

Hunters Point Naval Shipyard Radiological Program Update

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Purpose of this Presentation



1. Provide general background information on radiological concerns at HPNS
2. Provide the current status of the radiological data re-evaluation and answer questions
3. Describe future actions to complete the re-evaluation and present results to the public

Hunters Point Naval Shipyard (HPNS) History



Founded as
a commercial
dry dock

1869

Navy radiological uses

1939 to 1974

Navy ends
leasing

1986

1939

Purchased by
US Navy

1976

Leased to Triple A
Machine Shop

1991

Placed on
BRAC list



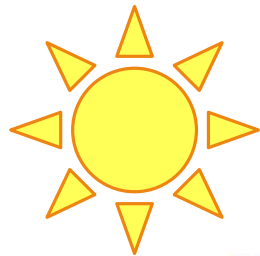
HPNS dry docks (1940)



USS Iowa at HPNS (1953)

What Is Radiation?

- Radiation is energy given off from atoms
- Everyone is exposed to radiation every day from natural and man-made sources, including:



The Sun

Rocks and soil



Common foods

Man-made sources



- Navy Fact Sheet on Radiation exposure available here:
www.bracpmo.navy.mil/hpnsrc

What were the Navy uses of radiation at HPNS?



Historical activities at HPNS

- Ship repair and maintenance
- Testing and decontaminating ships
- Navy Radiological Defense Laboratory (NRDL) testing
- Waste disposal practices

Where are the potentially contaminated areas at HPNS?

- Buildings with historical radiological use
- Sanitary sewer and storm drain lines (removed)
- Former disposal/burial areas
- Piers and ship berths



How does the Navy address radiological contamination at HPNS?



Soil Sampling



Building Scanning



Soil and Sewer Line Removal

- Evaluate by sampling and scanning
- Monitor the environment
 - Air monitoring
 - Perimeter scanning
 - Equipment and personnel
- Remove sources or construct protective barriers
- Confirm the safety of response
- Report to agencies and the public
- All responses are performed in coordination with
 - EPA
 - DTSC
 - CDPH
 - SFDPH

Radiological Data Investigation (2012)



Why did the Navy start to question data?

- In 2012, Navy review of radiological sampling data found anomalous results that could not be explained
- The Navy discovered that one of its radiological remediation contractors (Tetra Tech EC), had misrepresented radiological data

What was done after discovery of the misrepresented data?

- Regulatory agencies (NRC, EPA, and CDPH) were notified
- Tetra Tech EC performed an internal investigation, and presented results to the Navy in “Anomalous Soil Sampling Report”

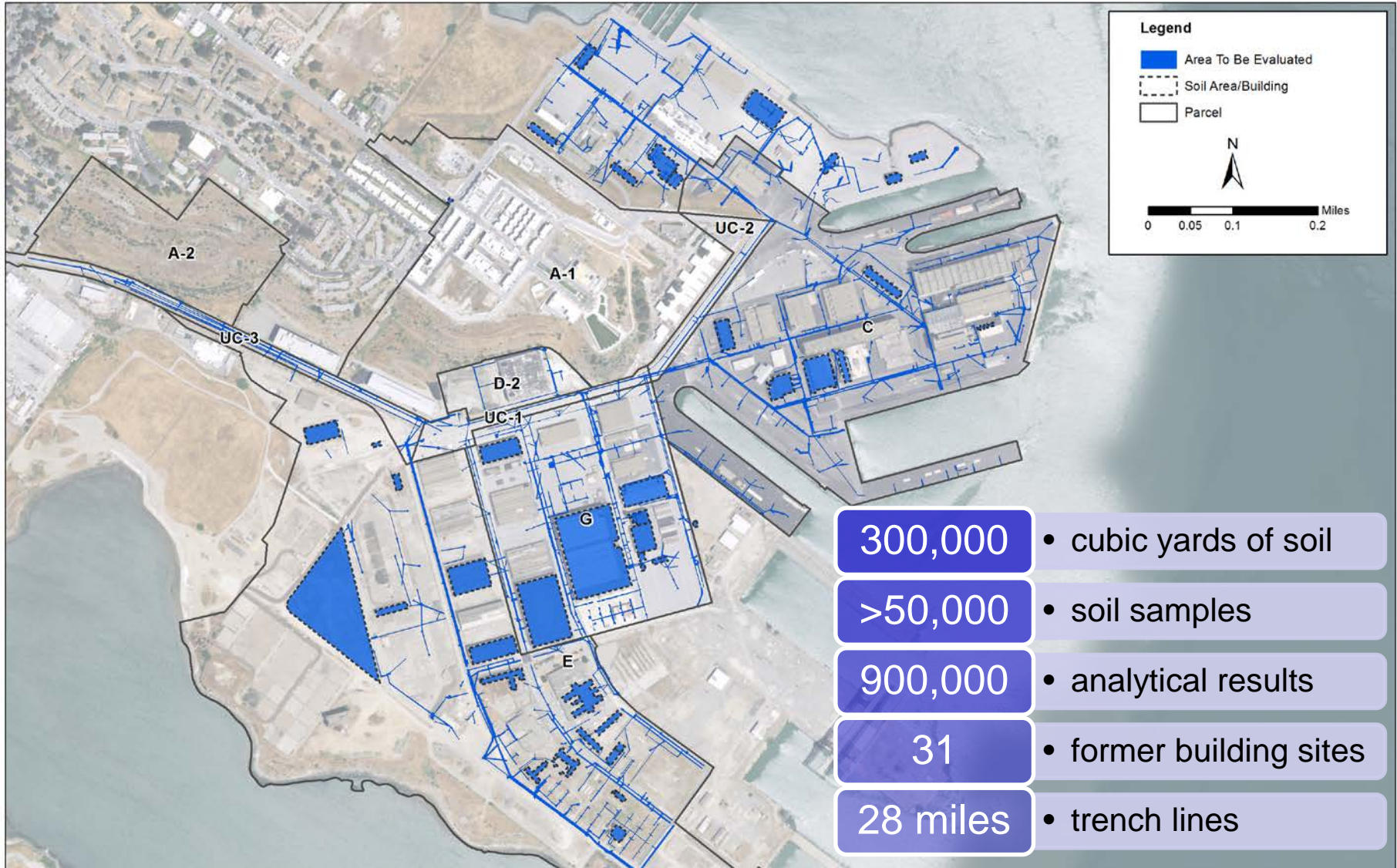
Why are
radiological
sample results
being questioned
again?

- In 2016, a former Tetra Tech EC employee made new allegations of improper sampling and cleanup activities
- In 2017, six more former Tetra Tech EC employees made further allegations

How is the Navy addressing new allegations?

- First priority was to evaluate the allegations and determine whether those who live and work on or near HPNS are being exposed to harmful radiation
 - That evaluation indicated it is safe to live and work here
- The Navy has assembled a team of technical experts to evaluate information and existing data

Size and Scope of Current Evaluation



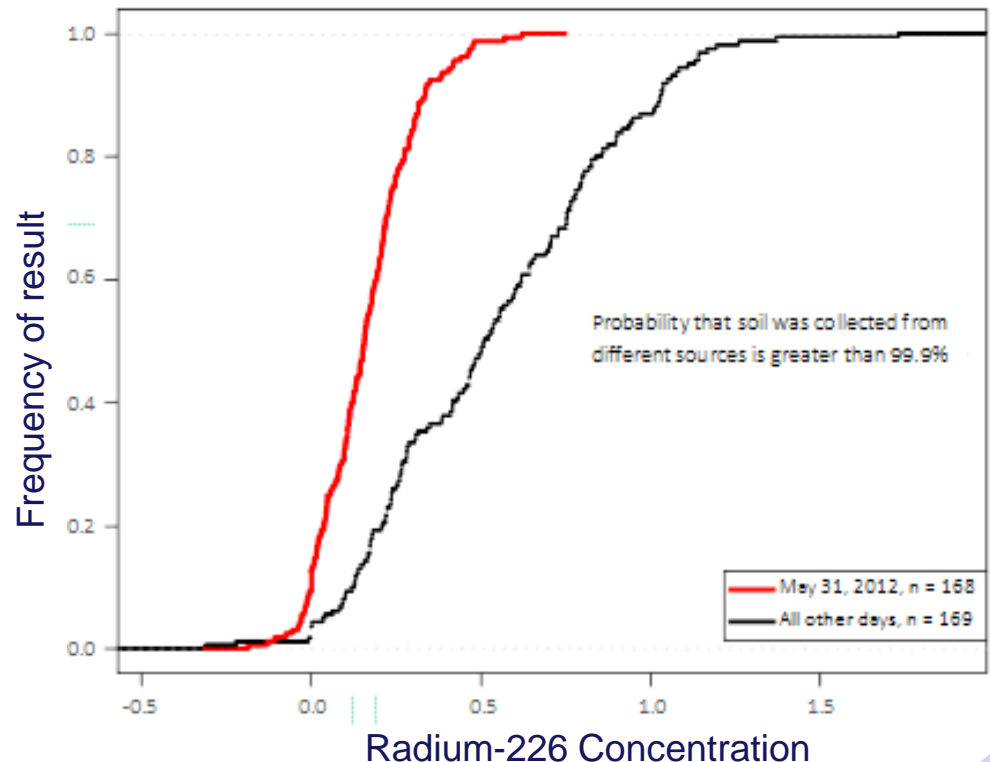
Data Evaluation Method - Statistics



- Statistical tests are very efficient and can look at a lot of data
- Statistical tests tell us whether the radiological data is genuine or falsified
- 5 types of statistical tests used for soil sampling and building scan data

Example of statistical analysis:

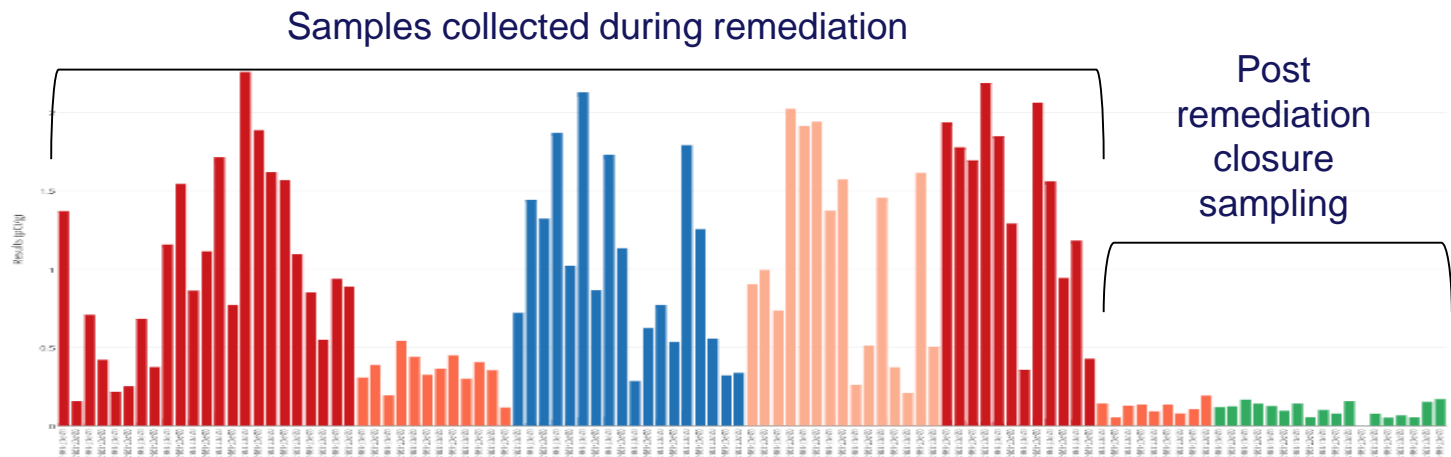
- ✓ The graph shows how often a concentration of Radium 226 was detected in a survey unit.
- ✓ The **red line** shows the frequency of Radium -226 concentrations for May 31, 2012, and the **black line** shows the pattern for all other days of sampling the survey unit.
- ✓ This shows that the data collected on May 31, 2012 are not from the same area as all the other samples from the survey unit, and are suspected to be fraudulent.
- ✓ This also shows that statistical methods work.



Data Evaluation Method – Logic Tests

- Inconsistencies in data and methods:
 - Samples collected on different day than rest of survey unit
 - Timing on sample collection
 - Samples analyzed before records say they were collected
- Unusual patterns in analytical and scan data

Example of unusual pattern: Ac-228 is a naturally occurring radionuclide, and should be detected within a consistent range within a survey unit. In evaluating data from soil sampling it was determined that Ac-228 concentrations decreased suddenly while sampling for closure of survey unit when compared to previously sampling in the same survey unit.

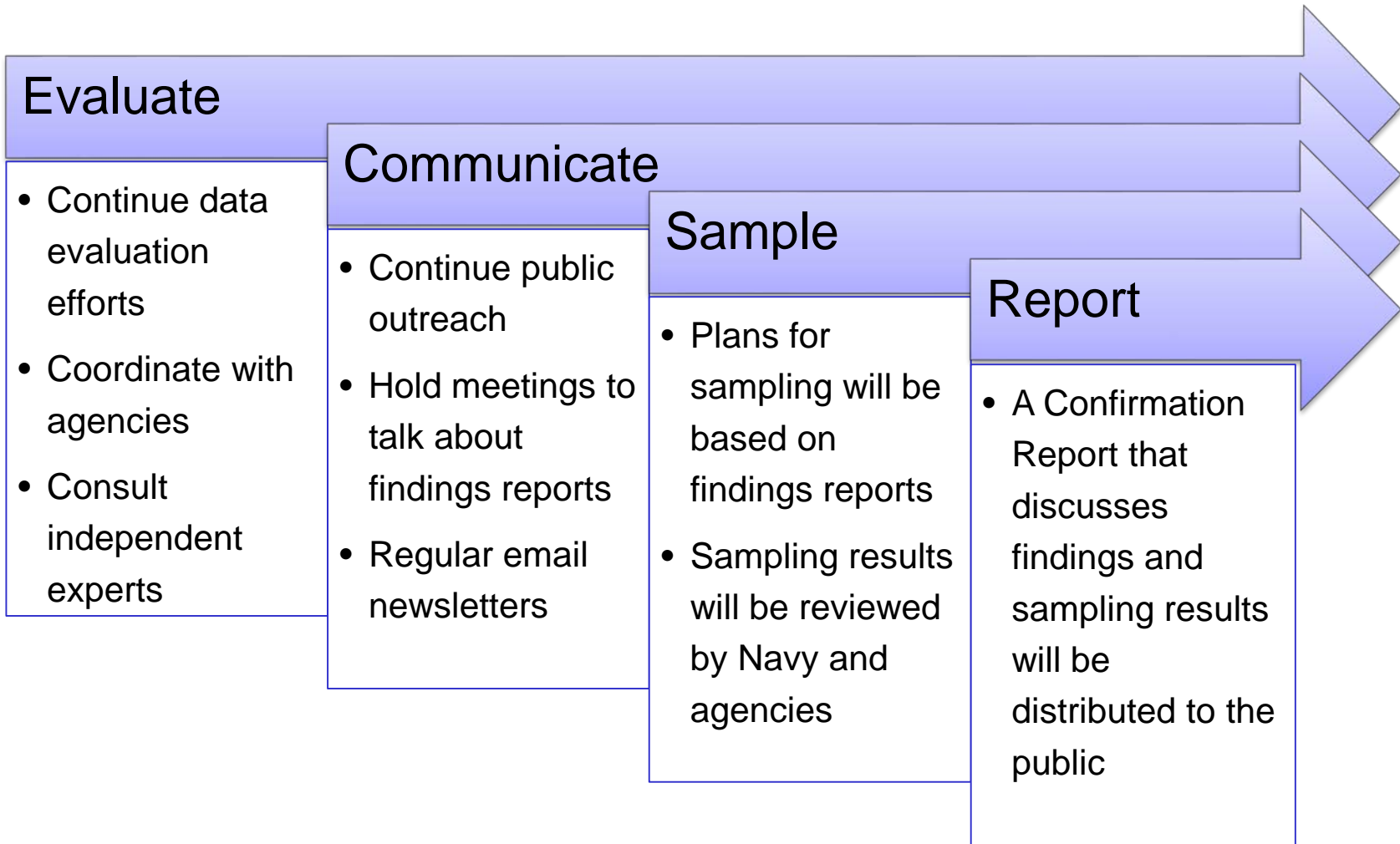


Key Accomplishments



- ✓ Assembled soil database for sewer lines and soil sites
- ✓ Evaluated statistical methods and developed a validation protocol with EPA to verify Navy process
- ✓ Completed statistical tests of sewer line and soil sites data
- ✓ Added experts from Oak Ridge Associated Universities to provide support and independent review
- ✓ Developed methods for future sampling

Next Steps



Is the Community Safe?



- **The Navy's first priority is public safety**
- The Navy will complete all work to be protective of Human Health and the Environment
- People who live on, work at and visit the HPNS area are safe
- The Navy continues its commitment to ensure that all property at HPNS will be safe before transfer to the City of San Francisco



For more information...



Join the HPNS Mailing List



Send an email to
info@sfhpn.com



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

Navy Resources

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

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Community Resources

Community Technical Advisor
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Community Liaison
Mr. James Bryant
(415) 970-9051 community@sfhpn.com

Information on the Internet

American Nuclear Society
www.ans.org

U.S. Environmental Protection Agency
www.epa.gov

U.S. Nuclear Regulatory Commission
www.nrc.gov

Hunters Point Navy Website
www.bracpmo.navy.mil/hpns
Radiological Page
www.bracpmo.navy.mil/hpnsrc

World Health Organization
www.who.int

Radiation Answers
www.radiationanswers.org

American Council on Health and Science
www.acsh.org