

**STANDARD ASBESTOS SAMPLING AND WASTE  
CLASSIFICATION PLAN  
FOR REMOVING  
WWII WOODEN BUILDINGS  
ON THE  
FORMER FORT ORD**

**Project Location**

Monterey County,  
California State University Monterey Bay,  
City of Marina and  
Seaside Lands  
Former Fort Ord

To Be filled in by Project Manager

**Prepared For:**

To Determine Asbestos Containing Materials Before Building Removal Projects

**Prepared By:**

To Be filled in by Project Manager

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## **APPENDICES**

### **Appendix A Site and Vicinity Map**

### **Appendix B Information on Industrial Hygienist/Asbestos Consulting Firm**

### **Appendix C Photographs of Each Building Type**

### **Appendix D List of Buildings to be Removed**

The standard format for this Sampling and Waste Classification has been reviewed and approved for use on the WWII Era Wooden buildings by the following agencies:

Monterey Bay Unified Air Pollution Control District  
Fort Ord Reuse Authority

#### **NOTE:**

- Although the standard format has been approved by the agencies mentioned above, additional information may be required during the sampling and waste classification procedures that are not specifically addressed in this sampling plan. The services of a California Department of Safety and Health (DOSH) Certified Asbestos Consultant must be used in the sampling and preparation of the final plan.

# **WWII Wooden Buildings Asbestos Sampling and Waste Classification Plan Former Fort Ord**

## **I. INTRODUCTION**

This Asbestos Sampling and Waste Classification Plan (hereafter “Sampling Plan”) is for worker safety, protection of the public health, and regulatory requirements and not exclusively for waste classification, therefore 100% of all structures in the project must be thoroughly sampled. This sampling protocol has been approved and may be used as is or an alternate protocol may be developed and utilized if deemed equivalent. Existing sampling with positive findings may be used to reduce sampling costs. Previous negative results can not be used as they have been found to be historically unreliable.

The Sampling Plan establishes the type and amount of sampling, analyses and reporting necessary to assess the presence of asbestos-containing materials (ACM) and to classify the waste to be generated from standing buildings scheduled for demolition or removal at the former Fort Ord. Implementation of the Sampling Plan is necessary in order for the Fort Ord Reuse Authority, its contractors and regulatory personnel to correctly develop management decisions during and after demolition, related to: health and environmental protection; demolition debris handling; and, segregating debris for proper disposal and/or reuse.

A site map is attached in Appendix A. Information on the Industrial Hygienist/Asbestos Inspection Firm can be found in Appendix B.

## **II. SITE HISTORY AND PROJECT DESCRIPTION**

For nearly all of the 20th century, the former Fort Ord played a significant role in the history of our country as well as that of the Monterey Bay area. From its beginnings in 1917 until announcement of its impending closure in 1991, this former U.S. Army base served as a training facility and temporary home to hundreds of thousands of soldiers.

The Fort Ord Reuse Authority (FORA) was formed in 1994 under special state legislation (SB 899), to prepare, adopt, finance, and implement a plan for gradual redevelopment, reuse, and economic recovery of the 28,000 acre (45 square mile) area formerly known as Fort Ord. Based on a philosophy of providing economic, educational, and environmental opportunities in the reuse process, in 1997 FORA adopted a comprehensive Base Reuse Plan. The Base Reuse Plan governs how land at the former military base will be used, addresses the implementation of transportation systems and conservation of land and water, and encourages a variety of new business opportunities.

FORA has a base wide responsibility for 1,200 to 1,500 structures (hereafter “Buildings”) that are impeding the sustainable reuse of the former Fort Ord. FORA implemented a Building Removal Program to address the demolition, deconstruction, and/or relocation of the Buildings. As part of the Building Removal Program, FORA conducted a Pilot Deconstruction Project which was a cooperative effort involving local businesses, labor and educational institutions, with the objective of identifying ways to save on building removal

costs.

### **Usefulness and Limitations of the Existing US Army Asbestos Surveys**

Earlier asbestos surveys/sampling plans, by the US Army Corps of Engineers were generated with the objective of identifying potential employee exposure while utilizing intact buildings. These surveys were non-destructive in nature and focused on finding asbestos that needed to be managed in order to prevent immediate exposure. Consequently, the existing US Army Asbestos Surveys have limited application when preparing for building removal. Typically these surveys are most valuable by providing a schematic floor plan of each building, and the positive test results can identify some of the asbestos containing materials present in the building.

**CAUTION!** All materials previously tested by the US Army that gave a negative result must be retested to confirm that they are indeed negative. The existing US Army Asbestos Surveys do not provide an accurate assessment of:

1. The total asbestos in the building.
2. All the types of asbestos containing materials in the building.
3. Asbestos below the surface.
4. The current condition of the asbestos containing products.

Consequently, this Sampling Plan proposes identifying all ACM's present in each building scheduled for demolition or removal and to classify the waste that will be generated from the removal of the ACM.

## **III SCOPE**

The overall scope of this Sampling Plan is to accurately identify the presence of all ACM present in each building scheduled for demolition or removal. In addition, to classify the waste stream that will be generated from the removal of ACM's. This will provide a significant amount of information that will ensure that all appropriate regulatory agency regulations have been complied with. The critical path for proper demolition or removal of the subject buildings is to conduct a comprehensive asbestos-containing materials survey. Next, all ACM's must be removed from the building prior to demolition or deconstruction. Lastly, the abated ACM's must be appropriately disposed. The Sampling Plan's scope is described as follows:

### **Asbestos-Containing Materials Inspection**

Before demolition or building removal can occur, all ACM's must be abated. This will require that a comprehensive asbestos-containing materials survey must be performed which will identify the ACM's. In general, the ACM survey must be conducted in accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAPS), the EPA's, Asbestos Hazard Emergency Response Act (AHERA) and the Occupational Safety and

Health Administration (OSHA). A more detailed ACM Inspection protocol is included in Section V. of this Plan.

### **Waste Classification**

Once the ACM's have been abated from the subject buildings, the waste must be packaged and disposed of properly. In general, "friable" ACM's and "non-friable" ACM's must be segregated and disposed of separately. In addition, the use of chemical strippers to assist in the removal of ACM mastics must also be classified separately. The term "friable" is used throughout this document and is defined as "that can be crumbled, pulverized or reduced to powder by hand pressure when dry". Also, NESHAP's requires actions based on its classification of waste that includes, Regulated Asbestos Containing Material (RACM), Category I and Category II non-friable's. The following describes each:

RACM – (a) friable asbestos material, (b) Category I nonfriable ACM that has become friable (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

Category I nonfriable asbestos-containing – asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos.

Category II nonfriable asbestos-containing – any material excluding Category I nonfriable ACM, containing more than 1 percent asbestos.

Section VI. of this Plan further describes the waste classification procedure.

### **Building Type**

All the buildings associated with a specific demolition project/contract are referred to as a "Population." The Population of buildings is to be subdivided into the following five (5) building types:

<b>Type #</b>	<b>Description</b>	<b>Number of Buildings</b>
<b>1 (A&amp;B)</b>	Two-story barracks	266
<b>2</b>	One-story clinics/mess halls	101
<b>3</b>	One-story dayrooms	163
<b>4</b>	Theater	1
<b>5 (A, B, etc)</b>	Other, (describe as needed)	42

All references to a building (e.g., in a lists, correspondence, or contract document) must include the building "Type." Appendix C contains photographs of each "Type" of building to be demolished during this specific demolition project.

### **Asbestos Removal Plan**

The contractor must describe in detail its proposed plan for removing the identified ACM's. There should be a contingency for dealing with suspect ACM's in previously accessible areas uncovered during demolition. The contractor's plan must satisfy all applicable local, state and federal regulations. In particular, the contractor's plan must describe in detail the administrative controls, engineering controls and personal protective equipment that will be utilized.

### **Air Monitoring**

Area air monitoring is typically only required when removing asbestos-containing materials in schools or if exterior ACM's are being removed. However, the contractor must verify that the engineering controls they have elected to use do not require area sampling as there may be some OSHA and/or EPA requirements. Exposure monitoring is required by OSHA in order to evaluate worker safety requirements and monitor the effectiveness of procedural and engineering controls.

## **IV SITE SAFETY PROCEDURES.**

The contractor must prepare a Site Safety and Health Plan (SSHP) to ensure safe working conditions for personnel performing the procedures outlined in this protocol. The SSHP must summarize the potential hazards and safety procedures during collection at the subject buildings.

## **V. ASBESTOS-CONTAINING MATERIALS INSPECTION PLAN**

The purpose of the ACM inspection is to provide the contractor with a detailed listing of all

the ACM's present in the building so that all ACM's can be properly removed prior to demolition or building removal. Therefore, a thorough inspection must be conducted in order to prevent unnecessary asbestos releases that may be caused if the building is demolished or removed with ACM still present.

The procedures that should be employed for the asbestos inspection are as follows for each independent structure:

1. **Review existing survey information**

While the existing information may not determine all of the ACM's present in a building, it may certainly be useful in identifying materials which were previously tested positive for asbestos. This information can be used to classify a material as an ACM, however, based on previous projects, the MBUAPCD will not allow materials that were previously tested as "non-ACM" to be classified as such without additional testing to support the original findings. It is recommended that the Contractor obtain the original surveys conducted by the US Army Corps of Engineers (ACE) and use the included drawings to delineate which materials were previously tested, which materials must be tested/re-tested and the findings of the testing.

2. **Conduct Supplemental Testing**

Determine which homogenous materials will be classified as "asbestos-containing" based on the previous test results or objective data. Since these materials will then be considered ACM's and will thus be removed prior to demolition or building removal, no additional testing will be required for those materials.

Next, list the remaining homogenous materials that will need to be tested negative for asbestos if they are to be considered "non-ACM". All asbestos sampling must be performed by a Department of Occupational Safety and Health (DOSH) Certified Asbestos Consultant (CAC) or a Site Surveillance Technician working under the direction of a CAC. The sampling that will be conducted on these materials must be thorough and in accordance with the NESHAP's regulation. Collection of all samples should be conducted using wet methods in order to minimize the amount of asbestos fiber release. All sampling tools must be decontaminated between uses in order to prevent cross-contamination. The following steps have been included to assist the contractor in conducting a comprehensive investigation. These procedures are not intended to mandate these procedures but rather to be used as a guideline, for each individual structure.

a. Prior to sampling, classify each homogenous material as either a



surfacing material, thermal system insulation or a miscellaneous material.

- b. Determine number of samples to be collected from each homogenous material. A homogenous material should be determined by the same color, texture, size and boundary of the building.

(1) For surfacing materials, apply the 3-5-7 Rule which requires that a minimum of three samples be collected for materials encompassing less than 1,000 square feet, a minimum of five samples be collected for materials encompassing between 1,000 and 5,000 square feet, and a minimum of seven samples be collected for materials encompassing greater than 5,000 square feet.

(2) For thermal system insulation (TSI), a minimum of three samples per homogenous area should be collected. While no samples need to be collected from any homogenous area of thermal system insulation if the accredited Inspector determines that the TSI is fiberglass, foam, rubber, or other non-ACM, it is recommended that samples be collected of these materials in order to ensure that there are no hidden materials within the TSI which may be asbestos-containing.

(3) AHERA and OSHA require that miscellaneous materials be sampled "in a manner sufficient to determine" per homogenous material.

- c. Quantification of ACM's must be provided in order to determine if NESHAPS and OSHA notification requirements will be enforced. Therefore, it is very important for the Inspector to accurately quantify the materials sampled. In general, surfacing materials should be quantified in square footage, TSI in linear footage and almost all miscellaneous suspect ACM should be measured in square footage.
- d. The location of each sample collected must be done in a "statistically reliable manner that is representative of the homogenous area". When sampling surfacing materials, this will entail the inspector using the 9 grid system. TSI should be sampled based upon the length of the homogenous material. Care should be take to spread the sample locations vertically in order to get good representation. Most miscellaneous materials, such as flooring and ceiling surfaces, should also be sampled using the 9 grid system.

- e. A recommended sampling procedure which can be used includes:
- (1) Label sample container with date, material sampled, unique sample number and location
  - (2) Mark the sample location on the sampling location diagram. Make sure that the sample number is written on the diagram as well as on the labeled container.
  - (3) Spread a polyethylene dropcloth below the area to be sampled.
  - (4) Don appropriate personal protective equipment (PPE).
  - (5) Spray the sample area with amended water.
  - (6) Collect the sample using a sample tool. Make sure the sample includes all suspect material completely down to the substrate. If sampling wall systems, it is very important to obtain joint compound and wallboard as a composite sample. The size of the sample does not need to be much bigger than a quarter.
  - (7) Put sample in sample container.
  - (8) Clean up tools and any debris created with wet wipes or a HEPA vacuum.
  - (9) Seal the sampling hole. This can be done with caulking, duct tape, patching compound, etc.
  - (10) Carefully HEPA vac or clean PPE and remove from body and place in an asbestos disposal bag.
  - (11) Decontaminate respirator using soap and water and dispose of wet wipes in asbestos disposal bag. If disposing of filters, also place in disposal bag.
  - (12) Transport all samples to a laboratory accredited by the National Voluntary Lab Accreditation Program (NVLAP). The samples should be analyzed for asbestos content by polarized light microscopy as described in Appendix A of 40 CFR part 763, Subpart F.

## **VI. WASTE CLASSIFICATION/MANAGEMENT DECISIONS**

The contractor must understand that the material must be thoroughly wet prior to disturbing it and throughout the removal, containerization, transportation and unloading of the material at the designated waste disposal site. The waste must be packaged and transported in accordance with all applicable regulations. The disposal of the removed ACM's will be dependent upon the "friability" and presence or absence of solvents.

### **Friable Asbestos**

All asbestos-containing materials that have been determined to be "friable" or will become "friable" during removal operations, must be disposed of as asbestos hazardous waste. This includes wastes classified by NESHAPS as RACM and Category II non-friable. A

waste manifest form must be completed which documents the owner of the waste as well as the transporter. The intent of the manifest is to track the waste from “cradle to grave”.

### **Non-Friable Asbestos**

Waste that has been classified as “non-friable” can be disposed of as non-hazardous asbestos waste. The EPA considers waste classified as Category I “non-friables” to fit this category. A “Non-Hazardous” waste manifest form typically accompanies this waste stream.

### **Solvents and Asbestos**

Some contractors elect to use chemical solvents to remove ACM flooring mastics. If mastic removal solvents are used, this waste must be segregated separately and characterized based on the requirements of EPA SW-846. This waste has typically determined to be a RCRA waste and is then subject to stabilization prior to disposal. It is recommended that the contractor consult with a knowledgeable consultant or waste hauler if the use of solvents will be used.

### **Wallboard/Joint Compound Systems**

Wallboard and the associated joint compound, combined called a wallboard system, have routinely been tested for asbestos content. It is very common for the asbestos content in the wallboard to have no asbestos detected but for the joint compound to have greater than one percent asbestos. If the sample is composited, the result will typically yield less than one percent asbestos for the wallboard system, thus eliminating this material from being classified as an asbestos waste. It is important to note, that for a composite sample to be classified as less than one percent, the sample(s) must be point counted in accordance with the NESHAP’ Point Counting method. This method is a derivative of the PLM method.

It should also be noted that OSHA does not allow composite sampling and analysis and therefore although the composite result may be less than one percent, the asbestos content in the joint compound will continue to trigger compliance with OSHA asbestos regulations. **It must be noted that surface texture that is not part of a joint must be tested separately and not be composited as a wall system.**

## **VIII. SUMMARY**

It is FORA’s and the following agencies, DTSC and MBUAPCD’s position that this Sampling Plan’s approach to conducting an asbestos-containing materials survey and having all ACM removed prior to demolition or building removal as well as the waste disposal requirements specified herein complies with the aforementioned agencies regulations.

## **IX. WORKER EXPOSURE MONITORING DURING DEMOLITION**

## **ACTIVITIES**

Exposure monitoring is the responsibility of the contractor selected to perform the asbestos abatement work. The contractor will be required to comply with all of the requirements of Cal/OSHA's "Asbestos Construction Standard", 8 CCR 1529. This will require that the contractor perform an initial exposure assessment (IEA) for this project. The IEA must include the collection of personal air samples representative of a full shift including at least one sample for each job classification in each work area either for each shift or for the shift with the highest exposure level. In addition, at least one short term exposure sample must be collected which represents the 30 minute time period in which the highest exposures to fibers are expected.

## **X. ADDITIONAL CONTRACTOR REQUIREMENTS**

All asbestos abatement activities must be conducted by contractors who are registered with the Department of Occupational Safety and Health (DOSH). The contractor must also use workers and supervisors who are licensed with DOSH. The contractor must provide all applicable notifications to the appropriate regulatory agencies, including, but not limited to the MBUAPCD and Cal/OSHA.

## **XI. AREA AIR MONITORING DURING DEMOLITION ACTIVITIES**

While the contractor will be responsible to conduct (personal) exposure air monitoring during demolition activities, area air monitoring of emissions may be performed to assure that the controls in place are adequate to protect the public and the environment.