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FINAL
TASK-SPECIFIC PLAN
B-25 Box Dewatering, Characterization, and Repackaging
Installation Restoration Site 12
Former Naval Station Treasure Island
San Francisco, California

Contract Number: N62473-12-D-2005
Contract Task Order: 0004

Document Control Number: CBI-2005-0004-0048

July 2015

Submitted to:

Base Realignment and Closure
Program Management Office West Naval Facilities Engineering Command
1455 Frazee Road, Suite 900
San Diego, California 92108

Submitted by:

CB&I Federal Services LLC
4005 Port Chicago Highway, Suite 200
Concord, California 94520-1120

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Prepared by: _____ Date: July 10, 2015
John Hackett, CHP, PE
Technical Lead

Approved by: _____ Date: July 10, 2015
Ulrika Messer, PE
Project Manager

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Acronyms and Abbreviations

^{226}Ra	radium-226
APP/SSHP	*Final Accident Prevention Plan, Non-Time Critical Removal Action for Solid Waste Disposal Areas (SWDAs) A/B, 1207/1209, and 1231/1233 – Radiological Characterization, Remediation, Final Status Survey and Building Demolition, Installation Restoration Site 12 (Phase III), Naval Station Treasure Island, Former Naval Station Treasure Island, San Francisco, California*
CB&I	CB&I Federal Services LLC
EMS	Environmental Management Services, Inc.
EPA	U.S. Environmental Protection Agency
ESS	*Explosives Safety Submission, Non-Time Critical Removal Action for Solid Waste Disposal Areas Westside Drive, Bayside Drive, and North Point Drive, Radiological Characterization, Remediation, and Building Demolition, Installation Restoration Site 12 (Phase III), Former Naval Station Treasure Island, San Francisco, California*
HEPA	high-efficiency particulate air
IR	Installation Restoration
LLRO	low-level radioactive objects
LLRW	low-level radioactive waste
mCi	millicurie
MDAS	material determined as safe
MEC	munitions and explosives of concern
MPPEH	material potentially presenting an explosive hazard
mR/hr	milliroentgen per hour
Navy	U.S. Department of the Navy
NSTI	former Naval Station Treasure Island
poly	polyethylene
PPE	personal protective equipment
PRSO	Project Radiation Safety Officer
RCT	Radiological Controls Technician
RWP	radiological work permit
Sitewide RPP	*Sitewide Radiation Protection Plan, Naval Station Treasure Island, San Francisco, California*
SUXOS	Senior UXO Supervisor
SWDA	solid waste disposal area
TSP	task-specific plan
UXO	unexploded ordnance

1.0 Introduction

This Task-Specific Plan (TSP) presents the specific tasks and procedures that will be implemented by CB&I Federal Services LLC (CB&I), to conduct dewatering, segregation of munitions scrap from radium-226 (^{226}Ra) radioactive debris and soil, and waste characterization of material stored in five B-25 waste containers located within Installation Restoration (IR) Site 12 at the former Naval Station Treasure Island (NSTI) (Figure 1). (Typical B-25 box size is 4 feet by 6 feet by 4 feet.) Upon completion of waste characterization, the waste material may be further segregated as required for shipment to the designated waste disposal facility.

This work is being performed for the U.S. Department of the Navy (Navy), Naval Facilities Engineering Command Southwest, under Contract No. N62473-12-D-2005, Contract Task Order 004. Base Realignment and Closure Program Management Office West will manage the work elements under this Contract Task Order.

1.1 Guiding Documents and Permits

The radiological scope of work under this task order will be conducted under California Radioactive Materials License 7889-07, issued to CB&I, and will follow the provisions of the *Sitewide Radiation Protection Plan, Naval Station Treasure Island, San Francisco, California* (Sitewide RPP; CB&I, 2014a, as updated or revised). The munitions control scope of work under this task order will be conducted under the *Explosives Safety Submission, Non-Time Critical Removal Action for Solid Waste Disposal Areas Westside Drive, Bayside Drive, and North Point Drive, Radiological Characterization, Remediation, and Building Demolition, Installation Restoration Site 12 (Phase III), Former Naval Station Treasure Island, San Francisco, California* (ESS, CB&I, 2015a)

Work performed under this TSP will also follow the provisions of the project *Final Accident Prevention Plan, Non-Time Critical Removal Action for Solid Waste Disposal Areas (SWDAs) A/B, 1207/1209, and 1231/1233 – Radiological Characterization, Remediation, Final Status Survey and Building Demolition, Installation Restoration Site 12 (Phase III), Naval Station Treasure Island, Former Naval Station Treasure Island, San Francisco, California* (APP/SSHP; CB&I, 2014b) and the *Work Plan for the Non-time Critical Removal Action for Solid Waste Disposal Areas Westside Drive, Bayside Drive, and North Point Drive – Radiological Characterization, Remediation, and Building Demolition, Installation Restoration Site 12 (Phase III), Naval Station Treasure Island, Former Naval Station Treasure Island, San Francisco, California* (CB&I, 2015b). The APP/SSHP was prepared to support fieldwork in accordance with the *Safety and Health Requirements Manual EM 385-1-1* (U.S. Army Corps of Engineers,

2008) and *Unified Facilities Guide Specifications Section 01 35 26 Governmental Safety Requirements* (Naval Facilities Engineering Command, 2012).

All radiological work will be performed under a job-specific radiological work permit (RWP), applicable standard operating procedures, and Treasure Island Work Instructions per the Sitewide RPP (CB&I, 2014a, as updated or revised).

CB&I will obtain all necessary authorizations from the NSTI Caretaker Site Office and the Resident Officer in Charge of Construction for performing work at the site. Prior to field activities, CB&I will notify the Program Management Office Contracting Officer Representative, Navy Remedial Project Manager, Navy Caretaker Site Office, Resident Officer In Charge of Construction, and appropriate NSTI security and fire department personnel about the nature of the planned work. Table 1 outlines the project notification requirements.

1.2 Scope of Task

The scope of this task includes the following elements:

1. Dewater the five B-25 waste boxes staged at IR Site 12 north of the Building 1319, Unit D footprint and sample water for waste characterization and stage drums of wastewater in radiologically-controlled area pending final waste characterization.

2. Perform radiological contamination and gamma survey of the B-25 work areas to establish baseline values for comparison to surveys conducted at the conclusion of task activities.

3. Draft specifications, procure, and assemble a temporary containment tent/structure suitable for B-25 handling, radiological and munitions waste segregation, decontamination, and repackaging activities.

4. Perform mock-up testing of containment tent ingress/egress, airflow, B-25 transfer, hoisting and handling equipment, material handling, and ventilation/equipment function.

5. Transfer dewatered B-25 boxes individually to the temporary containment structure for material investigation, segregation, and repackaging.

6. Remove waste from each B-25 and segregate munitions and radioactive objects for evaluation and photograph segregated waste items including munitions scrap and objects as applicable.

7. Stage radiologically contaminated munitions scrap that has been released by an Unexploded Ordnance (UXO) technician for placement into designated waste container for disposal as Type A or low-level radioactive waste (LLRW). NOTE: Stop Work if material potentially presenting an explosive hazard (MPPEH) are identified and implement ESS protocol (CB&I, 2015a). The Stop Work will remain in place until the Senior UXO Supervisor (SUXOS) determines work can safely be resumed.

8. Perform gamma spectroscopy and dose rate measurements of each recovered low-level radioactive object (LLRO). Properly package and transport LLRO for storage in the Building 570 Radioactive Material Storage Area.

9. Repackage Type A (majority of screened material) and/or LLRW (job control waste) into the designated waste containers provided by the Navy's LLRW broker, Environmental Management Services, Inc. (EMS).

10. Deconstruct the containment structure and place in designated Type A or LLRW waste container. Perform necessary decontamination of equipment, work, and staging areas.

11. Transfer all solid and liquid Type A or LLRW to the Navy's radioactive waste broker, EMS, for off-site disposal. Support waste characterization efforts.

12. Perform final radiological contamination and gamma count rate survey of the B-25 work areas to confirm the areas have not been contaminated from activities performed in support of this task.

1.3 Task-Specific Plan Organization

This TSP is organized into the following seven sections:

- Section 1.0, "Introduction"—Provides task scope and TSP organization.
- Section 2.0, "Site Conditions"—Provides site description, history, and previous investigations and removal actions.
- Section 3.0, "Task Logistics"—Describes the design, steps, controls, and schedule to be followed.
- Section 4.0, "Dewatering"—Describes the purpose and procedure of dewatering of the five B-25 waste containers prior to transfer to the temporary containment structure.
- Section 5.0, "B-25 Material Characterization"—Describes the process followed during B-25 material segregation characterization.
- Section 6.0, "B-25 Repackaging and Transfer"—Describes the process for repackaging the waste and transfer to EMS.
- Section 7.0, "References"—Includes a list of documents used to prepare this TSP.

2.0 Site Conditions

The following subsections provide the history of the site and previous remedial actions as related to the material stored in the B-25 waste containers.

2.1 Site Description and History

IR Site 12 occupies 93 acres of land on the northwest portion of NSTI and was used by the Navy for disposal and burning of solid waste in discrete burn pits between 1940 and 1960. To remediate chemicals in soil associated with chemical/fuel storage and disposal or burning of waste in solid waste disposal areas (SWDAs), a Non-time Critical Removal Action was implemented at Westside Drive SWDA, previously identified as SWDA A/B, in May 2006 to address chemical impacts. The SWDA Westside is an approximate 4.5-acre area on the west side of IR Site 12 abutting Perimeter Road (Figure 1). The SWDA Westside contained chemical contaminants (predominantly lead) which were co-located with radiological objects containing ^{226}Ra (deck markers, instrument gauges, metal debris, etc.) and ^{226}Ra contaminated soil.

SWDA Westside is located within IR Site 12 and has nine residential buildings within its boundary fence that have been unoccupied since base closure in 1997 and in phases of demolition and removal since 2014. The five B-25 containers to be managed under this TSP are stored below grade north of Building 1319, Unit D and the temporary containment structure will be constructed on the adjacent roadway within the radiologically-controlled work area, Westside Drive, as shown in Figure 2.

2.2 Previous Investigations and Remedial Actions

Several investigations and removal actions have been conducted at the IR Site 12, SWDA Westside area prior to this Non-Time Critical Removal Action and TSP. Excavation of an area of elevated ^{226}Ra contaminated soil and known debris in SWDA Westside, referred to as the 1321 Hot Spot area, took place June 7 through 9, 2011. The soil and debris were excavated using a bucket excavator and placed in five B-25 waste boxes supplied by EMS. Dose rates of the excavator bucket contents were measured using a Ludlum Model 78 “Stretch Scope” gamma detector with range from 0.1 milliroentgen per hour (mR/hr) up to 1,000 roentgen per hour as each bucket of soil and debris was removed from the 1321 Hot Spot. The dose rate measurements were used to estimate ^{226}Ra activity. All excavated soil and debris was placed into B-25 boxes.

As each B-25 waste box was filled, EMS technicians collected soil samples to support the waste profile. The dose rate measurements of each bucket placed in the five B-25s are provided in

Table 2 and the waste sample results are provided in Table 3. The estimated ^{226}Ra activity in the five B-25 boxes is provided as follows:

B-25 Box Number	^{226}Ra Activity (mCi)
2746	8.77
2749	11.23
2750	0.068
2830	41.92
2831	2.78

Notes:
mCi millicurie

The soil was water-saturated and contained many large pieces of metal debris, all of which were placed into the B-25 boxes. To the extent possible, excess water was allowed to drain from the bucket of soil into the excavation before it was placed into the box. A dewatering pipe was installed in each B-25 box prior to beginning the fieldwork using two different configurations. Three of the B-25 boxes have a submersible pump installed in the bottom of the dewatering pipe. The pump discharge hose and the pump power cord run up through the dewatering pipe to the top. Two B-25 boxes have only a dewatering pipe that was connected to an in-line transfer pump. The boxes were placed in the excavation area north of Building 1319 Unit D footprint, within the radiologically-controlled boundary, and have remained at that location. The B-25 boxes were dewatered once which resulted in three 55-gallon waste drums filled with liquid waste. The liquid waste and five B-25 waste containers remain staged in the radiologically-controlled area near the Building 1319 footprint. Shipping and disposal of these containers was delayed due to the discovery of munitions debris in SWDA Westside, as this presents the possibility that the munitions scrap was inadvertently placed in the containers with ^{226}Ra-contaminated soil and debris removed from the SWDA. This TSP addresses both the radiological and potential munitions scrap safety concerns.

3.0 Task Logistics

The following subsections describe the work sequence and safety requirements of B-25 dewatering, waste characterization, and repacking activities.

3.1 Work Sequence and Site Preparation

The following work tasks will be performed in the general sequence shown. Figure 3 is a diagram of the general workflow for movement of the B-25 waste containers for sorting and repackaging.

- Dewatering each of the five B-25 containers staged north of Building 1319.
- Sampling and transfer of wastewater to EMS, including the three drums from the 2011 dewatering activity. Transfer to EMS will take place following receipt of water analysis supporting waste characterization (See Section 4.0).
- Perform a radiological contamination and gamma survey of the roadway under and immediately adjacent to where the temporary containment tent/structure will be located to establish baseline levels of radioactivity.
- Construction of the temporary containment structure on the roadway (Westside Drive) just east of the Building 1319. Installation of the high-efficiency particulate air (HEPA) filtered negative ventilation unit, manometer, B-25 handling equipment, temporary shielding, containment tent/structure, gross decontamination station, and storage containers. The containment tent/structure will be surrounded by the placement of SEALAND containers on the north and east sides of the containment.
- Successful completion of mock-up testing of the temporary containment structure, B-25 handling equipment (forklift, hoist, rigging), sorting table, and storage containers. The mock-up testing will also evaluate airflow patterns by smoke (Draeger® Air Current Smoke tube) testing to ensure the installed negative ventilation provides proper worker protection, the installed filtration units function properly, and support placement of job-specific air sampling.
- Transfer of individual B-25s from the staging area to the containment tent for material evaluation and repackaging.
- Removal of waste material from the B-25s.
- Evaluation of waste material. UXO technician(s) will perform a visual inspection of waste debris and remove suspect munitions scrap and MPPEH. If MPPEH or munitions and explosives of concern (MEC) are identified, work will stop and the Project Manager, Site Construction Supervisor and Project Radiation Safety Officer will be immediately notified.

- Radiological Controls Technicians (RCTs) will perform radiological surveys, identify and remove LLRO, perform gamma spectroscopy measurements, package LLRO for transport to Building 570 Radioactive Materials Storage Area, and separate any other prohibited items (e.g., aerosol cans).
- Radiologically contaminated munitions scrap that has been released by the UXO technician will be photographed and staged to be disposed of as Type A waste into the staged B-25.
- Placement of soil and debris into a staged B-25. .
- All screened waste will be repackaged into the designated shipping container, and absorbent will be added as directed by EMS.
- Random soil samples will be collected from each of the B-25 waste containers to support EMS waste characterization as designated by EMS. The B-25 will be staged pending transfer to EMS.
- Following processing of the five B-25s and proper material segregation and disposition, the temporary containment tent will be surveyed then dismantled for disposal as LLRW. All supplemental job control waste, such as air filters, personal protective equipment, and spent decontamination supplies, will be packaged for transfer to EMS as LLRW.
- A radiological contamination and gamma survey of the roadway under and immediately adjacent to the temporary containment structure and adjacent work area will be performed to verify that the roadway has not been inadvertently contaminated by work activities addressed in this TSP.

3.2 Temporary Containment Structure

An overview of the temporary containment structure configuration, construction, and use is provided in the following subsections. Based on the calculated levels of radioactivity within each of the B-25 boxes and the process knowledge (June 2011) that the handling of the B-25 contents will not generate airborne or dispersible radioactivity, the use of the containment employs overly conservative engineering controls to mitigate potential risk concerns from members of the nearby residential housing units during the B-25 material segregation task.

3.2.1 Specifications, Construction and Use

The configuration of the temporary containment tent/structure (Figure 4) has been developed considering the following factors and required features to ensure successful completion of the task:

- Space requirements to accommodate the transfer, handling, and movement of a B-25 using a telescopic boom, all-terrain forklift for transfer, and gantry crane for movement of materials inside the containment. Space for a sorting table; receiving

(empty) B-25; RCT; and UXO technician, material staging, and decontamination station.

- Install padding on sharp objects.
- Locate instruments, temporary shielding, and ventilation system components to reduce interferences with workflow.
- Containment equipment and floor coverings, including plastic (Herculite®, or similar) cover to reduce decontamination efforts. Padding installed under containment floor to preclude punctures, rips, and tears.
- Containment placed on a firm base (plywood sheeting, or equivalent), and secured by tie-off and anchoring within staged SEALAND container "shelter" (or equivalent) to prevent damage by wind and weather.
- Transfer and pass through ports for LLRO, sample, ventilation, and equipment exchange.
- Installation of sufficient windows to provide adequate exterior observation and illumination of the work area.
- Containment material selection. Fire retardant Pacifitex® 1400/1800, or similar, will be used to construct (manufacture heat seal) the floors and walls. Fire retardant framing, e.g., galvanized piping, suitable to support structure in 50-mile per hour wind.
- Vestibule/anteroom(s) and step off pad for contamination control.
- Portable ventilation unit for the containment structure designed to provide negative ventilation with at least 10 air changes per hour.
- Localized ventilation to maintain potential contamination capture at the point of generation. The localized ventilation shall be positioned above the sorting table to minimize the potential of airborne contamination in the technicians breathing zone. Airflow pathway is designed to move across and away from the work area adjacent to the B-25. Verify airflow patterns by smoke test.
- Location of decontamination station, supplies, and equipment remote from containment structure.
- Portable power supply and backup power.

3.2.2 Air Handling

The HEPA filtration unit will be operated during work activities to maintain constant negative pressure within the containment structure. Non-HEPA particulate filtration will be installed on the ventilation inlet grills. The HEPA filtration unit for the temporary containment structure will have at least one stage of HEPA filters on the exhaust air stream. The HEPA filtered exhaust

stream will be monitored by an air-sampling unit to verify the absence of exhausted radioactivity.

Based on the containment structure size, a 1,000 cubic feet per minute HEPA filtration unit will provide greater than 12 air changes per hour. A portable HEPA filtration unit such as the Abatement Technologies HEPA-AIRE Model 19990L or functional equivalent will be used. This unit will also be used to provide an additional internal suction trunk for localized ventilation.

3.2.3 Containment Testing

Smoke testing will be performed within the temporary containment tent/structure using a Draeger® Air Current Smoke tube (or equivalent) to evaluate airflow patterns. This will ensure that the installed negative ventilation provides adequate worker protection, the installed filtration units function properly, and will support placement of job-specific air sampling. Smoke testing will be also be performed to evaluate the security of the access flap seals and to verify that airflow is moving from the areas designated "clean" to "dirty," across and away from the work area. It will also be performed at the sorting table to verify that the localized ventilation is adequately removing the potential for airborne contamination from the technicians' breathing zone.

3.2.4 Contamination Control

The containment structure will be positioned so that the B-25 loading location will be on the one end of the structure and the B-25 load out location on the other end. A vestibule is constructed on one side for personnel ingress/egress and for doffing personal protective equipment (PPE) during the egress process.

The containment structure will be inspected prior to initial use and prior to each workday's subsequent use. Table 4 shall be used for each inspection. Each inspection shall evaluate the containment structure for the following:

- Evidence of scrapes, rips, tears in the floor, wall, or ceiling of the containment.
- Adequacy of door and make-up air Velcro® seals.
- Security of installed components such as transfer sleeving, exhaust trunking, manometer, and make-up air filters.
- Security of tent structure.
- Satisfactory maintenance of any performed repairs.
- Satisfactory connection of support electrical and air handling equipment.

Only the telescopic boom of the all-terrain forklift used to transfer the B-25 boxes will enter the containment structure. At the entrance to the structure, the access flap will be opened to allow placement of the B-25 inside the structure. Once inside the structure, the access flap will be secured around the boom of the forklift. Upon closure of the access flap around the boom, the access flap seals will leak checked by the use of Draeger (or equivalent) air current smoke tubes to verify adequate security of the access flap seals. The manometer will be checked to ensure negative pressure within the containment. Prior to each breach of containment for the insertion or removal of the B-25 container and the insertion and removal of the receiving B-25, the areas within the containment tent, adjacent to the access point will be surveyed to confirm the absence of loose surface contamination.

3.2.5 Equipment Transfers

The B-25 containers with material to be screened, will be transferred from the staging area to the containment tent via a telescopic boom, all-terrain forklift. The B-25 container will then be secured to the fork carriage with straps prior to placement inside the containment structure. Once placed inside the containment structure, the forks will be tilted to allow removal of the waste from the B-25 onto the sorting table using hand tools. A gantry crane will be available inside the containment structure to aid in emptying the container contents. An all-terrain forklift will also be used to transfer the B-25 container used to receive the sorted and segregated waste material.

3.3 Safety Requirements

In addition to all health and safety requirements detailed in the *Work Plan for the Non-time Critical Removal Action for Solid Waste Disposal Areas Westside Drive, Bayside Drive, and North Point Drive – Radiological Characterization, Remediation, and Building Demolition, Installation Restoration Site 12 (Phase III), Naval Station Treasure Island, Former Naval Station Treasure Island, San Francisco, California* (CB&I, 2015b) and noted in Section 1.1, the following TSP-specific requirements will be followed.

3.3.1 Radiological Work Permit

Task-specific RWPs will be prepared by the Radiological Controls Supervisor to address prescribed PPE, dosimetry (external and internal), contamination control, and survey requirements. The RWPs will be peer-reviewed to ensure all As Low As Reasonably Achievable considerations have been incorporated and will be approved by the Project Radiation Safety Officer (PRSO). Individual and collective dose estimates will be included in the As Low As Reasonably Achievable review based on information obtained during mock-up testing of the equipment and containment structure. All work will be performed in a properly posted and controlled work area.

Engineering and administrative controls include the following:

- B-25 Dewatering
  - Dewatering performed in posted Restricted Area
  - Use of revetment during B-25 liquid transfers
  - Use of splash protection PPE
- B-25 Waste Removal
  - Tent Structure is posted as an Airborne Area and High Radiation Area during operations
  - Use of powered air purifying respirator with HEPA cartridges when inside tent containment during work and decontamination activities
  - Use of self-reading dosimetry, whole body and extremity dosimetry, and bioassay (pre-work, supplemental, post-work)
  - Use of full Tyvek/PPE including latex anti-contamination gloves
  - Continuous negative pressure ventilation in the tent structure during operations
  - Localized ventilation trunk positioned above the sorting table
  - Job-specific contamination and exposure rate surveys during operations
  - Job-specific air sampling, including general area and lapel sampling during operations
  - Frequent decontamination of equipment and diligent contamination control
  - Use of portable shielding and extension tools
  - B-25 waste handling will proceed from lowest estimated activity B-25 (Box #2750, 0.068 millicurie [mCi]) to highest (Box #2830, 41.92 mCi)

3.3.2 Air Monitoring

Per Treasure Island Work Instruction TIWI-19-01, "Radiological Work Permits," (Shaw Environmental & Infrastructure, Inc., 2012) air monitoring is required for working in Airborne Radioactivity Areas. Radiological air monitoring will be conducted in accordance with the requirements of the Sitewide RPP (CB&I, 2014a, as updated or revised) and applicable radiological work instructions.

A radiological air sampler will be placed at the HEPA filtered exhaust stream to verify the absence of exhausted radioactivity. General area radiological air samples will be collected inside the containment structure, and each worker will wear a lapel sampler when working inside containment as well.

Air monitoring for dust is not anticipated to be necessary due to the lack of active excavation and because the material in the boxes will retain enough residual moisture to prevent much soil from becoming airborne. Visual monitoring will be conducted to verify this assumption and air monitoring for dust will be implemented should the operation begin to produce visible dust.

3.3.3 Heat Stress Monitoring

CB&I Procedure No. HS400, "Heat Stress," can be found in Attachment 4 of the APP/SSHP (CB&I, 2014b). Due to the nature of the planned operations and the temperate local climate heat stress is unlikely; however physiological monitoring may become necessary for employees working inside containment and PPE. The cited procedure defines the parameters, which necessitate heat stress monitoring.

3.3.4 Munitions

The ESS (CB&I, 2015a) describes the procedure to be followed and safety precautions to be taken during work at SWDA Westside, because this area includes the footprint where material determined as safe (MDAS) items were found during previous excavation work in heavy debris areas. The five B-25 boxes contain materials previously excavated from within the SWDA Westside.

The B-25 boxes will be elevated using a fork lift or equivalent equipment to allow for the material to be moved onto a sorting table using rakes or equivalent. Once on the sorting table, qualified UXO technicians, and trained radiological technicians will segregate and disposition the material for appropriate waste disposal. Only trained essential personnel, including radiological technicians, will be present within the K24 distance as established in the ESS (i.e. 15 feet for the primary item) while soil and debris material is taken out of the B-25 and cleared.

Upon encounter of a potential MPPEH item, all operations will cease and all non-essential personnel will be relocated to a pre-determined area outside the exclusion zone. The SUXOS will confirm the identity of each item, determine whether it is safe to move, and classify the potential explosive hazard. Depending on the results of the identification, one of the following contingency actions will be implemented:

- If an item is unsafe to move, the UXO technicians will immediately cease all site operations and secure the area until explosives can be imported to the site to detonate the item in-place (within IR Site 12, exterior of containment). Engineering controls will be utilized during all intentional detonations. Sand bags will be the preferred engineering control for use on the site. Placement of the sand bags will only be performed by UXO technicians. Required sandbag thickness will be based on the munition with the greatest fragment distance for the site and required sandbag thickness information can be found on the Fragmentation Data Review Forms found in Appendix B of the ESS.

- If the anomaly is MPPEH or suspect MEC, and determined by the SUXOS to be safe to move, the disposition procedures in Section 6.4 of the ESS (CB&I, 2015a) will be followed.
- If the item is non-munitions related scrap, it will be stored on-site until it can be disposed of as scrap material with other non-munitions related debris.

4.0 B-25 Dewatering (Water Removal)

This section describes the protocol that will be implemented during the dewatering work as necessary.

4.1 Equipment and Staging

The B-25 waste containers currently staged below grade adjacent to Building 1319 will be dewatered using existing submersible pumps, external pumps, and gravity-assist draining as needed. Two different configurations exist for dewatering. Three of the B-25 boxes have a submersible pump installed in the bottom of a dewatering pipe. The pump is not removable. A discharge hose and the power cord are installed on the submersible pump and run up through the dewatering pipe to the top. Two B-25 boxes have only a dewatering pipe and will be dewatered using an in-line transfer pump if needed. All of the B-25 waste containers are stored with one end elevated to allow the water to drain toward the dewatering pipe. Water will be transferred from the B-25 waste containers to closed top polyethylene (poly) drums with bung holes, or equivalent.

4.2 Water Management

The following subsections describe the water removal process, sampling, and storage prior to transfer of the waste to EMS.

4.2.1 Transfer from B-25 to Waste Drum

Due to the configuration of the dewatering pipe installed in the B-25 boxes it may be necessary to conduct multiple dewatering cycles to assure the removal of free liquids.

The discharge hose from the dewatering pump will be placed into a poly drum and secured to prevent the hose from sliding out of the drum. The poly drums will be in secondary containment. The drums will be staged so that they will not tip from pump surges or the weight of the discharge hose. The pump will be started and the hose checked for leaks.

After the dewatering setup has been checked for leaks, dewatering will commence and continue until the collection drum is almost full (i.e., ¾ to ⅞ full). Dewatering will be secured by first turning off the pump and allowing the discharge hose to drain. The hose will be removed from the drum and the bung plug will be installed in the drum. The open end of the drain hose will be bagged until transferred to another drum or bagged and removed from service. The dewatering process for each B-25 will be repeated until the absence of free standing liquid is verified by the PRSO.

4.2.2 Sampling

Wastewater samples from dewatering drums, as requested by EMS, will be collected using a disposable bailer or Coliwasa, or equivalent.

4.2.2.1 Baler Sampling

Samples will be collected using the following procedure if a bailer is used:

1. Obtain an unused disposable bailer for each sample event.
2. Put on a new, clean, and chemical-resistant pair of disposable gloves.
3. Tie the bailer to a nylon cord or string.
4. Lower the bailer into the drum. Allow sufficient time for the bailer to fill with water.
5. Retrieve the bailer and fill appropriate bottle(s) for analyses being requested.
6. If the storage container is equipped with sampling taps, samples may be collected at these locations.
7. Cap the bottle(s) and wipe any moisture from the outside of the bottle(s).
8. Label, package, and prepare the samples for shipment to the laboratory. Transfer the samples to cold storage after collection.

4.2.2.2 Coliwasa Sampling

Samples will be collected using the following procedure if a Coliwasa is used:

1. Obtain an unused disposable Coliwasa for each sample event.
2. Put on a new, clean, and chemical-resistant pair of disposable gloves.
3. Draw the sample from the bung openings whenever possible.
4. Insert the open Coliwasa into the desired liquid phase to be sampled and obtain the sample.
5. Close the Coliwasa and remove the sample within the Coliwasa from the container being sampled.
6. Transfer the sample from the Coliwasa to the appropriate bottle(s) for analyses being requested Cap the bottle(s) and wipe any moisture from the outside of the bottle(s).
7. Label, package, and prepare the samples for shipment to the laboratory. Transfer the samples to cold storage after collection.

Wastewater generated from site activities will be disposed of off-site. Wastewater will be sampled once for characterization to determine disposal options.

Wastewater will be analyzed for the following parameters:

- Total petroleum hydrocarbons as diesel and total petroleum hydrocarbons as motor oil by U.S. Environmental Protection Agency (EPA) Method 8015
- California Code of Regulations Title 22 Metals by EPA Methods 6010/7000
- Volatile organic compounds by EPA Methods 5035/8260 (only if requested by disposal facility)
- Semi-volatile organic compounds by EPA Method 8270
- Polychlorinated biphenyls by EPA Method 8082
- Gamma Spectroscopy by EPA Method 901.1

4.2.3 Storage

The wastewater drums will be staged in secondary containment within the radiologically-controlled boundary, and will remain at that location pending final waste characterization and transfer to EMS.

5.0 B-25 Material Characterization

This section describes the process followed during B-25 material segregation characterization.

5.1 B-25 Transfer and Handling

The B-25 waste containers will be transferred to the temporary containment structure using a telescopic boom, all-terrain forklift. The B-25 container will be secured to the fork carriage with straps or by other means prior to placement inside the containment structure. At the entrance to the containment tent/structure, the access flap will be opened to allow placement of the B-25 inside the structure. Once inside the structure, the access flap will be secured around the boom of the forklift. Smoke testing will be performed to verify the adequacy of the Velcro® seal around the forklift boom. Once placed inside the containment structure, the forks will be tilted to allow removal of the waste from the B-25 onto the sorting table using hand tools. The empty B-25 container will be staged on the opposite end of the sorting table to receive sorted waste material, waste material that excludes identified MEC/MPPEH and/or LLRO. This empty B-25 will be staged prior to the insertion of the B-25 containing waste material into the containment. A gantry crane will be available inside the containment structure to aid in maneuvering and emptying the containers. The tires and main body of the forklift maintaining the positioning of the B-25 containing material to be sorted will remain outside the containment.

5.2 Waste Removal and Segregation

As each full B-25 is positioned next to the sorting table, waste will be removed using long-handled tools and spread on the table to allow visual inspection. The conceptual protocol of the waste sorting process within the containment structure is shown in Figure 5. After the material on the sorting table has been inspected and sorted (i.e., LLRO and potential munitions removed), the remaining soil and debris will be placed in an empty B-25 staged at the opposite side of the table. This process will be repeated until the material receiving B-25 is full or the initial B-25 waste container is empty. The empty B-25 will be then be surveyed for repositioning as the receptacle for the next cycle of B-25 waste processing or for waste disposition. Radiological Affairs Support Office concurrence will be obtained for LLRW disposition or staging of empty B-25 containers at the completion of the waste processing task. Packaged LLRW waste may be loaded (dumping prohibited) into a roll-off container provided by EMS and staged adjacent to the containment structure work area.

5.3 Radioactive Object Management (LLRO)

LLRO will be identified through visual inspection and exposure rate measurement as the waste material is removed from the B-25 and placed on the table. This investigation will be conducted concurrent with the UXO technician evaluation of the waste. A qualified RCT will perform

visual inspection and exposure rate measurements to locate LLRO, if present. All debris, including clumps of soil, with an exposure rate of 0.5 mR/hr or greater, on contact, will be removed and managed as LLRO or as LSA/Type A waste that shall be loaded into the staged B-25.

If general exposure rates preclude effective evaluation of the material, local shielding, such as a shielded corner of the sorting table, will be used. Upon identification of LLRO, LLROs will be recovered using long-handled tools, cleaned of excess soil, as necessary, and placed in a plastic bag and then in a secondary shielded container for additional characterization prior to transfer to Building 570. Individual items may be transferred from the containment tent through a sleeved port or pass through into a clean bag under the control of the supporting RCT and or Radiological Controls Supervisor. Larger quantities of accumulated objects may be removed from the containment following containment down posting supporting periodic personnel ingress/egress. The characteristics, exposure rates, and gamma spectroscopy of each LLRO will be recorded prior to transport on public roads. Once properly packaged, the LLRO will be transported per applicable U.S. Department of Transportation regulations and Work Instruction to the designated Radioactive Materials Storage Area at the Building 570 site. The Navy and Radiological Affairs Support Office will be informed of LLRO encountered during B-25 material segregation as soon as practical. Following removal or temporary storage of the accessible LLRO, work will resume following PRSO approval.

5.4 Munitions Management

Although the risk of encountering MPPEH during B-25 waste material evaluation is low, UXO screening of the B-25 container material will be conducted by a qualified UXO technician to ensure that MEC/MPPEH are appropriately identified if encountered. The B-25 waste material will be screened in accordance with the ESS for this project (CB&I, 2015a). If a MEC/MPPEH item is verified, work in the area will cease and the Navy (Contracting Officer Representative, Navy Remedial Project Manager, Navy Caretaker Site Office, and Resident Officer In Charge of Construction) will be notified. The item will be inspected by the SUXOS to determine if the item is MEC/MPPEH, or MDAS. A second qualified UXO technician will verify the determination. If the item is a MDAS, it will be mechanically removed from the work area, decontaminated, logged, and stored in a locked container in a locked storage box at the designated on-site collection point until the item can be processed and demilitarized as described in the ESS (CB&I, 2015a). If the item cannot be decontaminated, it will be disposed as Type A or LLRW. In the unlikely event that an item is determined to be MEC, it will be addressed in accordance with the provisions in the ESS (Section 6.4; CB&I, 2015a).

6.0 Waste Repacking and Transfer

This section describes the protocol that will be implemented during repackaging and transfer of LLRW.

6.1 Waste Transfer Requirements

Following removal of LLRO and discrete soil/material contamination with exposure rates equal to or above 0.5 mR/hr (contact reading), and MPPEH, all debris and soil will be transferred to a staged B-25 staged at the end of the sorting table. Other non-discrete material (soils) may exhibit exposure rates greater than 0.5 mR/hr and may be loaded into the staged B-25 container as Type A waste. Once filled to approximately 75 percent capacity, the B-25 will be verified free of external loose surface contamination and the opening (top) will be covered prior to removal from the containment structure using a forklift. A LLRW roll-off staged outside the posted Contamination Area in an adjacent Restricted Area will be available to receive material from the sorting process that is not suitable for loading into the staged B-25. PRSO authorization is required to utilize the staged LLRW roll-off for the disposition of sorted materials. The area beneath the roll-off will be covered with poly (10-millimeter thickness minimum) to provide an additional ground surface contamination containment barrier. Smoke testing will be performed to verify the adequacy of the Velcro® seal of the structure door at each closure.

6.2 Waste Characterization

Following removal of LLRO and repackaging of the soil and debris, as directed by EMS, soil samples may be collected from the waste containers to support waste characterization prior to transfer of the waste containers to EMS.

7.0 References

CB&I Federal Services LLC (CB&I), 2014a, *Sitewide Radiation Protection Plan, Former Naval Station Treasure Island, San Francisco, California*, February.

CB&I, 2014b, *Final Accident Prevention Plan, Non-Time Critical Removal Action for Solid Waste Disposal Areas (SWDAs) A/B, 1207/1209, and 1231/1233 – Radiological Characterization, Remediation, Final Status Survey and Building Demolition, IR Site 12 (Phase III), Naval Station Treasure Island, Former Naval Station Treasure Island, San Francisco, California*, March.

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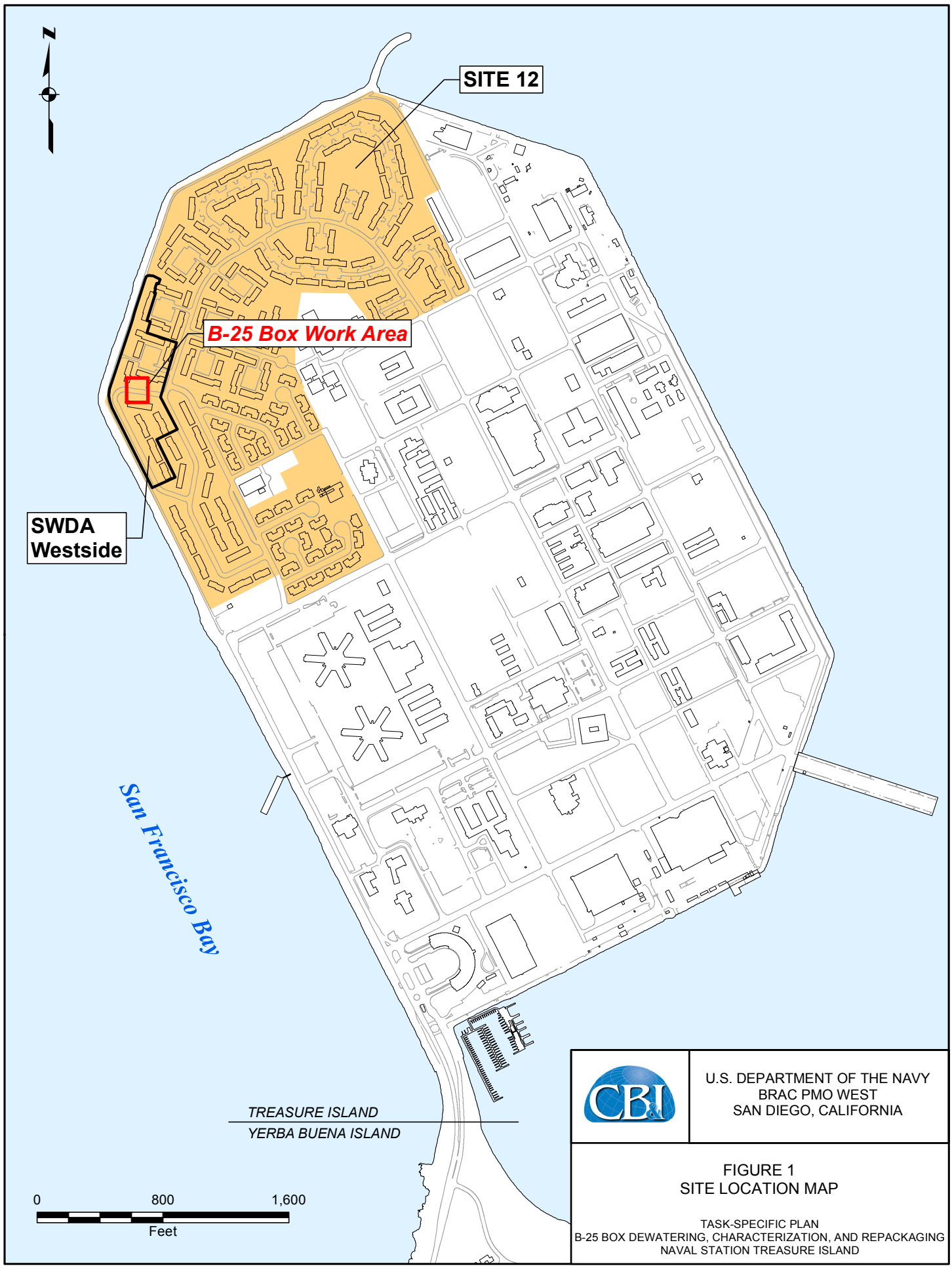
Naval Facilities Engineering Command, 2012, *Unified Facilities Guide Specifications Section 01 35 26 Governmental Safety Requirements*, February.

Shaw Environmental & Infrastructure, Inc., 2012, TIWI-19-01, *Treasure Island Work Instruction*, "Radiological Work Permits," January.

U.S. Army Corps of Engineers, 2008, *Safety and Health Requirements Manual, EM 385-1-1*.

Figures



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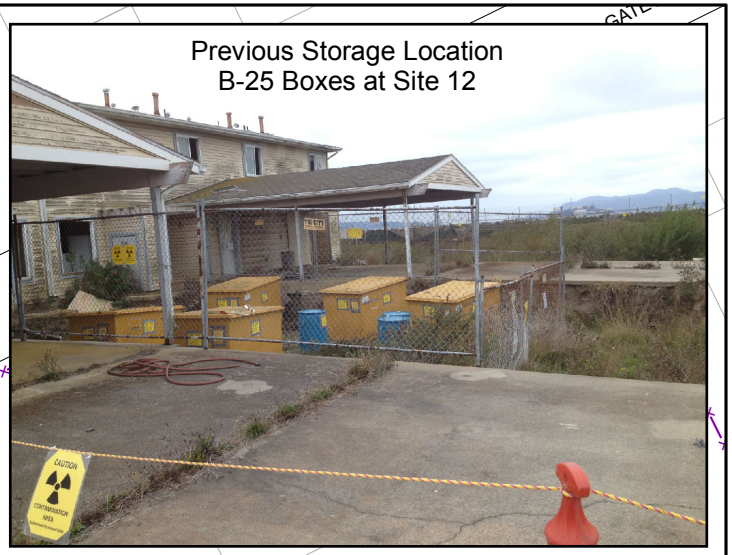
BRAC PMO WEST
SAN DIEGO, CALIFORNIA

FIGURE 1
SITE LOCATION MAP

TASK-SPECIFIC PLAN
B-25 BOX DEWATERING, CHARACTERIZATION, AND REPACKAGING
NAVAL STATION TREASURE ISLAND

S:\GIS\Treasure_Island\GIS_Documents\Project_Maps\CTO4_Site12\TI_CTO4_019_Loc.mxd 4/15/2015



GATE

LESTER CT

1119

1123

1121

1319

1321

WESTSIDE DRIVE

Stacked Connex Boxes (2 high)

Current Storage Location

Containment Tent

Previous Storage Location

Legend

Excavation Area

Restricted Area Fenceline

Note: Locations of site support features and engineering controls are subject to change based on site conditions and professional judgment.

0 60 120

Feet

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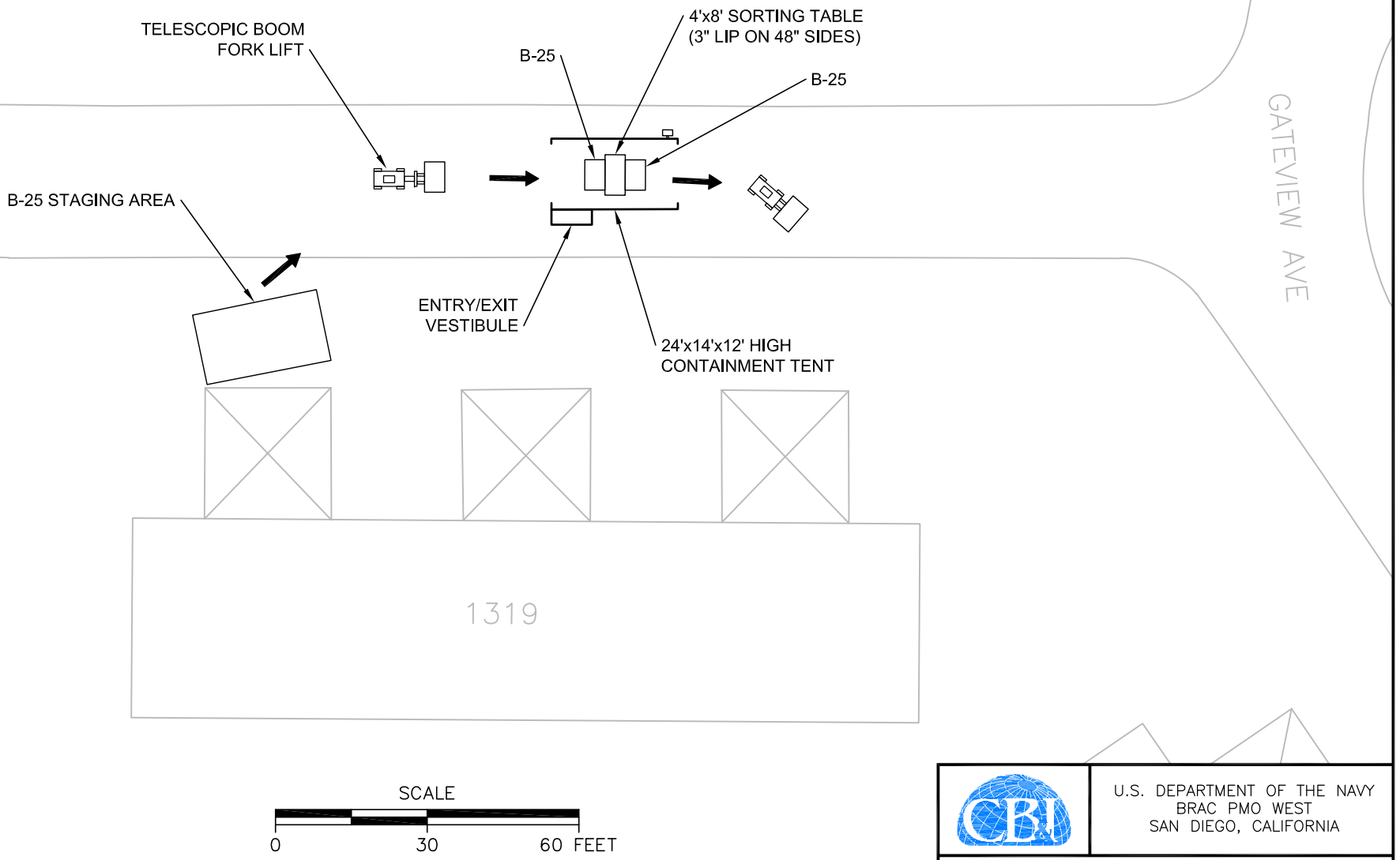
SAN DIEGO, CALIFORNIA

FIGURE 2
B-25 STAGING AND WORK AREA LOCATION MAP

TASK-SPECIFIC PLAN
B-25 BOX DEWATERING, CHARACTERIZATION, AND REPACKAGING
NAVAL STATION TREASURE ISLAND

C:\GIS\Treasure_Island\GIS_Documents\Project_Maps\CTO4_Site12\TI_CTO4_020_B25_site.mxd 7/8/2015

IMAGE	X-REF	OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
---	---	Concord	*SCHAEFFER*	*6-11-15*	*HACKETT*	*6-11-15*			500060-A18



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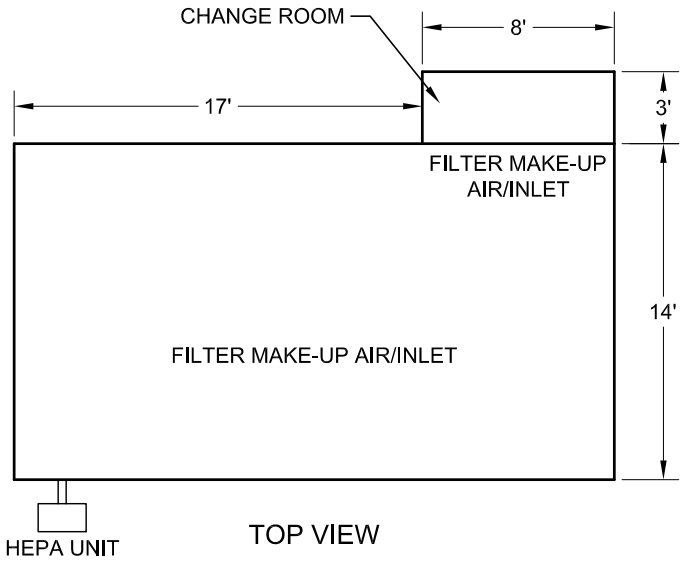
SAN DIEGO, CALIFORNIA

FIGURE 3

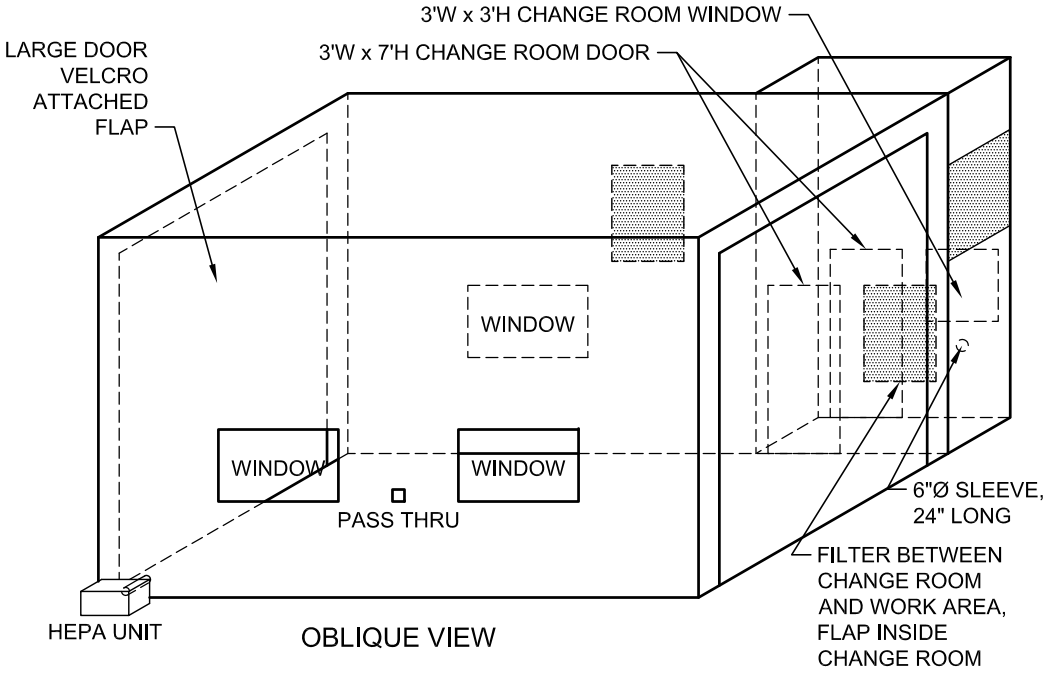
B-25 WORK FLOW DIAGRAM

TASK-SPECIFIC PLAN
B-25 BOX DEWATERING, CHARACTERIZATION, AND REPACKAGING
NAVAL STATION TREASURE ISLAND

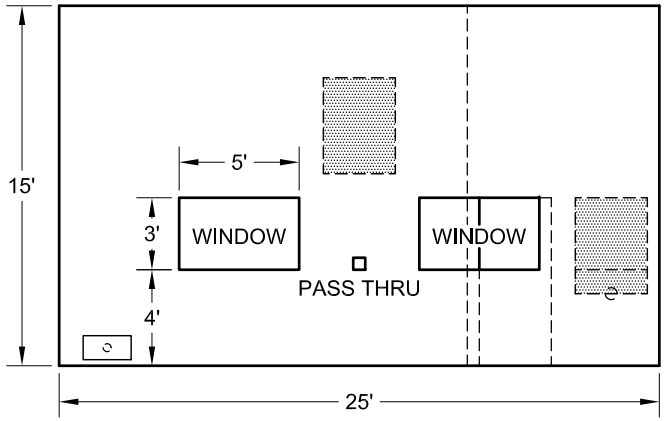
IMAGE	X-REF	OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
---	---	Concord	*SCHAEFFER*	*4-15-15*	*HACKETT*	*4-15-15*			500060-A17



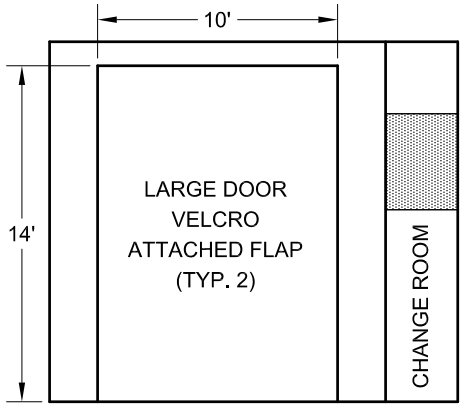
TOP VIEW



OBLIQUE VIEW



FRONT VIEW



RIGHT SIDE VIEW

SCALE

0 8 16 FEET

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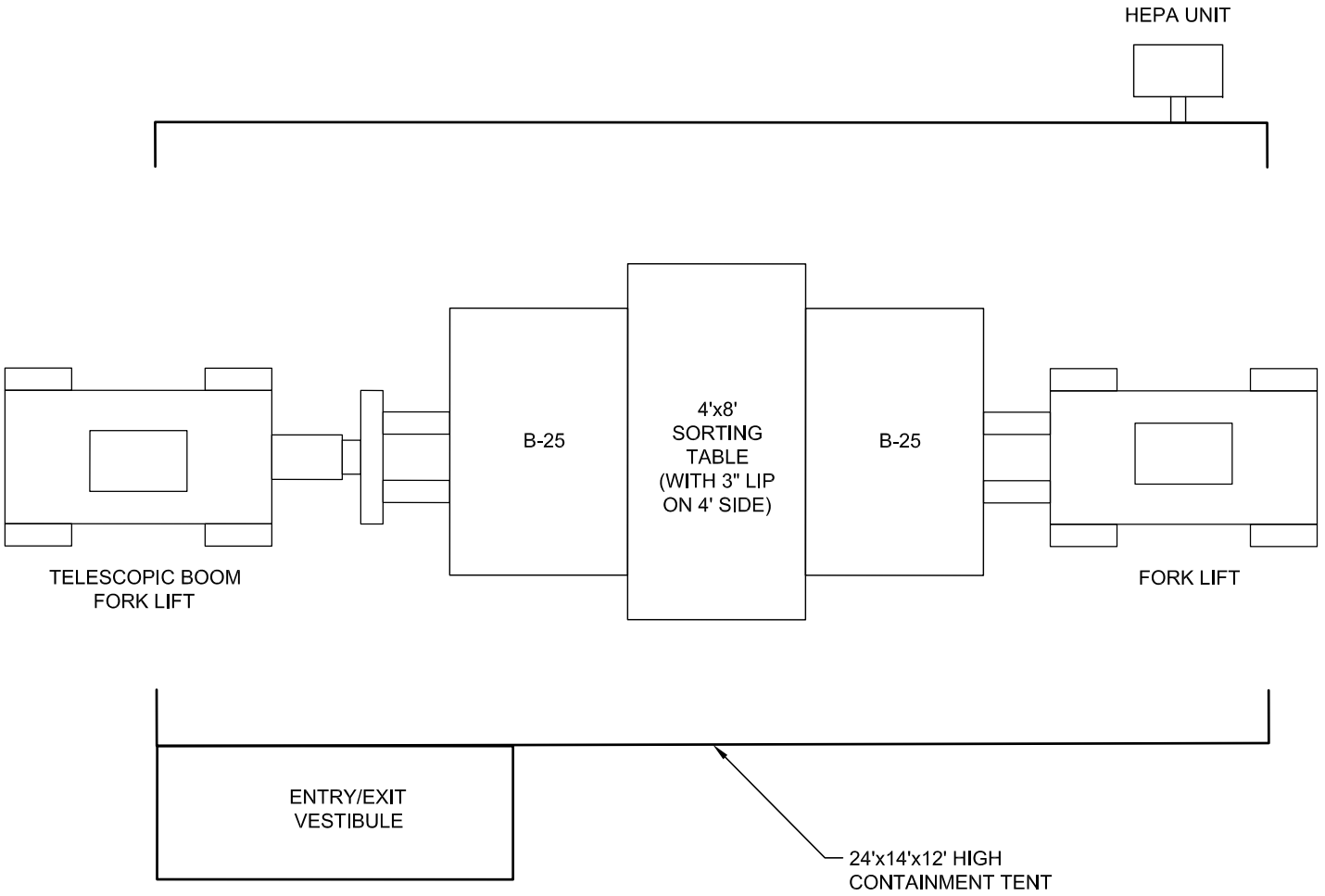
FIGURE 4

CONTAINMENT TENT LAYOUT

TASK-SPECIFIC PLAN
B-25 BOX DEWATERING, CHARACTERIZATION, AND REPACKAGING
NAVAL STATION TREASURE ISLAND

IMAGE	X-REF	OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
---	---	Concord	*SCHAEFFER*	*6-11-15*	*HACKETT*	*6-11-15*			500060-A19



SCALE

0 4 8 FEET

U.S. DEPARTMENT OF THE NAVY
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SAN DIEGO, CALIFORNIA

FIGURE 5

WASTE SORTING PROCESS

TASK-SPECIFIC PLAN
B-25 BOX DEWATERING, CHARACTERIZATION, AND REPACKAGING
NAVAL STATION TREASURE ISLAND

Tables

Table 1
Project Notification Requirements

Notification Event	Navy COR and RPM	RASO	ROICC	CSO	CDPH
Mobilization	✓	✓	✓	✓	
License implementation	✓				✓
Significant event	✓	✓	✓	✓	
Schedule change	✓	✓	✓	✓	
Demobilization	✓	✓	✓	✓	

Notes:

CDPH	*California Department of Public Health*
COR	*Contracting Officer Representative*
CSO	*Former NSTI Caretaker Site Office (Navy)*
RPM	*Remedial Project Manager*
RASO	*Radiological Affairs Support Office*
ROICC	*Resident Officer in Charge of Construction (Navy)*

Table 2
B-25 Estimated Activity

Building 1321 Hot Spot Excavation
Exposure Rates Used to Estimate Waste Container Activities[a]

Date	Box Number	Bucket (mR/hr)	Activity (mCi)
6/7/2011	2830	0.2	0.0025
6/7/2011	2830	3.7	0.65
6/7/2011	2830	2.7	0.568
6/7/2011	2830	2.8	0.578
6/7/2011	2830	1.7	0.033
6/7/2011	2830	5.7	0.522
6/7/2011	2830	2.8	0.617
6/7/2011	2830	3.4	0.15
6/7/2011	2830	4.5	0.2
6/7/2011	2830	6.3	1.27
6/7/2011	2830	2.3	0.1
6/7/2011	2830	6	1.32
6/7/2011	2830	69.9	3.3
6/7/2011	2830	2.7	0.6
6/7/2011	2830	1.5	0.07
6/7/2011	2830	1.7	0.38
6/7/2011	2830	1.3	0.06
6/7/2011	2830	1.6	0.07
6/7/2011	2830	1.3	0.19
6/7/2011	2830	28.8	1.35
6/7/2011	2830	1.2	0.05
6/7/2011	2830	0.14	3.2
6/7/2011	2830	8.5	1.2
6/7/2011	2830	1	0.04
6/7/2011	2830	1.7	0.29
6/7/2011	2830	44.8	0.36
6/7/2011	2830	1.2	0.05

Table 2 (continued)
B-25 Estimated Activity

Building 1321 Hot Spot Excavation
Exposure Rates Used to Estimate Waste Container Activities[a]

6/7/2011	2830	0.5	0.022
6/7/2011	2830	0.8	0.03
6/7/2011	2830	8.7	0.377
6/7/2011	2830	0.5	0.02
6/7/2011	2830	1.8	1.2
6/7/2011	2830	0.5	0.02
6/7/2011	2830	1.3	0.26
6/7/2011	2830	3.7	0.31
6/7/2011	2830	12.8	1.3
6/7/2011	2830	1.3	0.26
6/7/2011	2830	7.6	0.84
6/7/2011	2830	0.8	0.03
6/7/2011	2830	4.2	0.18
6/7/2011	2830	1	0.04
6/7/2011	2830	0.6	0.03
6/7/2011	2830	0.5	0.02
6/7/2011	2830	6.8	0.3
6/7/2011	2830	393	17.1
6/7/2011	2830	0.4	0.08
6/7/2011	2830	8.7	0.38
6/7/2011	2830	4.4	0.19
6/7/2011	2830	31.9	1.39
6/7/2011	2830	0.7	0.1
6/7/2011	2830	4.7	0.22
TOTAL	2830		41.9195
6/8/2011	2749	0.8	0.3
6/8/2011	2749	0.1	0.004
6/8/2011	2749	0.1	0.004
6/8/2011	2749	0.1	0.004

Table 2 (continued)
B-25 Estimated Activity

Building 1321 Hot Spot Excavation
Exposure Rates Used to Estimate Waste Container Activities[a]

6/8/2011	2749	0.1	0.004
6/8/2011	2749	0.1	0.004
6/8/2011	2749	0.1	0.004
6/8/2011	2749	0.1	0.004
6/8/2011	2749	0.1	0.004
6/8/2011	2749	0.2	0.009
6/8/2011	2749	0.1	0.004
6/8/2011	2749	0.1	0.004
6/8/2011	2749	3.2	0.7
6/8/2011	2749	27.3	2.06
6/8/2011	2749	5.9	0.814
6/8/2011	2749	2.2	0.1
6/8/2011	2749	0.1	0.004
6/8/2011	2749	0.2	0.01
6/8/2011	2749	0.1	0.008
6/8/2011	2749	38.4	0.79
6/8/2011	2749	0.5	0.04
6/8/2011	2749	25.1	5.07
6/8/2011	2749	0.2	0.008
6/8/2011	2749	0.3	0.02
6/8/2011	2749	1.2	0.388
6/8/2011	2749	0.3	0.02
6/8/2011	2749	0.7	0.06
6/8/2011	2749	106.8	0.57
6/8/2011	2749	0.3	0.026
6/8/2011	2749	0.5	0.18
6/8/2011	2749	0.2	0.009
TOTAL	2749		11.226
6/8/2011	2831	0.4	0.04

Table 2 (continued)
B-25 Estimated Activity

Building 1321 Hot Spot Excavation
Exposure Rates Used to Estimate Waste Container Activities[a]

6/8/2011	2831	20.8	0.83
6/8/2011	2831	0.4	0.04
6/8/2011	2831	48.3	0.5
6/8/2011	2831	0.1	0.004
6/8/2011	2831	0.2	0.02
6/8/2011	2831	0.1	0.004
6/8/2011	2831	0.3	0.026
6/8/2011	2831	0.2	0.009
6/8/2011	2831	2.8	0.13
6/8/2011	2831	2.4	0.11
6/8/2011	2831	1.6	0.06
6/8/2011	2831	2.2	0.305
6/8/2011	2831	2.9	0.13
6/8/2011	2831	15.6	0.073
6/8/2011	2831	0.2	NR
6/9/2011	2831	0.4	0.48
6/9/2011	2831	0.1	0.008
6/9/2011	2831	0.1	0.008
TOTAL	2831		2.777
6/9/2011	2746	0.1	0.004
6/9/2011	2746	0.2	0.018
6/9/2011	2746	0.8	0.1
6/9/2011	2746	0.1	0.004
6/9/2011	2746	0.2	0.018
6/9/2011	2746	0.1	0.004
6/9/2011	2746	0.1	0.004
6/9/2011	2746	1.1	0.105
6/9/2011	2746	0.1	0.004
6/9/2011	2746	1.2	0.104

Table 2 (continued)
B-25 Estimated Activity

Building 1321 Hot Spot Excavation
Exposure Rates Used to Estimate Waste Container Activities[a]

6/9/2011	2746	0.1	0.004
6/9/2011	2746	18.8	0.54
6/9/2011	2746	1.3	0.198
6/9/2011	2746	5.6	0.263
6/9/2011	2746	0.1	0.004
6/9/2011	2746	1.4	0.2
6/9/2011	2746	0.2	0.018
6/9/2011	2746	0.2	0.018
6/9/2011	2746	300	7.06
6/9/2011	2746	1	0.1
TOTAL	2746		8.77
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.2	0.008
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
6/9/2011	2750	0.1	0.004
TOTAL	2750		0.068
Total Estimated Activity			64.7605

Table 2 (continued)
B-25 Estimated Activity

Notes:

[a]The activity is an estimate based on a high and low dose rate collected above the surface of the excavator bucket

mCi	*millicurie*
mR/hr	*milliroentgen per hour*
NR	*Not Recorded*

Table 3
B-25 Waste Characterization Results

B-25 Box Number	Sample Number	^{226}Ra concentration (pCi/g)	Estimated ^{226}Ra activity (mCi)[a]
2746	TI-Bin 793	11.9 ± 0.83	8.77
2749	TI-Bin 791	37.7 ± 2.4	11.23
2750	TI-Bin 794	24.2 ± 1.6	0.068
2830	TI-Bin 789	127 ± 7.6	41.92
2830 duplicate	TI-Bin 790	136 ± 8.1	NA
2831	TI-Bin 792	59.4 ± 3.6	2.78

Notes:

[a] Activity estimates based on dose rate measurements

^{226}Ra	*radium-226*
mCi	*millicurie*
pCi/g	*picocurie per gram*

Table 4
Containment Inspection

Action	Remarks	Performer Name/Signature	Date/Time
RCT Inspect containment for scrapes, rips, or tears in the floor, wall and ceiling materials.			
RCT Inspect all door and filter cover Velcro® seals.			
RCT Inspect security of make-up air filters to containment wall.			
RCT Inspect security of installed transfer sleeving and exhaust trunks.			
RCT Inspect connections of electrical and air handling equipment.			
RCT Inspect security of tent structure to roadway and SEALAND barrier.			
RCT Verify and record negative air (HEPA) unit DOP test date:_____			
Equipment Operator Inspect power supply.			
RCT Start negative air (HEPA unit), run for 10 minutes, perform smoke check of all tent seams and seal points.			
Equipment Operator Inspect fork trucks(s).			
RCT Verify all support materials and instruments are staged and ready for use.			
PRSO/RCS Approval to perform work within the containment.			

Notes:

DOP	*dispersed oil particulate*
HEPA	*high-efficiency particulate air*
PRSO	*Project Radiation Safety Officer*
RCS	*Radiological Controls Supervisor*
RCT	*Radiological Controls Technician*