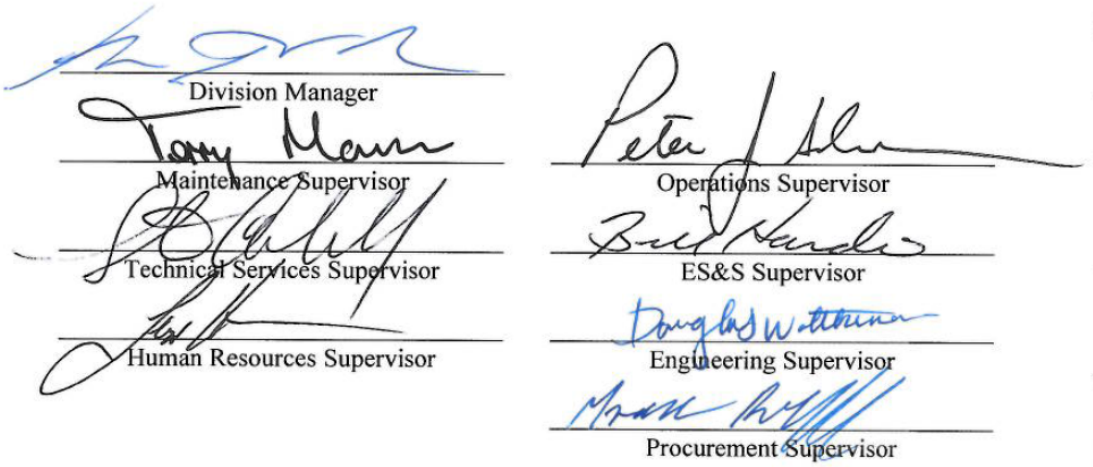
RSW-0013-CR - Industrial Hygiene

Overview

Approvals



Purpose

The purpose of this document is to define the industrial hygiene practices and procedures used to anticipate, evaluate and control employee exposures to potentially harmful agents.

Scope

The scope of this document includes general practices, respiratory protection, radiation safety, toxic metals, hearing conservation and employee exposure notification as it applies at Cincinnati Renewable Fuels.

Out of Scope

Out of scope programs include benzene and hydrogen sulfide. If existence of these materials is identified onsite, the applicable RSP will be followed and the need for an onsite program will be re-evaluated. For information regarding these programs, consult with your local ES&S Professional.

Ventilation requirements are not within the scope of this document. See **RSW-0016-CR** Local Exhaust Ventilation.

Silica requirements are not within the scope of this document. See RSW-0029-CR - SILICA CONTROL PLAN.

Supersedes

The requirements of this document (Section 8.3) supersede RSW-0008-CR Facial Hair.

Records Retention

Printed copies of this document should not be retained more than 12 months. Any revision to this document will be retained a maximum of 10 years following the revision.

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1.0 References

1.1 CBD References

The table below lists references to be used following the requirements of this document.

Number	Description
--	IH Procedure Manual
--	Marathon Petroleum Company's Occupational Exposure Limits
HLT-2001, Appendix B	Marathon Exposure Assessment Methodology (EXAM) Flowchart
HLT-2005, Appendix B	Facial Hair Graphic
HLT-2017, Appendix B	Marathon API Hexavalent Chromium Calculator
HLT-2025-DN	Employee Health Monitoring Examination Protocols Standard
HLT-2025-DN, Appendix E	Respiratory Protection Examination
OEH 23	CBD Covered Job List
REW-1001-CR	Waste Management Plan
RGD-ESS-0001-Form01-CR - Radiation Devices Audit Checklist	Radiation Devices Audit Checklist

1.2 Refining References

The table below lists the Refining references used with this document.

Number	Description
HLT-2001	Industrial Hygiene Program
HLT-2003	Management of Employee Exposure and Medical Records
HLT-2005	Respiratory Protection Program
HLT-2017	Toxic Metals Exposure Control Program
HLT-2024	Employee Exposure Notification Procedure
HLT-2025-DN	Employee Health Monitoring Examination Protocols Standard
HLT-2034	Hearing Conservation

1.3 Industry References

The table below lists the industry references used with this document.

Number	Description
Compressed Gas Association (CGA)	
CGA G-7.1-1989	Commodity Specification for Air

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1.0 References, Continued

1.4 Regulatory References

The table below lists the regulatory references used with this document.

Number	Description
--	Occupational Safety & Health Administration (OSHA): Standard Interpretations, November 18, 2003, Clarification of Maintenance vs. Construction Activities
29 CFR 1910.134	Occupational Safety & Health Administration (OSHA):Respiratory Protection
29 CFR 1910.1000	Occupational Safety & Health Administration (OSHA): Table Z-1 Limits for Air Contaminants
29 CFR 1910.1026	Occupational Safety & Health Administration (OSHA): Hexavalent Chromium (General Industry)
29 CFR 1926.1126	Occupational Safety & Health Administration (OSHA): Hexavalent Chromium (Construction Industry)
49 CFR Part 173	Shippers - General Requirements For Shipments And Packaging
49 CFR Part 178	Specifications for Packaging
3701:1-68-04	Ohio Industrial Analytical Radiation Generating Equipment

1.5 Terms

For details, see Appendix A: Terms and Definitions.

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2.0 Roles and Responsibilities

2.1 Roles and Responsibilities

The table below describes the roles and responsibilities related to this document.

Roles	Responsibilities
Employee/Contractor	**(a)** Participate in monitoring tasks as necessary. **(b)** Report potential exposure events. **(c)** Follow exposure reduction controls as required.
IH Program Administrator	**(a)** Required to review this document on an annual basis for updates, compliance, clarifications etc. **(b)** Manage the programs included in this document. **(c)** Review the *CBD Covered Job List* (**OEH 23**) and submit to OEH no later than January 1 of each year for input into the corporate medical database. **(d)** Maintain a current copy of the CBD isopleth for noise monitoring. **(e)** Maintain certification of air quality for each cylinder or batch of cylinders that were refilled. **(f)** Complete *Radiation Devices Audit Checklist* (**RGD-ESS-0001-Form01-CR - Radiation Devices Audit Checklist**) semi-annually. **(g)** Complete RGD-ESS-0001-Form02-CR - Annual Radiation Devices Audit Checklist annually. **(h)** Maintain radiation leak check, calibration, and audit checklist documents.
Lab Supervisor	**(a)** Calibrate ionizing radiation producing equipment following lab procedures. **(b)** Designate Individual Responsible Person for Radiation Protection (IRRP) for the analytical radiation producing laboratory equipment.
HR Supervisor	**(a)** Review the "Scheduled Recall Report" from Corporate Health Services to determine when employees need to be scheduled for a medical (re)evaluation. **(b)** Coordinate medical examinations following Section 4.3 and Section 8.1.5.
OEH	**(a)** Manage documents in Medgate, as applicable. **(b)** Maintain and update medical surveillance groups, including medical exceptions. **(c)** Develop and implement Annual Monitoring Plan. **(d)** Assess site activities and hazards per EXAM Process. **(e)** Respond to employee and contractor health related concerns. **(f)** Coordinate ear-fit testing and respiratory protection fit testing with program administrator. **(g)** Perform and maintain noise isolpleth maps. **(h)** Respond to site concerns as requested. **(i)** Develop and maintain metric (KPI) information for reporting.

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3.0 Industrial Hygiene

3.1 Exposure Assessment Methodology (EXAM)

3.1.1 The *Marathon Exposure Assessment Methodology (EXAM) Flowchart* (**HLT-2001, Appendix B**) process is a comprehensive strategy for the qualitative and quantitative assessment, statistical analysis, exposure control and reassessment of occupational exposure risks. EXAM will be used to asses CBD's employee exposures and to determine what tasks require engineering intervention, work practice control, hearing and/ or respiratory protection to maintain employee exposures to below Marathon Petroleum Company's Occupational Exposure Limits (OEL).

3.1.2 Qualitative assessments will be conducted on Similar Exposure Groups (SEGs) to identify:
- **(a)** routine and non-routine Similar Exposure Tasks (SETs),
- **(b)** agents of concern, and
- **(c)** Health Risk Ranking for each task to establish a priority for further action.

3.1.3 Quantitative exposure assessments will be conducted, per the IH Procedure Manual or other sampling methods approved by an AIHA accredited laboratory, on:
- **(a)** identified SETs,
- **(b)** tasks of employee's concern, and
- **(c)** and tasks potentially eligible for PPE downgrade validation

3.1.4 Bayesian Decision Analysis (BDA) will be utilized to validate quantitative analysis data.
- **(a)** Quantitative data for BDA analysis must be $\leq$ 6 years old (current year plus 5 years).
- **(b)** Control parameters at the 95th percentile level and 95% confidence interval (Highly acute toxins will be controlled at the 99th percentile and 95% confidence interval), with an exceedance fraction of 5% or less.

3.1.5 Qualitative assessment intervals will be determined by the statistical analysis and EXAM process.

3.1.6 Only American Industrial Hygiene Association (AIHA) accredited laboratories that participate in the Proficiency Analytical Testing (PAT) will be used to analyze field sample media.

3.2 Control Measures

3.2.1 When direct reading instrument readings, analytical results, or statistical analysis indicate exposures exceed or have the probability to exceed MPC's OELs or applicable Action Levels (AL), feasible control measures will be implemented to mitigate the exposure. The hierarchy of controls that should be followed is as follows:
- **(a)** Elimination / substitution of the hazardous substance,
- **(b)** Engineering controls (e.g., ventilation controls, or enclosures for noise reduction),
- **(c)** Work practice controls, and
- **(d)** Personal Protective Equipment (PPE) provided will be evaluated on a case-by-case basis and will be validated by formal hazard assessment.

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3.0 Industrial Hygiene, Continued

3.2 Control Measures (continued)

3.2.2 Medical surveillance programs will be implemented when exposures cannot be controlled to within established limits.

Note: Surveillance programs have been established for hearing conservation and respiratory protection.

3.3 Training

Employees performing qualitative or quantitative assessments are required to complete the respective training courses, led by OEH group, prior to conducting the assessments.

3.4 Metrics

3.4.1 Annually, qualitative and quantitative strategies must be developed by OEH for review and approval to ensure implementation of the EXAM Process.

3.4.2 Quarterly, in accordance with the EXAM implementation schedule, the following must be reported by OEH:

- **(a)** Completion of employee baseline qualitative exposure assessments,
- **(b)** Completion of nested contractor baseline qualitative exposure assessments,
- **(c)** Collection of required number of quantitative samples, per Health Risk Rank (HRR) categories and sampling strategies for each SEG and SET,
- **(d)** Completion of Bayesian Analysis for all HRR Categories 4-2 SEG and SET, and
- **(e)** Compliance to Reassessment Schedule.

3.5 Asbestos

3.5.1 Materials that are suspected to contain asbestos shall be sampled by a qualified contractor and tested by an accredited laboratory to determine if the material is asbestos containing.

- **(a)** Abatement must be conducted by a certified asbestos abatement contractor following all applicable regulations.

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4.0 Hearing Conservation

4.1 Requirements

4.1.1 Hearing protection is required to be worn inside the operating boundary (perimeter) of all process units on the National side (i.e. North Esters, South Esters, Cooling Towers, Bldg. 413, etc.) of the plant, including during shutdown/turnaround periods. Other select areas are demarcated with signage. See Appendix B.

4.1.2 Signs or other demarcations (i.e. paint, striping) must be posted to identify areas where there is potential exposure in excess of the MPC OEL (85dBA) and hearing protection is required.

4.1.3 Hearing protection is required where the employee's 8-hour TWA exposure, ≥85dBA.

4.1.4 Double hearing protection is required where the employee's 8-hour TWA exposure ≥ 100dBA.

4.1.5 High noise areas are also encountered around tools and operating equipment such as pneumatic tools, grinders, motorized equipment, vacuum trucks, and compressors. Hearing protection must be worn regardless of the time spent in these areas.

4.2 Noise Monitoring

4.2.1 Area noise monitoring must be conducted to identify areas above 85dBA. This includes areas / units operating under normal conditions, or a change of equipment that could potentially increase or reduce noise levels (e.g., pump change out).

4.2.2 An isopleth, Appendix B, indicates where noise levels exceed 85 dBA based on an Area Noise Survey (ANS).

NOTE: The IH Program Administrator will own a current copy of the ANS.

4.3 Audiometric Exams

4.3.1 An initial audiometric exam must be completed for employees whose job position has been identified in the Hearing Conservation Program medical surveillance category (*CBD Covered Job List* (**OEH 23**)).

4.3.2 Periodic audiograms must be completed annually for employees in the Hearing Conservation Program.

4.4 Fit Testing

4.4.1 Each employee in the Hearing Conservation Program must be quantitatively fit tested every 3 years.

4.4.2 Each employee who experiences a Standard Threshold Shift (STS) must be retrained on proper selection, fit, and condition of hearing protection devices.

4.5 Recordkeeping

4.5.1 The *CBD Covered Job List* (**OEH 23**) must be reviewed annually and submitted to OEH no later than January 1 of each year for input into the corporate medical database.

4.5.2 This list should also be sent to OEH when job category or personnel changes occur.

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5.0 Toxic Metals Exposure Control

5.1 General

For the purpose of this document, toxic metals include:

(a) Arsenic,
(b) Hexavalent chromium,
(c) Lead, and
(d) Manganese.

5.2 Exposure Control

5.2.1 Where exposures exceed the applicable Occupational Exposure Limit or Action Level, substitution with a less toxic material must be considered.

5.2.2 Substitution should not compromise the quality or integrity of the operation.

5.2.3 When a viable substitute cannot be used, engineering controls must be developed.

5.2.4 Where engineering controls are infeasible, work practice controls and personal protective equipment are to be used.

5.3 Lead

3.5.2 For all new paints / coatings documentation is required that indicates that the material is non-lead containing.

3.5.3 If an existing surface is to have hot-work conducted on it and there are no prior records or data proving it is non-lead containing, a bulk sample will be tested by an accredited laboratory to obtain the exact concentration of lead.

(b) Hot-work may proceed without coating analysis if the coating is abated in a manner that assumes it contains lead.
(c) Abatement must be conducted by a certified lead abatement contractor following all applicable regulations.

5.4 Hexavalent Chromium

5.4.1 In the absence of monitoring data for hexavalent chromium exposures during hot-work on stainless steel metal, the *Marathon API Hexavalent Chromium Calculator* (**HLT-2017, Appendix B**) must be used to evaluate exposure potential and identify control measures.

5.4.2 When employee exposures exceed the action level for hexavalent chromium for > 30 days (240 hours) per year, a written plan must be developed and implemented to control employee exposure. Covered employees are included in the respiratory protection program.

NOTE: Employees in the respiratory protection program are identified in the *CBD Covered Job List* (**OEH 23**).

5.4.3 When hot work is performed on chromium containing materials and the airborne concentration is expected to be above the OSHA 8 hour TWA, the work area must be barricaded and demarcated in order to effectively warn an employee working in the immediate area that hexavalent chromium exposure might occur.

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5.0 Toxic Metals Exposure Control, Continued

5.4 Hexavalent Chromium (continued)

5.4.4 Warning signs must be placed in the area where work is being performed that may produce Hexavalent Chromium at hazardous concentrations. The warning signs shall contain the following warning:

WARNING
HEXAVALENT CHROMIUM
CANCER HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATOR REQUIRED

5.4.5 Labels or other forms of warning are provided for containers of hexavalent chromium or mixtures containing hexavalent chromium. The labels must comply with requirements of the Hazard Communication Standard (29 CFR 1910.1200,f) and in addition include the following wording:

DANGER
CONTAINS HEXAVALENT CHROMIUM
CANCER HAZARD

5.5 Disposal

Waste containing toxic metals must be disposed of properly following **REW-1001-CR**, *Waste Management Plan*.

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6.0 Radiation Safety Program

6.1 Licensing and Registration

CBD does have equipment that requires registration (i.e., devices with radiation sources), with the ODH and an identified responsible person.

Equipment registration, inspections, monitoring data, and additional radiation program information is located here: Y:\Marathon HES\Industrial Hygiene\Radiation.

6.2 Requirements

6.2.1 The Lab Supervisor will designate the IRRP to be the responsible person for the ionizing radiation producing equipment.

6.2.2 A Tier I Audit is required to be completed semi-annually by the Safety Department and documented for ionizing radiation producing equipment following **RGD-ESS-0001-Form01-CR - Radiation Devices Audit Checklist**, *Radiation Devices Audit Checklist*.

a. This audit includes a shutter check. The shutter check is a functional test of the device shutter to ensure that when this instrument is on, the shutters are closed and locked to prevent radiation from leaking out of the device.

NOTE: Documents must be stored with the ES&S Supervisor in the radiation file.

6.2.3 An Tier I Audit is required to be completed annually by the Safety Department and documented for ionizing radiation producing equipment following RGD-ESS-0001-Form02-CR - Annual Radiation Devices Audit Checklist.

6.2.4 The Lab Supervisor is responsible for calibration of ionizing radiation producing equipment following lab procedures.

6.2.5 CBD will provide documentation upon request showing employees operating or near the piece of equipment are not exposed to harmful levels of ionizing radiation.

NOTE: This documentation also confirms that no personal dosimetry is necessary.

6.3 Training

6.3.1 Employees shall be trained on the following fundamentals of radiation safety:

(a) Characteristics of radiation
(b) Units of radiation dose
(c) Significance of radiation dose
   a. Radiation protection standards
   b. Biological effects of radiation
   c. Case histories of radiography accidents
(d) Levels of radiation from sources of radiation
(e) Methods of controlling radiation does
   a. Working time
   b. Working distance
   c. Shielding

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7.0 Employee Notification Program

7.1 Requirements

7.1.1 When workplace measurements of employee exposure to covered substances or agents are conducted, the employee shall be notified of the monitoring results and documentation of the notification shall be maintained.

7.1.2 Employee notification and documentation applies to all exposure measurement results that are obtained from:

(a) Personal sampling of individual employee exposure,

(b) Other sampling, including area monitoring or representative sampling of a group of employees, or

(c) Personal sampling of non-MPC employee exposures.

Note: When other area monitoring is done for general assessment of workplace exposures, a summary of the results should be posted or made available to the employees who work in the area monitored.

7.1.3 The employee notification shall include the exposure measurement determined from the monitoring and it shall be compared to the applicable exposure limit as determined from Marathon Petroleum Occupational Exposure Limit and OSHA Standard Action Levels and/or Permissible Exposure Limits.

7.2 Acceptable Exposure Limits

When monitoring results are within the acceptable exposure limits, an appropriate and timely notification should be provided by the IH Program Coordinator or OEH to the employee and any employee performing the similar tasks.

7.3 Exceeded Exposure Limits

7.3.1 When monitoring results exceed the acceptable exposure limit, arrangements shall be made through the IH Program Coordinator or OEH to contact the employee and applicable Similar Exposure Task employees as soon as practical, but no later than the requirements of Federal, State or Local regulations to provide a letter and explain the results.

7.3.2 Where applicable additional monitoring and/or corrective action may be required:

(a) Affected MPC employees will be given the letter to sign, and

Note: The signed document will then be uploaded into Medgate by OEH and follow the applicable records retention policy.

(b) Contractor employees will be notified by either:

- A letter to be signed if still on location, or
- An email with a return receipt from the company's HES&S contact acknowledging they have received the results and/or notification letter.

7.3.3 A letter delivered via certified mail. MPC must have the signed certification of delivery copy proving they have received the results and / or notification letter for records retention

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7.0 Employee Notification Program, Continued

7.4 Recordkeeping	Employee exposure records must be maintained for a minimum of 30 years per OSHA Access to Employee and Medical Records Standard.

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8.0 Respiratory Protection Program

8.1 Requirements

8.1.1 The IH Program Coordinator will hold responsibility as the Local Program Administrator.

8.1.2 The use of respiratory protection shall be used only by employees who are medically qualified, trained and fit tested.

8.1.3 Employees included in the respiratory protection program are identified in the *CBD Covered Job List* (**OEH 23**). The *CBD Covered Job List* (**OEH 23**) categorizes employees by job task. The categories are identified by the *Respiratory Protection Examination* (HLT-2025-DN**,** Employee Health Monitoring Examination Protocols):

(a) **HazMat Response Team**: includes employees who participate on a Component's HazMat Response Team that would don supplied air respiratory protection to perform offensive actions in response to an emergency situation. Personnel that have received 24 hour HAZWOPR Technician level training, and are expected to perform in that capacity during an event, would meet this definition. Personnel that have received 8 hour HAZWOPR Operations level training, and are expected to perform defensive actions only during an event, would not meet this definition.

(b) **Fire Brigade**: includes employees who participate on a Component's Fire Brigade on a full or part time basis. Fire Brigade members will typically don bunker gear and perform offensive actions in response to emergency situations.

8.1.4 Medical evaluations for employees will be conducted following the *Respiratory Protection Examination* (HLT-2025-DN**,** Employee Health Monitoring Examination Protocols) to determine if they are medically qualified to use a respirator prior to fit testing and periodically thereafter.

Notes:

(1) Employees will have until the end of the same month (not calendar year) to complete their medical evaluation and can be fit tested again.

(2) After the annual review of the *CBD Covered Job List* (**OEH 23**) is conducted and changes are executed, the HR Supervisor will request a "Scheduled Recall Report" from Corporate Health Services which will contain a list of employees, and corresponding dates, when each is to be scheduled for a medical (re)evaluation.

8.2 Fit Testing

8.2.1 Each employee that is required to wear a respirator with a tight-fitting face-piece must be fit tested with the same make, model, style and size of respirator as used in the workplace, prior to initial use of the respirator.

8.2.2 Respiratory quantitative fit testing will occur annually.

8.2.3 Employees are subject to fit testing whenever the employee reports, or the employer, PLHCP, supervisor, or program administrator makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to:

(a) facial scarring,
(b) dental changes,
(c) cosmetic surgery, or
(d) obvious change in body weight.

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8.0 Respiratory Protection Program, Continued

8.2 Fit Testing (continued)

8.2.4 Quantitative fit testing will be conducted in the negative pressure mode. Positive pressure respirators shall be fit tested in negative pressure mode.

8.2.5 A quantitative fit test is required for all full-face positive and negative pressure respirators or any respiratory that requires a fit factor greater than 100.

8.3 Facial Hair

8.3.1 Respiratory protection requires a proper face seal to provide adequate protection against potentially hazardous atmospheres.

8.3.2 Facial hair, facial characteristics, or corrective lenses which interfere with the face-piece seal disqualify an employee from wearing a respirator unless the condition is corrected or a specific governmental regulation allows the use of positive pressure with facial hair.

NOTE: Prescription lense kits are available for respirators. Contact the IH Program Coordinator for additional information.

8.3.3 Acceptable and unacceptable facial hair is identified in **HLT-2005, Appendix B**, *Facial Hair Graphic*.

8.4 Respiratory Protection Selection

8.4.1 Respiratory protection shall be worn where there is reasonably foreseeable employee exposure to airborne contaminants above the applicable Marathon Petroleum Company's Occupational Exposure Limits or potentially IDLH atmospheres.

Note: Tasks include, but are not limited to welding chrome containing metals, gauging tanks, line breaking, etc.

8.4.2 The EXAM process and Bayesian analysis will be used to determine what tasks require respiratory protection.

8.4.3 NIOSH certified respiratory protection will then be selected taking in to account the magnitude and length of exposure.

8.4.4 Filter cartridges will be replaced at the end of each shift or as indicated by any available End of Service Life Indicator.

8.4.5 End of Service Life indicators (ESLI) are required for air-purifying respirators used for applicable gases and vapors. If no ESLI is available, the use of the respirator cartridges must not exceed the service life as indicated by the Respirator Cartridge Change-Out Schedule (Appendix *–this will be created after monitoring data confirms exposure concentrations*-). This schedule is based on objective information that will ensure that cartridges and canisters are changed before the end of their service life.

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8.0 Respiratory Protection Program, Continued

8.5 Air Purifying Respirators

Air Purifying Respirators including half-mask or full-face respirators, purify the air as an employee breathes through filter/chemical cartridges. They provide protection against lower levels of contaminants, as specified by OSHA. Limitations are provided below:

(a) These devices do NOT supply oxygen.
(b) Can be used only in areas containing 19.5-23.5% oxygen.
(c) Cannot be used when concentrations of contaminants are unknown, or Immediately Dangerous to Life or Health (IDLH).
(d) Employees shall leave area immediately if:
- breathing becomes difficult,
- dizziness or other distress occurs, or
- you taste or smell contaminant.

(e) Cannot be worn for protection from the following substances, regardless of concentration:
- Carbon Monoxide,
- Carbon Dioxide, and
- Methanol.

8.6 Air Supplied Respirators

8.6.1 Air Supplied Respirators supply Grade "D" Breathing Air and should be worn in areas where there is NOT sufficient oxygen (<19.5% or >23.5%) or in areas that require supplied air due to the toxic atmosphere. Limitations are that employees shall leave area immediately if:
(a) breathing becomes difficult,
(b) dizziness or other distress occurs, or
(c) you taste or smell contaminant.

8.6.2 Couplings and fittings used for breathing air lines shall be incompatible with all other fittings used at field and plant facilities.

8.6.3 When used, compressors shall be constructed and located to avoid the entry of contaminated air into the fresh air supply system and shall be equipped with suitable in-line sorbent beds and filters to assure breathing air quality is met, and the dew point at line pressure is 100°C (180°F) below the lowest expected ambient temperature.

8.6.4 A carbon monoxide alarm shall be used to monitor CO levels in air from compressors that are used to refill cylinders and/or to provide breathing air for personnel.

8.6.5 Sorbent beds shall be tagged indicating the change date and the person authorized to perform the change.

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8.0 Respiratory Protection Program, Continued

8.7 Breathing Air

8.7.1 Formulated oxygen/nitrogen gas mixtures shall not be used for breathing air.

8.7.2 Compressed air, compressed oxygen, liquid air or liquid oxygen used for respiration is of high purity and compressed breathing air shall meet the minimum specifications of the Compressed Gas Association (CGA) Commodity Specification **G-7.1-1989** for Type-1 Grade D Breathing Air, in conformance with the following parameters:

- **(a)** Oxygen content of 19.5 – 23.5% by volume (atmospheric air),
- **(b)** Hydrocarbon content of 5 mg/m3 of air or less,
- **(c)** Carbon monoxide (CO) content of 10 ppm or less,
- **(d)** Carbon dioxide content of 1000 ppm or less, and
- **(e)** Lack of discernible odor.

8.7.3 When breathing air cylinders are filled / refilled by vendors, a certification of air quality shall be obtained for each cylinder or batch of cylinders and be maintained at the with the IH Program Coordinator for 10 years per MPC's records retention policy.

8.8 ESCBA

8.8.1 Emergency use respirators (60 minute) shall be inspected monthly and checked for proper function before and after each use.

8.8.2 Emergency escape-only respirators (15 minute) shall be inspected before being placed in work area and monthly if stored in the work area.

8.8.3 Emergency use respirators and escape-only respirator inspections shall be documented and attached to the respirator or maintained in a file.

8.9 Inspection

8.9.1 Self-Contained Breathing Apparatus (SCBA) tanks shall be hydrostatically tested every 5 years by a certified third party.

8.9.2 SCBA breathing apparatuses shall be bench tested annually.

Note: Cylinders shall be tested and maintained in accordance with the Shipping Container Specification Regulations of the US Department of Transportation (**49 CFR Parts 173 and 178**) or equivalent jurisdictional standard.

8.9.3 Respirators shall be inspected before each use and during cleaning. Respirator inspections shall include the following:

- **(a)** A check of respirator function, tightness of connections, and condition of various parts (e.g., face-piece, head strap, valves, cartridges, etc.),
- **(b)** A check of elastomeric parts for pliability and signs of deterioration,
- **(c)** Verification that air cylinders are maintained full and shall be refilled when below 90% of the manufacturer's recommended pressure level, and
- **(d)** Verification that all filters, cartridges and canisters (where provided) are properly labeled.

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8.0 Respiratory Protection Program, Continued

8.10 Cleaning

8.10.1 Respirators used by more than one employee shall be cleaned and disinfected after each use.

8.10.2 Respirators used exclusively by one employee shall be cleaned and disinfected as often as necessary to be maintained in a sanitary condition.

8.10.3 Respirators should be cleaned and disinfected in accordance with the following methods:

- **(a)** Remove filters and disassemble face pieces.
- **(b)** Wash components in warm water with mild detergent or disinfectant cleaner. A stiff bristle, non-wire, brush can be used.
- **(c)** Rinse components thoroughly with clean, warm water until any visual remains of detergents or cleaners are no longer evident.
- **(d)** Hand dry with a cloth or towel.
- **(e)** Reassemble face piece.
- **(f)** Test the respirator ensuring that all components work properly, prior to use.

8.11 Storage

Respirators shall be stored in such a way as to protect them from physical and chemical damage, contamination, dust, sunlight and excessive moisture or heat. Face-pieces shall be stored to prevent deformation of the seal or exhalation valves.

8.12 Voluntary Respirator Use

If an employee decides that they would prefer wearing a respirator during a task(s) when not required (i.e. sweeping):

- **(a)** The employee must first be medically qualified to wear a respirator and fit tested.

  Note: This requirement does not apply to filtering face pieces (dust masks) where the entire mask is a filter.

- **(b)** A copy of the Occupational Safety and Health Standard **29 CFR 1910.134**, ***Appendix D (Mandatory)*** Information for Employees Using Respirators When Not Required under the Standard will be provided for all employees voluntarily using respirators.

8.13 Training

Employees in the Respiratory Protection Program will receive training at least annually. The training will include, but not be limited to:

- **(a)** Proper donning techniques that includes positive and negative user seal checks,
- **(b)** Change out schedule awareness for air purifying respirators,
- **(c)** APR limitations regarding IDLH atmospheres,
- **(d)** Proper maintenance and storage,
- **(e)** Proper cleaning and disinfecting, and
- **(f)** How and when to inspect the respirator.

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Appendix A: Terms and Definitions

A.1 Air Purifying Respirators (APRs)	***Air Purifying Respirators*** are a respirator with a filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.
A.2 Covered Employee	***Covered Employee*** is an employee that is a member of a Similar Exposure Group or performs tasks that require the use of respiratory protection.
A.3 Covered Job List	***Covered Job List*** is a list of job titles that indicates the necessary medical programs an employee must be included in per regulatory requirements (i.e., Respiratory Protection Category, Hearing Conservation)
A.4 Exceedance Fraction	***Exceedance Fraction*** is the estimate of the proportion of the exposure distribution that exceeds a defined limit at a specific confidence interval.
A.5 Health Risk Rating (HRR)	***Health Risk Rating (HRR)*** is an algorithm designed to risk rank a Qualitative Exposure Assessment.
A.6 Immediately Dangerous to Life and Health (IDLH)	***Immediately Dangerous to Life and Health (IDLH)*** is an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects or would impair an individual's ability to escape from a dangerous atmosphere with an exposure of 30 minutes or less (e.g., a concentration of oxygen below 19.5% or Hydrogen Sulfide above 100 ppm).
A.7 Industrial Hygiene/Local Program Coordinator	***Industrial Hygiene Program Coordinator*** is an HES professional identified at the component level which is responsible for the day to day administration and evaluation of the respiratory protection program.
A.8 Ionizing Radiation	For purposes of this program, ***Ionizing Radiation*** includes: **(a)** ionizing radiation emitted from radioactive materials, and **(b)** ionizing electromagnetic radiation (e.g., gamma rays emitted from radioactive materials and x-rays).

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Appendix A: Terms and Definitions, Continued

A.10 Marathon Exposure Assessment Methodology (EXAM)	***Marathon Exposure Assessment Methodology (EXAM)*** is a comprehensive strategy for the qualitative and quantitative assessment, statistical analysis, developing controls and reassessment of occupational exposure risks.
A.11 MPC Occupational Exposure Limit (OEL) for Noise	***MPC Occupational Exposure Limit (OEL) for Noise*** is an 8-hour TWA occupational exposure limit (OEL) of 85 dBA for occupational noise established by MPC. Organizations shall use the MPC limit as the minimum to determine areas or jobs that require control measures.
A.12 Negative Pressure Respirator	***Negative Pressure Respirator*** is a respirator in which the air pressure inside the face-piece is negative during inhalation with respect to the ambient air pressure outside the respirator.
A.13 Oxygen-Deficient Atmosphere	***Oxygen-Deficient Atmosphere*** is an atmosphere with less than 19.5% oxygen by volume.
A.14 Permissible Exposure Limit (PEL-TWA) for Noise	***Permissible Exposure Limit (PEL-TWA) for Noise*** is an eight-hour TWA sound level of 90 dBA or a twelve-hour TWA of 87 dBA established by OSHA.
A.15 Positive Pressure Respirator	***Positive Pressure Respirator*** is a respirator in which the pressure inside the respiratory exceeds the ambient air pressure outside the respirator.
A.16 Qualitative Exposure Assessments	***Qualitative Exposure Assessments*** is a method to evaluate and risk rank potential exposures, in the absence of quantitative data. The assessment process is based on the integration of process information, work practices and professional judgment.
A.17 Quantitative Exposure Assessments	***Quantitative Exposure Assessments*** is the process of obtaining representative air or noise samples using traditional industrial hygiene and analytical methods.
A.18 Regulatory Action Level	***Regulatory Action Level*** is an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A scale (slow response) or, equivalently, a dose of fifty percent of the US Occupational Safety & Health Administration's (OSHA's) Permissible Exposure Limit (PEL).

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Appendix A: Terms and Definitions, Continued

A.19 Self-Contained Breathing Apparatus (SCBA)	***Self-Contained Breathing Apparatus (SCBA)*** is an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.
A.20 Similar Exposure Group (SEG)	***Similar Exposure Group (SEG)*** is a group of persons who experience exposures similar enough that assessing the exposures of any member of the group is predictive of exposures of all members of the group.
A.21 Similar Exposure Tasks (SET)	***Similar Exposure Tasks (SET)*** is a routine work element or series of work elements, identified within a specific SEG that has a potential for exposure.
A.22 Standard Threshold Shift (STS)	***Standard Threshold Shift (STS)*** is a change in hearing threshold, relative to the baseline audiogram for that employee, of an average of 10 decibels (dB) or more at 2000, 3000, and 4000 hertz (Hz) in one or both ears.
A.23 Toxic Metals	For the purposes of this document, ***Toxic Metals*** include: **(a)** Arsenic, **(b)** Hexavalent Chromium, **(c)** Lead, and **(d)** Manganese.
A.24 User Seal Check	***User Seal Check*** is an action conducted by the respirator user to determine if the respirator is properly seated to the face.
A.25 Occupational Environmental and Hygiene (OEH)	***OEH*** is the corporate industrial hygiene group that supports CBD in meeting compliance of this document.

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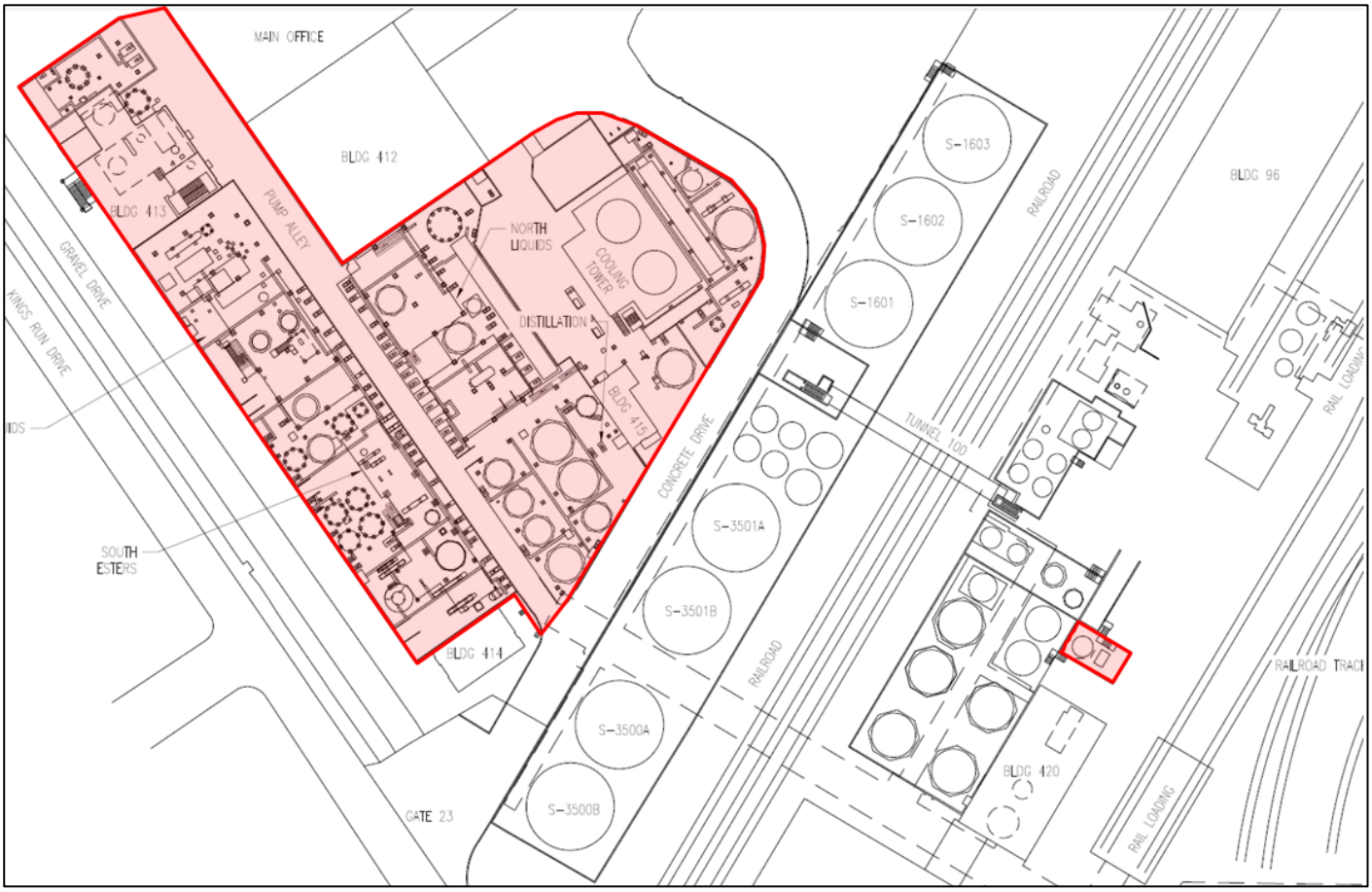
Appendix B: Hearing Protection Requirements

B.1 Hearing Conservation Isopleth

A Sound Level Meter was used to identify areas of high noise that exceed 85 dBA. Areas at or exceeding Marathon's OEL of 85 dBA are considered a hearing protection required area and signs shall be posted. Areas requiring hearing protection posting are indicated in **RED** below.



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Revision History

Document Revision History Complete the following table for each document revision.

Rev. No.	Description of Change	Author	Approved By	Rev. Date	Effective Date
1	First issue of document.	C. R. Monarch	CBD LT	4/8/2015	4/8/2015
2	Updated Section 6.2.2 and 6.2.3 to reflect clarifications from ODH.	C. R. Monarch	ES&S Supervisor, Lab Supervisor	8/6/2015	8/6/2015
3	Updated cover page with new signatures.	C. R. Monarch	CBD LT	6/3/2016	6/3/2016
4	Updated roles and responsibilities. Added Asbestos to scope. Annual Review. Removed RPP Categories A,B,C.	C. R. Monarch	ES&S Supervisor, OEH	3/2/2017	3/2/2017
5	Added Appendix B: Hearing Conservation Requirements	C. R. Monarch	CBD RLT	10/19/17	11/8/17
6	Completed annual review. Added references to annual radiation audit and file location of additional radiation information.	C. R. Monarch	Minor Change	1/8/19	1/8/19
7	Completed full program review; no changes made. Extended review cycle to 5yrs.	T. Junga	ES&S	2/11/20	2/11/20

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