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1.0 PURPOSE

1.1 The purpose of this program is to inform Marathon Petroleum Company (MPC) and Contractor employees of the criteria used to develop safe work practices necessary to minimize exposure to Inorganic Lead (Pb). Inorganic Arsenic, Hexavalent Chromium, and other metal contaminants, as well as to outline the procedures followed to anticipate the potential for hazardous exposures, control exposures, and verify the effectiveness of control measures.

2.0 APPLICATION

2.1 This plan applies to all Marathon Petroleum Company, Louisiana Refining Division (LRD) Contractor employees who have the potential for toxic metals exposure.

2.2 In general, the Occupational Safety and Health Administration (OSHA) Construction regulations would apply to turnaround and other “construction-type” operations. Construction means work involving alteration or repair, including painting and decorating, but does not include routine cleaning and repainting of surfaces where there is insignificant damage, wear or corrosion. Normal operations that are anticipated, routine, and regularly scheduled are generally considered under OSHA General Industry regulations.

3.0 IMPLEMENTATION

3.1 The implementation of the requirements outlined in the Toxic Metals Exposure Control Standard shall be adhered to as of this standard’s effective date.

4.0 RESPONSIBILITIES

4.1 The Division's Safety Supervisor is designated as the administrator of this standard and is responsible for its implementation at the Louisiana Refining Division.

4.2 The LRD Safety Department must periodically review this standard.

5.0 DEFINITIONS

5.1 ***Action Level (AL):*** An 8-hour time weighted average (TWA) airborne exposure limit to a contaminant, which if exceeded initiates additional exposure monitoring and medical surveillance requirements. The OSHA AL for Arsenic is 0.005 mg/m^3, Hexavalent Chromium is 0.0025 mg/m^3, and Lead is 0.03 mg/m^3.

5.2 ***Arsenic (As):*** This includes elemental arsenic and all inorganic compounds containing arsenic, but excludes arsine gas. At MPC the most likely sources of arsenic are in crude oil and some catalysts, as well as in pressure treated lumber.

5.3 ***Ceiling:*** OSHA has established an acceptable ceiling concentration for Manganese at 5 mg/m^3, which is a level of exposure that must not be exceeded at any time.

5.4 ***Covered Employee:*** An employee included in a written exposure control plan when industrial hygiene monitoring of any work operation, which involves regular or periodic arsenic, lead, or hexavalent chromium exposure, confirms results above the respective action level.

5.5 ***HEPA:*** High Efficiency Particulates Air Filtration (99.97% efficient) for respirable particulates such as asbestos, lead, silica, arsenic, dust, etc. HEPA filtration is used to prevent particulate emissions from vacuum systems used as local exhaust ventilation on hand held coating equipment (e.g. buffers, needle-guns & scalers). HEPA filtration is also used to prevent

particulate emissions from general exhaust ventilation systems used to maintain negative pressure inside a contained work area during abrasive blasting of lead-containing coatings.

5.6 ***Hexavalent Chromium (CrVI):*** This includes chromium with a valence of positive six in any form and in any compound. At MPC the most likely sources of Cr(VI) are welding operations; residual chromium on catalysts, refractory surfaces and furnace tubes; chromate-containing paints/primers, and residual chromium in old cooling tower wood supports and other pressure treated lumber.

5.7 ***Hot Work:*** Work involving electric or gas welding, cutting, brazing, or similar flame or spark-producing operations, including associated grinding.

5.8 ***Lead:*** Metallic (elemental) lead and all inorganic lead compounds are defined as "lead". Excluded from this procedure are all organic lead compounds, such as tetraethyl lead (TEL), which have their own distinct physical, chemical, and toxic properties and exposure control methods.

5.9 ***Lead-Based Coating:*** Any paint, primer, or coating containing over 0.06% (600 ppm) lead by dry weight when quantified by laboratory analysis.

***Note*: The use of X-Ray Fluorescence (XRF) devices is limited to confirming positive lead content.**

5.10 ***Manganese (Mn):*** This includes all valence states and compounds. At MPC the most likely sources of manganese are welding and grinding operations.

5.11 ***MPC Occupational Exposure Limits (OEL):*** Marathon's internal OELs inclusive of OSHA PELs, ALs and ceiling limits. In addition to the OSHA limits for arsenic, Cr(VI), and lead, MPC has adopted a TWA for manganese of 0.2 mg/m^3, and the OSHA Ceiling of 5 mg/m^3.

5.12 ***N100, R100 and P100 Air Purifying Respirator Cartridges:*** Classifications of HEPA respirator cartridges with respect to resistance to degradation when used in a work environment in the presence of oily dust or mist.

N for ***N****ot* resistant to oil
R for ***R****esistant* to oil
P for oil ***P****roof*

5.13 **Permissible Exposure Limit (PEL)***:* An 8-hour time weighted average (TWA) airborne exposure limit to a contaminant. The OSHA PEL for Arsenic is 0.01 mg/m^3, Hexavalent Chromium is 0.005 mg/m^3, and Lead is 0.05 mg/m^3.

5.14 ***Regulated Areas:*** Work areas where employee exposures may exceed the PEL for a Toxic Metal, or where no previous data exists to indicate levels are less than the PEL.

5.15 ***Time-Weighted Average (TWA):*** An 8-hour average exposure limit of a contaminant.

5.16 ***Toxic Metals:*** For the purposes of this standard, includes arsenic, Cr(VI), lead, and manganese.

6.0 REQUIREMENTS

6.1 Toxic Metals Determination

6.1.1 Evaluations of potential exposures may be conducted quantitatively and analyzed to ensure statistical validity per the Marathon Exposure Assessment Methodology (EXAM)

as described in the LRD Industrial Hygiene Standard Practice.

6.1.2 Materials are assumed to contain toxic metals until bulk analysis, documentation, or other known resources determine otherwise.

6.1.3 Air monitoring results will provide an indication of the need for investigation of procedures, engineering controls, work practice controls, and personal protective equipment (PPE).

6.2 Regulated Areas

6.2.1 Operating personnel will ensure that proper signs/labeling and barricades, as necessary, are placed at all entrance ways of regulated areas, including temporary regulated areas.

6.2.1.1 Signs must state the contaminant, the hazard, that entrance is for authorized personnel only, and the PPE requirements.

6.2.2 All products, including waste containers, containing hazardous levels of toxic metals must be labeled.

6.2.3 Temporary regulated areas will be dismantled and signs removed at the completion of the work operation.

6.2.4 Contaminated PPE must not be worn outside the regulated area.

6.3 Exposure Control

6.3.1 Less toxic materials should be investigated to substitute for toxic metals, but without compromising the quality or integrity of operations.

6.3.2 In work areas where toxic metals are present, engineering controls and work practices should be used to reduce and maintain employee exposure at or below MPC OELs, except where these controls are not feasible.

6.3.3 In the interim, when engineering controls are being installed or are not feasible, appropriate personal protective equipment must be used, as described in the respective toxic metals sections below.

6.3.4 Dilution ventilation will be used when hot work is taking place inside of confined spaces.

6.3.5 If airborne levels of toxic metals exceed MPC OELs, local exhaust ventilation must be used, when feasible, to prevent the accumulation of toxic metal fumes and particulates in the employee's breathing zone.

6.3.6 Job rotation is prohibited to obtain compliance with respective MPC OELs.

6.3.7 Hygiene facilities must be provided and used when exposure exceeds the PEL or MPC adopted limits. Placement of personal decontamination facilities shall be approved by LRD Safety, Operations and Maintenance Departments.

6.3.8 Personal hygiene practices are an important control measure for protecting workers from exposure to toxic metals. Eating, drinking, chewing gum, the use of tobacco products, and applying cosmetics are not permitted in the regulated area. Employees

must wash hands, forearms, and face after completion of job task and prior to eating, drinking, smoking, chewing tobacco or gum, applying cosmetics and using the restroom. Adequate washing facilities should be furnished at the worksite.

6.3.9 Refer to the LRD Exposure Control Measure Requirements for Maintenance/Construction Operations for specific task exposure control requirements.

6.3.9.1 Appropriate protective clothing must protect employees from skin, eye and street clothing contamination of toxic metals.

6.3.9.2 Removal of personal protective clothing must be performed in a manner to minimize skin and/or eye contact, and effectively prevents the release of airborne particulates of toxic metals.

6.3.9.3 Reusable protective clothing must be decontaminated before removing it from the regulated area. Decontamination methods must not disperse particulates into the air or onto an employee's body (e.g. blowing with compressed air).

6.3.9.4 Disposable clothing must not be worn for more than one work shift.

6.3.9.5 Employees wearing contaminated clothing shall not enter areas designated for eating and drinking.

6.3.10 Refer to the LRD Respiratory Protection Standard Practice for specific requirements for using respiratory protection.

6.3.11 Toxic metals must be disposed in a manner that minimizes their release and that complies with appropriate regulatory requirements.

6.3.12 Housekeeping

6.3.12.1 All surfaces must be maintained as free as practical of accumulations of toxic metals. This may include cleaning of dust and debris frequently throughout a project, but at a minimum, it must be conducted daily or at the end of the work shift in which particulates were generated.

6.3.12.2 Compressed air must not be used to cleanup floors and other surfaces where metal particulates accumulate. Dry shoveling or dry sweeping and brushing can be used only where vacuuming and other equally effective methods have been tried and found to be ineffective.

6.3.12.3 Vacuums must be equipped with high-efficiency particulate air (HEPA) filters and used and emptied in a manner that minimizes the re-entry of particulates into the workplace atmosphere.

6.4 Contracted Operations

6.4.1 Contractors hired by MPC to perform maintenance or demolition work that could disturb protective coatings that contain lead, disturb scale, disturb process byproducts, or otherwise cause the release of toxic metals are required to submit a respective exposure control and compliance program for review by the Safety Department prior to the beginning of work. The plan should contain all requirements found in 29 CFR Part 1926.62, 1926.353, 1926.1118, 1926.1126, 1910.252, 1910.1018, 1910.1025, and 1910.1026 for the respective toxic metal.

6.5 Lead Exposure Control Program

6.5.1 Lead Exposure Limit Adjustments

6.5.1.1 For shifts greater than 8 hours, the action level is adjusted by the following formula:

$$AL = \frac{8\ HOURS}{NO.OF\ HOURS\ WORKED}\ X\ 30\ microgram/\ m^3$$

6.5.1.2 For shifts greater than 8 hours, the PEL is adjusted by the following formula:

$$PEL = \frac{8\ HOURS}{NO.OF\ HOURS\ WORKED}\ X\ 50 microgram/\ m^3$$

6.5.2 Determination of the Lead Content of a Coating

6.5.2.1 Determination of lead content in a coating can only be made by a trained LRD Safety Department representative or authorized contractor. Initiate coordination of the analysis necessary to make this determination by contacting the Safety Department, Turnaround Planning, or the Maintenance Planner in a Zone Shop. Analysis will be conducted using one of the following methods:

6.5.2.1.1 <u>XRF (Real-Time Analyzer)</u>

6.5.2.1.1.1 X-Ray Fluorescence (XRF) spectrum analyzer is used for the immediate evaluation of lead content in coatings. Evaluation of lead content using the XRF requires at least three analysis of each type of coating system (i.e. tank roof, shell and associated piping).

The use of X-Ray Fluorescence (XRF) devices is <u>limited</u> to confirming positive lead content. Negative determinations <u>require</u> laboratory analysis or other objective sources (i.e., Paint specification or SDS).

6.5.2.1.2 <u>Bulk Sample Collection and Laboratory Analysis</u>

6.5.2.1.2.1 Samples should be obtained from representative areas by scraping approximately one square inch area of the coating down to the base metal with a sharp chisel. Each sample should be labeled and sealed in its own container that prevents the sample from being contaminated.

6.5.2.1.2.2 Analyses for lead content should be conducted by an accredited laboratory (e.g., AIHA Environmental Lead Laboratory Accreditation Program) using either inductively coupled plasma atomic emission spectroscopy (ICP-AES) or atomic absorption spectroscopy (AAS). Results of lead content analysis should be reported in parts per million (ppm) or percent by weight.

Routine turnaround time for laboratory analysis is 24-48 hours.

6.5.2.2 Any paint, primer, or coating containing greater than 0.06% (600 ppm) lead by dry weight when quantified by laboratory analysis is considered a lead based paint.

6.5.3 Identification of Lead Based Coatings

6.5.3.1 Coatings on piping, equipment, vessels, etc that may be disturbed during the course of planned maintenance, construction or demolition must be analyzed to determine its lead content before the work can commence.

6.5.4 Identification of Surface Coating to be disturbed

6.5.4.1 Identification of coated surfaces that will be disturbed is necessary to ensure representative analysis of the coating to be disturbed. Because of the high heat generated by welding, torch cutting and arc gouging, it is assumed that a coating will be disturbed if any of these operations are carried out on the same surface, within 6 inches of the coating. MPC and Contractor personnel supervising the maintenance, construction, or demolition work must provide a clear indication of where suspect coatings may be disturbed. This should be accomplished using one of the following methods:

6.5.4.1.1 Mark perimeters of a surface coating to be disturbed (e.g. for tie-ins) with orange paint, 6-8 inches or beyond where torch cutting or welding will be required.

6.5.4.1.2 Paint an orange line around pipe, 6-8 inches on either side of where it is to be torch cut during demolition.

6.5.5 Lead-Based Coating Removal (Abatement)

6.5.5.1 Required Qualifications

6.5.5.1.1 *Coatings characterized as lead-based or those that may be lead-based must be removed by specially trained Contractor personnel* who will use task specific control measures to minimize their exposure and the release of lead to surrounding work areas. Only Contractors with LRD Safety Department approved exposure control and compliance programs shall conduct work that involves the disturbance of lead-based coatings or suspect lead-based coatings.

6.5.5.2 Lead-Based Coating Removal Procedures

6.5.5.2.1 Based on historical exposure assessment data collected during work at the LRD, acceptable methods of removal and corresponding engineering controls are as follow:

6.5.5.2.1.1 Buffing, grinding, scaling or needle-gunning equipped with integrated HEPA filtered dust collection system.

6.5.5.2.1.2 Centrifugal blasting (using rotating blades to propel the abrasive, which is recovered and recycled) equipped with integrated HEPA filtered dust collection system.

6.5.5.2.1.3 Wet blasting (abrasive blasting concurrent with the application of high-pressure water from a “water ring” that encircles the blast nozzle).

6.5.5.2.1.4 Pressure washing with water applied at high pressure.

6.5.5.2.1.5 Dry abrasive blasting (with other than sand) inside a fully contained work area (walls, ceiling & floor) maintained under negative pressure through the use of a HEPA filtered general exhaust ventilation system.

6.5.5.2.1.6 Other methods of removal may be acceptable to the LRD; however this will be dependent on the LRD Safety Department assessment of the proposed methods of removal and emission control, the lead content of the coating and the potential impact on MPC and Contractor employees.

6.5.5.2.2 Containment systems are used to reduce environmental contamination by capturing paint particles and used blasting materials. Containment system materials and designs should vary according to conditions at the worksite. Considerations for specifying and selecting containment systems should include the following:

6.5.5.2.2.1 Load bearing capacity and integrity of the containment system and of the scaffolding structure.

6.5.5.2.2.2 Size and elevation of the structure being abated.

6.5.5.2.2.3 Location of the structure.

6.5.5.2.2.4 Proximity to other buildings, structures or equipment.

6.5.5.2.2.5 Local climate and conditions (e.g., heavy winds, rain, etc.).

6.5.5.2.2.6 Containment systems tend to increase airborne lead concentrations to workers inside the containment. They should be designed to optimize the flow of ventilation air past the worker, and the worker should remain upstream of the blasting operation if possible.

6.5.5.2.3 Recyclable blasting materials should be used when possible to reduce the amount of waste generated. Spent abrasive materials contaminated with lead will be considered as hazardous waste and should be handled as such until analysis indicates otherwise. A sample of the spent material will be collected by the LRD Environmental Department and sent to an environmental laboratory for TCLP analysis. Lab results will determine whether the spent material is hazardous or non-hazardous.

6.5.6 Personal Protective Equipment

6.5.6.1 Personal Protective Equipment (PPE) is the least preferred means of controlling exposures to lead, but is typically necessary in addition to engineering controls.

6.5.6.2 Respiratory Protection is required during any operation that involves the disturbance of lead-based or suspect lead-based coatings. The following types of removal operations will require the corresponding specified levels of respiratory protection:

6.5.6.2.1 Minimum of a half face P100 cartridge respirator (APF=10) during the cold cutting of pipe with a band saw or reciprocating saw, the use of buffers, grinders, scalers or needle-guns equipped with integrated HEPA filtered dust collection systems.

6.5.6.2.2 Minimum of a half face P100 cartridge respirator (APF=10) during the use of centrifugal blasting (using rotating blades to propel the abrasive, which is recovered and recycled) equipped with integrated HEPA filtered dust collection system.

6.5.6.2.3 Minimum of a supplied air hood respirator (APF=25) during wet blasting (abrasive blasting concurrent with the application of high-pressure water from a “water ring” that encircles the blast nozzle).

6.5.6.2.4 Minimum of a supplied air hood respirator (APF=25) during dry abrasive blasting (with other than sand) inside a fully contained work area (walls, ceiling & floor) maintained under negative pressure through the use of a HEPA filtered general exhaust ventilation system.

6.5.6.3 Any reduction in the level of respiratory protection must be preceded by supporting historical data collected during an ongoing project on the same coating. A reduction in the level of respiratory protection must be in accordance with the LRD Respiratory Protection Equipment Selection Guide.

6.5.6.4 Protective clothing must be provided in accordance with OSHA Lead Standard 29 CFR 1926.62 and/or 29 CFR 1910.1025. For example, full body coveralls and impermeable gloves must be worn by personnel involved in the disturbance of lead-based or suspected lead-based coatings. If reusable rather than disposable coveralls are used to limit heat stress experience by the wearers, procedures for decontamination of reusable coveralls must be submitted to LRD Safety for approval. Adequate supplies of disposable protective clothing shall be made available to any MPC or Contractor personnel with the potential for contact with lead-contaminated material. Used disposable clothing must be treated as contaminated waste. Contaminated work clothes should be kept separate from street clothes.

6.5.6.5 Safety glasses must be worn at a minimum, unless a full face respirator provides appropriate eye protection.

6.5.6.6 When there is a risk of flying debris and particulates, a face shield and safety glasses must be worn.

6.5.6.7 Goggles or a face shield with safety glasses must be worn when around pressurized water use.

6.5.7 Work Area (Regulated Area) Demarcation

6.5.7.1 Install danger barricade tape and post warning signs at perimeters of each work area where lead-containing materials are being disturbed. Signs should be worded exactly as follows:

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

6.5.8 Exposure Assessments

6.5.8.1 An initial exposure assessment will be conducted at the onset of any operation that involves the disturbance of lead-based or suspect lead-based coatings. The purpose of the initial assessment is to quantify airborne lead concentrations in breathing zones of personnel performing the work, in the work area atmosphere, and adjacent work areas in order to assess the adequacy of the exposure control measures (engineered & PPE) being employed. The initial assessment is performed by the LRD Safety Department, at the request of the Contractor who will conduct the removal of lead-based coatings. The LRD Safety Department will conduct the initial assessment in accordance with the following procedures:

6.5.8.1.1 Collect breathing zone and work area perimeter (downwind) samples in accordance with NIOSH Sampling and Analytical Method 7300.

6.5.8.1.2 Analyze samples upon completion of the removal operation using a Portable XRF in accordance with NIOSH Sampling and Analytical Method 7702.

6.5.8.1.3 Calculate airborne lead concentrations and report results to the Contractor's Competent Person.

6.5.8.1.4 Send samples to an MPC approved laboratory for analysis by ICP in accordance with NIOSH Sampling and Analytical Method 7300.

6.5.8.2 Follow-up exposure assessments will be conducted when:

6.5.8.2.1 The initial exposure assessment has indicated that an airborne lead concentration detected in a breathing zone, the work area atmosphere or an adjacent work area has exceeded the Action Level.

6.5.8.2.2 It is necessary to further evaluate the adequacy of the exposure control measure modifications made since the determination of the initial assessment results.

6.5.9 Medical Surveillance

6.5.9.1 Medical monitoring will be performed on MPC employees in the event of exposure to airborne lead concentrations equivalent to or greater than the Action Level for more than 30 days per year. Any MPC personnel exposed to an airborne lead concentration above the Action Level (30 ug/m^3) during an eight hour day, will receive a baseline blood lead level and ZPP during their annual physicals.

6.5.9.2 Medical monitoring of MPC Contractor employees must, at a minimum, be conducted in accordance with requirements outlined in the Lead in Construction Standard, 29 CFR 1926.62.

6.5.9.3 Due to the fact that contractor personnel conduct all operations that result in the disturbance of a lead-based coating at the LRD, no MPC employees have experienced an elevated exposure to lead in excess of the Action Level. No MPC employees are included in a medical surveillance program for lead.

6.6 Hexavalent Chromium Exposure Control Program

6.6.1 Hexavalent Chromium/Chromium (VI) Sources

6.6.1.1 Conducting hot work on chromium containing alloys may produce Cr(VI).

6.6.1.2 The type of hot work and concentration of chromium in the alloy will determine the amount of Cr(VI) produced.

6.6.1.3 Sawing treated lumber.

6.6.2 Exposure Control Measures

6.6.2.1 Respiratory Protection

6.6.2.1.1 Employees conducting hot work on chromium alloys will be required to use respiratory protection in accordance to the LRD Exposure Control Measure Requirements for Maintenance/Construction Operations.

6.6.2.1.2 For non-routine or new processes/tasks and emergency situations, a minimum of a half-mask air purifying respirator with a P100 (HEPA) filter must be used.

6.6.2.1.3 Higher protection factor respirators may be necessary under some circumstances.

6.6.2.1.4 Filtering facepiece respirators are not acceptable.

6.6.2.1.5 Supplied air respiratory protection is required when performing hot work inside confined spaces.

6.6.2.2 Protective Clothing

6.6.2.2.1 Protective clothing shall be worn to prevent eye or dermal contact with Cr(VI). Refer to the LRD Exposure Control Measure Requirements for Maintenance/Construction Operations.

6.6.2.2.2 Safety glasses must be worn at a minimum, unless a full face respirator provides appropriate eye protection.

6.6.2.2.3 When there is a risk of flying debris and particulates, a face shield and safety glasses must be worn.

6.6.2.2.4 Goggles or a face shield with safety glasses must be worn when around pressurized water use.

6.6.2.2.5 Appropriate welding helmets with tinted lenses must be worn for the respective welding operation. When helmets are used to protect against flying debris and particulates, it must meet ANSI Z-87 standards.

6.6.3 Work Area Demarcation

6.6.3.1 Install barricade tape and post warning signs at perimeters of each work area where Cr(VI)-containing materials are being disturbed or created. Signs should be worded exactly as follows:

DANGER
Chromium VI Cancer Hazard
Authorized Personnel Only
No Smoking or Eating
Respirator Required

6.6.4 Exposure Assessments

6.6.4.1 An initial exposure assessment will be conducted at the onset of any operation that involves the disturbance or creation of airborne Cr(VI) particulates. The purpose of the initial assessment is to quantify airborne Cr(VI) concentrations in breathing zones of personnel performing the work and in the work area atmosphere in order to assess exposure levels and the adequacy of the exposure control measures (engineered & PPE) being employed, if any. The initial assessment is performed by the LRD Safety Department in accordance with accepted industrial hygiene practices.

6.6.4.2 If monitoring reveals exposures at or above the action level, periodic monitoring must be conducted every six months, as operations permit.

6.6.4.3 If monitoring reveals exposures at or above the PEL, periodic monitoring must be conducted every three months, as operations permit.

6.6.4.4 The employer may discontinue monitoring for respective tasks/operations when monitoring results are below the action level for two consecutive monitoring events taken at least seven days apart.

6.6.4.5 Monitoring must be conducted when there has been any change in process, raw materials, equipment, personnel, work practices, or control methods that may result in new or additional exposures.

6.6.5 Medical Surveillance

6.6.5.1 Medical monitoring will be performed on MPC employees in the event of exposure to airborne Cr(VI) concentrations equivalent to or greater than the Action Level for more than 30 days per year.

6.6.5.2 Medical monitoring must be performed within 30 days after initial assignment, unless the employee has received an equivalent examination within the previous 12 months.

6.6.5.3 Medical monitoring must be performed annually.

6.6.5.4 Medical monitoring must be performed within 30 days after exposure during an

emergency that resulted in an uncontrolled release of Cr(VI).

6.6.5.5 Medical monitoring must be performed at the termination of employment, unless conducted within 6 months prior to separation.

6.6.5.6 Additional monitoring must be conducted within 30 days after a clinician recommends additional examination.

6.6.5.7 Additional monitoring must be conducted for employees that develop signs or symptoms of the adverse health effects associated with Cr(VI) exposure.

6.6.5.8 The hexavalent chromium examination must consist of the following:

6.6.5.8.1 Health history questionnaire, including medical and work history.

6.6.5.8.2 Physical examination, including skin and respiratory tract examination.

6.6.5.8.3 Occupational medicine clinician's written opinion.

6.6.5.9 Medical monitoring of MPC Contractor employees must, at a minimum, be conducted in accordance with requirements outlined in the OSHA Chromium (VI) Standard, 29 CFR 1910.1026.

6.6.5.10 No MPC employees have experienced an elevated exposure to Cr(VI) in excess of the Action Level; therefore no MPC employees are in a medical surveillance program for Cr(VI).

6.7 Arsenic Exposure Control Program

6.7.1 Identification of Arsenic Exposure Sources

6.7.1.1 Present in spent catalysts, storage tank scale, and refractory in heaters and vessels. Arsenic may be released during the following activities:

6.7.1.1.1 During hot work on carbon steel that was previously in service.

6.7.1.1.2 During abrasive and CO_2 pellet blasting of heater tubes.

6.7.1.1.3 During removal/disturbance (cutting, chipping), and clean-up of refractory debris.

6.7.1.1.4 During dumping of hydrotreater or isomerization catalyst, dumping of alky defluorinators desiccant, and removal of catalyst.

6.7.2 Exposure Control Measures

6.7.2.1 Respiratory Protection

6.7.2.1.1 Employees will be required to use respiratory protection in accordance with the LRD Exposure Control Measure Requirements for Maintenance/Construction Operations.

6.7.2.1.2 For non-routine or new processes/tasks and emergency situations, a minimum of a half-mask air purifying respirator with a

P100 (HEPA) filter must be used.

6.7.2.1.3 Higher protection factor respirators may be necessary under some circumstances.

6.7.2.1.4 Filtering facepiece respirators are not acceptable.

6.7.2.2 Protective Clothing

6.7.2.2.1 Protective clothing will be required in accordance with the LRD Exposure Control Measure Requirements for Maintenance/Construction Operations.

6.7.2.2.2 Safety glasses must be worn at a minimum, unless a full face respirator provides appropriate eye protection.

6.7.2.2.3 When there is a risk of flying debris and particulates, a face shield and safety glasses must be worn.

6.7.2.2.4 Goggles or a face shield with safety glasses must be worn when around pressurized water use.

6.7.3 Work Area Demarcation

6.7.3.1 Install barricade tape and post warning signs at perimeters of each work area where arsenic-containing materials are being disturbed or released. Signs should be worded exactly as follows:

DANGER
Arsenic Cancer Hazard
Authorized Personnel Only
No Smoking or Eating
Respirator Required

6.7.4 Exposure Assessments

6.7.4.1 An initial exposure assessment will be conducted at the onset of any operation that involves the disturbance or creation of arsenic particulates. The purpose of the initial assessment is to quantify airborne arsenic concentrations in breathing zones of personnel performing the work and in the work area atmosphere in order to assess exposure levels and the adequacy of the exposure control measures (engineered & PPE) being employed, if any. The initial assessment is performed by the LRD Safety Department in accordance with accepted industrial hygiene practices.

6.7.4.2 If monitoring reveals exposures at or above the action level, periodic monitoring must be conducted every six months, as operations permit.

6.7.4.3 If monitoring reveals exposures at or above the PEL, periodic monitoring must be conducted every three months, as operations permit.

6.7.4.4 The employer may discontinue monitoring for respective tasks/operations when monitoring results are below the action level for two consecutive monitoring events taken at least seven days apart.

6.7.4.5 Monitoring must be conducted when there has been any change in process, raw materials, equipment, personnel, work practices, or control methods that may result in new or additional exposures.

6.7.5 Medical Surveillance

6.7.5.1 Medical monitoring will be performed on MPC employees in the event of exposure to airborne arsenic concentrations equivalent to or greater than the Action Level for more than 30 days per year.

6.7.5.2 Medical monitoring must be performed prior to initial assignment and annually thereafter. However, medical monitoring must be performed semi-annually for covered employees over the age of 45 and/or have been occupationally exposed to inorganic arsenic above the AL for more than 10 years.

6.7.5.3 Medical monitoring must be performed at the termination of employment, unless conducted within 6 months prior to separation.

6.7.5.4 Additional monitoring and emergency medical treatment must be conducted for employees that develop signs or symptoms of the adverse health effects associated with inorganic arsenic exposure.

6.7.5.5 The arsenic examination must consist of the following:

6.7.5.5.1 Health history questionnaire, including medical and work history.

6.7.5.5.2 Physical examination, including skin and nasal examination.

6.7.5.5.3 A standard posterior-anterior chest x-ray.

6.7.5.5.4 Other examinations as determined by the examining physician.

6.7.5.5.5 Occupational medicine clinician's written opinion.

6.7.5.6 Medical monitoring of MPC Contractor employees must, at a minimum, be conducted in accordance with requirements outlined in the Inorganic Arsenic Standard, 29 CFR 1910.1018.

6.7.5.7 No MPC employees have experienced an elevated exposure to arsenic in excess of the Action Level; therefore no MPC employees are in a medical surveillance program for arsenic.

7.0 TRAINING

7.1 MPC and Contractor employees with the potential for exposure to hazardous levels of toxic metal compounds must be provided awareness training on hazards associated with toxic metals and the measures established to control exposure.

7.2 Training will consist of, but is not limited to, the following:

7.2.1 The content of the Lead Standards 29 CFR 1926.62 and 1910.1025.

7.2.2 The content of the Inorganic Arsenic Standards, 29 CFR 1910.1018 and 1926.1118.

7.2.3 The content of the Chromium (VI) Standards, 29 CFR 1910.1026 and 1926.1126.

7.2.4 Hazard Communications 29 CFR 1910.1200

7.2.5 Specific nature of operations that could result in exposure to toxic metals above the OSHA Action Level.

7.2.6 Respiratory Protection requirements.

7.2.7 Purpose and description of medical surveillance and medical removal programs.

7.2.8 Engineering controls and good work practices associated with the job assignment.

7.2.9 Contents of any compliance plan in effect including this procedure.

7.2.10 Instructions not to use chelating agents.

7.2.11 The right to access records under 29 CFR 1910.1020, Access to Employee Exposure and Medical Records.

7.2.12 All materials relating to the training programs and a copy of the standard will be made readily available to all employees.

8.0 RECORDKEEPING

8.1 Recordkeeping

8.1.1 All records associated with this Standard and its implementation shall be maintained in accordance with Marathon Petroleum Corporation Enterprise Records and Information Management Policy (MPC6003)**.**

8.1.2 The Louisiana Refining Division's Safety Department will establish and maintain an accurate record of all monitoring and other data used to conduct employee exposure assessments as required by the OSHA 29 CFR 1910.1020 Access to Employee Exposure and Medical Records standard.

8.1.3 LRD Contractors are also required to maintain records of all employee monitoring and other data used for the exposure assessment.

9.0 REFERENCES

9.1 OSHA 29 CFR 1910.1026 and 29 CFR 1926.1126, Chromium (VI)

9.2 OSHA 29 CFR 1910.1018 and 29 CFR 1926.1118, Inorganic Arsenic

9.3 OSHA 29 CFR 1910.1025 and 29 CFR 1926.62, Lead

9.4 OSHA 29 CFR 1910.1020, Access to Employee Exposure and Medical Records

9.5 OSHA 29 CFR 1910.1200, Hazard Communication

9.6 LRD HazCom Standard Practice, RSW-0140-GV

9.7 LRD Respiratory Protection Standard Practice, RSW-0117-GV

9.8 LRD Industrial Hygiene Standard Practice, RSW-0118-GV

9.9 LRD Exposure Control Measure Requirements for Maintenance/Construction Operations, RSW-A-003-GV

9.10 MPC Toxic Metals Exposure Control Program, HLT-2017

10.0 APPENDICES

10.1 N/A

11.0 REVISION HISTORY

Revision Number	Description of Change	Written by	Approved by	Revision Date	Effective Date
0	**Change procedural format and content**	**Jessica Myers**	**VPP Committee- 5/27/2014 RLT- 5/29/2014**	**5/30/2014**	**5/30/2014**
1	**3 year review, no changes**	**Jessica Myers**	**Safety**	**6/14/2017**	**6/20/2017**
2	**Minor administrative changes. Added "Notes" about how XRFs can be utilized per OSHA. Updated signage language that changed in 2012 Per HazCom 2012.**	**Alex Mapel**	**Safety**	**6/29/2020**	**6/29/2020**
3	**3 year review. Deleted unnecessary highlighting and typos.**	**Kristen Brickner**	**Safety**	**6/30/2023**	**6/30/2023**