiation levels are not elevated prior to disturbing the surfaces. If elevated gamma radiation readings (three sigma above the background value identified at a reference area to be selected in consultation with RASO) are detected during the scan survey, SES-TECH will be advised to conduct their sampling in a different location and RASO will be notified.

Surveys of tools, materials, and equipment will be conducted in accordance with SOP HPO-Tt-006, Radiation and Contamination Surveys. Surveys of tools, materials and equipment will be completed prior to any chemical decontamination method being used to minimize generation of radiological waste streams. DPT equipment used to install the temporary sampling probes will be surveyed after each sampling probe is installed and the installation equipment has been removed from the ground, prior to chemical decontamination. Once chemical decontamination has been completed, the sampling equipment will be resurveyed to ensure the equipment is free from radioactive contamination. If radioactive contamination is identified that is above the release criteria in Table 1, decontamination will be performed in accordance with SOP HPO-Tt-016, Decontamination of Tools and Equipment.

TABLE 1
RELEASE CRITERIA

Radionuclide	Radiation	Equipment (dpm/100 cm ²)	
		Removable	Fixed ^a
Plutonium-239	Alpha	20 α	100 α
Radium-226			
Strontium-90	Beta	200 β ⁻	1,000 β ⁻
Cesium-137	Beta / Gamma	1,000 β ⁻ , γ	5,000 β ⁻ , γ
<p>Notes:</p> <p>^a These limits are based on Atomic Energy Commission <i>Regulatory Guide 1.86</i>. Limits for removable surface activity are 20 percent of these values.</p> <p>Types of radiation: α - alpha, γ - gamma, β⁻ - beta</p> <p>cm² - square centimeters</p> <p>dpm - disintegrations per minute</p>			

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Work will be performed in accordance with the requirements of a TtFW Base-wide Radiation Work Permit. If elevated levels of radioactivity are identified during the performance of the work, a site specific RWP will be issued.

Outgoing equipment and materials (including surveys of removed temporary sampling probe materials) will be surveyed for release prior to leaving the jobsite. Surveys will be conducted in accordance with HPO-Tt-006, Radiation and Contamination Surveys. Wipe samples will be collected from the tools and equipment prior to leaving the site. If radioactive contamination is identified that is above the release criteria in Table 1, decontamination will be performed in accordance with SOP HPO-Tt-016, Decontamination of Tools and Equipment.

Results of the surveys will be submitted to the Radiological Affairs Support Office upon completion of the surveys and compilation of the survey data. A general statement that screening was performed and what the screening showed without actually listing the screening data will be included in the Soil Gas Survey Report. The screening data will be provided to RASO and documented for future reference if required.

If generated, radioactive waste or equipment and materials having contamination present that exceeds the criteria identified in Table 1 that could not be decontaminated will be packaged and placed in Building 406. The waste will be maintained under New World Technology, Inc.'s license until disposed of via the Department of the Navy Low-level Radioactive Waste Disposal Program.



TETRA TECH FW, INC.

TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N68711-98-D-5713 (RAC III)

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TO: Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Ms. Beatrice Appling, 02R1.BA
1220 Pacific Highway
San Diego, CA 92132-5190

DATE: 03/10/05
CTO: 0072
LOCATION: Hunters Point Shipyard

FROM: Neil Hart, Program Manager

DESCRIPTION: Final IR-07/18 Soil Gas Survey Radiological Support Work Instruction,
Revision 0, March 10, 2005

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TtFW: G. Slattery
M. Schneider
C. Jones
B. Williams
D. Delong
Library Copy - SD
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OTHER: (Distributed by TtFW)
*See Attached Cover Letter
K. Ellis - MKM
B. Bowers - NWT
L. Lowman / M. Slack - RASO

Date/Time Received



TETRA TECH FW, INC.

March 10, 2005
FWSD-RAC-05-0695 5.0

Naval Facilities Engineering Command
Southwest Division
Attn: Mr. Ralph Pearce
1230 Columbia Street, Suite 1100
San Diego, California 92101

**SUBJECT: FINAL, IR-07/18 SOIL GAS SURVEY RADIOLOGICAL SUPPORT WORK
INSTRUCTION, REVISION 0, HUNTERS POINT SHIPYARD, SAN FRANCISCO,
CALIFORNIA.**

Reference: Contract N68711-98-D-5713, Environmental Remedial Action Contract
For Sites Southern California, Arizona, New Mexico, and Southern Nevada

Dear Mr. Pearce:

Enclosed is the Final, IR-07/18 Soil Gas Survey Radiological Support Work Instruction, Revision 0, dated March 10, 2005, for Hunters Point Shipyard, San Francisco, California. If you have any questions or require additional information, please contact me at (415) 671-1990.

Sincerely,


Gerard L. Slattery, R.G.
Project Manager

Enclosures: Final IR-07/18 Soil Gas Survey Radiological Support Work Instruction, Revision 0,
dated March 10, 2005

Bcc:

BPMOW
Pat Brooks

05GIH.DS (Admin File, 3 Hard Copies)
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