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TOLEDO REFINERY

LEAD EXPOSURE MANAGEMENT PLAN

1.0 Introduction

This document is intended to help guide individuals charged with the management and control of potential inorganic lead exposures on the BP Toledo Refinery worksite.

2.0 Purpose

The purpose of this plan is to reduce occupational and environmental exposure to lead to BP employees and contractor employees.

3.0 Definitions

A. **Action Level (AL):** Air-borne concentration of lead of 30 micrograms per cubic meter of air (30 ug/m^3).
B. **Aggressive Removal:** Abrasive blasting, sanding, buffing, grinding; flame-burning, cutting, or welding on lead alloys, paints, or coatings.
C. **Blood Lead Level:** A blood test marker to indicate recent exposure to lead.
D. **Competent Person:** An individual capable of identifying and predicting lead hazards in the work environment and has the authority to take prompt corrective measures to manage them.
E. **High Efficiency Particulate Air (HEPA) Filter:** A filter that will trap from the air 99.97% or more of particles having a diameter 0.3 microns.
F. **Lead:** Includes metallic lead, all inorganic lead compounds and organic lead soaps. Other organic lead compounds are excluded from this definition.
G. **Permissible Exposure Limit (PEL):** The OSHA allowable air-borne exposure limit as an 8-hour time-weighted average (TWA), 40-hourweek. The PEL is 50 ug/m^3 for lead.
H. **Trigger Lead Level:** An X-Ray Fluorescence **(XRF)** analyzer (Niton xLP) is the preferred method used to assess paint or other similar surface-coating materials by direct reading. The trigger level is **>1 mg/cm^2** as considered lead-containing. The Consumer Products Safety Commission **(CPSC)** trigger level is used to assess bulk paint or other similar surface-coating materials that are sent out for analysis to an external laboratory. This trigger level is **0.06% by weight (600 ppm).** These values have been determined to require the use of a Lead Exposure Prevention Plan. Past exposure monitoring data along with past work practice experience supports these trigger levels.
I. **Regulated Area:** A work area where workers may be potentially exposed to average airborne concentrations of lead at or above the PEL.
J. **Small Job:** Occasional cutting, welding, grinding, or small parts blasting done as a part of routine maintenance work. Actual daily exposure time will be 15 minutes or less for any one person.

4.0 Responsibilities

4.1 Project Design and Construction/Planners

A. Contact the BP job coordinator or the BP HSE department for lead assessment on projects requiring removal or demolition of potential lead-containing materials.
B. Perform the evaluation of paint or coating for lead content assessment.
C. Co-ordinate the completion of the Lead Pre-Plan Checklist.
D. Obtain signatures on the checklist.
E. Obtain hazardous waste drums for lead disposal.
F. Ensure that Operations (Process) is made aware of the lead job and attaches the Lead Pre-Plan Checklist to the Permit to Work (PTW).

4.2 Operations (Process)

A. Recognize the potential hazard of lead when the Permit to Work (PTW) is written. Lead hazard will be noted on the Permit to Work (PTW).
B. Insure the Lead Pre-Plan Checklist will accompany the permit for identified lead jobs, and a copy is maintained with the COW Documents.
C. Insure and/or require that respiratory protection is used for all lead abatement work.

4.3 Health/Safety/Environmental

A. Provide technical assistance to Operations, Design and Construction/Planners for potential lead exposure work.
B. Assist/coordinate the paint and coating testing and evaluation.
C. Review/Sign the Lead Pre-Plan Checklist.
D. Review the personal and environmental air sampling during abatement projects.
E. Audit and inspect lead abatement projects.
F. Assist with hazard communication training and recommendations for PPE for BP employees who may be potentially exposed to lead.
G. Obtain proper hazardous waste labels.

4.4 Lead Abatement-Trained Personnel

A. Follow approved lead abatement/management practices.
B. Use authority to manage and take corrective action on lead jobs in order to minimize lead exposure to people.
C. Maintain training certification.

4.5 Lead Abatement Contractors

A. Maintain a Lead Program that meets the OSHA Lead Standard, and requirements set forth in this program.

5.0 Hazard Identification and Control Plan

A. Materials Analysis
   1. Identification of lead-containing materials should be performed prior to the start of work or project bid.
   2. If it is not possible to determine the presence or level of lead, it will be assumed to contain lead and handled as lead-containing.
   3. Contact the HSE department for assistance with sampling and analysis.

B. Lead Pre-Plan Checklist
   1. Every identified lead job or project must have the Lead Pre-Plan Checklist with the Permit to Work (PTW).
   2. Another copy of this checklist will be at the job site.

C. Engineering Controls
   1. Use long-handled cutting torches.
   2. Remove the lead-based paint six inches from both sides of the cut or weld.
   3. Use vacuum or wet vacuum blasting as opposed to open-air blasting.
   4. Use rotary pining, needle scaling or angle sanders that have vacuum recovery systems.
   5. Consider the use of chemical stripping agents.
   6. High pressure water blasting with vacuum recovery.

D. Work Practices
   1. Barricade the work area with danger tape.
   2. Post lead warning signs in several directions of potential entry.

      DANGER
      LEAD
      MAY DAMAGE FERTILITY OR THE UNBORN CHILD
      CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
      DO NOT EAT, DRINK OR SMOKE IN THIS AREA

      Or until June 1, 2016

      WARNING
      LEAD WORK AREA
      POISON
      NO SMOKING OR EATING

   3. Use protective skirting, at least 6 millimeter thickness, placed on the ground for containment of debris.
   4. Place contaminated protective clothing and equipment in a properly labeled container.

DANGER: CLOTHING AND EQUIPMENT CONTAMINATED WITH LEAD. MAY DAMAGE FERTILITY OR THE UNBORN CHILD. CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM. DO NOT EAT, DRINK OR SMOKE WHEN HANDLING. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCA, STATE, OR FEDERAL REGULATIONS.

Or until June 1, 2015

CAUTION: CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS.

5. Place debris in drums that are properly labeled.
6. No eating, drinking, or smoking in the work area.
7. Remove disposable clothing (TYVEK) before leaving the work area. Place in properly labeled container.
8. Hand-washing facilities must be available.
9. Use HEPA vacuum systems for clean-up and decontamination.

A. Personal Protective Equipment
   1. The level of respiratory will be determined by the job scope. Refer to the Lead Pre-Plan Checklist and the Permit to Work (PTW) for requirements.
   2. Protective clothing must include full-body, disposable coveralls with hood.
   3. Rubber boots or disposable boot covers taped to the coveralls.
   4. Gloves taped to the coveralls at the wrist.
   5. Clothing must be maintained free of cracks, tears, or breaks.

F. Exposure Monitoring
   1. Worker exposure monitoring for airborne lead will be performed on jobs using aggressive methods for removal.
   2. Large jobs will also require perimeter environmental monitoring.
   3. Previous exposure monitoring data may be used for jobs managed and controlled similarly. For example: Boilermaker personal lead monitoring assessments on tasks using a long-handled torch can be extrapolated for another job using the same method for removal for the same or less duration. This is called a “negative exposure assessment.”

G. Training
   1. All workers who will enter lead job restricted areas or supervise lead work must receive lead awareness training.
   2. Training documentation must be made available for unannounced audits.

H. Decontamination
   1. All workers must decontaminate following any lead exposure.
   2. Adequate work time must be provided for clean-up/decontamination.
   3. HEPA vacuum systems must be used to remove excess lead dust from coveralls and other protective equipment prior to taking off.
   4. Wet-wipe respirators prior to removal.
   5. If non-disposable clothing is used, the contaminated clothing must be handled as hazardous laundry and cleaned by a commercial laundry.
   6. Clean clothes and equipment must be stored separate from contaminated items.
   7. All contaminated equipment and surfaces must be wiped clean with damp rags. Soapy water is recommended.
   8. All contaminated, disposable items must be placed in a properly labeled, closed container. This includes the HEPA cartridges from respirators.

I. Disposal
   1. All lead-contaminated material must be placed in leak-proof containers.
   2. All waste and debris must be cleaned as well as practicable at the end of each shift.
   3. The Environmental department will co-ordinate testing for evaluation of hazardous waste status.

J. Medical Surveillance
   1. Workers will be part of a medical surveillance program if exposed to more than 30 ug/m^3 of lead in air for more than 30 days per year.
   2. Lead abatement contract workers will have had blood lead levels performed prior to lead abatement work on the BP worksite.

K. Field Audits
   1. Random field audits will be conducted to ensure documentation is in place and work practices are being followed.

L. Recordkeeping/Documentation
   1. HSSE will maintain a copy of random field audits.
   2. HSE will receive a copy of all exposure monitoring data results upon request for both the personal and environmental measurements sampled by the abatement contractor.

Revision history

The following information documents at least the last 3 changes to this document, with all the changes listed for the last 6 months.

Date	Revised By	Changes
8/1/11	**Hasbrouck**	Re-name IH Procedure to SAF-109 and change header and footer and add revision history. First issuing as SAF, so it is revision 0. No change to content of procedure. MOC#20114521-001.
12/05/12	**Michael Chambers**	Changed Owner and Authorizer. Changed 4.1.B. Planners to perform lead evaluation. Changed references from Safe Work Permit to WCC-Permit. Added Requirement for Operations to maintain a copy of the Lead Pre-Plan with the COW documentation. Added requirements for lead abatement contractors to maintain a Lead Program that meets the OSHA standard, as well as follow the requirements set forth in this document. Added wording requirements for lead work areas and contaminated PPE/equipment containers. Added requirement for random field audits. Added HSSE will maintain documentation of field audits. Added upon request abatement contractors must supply personal and environmental monitoring results. RF01 – Name list was updated. FM01, FM02 & FM03 – These forms are now required (or contractor equivlant) and need to be maintained with the CoW paperwork. **MOC# M2013977-001**
09/18/14	**M. Grimes**	Updated owner to Matthew Grimes. Administrative changes – Updated CoW terminology to eCoW terminology. Covered under eCoW implementation MOC #M2014707-001