Naval Facilities Engineering Systems Command

Hunters Point Naval Shipyard
Environmental Cleanup Program Update

Hunters Point Shipyard Citizens Advisory Committee
Environmental & Reuse Subcommittee Meeting

July 22, 2024

Michael Pound – BRAC Environmental Coordinator
Daniel Dutra – Lead Remedial Project Manager
Brian Londquist – Remedial Project Manager

Agenda

Topic	Team Member
• Introductions	Michael Pound
• Strontium-90 Laboratory Method Selection Update	Brian Londquist
• Radiological Retesting: Radiological Object Discovery Update	Daniel Dutra
• Parcel B Installation Restoration Site 10 (IR-10) Update	Michael Pound
• Building Demolition Update	Michael Pound
• Next Navy HPS CAC E&R Meeting	Michael Pound
• Contacts	Michael Pound
• Questions	Navy Team

Strontium-90 (Sr-90)
Laboratory Method Selection Update

Sr-90 Method Evaluation: Background

Overview of Retesting at Parcel G

2017

- Navy found past radiological data unreliable; informed regulatory agencies
- Navy and regulatory agencies agreed to collect new samples

2020

- Navy soil sample collection began at Parcel G; independent sample collection by regulatory agencies
- Sr-90 analyzed using EPA Method 905

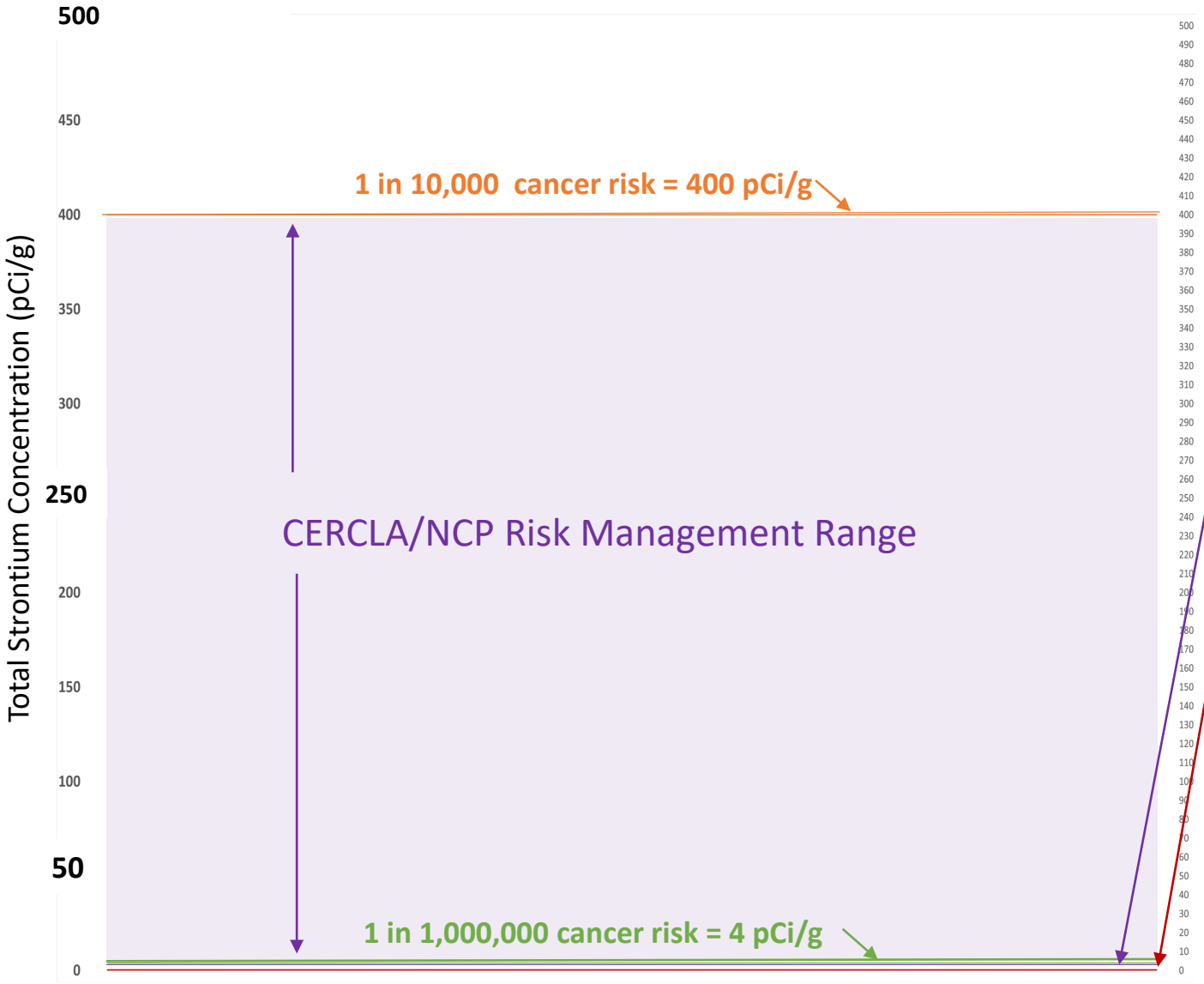
- **Discovery and Investigation of Elevated Sr-90 Levels Using EPA Method 905**

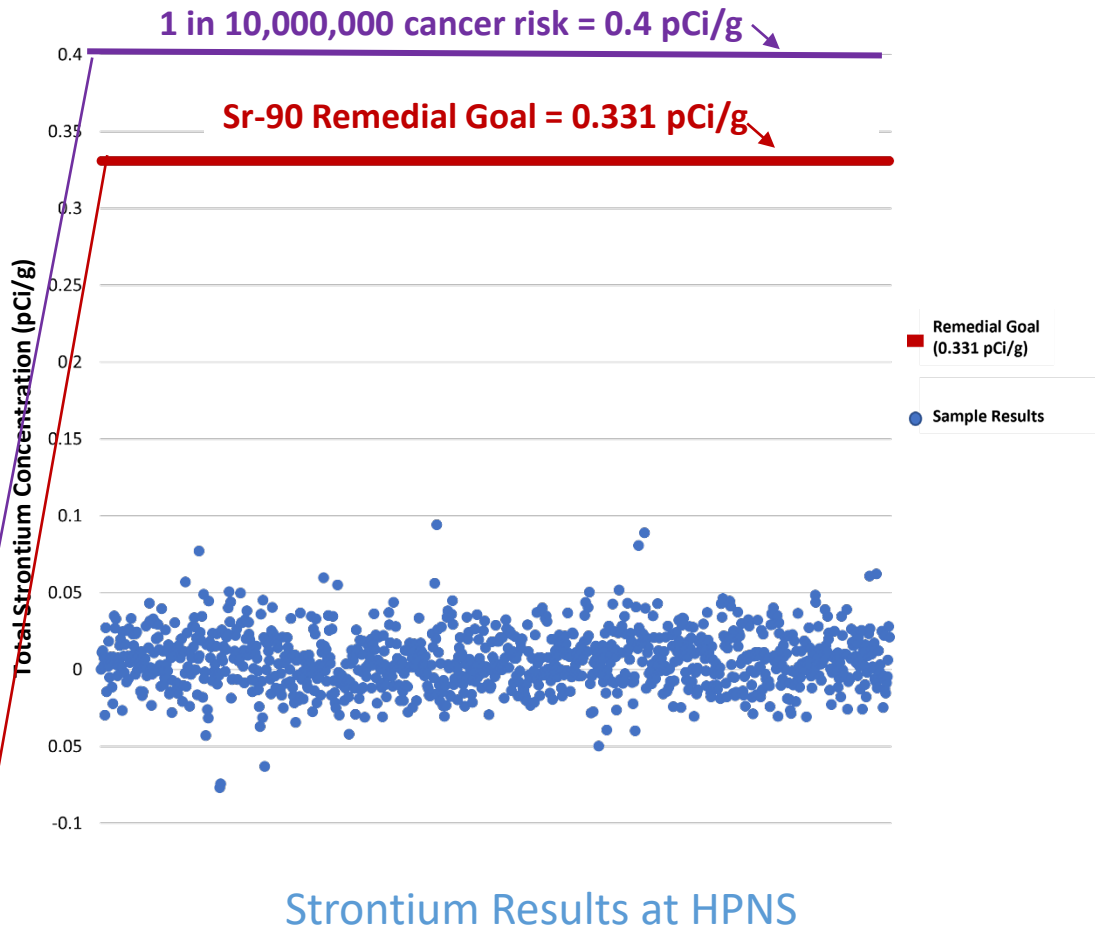
2021

- Navy observed elevated Sr-90 levels; inconsistent and irreproducible results; identified a high potential for false positive results
- EPA Method 905 originally designed to detect Sr-90 in water; adaptation required for soil samples
- Continued observation of inconsistent and irreproducible results using EPA Method 905 at the very low concentrations

Collection of radiological soil samples at Parcel G

Parcel G: Radiological Soil Strontium Results





Strontium Results at HPNS

Sr-90 Method Evaluation

- **Collaboration and Search for Alternate Method**

2021

  - **Navy shared concerns with USEPA, DTSC, CDPH; began discussions to identify an alternate method to detect Sr-90 at very low levels with precision, reliability, and accuracy**

- **Alternate Analytical Methods Evaluated**

2022

  - **Analyzed 950 samples using Eichrom Method for Sr-90 (Nov 2021 to Mar 2022); discussed alternatives with regulatory agencies**
    - Identified interference from natural elements affecting Sr-90 results; informed agencies
  - **Used Eichrom Method for Total Beta Strontium (TBS): includes <u>Sr-90 and other Sr isotopes</u>**
    - Reanalyzed more than 1,000 samples (Mar 2022—Jul 2022)
    - Conducted validation studies on Eichrom Method; shared results with agencies

2023

    - Continued sampling activities into 2023

Sr-90 Method Evaluation

- **Method Verification Studies and Approval**

2023

  - **Conducted laboratory method verification studies on <u>all methods</u>**
  - **Determined EPA Method 905 not reliable at low concentration ranges**
  - **Confirmed Eichrom Method's reliability and accuracy for TBS**
    - Highly conservative method that analyzes for ALL Sr in a sample
  - **Continued communication with regulatory agencies**

Collection of radiological soil samples at Parcel G

Sr-90 Method Evaluation

Feature	EPA Method 905	Eichrom Method
Rationale for Choice	Well-established, commonly used method with historical reliability and accuracy	Offers more accurate and consistent results, with lower uncertainty and better for decision-making
How it Works	Dissolution of soil samples in acid; analysis primarily for Sr-90	Dissolution of soil sample in acid; separation and analysis of components for TBS
Accuracy	High, but with issues of variability and false positives at very low levels	Very high, with consistent results and low uncertainty at very low levels
Reliability	Reliable for general detection, but issues at low concentration ranges	Highly reliable, particularly at very low concentration ranges
Issues Encountered	Inconsistent results, high variability, potential for false positives at very low levels	Potential interference from other substances, but more consistent and accurate overall
Results of Laboratory Validation Analysis	Not reliable for either TBS or Sr-90 at very low levels	Reliable for TBS analysis. Reliable for Sr-90 only with certain adjustments.

Eichrom Method for TBS Selected at HPNS

2024 - completion

- **Eichrom Method for TBS test results evaluated against the remedial goal for Sr-90: 0.331 pCi/g**
  - **Navy goal is more than 10 times lower than typical regulatory standard**
    - Ensures HPNS cleanup exceeds regulatory requirements and protects human health and the environment
- **Using the Eichrom Method for TBS, no Sr-90 levels above the remedial goal have been detected at Parcel G**

- **Navy findings will be verified against independent samples analyzed by federal and state regulatory agencies to ensure accuracy and transparency in the cleanup process**
- **Navy continues methodical cleanup and retesting on Parcel G and throughout HPNS for all contamination**
- **Navy will continue to keep community informed about ongoing radiological retesting efforts**

Radiological Retesting
Radiological Objects Decision Outcomes

Radiological Object Discovery: Parcel B

Small glass object found in radiological screening yard (RSY) pad ESU TU-45B (April 2023)

Actions Taken

- Soil samples and radiological readings collected

Safety Measures

- Secure handling
- Work plan protocol
- No risk to community

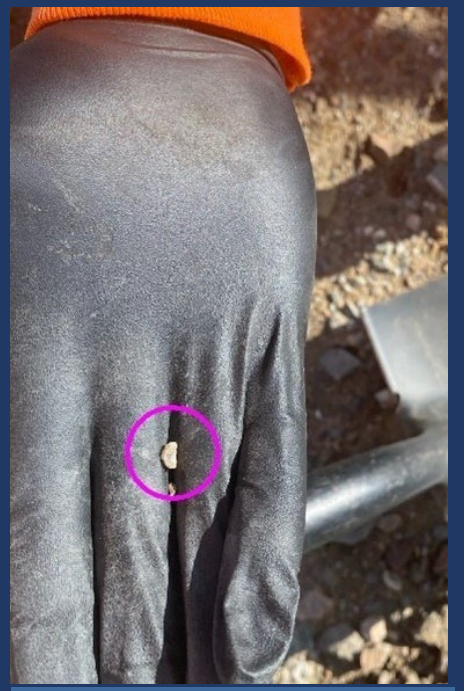


Photo of radiological object discovered at Parcel B

Key Activities and Dates

- **Jan 2023**
  - Excavation
- **Apr 2023**
  - Gamma Drive-Over
- **May 2023**
  - Soil Samples Collected
- **July 2023**
  - Sample results & radiological object analysis received
- **Nov 2023**
  - RSY pad investigation & object recovery
  - Samples collected and sent to lab for analysis
- **Dec 2023**
  - Lab analysis results received
- **Jan 2024**
  - Radiological object report & data review began
- **July 2024**
  - Decision to excavate 100% sanitary sewer & storm drain units

Radiological Object Discovery: Parcel C

Deck marker discovered during routine soil scan (August 2023)

Actions Taken

- Static gamma counts
- Dose-rate readings
- Lab analysis

Safety Measures

- Secure handling
- Work plan protocol
- No risk to community

Photo of radiological object discovered at Parcel C

Key Activities and Dates

- **Apr-May 2023**
  - Excavation
- **Aug 2023**
  - Gamma drive-over
  - RSY pad investigation & object recovery
- **Sep 2023**
  - Soil samples collected
- **Oct 2024**
  - Sample results received
- **Jan 2024**
  - Radiological object report & data review began
- **July 2024**
  - Decision to excavate 100% sanitary sewer & storm drain units

Parcels B and C: Phase 1 Decision Criteria

- **Parcel B and Parcel C Rework Data Quality Objective (DQO) states: "100 percent of Phase 2 TUs will be re-excavated if contamination is identified in Phase 1 Trench Units."**
  - **Contamination is defined as "exceedance of the Remedial Goal (RG) that is not attributable to NORM or anthropogenic background."**
  - **Parcel B and Parcel C Object lab results report radioactivity exceeding the RG and cannot be attributed to NORM or anthropogenic background**

Soil Remediation Goals from Parcel B ROD

Radionuclide	Residential Soil Remediation Goal[a] (pCi/g)	Parcel B Object Analytical Results (pCi/g)
^{226}Ra	1.0[b]	9,700

a. All RGs will be applied as stated in the Parcel B ROD. Analytical results will also be compared to background.
b. ^{226}Ra RG is 1 pCi/g above background.

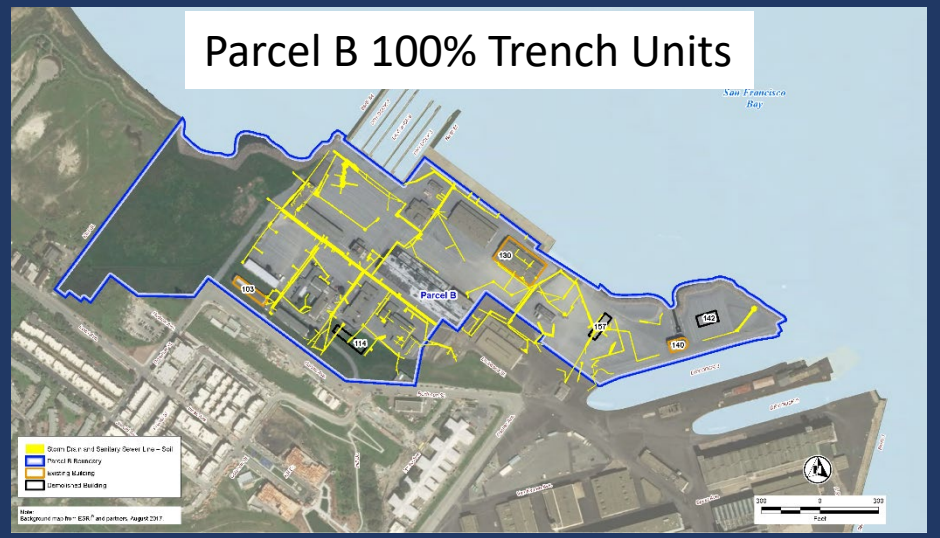
Soil Remediation Goals from Parcel C ROD

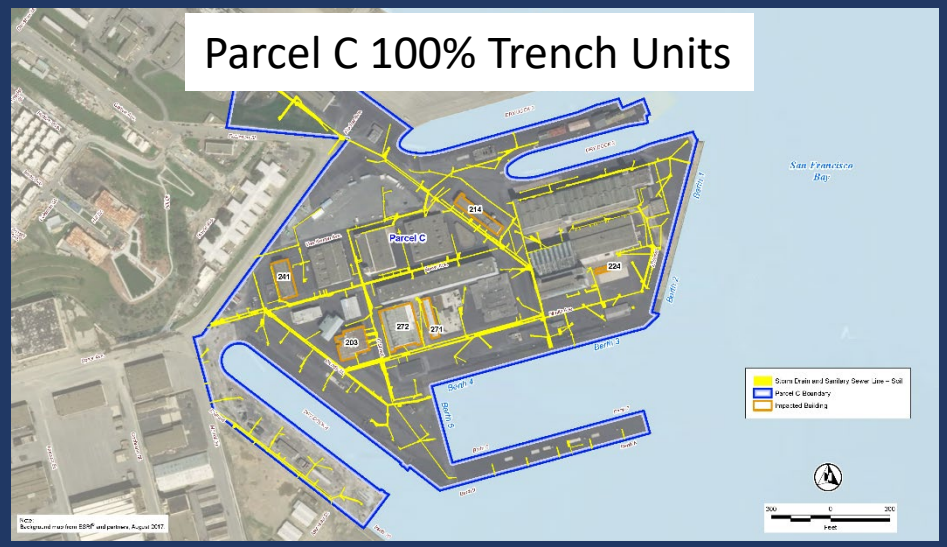
Radionuclide	Residential Soil Remediation Goal[a] (pCi/g)	Parcel C Object Analytical Results (pCi/g)
^{226}Ra	1.0[b]	60,000

a. All RGs will be applied as stated in the Parcel C ROD. Analytical results will also be compared to background.
b. ^{226}Ra RG is 1 pCi/g above background.

Parcels B and C: Phase 1 Decision for Excavation

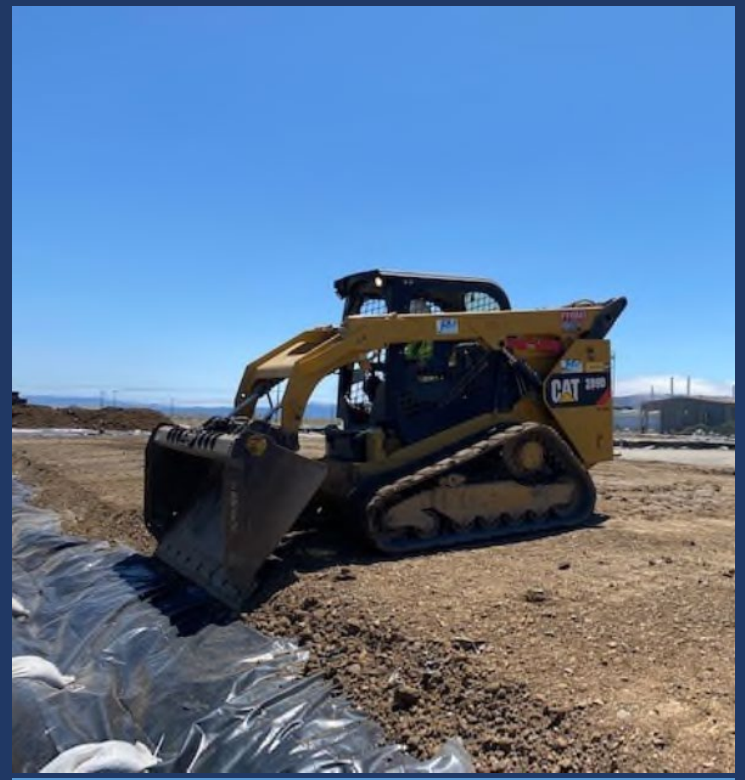
- **For the Parcel B and C objects, the Navy has:**
  - Conducted a thorough analysis of the data and reviewed work plans
  - Based on the discovery of the small glass fragment and deck marker containing radium-226 (Ra-226) above the RG, Parcel B and C Phase 2 trench units will be excavated
  - Regulatory agencies consulted and in agreement
- **The Navy will follow the regulatory agency approved work plans for excavation and retesting**
- **Decision underscores the Navy's commitment to ensuring the safe and thorough cleanup of HPNS**





Parcel G: Phase 1 Results

- **Excavated 21 Trench Units for Phase 1**
  - **About 21,500 cubic yards excavated from trenches; placed on radiological screening yard (RSY) pads for scanning, evaluation, and sampling**
  - **<u>NO ANOMALIES FOUND</u>**
- **Over 4,500 samples collected for laboratory analysis**
  - **All samples analyzed for Cesium-137**
  - **Subset of samples analyzed for Ra-226, TBS/Sr-90, Thorium-232, Uranium 235/236, and/or Plutonium-239/240**
  - **<u>NO EXCEEDANCES OF THE RG FOR ANY ROC</u>**
- **All Phase 1 Trench Units were backfilled**
  - **Over 80,000 labor hours expended to date**
  - **Beginning Phase 2 drilling and sampling**



Preparation of RSY pads for scanning, evaluation, and sampling

Parcel G: Phase 1 Decision Criteria and Outcome

- **Parcel G Rework DQO states: "100 percent of Phase 2 TUs will be re-excavated if contamination is identified in Phase 1 Trench Units."**
  - **Contamination is defined as "exceedance of the Remedial Goal (RG) that is not attributable to NORM or anthropogenic background."**
  - **Parcel G lab data shows radioactivity in exceedance of the RG that cannot be attributed to NORM or anthropogenic background (see table)**
- **Based on the lack of radioactive contamination in exceedance of the RGs, <u>Phase 2 trench units shall be drilled and sampled in accordance with the regulatory agency-approved work plan</u>**

Soil Remediation Goals from Parcel G ROD	
Radionuclide	**Residential Soil Remediation Goal (pCi/g)**
Cesium-137	0.113
Plutonium-239	2.59
Radium-226	1[A]
Strontium-90	0.331
Thorium-232	1.69
Uranium-235	30
Notes:	[A] - Goal is 1 pCi/g above background per agreement with EPA

Parcel B
Installation Restoration Site 10 (IR-10)
Remedial Action

Parcel B IR-10

Building demolition and soil remediation

March - May 2024
Building Demolition

May - Aug 2024
Characterize Soil

Sep - Oct 2024
Excavate

Backfill clean imported soil

Oct 2024 – Oct 2025
Installation of durable cover, quarterly soil gas monitoring

Schedule date: July 2024

Preparatory Fieldwork Began Feb 5, 2024
Building Demolition Completed May 27, 2024

Parcel B IR-10

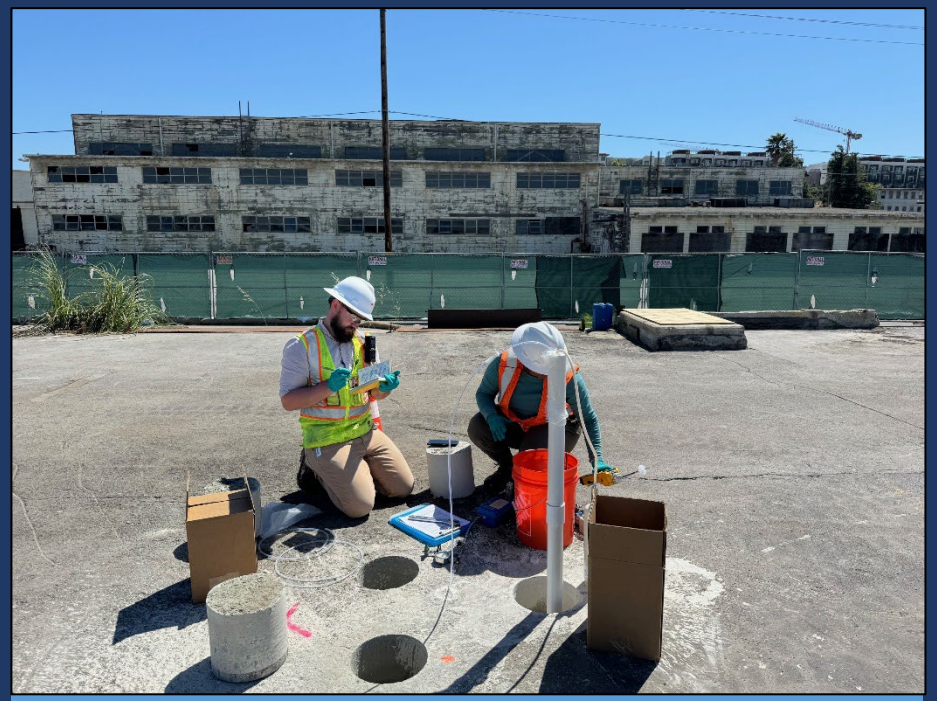
Building demolition and soil remediation

Recent Milestones Achieved

- **Soil vapor sampling completed**

Upcoming Activities

- **08/05/24 – 09/05/24**
  - Agency review of sampling data
  - Concurrence on proposed excavation footprint
  - Ensure proper safety protocols are in place before performing excavation activities
- **09/12/2024 – 10/20/2024**
  - Excavation based on pre-RA characterization concurrence
  - Confirmation sampling, backfill
- **10/23/2024 – 11/4/2024**
  - Restoration and durable cover installation



Soil gas sampling on Building 123 concrete slab

Building Demolition Update

Post-Industry Day Outreach

- **Compiled and distributed attendee list to registrants**
  - About 70 people participated through an opt-in subscription
- **Parcel G Buildings**
  - Shared list of 14 Multiple Award Construction Contract (MACC) companies with registrants

Upcoming Activities

- **Communications via Landing Page**
  - Registration to open Monday, July 29, 2024 (email info@sfhpns.com to request to link)
- **Local Small Business Site Visit planned for August 13, 2024**
  - To gain better understanding of project requirements
  - Tour registration through Industry Day Landing Page

Networking opportunities were available at Industry Day

Next Navy Presentation to HPSCAC E&R Subcommittee

The Navy will present an update on the ongoing environmental cleanup at HPNS to the

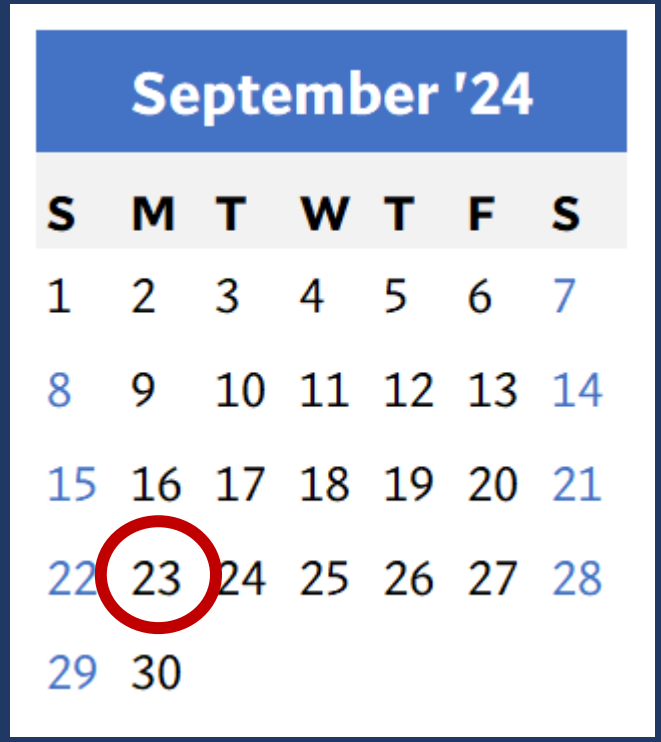
HPSCAC E&R Subcommittee

on

Monday, September 23, 2024*

*pending Navy's ability to travel

SAVE THE DATE!



Resources for More Information

HPNS Program Management

Michael Pound
michael.j.pound.civ@us.navy.mil

Navy BRAC PMO West
33000 Nixie Way, Bldg 50, Suite 207
San Diego, CA 92147
www.bracpmo.navy.mil/hpns

Other Resources

Community Technical Advisor
Dr. Kathryn Higley
(541) 737-0675
kathryn.higley@oregonstate.edu
www.ne.oregonstate.edu

HPNS Information Repository

San Francisco Public Library (Main Branch)
100 Larkin Street, 5th Floor, Gov't Information Center

Regulatory Agencies

Andrew Bain, US Environmental Protection Agency
bain.andrew@epa.gov

Michael Howley, CA Dept. of Toxic Substances Control
michael.howley@dtsc.ca.gov

Mary Snow, San Francisco Reg'l Water Quality Control Board
mary.snow@waterboards.ca.gov

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HPNS Community Outreach

Send an email or leave a message

- For program information
- To join the HPNS Mailing List
- To request language assistance

Email info@sfhpns.com

(415) 295-4742