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FINAL NO FURTHER ACTION DECISION DOCUMENT FOR SITE 30 NSY PORTSMOUTH
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**NO FURTHER ACTION
DECISION DOCUMENT
FOR
SITE 30**

**PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE**

FEBRUARY 2014

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ACRONYMS AND ABBREVIATIONS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIA	Controlled Industrial Area
DoD	Department of Defense
EE/CA	Engineering Evaluation/Cost Analysis
FFA	Federal Facility Agreement
FS	Feasibility Study
FY	Fiscal Year
IRP	Installation Restoration Program
MEDEP	Maine Department of Environmental Protection
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
OU	Operable Unit
PNS	Portsmouth Naval Shipyard
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
SARA	Superfund Amendments and Reauthorization Act
SMP	Site Management Plan
SSI	Site Screening Investigation
TCLP	Toxicity Characteristic Leaching Procedure
TRC	Technical Review Committee
USEPA	United States Environmental Protection Agency

1.0 THE DECLARATION

SITE NAME AND LOCATION

This No Further Action Decision Document addresses Site 30, Former Galvanizing Plant, Building 184, located in the central portion of Portsmouth Naval Shipyard (PNS), Kittery, Maine. Site 30 is a Site Screening Area in the PNS Installation Restoration Program (IRP).

STATEMENT OF BASIS AND PURPOSE

This Decision Document presents the basis for the selection of No Further Action as the final remedy for Site 30 at PNS, Kittery, Maine. The No Further Action decision is based on the results of the Engineering Evaluation/Cost Analysis (EE/CA) for Site 30 (Tetra Tech, October 2010) and subsequent completion of a non-time-critical removal action as described in the Action Memorandum for Non-Time-Critical Removal for Site 30 (Navy, December 2010), Removal Action Work Plan (Shaw, July 2011), and Construction Completion Report (CB&I, November 2013). After the removal action, remaining concerns were addressed in the Navy Proposal to Modify Removal Action for Site 30 (Navy, October 2011), provided in Appendix A of this Decision Document, and in the Technical Memorandum on the crystalline growth investigation provided as an appendix to the Construction Completion Report.

No Further Action for Site 30 was selected in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the documents and reports referenced herein, which are available for public review in the Information Repositories at the Rice Public Library in Kittery, Maine, and Portsmouth Public Library in Portsmouth, New Hampshire. United States Environmental Protection Agency (USEPA) and Maine Department of Environmental Protection (MEDEP) concur with the selection of No Further Action as the final remedy for Site 30.

DESCRIPTION OF NO FURTHER ACTION

Site 30 was originally investigated in 1998 based on the observation of a crystalline material along the base of the eastern wall adjacent to an underground tank vault used as part of the former galvanizing and metal cleaning facility. Analysis of the crystalline material via USEPA Toxicity Characteristic Leaching Procedure (TCLP) analysis indicated that it contained several metals and sulfur compounds. The pH values of some of the samples of the substance were less than the acidic TCLP criterion (pH of 2.0). Based on investigation of the site, fill material and water in the tank vault were thought to be the source of the crystalline material. In addition, there was potential unacceptable risk for construction workers

exposed to metals in the tank vault water and potential for unacceptable risk if metals in the tank vault fill or water migrated to underlying soil and groundwater. Therefore, the Navy determined that a non-time-critical removal action was appropriate before determining whether a Remedial Investigation (RI)/Feasibility Study (FS) was necessary for the site. The 2010 Action Memorandum specified that the concrete floor, water in the tank vault, tank vault fill material, acid-proof brick lining, and concrete containment would be removed, and the eastern tank vault wall would be washed. Confirmation samples were to be collected from the exposed soil walls and floor after excavation, materials removed from Site 30 were to be disposed of properly, and the site was to be restored. Removal of these items was planned because it was believed that the vault construction materials could be significantly contaminated with chemicals that leached out of the vault contents and migrated to underlying soil or groundwater.

The removal action, conducted in August and September 2011, included removal of the concrete slab flooring and vault fill material. It was determined based on the observed site conditions at that time and the variance between the actual conditions and site conditions presumed in the Action Memorandum, that there was a low likelihood that the concrete containment, bricks, and underlying soil had been adversely impacted (Navy, October 2011). Therefore, it was recommended by the Navy and accepted by USEPA Region 1 and MEDEP that the acid-proof brick lining and concrete containment not be removed and that the vault be backfilled. The fill material was removed from the vault, the acid-proof brick was cleaned and tested, and site was restored. The removal action has addressed potential threats to public health and welfare and the environment at Site 30; therefore, Site 30 is available for unlimited use and unrestricted exposure.

Investigation of the crystalline material has determined that the tank vault fill material and water were not the source and that the crystalline formation is caused by efflorescence. Efflorescence is a common crystalline deposit that forms on masonry when water passes through building construction materials such as concrete, mortar, grout, or brick. Salts comprising the construction materials slowly dissolve, and the dissolved salts are drawn to the surface of the construction material where evaporation of the water occurs and crystalline material is deposited. Based on observations of the vault contents and completion of removal of the vault contents, it has been determined that Site 30 is not the source of the water causing efflorescence or the crystalline material. Efflorescence is a common process, and any resulting materials are not considered CERCLA process waste. Therefore, it has been concluded that the crystalline material on the wall of Building 184 is not related to Site 30 (CB&I, November 2013).

DECLARATION STATEMENT

On the basis of the findings at Site 30, No Further Action is warranted for the site. Observations of site conditions upon removal of the tank vault fill material indicate that the concrete containment and underlying soil were unlikely to have been adversely impacted by the tank vault fill material or site

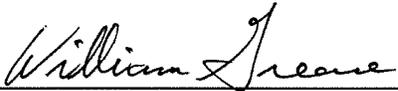
operations because the acid-proof brick lining was in excellent condition, there were no cracks or gaps in the brick lining along the floor of the vault, there was a significantly smaller volume of water in the vault than anticipated, and any potential Site 30 water sources were isolated and did not include groundwater. Thus, the concrete containment and underlying soil that remain in place do not pose a threat, or potential threat, to public health or welfare or the environment, and all tank vault fill material has been removed and disposed of properly. The crystalline material is from efflorescence on the building wall and is not related to Site 30. Therefore, no remedial actions, land use restrictions, or five-year reviews are required for Site 30, and the decision has been made for No Further Action. This area will no longer be included as a Site Screening Area, and it will be removed from the IRP at PNS.

SIGNATURE AND SUPPORT AGENCY ACCEPTANCE

This documents the selection of No Further Action for Site 30 and therefore removal of Site 30 from the IRP at PNS. The foregoing represents the selection of No Further Action by the Navy, with the concurrence of USEPA and MEDEP.

Concur and recommend for immediate implementation:

United States Department of Navy Signature and Date

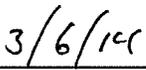


W. C. Greene

Captain, United States Navy

Commanding Officer

Portsmouth Naval Shipyard, Kittery, Maine



Date

2.0 DECISION SUMMARY

SITE NAME, LOCATION, AND DESCRIPTION

PNS is a military facility with restricted access on an island located in the Piscataqua River, as shown on Figure 1. The Piscataqua River is a tidal estuary that forms the southern boundary between Maine and New Hampshire. PNS is located in Kittery, Maine, north of Portsmouth, New Hampshire, at the mouth of the Great Bay Estuary (commonly referred to as Portsmouth Harbor).

Military activities are concentrated in the western portion of the facility in the Controlled Industrial Area (CIA). This area includes all of the dry docks and submarine berths and numerous buildings that house trade shops related to submarine maintenance activities. Access to the area is tightly controlled and limited to individuals having appropriate clearances. The CIA is covered with buildings and asphalt to support military operations at PNS. Uses of other portions of PNS include administration offices, officers' residences, equipment storage, parking, and recreational facilities. Outside the CIA, areas are covered with asphalt, grass, and/or buildings, depending on the use of the area.

Water for operations and drinking at the Shipyard is supplied by the Kittery Water District. Kittery's water supply originates from surface reservoirs located in the vicinity of York, Maine. Groundwater at PNS is not used for drinking, irrigation, industrial processes, firefighting, or any other purposes.

Site 30 is addressed in this No Further Action Decision Document. Site 30 is located in the central portion of PNS, as shown on Figure 2. Site 30 was investigated under the IRP, which is to identify, assess, characterize, and clean up or control contamination from past hazardous waste disposal operations and hazardous material spills. An EE/CA was completed for Site 30 (Tetra Tech, October 2010) to support a non-time-critical removal action to abate potential human exposure to hazardous substances and to mitigate the potential threat of a release to the environment of hazardous substances associated with the former tank vault within Building 184. Building 184 has been determined to be a historically significant building, and the building is currently a vacant office building.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

PNS is engaged in the conversion, overhaul, and repair of submarines for the Navy. The long history of shipbuilding in Portsmouth Harbor dates back to 1690, when the first warship launched in North America, the Falkland, was built. PNS was first established as a government facility in 1800, and it served as a repair and building facility for ships during the Civil War. The first government-built submarine was designed and constructed at PNS during World War I. A large number of submarines have been

designed, constructed, and repaired at this facility from 1917 to the present. PNS continues to service submarines as its primary military focus.

Prior to CERCLA and Resource Conservation and Recovery Act (RCRA) regulation at PNS, years of shipbuilding and submarine repair work at PNS resulted in hazardous substances being released into the soil, groundwater, surface water, and sediment on and around PNS. As a result, investigation and remediation activities were performed under the Department of Defense (DoD) IRP. The IRP parallels CERCLA and is further discussed in the Site Management Plan (SMP) for PNS [Amended Fiscal Year (FY) 13] (Navy, April 2013). Effective May 31, 1994, PNS was included on the National Priorities List (NPL), and subsequent studies have been conducted under the authority of CERCLA, commonly known as Superfund. The Federal Facility Agreement (FFA) for PNS was signed by USEPA and the Navy in September 1999, and became effective in February 2000. The State of Maine has elected not to be a party to the FFA at this time; however, the state is afforded a participatory role in the site remediation process by virtue of CERCLA. Among other things, the FFA outlines roles and responsibilities, establishes deadlines/schedules, outlines work to be performed, and provides a dispute resolution process for primary documents. The FFA ensures that CERCLA decisions will be consistent with RCRA and other federal and state hazardous waste statutes and regulations as appropriate for the sites at PNS. USEPA, MEDEP, and the Navy continue to work toward site cleanup under CERCLA. The sites identified in the FFA were grouped, based on similar characteristics or proximity, into Operable Units (OUs). There are currently seven OUs under various stages of remediation. Site 30 is identified in the FFA as under investigation as a study area; it is not included within an OU.

Site 30 includes the former tank vault within Building 184, the Former Galvanizing Plant. Building 184 was constructed in 1943 as a galvanizing plant to accommodate PNS' increased production schedule in support of the World War II effort. By the end of the war, PNS production requirements were greatly reduced, and galvanizing was performed off yard by a private contractor. In 1946, Building 184 was converted from a galvanizing plant to an electrical testing laboratory. Sometime between 1954 and 1956, the building was converted into a clean room facility used for cleaning and assembling metal parts. In the early 1960s, the building was converted into a welding school, and a flame-spray galvanizing system was installed in the building (Dolph and Hall, September 1995). Until 2010, the building was used as a welding school. The welding school has been relocated, and Building 184 is not currently in use. Figure 2 shows the location of Site 30 at PNS, and Figure 3 shows the layout of the area, including the location of the former tank vault within Building 184.

The tank vault within Building 184 was constructed at the approximate center of the building, along the eastern wall, as shown on the 1943 as-built conditions plan on Figure 4. The eastern wall of the tank vault was constructed against the exterior wall of the building. The multi-compartment tank vault,

measuring approximately 52 feet long by 35 feet wide by a maximum of approximately 4 feet deep, was constructed as a concrete vault lined with acid-proof bricks set in acid-proof cement. The tank vault originally contained pickling tanks including a flux tank, water tank, acid tank, and caustic tank. These tanks were used to remove oxide scale from metal surfaces by immersion in a diluted acid bath to obtain a chemically clean surface in preparation for plating and galvanizing (Dolph and Hall, September 1995). Details regarding the location, size, and cross-sectional views of the vault and floor are shown on Figure 4.

Site 30 was originally investigated as part of a Site Screening Investigation (SSI) in 1998 and test pitting investigation in 2001 based on the observation of a crystalline material along the base of the eastern wall adjacent to the tank vault used as part of the former galvanizing and metal cleaning facility. The crystalline material was first observed in 1973 and was removed at that time. It was again observed in 1994. TCLP analysis of the crystalline material indicated that it contained several metals and sulfur compounds. The pH of the substance (1.0) was less than the acidic TCLP criterion (pH of 2.0), and it was removed and disposed of off site. The crystalline material was observed on the wall again in 1996 and was sampled and analyzed in 1997, with results similar to the 1994 sample analyses. An investigation of surface soil, subsurface soil, and groundwater at the site was conducted during the SSI in 1998 to assess the area surrounding Building 184. The results indicated that further investigation of the source area was necessary (Tetra Tech, May 2000).

Fill material in the former tank vault, water in the former tank vault, and the crystalline material on the wall of Building 184 along the tank vault were investigated as part of the test pitting investigation in 2001. Sampling included collection of samples of the crystalline material, tank vault fill material samples, and tank vault water samples, as shown on Figure 5. Based on investigation of the site, fill material and water in the tank vault were thought to be the source of the crystalline material. In addition, there were potential unacceptable risks for construction workers exposed to metals in the tank vault water and potential for unacceptable risk if metals in the tank vault fill or water migrated to underlying soil and groundwater. Based on the results of the test pitting investigation, the Navy recommended that a non-time-critical removal action be implemented to address the former tank vault (Tetra Tech, May 2002). An EE/CA was completed to provide the necessary support for the non-time-critical removal action at Site 30. The results of the test pitting investigation were used to estimate disposal costs and volumes for the removal action, including removal and offsite disposal of the tank vault material, concrete containment, and acid-proof brick.

The removal action, including removal of the concrete slab flooring and vault fill material, was conducted in August and September 2011. It was determined based on site conditions at that time that there was a low likelihood that the concrete containment, bricks, and underlying soil had been adversely impacted

because there was little water in the vault, a source of water was not found in the vault, and the fill material had relatively low metals concentrations. Therefore, it was recommended and accepted by the regulatory authorities (USEPA Region 1 and MEDEP) that the acid-proof brick lining and concrete containment not be removed and that the vault be backfilled (Navy, October 2011).

The crystalline material identified along the wall above the former tank vault was investigated after the removal action, and a Technical Memorandum was prepared to present the Navy's understanding of the hazard represented by the material. Although there is still some crystalline material in Building 184, the crystalline material was found in other areas of the building not associated with the former tank vault. Accumulation of crystalline material is common in buildings with poor drainage or frequent contact of masonry walls with water (e.g., groundwater and rain water). This phenomenon, called efflorescence, is described in the Technical Memorandum included in an appendix of the Construction Completion Report (CB&I, November 2013). Because Site 30 is not the source of the water, crystalline material was found to be accumulating in other areas of the building, and efflorescence is a common phenomenon, the Navy concludes that the crystalline material is not a process waste and thus all CERCLA concerns have been addressed at Site 30.

COMMUNITY PARTICIPATION

Community relations activities for PNS began as early as August 1986 when the first public information workshop was held regarding environmental restoration work at the Shipyard. In addition to community workshops, a Technical Review Committee (TRC) organized meetings beginning in December 1987 and on an as-needed basis thereafter to provide an opportunity for technical experts performing environmental investigations to meet with appointed citizens and PNS personnel to discuss and solicit community input on the technical progress and interim findings of the investigations. The TRC evolved into a Restoration Advisory Board (RAB) with the inclusion of additional community members in 1995. The RAB, which generally meets quarterly, provides a forum for discussion and exchange of information between the Navy, regulatory agencies, and the community on environmental restoration activities, and it provides an opportunity for individual community members to participate in the decision-making process and to provide input to decision-makers for various IRP sites, which included Site 30. Members of the public in Seacoast communities have been interviewed to establish a baseline of the public's knowledge and concerns about the PNS IRP and to enhance open communication on topics of public concern. Details of the history, objectives, and implementation techniques of community relations activities at the PNS can be found in the Final Community Involvement Plan Update (CH2MHill, June 2012).

Information on IRP sites is provided to the RAB through annual updates to the SMP, RAB presentations, and technical documents prepared as part of the IRP. The SMP provides the current status of the IRP sites and remedial action schedules for each site/OU (Navy, April 2013). The Navy provides

presentations of the results of the various investigations and evaluations conducted at PNS at RAB meetings, and the minutes from these meetings are provided to RAB members. In addition, fact sheets providing updates on each RAB meeting are provided. The RAB Update fact sheets include a summary of the main RAB presentations, contact information, and information on the next RAB meeting. Technical documents provided for regulatory review and comment are presented at RAB meetings.

Documents that support this No Further Action Decision Document are available for public review in the PNS Information Repositories. The PNS Information Repositories are located at the Rice Public Library in Kittery, Maine, and the Portsmouth Public Library in Portsmouth, New Hampshire.

Specific community outreach efforts for the selection of No Further Action for Site 30 are as follows:

- A status update on removal action construction activities was provided at the December 2011 RAB meeting.
- The draft No Further Action Decision Document for Site 30 was submitted for regulatory review in May 2013. Comments were resolved and Navy responses to comments were submitted in December 2013.
- The draft No Further Action Decision Document for Site 30 was presented at the December 2013 RAB meeting.
- A 30-day public comment period on the draft final document was held from January 7 to February 5, 2014. Announcement of the comment period, availability of the No Further Action document, and information on how to provide public comments was provided in the Portsmouth Herald and Foster's Daily Democrat on January 7, 2014. No comments were received during the public comment period.

SCOPE AND ROLE OF OPERABLE UNIT

As with many CERCLA sites, issues at the PNS IRP sites are complex. As a result, the Navy has divided the analysis and cleanup of PNS IRP sites into manageable portions called OUs. There are seven operable units (OU1, OU2, OU3, OU4, OU7, OU8, and OU9) at PNS, as shown on Figure 2. There is also one Site Screening Area, Site 30, which is the subject of this Decision Document. Information on the OUs and Site 30 is provided in the FY13 SMP (Navy, April 2013).

Site 30 has never been considered part of an OU at PNS because it was a Site Screening Area since investigation began. Investigations and the results of actions taken at Site 30 indicate that potential commercial, industrial, and residential risks from exposures to contaminants in the former tank vault are

acceptable. In addition, soil and groundwater have not been adversely impacted by a potential release at Site 30. Therefore, Site 30 will not be considered part of an OU at PNS, no land use restrictions are required for Site 30, and the decision has been made for No Further Action.

SITE CHARACTERISTICS

The following provides a summary of the site characteristics based on information provided in the SSI Report (Tetra Tech, May 2000), Test Pitting Investigation Report (Tetra Tech, May 2002), EE/CA (Tetra Tech, October 2010), Action Memorandum for Non-Time-Critical Removal Action (Navy, December 2010), Navy Proposal to Modify Removal Action for Site 30 (Navy, October 2011), and Construction Completion Report (CB&I, November, 2013). Tables and excerpts providing data and evaluation results from previous investigations are provided in Appendix A.1, and the Navy Proposal to Modify Removal Action for Site 30 is provided in Appendix A.2 of this Decision Document.

Building 184 was constructed in 1943 as a galvanizing plant and has since served as an electrical testing laboratory, clean room facility for cleaning and assembling metal parts, and welding school. The welding school was relocated in 2010, and Building 184 is not currently in use. The specific types and quantities of chemicals used throughout the history of Building 184 are largely unknown. However, chemicals used in industrial cleaning operations similar to these performed at the Shipyard include caustic solutions (sodium hydroxide, sodium carbonate, trisodium phosphate, and tetrasodium pyrophosphate), acid solutions (hydrochloric and sulfuric), and flux solutions (sodium silicate). These chemicals were most likely used when Building 184 was a galvanizing plant and when the tanks were used as industrial cleaning tanks.

The land surface outside of Building 184 is primarily asphalt and concrete and is relatively flat, with an elevation change of only 1 foot across the site. The tank vault was constructed at the approximate center of Building 184, along the eastern wall, with the eastern wall of the tank vault adjoining the eastern wall of the building. The tank vault, measuring approximately 52 feet long by 35 feet wide by a maximum of approximately 4 feet deep, was constructed as a concrete vault lined with acid-proof bricks set in acid-proof cement. The bottom of the tank vault was sloped to a drain at the center of the western side of the vault.

A crystalline material was observed on the eastern building wall adjacent to the vault first in 1973 and was removed at that time. It was observed and removed at other times in the 1990s. The 1998 SSI included sampling of surface soil, subsurface soil, and groundwater to assess the area surrounding Building 184. The results did not show an adverse impact to soil and groundwater; however, no sampling was conducted from the tank vault. The 2001 investigation included a test pit installed to allow for sampling the tank vault contents, including crystalline material, fill material, and water found in the vault. The

samples were analyzed for metals, anions, and pH. The results and sample locations are provided in Appendix A.1. The results showed elevated levels of some metals. Based on the results of the test pitting investigation, the Navy recommended that a non-time-critical removal action be implemented to address the former tank vault (Tetra Tech, May 2002).

Observation of the tank vault and its contents during the 2011 non-time-critical removal action showed that there was little water in the tank vault and that the fill material in the tank vault had lower metals concentrations than anticipated. The difference between actual site conditions and presumed site conditions is discussed further in the Navy Proposal to Modify Removal Action for Site 30 (Navy, October 2011) provided in Appendix A.2. The non-time-critical removal action was conducted in August and September 2011 and included excavation and disposal of the tank vault fill material.

Crystalline material on the walls in Building 184 observed after completion of the removal action was investigated. The results show that the tank vault fill material and water were not the source of the crystalline material and that the crystalline formation is caused by efflorescence. Efflorescence is a common crystalline deposit that forms on masonry when water passes through building construction materials such as concrete, mortar, grout, or brick. Salts comprising the construction materials slowly dissolve, and the dissolved salts are drawn to the surface of the construction material where evaporation of the water occurs and crystalline material is deposited. A water source is necessary for efflorescence to occur. The lack of water or water source in the tank vault and the presence of crystalline material along the wall of the tank vault and other areas of Building 184 indicate that Site 30 is not the source of the crystalline material observed after completion of the removal action. Results of chemical and physical analyses are consistent with common efflorescence (CB&I, November 2013).

CURRENT AND POTENTIAL FUTURE LAND AND RESOURCE USES

Site 30 (Building 184) is not currently being used. The site is in an industrial area of the Shipyard, and continued industrial use is anticipated.

SUMMARY OF SITE RISKS

Potential exposure pathways and unacceptable risks related to contaminated fill in the tank vault and crystals around the tank vault, based on current site use (industrial) were identified in the EE/CA. Potentially unacceptable risk to a construction worker exposed to crystalline material with low pH and metals in the tank vault, future potential for contaminants in the tank vault to adversely impact underlying soil and groundwater if any cracks or gaps are present in the brick lining and concrete containment, and potentially unacceptable health risk to workers in Building 184 from exposure to crystalline material with low pH in the tank vault or nearby wall were identified.

In response to these potential unacceptable risks, a non-time-critical removal action was conducted in August and September 2011. The removal action included excavation and disposal of the tank vault fill material and, upon inspection, identified that the concrete containment and acid-proof brick lining were in excellent condition (no cracks or gaps) and that there was a very limited amount of water in the former tank vault. Therefore, the likelihood of any potential contaminants in the tank vault impacting underlying soil and groundwater was very low. With removal of all fill material in the tank vault, cleaning and testing of the acid-proof brick, site restoration, and investigation of the crystalline material observed post-removal, potential threats to public health and welfare and the environment have been eliminated, and Site 30 is acceptable for unlimited use and unrestricted exposure.

The crystalline material identified along the wall above the former tank vault was investigated after the removal action. It was determined that crystalline material is accumulating in Building 184 via a common process called efflorescence and that the crystalline material (efflorescence) is not a CERCLA process waste. Moreover, efflorescence does not typically pose a health hazard for exposure. Therefore, No Further Action under CERCLA is needed for the crystalline material on the walls of Building 184. The results of the investigation of the crystalline material observed post-removal is provided as an appendix to the Construction Completion Report.

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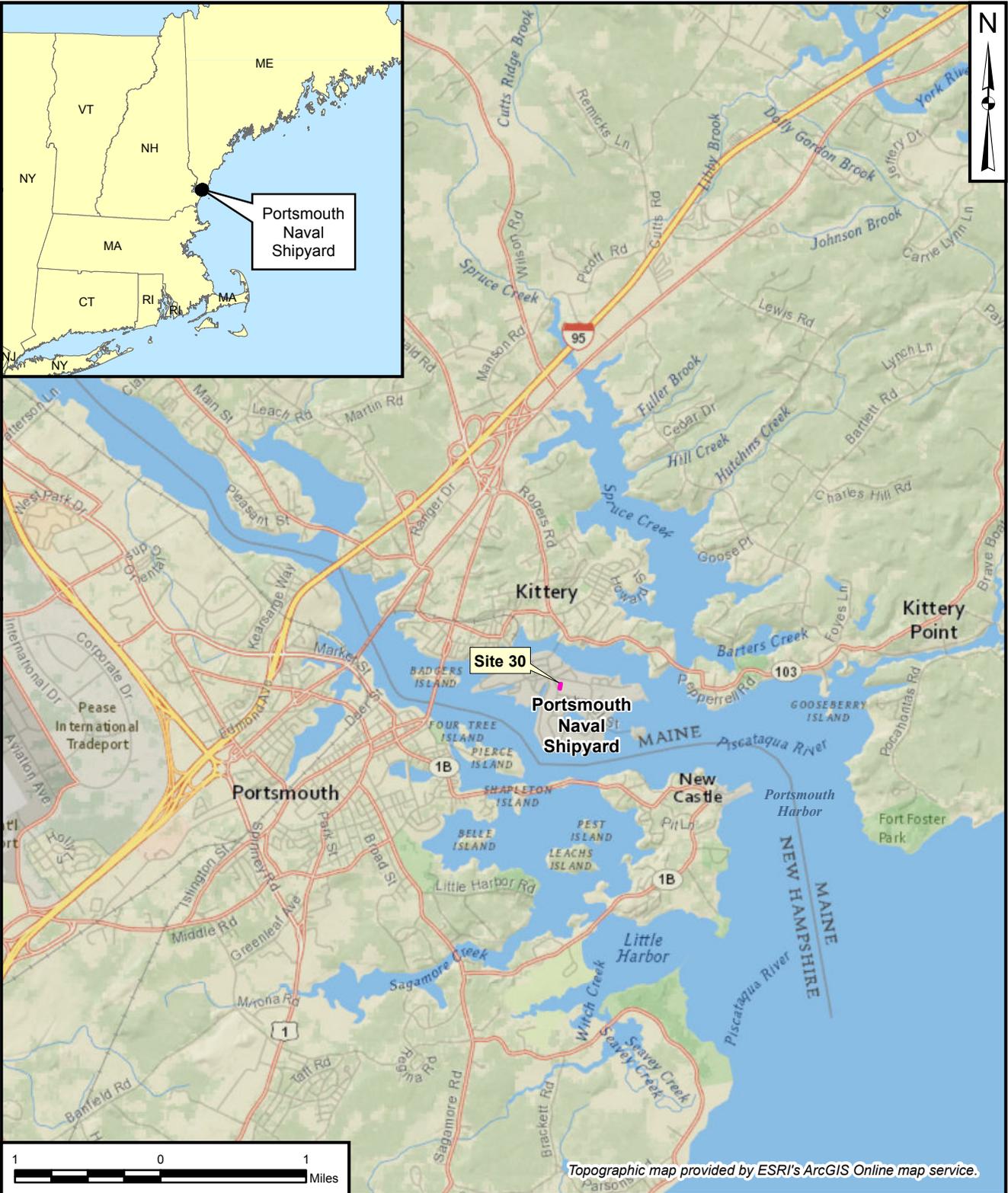
Shaw, July 2011. Removal Action Work Plan, Interim Removal Action, Site 30, Former Galvanizing Tank Vault, Portsmouth Naval Shipyard, Kittery, Maine. Shaw Environmental and Infrastructure, Inc., Norfolk, Virginia.

Tetra Tech, May 2000. Site Screening Report, Site 30 (Building 184), Site 31 (West Timber Basin), and Site 32 (Topeka Pier), Portsmouth Naval Shipyard, Kittery, Maine. Tetra Tech NUS, Inc., King of Prussia, Pennsylvania.

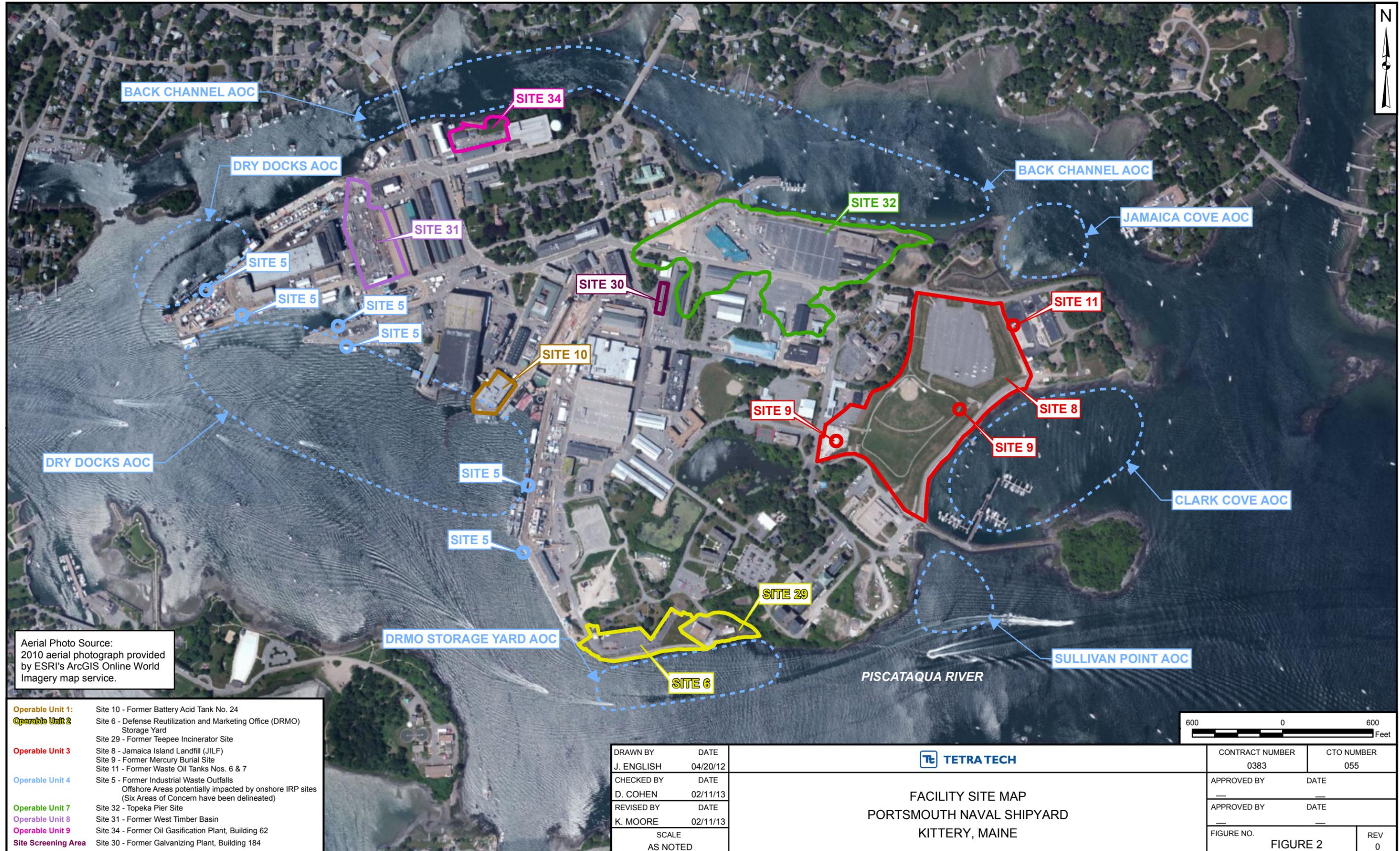
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Tetra Tech, October 2010. Engineering Evaluation/Cost Analysis for Site 30, Revision 2, Portsmouth Naval Shipyard, Kittery, Maine. Tetra Tech NUS, Inc., King of Prussia, Pennsylvania.

FIGURES



DRAWN BY K. MOORE CHECKED BY D. COHEN REVISIED BY SCALE AS NOTED	DATE 2/11/13 DATE 2/11/13 DATE _____ DATE _____	TETRA TECH VICINITY AND SITE 30 LOCATION MAP PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE	CONTRACT NUMBER 0383 CTO NUMBER 055 APPROVED BY _____ DATE _____ APPROVED BY _____ DATE _____ FIGURE NO. FIGURE 1 REV 0
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Aerial Photo Source:
2010 aerial photograph provided
by ESRI's ArcGIS Online World
Imagery map service.

Operable Unit 1:	Site 10 - Former Battery Acid Tank No. 24
Operable Unit 2:	Site 6 - Defense Reutilization and Marketing Office (DRMO) Storage Yard
Operable Unit 3:	Site 29 - Former Teepee Incinerator Site
Operable Unit 4:	Site 8 - Jamaica Island Landfill (JILF) Site 9 - Former Mercury Burial Site Site 11 - Former Waste Oil Tanks Nos. 6 & 7
Operable Unit 5:	Site 5 - Former Industrial Waste Outfalls Offshore Areas potentially impacted by onshore IRP sites (Six Areas of Concern have been delineated)
Operable Unit 7:	Site 32 - Topeka Pier Site
Operable Unit 8:	Site 31 - Former West Timber Basin
Operable Unit 9:	Site 34 - Former Oil Gasification Plant, Building 62
Site Screening Area:	Site 30 - Former Galvanizing Plant, Building 184

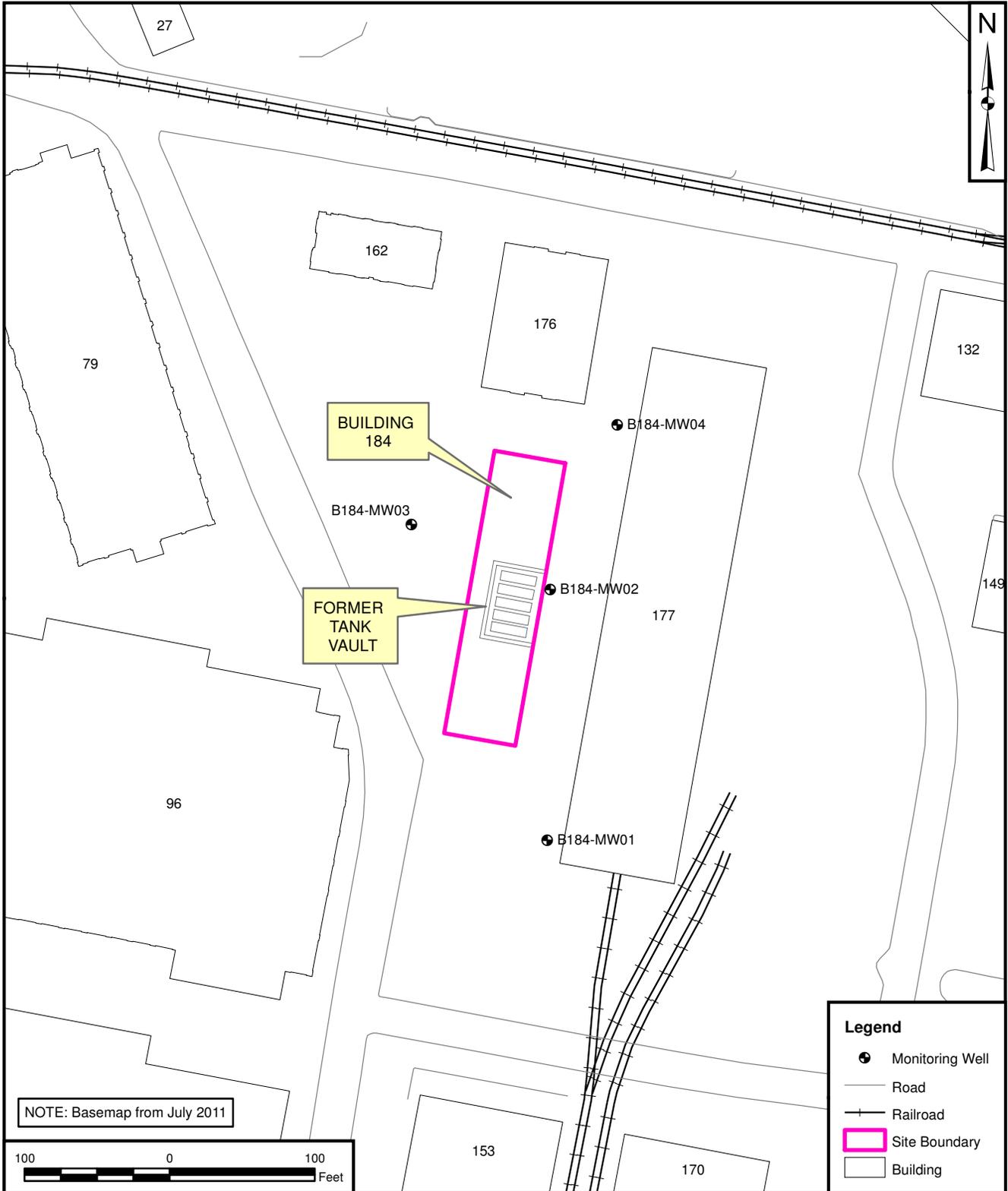
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CHECKED BY	DATE
D. COHEN	02/11/13
REVISED BY	DATE
K. MOORE	02/11/13
SCALE	
AS NOTED	



FACILITY SITE MAP
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE



CONTRACT NUMBER	CTO NUMBER
0383	055
APPROVED BY	DATE
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APPROVED BY	DATE
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FIGURE NO.	REV
FIGURE 2	0



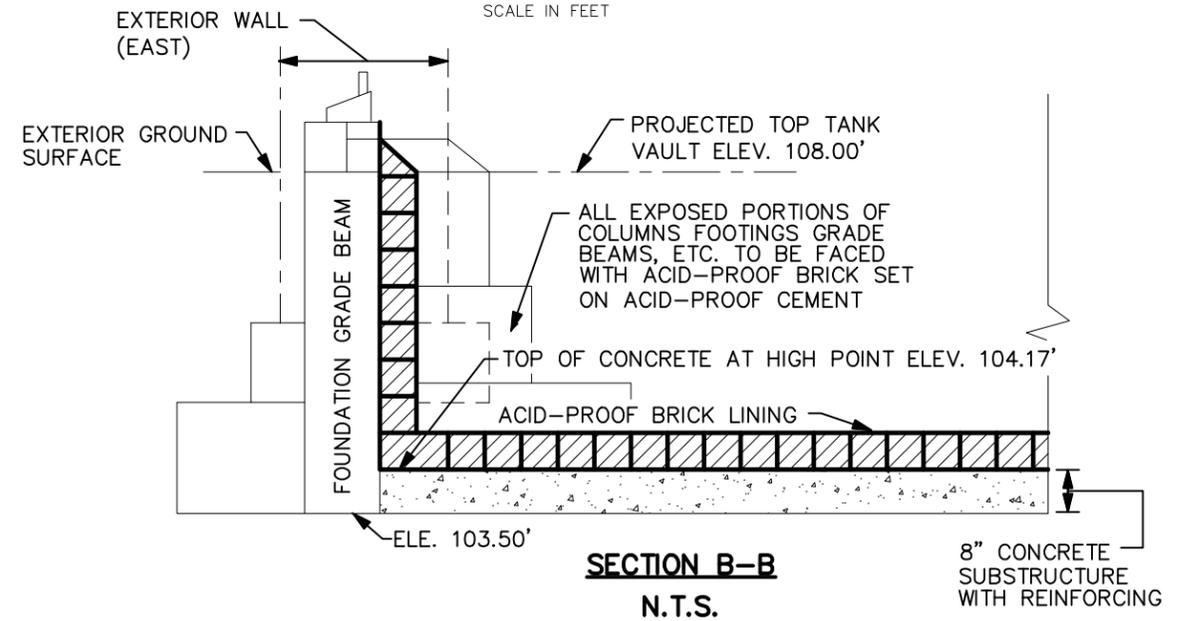
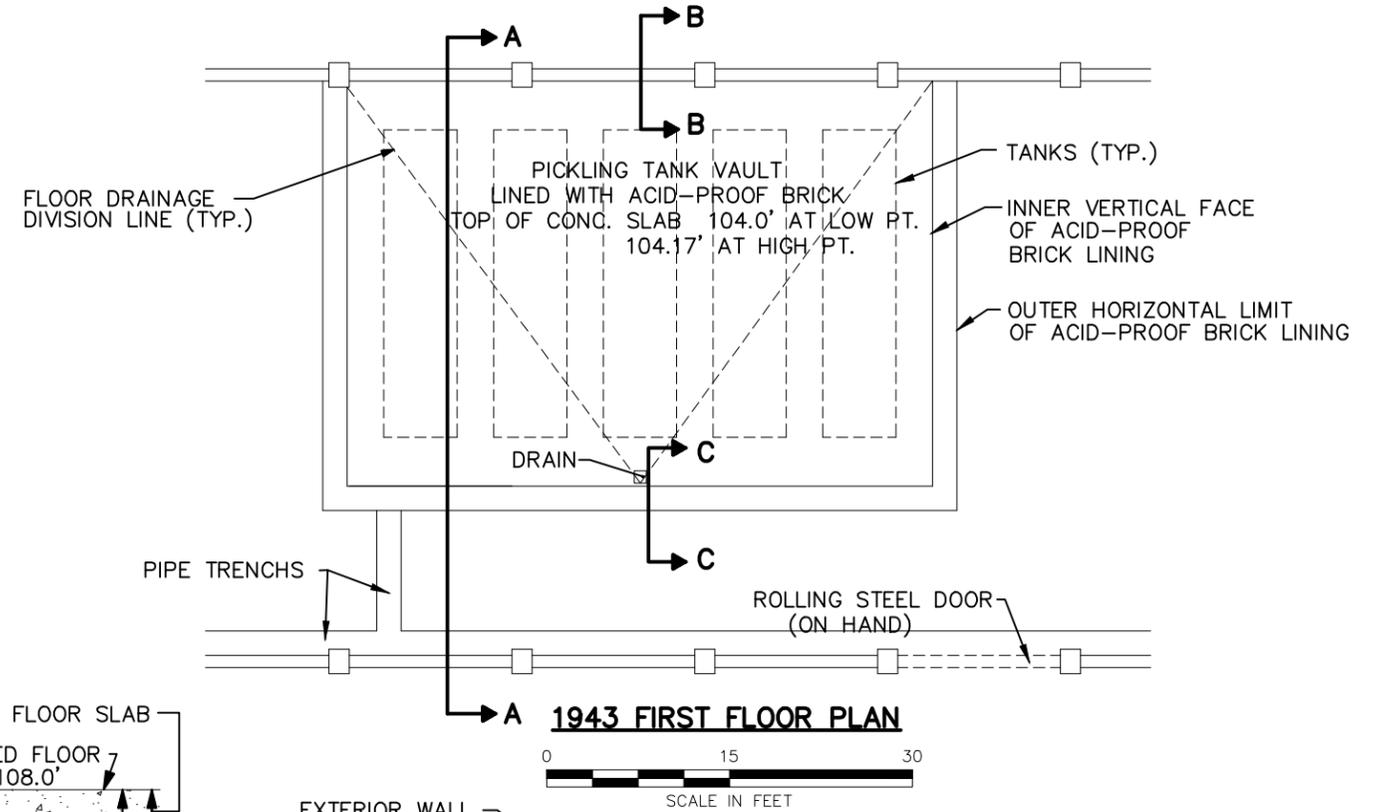
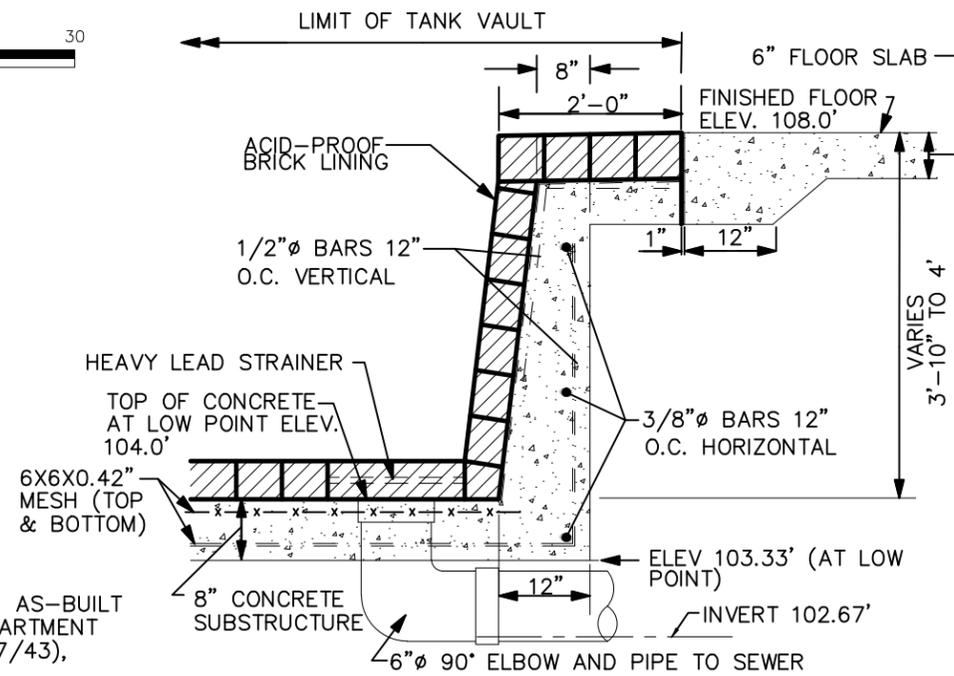
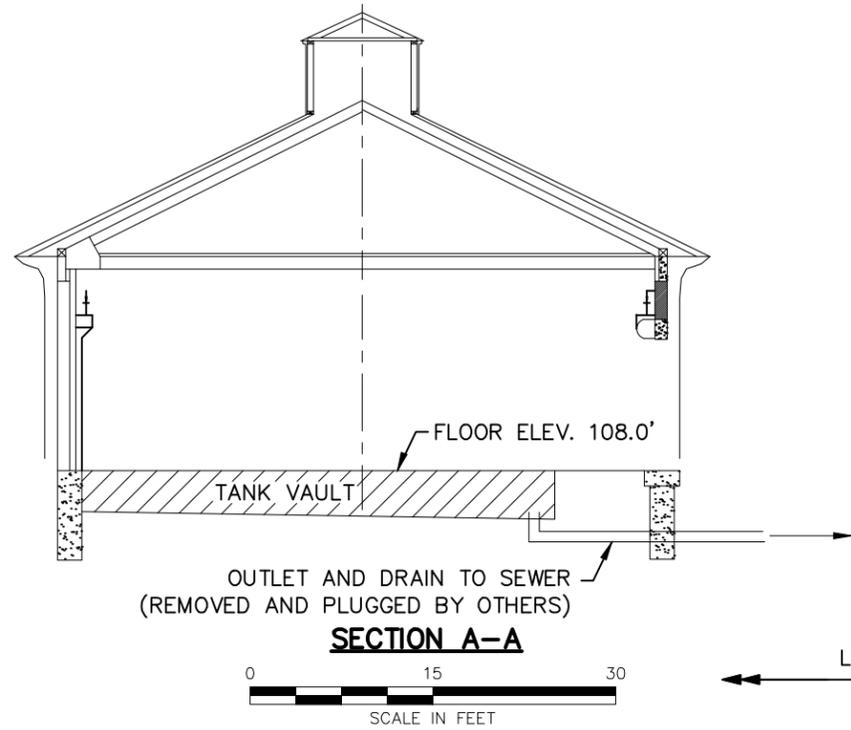
DRAWN BY	DATE
K. MOORE	02/11/13
CHECKED BY	DATE
D. COHEN	05/10/13
REVISED BY	DATE
S. PAXTON	05/10/13
SCALE AS NOTED	



TETRA TECH

SITE 30 LAYOUT
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE

CONTRACT NUMBER	CTO NUMBER
0383	0055
APPROVED BY	DATE
_____	_____
APPROVED BY	DATE
_____	_____
FIGURE NO.	REV
FIGURE 3	0



NOTES:

INFORMATION ON THIS FIGURE IS COMPILED FROM AS-BUILT DRAWINGS REVIEWED AT THE PUBLIC WORKS DEPARTMENT AT PNS, DRAWINGS USED ARE: 184-43-11 (6/17/43), 184-43-18 (10/12/43), 184-43-10 (6/5/43), 184-43-3 (3/27/43), 184-43-13 (6/21/43), AND 184-43-2 (3/27/43)

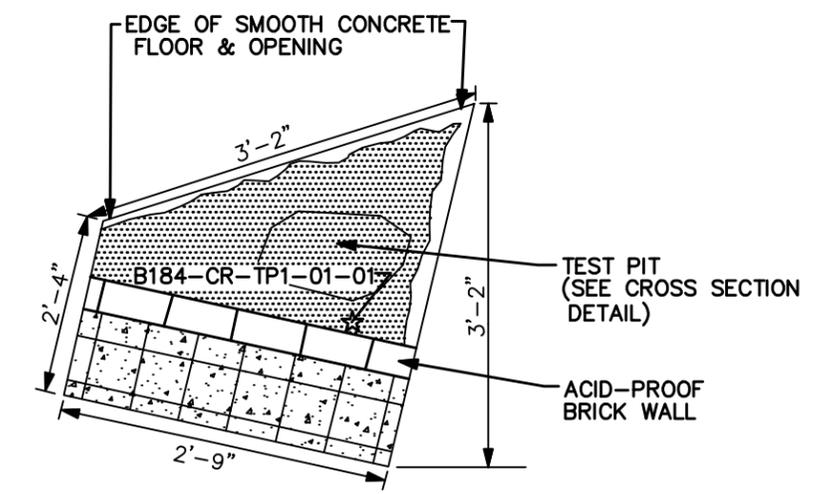
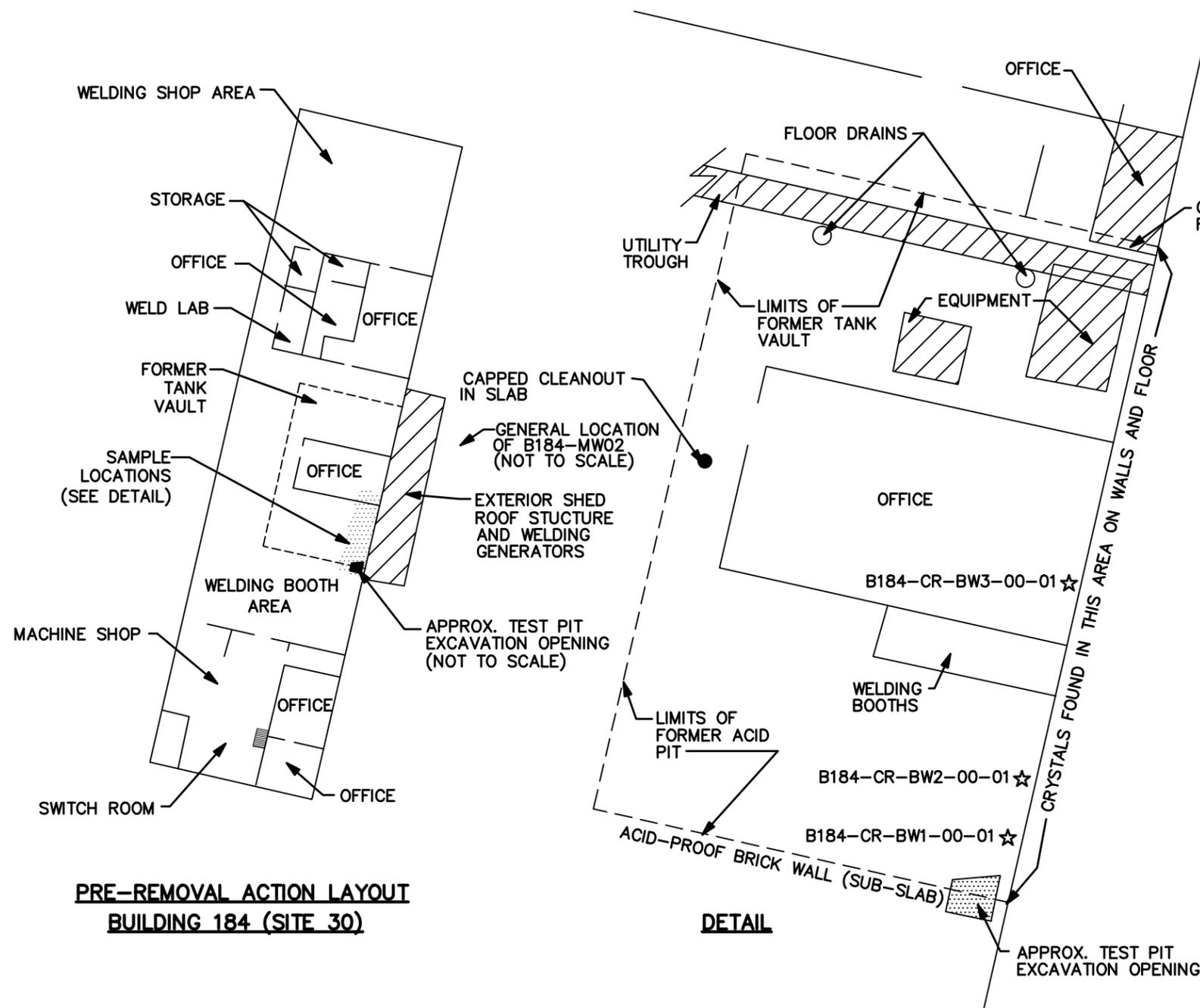
SOURCE: FIGURE 3, FINAL ACTION MEMORANDUM FOR NON-TIME-CRITICAL REMOVAL FOR SITE 30, REVISION 2, NAVY, DECEMBER 2010.

DRAWN BY DM	DATE 5/10/02
CHECKED BY	DATE
REVISED BY	DATE
SCALE AS NOTED	

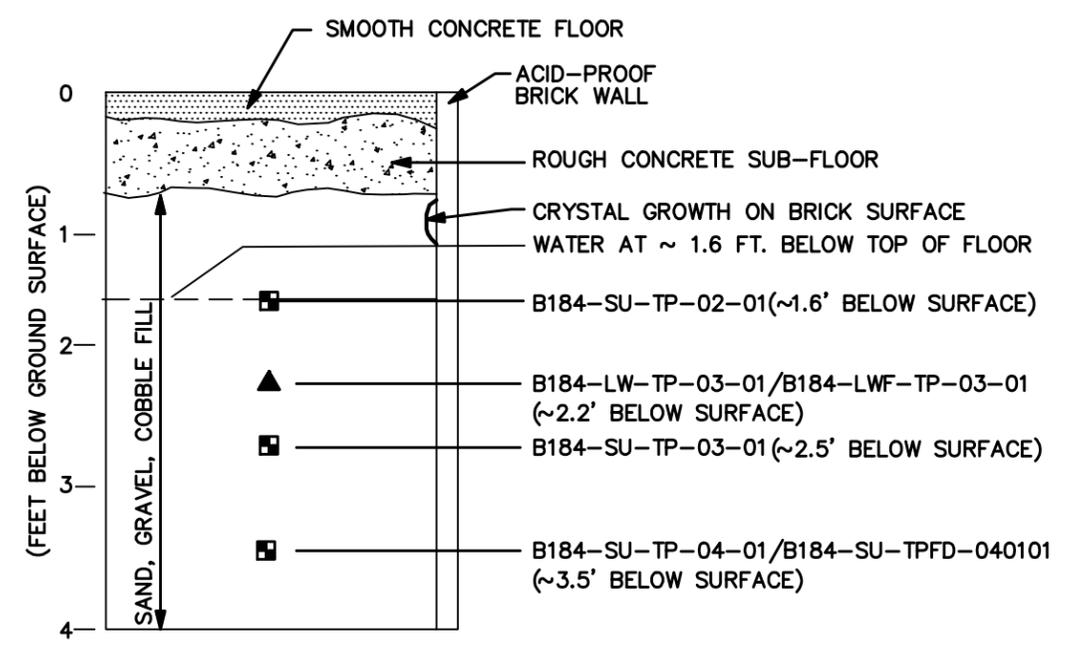


1943 AS-BUILT BUILDING CONDITIONS PLAN AND SECTIONS FOR SITE 30 (BUILDING 184) PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE

CONTRACT NO. 0383	
OWNER NO. 0055	
APPROVED BY	DATE
DRAWING NO. FIGURE 4	REV. 0



TEST PIT DETAIL IN PLAN VIEW



TYPICAL CROSS SECTION DETAIL

- LEGEND:**
- PIT FILL SAMPLE
 - ▲ PIT WATER SAMPLE
 - ☆ CRYSTAL SAMPLE

NOTE:
 NOT TO SCALE - FEATURES ARE ESTIMATED USING LOCATIONS BASED ON NOTES FROM SITE VISIT ON DECEMBER 11, 2001 BY TETRA TECH.

SOURCE: FIGURE 4, FINAL ACTION MEMORANDUM FOR NON-TIME-CRITICAL REMOVAL FOR SITE 30, REVISION 2, NAVY, DECEMBER 2010.

DRAWN BY DM	DATE 5/10/02	<p>Tetra Tech</p>	PRE-REMOVAL ACTION GENERAL BUILDING LAYOUT FOR SITE 30 (BUILDING 184) PORTSMOUTH NAVAL SHIPYARD KITTERY, MAINE		CONTRACT NO. 0383	
CHECKED BY	DATE				OWNER NO. 0055	
REVISD BY	DATE				APPROVED BY	DATE
SCALE AS NOTED					DRAWING NO. FIGURE 5	REV. 0

APPENDIX A

SUPPORTING INFORMATION

APPENDIX A.1
TABLES AND EXCERPTS FROM PREVIOUS DOCUMENTS

**TABLES FROM TEST PITTING INVESTIGATION REPORT
(TETRA TECH, MAY 2002)**

**Test Pitting Investigation Report
Building 184, Site 30
March/April 2001 Activity**

**Portsmouth Naval Shipyard
Kittery, Maine**



Engineering Field Activity Northeast

Contract Number N62472-90-D-1298

Contract Task Order 0232

May 2002

TABLE 2-7

CRYSTAL METAL AND ANION RESULTS
BUILDING 184 TEST PITTING INVESTIGATION
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

PARAMETER	B184-CR-BW1-00-01	B184-CR-BW2-00-01	B184-CR-BW3-00-01	B184-CR-TP1-01-01
Metals (mg/Kg)				
Aluminum	61800	53600	49600	3630
Antimony	0.97 U	0.94 U	5.9	1.8 J
Arsenic	0.99 U	1.8 U	6.6	8.6
Barium	3.2	39.6	13.1	36.3
Beryllium	2.7	2.9	3.2	0.11 U
Cadmium	4.7	12.4	1.3 J	0.29 U
Calcium	1180	1270	3600	65300
Total Chromium	45.3	66.9	139	15.8
Cobalt	208	201	162	3.5
Copper	394	345	4780	41.1
Hexavalent Chromium	0.697 U	0.668 U	0.633 U	0.615 U
Iron	1980	13400	35800	19600
Lead	8.7	11.6	39.6	21.8
Magnesium	45000	45500	35700	1490
Manganese	11800	16500	2210	218
Mercury	0.01 U	0.4	0.02 U	0.01 U
Nickel	754	682	13000	22.9
Potassium	1720	910	2670	2800
Selenium	3.5 U	3.92 UJ	1.7 U	1.2 U
Silver	1.4	1.5	0.31 J	0.52 J
Sodium	14800	14200	11000	881
Thallium	0.25 U	0.26 U	0.25 U	0.25 U
Vanadium	2	22	74.1	18.7
Zinc	875	1550	914	97.8
Anions				
Orthophosphate (mg/Kg)	1 UR	1 UR	2.8 J	1 UR
Total Cyanide (mg/Kg)	NA	NA	NA	NA
Chloride (mg/Kg) *	2700 UJ	2600 UJ	2500 UJ	40 UJ
Sulfate (mg/Kg)	560000 J	610000 J	610000 J	36600 J
Miscellaneous				
pH (units)	2.8 J	2 J	1.4 J	4.2 J

Notes:

Within the sample identification, the sample location designation is "BW" for "building wall" or "TP" for "test pit".

U - The analyte was analyzed for but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

UR - The analyte was not detected above the reported sample quantitation limit. However, the sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria.

NA - The analyte was not analyzed.

* Detection limits are high because of high dilution required in the preparation for sulfate analysis. See Appendix C (Data Validation) for details.

TABLE 2-8

PIT FILL MATERIAL METAL AND ANION RESULTS
BUILDING 184 TEST PITTING INVESTIGATION
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

PARAMETER	B184-SU-TP-02-01 (mg/kg)	B184-SU-TP-03-01 (mg/kg)	B184-SU-TP-04-01 (mg/kg)	B184-SU-TPFD-040101 Duplicate of B184-SU-TP-04-01 (mg/kg)	B184-SU-TP-0204-01 TCLP (mg/L)
Metals					
Aluminum	10300	10600	6820	8900	
Antimony	0.68 UJ	0.79 UJ	0.7 UJ	0.74 UJ	
Arsenic	13.4	13.4	10.4	13.6	6.8 U
Barium	31.9	33.9	25.1	32.4	64 U
Beryllium	0.39 U	0.33 U	0.21 U	0.27 U	
Cadmium	0.07 U	0.19 U	1.5	0.16 U	3.3 U
Calcium	1790	1500	915	1100	
Total Chromium	26.8	40.8	22.3	31.8	9.3 U
Cobalt	8.3	6.8	6	5.5	
Copper	23	23.7	22.1	27	
Hexavalent Chromium	0.602 UJ	0.6 UJ	0.621 UJ	0.616 UJ	NA
Lead	7.2	8.6	7.1	9.8	3.7 U
Magnesium	5220	5920	3970	5250	
Manganese	385	319	306	256	
Mercury	0.02 U	0.02 U	0.01 U	0.02 U	0.06
Nickel	31.9	28.6	24.1	28.2	
Potassium	1460	1490	1150	1390	
Selenium	0.72 U	0.66 UJ	0.58 UJ	0.62 UJ	7.6 UJ
Silver	1.5	0.22 U	4.8	6.1	2.58 U
Sodium	222	266	256	234	
Thallium	0.23 U	0.22 U	0.21 U	0.21 U	
Vanadium	22.9	29.7	18.4	25.3	
Zinc	42.5	42.8	33.7	37.4	
Anions					
Orthophosphate	1 UR	1 UR	1 UR	NA	NA
Total Cyanide	1 U	1.2 U	1.2 U	1.2 U	NA
Chloride	40 UJ	40 UJ	40 UJ	NA	NA
Sulfate	8300 J	7500 J	19400 J	NA	NA
Miscellaneous					
pH (units)	4.4 J	3.8 J	3.8 J	NA	NA

Notes:

Sample depth corresponding to each sample identification is shown on Figure 2-1.

U - The analyte was analyzed for but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

UR - The analyte was not detected above the reported sample quantitation limit. However, the sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria.

NA - The analyte was not analyzed.

TCLP - Toxicity Characteristic Leaching Procedure

TABLE 2-9

PIT WATER METAL AND ANION RESULTS
BUILDING 184 TEST PITTING INVESTIGATION
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

PARAMETER	B184-LW-TP-03-01	B184-LWF-TP-03-01	B184-LW-TPFD-040101 Duplicate of B184-LW-TP-03-01	B184-LWF-TPFD-040101 Duplicate of B184-LWF-TP-03-01
Metals (ug/L)				
Aluminum	1260000	1400000	1280000	1300000
Antimony	36.5 U	36.5 U	36.5 U	36.5 U
Arsenic	119 U	84.2 U	110 U	79.4 U
Barium	206	3.2 U	189	3.1 U
Beryllium	68.5	74.8	70.6	69.7
Cadmium	246	329	251	298
Calcium	446000	473000	452000	461000
Total Chromium	526	730	526	562
Cobalt	7130	8180	7270	7750
Copper	2590	2750	2630	2560
Hexavalent Chromium (mg/L)	10 UR	30 J	10 UR	20 J
Lead	152	46.3	126	55.6
Magnesium	1220000	1400000	1240000	1280000
Manganese	537000	618000	543000	586000
Mercury	2.5 J	0.2 U	0.7 J	0.12 U
Nickel	22700	27800	23400	25100
Potassium	26000	24200	25800	21100
Selenium	30.4 UJ	33.1 U	30.4 UJ	30.4 UJ
Silver	73.6	18.2	71.9	18.5
Sodium	419000	479000	427000	444000
Thallium	2.4 J	2 U	2 U	2 U
Vanadium	212	294	207	208
Zinc	26600	33600	27200	29900
Anions				
Orthophosphate (mg/L)	NA	0.05 UJ	NA	NA
Total Cyanide (ug/L)	10 UJ	10 UJ	10 UJ	10 UJ
Total Phosphorus (mg/L)	NA	4.4	NA	NA
Chloride (mg/L)	NA	20	NA	NA
Sulfate (mg/L)	NA	7100 J	NA	NA
Miscellaneous				
pH (units)	3.7 J	3.4 J	NA	NA

Notes:

Designation "LWF" corresponds to filtered sample.

U - The analyte was analyzed for but was not detected above the reported sample quantitation limit.

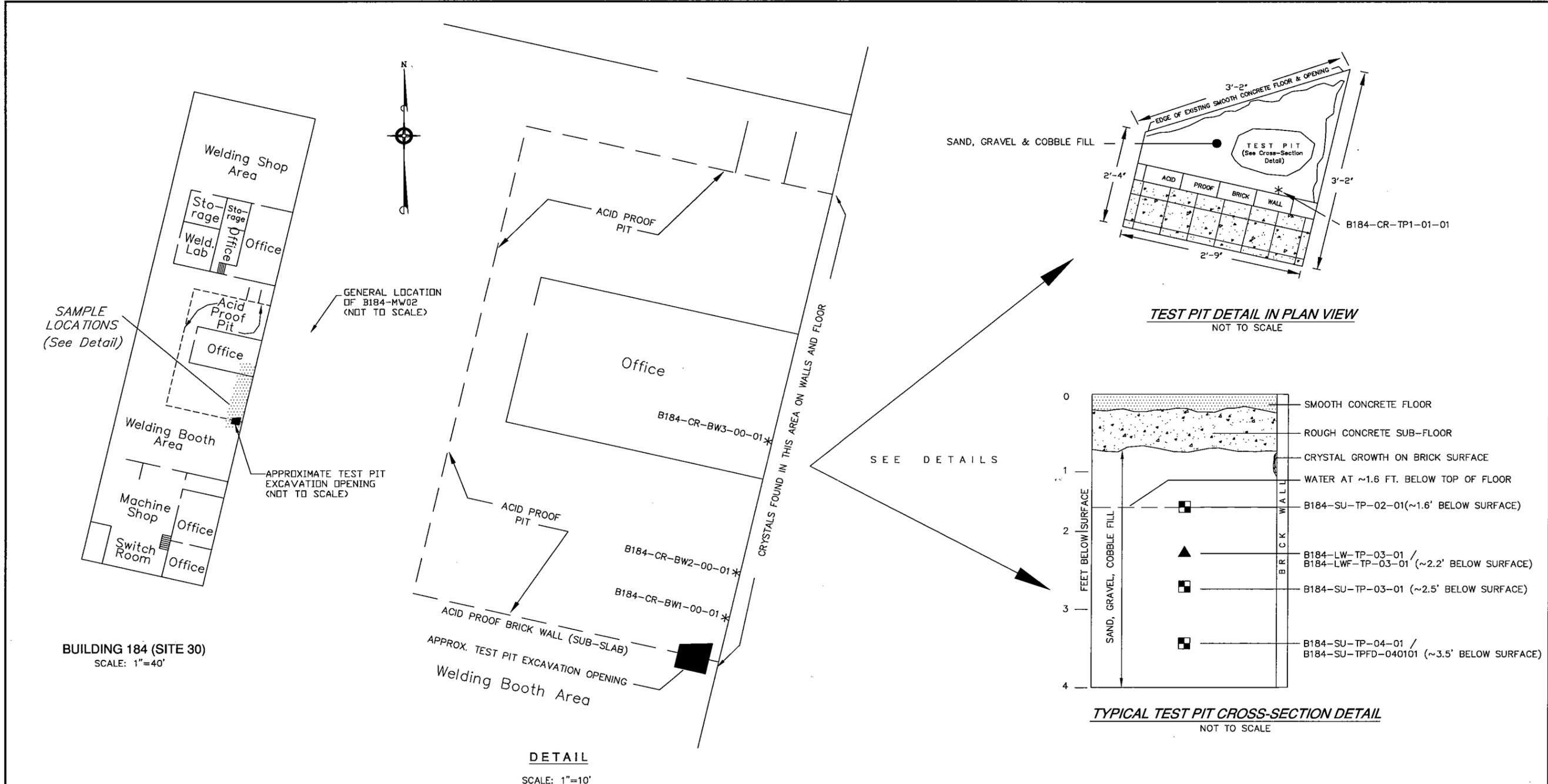
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

UR - The analyte was not detected above the reported sample quantitation limit. However, the sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria.

NA - The analyte was not analyzed.

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BUILDING 184 (SITE 30)
SCALE: 1"=40'

DETAIL
SCALE: 1"=10'

TEST PIT DETAIL IN PLAN VIEW
NOT TO SCALE

TYPICAL TEST PIT CROSS-SECTION DETAIL
NOT TO SCALE

LEGEND

- SOIL SAMPLE
- ▲ LIQUID WASTE SAMPLE
- * CRYSTAL SAMPLE

- NOTES:
1. ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.
 2. PLAN NOT TO BE USED FOR DESIGN.

BUILDING LAYOUT, TEST PIT DETAIL & SAMPLE LOCATIONS		FIGURE 2-1	
BUILDING 184 INVESTIGATION - PORTSMOUTH NAVAL SHIPYARD			
KITTERY, MAINE			
DRAWN BY:	D.W. MACDOUGALL	REV.:	0
CHECKED BY:	J.P. KUMAR	DATE:	23 APR 02
SCALE:	AS SHOWN	FILE NO.:	DWG\5003\5300\SAMP_LOC_BLDG184.DWG



TETRA TECH NUS, INC.

55 Jonspin Road
Wilmington, MA 01887
(978)658-7899

**EXCERPT FROM EE/CA FOR SITE 30, REVISION 2
(TETRA TECH, OCTOBER 2010)**

**Engineering Evaluation/
Cost Analysis (EE/CA)
for
Site 30**

Portsmouth Naval Shipyard
Kittery, Maine



**Naval Facilities Engineering Command Mid-
Atlantic**

Contract Number N62472-03-D-0057

Contract Task Order 55

October 2010

source of water within the former tank vault. This conclusion is based on the difference in water elevations between the tank vault water (which was higher) and groundwater within a nearby monitoring well (B184-MW02), as noted during the investigation. The water level last measured in the tank vault by TiNUS in March 2001 indicated there was 2.4 feet of water in the tank vault. However, the potential exists for the tank vault water to migrate through cracks or gaps, if any exist in the brick lining and the concrete containment, to the groundwater beneath the site.

It is not known if any or all of the acid-proof brick lining materials were removed from the tank vault prior to the backfilling and concrete floor placement over the tank vault. However, field observations during the test pitting investigation indicate the presence of some of these bricks.

The presence of crystals within the building constitutes a potential for corrosive effects to the exposed skin of receptors. The removal of the contaminated materials in the tank vault in conjunction with the removal of any acid-proof brick in contact with walls or floor surfaces is expected to stop the growth of crystals.

The following summarizes the potential exposure pathways and risks related to the contaminated fill in the tank vault based on current site use (industrial):

- There is potential risk to occupational workers in Building 184 from exposure to crystals with low pH in the tank vault and on the nearby building wall if the crystals were uncovered.
- There is potential risk to a construction worker exposed to crystals with low pH and metals in the tank vault water.
- There is future potential for contaminants in the tank vault to adversely impact underlying soil and groundwater if any cracks or gaps are present in the brick lining and the concrete containment.

APPENDIX B

GROUNDWATER TECHNICAL EVALUATION

- Several inorganic contaminants (in particular manganese) in the water sample were present at concentrations exceeding the screening levels that were developed for a construction worker.
- The main human health risk concern was related to the acidic nature of the crystals.

Evaluation of Data

Salinity, pH, and chemical concentrations were evaluated for Site 30 monitoring wells and downgradient Site 32 monitoring wells to determine whether groundwater shows an adverse impact from Site 30. Monitoring wells are located upgradient of (B184-MW01), at (B184-MW02 and B184-MW03), and downgradient of (B814-MW04, TP-MW10, TP-MW12, and FA-01) Site 30 as shown on Figure 1.

Groundwater is considered fresh if salinity readings are less than 0.5 ppt, brackish if salinity is between 0.5 ppt and 30 ppt, and saline if salinity is greater than 30 ppt. Salinity readings in the Site 30 wells ranged from 0.28 to 0.85 ppt, as shown on Table 2. No Site 30 well was consistently fresh or brackish. Salinity readings for the wells located downgradient within Site 32 (located outside the original island boundary) range from approximately 6 to 26 ppt. Based on the salinity in the Site 30 wells, groundwater at Site 30 would not be considered suitable for drinking. Therefore, for evaluation of chemical data, only risk-based numbers for construction worker exposure to groundwater were used to evaluate potential risks.

Groundwater pH values were in the neutral range; values for Site 30 wells ranged from 6.48 to 8.8 and for Site 32 downgradient wells from 7.35 to 7.71. In contrast, tank pit water was acidic with a pH of 3.6.

Table 3 provides the chemicals detected in Site 30 monitoring wells and the range of detections. Comparison of these chemicals to construction worker risk-based numbers shows that there were no exceedances of the risk-based numbers for any of the chemicals in Site 30 wells. There were also no exceedances of the risk-based numbers for any of these chemicals in Site 32 wells.

Conclusions

- Groundwater flow direction has been adequately characterized at Site 30 with the addition of the downgradient monitoring wells within Site 32 (TP-MW10 and TP-MW12). Monitoring wells are sufficiently located upgradient of (B184-MW01), at (B184-MW02 and B184-MW03), and downgradient of (B814-MW04, TP-MW10, TP-MW12, and FA-01) Site 30.
- Groundwater in the area of Site 30 is not significantly tidally influenced.
- Contamination in the tank vault has not adversely impacted groundwater at or downgradient of Site 30 based on pH, water level elevations, and metals concentrations in groundwater.

References

TtNUS, May 2000. Site Screening Report Site 30 (Building 184), Site 31 (West Timber Basin), and Site 32 (Topeka Pier) for Portsmouth Naval Shipyard Kittery, Maine.

TtNUS, May 2002. Test Pitting Investigation Report, Building 184, Site 30, March/April 2001 Activity for Portsmouth Naval Shipyard, Kittery, Maine.

TtNUS, December 2002. Site 30 (Building 184) Engineering Evaluation/Cost Analysis for Portsmouth Naval Shipyard, Kittery Maine. Revision 0.

TtNUS, January 2004. Site 32 Phase I Remedial Investigation Data Package for Portsmouth Naval Shipyard, Kittery Maine.

Table 3
Site 30 Groundwater Positive Detection Summary
Site 30 Groundwater Evaluation
Portsmouth Naval Shipyard, Kittery, Maine

PARAMETER	Frequency of Detection ⁽¹⁾	Minimum Detection	Maximum Detection	Location of Maximum Detection	Sample with Maximum Detection ⁽¹⁾	PNS Construction Worker Risk-Based Number for Groundwater ⁽²⁾
Semivolatile Organics (ug/L)						
BIS(2-ETHYLHEXYL)PHTHALATE	3/4	1 J	6 J	B184-MW01	B184-MW-01-11	3200
BUTYL BENZYL PHTHALATE	2/4	0.6 J	0.9 J	B184-MW01	B184-MW-01-11-D	5.4
BUTYL BENZYL PHTHALATE	2/4	0.6 J	0.9 J	B184-MW03	B184-MW-03-11	5.4
DI-N-BUTYL PHTHALATE	4/4	0.9 J	2 J	B184-MW02	B184-MW-02-11	31000
PHENOL	1/4	0.9 J	0.9 J	B184-MW04	B184-MW-04-11	1300000
Inorganics (ug/L)						
ANTIMONY	1/8	12.3	12.3	B184-MW01	B184GWMW011208	1550
BARIUM	4/8	29.3	69	B184-MW04	B184GWMW041208	361000
CALCIUM	8/8	19800	132000	B184-MW02	B184GWMW021208	NA
CHROMIUM	1/8	2.1 J	2.1 J	B184-MW01	B184GWMW011208	258000
IRON	1/8	2120	2120	B184-MW03	B184-MW-03-11	18100000
LEAD	4/8	1.3 J	3.6	B184-MW04	B184-MW-04-11	1340
MAGNESIUM	6/8	3820	25400	B184-MW02	B184GWMW021208	NA
MANGANESE	4/8	66.2	2290	B184-MW02	B184GWMW021208	24800
POTASSIUM	8/8	3350	8760	B184-MW03	B184-MW-03-11	NA
SELENIUM	4/8	6.6 J	15.6	B184-MW04	B184GWMW041208	129000
SODIUM	8/8	38600	306000	B184-MW03	B184GWMW031208	NA
ZINC	3/8	5.1	11	B184-MW04	B184-MW-04-11	12900000
Filtered Inorganics (ug/L)						
BARIUM	4/4	24.6	63.6	B184-MW04	B184GWMW041208	361000
CALCIUM	4/4	20200	137000	B184-MW02	B184GWMW021208	NA
CHROMIUM	1/4	1.8 J	1.8 J	B184-MW01	B184GWMW011208	258000
COBALT	1/4	2.7	2.7	B184-MW02	B184GWMW021208	19400
COPPER	1/4	6.8 J	6.8 J	B184-MW01	B184GWMW011208	1030000
IRON	1/4	102 J	102 J	B184-MW02	B184GWMW021208	18100000
MAGNESIUM	4/4	1030	25500	B184-MW02	B184GWMW021208	NA
MANGANESE	1/4	2310	2310	B184-MW02	B184GWMW021208	24800
NICKEL	2/4	5	10.6	B184-MW04	B184GWMW041208	103000
POTASSIUM	4/4	3400	8290	B184-MW04	B184GWMW041208	NA
SODIUM	4/4	97600	340000	B184-MW03	B184GWMW031208	NA
VANADIUM	1/4	2.1	2.1	B184-MW01	B184GWMW011208	129000
ZINC	4/4	10.8 J	25.1	B184-MW01	B184GWMW011208	12900000
Miscellaneous Parameters						
CARBONATE ALKALINITY MG/L	4/4	160	230	B184-MW02	B184-MW-02-11	NA
CHLORIDE MG/L	4/4	14	240	B184-MW01	B184-MW-01-11-D	NA
HEXAVALENT CHROMIUM MG/L	2/4	0.011	0.011	B184-MW03	B184-MW-03-11	NA
HEXAVALENT CHROMIUM MG/L	2/4	0.011	0.011	B184-MW02	B184-MW-02-11	NA
NITRATE MG/L	3/4	0.83 J	4.9 J	B184-MW04	B184-MW-04-11	NA
PH S.U.	4/4	7	7.6	B184-MW01	B184-MW-01-11-D	NA
SALINITY PPT	4/4	0.18	0.8	B184-MW01	B184-MW-01-11	NA
SULFATE MG/L	4/4	16	53	B184-MW04	B184-MW-04-11	NA
TOTAL ORGANIC CARBON MG/L	4/4	1.9	2.7	B184-MW01	B184-MW-01-11	NA

1 - The average and duplicate sample are counted as one when determining the frequency of detection and considered as unique samples for determining minimum and maximum concentrations.

2 - Based on 10⁻⁵ for carcinogens and HI of 1 for non-carcinogens.

Associated Samples:

B184-MW-01-11	B184-MW-02-11	B184GWMW011208
B184-MW-01-11-AVG	B184-MW-03-11	B184GWMW021208
B184-MW-01-11-D	B184-MW-04-11	B184GWMW031208
		B184GWMW041208

APPENDIX A.2

NAVY PROPOSAL TO MODIFY REMOVAL ACTION FOR SITE 30

**Site 30, Portsmouth Naval Shipyard, Kittery, Maine
Navy Proposal to Modify Removal Action, October 2011**

From: Cole, Linda L CIV NAVFAC MIDLANT, IPTNE [mailto:linda.cole@navy.mil]
Sent: Thursday, October 13, 2011 1:22 PM
To: McLeod, Iver J; audet.matthew@epa.gov
Cc: Cohen, Deborah; Evans, Chris; Poulin, Fred; Thyng, Frederick M CIV NAVFAC MIDLANT, PWD Maine
Subject: TM for field change justification to IRA WP for Site 30
Importance: High

Iver and Matt,

Please find attached the Navy's Tech Memo for a field change to the IRA work plan for Site 30. We've also attached a hand-drawn figure of the existing conditions. In addition, we've received the sample results for the first 100 CY of gravel fill that was removed from the tank vault and the concrete slab. Please confirm your concurrence with no further action at Site 30 as soon as practicable (got that word from EPA ;)).

Linda L. Cole, P.E.
NAVFAC MIDLANT
Northeast IPT
RPM - NAVSHIPYD Portsmouth
(757)341-2011
DSN 341-2011
FAX 341-2096

"You will rebuild the ancient ruins and raise up the age-old foundations; you will be called Repairer of the breach, Restorer of streets with dwellings." Isaiah 58:12

-----Original Message-----

From: McLeod, Iver J [mailto:Iver.J.McLeod@Maine.gov]
Sent: Wednesday, October 12, 2011 16:10
To: Cole, Linda L CIV NAVFAC MIDLANT, IPTNE; audet.matthew@epa.gov
Cc: Cohen, Deborah; Evans, Chris
Subject: RE: Before I give Shaw the ok to backfill the pit vault in Bldg 184

Linda,

I've given this some more thought. I'm still ok with NFA (provided EPA has no further concerns) but given that work described in the RAWP was not performed I'm going to need a letter from you requesting and justifying a no further action determination (or requesting concurrence rather than approval).

The RAWP states that the acid-proof brick lining on the walls and floor will be removed. It also says the concrete vault floor and the three non-structural walls will be removed and samples will be collected. Note that it does not say anything about not removing the bricks and concrete if specific conditions are observed such as the vault looks brand new, there is

no evidence of staining, etc. While these may be the reasons for not removing the material and collecting the samples the Navy needs to discuss why the pristine condition of the vault and any other factors obviate the need to remove/sample.

Were this not a "final" decision for Site 30 and if the RAWP had contingencies for not removing bricks/concrete and not collecting samples I wouldn't be asking for written justification. But it is and it didn't so it's important to document the reasoning behind the NFA decision.

Thanks,

Iver McLeod
Project Manager
Bureau of Remediation and Waste Management
Maine DEP Augusta, ME 04333

iver.j.mcleod@maine.gov

ph: (207) 287-8010

fx: (207) 287-7826

> -----Original Message-----

> From: Cole, Linda L CIV NAVFAC MIDLANT, IPTNE

> [\[mailto:linda.cole@navy.mil\]](mailto:linda.cole@navy.mil)

> Sent: Wednesday, October 12, 2011 2:35 PM

> To: McLeod, Iver J; audet.matthew@epa.gov

> Cc: Cohen, Deborah

> Subject: Before I give Shaw the ok to backfill the pit vault
> in Bldg 184

>

> I really need confirmation from you both that you concur with
> no further action including any type of long-term monitoring
> that we'll document in a decision document as the final
> remedy for Site 30.

>

> Of course, if for some unknown reason the crystalline growth
> would reappear we'd investigate it again as a new site.

>

> Linda L. Cole, P.E.

> NAVFAC MIDLANT

> Northeast IPT

> RPM - NAVSHIPYD Portsmouth

> (757)341-2011

> DSN 341-2011

> FAX 341-2096

> "You will rebuild the ancient ruins and raise up the age-old

> foundations; you will be called Repairer of the breach,
> Restorer of streets with dwellings." Isaiah 58:12

ATTACHMENT 1 – Waste Disposal Sample Results

From: Poulin, Fred [mailto:fred.poulin@shawgrp.com]
Sent: Tuesday, October 11, 2011 9:19 AM
To: Cole, Linda L CIV NAVFAC MIDLANT, IPTNE
Subject: FW: Kittery Maine Site 30 139799

Linda FYI,

First two sample results- these samples represent the concrete slab and the first lift 100cu.yds of the gravel backfill removed from the Tank Vault.

Fred Poulin
Project Manager
Shaw Environmental & Infrastructure
500 E. Main Street, Suite 1630
Norfolk Va, 23510
Direct 401-474-0867
fred.poulin@shawgrp.com

From: Sullivan, Natasha
Sent: Tuesday, October 11, 2011 9:12 AM
To: Deane, William; Poulin, Fred
Subject: Kittery Maine Site 30 139799

Good Morning All,

Please find attached the results from the waste disposal samples collected on 09/30/11 from Kittery Maine Site 30 in support of project number 139799 and analyzed by Accutest New England.

Files attached:
PDF Final Report
PDF Form I's
Excel Report (All data and Hits Only) **TCLP REG Limits in Red**

Notes:
None of the samples exceeded TCLP Reg Limits (had some detection of low level metals)
Both samples had detection of TPH DRO 21 mg/kg in soil sample and 18.8 mg/kg in concrete
Both soil and concrete samples had low level detections of total volatiles and semivolatile compounds.

Please feel free to contact me with any questions!

thanks,
tash

Natasha Kelley Sullivan
Scientist
Shaw Environmental & Infrastructure
500 E. Main Street
Suite 1630
Norfolk, VA 23510

(410)529-7598 direct

(410)804-5642 cell

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<http://www.shawgrp.com>

Sample Summary

Global General Services

Job No: MC4194

Kittery Maine Site 30 Disposal Samples
Project No: 139799

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
MC4194-1	09/30/11	10:24 JW	10/01/11	SO	Soil	139799-WASTE-S-001
MC4194-1A	09/30/11	10:24 JW	10/01/11	SO	Soil	139799-WASTE-S-001
MC4194-2	09/30/11	10:45 JW	10/01/11	SO	Solid	139799-WASTE-C-001
MC4194-2A	09/30/11	10:45 JW	10/01/11	SO	Solid	139799-WASTE-C-001

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Report of Analysis

Client Sample ID:	139799-WASTE-S-001	Date Sampled:	09/30/11
Lab Sample ID:	MC4194-1	Date Received:	10/01/11
Matrix:	SO - Soil	Percent Solids:	92.8
Method:	SW846 8260B		
Project:	Kittery Maine Site 30 Disposal Samples		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V2332.D	1	10/05/11	AMY	n/a	n/a	MSV101
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	7.04 g	5.0 ml
Run #2		

VOA TCL List

CAS No.	Compound	Result	LOQ	LOD	Units	Q
67-64-1	Acetone	28.3	3.8	3.8	ug/kg	
71-43-2	Benzene	0.19 U	0.38	0.19	ug/kg	
75-27-4	Bromodichloromethane	0.38 U	1.5	0.38	ug/kg	
75-25-2	Bromoform	0.38 U	1.5	0.38	ug/kg	
74-83-9	Bromomethane	1.5 U	1.5	1.5	ug/kg	
78-93-3	2-Butanone (MEK)	1.5 U	3.8	1.5	ug/kg	
75-15-0	Carbon disulfide	1.5 U	3.8	1.5	ug/kg	
56-23-5	Carbon tetrachloride	0.38 U	1.5	0.38	ug/kg	
108-90-7	Chlorobenzene	0.19 U	1.5	0.19	ug/kg	
75-00-3	Chloroethane	0.38 U	3.8	0.38	ug/kg	
67-66-3	Chloroform	0.38 U	1.5	0.38	ug/kg	
74-87-3	Chloromethane	1.5 U	3.8	1.5	ug/kg	
124-48-1	Dibromochloromethane	1.5 U	1.5	1.5	ug/kg	
75-34-3	1,1-Dichloroethane	0.38 U	1.5	0.38	ug/kg	
107-06-2	1,2-Dichloroethane	0.38 U	1.5	0.38	ug/kg	
75-35-4	1,1-Dichloroethene	0.38 U	1.5	0.38	ug/kg	
156-59-2	cis-1,2-Dichloroethene	0.38 U	1.5	0.38	ug/kg	
156-60-5	trans-1,2-Dichloroethene	0.38 U	1.5	0.38	ug/kg	
78-87-5	1,2-Dichloropropane	0.38 U	1.5	0.38	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	1.5 U	1.5	1.5	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	1.5 U	1.5	1.5	ug/kg	
100-41-4	Ethylbenzene	0.38 U	1.5	0.38	ug/kg	
591-78-6	2-Hexanone	3.8 U	3.8	3.8	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.5 U	3.8	1.5	ug/kg	
75-09-2	Methylene chloride	0.38 U	1.5	0.38	ug/kg	
100-42-5	Styrene	0.38 U	3.8	0.38	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	0.38 U	1.5	0.38	ug/kg	
127-18-4	Tetrachloroethene	0.38 U	1.5	0.38	ug/kg	
108-88-3	Toluene	0.38 U	3.8	0.38	ug/kg	
71-55-6	1,1,1-Trichloroethane	0.38 U	1.5	0.38	ug/kg	
79-00-5	1,1,2-Trichloroethane	0.38 U	1.5	0.38	ug/kg	
79-01-6	Trichloroethene	0.38 U	1.5	0.38	ug/kg	

U = Not detected LOD - Limit of Detection

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-S-001	
Lab Sample ID: MC4194-1	Date Sampled: 09/30/11
Matrix: SO - Soil	Date Received: 10/01/11
Method: SW846 8260B	Percent Solids: 92.8
Project: Kittery Maine Site 30 Disposal Samples	

VOA TCL List

CAS No.	Compound	Result	LOQ	LOD	Units	Q
75-01-4	Vinyl chloride	1.5 U	1.5	1.5	ug/kg	
1330-20-7	Xylene (total)	0.38 U	1.5	0.38	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	95%		70-130%
460-00-4	4-Bromofluorobenzene	101%		70-130%

U = Not detected LOD - Limit of Detection
 LOQ = Limit of Quantitation
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	139799-WASTE-S-001	Date Sampled:	09/30/11
Lab Sample ID:	MC4194-1	Date Received:	10/01/11
Matrix:	SO - Soil	Percent Solids:	92.8
Method:	SW846 8270C SW846 3546		
Project:	Kittery Maine Site 30 Disposal Samples		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S27654.D	1	10/06/11	PR	10/04/11	OP26484	MSS1197
Run #2							

Run #	Initial Weight	Final Volume
Run #1	20.6 g	1.0 ml
Run #2		

ABN TCL List

CAS No.	Compound	Result	LOQ	LOD	Units	Q
95-57-8	2-Chlorophenol	14 U	260	14 ^a	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	18 U	520	18 ^a	ug/kg	
120-83-2	2,4-Dichlorophenol	31 U	520	31 ^a	ug/kg	
105-67-9	2,4-Dimethylphenol	52 U	520	52 ^a	ug/kg	
51-28-5	2,4-Dinitrophenol	260 U	1000	260 ^a	ug/kg	
534-52-1	4,6-Dinitro-o-cresol	260 U	520	260 ^a	ug/kg	
95-48-7	2-Methylphenol	15 U	520	15 ^a	ug/kg	
	3&4-Methylphenol	28 U	520	28 ^a	ug/kg	
88-75-5	2-Nitrophenol	31 U	520	31 ^a	ug/kg	
100-02-7	4-Nitrophenol	260 U	1000	260 ^a	ug/kg	
87-86-5	Pentachlorophenol	49 U	520	49 ^a	ug/kg	
108-95-2	Phenol	44 U	260	44 ^a	ug/kg	
95-95-4	2,4,5-Trichlorophenol	39 U	520	39 ^a	ug/kg	
88-06-2	2,4,6-Trichlorophenol	36 U	520	36 ^a	ug/kg	
83-32-9	Acenaphthene	22 U	260	22 ^a	ug/kg	
208-96-8	Acenaphthylene	20 U	260	20 ^a	ug/kg	
120-12-7	Anthracene	21 U	260	21 ^a	ug/kg	
56-55-3	Benzo(a)anthracene	9.6 U	260	9.6 ^a	ug/kg	
50-32-8	Benzo(a)pyrene	16 U	260	16 ^a	ug/kg	
205-99-2	Benzo(b)fluoranthene	31 U	260	31 ^a	ug/kg	
191-24-2	Benzo(g,h,i)perylene	17 U	260	17 ^a	ug/kg	
207-08-9	Benzo(k)fluoranthene	7.8 U	260	7.8 ^a	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	21 U	260	21 ^a	ug/kg	
85-68-7	Butyl benzyl phthalate	25.4	260	11 ^a	ug/kg	J
91-58-7	2-Chloronaphthalene	22 U	260	22 ^a	ug/kg	
106-47-8	4-Chloroaniline	130 U	520	130 ^a	ug/kg	
86-74-8	Carbazole	21 U	260	21 ^a	ug/kg	
218-01-9	Chrysene	8.5 U	260	8.5 ^a	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	20 U	260	20 ^a	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	5.6 U	260	5.6 ^a	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	25 U	260	25 ^a	ug/kg	
7005-72-3	4-Chlorophenyl phenyl ether	24 U	260	24 ^a	ug/kg	

U = Not detected LOD - Limit of Detection

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	139799-WASTE-S-001	Date Sampled:	09/30/11
Lab Sample ID:	MC4194-1	Date Received:	10/01/11
Matrix:	SO - Soil	Percent Solids:	92.8
Method:	SW846 8270C SW846 3546		
Project:	Kittery Maine Site 30 Disposal Samples		

ABN TCL List

CAS No.	Compound	Result	LOQ	LOD	Units	Q
95-50-1	1,2-Dichlorobenzene	21 U	260	21 ^a	ug/kg	
541-73-1	1,3-Dichlorobenzene	22 U	260	22 ^a	ug/kg	
106-46-7	1,4-Dichlorobenzene	22 U	260	22 ^a	ug/kg	
121-14-2	2,4-Dinitrotoluene	130 U	520	130 ^a	ug/kg	
606-20-2	2,6-Dinitrotoluene	25 U	520	25 ^a	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	6.3 U	260	6.3 ^a	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	17 U	260	17 ^a	ug/kg	
132-64-9	Dibenzofuran	22 U	260	22 ^a	ug/kg	
84-74-2	Di-n-butyl phthalate	24 U	260	24 ^a	ug/kg	
117-84-0	Di-n-octyl phthalate	14 U	260	14 ^a	ug/kg	
84-66-2	Diethyl phthalate	23 U	260	23 ^a	ug/kg	
131-11-3	Dimethyl phthalate	18 U	260	18 ^a	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	187	260	18 ^a	ug/kg	J
206-44-0	Fluoranthene	8.9 U	260	8.9 ^a	ug/kg	
86-73-7	Fluorene	5.8 U	260	5.8 ^a	ug/kg	
118-74-1	Hexachlorobenzene	23 U	260	23 ^a	ug/kg	
87-68-3	Hexachlorobutadiene	21 U	260	21 ^a	ug/kg	
77-47-4	Hexachlorocyclopentadiene	3.5 U	520	3.5 ^a	ug/kg	
67-72-1	Hexachloroethane	21 U	260	21 ^a	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	16 U	260	16 ^a	ug/kg	
78-59-1	Isophorone	26 U	260	26 ^a	ug/kg	
91-57-6	2-Methylnaphthalene	22 U	260	22 ^a	ug/kg	
88-74-4	2-Nitroaniline	130 U	520	130 ^a	ug/kg	
99-09-2	3-Nitroaniline	130 U	520	130 ^a	ug/kg	
100-01-6	4-Nitroaniline	19 U	520	19 ^a	ug/kg	
91-20-3	Naphthalene	6.1 U	260	6.1 ^a	ug/kg	
98-95-3	Nitrobenzene	7.8 U	260	7.8 ^a	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	17 U	260	17 ^a	ug/kg	
86-30-6	N-Nitrosodiphenylamine	14 U	260	14 ^a	ug/kg	
85-01-8	Phenanthrene	6.8 U	260	6.8 ^a	ug/kg	
129-00-0	Pyrene	8.4 U	260	8.4 ^a	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	23 U	260	23 ^a	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	54%		30-130%
4165-62-2	Phenol-d5	55%		30-130%
118-79-6	2,4,6-Tribromophenol	61%		30-130%
4165-60-0	Nitrobenzene-d5	53%		30-130%
321-60-8	2-Fluorobiphenyl	58%		30-130%

U = Not detected LOD - Limit of Detection

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-S-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-1	Date Received: 10/01/11
Matrix: SO - Soil	Percent Solids: 92.8
Method: SW846 8270C SW846 3546	
Project: Kittery Maine Site 30 Disposal Samples	

ABN TCL List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1718-51-0	Terphenyl-d14	76%		30-130%

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection
 LOQ = Limit of Quantitation
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	139799-WASTE-S-001	Date Sampled:	09/30/11
Lab Sample ID:	MC4194-1	Date Received:	10/01/11
Matrix:	SO - Soil	Percent Solids:	92.8
Method:	SW846 8015		
Project:	Kittery Maine Site 30 Disposal Samples		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BH24397.D	1	10/06/11	WS	n/a	n/a	GBH1341
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	6.31 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	LOQ	LOD	Units	Q
	TPH-GRO (VOA)	1.7 U	8.9	1.7 ^a	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
615-59-8	2,5-Dibromotoluene	86%		36-148%		

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection
 LOQ = Limit of Quantitation
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	139799-WASTE-S-001	Date Sampled:	09/30/11
Lab Sample ID:	MC4194-1	Date Received:	10/01/11
Matrix:	SO - Soil	Percent Solids:	92.8
Method:	SW846 8082 SW846 3546		
Project:	Kittery Maine Site 30 Disposal Samples		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ68242.D	1	10/05/11	CZ	10/04/11	OP26486	GYZ6528
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.4 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	LOQ	LOD	Units	Q
12674-11-2	Aroclor 1016	35 U	110	35	ug/kg	
11104-28-2	Aroclor 1221	35 U	110	35	ug/kg	
11141-16-5	Aroclor 1232	35 U	110	35	ug/kg	
53469-21-9	Aroclor 1242	7.1 U	110	7.1	ug/kg	
12672-29-6	Aroclor 1248	7.0 U	110	7.0	ug/kg	
11097-69-1	Aroclor 1254	35 U	110	35	ug/kg	
11096-82-5	Aroclor 1260	7.0 U	110	7.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	90%		30-150%
877-09-8	Tetrachloro-m-xylene	86%		30-150%
2051-24-3	Decachlorobiphenyl	85%		30-150%
2051-24-3	Decachlorobiphenyl	83%		30-150%

U = Not detected LOD - Limit of Detection
 LOQ = Limit of Quantitation
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-S-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-1	Date Received: 10/01/11
Matrix: SO - Soil	Percent Solids: 92.8
Method: SW846-8015 SW846 3546	
Project: Kittery Maine Site 30 Disposal Samples	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BC54842.D	1	10/07/11	SS	10/05/11	OP26496	GBC2619
Run #2							

	Initial Weight	Final Volume
Run #1	15.9 g	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	Units	Q
	TPH-DRO (Semi-VOA)	21.0	17	13 ^a	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	92%		40-140%		

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection
 LOQ = Limit of Quantitation
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-S-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-1	Date Received: 10/01/11
Matrix: SO - Soil	Percent Solids: 92.8
Project: Kittery Maine Site 30 Disposal Samples	

Metals Analysis

Analyte	Result	LOQ	LOD	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	17.7	0.88	0.12	mg/kg	1	10/04/11	10/07/11 DA	SW846 6010C ²	SW846 3050B ³
Cadmium	0.12 J	0.35	0.053	mg/kg	1	10/04/11	10/07/11 DA	SW846 6010C ²	SW846 3050B ³
Chromium	25.1	0.88	0.12	mg/kg	1	10/04/11	10/07/11 DA	SW846 6010C ²	SW846 3050B ³
Lead	8.3	0.88	0.31	mg/kg	1	10/04/11	10/07/11 DA	SW846 6010C ²	SW846 3050B ³
Mercury	0.012 U	0.034	0.012	mg/kg	1	10/06/11	10/06/11 MA	SW846 7471B ¹	SW846 7471B ⁴

(1) Instrument QC Batch: MA13472

(2) Instrument QC Batch: MA13487

(3) Prep QC Batch: MP17851

(4) Prep QC Batch: MP17872

LOQ = Limit of Quantitation
LOD = Limit of Detection

U = Indicates a result < LOD
J = Indicates a result > = LOD but < LOQ

Report of Analysis

Client Sample ID: 139799-WASTE-S-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-1	Date Received: 10/01/11
Matrix: SO - Soil	Percent Solids: 92.8
Project: Kittery Maine Site 30 Disposal Samples	

General Chemistry

Analyte	Result	LOQ	LOD	Units	DF	Analyzed	By	Method
Corrosivity as pH	7.3				1	10/04/11	MA	SW846 CHAP7
Cyanide Reactivity	1.6 U	1.6	1.6	mg/kg	1	10/05/11	BF	SW846 CHAP7
Ignitability (Flashpoint)	> 230			Deg. F	1	10/04/11	BF	SW846 1020
Solids, Percent	92.8			%	1	10/04/11	CF	SM21 2540 B MOD.
Sulfide Reactivity	54 U	54	54	mg/kg	1	10/05/11	BF	SW846 CHAP7

LOQ = Limit of Quantitation
LOD = Limit of Detection

U = Indicates a result < LOD
J = Indicates a result > = LOD but < LOQ

Report of Analysis

Client Sample ID:	139799-WASTE-S-001	Date Sampled:	09/30/11
Lab Sample ID:	MC4194-1A	Date Received:	10/01/11
Matrix:	SO - Soil	Percent Solids:	92.8
Method:	SW846 8260B SW846 1311		
Project:	Kittery Maine Site 30 Disposal Samples		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L57599.D	100	10/04/11	EK	10/03/11	GP13589	MSL1932
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	LOQ	LOD	Units	Q
71-43-2	Benzene	0.046 U	D018	0.50	0.050	0.046 ^a	mg/l	
78-93-3	2-Butanone (MEK)	0.27 U	D035	200	0.50	0.27 ^a	mg/l	
56-23-5	Carbon tetrachloride	0.058 U	D019	0.50	0.10	0.058 ^a	mg/l	
108-90-7	Chlorobenzene	0.044 U	D021	100	0.10	0.044 ^a	mg/l	
67-66-3	Chloroform	0.058 U	D022	6.0	0.10	0.058 ^a	mg/l	
106-46-7	1,4-Dichlorobenzene	0.042 U	D027	7.5	0.10	0.042 ^a	mg/l	
107-06-2	1,2-Dichloroethane	0.044 U	D028	0.50	0.10	0.044 ^a	mg/l	
75-35-4	1,1-Dichloroethene	0.080 U	D029	0.70	0.10	0.080 ^a	mg/l	
127-18-4	Tetrachloroethene	0.036 U	D039	0.70	0.10	0.036 ^a	mg/l	
79-01-6	Trichloroethene	0.075 U	D040	0.50	0.10	0.075 ^a	mg/l	
75-01-4	Vinyl chloride	0.083 U	D043	0.20	0.10	0.083 ^a	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		70-130%
2037-26-5	Toluene-D8	92%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 6/96) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-S-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-1A	Date Received: 10/01/11
Matrix: SO - Soil	Percent Solids: 92.8
Method: SW846 8270C SW846 3510C	
Project: Kittery Maine Site 30 Disposal Samples	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S27622.D	1	10/05/11	PR	10/03/11	OP26473	MSS1195
Run #2							

Run #	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	LOQ	LOD	Units	Q
95-48-7	2-Methylphenol	0.020 U	D023	200	0.10	0.020	mg/l	
	3&4-Methylphenol	0.010 U	D024	200	0.10	0.010	mg/l	
87-86-5	Pentachlorophenol	0.020 U	D037	100	0.10	0.020	mg/l	
95-95-4	2,4,5-Trichlorophenol	0.0050 U	D041	400	0.10	0.0050	mg/l	
88-06-2	2,4,6-Trichlorophenol	0.0050 U	D042	2.0	0.10	0.0050	mg/l	
106-46-7	1,4-Dichlorobenzene	0.0050 U	D027	7.5	0.050	0.0050	mg/l	
121-14-2	2,4-Dinitrotoluene	0.020 U	D030	0.13	0.10	0.020	mg/l	
118-74-1	Hexachlorobenzene	0.0050 U	D032	0.13	0.050	0.0050	mg/l	
87-68-3	Hexachlorobutadiene	0.0050 U	D033	0.50	0.050	0.0050	mg/l	
67-72-1	Hexachloroethane	0.020 U	D034	3.0	0.050	0.020	mg/l	
98-95-3	Nitrobenzene	0.0050 U	D036	2.0	0.050	0.0050	mg/l	
110-86-1	Pyridine	0.050 U	D038	5.0	0.10	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	82%		15-110%
4165-62-2	Phenol-d5	75%		15-110%
118-79-6	2,4,6-Tribromophenol	92%		15-110%
4165-60-0	Nitrobenzene-d5	87%		30-130%
321-60-8	2-Fluorobiphenyl	88%		30-130%
1718-51-0	Terphenyl-d14	92%		30-130%

U = Not detected LOD - Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 6/96) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-S-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-1A	Date Received: 10/01/11
Matrix: SO - Soil	Percent Solids: 92.8
Method: SW846 8151 SW846 3510C	
Project: Kittery Maine Site 30 Disposal Samples	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ68270.D	1	10/06/11	CZ	10/03/11	OP26470	GYZ6530
Run #2							

Run #	Initial Volume	Final Volume
Run #1	100 ml	5.0 ml
Run #2		

Herbicide TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	LOQ	LOD	Units	Q
94-75-7	2,4-D	0.0014 U	D016	10	0.010	0.0014	mg/l	
93-72-1	2,4,5-TP (Silvex)	0.0013 U	D017	1.0	0.010	0.0013	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	98%		30-150%
19719-28-9	2,4-DCAA	100%		30-150%

U = Not detected LOD - Limit of Detection J = Indicates an estimated value
 MCL = Maximum Contamination Level (40 CFR 261 6/96) B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-S-001	
Lab Sample ID: MC4194-1A	Date Sampled: 09/30/11
Matrix: SO - Soil	Date Received: 10/01/11
Method: SW846 8081 SW846 3510C	Percent Solids: 92.8
Project: Kittery Maine Site 30 Disposal Samples	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB38618.D	1	10/05/11	CZ	10/03/11	OP26469	GBB2413
Run #2							

Run #	Initial Volume	Final Volume
Run #1	100 ml	5.0 ml
Run #2		

Pesticide TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	LOQ	LOD	Units	Q
58-89-9	gamma-BHC (Lindane)	0.00025 U	D013	0.40	0.00050	0.00025	mg/l	
12789-03-6	Chlordane	0.0050 U	D020	0.030	0.0050	0.0050	mg/l	
72-20-8	Endrin	0.00025 U	D012	0.020	0.00050	0.00025	mg/l	
76-44-8	Heptachlor	0.00025 U	D031	0.0080	0.00050	0.00025	mg/l	
1024-57-3	Heptachlor epoxide	0.00025 U	D031	0.0080	0.00050	0.00025	mg/l	
72-43-5	Methoxychlor	0.00025 U	D014	10	0.00050	0.00025	mg/l	
8001-35-2	Toxaphene	0.0025 U	D015	0.50	0.025	0.0025	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	76%		30-150%
877-09-8	Tetrachloro-m-xylene	68%		30-150%
2051-24-3	Decachlorobiphenyl	83%		30-150%
2051-24-3	Decachlorobiphenyl	72%		30-150%

U = Not detected LOD - Limit of Detection J = Indicates an estimated value
 MCL = Maximum Contamination Level (40 CFR 261 6/96) B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-S-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-1A	Date Received: 10/01/11
Matrix: SO - Soil	Percent Solids: 92.8
Project: Kittery Maine Site 30 Disposal Samples	

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	LOQ	LOD	Units	DF	Prep	Analyzed By	Method
Arsenic	0.0035 U	D004	5.0	0.010	0.0035	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Barium	0.21 J,Q	D005	100	0.50	0.0010	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Cadmium	0.0018 J	D006	1.0	0.0040	0.00060	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Chromium	0.0039 J	D007	5.0	0.010	0.0010	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Lead	0.0035 U	D008	5.0	0.010	0.0035	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Mercury	0.000058 U	D009	0.20	0.00020	0.000058	mg/l	1	10/04/11	10/04/11 MA	SW846 7470A ¹
Selenium	0.0035 U	D010	1.0	0.025	0.0035	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Silver	0.0010 U	D011	5.0	0.0050	0.0010	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²

- (1) Instrument QC Batch: MA13467
(2) Instrument QC Batch: MA13470
(3) Prep QC Batch: MP17858
(4) Prep QC Batch: MP17859

LOQ = Limit of Quantitation LOD = Limit of Detection
MCL = Maximum Contamination Level (40 CFR 261.6/96)

U = Indicates a result < LOD
J = Indicates a result > = LOD but < LOQ

Report of Analysis

Client Sample ID:	139799-WASTE-C-001	Date Sampled:	09/30/11
Lab Sample ID:	MC4194-2	Date Received:	10/01/11
Matrix:	SO - Solid	Percent Solids:	91.1
Method:	SW846 8260B		
Project:	Kittery Maine Site 30 Disposal Samples		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V2333.D	1	10/05/11	AMY	n/a	n/a	MSV101
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	5.80 g	5.0 ml
Run #2		

VOA TCL List

CAS No.	Compound	Result	LOQ	LOD	Units	Q
67-64-1	Acetone	4.7 U	4.7	4.7	ug/kg	
71-43-2	Benzene	0.24 U	0.47	0.24	ug/kg	
75-27-4	Bromodichloromethane	0.47 U	1.9	0.47	ug/kg	
75-25-2	Bromoform	0.47 U	1.9	0.47	ug/kg	
74-83-9	Bromomethane	1.9 U	1.9	1.9	ug/kg	
78-93-3	2-Butanone (MEK)	1.9 U	4.7	1.9	ug/kg	
75-15-0	Carbon disulfide	2.3	4.7	1.9	ug/kg	J
56-23-5	Carbon tetrachloride	0.47 U	1.9	0.47	ug/kg	
108-90-7	Chlorobenzene	0.24 U	1.9	0.24	ug/kg	
75-00-3	Chloroethane	0.47 U	4.7	0.47	ug/kg	
67-66-3	Chloroform	0.47 U	1.9	0.47	ug/kg	
74-87-3	Chloromethane	1.9 U	4.7	1.9	ug/kg	
124-48-1	Dibromochloromethane	1.9 U	1.9	1.9	ug/kg	
75-34-3	1,1-Dichloroethane	0.47 U	1.9	0.47	ug/kg	
107-06-2	1,2-Dichloroethane	0.47 U	1.9	0.47	ug/kg	
75-35-4	1,1-Dichloroethene	0.47 U	1.9	0.47	ug/kg	
156-59-2	cis-1,2-Dichloroethene	0.47 U	1.9	0.47	ug/kg	
156-60-5	trans-1,2-Dichloroethene	0.47 U	1.9	0.47	ug/kg	
78-87-5	1,2-Dichloropropane	0.47 U	1.9	0.47	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	1.9 U	1.9	1.9	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	1.9 U	1.9	1.9	ug/kg	
100-41-4	Ethylbenzene	0.47 U	1.9	0.47	ug/kg	
591-78-6	2-Hexanone	4.7 U	4.7	4.7	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	1.9 U	4.7	1.9	ug/kg	
75-09-2	Methylene chloride	0.47 U	1.9	0.47	ug/kg	
100-42-5	Styrene	0.47 U	4.7	0.47	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	0.47 U	1.9	0.47	ug/kg	
127-18-4	Tetrachloroethene	0.47 U	1.9	0.47	ug/kg	
108-88-3	Toluene	0.47 U	4.7	0.47	ug/kg	
71-55-6	1,1,1-Trichloroethane	0.47 U	1.9	0.47	ug/kg	
79-00-5	1,1,2-Trichloroethane	0.47 U	1.9	0.47	ug/kg	
79-01-6	Trichloroethene	0.47 U	1.9	0.47	ug/kg	

U = Not detected LOD - Limit of Detection

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-C-001	
Lab Sample ID: MC4194-2	Date Sampled: 09/30/11
Matrix: SO - Solid	Date Received: 10/01/11
Method: SW846 8260B	Percent Solids: 91.1
Project: Kittery Maine Site 30 Disposal Samples	

VOA TCL List

CAS No.	Compound	Result	LOQ	LOD	Units	Q
75-01-4	Vinyl chloride	1.9 U	1.9	1.9	ug/kg	
1330-20-7	Xylene (total)	0.47 U	1.9	0.47	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%
2037-26-5	Toluene-D8	95%		70-130%
460-00-4	4-Bromofluorobenzene	101%		70-130%

U = Not detected LOD - Limit of Detection
 LOQ = Limit of Quantitation
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	139799-WASTE-C-001	Date Sampled:	09/30/11
Lab Sample ID:	MC4194-2	Date Received:	10/01/11
Matrix:	SO - Solid	Percent Solids:	91.1
Method:	SW846 8270C SW846 3546		
Project:	Kittery Maine Site 30 Disposal Samples		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S27655.D	1	10/06/11	PR	10/04/11	OP26484	MSS1197
Run #2 ^a	S27703A.D	1	10/07/11	KR	10/04/11	OP26484	MSS1198

Run #	Initial Weight	Final Volume
Run #1	20.7 g	1.0 ml
Run #2	20.7 g	1.0 ml

ABN TCL List

CAS No.	Compound	Result	LOQ	LOD	Units	Q
95-57-8	2-Chlorophenol	14 U	260	14 ^b	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	18 U	530	18 ^b	ug/kg	
120-83-2	2,4-Dichlorophenol	31 U	530	31 ^b	ug/kg	
105-67-9	2,4-Dimethylphenol	53 U	530	53 ^b	ug/kg	
51-28-5	2,4-Dinitrophenol	260 U	1100	260 ^b	ug/kg	
534-52-1	4,6-Dinitro-o-cresol	260 U	530	260 ^b	ug/kg	
95-48-7	2-Methylphenol	15 U	530	15 ^b	ug/kg	
	3&4-Methylphenol	28 U	530	28 ^b	ug/kg	
88-75-5	2-Nitrophenol	32 U	530	32 ^b	ug/kg	
100-02-7	4-Nitrophenol	260 U	1100	260 ^b	ug/kg	
87-86-5	Pentachlorophenol	49 U	530	49 ^b	ug/kg	
108-95-2	Phenol	44 U	260	44 ^b	ug/kg	
95-95-4	2,4,5-Trichlorophenol	39 U	530	39 ^b	ug/kg	
88-06-2	2,4,6-Trichlorophenol	36 U	530	36 ^b	ug/kg	
83-32-9	Acenaphthene	22 U	260	22 ^b	ug/kg	
208-96-8	Acenaphthylene	20 U	260	20 ^b	ug/kg	
120-12-7	Anthracene	21 U	260	21 ^b	ug/kg	
56-55-3	Benzo(a)anthracene	9.7 U	260	9.7 ^b	ug/kg	
50-32-8	Benzo(a)pyrene	16 U	260	16 ^b	ug/kg	
205-99-2	Benzo(b)fluoranthene	31 U	260	31 ^b	ug/kg	
191-24-2	Benzo(g,h,i)perylene	17 U	260	17 ^b	ug/kg	
207-08-9	Benzo(k)fluoranthene	7.8 U	260	7.8 ^b	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	22 U	260	22 ^b	ug/kg	
85-68-7	Butyl benzyl phthalate	11 U	260	11 ^b	ug/kg	
91-58-7	2-Chloronaphthalene	22 U	260	22 ^b	ug/kg	
106-47-8	4-Chloroaniline	130 U	530	130 ^b	ug/kg	
86-74-8	Carbazole	21 U	260	21 ^b	ug/kg	
218-01-9	Chrysene	8.6 U	260	8.6 ^b	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	21 U	260	21 ^b	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	5.7 U	260	5.7 ^b	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	25 U	260	25 ^b	ug/kg	
7005-72-3	4-Chlorophenyl phenyl ether	24 U	260	24 ^b	ug/kg	

U = Not detected LOD - Limit of Detection

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	139799-WASTE-C-001	Date Sampled:	09/30/11
Lab Sample ID:	MC4194-2	Date Received:	10/01/11
Matrix:	SO - Solid	Percent Solids:	91.1
Method:	SW846 8270C SW846 3546		
Project:	Kittery Maine Site 30 Disposal Samples		

ABN TCL List

CAS No.	Compound	Result	LOQ	LOD	Units	Q
95-50-1	1,2-Dichlorobenzene	21 U	260	21 ^b	ug/kg	
541-73-1	1,3-Dichlorobenzene	22 U	260	22 ^b	ug/kg	
106-46-7	1,4-Dichlorobenzene	22 U	260	22 ^b	ug/kg	
121-14-2	2,4-Dinitrotoluene	130 U	530	130 ^b	ug/kg	
606-20-2	2,6-Dinitrotoluene	25 U	530	25 ^b	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	6.4 U	260	6.4 ^b	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	17 U	260	17 ^b	ug/kg	
132-64-9	Dibenzofuran	23 U	260	23 ^b	ug/kg	
84-74-2	Di-n-butyl phthalate	24 U	260	24 ^b	ug/kg	
117-84-0	Di-n-octyl phthalate	14 U	260	14 ^b	ug/kg	
84-66-2	Diethyl phthalate	23 U	260	23 ^b	ug/kg	
131-11-3	Dimethyl phthalate	19 U	260	19 ^b	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	25.5	260	18 ^b	ug/kg	J
206-44-0	Fluoranthene	9.0 U	260	9.0 ^b	ug/kg	
86-73-7	Fluorene	5.8 U	260	5.8 ^b	ug/kg	
118-74-1	Hexachlorobenzene	23 U	260	23 ^b	ug/kg	
87-68-3	Hexachlorobutadiene	21 U	260	21 ^b	ug/kg	
77-47-4	Hexachlorocyclopentadiene	3.6 U	530	3.6 ^b	ug/kg	
67-72-1	Hexachloroethane	22 U	260	22 ^b	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	16 U	260	16 ^b	ug/kg	
78-59-1	Isophorone	89.2	260	26 ^b	ug/kg	J
91-57-6	2-Methylnaphthalene	22 U	260	22 ^b	ug/kg	
88-74-4	2-Nitroaniline	130 U	530	130 ^b	ug/kg	
99-09-2	3-Nitroaniline	130 U	530	130 ^b	ug/kg	
100-01-6	4-Nitroaniline	20 U	530	20 ^b	ug/kg	
91-20-3	Naphthalene	6.1 U	260	6.1 ^b	ug/kg	
98-95-3	Nitrobenzene	7.8 U	260	7.8 ^b	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	17 U	260	17 ^b	ug/kg	
86-30-6	N-Nitrosodiphenylamine	14 U	260	14 ^b	ug/kg	
85-01-8	Phenanthrene	6.8 U	260	6.8 ^b	ug/kg	
129-00-0	Pyrene	8.5 U	260	8.5 ^b	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	23 U	260	23 ^b	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	19% ^c	21% ^c	30-130%
4165-62-2	Phenol-d5	98%	100%	30-130%
118-79-6	2,4,6-Tribromophenol	40%	32%	30-130%
4165-60-0	Nitrobenzene-d5	122%	120%	30-130%
321-60-8	2-Fluorobiphenyl	140% ^c	140% ^c	30-130%

U = Not detected LOD - Limit of Detection

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-C-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-2	Date Received: 10/01/11
Matrix: SO - Solid	Percent Solids: 91.1
Method: SW846 8270C SW846 3546	
Project: Kittery Maine Site 30 Disposal Samples	

ABN TCL List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1718-51-0	Terphenyl-d14	187% ^c	165% ^c	30-130%

(a) Confirmation run for surrogate recoveries.

(b) Value reported is laboratory DL (MDL).

(c) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

U = Not detected LOD - Limit of Detection

LOQ = Limit of Quantitation

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	139799-WASTE-C-001	Date Sampled:	09/30/11
Lab Sample ID:	MC4194-2	Date Received:	10/01/11
Matrix:	SO - Solid	Percent Solids:	91.1
Method:	SW846 8015		
Project:	Kittery Maine Site 30 Disposal Samples		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BH24400.D	1	10/06/11	WS	n/a	n/a	GBH1341
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.92 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	LOQ	LOD	Units	Q
	TPH-GRO (VOA)	1.9 U	9.8	1.9 ^a	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
615-59-8	2,5-Dibromotoluene	88%		36-148%		

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection
 LOQ = Limit of Quantitation
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-C-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-2	Date Received: 10/01/11
Matrix: SO - Solid	Percent Solids: 91.1
Method: SW846 8082 SW846 3546	
Project: Kittery Maine Site 30 Disposal Samples	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ68243.D	1	10/05/11	CZ	10/04/11	OP26486	GYZ6528
Run #2							

Run #	Initial Weight	Final Volume
Run #1	15.2 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	LOQ	LOD	Units	Q
12674-11-2	Aroclor 1016	36 U	110	36	ug/kg	
11104-28-2	Aroclor 1221	36 U	110	36	ug/kg	
11141-16-5	Aroclor 1232	36 U	110	36	ug/kg	
53469-21-9	Aroclor 1242	7.3 U	110	7.3	ug/kg	
12672-29-6	Aroclor 1248	7.2 U	110	7.2	ug/kg	
11097-69-1	Aroclor 1254	36 U	110	36	ug/kg	
11096-82-5	Aroclor 1260	7.2 U	110	7.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	83%		30-150%
877-09-8	Tetrachloro-m-xylene	78%		30-150%
2051-24-3	Decachlorobiphenyl	82%		30-150%
2051-24-3	Decachlorobiphenyl	79%		30-150%

U = Not detected LOD - Limit of Detection
 LOQ = Limit of Quantitation
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-C-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-2	Date Received: 10/01/11
Matrix: SO - Solid	Percent Solids: 91.1
Method: SW846-8015 SW846 3546	
Project: Kittery Maine Site 30 Disposal Samples	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BC54843.D	1	10/07/11	SS	10/05/11	OP26496	GBC2619
Run #2							

	Initial Weight	Final Volume
Run #1	15.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	Units	Q
	TPH-DRO (Semi-VOA)	18.8	18	14 ^a	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	92%		40-140%		

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection
 LOQ = Limit of Quantitation
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-C-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-2	Date Received: 10/01/11
Matrix: SO - Solid	Percent Solids: 91.1
Project: Kittery Maine Site 30 Disposal Samples	

Metals Analysis

Analyte	Result	LOQ	LOD	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	15.5	0.92	0.13	mg/kg	1	10/04/11	10/07/11 DA	SW846 6010C ²	SW846 3050B ³
Cadmium	0.055 U	0.37	0.055	mg/kg	1	10/04/11	10/07/11 DA	SW846 6010C ²	SW846 3050B ³
Chromium	10	0.92	0.13	mg/kg	1	10/04/11	10/07/11 DA	SW846 6010C ²	SW846 3050B ³
Lead	3.9	0.92	0.32	mg/kg	1	10/04/11	10/07/11 DA	SW846 6010C ²	SW846 3050B ³
Mercury	0.012 U	0.037	0.012	mg/kg	1	10/06/11	10/06/11 MA	SW846 7471B ¹	SW846 7471B ⁴

(1) Instrument QC Batch: MA13472

(2) Instrument QC Batch: MA13487

(3) Prep QC Batch: MP17851

(4) Prep QC Batch: MP17872

LOQ = Limit of Quantitation
LOD = Limit of Detection

U = Indicates a result < LOD
J = Indicates a result > = LOD but < LOQ

Report of Analysis

Client Sample ID: 139799-WASTE-C-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-2	Date Received: 10/01/11
Matrix: SO - Solid	Percent Solids: 91.1
Project: Kittery Maine Site 30 Disposal Samples	

General Chemistry

Analyte	Result	LOQ	LOD	Units	DF	Analyzed	By	Method
Corrosivity as pH	12.0				1	10/04/11	MA	SW846 CHAP7
Cyanide Reactivity	1.6 U	1.6	1.6	mg/kg	1	10/05/11	BF	SW846 CHAP7
Ignitability (Flashpoint)	> 230			Deg. F	1	10/04/11	BF	SW846 1020
Solids, Percent	91.1			%	1	10/04/11	CF	SM21 2540 B MOD.
Sulfide Reactivity	55 U	55	55	mg/kg	1	10/05/11	BF	SW846 CHAP7

LOQ = Limit of Quantitation
LOD = Limit of Detection

U = Indicates a result < LOD
J = Indicates a result > = LOD but < LOQ

Report of Analysis

Client Sample ID: 139799-WASTE-C-001	
Lab Sample ID: MC4194-2A	Date Sampled: 09/30/11
Matrix: SO - Solid	Date Received: 10/01/11
Method: SW846 8260B SW846 1311	Percent Solids: 91.1
Project: Kittery Maine Site 30 Disposal Samples	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L57600.D	100	10/04/11	EK	10/03/11	GP13589	MSL1932
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate**TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	LOQ	LOD	Units	Q
71-43-2	Benzene	0.046 U	D018	0.50	0.050	0.046 ^a	mg/l	
78-93-3	2-Butanone (MEK)	0.27 U	D035	200	0.50	0.27 ^a	mg/l	
56-23-5	Carbon tetrachloride	0.058 U	D019	0.50	0.10	0.058 ^a	mg/l	
108-90-7	Chlorobenzene	0.044 U	D021	100	0.10	0.044 ^a	mg/l	
67-66-3	Chloroform	0.058 U	D022	6.0	0.10	0.058 ^a	mg/l	
106-46-7	1,4-Dichlorobenzene	0.042 U	D027	7.5	0.10	0.042 ^a	mg/l	
107-06-2	1,2-Dichloroethane	0.044 U	D028	0.50	0.10	0.044 ^a	mg/l	
75-35-4	1,1-Dichloroethene	0.080 U	D029	0.70	0.10	0.080 ^a	mg/l	
127-18-4	Tetrachloroethene	0.036 U	D039	0.70	0.10	0.036 ^a	mg/l	
79-01-6	Trichloroethene	0.075 U	D040	0.50	0.10	0.075 ^a	mg/l	
75-01-4	Vinyl chloride	0.083 U	D043	0.20	0.10	0.083 ^a	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		70-130%
2037-26-5	Toluene-D8	91%		70-130%
460-00-4	4-Bromofluorobenzene	90%		70-130%

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD - Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 6/96) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-C-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-2A	Date Received: 10/01/11
Matrix: SO - Solid	Percent Solids: 91.1
Method: SW846 8270C SW846 3510C	
Project: Kittery Maine Site 30 Disposal Samples	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S27623.D	1	10/05/11	PR	10/03/11	OP26473	MSS1195
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	LOQ	LOD	Units	Q
95-48-7	2-Methylphenol	0.020 U	D023	200	0.10	0.020	mg/l	
	3&4-Methylphenol	0.010 U	D024	200	0.10	0.010	mg/l	
87-86-5	Pentachlorophenol	0.020 U	D037	100	0.10	0.020	mg/l	
95-95-4	2,4,5-Trichlorophenol	0.0050 U	D041	400	0.10	0.0050	mg/l	
88-06-2	2,4,6-Trichlorophenol	0.0050 U	D042	2.0	0.10	0.0050	mg/l	
106-46-7	1,4-Dichlorobenzene	0.0050 U	D027	7.5	0.050	0.0050	mg/l	
121-14-2	2,4-Dinitrotoluene	0.020 U	D030	0.13	0.10	0.020	mg/l	
118-74-1	Hexachlorobenzene	0.0050 U	D032	0.13	0.050	0.0050	mg/l	
87-68-3	Hexachlorobutadiene	0.0050 U	D033	0.50	0.050	0.0050	mg/l	
67-72-1	Hexachloroethane	0.020 U	D034	3.0	0.050	0.020	mg/l	
98-95-3	Nitrobenzene	0.0050 U	D036	2.0	0.050	0.0050	mg/l	
110-86-1	Pyridine	0.050 U	D038	5.0	0.10	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	79%		15-110%
4165-62-2	Phenol-d5	73%		15-110%
118-79-6	2,4,6-Tribromophenol	85%		15-110%
4165-60-0	Nitrobenzene-d5	82%		30-130%
321-60-8	2-Fluorobiphenyl	82%		30-130%
1718-51-0	Terphenyl-d14	85%		30-130%

U = Not detected LOD - Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 6/96) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-C-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-2A	Date Received: 10/01/11
Matrix: SO - Solid	Percent Solids: 91.1
Method: SW846 8151 SW846 3510C	
Project: Kittery Maine Site 30 Disposal Samples	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ68271.D	1	10/06/11	CZ	10/03/11	OP26470	GYZ6530
Run #2							

Run #	Initial Volume	Final Volume
Run #1	100 ml	5.0 ml
Run #2		

Herbicide TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	LOQ	LOD	Units	Q
94-75-7	2,4-D	0.0014 U	D016	10	0.010	0.0014	mg/l	
93-72-1	2,4,5-TP (Silvex)	0.0013 U	D017	1.0	0.010	0.0013	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	101%		30-150%
19719-28-9	2,4-DCAA	98%		30-150%

U = Not detected LOD - Limit of Detection J = Indicates an estimated value
 MCL = Maximum Contamination Level (40 CFR 261 6/96) B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-C-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-2A	Date Received: 10/01/11
Matrix: SO - Solid	Percent Solids: 91.1
Method: SW846 8081 SW846 3510C	
Project: Kittery Maine Site 30 Disposal Samples	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB38619.D	1	10/05/11	CZ	10/03/11	OP26469	GBB2413
Run #2							

Run #	Initial Volume	Final Volume
Run #1	100 ml	5.0 ml
Run #2		

Pesticide TCLP Leachate

TCLP Leachate method SW846 1311

CAS No.	Compound	Result	HW#	MCL	LOQ	LOD	Units	Q
58-89-9	gamma-BHC (Lindane)	0.00025 U	D013	0.40	0.00050	0.00025	mg/l	
12789-03-6	Chlordane	0.0050 U	D020	0.030	0.0050	0.0050	mg/l	
72-20-8	Endrin	0.00025 U	D012	0.020	0.00050	0.00025	mg/l	
76-44-8	Heptachlor	0.00025 U	D031	0.0080	0.00050	0.00025	mg/l	
1024-57-3	Heptachlor epoxide	0.00025 U	D031	0.0080	0.00050	0.00025	mg/l	
72-43-5	Methoxychlor	0.00025 U	D014	10	0.00050	0.00025	mg/l	
8001-35-2	Toxaphene	0.0025 U	D015	0.50	0.025	0.0025	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	74%		30-150%
877-09-8	Tetrachloro-m-xylene	71%		30-150%
2051-24-3	Decachlorobiphenyl	82%		30-150%
2051-24-3	Decachlorobiphenyl	72%		30-150%

U = Not detected LOD - Limit of Detection J = Indicates an estimated value
 MCL = Maximum Contamination Level (40 CFR 261 6/96) B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 139799-WASTE-C-001	Date Sampled: 09/30/11
Lab Sample ID: MC4194-2A	Date Received: 10/01/11
Matrix: SO - Solid	Percent Solids: 91.1
Project: Kittery Maine Site 30 Disposal Samples	

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	LOQ	LOD	Units	DF	Prep	Analyzed By	Method
Arsenic	0.0035 U	D004	5.0	0.010	0.0035	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Barium	0.15 J,Q	D005	100	0.50	0.0010	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Cadmium	0.00060 U	D006	1.0	0.0040	0.00060	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Chromium	0.0035 J	D007	5.0	0.010	0.0010	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Lead	0.0035 U	D008	5.0	0.010	0.0035	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Mercury	0.000058 U	D009	0.20	0.00020	0.000058	mg/l	1	10/04/11	10/04/11 MA	SW846 7470A ¹
Selenium	0.0035 U	D010	1.0	0.025	0.0035	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²
Silver	0.0010 U	D011	5.0	0.0050	0.0010	mg/l	1	10/04/11	10/05/11 DA	SW846 6010C ²

- (1) Instrument QC Batch: MA13467
(2) Instrument QC Batch: MA13470
(3) Prep QC Batch: MP17858
(4) Prep QC Batch: MP17859

LOQ = Limit of Quantitation LOD = Limit of Detection
MCL = Maximum Contamination Level (40 CFR 261.6/96)

U = Indicates a result < LOD
J = Indicates a result > = LOD but < LOQ



Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC4194

Client: SHAW

Immediate Client Services Action Required: No

Date / Time Received: 10/1/2011

Delivery Method:

Client Service Action Required at Login: No

Project: KITTERY MAIE

No. Coolers: 1

Airbill #'s: N/A

<u>Cooler Security</u>	<u>Y or N</u>			<u>Y or N</u>	
1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. SmpI Dates/Time OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y or N</u>	
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Cooler temp verification:	Infrared gun	
3. Cooler media:	Ice (bag)	

<u>Quality Control Preservatio</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Samples preserved property:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y or N</u>	
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y or N</u>	
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Condition of sample:	Intact	

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

Empty box for comments.

Accutest Laboratories
V:508.481.6200

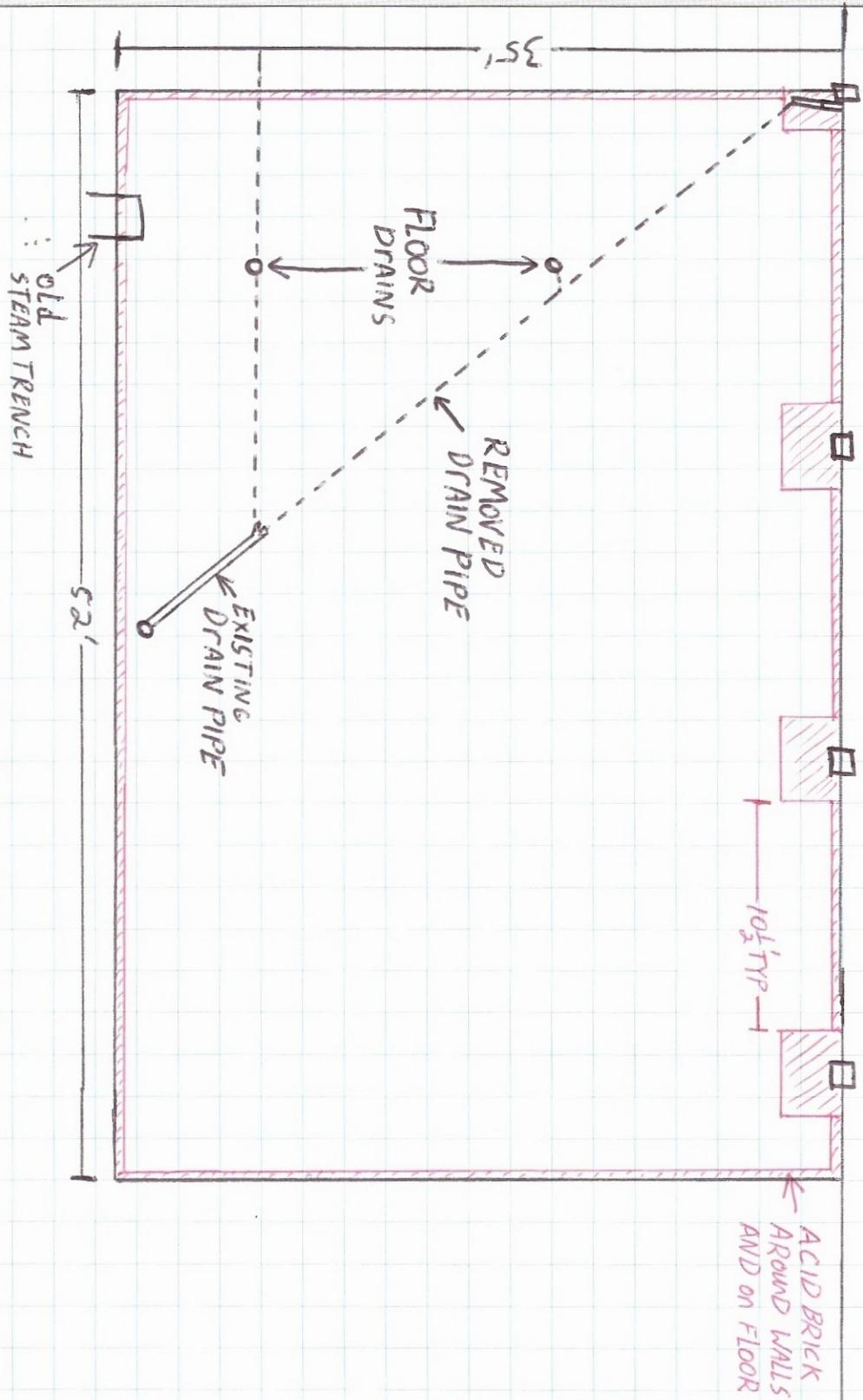
495 Technology Center West, Bldg One
F: 508.481.7753

Marlborough, MA
www.accutest.com

ATTACHMENT 2 – Site 30 Drawing



By	Date	Subject	Sheet No.	of
Checked By	Date		Project No.	



**ATTACHMENT 3 – Technical Memorandum for Modification to the
Removal Action for Site 30**

Technical Memorandum

October 13, 2011

RE: Modification to the Removal Action for Site 30

Introduction

Based on actual site conditions observed after removal of the concrete slab flooring and vault fill material, the Navy re-evaluated site conditions and recommends modification to the removal action activities to address potential site risks. The following provides an evaluation of the anticipated conditions, actual conditions, and the associated change in potential site risks. The subsequent recommend modifications to the removal action are also provided.

Evaluation based on Actual Site Conditions

The December 2010 Site 30 Action Memorandum indicates that hazardous substances and contaminants in the tank vault water were at levels that could pose a potential threat of contamination to groundwater. This conclusion was based on the volume of water estimated in the vault and the unknown conditions of the acid-proof brick lining and concrete containment of the tank vault. The source of the water was not confirmed, but information supported that groundwater infiltration to the vault was not the likely source. However, the potential for tank vault water to migrate through cracks or gaps in the brick lining and concrete containment, if any exists, was a potential concern. Potential risks to workers in the building were also identified if the workers were exposed to the crystals that were forming along the one wall or in the vault or to a construction worker exposed to contaminants in the fill material of the vault.

Because of various anticipated and unknown conditions related to potential contaminant migration to soil and groundwater underlying the vault, the removal action described in the December 2010 Site 30 Action Memorandum included inspection and removal of the acid-proof brick lining and inspection and removal of the concrete containment with confirmation sampling of soil underlying the vault to confirm that contaminant migration outside the vault had not occurred.

The following provides anticipated versus actual conditions and evaluation of impact to understanding of potential risks:

Anticipated condition	Actual condition	Impact to Risk
Approximately 75 percent of the fill material was estimated to be saturated.	Approximately ¾ of an inch of water remained on the floor in the center portion of vault after the fill material was removed. This water was combined with wash down water and approximately 500 gals-12 partially filled drums were removed. The bottom 3" of soil was saturated and homogenized with dry material in the removal process.	Much less volume of water in the vault and limited saturated fill material on the floor of the vault greatly reduces the potential that vault water migrates through the brick lining/concrete containment resulting in contamination of underlying soil.
Although unknown, infiltration of water via the original tank vault drain at the western edge of the vault is not the source of water within the tank vault.	Piping scheme that was uncovered was intact and operational and was used as conveyance for waste water from the sinks located in existing Lab and the bathroom sinks and toilets in the West side of the building. No evidence of any leaking pipes was observed.	Observation of the piping confirms that it was not a potential source of water that could migrate through the brick lining/concrete containment resulting in contamination of underlying soil.

Anticipated condition	Actual condition	Impact to Risk
Groundwater is not the suspected source of water in the tank vault.	Water was observed entering the vault area through an opening around an air conditioning unit on the eastern wall (near the main area of former crystalline growth). Observation of the eastern wall of the tank vault (after fill material was removed) indicates that rain water and likely previous storm water runoff from outside the building were the source of the water in the vault. After excavation of the fill material and removal of the air conditioning unit, observation of the vault confirmed that no water was entering the vault. Heavy rain events occurred during excavation and after the vault was cleaned and no water was observed entering the vault.	Groundwater was confirmed not to be the source of water in the vault greatly limiting the potential that water migrated through the brick lining/concrete containment resulting in contamination of underlying soil.
It was not known whether the acid-proof brick lining was removed from the tank vault at the time it was filled.	The acid-proof brick lining is present and in excellent condition. No staining was observed on the floor and the walls. Brick lining was washed and swept clean. Bricks that were dislodged during excavation were removed staged and sampled.	It is less likely that the underlying concrete containment or underlying soil is contaminated.
Water in the vault could impact underlying soil and groundwater if any cracks or gaps are present in the brick lining and concrete containment.	There were no cracks or gaps present in the brick lining along the floor. Only the top two courses of brick were damaged as a result of the excavation activity. These were removed for the installation of the new concrete pad to be installed. The concrete behind the brick on walls is approximately 12" thick as observed.	It is less likely that the underlying concrete containment or underlying soil is contaminated.
The extent of crystalline material in the fill material and type of fill material was not known.	Crystalline material was only observed along southeastern wall where office was and along the edge of the Steam chase trench. Only contents of vault was clean gravel, no evidence of tank components or debris were evident. Testing of the top layer of fill material of the fill material for off yard disposal results were returned Non Hazardous and showed COC concentrations less than removal action goals.	It is less likely that the underlying concrete containment or underlying soil is contaminated.

Based on the observations of actual conditions, the potential that vault water contaminants migrated through the brick lining to the concrete containment is very unlikely. Therefore, the potential for contaminants in the tank vault to adversely impact underlying soil and groundwater is considered very low. As provided in the Site 30 Action Memorandum, evaluation of groundwater at Site 30 shows that groundwater at the site has not been adversely impact, providing further support of the low likelihood that a release occurred to underlying soil and groundwater from the tank vault.

Recommended modification to the Removal Action for Site 30

The removal action memorandum and work plan specified that the acid-proof brick lining would be removed, the concrete containment inspected for breaches, and the concrete floor and three of the four walls removed. Because site conditions support a low likelihood that the concrete containment and underlying soil has been adversely impacted, it is recommended that the acid-proof brick lining and concrete containment not be removed and that the vault be backfilled with Quarry processed stone and compacted for installation of 6" concrete slab.

With the removal of all of the fill material in the tank vault, cleaning and testing of the acid proof brick, and planned site restoration, potential threats to public health and welfare and the environment have been addressed to support No Further Action for Site 30. A No Further Action Decision Document would be prepared to document the actual site conditions and that risks are acceptable for unrestricted use and unlimited exposure for Site 30.