Loan No.: 100018625

CHASE

Date: 12/13/2016

OPERATIONS AND MAINTENANCE PLAN INSTRUCTIONS

JPMorgan Chase Bank, N.A. ("Lender") is pleased you are considering our services and shares your interest in protecting the value of your property. Many properties have been constructed in part with asbestos-containing materials (ACMs) and, for pre-1978 construction, with lead-based paints (LBPs) in the building improvements.

Even if you are not aware of the presence of ACMs or LBPs, it is smart to presume they exist and treat suspect materials with the respect they deserve by avoiding uncontrolled disturbance of suspect materials.

What some building owners don't realize is that the mere presence of ACMs or LBPs does not necessarily mean there is a problem. These potential hazards only become a problem in damaged conditions, which can cause occupants to become exposed. The good news is that a proactive operations and maintenance plan ("O&M Plan") is generally the best course of action to manage this risk and is relatively cost-effective to implement. Rarely is extensive testing needed, and more rarely still is removal required. In fact, as you can read on Attachment 1 (an EPA fact sheet entitled "Five Facts About Asbestos"), improper removal of ACMs can increase the potential health risk to your tenants and workers.

To implement an O&M Plan, you can engage an environmental consulting firm to develop a site-specific O&M Plan, or Lender can provide a generic one to you. While we cannot guarantee that this generic O&M Plan will insulate you from liability, we believe observance of this document will help to minimize the potential for occupant or worker exposures. ***For pre-1980 improvements, your loan documents require implementation of an Asbestos O&M Plan.*** However, ACMs in particular can be found in more recently constructed buildings. Therefore, observance of an O&M Plan is prudent regardless of Lender's requirements or the age of the improvements. ***Also, for pre-1978 improvements that contain one or more residential units, your loan documents require implementation of a Lead-Based Paint O&M Plan.***

The idea behind the generic O&M Plan document is for you to identify *suspect* ACMs and/or LBPs and to visually assess the condition of the suspect materials now and in the future. If damage to suspect materials is observed (or occurs in the future), your environmental consulting firm should be contacted to collect samples of these materials for laboratory analysis. Laboratory analysis would confirm whether suspect materials actually contain ACMs or LBPs. If ACMs or LBPs are confirmed, your environmental firm could recommend a course of action.

X

If the generic O&M Plan is provided to you by Lender, it is provided as a courtesy to assist you in maintaining the good condition of your property and reducing the potential for asbestos fiber and lead releases associated with ACMs and LBPs.

ATTACHMENT 1

Five Facts About Asbestos[1]

FACT ONE: Although asbestos *is* hazardous, the risk of asbestos-related disease depends upon exposure to airborne asbestos fibers.

In other words, an individual must breathe asbestos fibers in order to incur any chance of developing an asbestos-related disease. How many fibers a person must breathe to develop disease is uncertain. However, at very low exposure levels, the risk may be negligible or zero.

FACT TWO: Based upon available data, the average airborne asbestos levels in buildings seem to be very low. Accordingly, the health risk to most building occupants also appears to be very low.

A 1987 EPA study found asbestos air levels in a small segment of Federal buildings to be essentially the same as levels outside these buildings. Based on that limited data, most building occupants (i.e., those unlikely to disturb asbestos-containing building materials) appear to face only a very slight risk, if any, of developing an asbestos-related disease.

FACT THREE: Removal is often *not* a building owner's best course of action to reduce asbestos exposure. In fact, an improper removal can create a dangerous situation where none previously existed.

By their nature, asbestos removals tend to elevate the airborne level of asbestos fibers. Unless all safeguards are properly applied, a removal operation can actually increase rather than decrease the risk of asbestos-related disease.

FACT FOUR: EPA *only* requires asbestos removal in order to prevent significant public exposure to airborne asbestos fibers during building demolition or renovation activities.

Asbestos removal before the wrecking ball swings into action is appropriate to protect public health. At other times, EPA believes that asbestos removal project, unless well-designed and properly performed, can actually increase health risk.

FACT FIVE: EPA *does* recommend a pro-active, in-place management program whenever asbestos-containing material is discovered.

In-place management does *not* mean "do nothing." It means having a program to ensure that the day-to-day management of the building is carried out in a manner that minimizes release of asbestos fibers into the air, and ensures that when asbestos fibers are released, either accidentally or intentionally, proper control and cleanup procedures are implemented. As such, it may be all that is necessary to control the release of asbestos fibers, until the asbestos-containing material in a building is scheduled to be disturbed by renovation or demolition activities.

[1] U.S. EPA Publication 20T-2003, July 1990, Managing Asbestos In Place-A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials

OPERATIONS AND MAINTENANCE PLANS - ASBESTOS [Pre-1980] & LEAD PAINT [Pre-1978] MULTI-UNIT RESIDENTIAL/COMMERCIAL PROPERTY

Property Address: _____

_____

Owner's Name: _____ **Loan #:** _____

Form Completed by: _____ **Date Completed:** _____

ASBESTOS & PRESUMED ASBESTOS INVENTORY [refer to Part 1, Section 3.0]

For improvements constructed prior to 1980, presume the materials identified below contain asbestos. Exclude all glass, wood, metal, concrete, fiberglass, plastic, or neoprene. Many asbestos materials are concealed, such as glues, mastics, vapor barriers, firestops, etc. Please complete the following based on your knowledge of the subject property and based on the assumption that the materials listed below, if present, contain asbestos.

Material Type	Material Present? (Check the box)		If yes, specify areas?	Observed Damage (Check the box)
Interior Finishes				
Floor Tiles	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Linoleum Flooring	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Carpet Mastic (glue adhesive)	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Sheetrock walls & ceilings	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Plaster walls & ceilings	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Acoustical treatment on ceilings ("popcorn")	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Ceiling tiles	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Fire Doors	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Exterior Finishes				
Roofing felts and tar	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Stucco plaster	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Cement (transite) siding panels or tiles	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Mechanical Systems				
Boiler or water heater insulation	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Pipe and duct insulation	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe
Stove or heater flue/gaskets	☐ Yes	☐ No		☐ None ☐ Minor ☐ Moderate ☐ Severe

LEAD-CONTAINING PAINT INVENTORY [refer to Part 2, Section 4.0]

For improvements constructed prior to 1978, presume painted surfaces contain lead. Include information about multiple paint layers, paint chips, debris, or dust which is visible. Include interior, exterior and common areas in the inventory. Please complete the following based on your knowledge of the subject property and based on the assumption that paint applied before 1978 contains lead. Attach additional sheets if necessary.

Area or Unit Number	**Paint Colors**	**Painted Surfaces** (what paint covers)	**Indicate Any Damage** None-Minor-Moderate-Severe	**Sample results and source, if applicable**
Examples: All Units	*Light Blue*	*Sheetrock Walls & Ceilings*	*None*	*No sample results*
Exterior	*Dark Blue*	*Stucco Walls*	*Minor-Approx. 5 s. f. peeling near east gutter downspout*	*0.6 % lead by weight ABC Consulting survey 3/14/96*

OPERATIONS AND MAINTENANCE PLANS
ASBESTOS [Pre-1980]
&
LEAD PAINT [Pre-1978]

MULTI-UNIT RESIDENTIAL/COMMERCIAL PROPERTY

PART 1 - ASBESTOS O& M TABLE OF CONTENTS:

PART 2 - LEAD PAINT O&M TABLE OF CONTENTS:

PART 1 - ASBESTOS O&M PLAN

1.0 INTRODUCTION AND STATEMENT OF PURPOSE

Throughout the document, each section will have a box like this one which will give a brief summary of the section's contents. In general, these guidelines apply to buildings constructed in before 1980.

This document, the Asbestos Operations and Maintenance Plan (O&M Plan), contains guidance for controlling asbestos-containing materials in multi-unit residential and commercial properties. Understanding and following the guidelines in this document is essential to complying with federal, state, and local regulations; to maintaining a safe building; and to avoiding asbestos exposure to employees, tenants, and the public.

This O&M Plan is written as a resource for Property Managers and Owner-Managers (referred to herein as the Building Manager). A copy of this document should be available to the Building Manager on a day-to-day basis.

This document is written with a focus towards the Building Manager who will not have staff that are trained to abate asbestos. Like many specialties, Asbestos Abatement is not always a cost-effective resource to maintain in-house; most Building Managers hire contractors to perform this work as needed.

If the Building Manager makes a conscious decision to bring Asbestos Abatement "in-house", then a complete program is required, which will include:

a. Training of employees at EPA AHERA 32- and 40-hour courses;
b. Medical surveillance of employees;
c. Adoption of a respirator program for employees, including periodic fit testing;
d. Periodic personal air sampling of employees;
e. Purchase of specialized equipment such as HEPA vacuums and air sampling pumps;
f. Generator ID number for waste disposal;
g. Creation of a waste storage area; and
h. A record-keeping system to track employee information.

Such a complete program is mandatory under various regulations. In most cases, there is no provision for a "minimum quantity", i.e. if any asbestos impacting work is done in-house, this complete program is needed in its entirety. Asbestos-impacting work is defined as potentially exposing employees above the Permissible Exposure Limit of 0.1 fibers per cubic centimeter of air (over 8 hours) or above 1.0 fibers per cubic centimeter of air (over 15 minutes).

2.0 RESPONSE TO UNPLANNED RELEASE

Actions to take if there is an accidental disturbance of asbestos materials.

Reporting:
In the event of an unplanned release of asbestos materials, obtain the following information before making any phone calls:

1. The precise location in the building where the release occurred.
2. The exact type of material released (sheetrock, ceiling tile, pipe insulation, etc.).
3. Why/how the material was released (aging, vandalism, a water leak, etc.).
4. Why you suspect the material contains asbestos (i.e., the material is labeled, the material was surveyed previously, the material is an OSHA-defined Presumed Asbestos-Containing Material).
5. The number of people in the area where the release occurred, and the use of the area (office, residential unit, public lobby, etc.).
6. Equipment and supplies which may have asbestos material on them, such as desks, books, office equipment, etc.
7. Potential to evacuate the immediate area of the release.
8. Potential to shut off the ventilation system(s) in the area.

Then, contact one or more of the companies listed on the *Asbestos Contacts* form in this document.

Procedures:
The following are general procedures to be followed for an asbestos release. They may not apply in all cases. The contacts listed above can give you guidance for your particular situation.

1. Evacuate the immediate area/room where the release occurred. Avoid tracking through asbestos material and spreading it to other areas.
2. Isolate the area, by closing doors, locking windows, setting up barrier tape, or other means.
3. Turn off ventilation systems serving the area.
4. Post warning signs at all possible entrances.

3.0 BUILDING INVENTORY OF ASBESTOS

This section of the O&M Plan discusses the inventory of asbestos materials in the building, including assumed asbestos materials.

The first step in an effective Asbestos Control Program is to inventory the building for suspect asbestos materials. These include basically all materials other than wood, glass, metal, fiberglass, neoprene, plastic, or concrete, which were installed prior to 1980. The form at the beginning of this document is designed to be filled in by the Building Manager while walking through the building. The form should be updated if previously undiscovered materials are identified.

If the materials listed on the form were installed prior to 1980, they should be assumed to contain asbestos for purposes of this document. Note that sampling of materials can be performed by a licensed consultant to verify whether they actually contain asbestos or not. This sampling is required prior to construction or renovation. However, for day-to-day management of the building, an inventory conducted by the Building Manager is adequate.

Surveying or Bulk Sampling:
A survey by a licensed consultant should be performed in any of the following situations:

1. When there is a potential to impact "assumed asbestos" materials, a decision should be made whether to collect bulk samples of the material, or to merely treat the material as asbestos. Unless the impact to the material is very minor, it is usually cost-effective to collect samples.

   Example: a sheetrock ceiling needs to have several holes drilled into it to hang new lights. The ceiling has not been sampled but was installed prior to 1980 and is considered an assumed asbestos material.

   The drilling work can be done using trained personnel under asbestos procedures (as detailed elsewhere in this document). Alternatively, samples can be collected of the sheetrock ceiling in the impacted area; if the samples indicate that the material is non-asbestos, the work can proceed without asbestos procedures. Note that, by law, samples have be collected by a qualified person (either a licensed consultant or by a specially trained employee of the Building Owner).

2. When assumed asbestos material becomes damaged, bulk samples can be collected to determine whether the damaged portion contains asbestos:

   Example: all of the plaster walls in a building are assumed asbestos, as they were installed prior to 1980. One day, a water leak results in several square feet of a plaster wall collapsing into a public hallway.

   The material should initially be treated as asbestos, and the hallway isolated from employees and the public. The material can either be cleaned under asbestos procedures, or samples can be collected by a qualified person to determine whether it actually contains asbestos.
3. When a construction project is being planned which will impact assumed asbestos materials or concealed spaces which may contain asbestos, additional investigation must be performed.

   This includes any project which involves moving or replacing a wall (including a non-load-bearing wall). The work permit/evaluation procedures must be used in these cases (see Section 14), and the evaluation must be performed by a qualified person.

Considerations for Bulk Sampling:
The actual act of collecting a bulk is fairly simple. However, collecting the sample in accordance with Federal Environmental Protection Agency (EPA) and Occupational Health and Safety Administration (OSHA) and applicable state requirements, and properly documenting the sample, is fairly complex. Consequently, only individuals who have undergone training to become an EPA accredited Asbestos Inspector should collect bulk samples. This is a requirement of Federal OSHA regulations, 29 CFR 1926.1101 (k) (4) (ii) (B), as well as Federal EPA and local (Air Pollution Control District) regulations. In addition, some states require licensing of asbestos consultants.

Bulk sampling and documentation can be conducted fairly rapidly for a small number of samples. However, laboratory analysis of the samples can take a week or longer, depending upon the means used to ship samples to the laboratory, and the turnaround time which the laboratory has agreed upon. Quick sample results (<24 hours), if needed, can be achieved through use of couriers to ship the samples, and paying a premium to the laboratory for a "rush" analysis.

4.0 CONTACT NAMES AND PHONE NUMBERS

This form between Parts 1 and 2 of this document contains a list of resources and contacts for asbestos materials.

The Building Manager should complete the *Asbestos Contacts* form at the beginning of this document in advance, so that the information is available when needed. It is advisable to have more than one asbestos consultant and contractor available to ensure that capacity is available when needed.

A variety of sources exist to obtain names of qualified consultants, contractors, and laboratories. Sources include:
1. Your state's Contractor Licensing Board.
2. Your state's OSHA office, which may keep a list of contractors and consultants in good standing.
3. Your local Air Pollution Control District, which may keep records of consultants and contractors who have completed state-certified training courses.
4. Local Environmental Protection Agency offices.
5. References from other Building Managers, General Contractors, etc.

5.0 NOTIFICATION REQUIREMENTS

This section describes regulatory requirements for notifying employees, contractors, and tenants regarding asbestos in buildings.

There are a number of regulatory requirements for asbestos notifications. These requirements are summarized below:

1. Federal OSHA requires that written notice be given to construction trades in areas where active asbestos abatement is occurring. This requirement is limited to construction projects occurring adjacent to asbestos abatement projects (29 CFR 1926.1101).

2. Federal OSHA also requires a one-time notice to employees working in areas which contain asbestos (29 CFR 1926.1101 and 29 CFR 1910.1001).

3. Good risk reduction practice involves keeping tenants, employees, and others aware of the presence of asbestos in a building. This may be best achieved by posting asbestos information in a central location which is accessible to these individuals, and encouraging them to report damaged or deteriorating materials to Building Management promptly.

6.0 REGULATIONS SUMMARY

This section provides a brief description of applicable regulations.

The following table summarizes general requirements of regulations as of April, 1997. Note that asbestos regulations do change periodically, consequently Building Managers should keep abreast of changes which affect them and not rely solely on this document. In addition, this summary is necessarily brief and is not detailed.

Inspections:
EPA NESHAP regulations (40 CFR 61) require inspections for asbestos-containing materials prior to renovation or demolition. Local Air Pollution Control Districts typically enforce EPA NESHAP regulations. Local APCDs require the inspections to be performed by a Qualified Person (licensed consultant or specially trained employee of the Building Owner).

Notification:
Prior to performing construction or renovation work, the Building Owner must notify the local APCD or the EPA (depending upon locale), typically 10 working days in advance. There is typically a fee associated with this. Construction or renovation work is typically very broadly defined to include most renovation activities, even those not affecting a structural element of the building.

Removal:
Prior to performing construction or renovation work, the Building Owner must remove all asbestos-containing material which would be impacted by the work, per EPA NESHAP, OSHA, and local APCD regulations. Removal must be by a licensed Asbestos Abatement Contractor, whose personnel have received EPA AHERA training, and have special medical clearance to perform the work (per state contractor board laws, and various EPA and OSHA regulations). Typically, a licensed consultant is used to design the work, oversee the contractor, and perform air sampling during the work to document the contractor's satisfactory performance.

Removal is also required where severely damaged materials pose a health threat to building occupants or the public. In these cases, there may be short-term remedies such as enclosing the damaged materials with a solid barrier.

There is a common misconception that up to 100 square feet of material can be removed by untrained personnel. This is incorrect, and if allowed, constitutes a violation of OSHA regulations.

Work Practices:
EPA, OSHA, and local APCDs all stipulate the way that an Abatement Contractor removes asbestos. Minimal requirements include wetting material during removal, using specially filtered vacuums (HEPA-filtered), and ensuring that no visible emissions (airborne dust) occur. Depending upon the materials to be removed, there may also be a requirement for a negative pressure enclosure, glovebags, and other specialized equipment. The most specific work practice requirements as of this writing are contained in 29 CFR 1926.1101, the Federal OSHA Asbestos in Construction regulation.

Waste Management:
In most states, asbestos is not a "hazardous waste", although some general requirements still apply. Waste handling in all states is regulated by OSHA to the extent that there is employee handling of the waste material. Once material is "on the truck", regulation by the state EPA applies.

Waste management generally involves common-sense practices: keeping waste locked up and secure, labeling waste clearly, avoiding spills or accidents which would release asbestos waste, etc.

Abatement Contractors hired by Building Managers will transport waste in a sealed, locked vehicle, with special licensing as a hazardous material transporter.

7.0 TRAINING REQUIREMENTS

This section details asbestos training requirements for Building Staff.

Federal OSHA requires building employees who may accidentally impact asbestos in the course of their work to have annual "awareness level" training regarding asbestos hazards. This training is typically 2 hours in length, and covers the health effects of asbestos, the common materials which contain asbestos, and an overview of how

the employee can protect themselves from asbestos exposure. This training is typically used for Building Engineers, janitorial staff, and others who may, in the course of their work, impact asbestos materials.

This training can be provided by outside consultants (typical cost is approx. $200 to $400 for a 2-hour course); in addition, there are some computerized and video training packages for this type of training.

Other, more extensive training will probably not apply to building staff. If abatement work is contracted out, Asbestos Abatement Contractor staff will require 3- and 4-day EPA AHERA training courses.

8.0 MEDICAL SURVEILLANCE

This section explains OSHA requirements for medical examinations and record keeping.

"Medical Surveillance" is a term describing medical examinations conducted of employees who work with asbestos. These examinations are necessary because asbestos has a cumulative, chronic effect on human lungs. The annual examinations are designed to spot these effects as early as possible, so that there is a possibility for early intervention (eliminating the exposure to asbestos). OSHA regulations require Initial Examinations and Annual Examinations for individuals who may reasonably expect to exceed the Permissible Exposure Level, or PEL.

Building staff should not exceed the PEL, consequently, medical surveillance will not apply to the Building Managers using this document.

9.0 ASBESTOS RESPIRATORY PROTECTION PROGRAM REQUIREMENTS

This section summarizes requirements for respiratory protection for employees working with asbestos.

Note that this section does not comprise a complete Respiratory Protection Program as defined by Federal OSHA. A complete Respiratory Protection Program is beyond the scope of this document. All employees who plan to wear respirators must participate in a Respiratory Protection Program that meets all of the requirements described here and in 29 CFR 1910.134, as well as other applicable regulations.

When are respirators required?

Respiratory protection is required by OSHA under various circumstances when employees are working near or with asbestos. As a general rule of thumb, OSHA requires employees to wear respirators whenever they might reasonably be exposed above the Permissible Exposure Limit of 0.1 fibers per cubic centimeter of air (f/cc).

Many Building Owners adopt a policy which is stricter than OSHA's, and requires the use of respirators whenever an employee's exposure might reasonably be expected to be above 0.01 f/cc, or ten-fold lower than the OSHA requirement.

Building staff covered by this document are not anticipated to work directly with asbestos, and are not anticipated to exceed 0.01 fibers per cubic centimeter. Consequently, respiratory protection requirements for asbestos are not anticipated to apply.

10.0 LABELING AND POSTING REQUIREMENTS

A variety of strategies exist for labeling asbestos materials in buildings. The intent of the strategies is all the same: to ensure that accidental disturbance of these materials, and asbestos exposure to building occupants, does not occur.

1. Labels are typically placed on asbestos or assumed asbestos thermal systems insulation materials (TSI) which are subject to disturbance. This includes pipe insulation, duct insulation, boiler and water heater insulation, flues, etc.

   The labels should be installed as close together as necessary to warn those who may impact the materials. Where possible, place the labels in spots where they are sure to be seen, such as just inside the opening to a ceiling access hatch, for example.

   The Environmental Information Association recommends the following in regard to labeling asbestos pipe insulation: "All labels must be clearly visible. Labels should be posted at the beginning and end of each continuous pipe run and at least every 75 feet. Extra labels should be required at each valve, flange, or change in direction. Each time a pipe passes through a wall, floor, or ceiling a label should be posted on each side of the penetration."

   Labels may not stick well on pipe and duct insulation due to dust accumulation on the material. Use of a squeeze-applied adhesive or caulk can help secure the label. Use of spray adhesives is discouraged because they will tend to disturb any asbestos fibers on the surfaces of the insulation.

   Note that applying labels to old, damaged, or unjacketed TSI may result in significant asbestos exposures. The activity should be done by appropriately trained (Consultant or Contractor) personnel with access to respirators and other personal protective equipment.

   Federal OSHA regulations requires the following information to be placed on asbestos labels:

DANGER

Contains Asbestos Fibers Avoid Creating Dust

CANCER AND LUNG DISEASE HAZARD

These labels are readily available from commercial sources.

Labels can be applied to materials besides TSI, where feasible. For example, cement-asbestos panels in an equipment room could have labels attached. However, where asbestos materials are in public view, such as sheetrock walls in an office, it may be undesirable to attach labels. In those cases, extra care should be taken to inform building occupants using other means, such as written notices and a posting board.

Some materials, such as sprayed-on fireproofing or troweled-on firestop packing, may be difficult to label because labels will not adhere to them. These materials are best dealt with by adhering the label as near as possible, for example on a wall right below the fireproofing.

2. For mechanical equipment rooms, a CAUTION sign may be placed at the entrance, with a copy of any asbestos survey information for that room. Where the mechanical room contains a mixture of asbestos and non-asbestos materials, it is also prudent to label the individual materials.

3. Rooms which are considered "Regulated Areas" by Federal OSHA must receive special signs. Regulated Areas are defined as those where the Permissible Exposure Level, or PEL may be exceeded. The PEL is a maximum level of airborne asbestos which an unprotected worker may be exposed to (see the Introduction to this O&M Plan for more details on the PEL).

   Federal OSHA regulations state that "signs shall be posted at all approaches to, or at a sufficient distance from regulated areas so that employees may read the signs and take necessary protective steps before entering the area."

   The Federal OSHA regulations also define the information to be contained on the warning signs:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

These warning signs are available from a variety of commercial sources.

Example: A crawlspace below a building has damaged asbestos-containing TSI and debris on the floor, such that entry into the crawlspace involves unavoidably contacting and disturbing these materials. Given that disturbance of these materials is likely to expose employees above the PEL, a warning sign is posted at all entrances to the space.

11.0 RECORDKEEPING REQUIREMENTS

This section explains asbestos recordkeeping required by regulations.

All forms related to air sampling, medical surveillance, and employee training are required to be stored for 30 years by OSHA regulations. It is generally good practice to store all asbestos-related documentation for this same time period, including notification forms, asbestos surveys, etc.
Since these forms are legal documents which verify compliance with regulations and state of the art practices, it is essential that they are completed legibly, and that the personnel completing them are trained to do so properly.

12.0 REINSPECTION/PERIODIC SURVEILLANCE

Asbestos materials should be periodically checked, similar to other types of maintenance inspections. These inspections are useful in spotting materials which are damaged or deteriorating, thus allowing a planned response action.

Surveillance means watching the status of asbestos materials in a building over time. Like other parts of a building, asbestos materials are dynamic, and are affected by aging, water damage, accidental disturbance, etc. The goal of surveillance is to catch changes in the asbestos materials early enough so that there is minimal health impact to building occupants and the public. *Another strong motivation for surveillance is that asbestos removal or repair can be performed much more cost-effectively when planned in advance. Emergency response to a*

severely damaged or collapsed material can be extremely expensive.

Surveillance involves looking for materials which have been damaged or are deteriorating. Maintenance staff are ideally suited for this task, since they know their buildings very well, and can often observe the condition of asbestos materials as part of a routine of checking other equipment in the building (such as lights, steam lines, fire extinguishers, etc.).

The frequency of ongoing surveillance will vary by building. However, in general it is recommended that building-wide surveillance be conducted at least once a year. The surveillance may be done on a "rolling" basis in larger facilities, with portions of the facility checked each month or quarter. Asbestos surveillance involves going through the building and visually assessing each asbestos material in each room, comparing it against the inventory of materials to verify that it has not become more damaged.

A quick and easy way to accomplish this is to photocopy the Asbestos Inventory form, and to initial each material as it is inspected. Documentation for each surveillance should be kept with other asbestos data for the building.

13.0 WORK PRACTICES

Asbestos work should be performed by outside Asbestos Abatement Contractor personnel only. The only exception to this is the Building Owner or Manager who opts to have a complete program for in-house asbestos work (as summarized in the Introduction to this document).

Examples of OSHA Class III and IV work are listed here for informational purposes.

Class III asbestos work is defined by OSHA as "repair and maintenance operations," where asbestos is likely to be disturbed, and where less than one glovebag or one waste bag full of debris is generated. The minimum worker training requirement for this work is 16-hours of relevant training (defined by OSHA regulations). Supervisory staff for this type of work require EPA AHERA 40-hour Supervisors training.

Examples include:

1. Sanding, drilling, or cutting a non-friable material (such as floor tile, plaster, sheetrock, or roofing);
2. Spot removal of thermal systems insulation (<1 glovebag);
3. Work conducted above a drop ceiling system with asbestos materials (fireproofing or pipe insulation); and
4. Removal of asbestos-containing resilient flooring materials (floor tile, linoleum, and underlying mastics or backings).

Class IV work is defined as "maintenance and custodial activities" during which employees contact asbestos, and activities to clean up waste and debris containing asbestos. The minimum worker training requirement for this work is 2-hours of relevant training (defined by OSHA regulations).

14.0 WORK EVALUATION PERMIT SYSTEM

This section lists the "sign-offs" and approvals necessary to perform work which may impact asbestos.

Purpose of the Work Evaluation Permit System:
There are many negative consequences of maintenance work or construction work which disturbs asbestos or assumed asbestos without using asbestos procedures:

1. Most importantly, building and contractor employees, building occupants, and the public may be exposed to high levels of asbestos unknowingly, and thus have a risk of long-term health effects.
2. Parts of the building may have to be evacuated, resulting in severe disruptions to the operations conducted in the building, and possibly resulting in property damage and/or loss.
3. Money which is intended for building improvement and maintenance may have to be diverted to expensive emergency cleanup work performed by outside contractors.

How is the Work Evaluation Permit System intended to avoid these problems? The system operates on the principle that any work done in the building must first be compared to the locations of known or presumed asbestos.

1. For maintenance work, this should be done by a person who is very familiar with the building and its asbestos inventory. Maintenance work as used in this section merely means work which is routine, and is performed by building maintenance staff on a periodic basis, including equipment maintenance, minor building repairs, wiring and cable installations, and drilling into walls and ceilings.
2. For construction work, this should be done by a person who has received EPA training as an Asbestos Inspector and Project Designer (typically a licensed consultant). Construction work as used in this section means non-routine work which may be performed by building maintenance staff, but more likely by outside contractors.

Note that inspections are required for construction work under EPA regulations, enforced locally by various Air Pollution Control Districts. The only alternative to an inspection is to treat all materials in the area as asbestos-containing, a very expensive approach.

General Elements of Work Evaluations:
The work evaluations conducted for maintenance and construction work involve collecting the following data, with written documentation:

1. the time and location of the work to be performed;
2. description of the work; and
3. any known information about the presence of asbestos or assumed asbestos.

Once the data has been collected, the steps below are taken:

1. Review data: The reviewer will examine the Asbestos Inventory form, any Asbestos Surveys, and any other records to determine whether or not asbestos or assumed asbestos will be affected by the work. For a construction review, it is also critical to obtain a written description of the work to be performed. Ideally, a drawing should exist showing locations of all planned work, including electrical cable runs, piping, wall cuts, etc.
2. Visit the site: The reviewer will make a visit to the location of the proposed work to verify whether asbestos is present and likely to be disturbed. The reviewer will collect additional samples if assumed asbestos material is present and the reviewer wants to attempt to confirm whether it actually is asbestos. Note: that sample collection may only be performed by an EPA accredited Asbestos Inspector.
3. Record information: Record in writing the project's potential impact to asbestos materials.
4. Communicate Findings: Send the written impact to all contractors and other personnel involved in the project.
5. Design Around the Asbestos: If feasible, work with the contractor and architect to design work which will not impact the asbestos materials. Examples include rerouting conduit, using surface-mounted conduit or Wiremold®, installing new flooring directly over asbestos flooring, etc.
6. Plan Abatement, if needed Retain the services of an Asbestos Abatement Contractor to remove asbestos materials where needed. Coordination between the Asbestos Abatement Contractor will be necessary in most cases. An Asbestos Consultant may also be used at this point to provide value engineering and quality control services.
7. Visit worksite during work: The reviewer, or reviewer's representative, should visit the location again during the set-up phase of the work, and possibly several times again during the project. The purpose of the visit should be to ensure that the project is proceeding as planned, and that no last minute changes have occurred which might cause an impact to asbestos materials.

15.0 WASTE STORAGE AND DISPOSAL REQUIREMENTS

Asbestos waste is not anticipated to be generated by Building Staff, as they are not expected to perform asbestos-impacting activities. However, if waste is generated by abatement, the Building Manager should review the waste handling and disposal performed by the Abatement Contractor. Waste handling and disposal are potentially the largest asbestos liability exposure a Building Owner faces.

Definition:
Asbestos waste is regulated by a variety of agencies, including Federal EPA, Federal OSHA, and the Air Pollution Control Districts (APCDs). Friable asbestos waste and materials contaminated with asbestos are designated "hazardous wastes" in California. In other states, asbestos is a "regulated waste".

General Requirements:
In general, asbestos waste must be stored in sealed, impermeable containers. It must be labeled according to the requirements of the agencies listed above.

For friable asbestos in California, a hazardous waste manifest is required. In other states, a bill of lading for non-hazardous waste is typically used. The manifest is a multi-copy form used to track the waste's transportation and disposal, in order to verify its proper disposal. The completed manifest contains the names of the waste generator, the transporter(s), and the landfill where the material was disposed. A copy returned to the generator acknowledges receipt of the waste at the landfill. This system allows the generator and the state to track the disposal of the waste.

Waste Handling:
A summary of good practice for waste handling by Asbestos Abatement Contractors or others follows (note that waste handling is not expected to be conducted by Building Staff):

1. Protect all workers handling waste in full body protective clothing and at least a respirator approved by NIOSH for protection against asbestos. Workers transporting clean, sealed bags of waste may handle them with less protective clothing, as noted above.
2. Do not allow asbestos waste to dry out prior to sealing bags.
3. Seal bags of asbestos-containing waste with tape within the Regulated Area or work area. Seal bags with a goose neck fold: first twist bag and seal top opening with tape; fold remaining bag extension over the first tape enclosure and retape around top of bag - thereby double sealing the top opening.
4. No free-flowing water shall be present at any time in the bag. If free-flowing water is present, add absorbent into the bags to remedy the condition.
5. Wrap and seal waste treated as asbestos-contaminated that can not be contained in bags in 6-mil

clear polyethylene plastic. Wrap objects that will tear the plastic in a protective material such as cardboard, canvas, or burlap to reduce the potential for damage to the plastic or other impermeable material.

6. While in the Regulated Area or work area, decontaminate bags by wet wiping. Pass the bags and/or wrapped objects into the equipment room where they will be thoroughly decontaminated by wet sponging with amended water, then immediately placed in a second clean bag and sealed with tape.

7. Mark bags with the label prescribed by the EPA, including the Generator's Name, Site Address, and Manifest Number.

8. Try to avoid generating any amount of contaminated water, as it is difficult to handle. Contaminated water must be triple bagged using 12-mil appropriately labeled bags filled with absorbent. No free-flowing water should be present in the bags, meaning that an absorbent should be added to soak up the water.

9. Once generated, waste should be moved immediately to an approved storage area or to a waste hauling vehicle.

10. For moving waste to the storage area or waste hauling vehicle, it should be carried in covered carts that are water tight and can be decontaminated. This precaution will help prevent spills and releases that can occur easily if the bags are damaged accidentally.

16.0 CONNELLY NOTIFICATION INSTRUCTIONS AND SAMPLE FORM (CALIFORNIA ONLY)

Step by Step Directions for Compliance With Asbestos Information Notice Requirements

1. Appointment of Asbestos Coordinator

Assign an Asbestos Coordinator t oversee the compliance with the asbestos notification requirements of California Health and Safety Code (as applicable) and with federal OSHA. The asbestos coordinator will be responsible for the following:

a. Compiling information known about asbestos-containing materials.
b. Preparing notices to employees, lessees, and contractors.
c. Distributing notices to each employee (includes contractors) and, by mail, to landlords, lessees, or other tenants that work in the building.
d. Establish a record keeping system that documents distribution of the notices, specifically listing the names of those to whom the notice was given and the date.
e. Establish and maintain a system for assuring that asbestos reports and data are available to employees and others as required by law.
f. Establish a system for posting warning signs in work areas, if the building personnel engage in or contract for construction, remodeling, or maintenance work.
g. Establish a system for incorporating notices into all information for bid for work in the building.

2. Preparation and Distribution of Notices

a. ASSEMBLING THE NOTICES

The standard notice has two parts: 1) two pages of general information about asbestos, its hazards, sampling, general handling restrictions, and the location where employees and others can have access to the reports and sampling data; and 2) additional pages of information about the contents of the asbestos survey report (if performed) and summarizing the results of bulk and/ or air sampling and/or exposure monitoring that was conducted in the building. If the information consists only of the asbestos inventory performed by the Building Manager, then just attach this inventory

b. WHEN TO DISTRIBUTE THE NOTICES

When you obtain information about asbestos in your building for the first time, you must prepare and distribute the initial notification (same as the annual notification). the date of this notification establishes the anniversary date when the subsequent annual notices must be distributed. This date also establishes the subsequent 90 day periods (quarters) during which you will accumulate any new information about asbestos for the building. At the end of any quarter, if new information was obtained. then a supplemental notice must be distributed to all parties. No supplemental is required at the end of any quarter during which no new information is received. Follow these guidelines for timing the distribution of notices.

1) Within 15 days following the first receipt of information about asbestos in the building, for an "initial" or "annual" notice - A summary of all asbestos survey and sampling information known at this time.
2) Within 15 days of the close of any subsequent 90 day period (calendar quarter), counting from the date of first receipt of information ("supplemental" or "quarterly" notice) - any "new" asbestos information that becomes known during that predetermined 90 day period.
3) To new employees (includes contractors) within 15 days of the date they begin work - A copy of the most recent annual notice and all subsequent supplemental notices, if any, for the current "notification year."
4) To new tenants (includes landlords, lessees, and tenants) within 15 days of the effective date of the lease or agreement - A copy of the most recent annual notice and all subsequent

supplemental notices, if any, for the current "notification year."

5) To all tenants and employees (includes landlords, lessees, tenants, and contractors) on an annual basis - A summary of all asbestos survey and sampling information known at this time.

3. Record Keeping

Maintaining the survey documents - survey records and all records of bulk and air sampling performed must be available for review and photocopying at an accessible time and place within the building or another building on the same property that is acceptable and convenient to employees. Insist on copies of documentation for all survey or sampling that you are aware of . Accumulate the information and make it available to employees and Tenants and their employees. On the boilerplate section of the asbestos information notice (see attached) there is a section that asks you to describe when and where the information is available.

Complete the following checklist to identify all of the notice recipients.

ASBESTOS INFORMATION DISTRIBUTION CHECKLIST			
Group	Contact Name	Address & Tel. #	Method of Notification
Employees (attach list)			hand delivered (or attached to paychecks?)
Residential Tenants (attach list)			hand-delivered or mailed
Commercial Tenants (attach list)			hand-delivered or mailed
Contractors			hand-delivered or mailed to company, with reminder that the company needs to directly notify their employees
Janitorial			
Telephone service company			
Cable service company			
Electrical service company			
Gas service company			
Others			
Others			

FOR CALIFORNIA PROPERTIES:

NOTICE TO EMPLOYEES, TENANTS, CONTRACTOR, AGENTS, ETC. ASBESTOS IN BUILDINGS

☐ **ANNUAL NOTICE** ☐ **QUARTERLY NOTICE**

☐ **FOR PERIOD BEGINNING:** _____

In January of 1989, Assembly Bill 3713 was signed into law and added to the California Health and Safety Code. This bill provides for written notice to employees concerning specific matters related to working in a building with asbestos-containing construction materials. It applies to buildings built before 1979 where the owner knows that the building contains asbestos-containing materials; it does not require that a building be surveyed to determine the presence of asbestos.

WHAT IS ASBESTOS?

Asbestos is naturally occurring group of fibrous minerals which have been used extensively in public buildings, apartment buildings and homes. Asbestos was incorporated into pipe insulation, acoustic plaster, acoustic tile, dust and furnace insulation, floor tiles, textiles, and hundreds of other building materials. In many public buildings, asbestos is located in insulation on piping systems, acoustic plaster on ceilings, acoustic ceiling tile, vinyl asbestos floor tiles, and structural fireproofing.

This notification includes the results of any air monitoring or bulk sampling for asbestos that has been conducted in your building during the previous calendar quarter.

WHY IS ASBESTOS HAZARDOUS?

Asbestos is a concern because of the potential health risks associated with breathing asbestos fibers. It is important for you to know that most people with asbestos-related diseases were asbestos workers before 1972. These workers were repeatedly exposed to high levels of asbestos each working day with little or no protection. Asbestos workers today are required to follow specific work procedures and wear appropriate protection to minimize exposure.

Significant exposure to asbestos fibers can lead to asbestosis and certain forms of cancer. Asbestosis is one of the many dust-related lung diseases. It is associated with chronic exposure to relatively high levels of asbestos and is characterized by the permanent deposition of asbestos fibers in the respiratory tract. The earliest and most prominent clinical finding, breathlessness upon exertion, rarely becomes apparent until after at least a decade of exposure.

In addition to asbestosis, the association of asbestos and lung cancer has been well established over the past two decades. Scientists have studied insulation and shipyard workers who were exposed to HIGH AIRBORNE LEVELS of asbestos. These studies indicated that asbestos workers were about five times as likely to get lung cancer as non-asbestos workers who did not smoke. Asbestos workers who also smoke were found to be at much greater risk (about 50 times) of dying of lung cancer than non-asbestos workers. Mesothelioma, a rare form of cancer of the chest or abdominal cavity, occurs among groups exposed to certain types of asbestos.

ASBESTOS SAMPLING RESULTS

A summary of the results of recent asbestos bulk sampling or air monitoring is attached to this notice (in some cases, an inventory of typical materials may be all that exists). In addition to the attached, you should be aware that asbestos often exists in these common building materials:

1. Textured acoustical ceiling materials, including sprayed ceilings and ceiling tiles;
2. Sheetrock and plaster walls and ceilings;
3. Resilient flooring tiles and linoleum;
4. Fire doors;
5. Pipe, duct, water heater, and boiler insulation
6. Window and weatherproofing caulking;
7. Structural fireproofing; and
8. Roofing materials.

A variety of exposure standards and health action levels have been established for various purposes:

1. The Occupational Safety and Health Administration (OSHA) asbestos standards (Title 29 of the Code of Federal Regulations), which apply to employees who actually work with asbestos, mandate a permissible exposure limit (PEL) of 0.1 fibers per cubic centimeter of air (f/cc) determined as an 8 hour time-weighted average (TWA) and an excursion limit if 1 f/cc as a 30 minute TWA. When employees are exposed at these levels, OSHA and Cal OSHA (Title 8 of the California Code of Regulations) require medical monitoring and other control methods.

2. The Environmental Protection Agency (EPA) has recommended a "clearance level" for asbestos of 0.1 f/cc, as measured by phase contrast microscopy (PCM) of 0.02 structures/cc as determined by the transmission electron microscopy (TEM) method described in 40 CFR Part 763, the Asbestos Hazard Emergency Response Act (AHERA). This means that once an operation involving asbestos (such as a removal) is complete the area is "safe" for re-occupancy as long as the asbestos air concentrations are less than or equal to the "clearance level". These same levels have also been adopted in the California Education Code (Section 494200.7) as the school abatement clearance level.

3. The State of California has an additional requirement relating to the disclosure of the presence of asbestos. Proposition 65, which was voted into law by the state citizens, basically requires posting of areas where anyone is exposed to a carcinogen at a level where there is a significant risk of cancer. The California Health and Welfare Agency has established this level at 100 fibers of asbestos per day.

GENERAL PROCEDURES AND HANDLING RESTRICTIONS

The concern is with asbestos fibers in the air. When asbestos materials are in good condition, it is unlikely that fibers will be released into the air, unless the asbestos materials are damaged or disturbed. Asbestos-containing materials must not be disturbed so that fibers do not get into the air. Do not cut into, drill into, nail or pin anything onto, sand, move, bump, rub against, or otherwise disturb any asbestos-containing materials. If you should discover any damaged asbestos-containing material, do not touch it; do not attempt to clean it up. Contact your supervisor or building representative/manager immediately and report the situation.

If any construction, maintenance, or remodeling is conducted in an area of the building where there is the potential for employees to come in contact with, or release or disturb asbestos-containing building materials, it is required that the area be posted with a clear and conspicuous warning sign. The warning sign must read:

CAUTION. ASBESTOS
CANCER AND LUNG DISEASE HAZARD
DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT"

Much of this information may be new to you. If you have questions about asbestos, you may call your local health department or EPS office to answer your questions.

This written announcement fulfills the asbestos notification requirement of Division 20, Chapter 10.4, Section 25915 of the California Health and Safety Code (Assembly Bill 3713).

SITE-SPECIFIC INFORMATION

The following pages are a summary of asbestos bulk sampling or air monitoring that has been conducted at the following building: _____

Copies of complete sampling reports are available for review or photocopying at:_____

Between the hours of _____and: _____

The Asbestos Coordinator/Site Manager for this building is: _____

Who can be reached at (phone number): _____

ASBESTOS & LEAD-CONTAINING PAINT CONTACTS [refer to Parts 1 & 2, Section 5.0]

Lead-Containing Paint Consultant:	Contact Name, Phone Number & Address
Asbestos Consultant:	Contact Name, Phone Number & Address
Lead Abatement Contractors:	Contact Name, Phone Number & Address
Asbestos Abatement Contractor:	Contact Name, Phone Number & Address
Analytical Laboratory:	Contact Name, Phone Number & Address
Local OSHA Office Consultation Number:	Contact Name, Phone Number & Address
Local EPA or State Health Departments: Lead Consultation: Air Pollution Control District Office:	Contact Names, Phone Numbers & Addresses
Other:	Contact Name, Phone Number & Address

Notes: _____

_____

PART 2 - LEAD PAINT O&M PLAN

1.0 INTRODUCTION AND STATEMENT OF PURPOSE

Throughout the document, each section will have a box like this one which will give a brief summary of the section's contents.

The document you are reading, the Lead-Containing Paint Operations and Maintenance Plan (O&M Plan), contains guidance for controlling lead paint-containing materials in multi-unit residential and commercial properties. Understanding and following the guidelines in this document is essential to complying with federal, state, and local regulations; to maintaining a safe building; and to avoiding lead-containing paint exposure to employees, tenants, and the public.

Applicable Regulations Covered by This O&M Plan:
This Lead O&M Plan is written primarily to comply with the following regulations:

1. The Federal OSHA *Lead in Construction Standard* (29 CFR 1926.62), & *General Industry Standard* (29 CFR 1910.25), and State OSHA standards with similar requirements.
2. The Federal EPA disposal requirements for lead waste, primarily derived from the *Resource Conservation and Recovery Act* (RCRA), 40 CFR 261 et. seq. Each state EPA typically has similar requirements, in some cases (such as in California) they are more stringent.
3. The Federal EPA *Title X* standard (24 CFR 35 and 40 CFR 745).

Other Applicable Regulations Not Covered by This O&M Plan:
Other regulations may apply, and compliance with these regulations is not covered in this document. For example, Federal OSHA Hazard Communication Act (HazComm) requirements may apply to employees handling lead paints and lead waste, under 29 CFR 1926.59.

In California, the employer's Illness and Injury Prevention Plan (IIPP) under 8 CCR 3203 must address lead hazards in the workplace, if they exist.

This document is not a set of rules for how to comply with Housing and Urban Development (HUD) guidelines.

This Lead O&M Plan does not address lead in drinking water.

How to Use This Document:
This Lead O&M Plan is written as a resource for Property Managers and Owner-Managers (referred to from here forward as the Building Manager). A copy of this document should be available to the Building Manager on a day-to-day basis.

This document is written with a focus towards the Building Manager who will not have staff that are abating or severely impacting lead-containing paint. Like many specialties, Lead Abatement is not always a cost-effective specialty to maintain in-house. Most Building Managers hire contractors to perform this work as needed.

It is anticipated that many tasks will be able to be conducted by in-house staff, such as prepping surfaces for repainting, performing minor impacts to lead-containing paint (such as installing conduit or phone jacks), and performing janitorial cleaning in areas with lead paint debris or dust. To perform these tasks, in-house staff will require some training, specialized equipment, and other resources.

If the Building Manager makes a conscious decision to bring Lead Abatement in-house, or to perform work in-house which will involve major impacts to lead-containing paint, a Complete Program is required, which will typically include:

a. Training of employees at EPA Model Accreditation Plan (MAP) 32- and 40-hour courses;
b. Medical surveillance of employees;
c. Adoption of a respirator program for employees, including periodic fit testing;
d. Periodic personal air sampling of employees;
e. Purchase of specialized equipment such as HEPA vacuums and air sampling pumps;
f. Generator ID number for waste disposal;
g. Creation of a waste storage area; and
h. A record-keeping system to track employee information.

A Complete Program is needed if workers will work with lead-containing paints and be exposed to lead above the OSHA Action Level of 30 micrograms of lead per cubic meter (30 µg/m3).

For the purposes of this document, lead-containing paints are defined as those containing greater than 600 parts per million (600 ppm) lead (definition adopted from draft OSHA standards and the Consumer Product Safety Commission limits on new residential paint). Note that HUD uses a definition of 0.5% lead (equivalent to 5,000 ppm) for "lead-based paint" in HUD-funded properties. This definition is less stringent than OSHA's definition and is not applicable for non-HUD properties.

2.0 RESPONSE TO UNPLANNED LEAD-CONTAINING PAINT RELEASE

Actions to take if there is an accidental disturbance of lead-containing paint materials.

Reporting:
In the event of an unplanned release of lead-containing paint materials, obtain the following information before making any phone calls:

1. The precise location in the building where the release occurred.
2. The exact type of material released (paint chips, dust from sanding, etc..)
3. Why/how the material was released (aging, accidental grinding, a water leak, etc.)
4. Why you suspect the material contains lead-containing paint (i.e. the material was sampled previously, the material is a pre-1978 paint).
5. The number of people in the area where the release occurred, and the use of the area (office, residential unit, public lobby, etc.).
6. Equipment and supplies which may have lead-containing debris on them, such as desks, books, office equipment, etc.
7. Potential to evacuate the immediate area of the release.
8. Potential to shut off the ventilation system(s) in the area.

Then, contact one or more of the companies listed on the *Lead-Containing Paint Contacts* form in this document.

Procedures:
The following are general procedures to be followed for an unexpected lead-containing paint release. They may not apply in all cases. The contacts listed above can give you guidance for your particular situation.

1. Evacuate the immediate area/room where the release occurred. Avoid tracking through lead dust and debris and spreading it to other areas.
2. Isolate the area, by closing doors, locking windows, setting up barrier tape, or other means.
3. Turn off ventilation systems serving the area.
4. Post warning signs at all possible entrances.

3.0 STEP-BY-STEP IMPLEMENTATION GUIDE FOR O&M PLANT

Sequence of events for O&M Plan implementation

Step 1:
Designate a responsible person for lead compliance in the building. This person would typically be the Building Manager.

Step 2:
Complete the *Inventory Form for Lead-Containing Paints* and *Lead-Containing Paint Contacts Form* at the beginning of this document (see Sections 4.0 and 5.0 following for guidance).

Step 3:
Review regular maintenance activities performed at the building. Assess whether these tasks fall into OSHA Activity Classes II or III (from table in Section 6.0, or from OSHA regulation 29 CFR 1926.62); or if workers are expected to exceed the OSHA Action Level. If so, identify outside lead-certified contractors to perform this work.

Step 4:
Complete the *Activity List for Lead Paint-Impacting Maintenance Activities* at the beginning of this document (see Section 6.0 following for guidance).

At the Building Manager's option, Activity Class I work can be monitored to determine the actual lead exposure to workers, and possibly allow recategorization of the work as "non-Activity" work. This reduces the amount of procedures required for the work (see chart in Section 6.0).

The mechanism for personal air monitoring of an Activity Class I work task is to hire a lead-certified contractor to perform the work for 2 shifts; and hire a consultant to perform personal air sampling of the contractor personnel during the work. Note that OSHA requires representative air sampling, typically interpreted to mean at least 6 hours duration for each of the 2 work shifts.

Update the *Activity List for Lead Paint-Impacting Maintenance Activities* Form as needed.

Step 5:
Have employees trained, per the requirements summarized in Section 7.0.

If required by Activity Class I work, have employees undergo medical surveillance (baseline blood samples, etc.).

If required by the need to wear a respirator, have employees undergo medical examination for respirator clearance; as well as fit testing of respirator.

Step 6:
Obtain necessary equipment for lead work compliance, including HEPA vacuums, disposable coveralls, warning signs, waste bags, etc. as needed.

Step 7:
Arrange for lead waste disposal, as summarized in Section 14.0.

Step 8:
Perform notifications to tenants as required by Title X, see Section 15.0.

Step 9:
Periodically review and update this O&M Plan.

4.0 BUILDING INVENTORY OF LEAD-CONTAINING PAINTS

Review and summary of survey and inspection data for the building.

Introduction:
In the absence of any paint sampling data for a building, all paints should be assumed to contain lead in concentrations greater than 600 ppm. The exception is residential-grade paint which has been applied in or after 1978. The Building Manager needs to know from first-hand experience that the paint is residential-grade and that it was applied since 1978.

Non-residential grade paints:
Note that even new non-residential grade paints may contain lead greater than 600 ppm. Marine paints and industrial-grade paints may also contain mercury, cadmium, copper, and other toxic metals for anti-fungal and anti-fouling purposes. These paints should never be used in or around residential or commercial properties.

Surveying or Sampling:
If a Building Manager wishes to determine the lead content of a paint in a specific area, prior to maintenance or construction work impacting that area, sampling can be performed. See Appendix A for a description of sample collection techniques.

Facility Paint Inventory:
The Building Manager should complete the *Inventory Form* at the beginning of this document, including any sampling or survey data available. The form should be updated twice annually, or as part of a regular maintenance inspection program. In particular, damaged paints should be noted, and should be repaired promptly to avoid further deterioration.

5.0 CONTACT NAMES AND PHONE NUMBERS

This section contains a list of resources and contacts for lead-containing paint materials.

The Building Manager should complete the *Lead-Containing Paint Contacts Form* between Parts 1 and 2 of this document in advance, so that the information is available when needed. It is advisable to have more than one lead consultant and contractor available to ensure that capacity is available when needed.

A variety of sources exist to obtain names of qualified consultants, contractors, and laboratories. Sources include:

1. Your state's Contractor Licensing Board.
2. Your state's OSHA office, which may keep a list of contractors and consultants in good standing.
3. Your local or State Department of Health Services, which may keep records of consultants and contractors who have completed state-certified training courses.
4. Local Environmental Protection Agency offices for lead paint hazard management.
5. References from other Building Managers, General Contractors, etc.

6.0 WORKER REQUIREMENTS PER OSHA REGULATIONS

This section describes regulatory requirements for workers as defined in 29 CFR 1926.62 and 1910.25

For all lead paint-impacting work, OSHA requires certain work practices, personnel protective equipment, etc. Lead-impacting work defined by OSHA as "Activity Level II or III" is not anticipated for residential/commercial structures under this O&M Plan. Examples include:

1. Using lead mortar;
2. Lead burning;
3. Rivet busting;
4. Power tool cleaning without dust collection systems;
5. Clean-up of dry abrasives;
6. Abrasive blasting enclosure movement and removal;
7. Abrasive blasting of any coated surfaces;
8. Welding on any coated surfaces;
9. Torching or cutting of any coated surfaces;
10. Torch burning of any coated surfaces;

All of the tasks listed above are outside the scope of this O&M Plan, and should be performed only by outside contractors with appropriate certifications and licensing. The tasks listed on the Permissible Task List form at the end of this document may be performed by building staff, assuming all work practices, training, equipment, monitoring, etc. are satisfied.

7.0 TRAINING REQUIREMENTS

This section details lead-containing paint training requirements for Building Staff.

Federal OSHA requires building employees who may incidentally impact lead-containing paint in the course of their work to have annual "awareness level" training regarding lead-containing paint hazards. This training is typically 2 hours in length, and covers the health effects of lead-containing paint, and an overview of how the employee can protect themselves from lead-containing paint exposure. This training is typically used for Building Engineers, janitorial staff, and others who may, in the course of their work, impact lead-containing paint materials. This training should be augmented with additional training if employees will be performing "non-Activity" work, i.e. work under the Action Level but which still impacts lead.

This training can be provided by outside consultants (typical cost is approx. $300 to $600 for a 4-hour course); a

course of this duration would include basic "Awareness" training for lead hazards, as well as some specific work practice guidelines. Other, more extensive training will apply to building staff only if they will be exposed above the Action Level, or will be performing the Activity Class I work listed above. If this work is done by building staff, Lead Worker and Supervisor courses will be required (4- and 5-day EPA MAP training courses). These courses typically cost $450 to $600/person.

For the Awareness-level training, the entire course must be repeated annually to remain eligible for work. For the Lead Worker or Supervisor course, an 8-hour refresher is required annually, at a cost of approximately $100 to 125/person.

8.0 MEDICAL SURVEILLANCE

This section discusses OSHA requirements for medical examinations and record keeping.

"Medical Surveillance" is a term describing medical examinations conducted of employees who work with lead. These examinations are necessary because lead-containing paint has a cumulative build-up in blood, and will deposit in bone and other tissues as well. For workers performing Activity Class I work, or exposed above the Action Level, the following applies:

1. An initial blood lead level test is required for any worker exposed above the Action Level for more than 30 days within a 12-month period. Blood testing should occur every 2 months for the first 6 months of this exposure.
2. As a follow-up, after the first 6 months testing is required every 6 months.
3. If a worker is found to have an elevated blood lead level (in excess of 40 micrograms per deciliter of blood, 40 µg/dl), then testing is repeated every 2 months until at least 2 consecutive samples come out below the 40 µg/dl figure.

9.0 LEAD-CONTAINING PAINT RESPIRATORY PROTECTION PROGRAM REQUIREMENTS

This section summarizes requirements for respiratory protection for employees working with lead-containing paint. Note that this section does not comprise a complete Respiratory Protection Program as defined by Federal OSHA. A complete Respiratory Protection Program is beyond the scope of this document. All employees who plan to wear respirators must participate in a Respiratory Protection Program that meets all of the requirements described here and in 29 CFR 1910.134, as well as other applicable regulations.

When are respirators required?

Respiratory protection is required by OSHA under various circumstances when employees are working near or with lead-containing paint. As a general rule of thumb, OSHA requires employees to wear respirators whenever they might reasonably be exposed above the Permissible Exposure Limit of 50 µg/m3. Under most circumstances, this will not apply to building staff covered by this document.

Note that many Building Owners adopt a policy which is stricter than OSHA's, and require the use of respirators whenever an employee's exposure might reasonably be expected to be above the Action Level.

Also, please note that 29 CFR 1926.62 states that any employee working in a lead setting, including a "non-Activity" task, can ask for and receive a respirator from their employer, at the employee's discretion. 29 CFR 1926.62 has a table of acceptable respirator types for various lead hazards.

10.0 LABELING AND POSTING REQUIREMENTS

Lead-Containing Paints have three (3) primary labeling requirements: for Regulated Areas where the PEL may be exceeded, for waste containers, and for reusable lead coveralls which are being sent to a laundry.

1. For Regulated Areas (areas where the PEL is expected to be exceeded, OSHA requires warning signs to be placed at the boundaries of the Regulated Area:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

These labels are readily available from commercial sources.

2. For lead wastes, a variety of labeling requirements apply, including the need for an OSHA-compliant warning label:

WARNING
LEAD WASTE
POISON

3. For lead coveralls being sent to an outside laundry, OSHA recommends the following warning label:

WARNING
CLOTHING CONTAMINATED WITH LEAD
DO NOT REMOVE DUST BY

BLOWING OR SHAKING

DISPOSE OF WASHWATER IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS POISON

11.0 RECORD KEEPING REQUIREMENTS

This section covers lead record keeping required by regulations.

All forms related to air sampling, medical surveillance, and employee training are required to be stored for 30 years by OSHA regulations. It is generally good practice to store all lead-containing paint-related documentation for this same time period, including any lead paint surveys, etc. Since these forms are legal documents which verify compliance with regulations and state of the art practices, it is essential that they are completed legibly, and that the personnel completing them are trained to do so properly.

Additionally, Title X requirements include the obligation to provide all available lead testing information to various parties (such as tenants, prospective buyers, etc.).

12.0 REINSPECTION/ PERIODIC SURVEILLANCE

Lead-Containing Paint materials should be periodically checked, similar to other types of maintenance inspections. These inspections are useful in spotting materials which are damaged or deteriorating, thus allowing a planned response action.

Surveillance means watching the status of lead-containing paint materials in a building over time. Using the *Inventory Form for Lead-Containing Paint* at the front of this document, maintenance staff should periodically check all paints for damage. Areas of special concern would include residential units with children, areas where large-scale repainting was anticipated, and areas where maintenance activities might result in impacts to loose paints.

A quick and easy way to accomplish this is to photocopy the *Inventory Form for Lead-Containing Paint*, and to initial each material as it is inspected. Documentation for each surveillance should be kept with other lead-containing paint data for the building.

13.0 WORK EVALUATION PERMIT SYSTEM

This section lists the "sign-offs" and approvals necessary to perform work which may impact lead-containing paint.

Purpose of the Work Evaluation Permit System:
There are many negative consequences of maintenance work or construction work which disturbs lead-containing paint without using lead-containing paint procedures:

1. Most importantly, building and contractor employees, building occupants, and the public may be exposed to high levels of lead-containing paint unknowingly, and thus have a risk of long-term health effects.
2. Parts of the building may have to be evacuated, resulting in severe disruptions to the operations conducted in the building, and possibly resulting in property damage and/or loss.
3. Money which is intended for building improvement and maintenance may have to be diverted to expensive emergency cleanup work performed by outside contractors.

How is the Work Evaluation Permit System intended to avoid these problems? The system operates on the principle that any work done in the building must first be compared to the locations of known or presumed lead-containing paint.

1. For maintenance work, this should be done by a person who is very familiar with the building and its lead-containing paint inventory. Maintenance work as used in this section merely means work which is routine, and is performed by building maintenance staff on a periodic basis, including equipment maintenance, minor building repairs, wiring and cable installations, and drilling into walls and ceilings.
2. For construction work, this should be done by a person who has received EPA training as a Lead Inspector and Project Designer (typically a licensed consultant). Construction work as used in this section means non-routine work which may be performed by building maintenance staff, but more likely by outside contractors.

General Elements of Work Evaluations:
The work evaluations conducted for maintenance and construction work involve collecting the following data, with written documentation:

1. the time and location of the work to be performed;
2. description of the work; and
3. any known information about the presence of lead-containing paint or assumed lead-containing paint.

Once the data has been collected, the steps below are taken:

1. Review data: The reviewer will examine the *Inventory Form for Lead-Containing Paint*, any Lead-Containing Paint Surveys, and any other records to determine whether or not lead-

containing paint or assumed lead-containing paint will be affected by the work. For a construction review, it is also critical to obtain a written description of the work to be performed. Ideally, a drawing should exist showing locations of all planned work, including electrical cable runs, piping, wall cuts, etc.

2. Visit the site: The reviewer will make a visit to the location of the proposed work to verify whether lead-containing paint is present and likely to be disturbed. The reviewer will collect additional samples if assumed lead-containing paint material is present and the reviewer wants to attempt to confirm whether it actually is lead-containing paint.

3. Record information: Record in writing the project's potential impact to lead-containing paint materials.

4. Communicate Findings: Send the written impact to all contractors and other personnel involved in the project.

5. Design Around the Lead-Containing Paint: If feasible, work with the contractor and architect to design work which will not impact the lead-containing paint materials. Examples include rerouting conduit, using plenum-run cable instead of surface-mounted conduit or Wiremold®, installing new sheetrock directly over lead-containing plaster, etc.

6. Plan Abatement, if needed: Retain the services of an Lead Abatement Contractor to remove lead-containing paint materials where needed. Coordination between the Lead Abatement Contractor and the General Contractor will be necessary in most cases. A Consultant may also be used at this point to provide value engineering and quality control services.

7. Visit worksite during work: The reviewer, or reviewer's representative, should visit the location again during the set-up phase of the work, and possibly several times again during the project. The purpose of the visit should be to ensure that the project is proceeding as planned, and that no last minute changes have occurred which might cause an impact to lead-containing paint materials.

14.0 WASTE STORAGE AND DISPOSAL REQUIREMENTS

Building staff engaged in Activity 1 work, and non-Activity work, have a strong likelihood of generating lead paint waste, which is typically a hazardous material by EPA definitions.

Definition:

Lead-Containing Paint waste is regulated by a variety of agencies, including Federal EPA, state-level EPAs, and the Department of Transportation.

General Requirements:
In general, lead-containing paint waste must be stored in sealed, impermeable containers. If there is a small quantity of waste, it will be assumed to contain lead and sent to the landfill without testing. If there is a larger quantity of waste, it will be characterized by a laboratory. The laboratory looks at the amount of lead which will "leach" out of the waste, and will compare the value to Federal and state EPA numbers to see whether the paint qualifies as a hazardous material.

For waste which qualifies as hazardous, it can be stored temporarily in a dry, secure location. The length of time for which it can be stored, depends upon several factors, including the state where the building is and the quantity of waste involved. Building Managers should consult their local state EPA for specific waste storage and disposal regulations.

Waste must have a Generators ID number for the manifest. The Building Manager obtains this number by calling the appropriate state or Federal EPA office with jurisdiction.

The manifest is a multi-copy form used to track the waste's transportation and disposal, in order to verify its proper disposal. The completed manifest contains the names of the waste generator, the transporter(s), and the landfill where the material was disposed.

A copy returned to the generator acknowledges receipt of the waste at the landfill. This system allows the generator and the state to track the disposal of the waste.

15.0 TITLE X COMPLIANCE

Title X governs disclosure in various real estate transactions, including purchases, sales, and leases.

Title X is a broad-scale piece of legislation addressing lead paint issues. One of the primary implications to users of this document, however, is the need to provide information to other entities involved in real estate transactions:

1. Sellers are required to provide to prospective buyers all information that they know regarding lead in the building; and to provide a 10-day period for buyers lead inspection, at the buyer's option.
2. Sellers are required to provide buyers with an informational pamphlet regarding lead hazards. These pamphlets are available through real estate agents, real estate boards, and via the California Association of Realtors (www.crenet).
3. Lessors are required to provide lessees with information regarding the health effects of lead, and any known lead hazards in the building.

Title X overlaps with many existing local and state regulations regarding lead in real estate transactions. Users of this document are urged to consult a real estate agent, attorney, or other resource to determine the requirements of these regulations.

16.0 PAINT SAMPLING PROTOCOL

Paint Sample Collection Procedures, from National Institute of Building Standards (NIBS) documents

If Building Staff decide to collect paint samples to send to a laboratory, the following procedure should be used:

First - Determine which area(s) and material(s) will be sampled. The areas should be divided into representative areas by component. Components with different types of paint should be divided into separate areas.

Second - Wear new latex ("kitchen/household") or disposable gloves while taking paint samples.

Third - Wet the area where the sample will be taken. Water in a spray bottle works well.

Fourth - Label a plastic bag or other suitable container with a unique sample ID number (zipper-lock type bags work well). Tape the plastic bag below the area to be sampled to catch the paint chip or flakes.

Fifth - Carefully remove an area of paint (at least the size of a quarter) from the surface using a scraper, knife, putty knife, or similar tool. The chips should be placed in the plastic bag. All layers of the paint must be removed. However, try to include as little of the underlying substrate material as possible. A new plastic bag must be used for each area sampled.

Sixth - Seal the container (lock the bag, or fold the edge over and tape shut).

Seventh - Submit the samples to a laboratory accredited under the requirements of the National Lead Laboratory Accreditation Program.

Eighth - Compare laboratory results to the 600 ppm OSHA and CPSC standards for lead-containing paint; and the 5,000 ppm HUD standards for lead-based paint.

PERMISSIBLE TASK LIST FORM [refer to Part 2, Section 6.0]

Summary of Lead Abatement Procedures	**Exposure Below the Action Level ("Non-Activity Task")**	**Activity Class I** (in the absence of any sampling, OSHA assumes that the following tasks will exceed the action level of 30 µg/m3):
Activities:	• All work below the Action Level (AL) of 30 µg/m3 • Activities are in this category if 2 days of personal monitoring show results <30 µg/m3; during the personal monitoring period, the employee must be trained and protected for exposures >30 µg/m3, however.	• Spray painting with lead-based paints • Manual demolition of structures (drywall, plaster, etc.) • Manual sanding, grinding, needle gunning, chiseling, hammering, wire brushing, milling or scraping of lead-containing coatings • Heat gun removal of any surface coating • Power tool cleaning with dust collection systems
Regulated Area Req'd:	No	Yes
Personnel Monitoring Required:	Only to document exposures are below the Action Level	Required semiannually; if results are >AL but <PEL of 50 µg/m3
Protective Controls:		
Respirators:	None required	Yes, for exposures above the PEL. Practically speaking, all Class I work requires respirators.
Respirator fit tests:	Not applicable	Every 6 months, per 29 CFR 1910.134
Protective Clothing:	Full coveralls, goggles, & gloves recommended	Full coveralls, goggles, & gloves required
Procedural requirements:		
Wet methods:	Yes	Yes
HEPA vacuums:	Yes. Shoveling, dry sweeping, wet sweeping, and brushing can be used only where vacuuming is ineffective.	Yes. Shoveling, dry sweeping, wet sweeping, and brushing can be used only where vacuuming is ineffective.
Prompt cleanup:	Yes	Yes
Negative pressure enclosure:	Not applicable	Cordon off within approx. 20 ft. radius of work
Dropcloths:	Yes	Yes
Personal Protection:		
Decontamination:	Clean change area required with hand washing facility. Shower not mandated. HEPA vacuuming of garments is required.	Provide shower where feasible, if exposure is >PEL. otherwise provide hand washing facilities only.
Blood Lead Tests/ Medical Surveillance	See Blood Lead Table in Section 8.0	See Blood Lead Table in Section 8.0

TASK LIST FOR LEAD PAINT IMPACTS [refer to Part 2, Section 6.0]

Date completed: _____ Completed by: _____

Address of building: _____

Name of Task	Brief Description	OSHA Activity Class	Personal Air Sampling Data	Contractor who will perform work (for Class II and III, and Class I at Building Manager's option)
Example: sweeping areas with lead paint chips.	*Weekly broom sweeping of common hallways with minor amounts of lead paint chips*	*<Action Level, therefore non-Activity Work*	*4 micrograms per cubic meter ABC Consulting 2/14/96*	*NA*