Parcel E Remedial Design Overview
Hunters Point Naval Shipyard
San Francisco, California

Navy Base Realignment and Closure (BRAC)
Hunters Point Naval Shipyard (HPNS) Community Meeting
July 11, 2018
Parcel E Remedial Design Overview

- The CERCLA Superfund Cleanup Process
- Parcel E Background
- Selected Remedies for Parcel E
  - Soil
  - Groundwater
  - Radiological
- Schedule of Upcoming Work
- Resources for More Information

Remaining structure on Parcel E
CERCLA (Superfund Cleanup) Process

1. Site Discovery
2. Preliminary Assessment/Site Inspection (PA/SI)
3. Community Profile
4. Remedial Investigation & Feasibility Study (RI/FS) including Risk Assessment
5. Proposed Plan
   - Public Notice / Meeting
6. Record of Decision (ROD)
7. Remedial Design (RD)
8. Remedial Action (RA) Implementation
9. Site Closure/Certification
10. Operation & Maintenance Engineering/Institutional Controls

July 11, 2018
BRAC Program Management Office.
Parcel E Background: Location

- Located in the southwestern part of Hunters Point Naval Shipyard
- Includes about 128 acres of shoreline and lowland coastal area
Parcel E Background: History

- Historically used as an industrial support area
- Remaining structures on site
  - 17 Existing Buildings
  - 25 Former Buildings
  - 1 Ship Berth
- Identified areas of concern
  - Building 406 Solvents
  - Former Oily Waste Ponds (1944-1974)
  - Former uses by Triple A Machine Shop, Inc. (1976-1986)
  - Former National Radiological Defense Laboratory (NRDL) buildings (1950’s-1960’s)
  - Areas of potential storage and disposal of industrial waste
Parcel E Background: Former Oily Waste Ponds
(also known as Site 03)

- Operation of Oil Reclamation Ponds from 1944 to 1974
- Two unlined ponds with a total capacity of 440,000 gallons
- Filled in with soil after recycling operations ended
- Oil leaked from the ponds, contaminating soil and groundwater

Legend:
- Site 03 Boundary
- Location of Former Oil Reclamation Pond
- Estimated Extent of Oil Contamination
- Sheetpile Wall installed in 1996
Parcel E Background: Interim Cleanup Actions

- Removed and screened over 60,000 cubic yards of soil and debris from two shoreline areas
- Installation of a protective liner and a 900-foot-long below-ground sheet pile wall at the Former Oily Waste Ponds
- Removal and cleanup of 8 underground storage tanks and 12 aboveground storage tanks

Removal of metal debris

Installation of protective liner

Removal of underground storage tanks (USTs)
Parcel E Remedies: Soil and Sediment
Overview of Upcoming Work

- Excavate and dispose of contaminated soil
  - Metals
  - PCBs
  - Petroleum
  - Other organic chemicals

- Install and maintain a soil vapor extraction (SVE) system
  - Solvents in soil above groundwater

- Install a durable cover throughout the parcel following radiological survey

- Investigate and close remaining steam and fuel lines

- Build and protect the shoreline with rocks and sand

Removal of contaminated soil
Shoreline protection
The Navy plans to excavate approximately 100,000 cubic yards of contaminated soil at Parcel E.
Parcel E Remedies: Soil and Sediment Map of Shoreline Protection and Durable Covers

Planned Activities for Soil at Parcel E after Excavations

- Install approximately 4,800 feet of shoreline protection to prevent erosion
- Install a colored fabric layer with a warning message over existing soil (portions of green area on map)
- Cover 56 acres with clean, imported soil (green area on map)
- Cover 50 acres with asphalt (orange area on map)
Parcel E Remedies: Groundwater Overview of Upcoming Work

- Treat with injections of environmentally-friendly materials (natural biological nutrients)
- Install two below-ground barriers with protective liners (e.g. slurry walls) to reduce flow of groundwater
- Remove or treat site-specific contamination at Former Oily Waste Ponds using mixed mud, bentonite and cement to trap oil in place
Parcel E Remedies: Groundwater
Slurry Walls, Protective Liners, Treatment

Planned Activities for Groundwater at Parcel E: 2018-2020

- Install 3,000 feet of slurry walls at varying depths
- Decrease groundwater flow to San Francisco Bay
- Treat groundwater in-place with natural biological nutrients
Parcel E Remedial Actions: Groundwater Slurry Wall Construction

Installation of slurry wall will reduce groundwater flow to San Francisco Bay

Example of Slurry Trench at HPNS
Parcel E Remedies: Soil Excavation, Groundwater Injection, and Soil Vapor Extraction

Soil Vapor Extraction System

Soil Excavation

ZVI

ISB Nutrients

Soil Gas Monitoring Probe

Durable Asphalt Cover

Vacuum Blower

Treated Air

ZVI/ISB Direct Injection Points

Soil Source Area

Contaminated Groundwater

Groundwater Monitoring Well

Contamination

Gas Flow

SVE Well

Vadose Zone

Soil Vapor Extraction System

ZVI = Zero Valent Iron

ISB = In situ Bioremediation

SVE = Soil Vapor Extraction

BRAC Program Management Office.

July 11, 2018
## Parcel E Remedies: Radiological Overview

- **Perform radiological surveys**
  - Buildings and former building sites
  - Structures
  - Soil and trenches

- **Remove radiologically impacted materials**
  - Soil
  - Debris
  - Objects
  - Building materials

- **Install final cover over ground surface**
  - Place a colored fabric layer over existing soil
  - Cover with a minimum of 2 feet of clean soil as a barrier

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**Radiological scans of buildings**

**Surface scans of soil**
Parcel E Remedies: Maintenance Monitoring, Management, and Institutional Controls

- Ongoing professional monitoring and management of all completed remedies
- Ongoing monitoring of groundwater
  - Chemical contaminants
  - Radiological contaminants
- Restrict land use with institutional controls
  - Specify use and activities to maintain integrity of remedy

Remedies will be monitored and maintained after the property is transferred
Upcoming Work at Parcel E: Schedule

- **Soil**: Excavate soil and debris
- **Groundwater**: Install slurry walls; treat groundwater
- **Radiological**: Soil sampling; surface scans

**Begin Work on Remedies** 2018-2020

**Install Shoreline Protection** 2018-2019

**Install Durable Cover** 2020

**Monitor Groundwater** before, during, and after transfer of property

**Monitor Remedies** before, during, and after transfer of property

**Transfer Property** 2021
Resources for More Information

Join the HPNS Mailing List

Send an email to info@sfhpns.com

Leave a message on the HPNS Information Line
(415) 295-4742

Navy Resources for Document Review

City of San Francisco Main Library
100 Larkin Street, 5th Floor
Government Information Center
San Francisco, CA 94102
(415) 557-4400

Navy Website
www.bracpmo.navy.mil/hpns

Hunters Point Naval Shipyard Site Trailer
(near HPNS security entrance)
690 Hudson Avenue
San Francisco, CA 94124

Get Answers on Radiological Health and Safety from a Technical Expert

Dr. Kathryn Higley
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www.ne.oregonstate.edu/kathryn-higley

• Highly qualified independent resource available to the public on HPNS radiological issues
• Head of the School of Nuclear Science and Engineering at Oregon State University
• Available to answer community member questions by phone or email, or during local onsite hours