



HEALTH AND SAFETY PROGRAM 401 – Respiratory Protection

1.0 PURPOSE

Westlake desires to minimize any and all atmospheric contamination by accepted engineering control measures. When effective engineering controls are not feasible, or while they are being instituted, administrative control measures will be used to reduce employee exposure. Respiratory protection will be worn by all employees whose duties require them to work in areas containing atmospheric contaminants in excess of the OSHA PEL(s) for that contaminant. Personnel required to wear respiratory protection (excluding escape respirator) shall be included in the Respiratory Protection Program.

2.0 SCOPE

This program applies to all Westlake employees at the Plaquemine Complex whose job responsibilities require them to wear respiratory protection either during routine operations or emergency response actions.

3.0 DEFINITIONS

Air-purifying respirator means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Assigned protection factor (APF) means the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees. See [Appendix A](#) for OSHA assigned protection factors.

Atmosphere-supplying respirator means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Canister or cartridge means a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

Demand respirator means an atmosphere-supplying respirator that admits breathing air to the face piece only when a negative pressure is created inside the face piece by inhalation.

EEBA (Emergency Escape Breathing Apparatus) are lifesaving equipment designed to provide a means of escape in an event where high concentrations of chemicals could occur rapidly.

Emergency situation means any occurrence such as, but not limited to,



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equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

Employee exposure means exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

End-of-service-life indicator (ESLI) means a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Escape-only respirator means a respirator intended to be used only for emergency exit.

Filter or air purifying element means a component used in respirators to remove solid or liquid aerosols from the inspired air.

Filtering face piece (dust mask) means a negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filtering medium.

Fit factor means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit test means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)

Helmet means a rigid respiratory inlet covering that also provides head protection against impact and penetration.

High efficiency particulate air (HEPA) filter means a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

Hood means a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

Immediately dangerous to life or health (IDLH) means 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.



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Interior structural firefighting means the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures involved in a fire situation beyond the incipient stage. (See 29 CFR 1910.155)

Loose-fitting face piece means a respiratory inlet covering that is designed to form a partial seal with the face.

Maximum use concentration (MUC) NIOSH APF's and OSHA PEL's will be used in determining MUC's.

Negative pressure respirator (tight fitting) means 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.

Oxygen deficient atmosphere means an atmosphere with oxygen content below 19.5% by volume.

Physician or other licensed health care professional (PLHCP) means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by 29 CFR 1910.134(e).

Positive pressure respirator means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered air-purifying respirator (PAPR) means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Pressure demand respirator means a positive pressure atmosphere-supplying respirator that admits breathing air to the face piece when the positive pressure is reduced inside the face piece by inhalation.

Qualitative fit test (QLFT) means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative fit test (QNFT) means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Respiratory inlet covering means that portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a face piece, helmet, hood, suit, or a



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mouthpiece respirator with nose clamp.

Self-contained breathing apparatus (SCBA) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user. **Service life** means the period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

Supplied-air respirator (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

Tight-fitting face piece means a respiratory inlet covering that forms a complete seal with the face.

User fit check means an action conducted by the respirator user to determine if the respirator is properly seated to the face.

4.0 RESPONSIBILITIES

4.1 Health and Safety (H&S):

- 4.1.1 Appoints an H&S Respiratory Program Administrator.
- 4.1.2 Conducts air monitoring in areas where respirators are routinely used.
- 4.1.3 Maintains a list of the evaluated areas and uses the data to ensure that respirators are used according to the hazard.

4.2 H&S Respirator Program Administrator:

- 4.2.1 Coordinates the purchase of all respiratory equipment with the purchasing department.
- 4.2.2 Ensures that monthly inspections are conducted of all supplied air respirators, manifolds, hoses and regulators.
- 4.2.3 Ensures that testing of compressor breathing air systems are periodically conducted in accordance with Compressed Gas Association (CGA) G-7.1 2004.
- 4.2.4 Conducts audit of Westlake Respiratory Protection Program and contractors' program to ensure continued effectiveness and compliance with OSHA standards.



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4.2.5 Ensure that the facility's respirator fit testing is conducted annually.

4.3 Plaquemine Emergency Response/ Security Coordinator

4.3.1 Ensures that monthly inspections are conducted of all SCBA's stored for emergency use.

4.4 H&S Medical:

4.4.1 The physician will perform medical exams that yield the same information that can be obtained from the medical questionnaire in 29 CFR 1910.134 Appendix C.

4.4.2 Conducts annual pulmonary function tests.

4.4.3 Maintains test results and medical history records in employees' medical files.

4.4.4 Conduct annual quantitative fit test.

4.4.5 Provides the supplemental information form to the Physician or other licensed health care professional (PLHCP).

4.5 Area Supervision:

4.5.1 Evaluate area of the plant for which they are responsible for potential respiratory hazards.

4.5.2 Ensure that all employees expected to use a respirator have received training.

4.5.3 Ensure that employees using respirators receive annual fit tests.

4.5.4 Enforce the correct use of respirators in required areas; Disciplines non-compliant employees according to company personnel policies.

4.5.5 Ensure that employees properly inspect, clean, and maintain all respirators.

4.5.6 Notify H&S of any process/material change, or any change that can impact respirator needs.

4.5.7 Ensure that SCBA's are inspected monthly for:



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- a. Fully charged cylinders;
- b. Properly functioning regulators;
- c. Condition of face piece;
- d. Condition of headbands;
- e. Condition of valves; and
- f. Condition of connecting tubes.

4.5.7 Maintain SCBA inspection records within the unit.

4.5.8 Ensure visual inspection of wall mounted EEBAs are completed:

- a. Ensure that correct number of EEBAs for the designated location are accounted for.
- b. Ensure that the EEBAs and brackets are secure.
- c. Ensure that the EEBA's pressure gauge indicator is pointing to "Full" and to the green portion of the gauge.
- d. Ensure that there is no other obvious damage to the gauge or regulator.

4.5.9 Ensure Monthly inspection of the Emergency Respirator box and EEBAs is completed:

- a. The box is properly secured.
- b. The box is void of any damage or cracks.
- c. Ensure that two EEBAs are installed in each box.
- d. The gasket is in place and in good working condition.
- e. The door properly closes and a proper seal is achieved.

Note: This inspection does not require the removal of the EEBA from the yellow box or bag housing unless a further review of the EEBA is determined necessary or damage is noticed.

4.6 Purchasing/Stores:

4.6.1 Purchases only respiratory protection equipment approved by the Health and Safety Department.

4.6.2 Purchase Grade D breathing air only from vendors certified by the Health and Safety Department (Air Liquide, Airgas, Orr Safety, Total Safety).

4.6.3 Ensures that the compressed breathing air vendor provides certificate of analysis, certifying that each breathing air cylinder/trailer or lot number for cylinders filled on that particular



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day, is tested and meets specifications for Grade D Breathing Air (CGA G-7.1-2004). Purchasing/Stores shall maintain Certificates of Analysis for one year.

4.6.4 Notify vendor immediately if there is any problem with the breathing air.

4.7 Employees:

4.7.1 Perform inspection of the respirator and positive/negative fit checks for each usage.

4.7.2 Return used respirators to Tool Room; or inspect, clean, maintain, and store respirators before and after each use.

4.7.3 Notify supervisor as soon as possible after using a self-contained breathing apparatus (SCBA) so that it can be properly refilled and placed back into service.

4.7.4 Notify supervisor for maintenance of supplied air respirators and breathing air equipment.

4.8 Contractors:

4.8.1 Implement a Respiratory Protection Program, for their employees that meets or exceeds Westlake's HSP 401 and 29 CFR 1910.134.

4.8.2 Any breathing air brought on-site by a contractor (i.e. turn-around activities) must have a certificate of analysis certifying that each breathing air cylinder or lot number for cylinders filled on that particular day, is tested and meets specifications for Grade D Breathing Air (CGA G-7.1-2004). The certificate of analysis must be provided to the Health and Safety Department for review.

5.0 PROCEDURE

5.1 Selection of Respirators

5.1.1 Employees will only use pressure demand atmosphere-supplying respirators.

5.1.2 Air purifying respirators may be used to perform tasks only with prior authorization of the Health & Safety Department.



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- 5.1.3 Escape respirators are approved air purifying respirators that are required to be carried at all times by all entrants into the facility. Escape respirators are for emergency escape only and should not be used for work tasks.

5.2 Supplied Air Respirators:

5.2.1 General

- 5.2.1.1 Westlake, Plaquemine, shall utilize only MSA brand supplied-air respiratory equipment. All components must be factory made and NIOSH approved. At no time may parts be “shop made” onsite.
- 5.2.1.2 Breathing air cylinder manifolds must have a low-level alarm bell to alarm when total bottle pressure reaches 500 pounds per square inch (psi) and when hose pressure to the mask regulator drops below 60psi or exceeds 100psi.
- 5.2.1.3 Airline hose must be 3/8 I.D. in size and limited to 250 feet in length.
- 5.2.1.4 Only Hansen fittings shall be used for facility breathing air drop pipes and airline hose connections. Quick connect fittings may only be utilized for coupling between the air supply manifold and hose and between the hose and respirator regulator.
- 5.2.1.5 Breathing airdrop pipes and airline hoses will be thoroughly flushed with breathing air before the face piece is connected.

5.2.2 Supplied Air Monitors/”Bottle Watches”

- 5.2.2.1 A supplied air monitor/”bottle watch” will be required when an airline respirator is used in a confined space.
- 5.2.2.2 A supplied air monitor/”bottle watch” will not be required when the following three conditions are met:
1. Operations Approval,
 2. Supplied air containers are readily accessible to employee



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3. And historical industrial hygiene monitoring has determined there is no potential for an IDLH atmosphere.

5.2.2.3 In all situations, a supplied air monitor/"bottle watch" will be provided upon request.

5.2.3 IDLH Atmosphere

5.2.3.1 Employees should not enter or remain in an atmosphere that tests indicate contains less than 19.5% oxygen at any time, or contains a chemical at concentrations Immediately Dangerous to Life or Health (IDLH), unless the wearer uses an approved supplied air respirator combined with a five minute escape bottle.

5.2.3.2 Under IDLH conditions, employees must constantly be monitored by at least one standby attendant with suitable personal protective equipment including a self-contained breathing apparatus for emergency rescue. See additional requirements for confined space entry with IDLH atmosphere in the Westlake Confined Space Entry Program.

5.2.3.3 Voice, visual or signal line communication must be maintained between the employee inside the IDLH atmosphere and those outside the IDLH atmosphere.

5.2.4 Breathing Air

5.2.4.1 Breathing air supplied from SCBA bottles, cylinders, and compressors must meet Grade D Breathing Air in accordance with the Compressed Gas Association's "Commodity Specification for Air," CGA G-7.1 (2004). A copy of the vendor's procedure for filling Grade D Breathing Air cylinders can be found in Appendix C.

5.2.4.2 Vendor's supplying breathing air must supply Stores with documentation certifying that each cylinder or lot number, for bottles filled on that particular day, has been tested and meets specifications for Grade D Breathing Air.

5.2.4.3 All breathing air cylinders must be marked "**Breathing**," in accordance with ANSI/CGA's method of marking portable compressed gas containers (C-4-1990).



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5.2.4.4 Plant air must not be used as a breathing air source due to the nitrogen back-up system.

5.2.5 Portable Air Compressor

5.2.5.1 An in-line carbon monoxide (CO) monitor **MUST BE UTILIZED** when any compressor is used.

5.2.5.2 If the CO alarm sounds, all work must stop until the source of the CO can be eliminated.

5.2.5.3 Airline hose fittings and an airline filter must be fitted to the compressor for proper attachment of individual airline hoses (one filter per two people).

5.2.5.4 In-line air purifying filters will be changed according to the manufacturer's recommendations.

5.2.5.5 The H&S Respirator Program Administrator will ensure that periodic tests are conducted to verify that compressor air meets Grade D Breathing Air specifications.

5.2.6 Self Contained Breathing Apparatus

SCBAs are provided at Westlake for emergency and routine use. All SCBA bottles must be labeled with unit name or location.

5.2.6.1 Prior to use of self-contained breathing apparatus, a systems check must be conducted on:

1. Apparatus connections;
2. Mask/hose;
3. Regulator valve configurations; and
4. Air bottle pressure indicator.

5.2.6.2 An SCBA must be taken out of service and the bottle sent for refill when the pressure drops below 90% of capacity. This is 1980psi on standard "30-minute" (2200psi) bottles and 4050psi on the 4500psi bottles.

5.2.6.3 Refilling SCBA Bottles:
When a SCBA bottle is in need of refill; that bottle **(which should be labeled with unit name or location)** will be returned to the receiving area at stores and put in the box



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labeled **Empty Bottles** located in the receiving area. There is a scheduled weekly pick-up by the vendor who refills our bottles. The re-filled bottles will be returned by the vendor to receiving and put into the box labeled **Full Bottles**. The stores personnel will return these Full Bottles to the unit or the location as the bottles are labeled.

5.2.6.4 All SCBAs will be checked for adequate flow according to the NFPA 600 flow test certification, annually.

5.3 Air Purifying Respirators:

Only National Institute for Occupational Safety and Health (NIOSH) approved air purifying respirators will be used at Westlake Plaquemine Complex.

5.3.1 Acid Gas Escape Respirators

5.3.1.1 Acid gas escape respirators are issued to each employee for their protection against an accidental in-plant chlorine release. Employees must have their respirators on their person at all times while within the fence line of the complex. They are not to be used for work at any time. Escape respirators must be maintained in a sealed plastic bag. Failure to do so may result in a premature degradation of the respirator.

NOTE: Acid gas escape respirators are to be used for emergency escape only.

5.3.1.2 Employees shall exchange their escape respirators for a new one for any of the following reasons:

1. Use of the respirator during a chlorine gas release.
2. Defective respirator (deformed exhalation valve, perforated outer body, etc.)
3. Damaged respirator (leaking cartridge, poor cartridge seal, etc.).
4. Moisture filled respirator.
5. In-service over one year from the date issued to the employee.

5.3.1.3 Honeywell Model 7902 escape respirators are the only escape respirator approved for use by Westlake personnel.



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They have the manufactured date printed on them. These cartridges do not have an expiration date, if stored in the original packaging in a climate-controlled environment. The end user should write the date issued on the zip lock respirator bag with an indelible marker.

5.3.1.4 The Health & Safety Department will be responsible for communicating to all employees that escape respirator change-out is required. This will occur every year in the month of July.

5.3.1.5 Employees may exchange their acid gas escape respirators at Stores.

5.3.2 Cartridge Respirators

5.3.2.1 Air purifying respirators have limitations in their ability to protect the user. Therefore, chemical cartridge air purifying respirators can only be utilized where the application has been fully reviewed and approved by the Health and Safety Department.

5.3.2.2 No one cartridge has been approved that removes all contaminants. Therefore, the cartridge selected must be appropriate for the particular chemical or chemicals. The appropriate cartridge will be determined by Health and Safety Department during their task review.

5.3.3 Dust Masks

Dust masks are a class of air purifying respirators. They filter nuisance dusts.

5.3.3.1 Dust masks are only to be used for convenience against nuisance dusts and particulates in airborne concentrations below the OSHA PEL.

5.3.3.2 Air monitoring and analysis should be performed to document that the airborne dust/particulate concentration is below the appropriate limit.

5.3.4 Air Purifying Particulate (P100) Respirators

5.3.4.1 Air purifying respirators have limitations in their ability to protect the user. Therefore, air purifying respirators with



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P100 cartridges can only be utilized where the application has been fully reviewed and approved by the Health and Safety Department. Currently, P100 cartridge air-purifying respirators are approved only for asbestos usage.

5.4 Emergency Escape Breathing Apparatus (EEBAs)

EEBAs are primarily located in the areas where toxics are manufactured, processed, and stored as well as in the nearby occupied buildings.

EEBAs may also be located in the nearby process areas, elevated structures, and areas that may potentially have limited egress.

Reference Appendix “D” for EEBA locations.

Reference Appendix “E” for List of EEBAs on site.

5.4.1 EEBAs do not replace the emergency escape mouth bit respirator, which is required to be carried at all times while in the facility.

5.4.2 EEBAs should be visually inspected on a monthly basis to help ensure their reliability and shelf life.

5.4.3 EEBAs located in the Chlor-Alkali and VCM control rooms are mounted on the wall using brackets.

5.4.4 All other EEBAs that could be exposed to the environment, are housed in sealed, yellow boxes labeled “Emergency Respirator”.

5.4.5 Each Emergency Respirator box should contain two EEBAs.

5.4.6 Emergency Respirator boxes located on upper levels of the facility’s structures or areas that have limited egress should house ten-minute EEBAs to allow for longer egress times.

5.4.7 Lower levels of structures and ground Emergency Respirator boxes should house five minute EEBAs.

5.4.8 Inspections

5.4.8.3 Monthly visual inspections are to be documented by each owning area using Mobile Ops or other methods. Inspections must be kept for at least one year and include:



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- a. The EEBA designated locations
- b. Inspection per the procedure requirements
- c. Date of inspection
- d. Person or persons who inspected the equipment

5.4.9 How to Use the Emergency Escape Breathing Apparatus

5.4.9.3 EEBA's are to be used for emergency escape purposes only and not intended for any other use.

5.4.9.4 Yellow EEBA's located in buildings and on lower levels contain five-minutes of breathing air, while Orange EEBA's located on elevated structures contain ten-minutes of breathing air.

5.4.9.5 During an evacuation, personnel that are near a chemical release, have limited egress, located in elevated structures near the release, experience saturation of the mouth-bit respirator (breakthrough), have to egress through the release, or any other reason where a heightened level of respiratory protection may be necessary, are to don the EEBA as follows:

- a. Locate an EEBA and ensure that the gauge indicator is pointing to "Full" and/or in the green section.
- b. Open the Velcro sealed carrying case.
- c. Remove the clear hood from the carrying case.
- d. Remove your hardhat.
- e. Fully open the regulator valve located on the EEBA bottle (breathing air will start flowing).
- f. Pull the clear hood over your head (remove the mouth bit escape respirator if being utilized).
- g. Tighten the draw strings around your neck to form a slight but snug seal.
- h. Immediately egress upwind or crosswind and follow emergency instructions and/or protocols.
- i. Monitor the pressure gauge which will indicate the amount of remaining breathing air.
- j. Once at a safe location and before the EEBA is empty, loosen the draw strings and remove the clear hood.
- k. Report the use of the EEBA to your supervisor and the Westlake Safety Department.

Note: The clear hood should inflate, create a positive pressure environment around your head, and excess air should purge/



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discharge from around your neck and the draw strings.

Warning: The EEBA's will only deliver five-minutes (yellow bottles) or ten-minutes (orange bottles) of breathing air once the regulator valve is opened. Though the regulator valve should be fully opened while the EEBA is in use, partially opening the regulator valve will not increase the amount of time the breathing air will flow. Personnel should egress in a safe manner as quickly as possible to a safe location upwind or crosswind from the release prior to running out of breathing air. The pressure gauge is the only indication for the amount of breathing air remaining in the bottle. Once the EEBA is empty, the respiratory system is no longer being protected. Once the air quits flowing, immediately remove the clear hood from your head.





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5.5 Work Place Evaluation

Appropriate work area surveillance is conducted to establish any change in the extent of the hazard. As processes change, the type or concentration of contaminants can also change, thus requiring different respiratory protection.

Air monitoring and analysis will be conducted periodically to determine the time weighted average (TWA) exposure and/or 15-minute short-term exposure limit (STEL) exposure, and/or the peak concentration exposure, of the employee.

5.5 Respirator Fit

5.5.1 General

All personnel required to wear a respirator shall receive a fit test prior to use.

5.5.1.1 The test results are the determining factor in selecting the type, model, and size of respirators for use by each individual respirator wearer.

5.5.1.2 This test is repeated at least annually with the same respirators (manufacturer and model) as the respirators used in the employee's area of the facility. Re-testing may be required when an employee experiences excessive weight gain or loss or significant dental work that may affect the shape and size of their face.

5.5.1.3 Respirators used for fit testing will be cleaned and disinfected after each use.

5.5.1.4 Escape respirators are designed for emergency escape use only and are not required to be fit tested or fit checked.

5.5.2 Quantitative Fit Test:

5.5.2.1 An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

5.5.2.2 When possible and practical this shall be the preferred fit test method.



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5.5.3 Qualitative Fit Test:

5.5.3.1 A pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

5.5.3.2 Qualitative fit tests will be performed only when quantitative fit testing is not practical or possible.

5.5.4 Fit Check:

Each time a respirator is donned, the user will perform positive and negative pressure fit checks. Respirators will not be worn when conditions prevent good face piece-to-face seal.

5.5.4.1 Negative Pressure Check -- A negative pressure fit check is considered satisfactory if the wearer inhales gently with the inlet opening of the respirator covered, and the face piece collapses slightly and no inward leakage of air into the face piece is detected.

5.5.4.2 Positive Pressure Check -- For a positive pressure fit check, the exhalation valve is closed off, and then the wearer exhales gently. The fit is considered satisfactory when slight positive pressure can be built up inside the face piece without the detection of any outward leakage of air between the sealing surface of the face piece and the wearer's face.

5.6 Fit Limitations

5.6.1 Facial Hair

Westlake employees and Evergreen contractors whom are included in the Respiratory Protection Program (get an annual physical and respirator fit test), must be clean-shaven. Any outside contractors, vendors or visitors who perform any work that may require the use of a tight fitting respirator must be clean-shaven.

Clean-shaven means no facial hair that could come in contact with the sealing surface of the respirator or any facial hair that could interfere with the function of the respirator valves is permitted.

5.6.2 Eye and Face Protection:



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- 5.6.2.1 Glasses with temple bars may not be worn with full-face respirators. Spectacle kits will be used when the employee needs visual acuity.
- 5.6.2.2 Goggles, face shield, or welding hood may be worn with a respirator, provided that the device does not interfere with the normal positioning of the respirator face piece.
- 5.6.3.3 Contact Lenses are allowed to be used while wearing full-face respirators.

5.7 Maintenance, Inspection and Storage

Each respirator wearer is responsible for daily inspection, cleaning, maintenance, and sanitary storage of their respirator. Following use, full-face piece respirators are to be returned to the Tool Room. A contractor will sanitize, inspect, clean and repair the face piece prior to it again being available for use.

5.7.1 Inspection:

Users will inspect their respirators before and after each use. The inspection will include the following parts:

- 5.7.1.1 Inhalation/Exhalation Valves - Examine for foreign material, proper fit over port, tears, distortion, improper insertion, defective valves, and missing valve cover.
- 5.7.1.2 Face piece - Check for dirt, distortion, cracks, and holes.
- 5.7.1.3 Head straps - Check for loss of elasticity, broken buckles and snaps, and breaks.
- 5.7.1.4 Air-purifying Elements - Check for incorrect cartridges or filters, worn or missing gaskets or threads, rust, dents, and holes. Ensure canisters of filters are screwed on hand tight.
- 5.7.1.5 If defective parts are found, the respirator is to be taken to a Tool Room immediately for replacement.

5.7.2 Cleaning:

- 5.7.2.1 The primary method for cleaning respirators will be for full face piece respirators to be returned to the Tool Room



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following use for the contracted services to sanitize, inspect, clean and reseal in a plastic bag for storage until reissued.

- 5.7.2.2 If employees need to maintain their respirator for reuse during the shift they are responsible for cleaning their own respirator according to the following guidelines:

Procedures for Cleaning Respirators:

1. Remove filters, cartridges, or canisters. Disassemble face piece by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
2. Wash components in warm water (43 deg. C [110 deg. F] maximum) with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
3. Rinse components thoroughly in clean, warm, preferably running, water (43 deg. C [110 deg. F] maximum) Drain.
4. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
 - Hypo chlorite solution (50ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43 deg. C (110 deg. F); or,
 - Aqueous solution of iodine (50ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43 deg. C (110 deg. F); or,
 - Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.



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5. Rinse components thoroughly in clean, warm, preferably running, water (43 deg. C [110 deg. F] maximum) Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on face piece may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
6. Components should be hand-dried with a clean lint-free cloth or air-dried.
7. Reassemble face piece. Replace filters, cartridges, and canisters where necessary.
8. Test the respirator to ensure that all components work properly.

5.7.2.3 The respirator cleaning procedure will be followed by all parties responsible for cleaning full-face respirators (in-house or contract).

5.7.3 Cartridge Change Schedule:

- 5.7.3.1 All cartridges change schedules must be based on objective information or data that will ensure that cartridges are changed before the end of their service life.
- 5.7.3.2 The respirator program will contain, as an addendum, a description of the information and data relied on and the basis for the cartridge change schedule and the basis for reliance on the data.
- 5.7.3.3 Cartridges are not to be used by more than one person.

5.7.4 Storage:

- 5.7.4.1 Respirator face piece will be stored in a dry location away from direct sunlight, free from dust or chemicals, heat, and extreme cold.
- 5.7.4.2 After each use, respirator face pieces are to be cleaned and immediately stored in a large sealable plastic bag.
- 5.7.4.3 Employees will take precautions to prevent distortion of



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rubber or other elastomeric parts.

5.8 Emergency Response Actions

Self-Contained Breathing Apparatus will be the preferred method for respiratory protection in emergency response actions. Other forms of respiratory protection may be deemed necessary.

5.9 Evaluating the Effectiveness of the Program

5.9.1 The **Plaquemine Emergency Response/ Security Coordinator** will field-verify the emergency SCBA's are checked monthly and the appropriate items are being checked.

5.9.2 The Program Administrator will obtain documentation from Stores concerning the APR usage and verify the appropriate use of the respirators.

5.9.3 The Program Administrator will verify annual training requirements are being completed.

6.0 MEDICAL REQUIREMENTS

Personnel who either wear respiratory protection for routine responsibilities or may be required to wear during an emergency response action must receive an annual physical to determine their fitness to wear a respirator as per medical requirements in 29 CFR 1910.134.

7.0 TRAINING

Personnel required to wear respirators shall receive annual training. The objective of the training will be for employees to demonstrate knowledge of the following:

- 7.1 Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator;
- 7.2 What the limitations and capabilities of the respirator are;
- 7.3 How to use the respirator effectively in emergency situations, including situation in which the respirator malfunctions;
- 7.4 How to inspect, put on and remove, use and check the seals of the respirator;



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- 7.5 What the procedures are for maintenance and storage of the respirator;
- 7.6 How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and
- 7.7 The general requirements of this procedure.

8.0 RECORDKEEPING

- 8.1 H&S maintains copies of all air monitoring results.
- 8.2 Air monitoring records are maintained for 30 years by H&S.
- 8.3 Purchasing/Stores maintains the documentation supplied by the breathing air vendors that certify the cylinder lots or trailer as containing Grade D Breathing Air.
- 8.4 H&S/Medical maintains respirator fit test records. Respirator fit test records include the following information:
 - 8.4.1 Employee name
 - 8.4.2 Employee social security number
 - 8.4.2 Date fit-tested
 - 8.4.4 Fit tester's name
 - 8.4.5 Respirator manufacturer, make, and size
 - 8.4.6 Quantitative fit test record
- 8.5 The Production Unit maintains records of all emergency respirator monthly inspections
- 8.6 H&S Medical maintains all employee medical records. The test record includes the following information:
 - 8.6.1 Employee's name and job title
 - 8.6.2 Date of medical test (Spirometry test)
 - 8.6.3 Medical test results
 - 8.6.4 Examiner's name



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8.6.5 Medical History Records

8.6.6 Consulting physician's approval.

- 8.7 H&S Medical test records are maintained by H&S Medical for the duration of the employee's employment plus 30 years.
- 8.8 If an employee terminates employment with Westlake less than one year from hire date, then H&S Medical will provide a copy of the medical record to the employee, so that it may be taken to the next employer.
- 8.9 Employees are entitled to review their medical record. Employees should contact H&S Medical to review or obtain a copy of the medical record.

9.0 AUDITS

The Westlake Respiratory Protection Program will be audited periodically. The purpose is to assess compliance, to ensure that all employees who should be included are, and to evaluate program effectiveness.

- 9.1 The audit will evaluate:
 - 9.1.1 Current Respiratory Protection Program
 - 9.1.2 H&S monitoring records
 - 9.1.3 H&S Medical records
 - 9.1.4 Employee training records
 - 9.1.5 Employee fit-test records
 - 9.1.6 Employee awareness.
- 9.2 Following the audit, the Respiratory Protection Program will be revised to include any necessary changes. Audit results will be documented. All employees will be informed of any changes made in the plan.
- 9.3 In addition to a periodic internal audit, Westlake will also audit approved breathing air vendor(s) periodically. The audit will include:
 - 9.3.1 Observation and documentation of the entire bottle/trailer filling process



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9.3.2 Review of the vendor bottle/trailer filling procedures

9.3.3 Review of the vendor QA/QC procedures

9.3.4 Random verification of breathing air quality in both breathing air cylinders and SCBAs located on site in Plaquemine

10.0 REFERENCES

American National Standard Institute (1980). "Practices for Respirator Protection," ANSI Z88.2-1980, New York, NY.

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Protection," DHHS (NIOSH) Publication No. 87-116 (September, 1987). Cincinnati, OH.

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Revision History

Rev	Changes	Approved	Date
10	Periodic Review of Procedure; Added Section 5.4 Emergency Escape Breathing Apparatus (EEBA); Added Sections 4.5.8 and 4.5.9 under Supervisor Responsibilities; Added Appendix D - EEBA Locations by Process Unit; Added Appendix E – EEBA Full List <i>MOC: PLQ0.EHSSPSM.031517.3117</i>	H. Garner	8/4/2020



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Appendix A-OSHA Assigned Protection Factors (29 CFR 1910.134(d)(3)(i)(A))

Table 1. -- Assigned Protection Factors⁵

Type of respirator ^{1, 2}	Quarter mask	Half mask	Full facepiece	Helmet/hood	Loose-fitting facepiece
1. Air-Purifying Respirator	5	³ 10	50	.....	.....
2. Powered Air-Purifying Respirator (PAPR)	.....	50	1,000	⁴ 25/1,000	25
3. Supplied-Air Respirator (SAR) or Airline Respirator					
• Demand mode	.....	10	50	.....	.....
• Continuous flow mode	.....	50	1,000	⁴ 25/1,000	25
• Pressure-demand or other positive-pressure mode	.....	50	1,000	.....	.....
4. Self-Contained Breathing Apparatus (SCBA)					
• Demand mode	.....	10	50	50	.....
• Pressure-demand or other positive-pressure mode (e.g., open/closed circuit)	.....	.....	10,000	10,000	.....

Notes:

¹Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration.

²The assigned protection factors in Table 1 are only effective when the employer implements a continuing, effective respirator program as required by this section (29 CFR 1910.134), including training, fit testing, maintenance, and use requirements.

³This APF category includes filtering facepieces, and half masks with elastomeric facepieces.

⁴The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.

⁵These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).



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Appendix B – List of Approved Respirator Uses

1. PVC Unit, Top Deck of Reactor Area, opening and inspecting reactors, SCBA or airline respirator;
2. PVC Unit, Ground level of Reactor Area, cleaning torpedoes, SCBA or airline respirator;
3. VCM Unit, Dopp Kettle area, Filter changes, SCBA or airline respirator;
4. VCM Unit, any filter change where purging time is less than normal, SCBA or airline respirator;
5. C/C Unit, Cell line startup/Sampling/Cell Connecting and Disconnecting, half mask respirator, organic vapor/acid gas or acid gas cartridge;
6. VCM Unit, Strong Acid Sampling, VCM Sampling, EDC Sampling (except R-201 liquid), DOPP Kettle strainer cleaning, VCM/EDC Filter Replacement after filter is opened and concentrations of less than 1 ppm are confirmed, R-201/HTC/OHC vent samples, Full-face with acid-gas/organic vapor cartridges.
7. VCM Railcar Loading Rack – Connecting and Disconnecting VCM railcars – SCBA or airline respirator; Full-face, negative pressure with organic vapor or organic vapor/acid gas cartridges; if cartridges are used, they must be replaced after 3 hours of use or daily, whichever comes first.



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Appendix C: Vendor Procedure - Filling Breathing Air Cylinders

Grade “D” BREATHING AIR Fill PROCEDURES

CYLINDERS TO BE Filled:

1. PROCEDURE

After a pre-fill inspection has been performed in accordance with Section, 4.1.1, High Pressure Cylinders, the following steps shall be followed:

- A. Securely, connect the cylinders to the filling manifold. While connecting cylinders, visually inspect each pigtail to ensure they are not broken, kinked, frayed or damaged in some way. Immediately, replace any damaged pigtails found.
- B. Open the manifold vent valve and all cylinder valves to completely vent the cylinders.
- C. After cylinders have vented to atmospheric pressure close the manifold vent valve, open the vacuum valve and start the vacuum pump.
- D. Evacuate the cylinders to a vacuum of at least 25 inches Hg (or to 125 mm Hg absolute pressure) and isolate the vacuum system.
- E. Break the vacuum in the cylinders by slowly opening the supply valve and starting the compressor. Compressors shall be inspected daily and maintained in accordance with Section 2.3, Compressors of this manual.

Note: Where provided, a vacuum break valve may be used.

- F. Cylinders that were identified as those with an open valve during pre-fill inspection and need processing, shall be processed in accordance with Section 3.1.3, Open Valve of this manual during this step.
- G. Immediately following Step E. attach a thermometer to the side-wall of a cylinder on the manifold.
- H. Check each cylinder for the presence of a proper label. Labels shall be current and legible if they are reused. Remove all improper labels and apply a current and legible label to each cylinder in need in accordance with the Label Manual.
- I. At approximately 1000 psi, each fill connection and cylinder valve shall be inspected for leaks. Leak inspections are performed by utilizing a compatible leak detection solution. (Snoop or other Airgas approved solution), or an approved leak detection device. Check the following valve components:
 - a. Valve Stem
 - b. Bonnet Nut

Note: If a cylinder is found leaking, close the valve and mark it. If the leak is severe and demands immediate attention, stop the filling process and blow down the troubled cylinder. Otherwise after the cylinders have been filled, blow it down, close the cylinder valve, mark it and set it aside for cylinder maintenance.

WARNING: DO NOT ATTEMPT TO REPAIR LEAKS WHILE THE CYLINDER IS PRESSURIZED.



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Grade “D” BREATHING AIR TEST PROCEDURES

CYLINDERS TO BE TESTED:

- A. Two randomly selected cylinders per manifold.

1. TEST I

- A. Odor, by Olfactory Method
 - 1. Specs – None (No discernable odor)
 - 2. Position cylinder, open valve slightly, perform odor test.
 - 3. Any odor present, test again.
 - 4. If odor persists, fail cylinder
 - 5. Check second cylinder, if odor present check all of remaining cylinders.
 - 6. If entire rack has odor shut down filling and determines source of odor.
 - 7. Record results on PCR

2. TEST II

- A. Water & Oil, by Stainless Steel Mirror Method
 - 1. None (No discernable liquid or moisture)
 - 2. Roll cylinder to inverter, invert cylinder, position valve outward, allow cylinder to be inverted for (5) minutes, open valve slightly, hold mirror 1 to 2 inches from valve, allow pressure to strike mirror in center. (Note make sure mirror is dry and free of debris). Move mirror away from cylinder, note surface. If any moisture, oil, or debris is present, this lot is rejected.
 - 2. Record results on PCR.

3. TEST III

- A. Oxygen, by Paramagnetic Oxygen Analyzer.
 - 1. Specs - 19.5 - 23.5 % oxygen
 - 2. Calibrate analyzer to standard, record on log
 - 3. Perform test on cylinder
 - 4. Record results on PCR.



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4. TEST VI

A. Carbon Dioxide and Carbon Monoxide by TC Analyzers.

1. Specs are: Carbon Dioxide - ≤ 1000 PPM
Carbon Monoxide - ≤ 10 PPM
2. Calibrate analyzer to standards, record on log.
3. Attach regulator to cylinder to be tested. Open valve on cylinder, set flow rate on the control panel.
4. Perform tests on cylinder.
5. Record results on PCR.

5. Test V

A. Moisture, by a PPM Moisture Analyzer.

1. Specs are: ≤ 67 PPM on Moisture
2. Attach regulator to cylinder to be tested. Open valve on cylinder, set control panel to sample and adjust flow rate.
3. Perform tests on cylinder.
4. Record results on PCR.

6. Repeat tests for second cylinder.

Note: Any failures of the above, the entire rack will be rejected. Investigation of the source will be conducted to determine the cause.

Note: Any cylinder determined to be contaminated will be removed from service until it is determined that either by vacuuming, purging or internal cleaning that it is suitable for return to service.

7. LOT NUMBERS -Affixed to cylinders after all tests have been performed and cylinders have passed.

- A. Determine number to be affixed, record data on fill log and testing logs.
- B. Affix lot numbers to shoulder of cylinder(s).

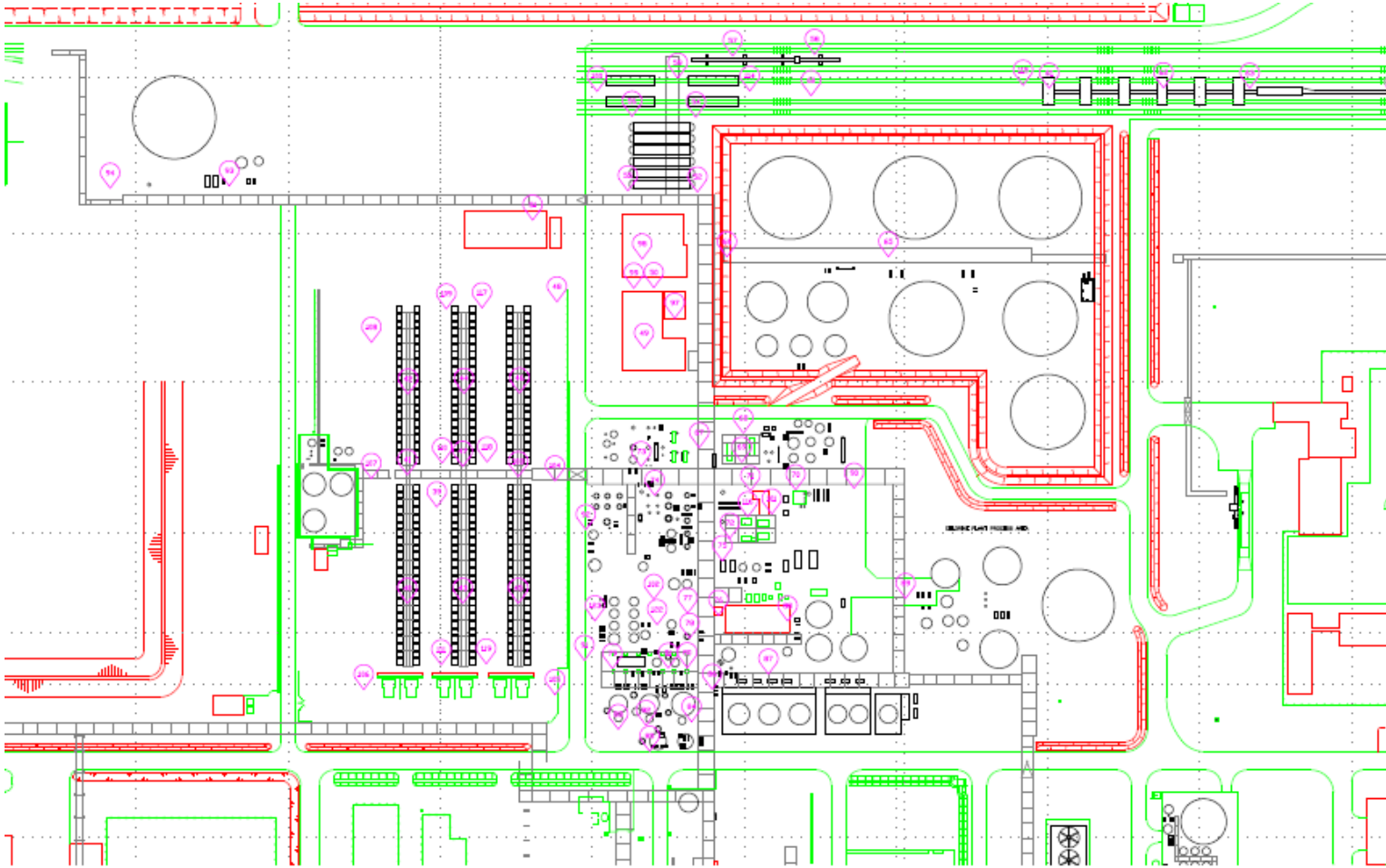
8. Turn in paperwork to Quality Control for review and release of product for distribution.



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Appendix D: EEBA Locations by Process Unit.

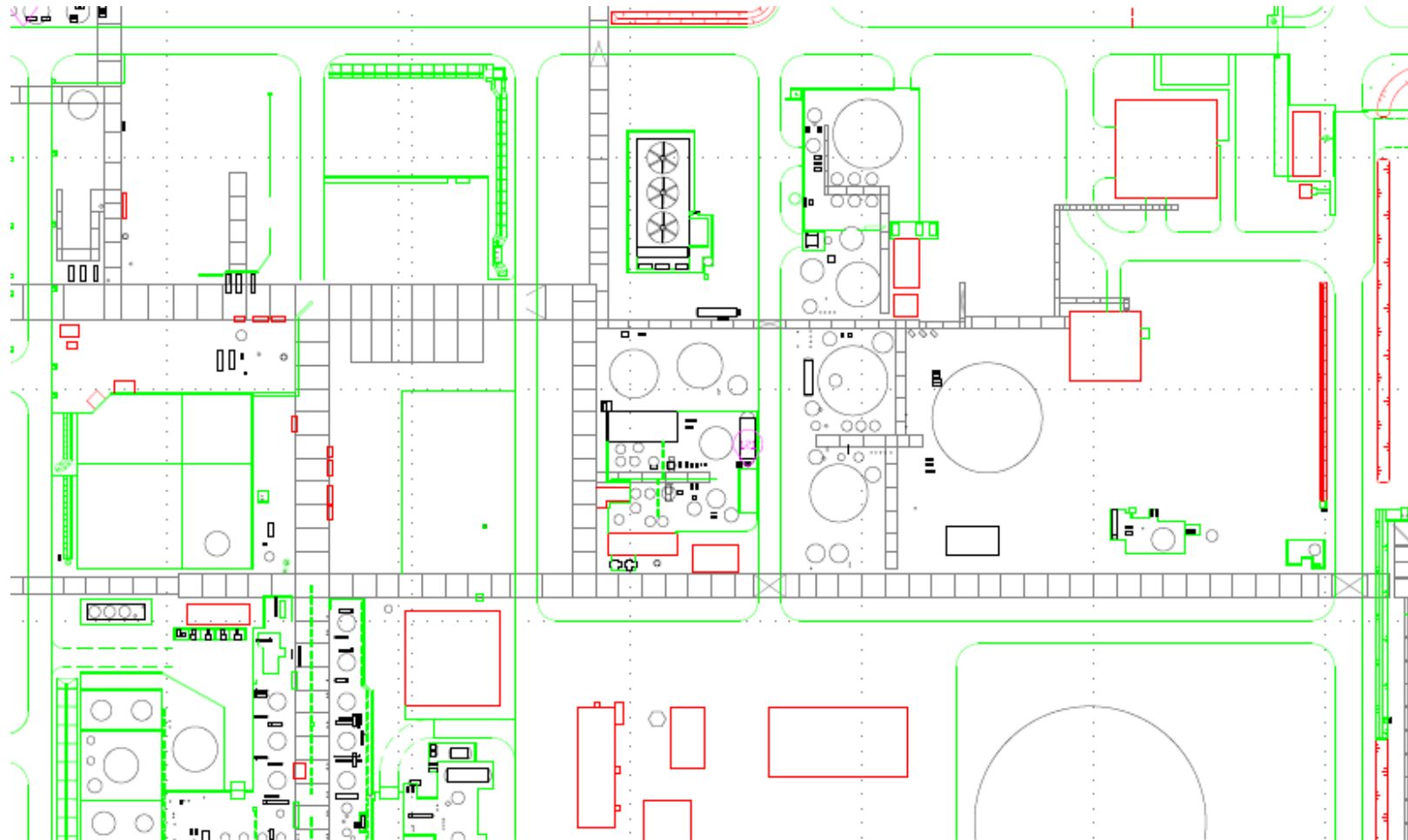
Chlor-Alkali





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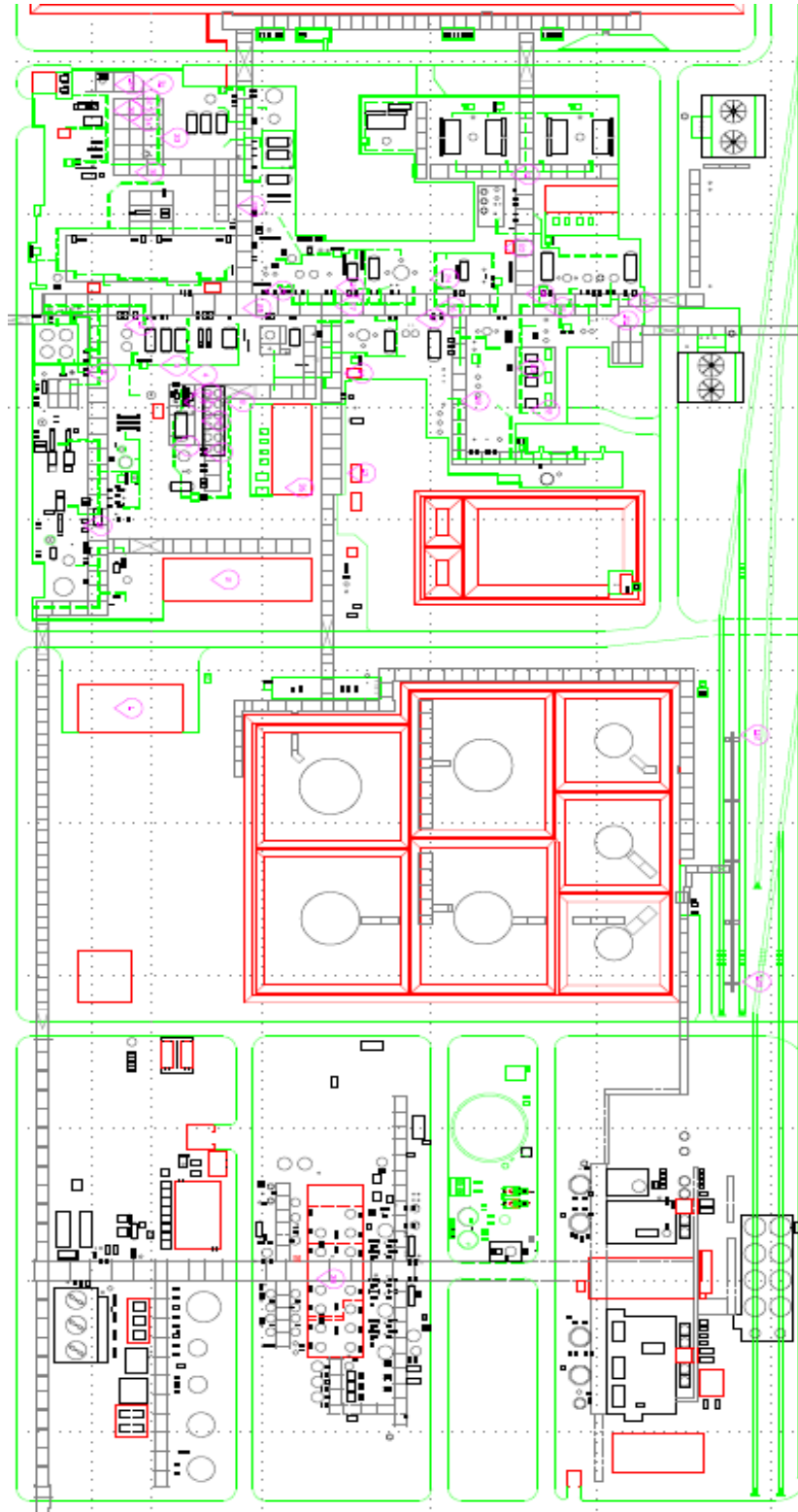
Utilities





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VCM and PVC





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Appendix E: EEBA Full List.



WESTLAKE EEBA CABINET LIST

#	Location
1	VCM - 24 ESCBAs Mounted In Dual Boxes Inside Shop Center (5 Min)
2	VCM - 25 ESCBAs Mounted In Wall Brackets Inside C/R (5 Min)
3	VCM - 2 ESCBAs Mounted In Dual Box at P510 A/B (5 Min)
4	VCM - 2 ESCBAs Mounted In Dual Box at Stairs Ground Level (5 Min)
5	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - E513 Deck 2nd Level (5 Min)
6	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - Rx Deck 1st Level (5 Min)
7	VCM - 2 ESCBAs Mounted In Dual Box On Beam - E511 Deck (5 Min)
8	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - Fin Fan Deck - 2nd Deck (10 Min)
9	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - SE501 Deck - Top Deck (10 Min)
10	VCM - 2 ESCBAs Mounted In Dual Box On Beam - P521 A/B Ground Level (5 Min)
11	VCM - 2 ESCBAs Mounted In Dual Box On Beam - P692 A/B Ground Level (5 Min)
12	VCM - 2 ESCBAs Mounted In Dual Box On Beam - P650 A/B Ground Level (5 Min)
13	VCM - 2 ESCBAs Mounted In Dual Box On Beam - G501A Generator Ground Level (5 Min)
14	VCM - 2 ESCBAs Mounted In Dual Box On Beam - 08AH01 Analyzer House Ground Level (5 Min)
15	VCM - 2 ESCBAs Mounted In Dual Box On Beam - P309 A/B Ground Level (5 Min)
16	VCM - 2 ESCBAs Mounted In Dual Box On Beam - P203 A/B Ground Level (5 Min)
17	VCM - 2 ESCBAs Mounted In Dual Box On Beam - P411 A/B Ground Level (5 Min)
18	VCM - 2 ESCBAs Mounted In Dual Box On Beam - V421 A/B/C Ground Level (5 Min)
19	VCM - 2 ESCBAs Mounted In Dual Box On Beam - P405 A/B Ground Level (5 Min)
20	VCM - 2 ESCBAs Mounted In Dual Box On Wall Inside Operators Shelter (5 Min)
21	VCM - 4 ESCBAs Mounted In 2 Dual Boxes On Beam - P417 A Ground Level (5 Min)
22	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - Refrigeration Structure 1st Deck (10 Min)
23	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - Refrigeration Structure 2nd Deck (10 Min)
24	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - E415 Deck - 2nd Deck (10 Min)
25	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - Fin Fan Deck (Elevated) (10 Min)
26	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - Fin Fan Deck (Elevated) (10 Min)
27	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - Fin Fan Deck (Elevated) (10 Min)
28	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - Fin Fan Deck (Elevated) (10 Min)
29	VCM - 2 ESCBAs Mounted In Dual Box On Beam - V646B Ground Level (5 Min)
30	VCM - 2 ESCBAs Mounted In Dual Box On Beam – R300 Ground Level (5 Min)
31	VCM - 2 ESCBAs Mounted In Dual Box On Beam – R301/302/303 2nd Deck (5 Min)
32	VCM - 2 ESCBAs Mounted In Dual Box On Handrail – P301 A/B/C Ground Level (5 Min)
33	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - R301/302/303 2nd Deck (5 Min)
34	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - R301/302/303 3rd Deck (5 Min)



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35	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - R301/302/303 Top Deck (10 Min)
36	VCM - 2 ESCBAs Mounted In Dual Box On Wall – VCM Inside Substation Back Wall (5 Min)
37	VCM - 2 ESCBAs Mounted In Dual Box On Beam - P401 A/B Ground Level (5 Min)
38	PVC - 6 ESCBAs Mounted In 3 Dual Boxes On Wall - Top Deck (10 Min)
39	CA/CC - 4 ESCBAs Mounted In 2 Dual Boxes On Wall - Cell Area Operator Shack Ground Level (5 Min)
40	CA/CC - 2 ESCBAs Mounted In Dual Box On Post – West End Cell Line 3 (5 Min)
41	CA/CC - 2 ESCBAs Mounted In Dual Box On Post – Center Cell Line 3 (5 Min)
42	CA/CC - 2 ESCBAs Mounted In Dual Box On Post – East End Cell Line 3 (5 Min)
43	CA/CC - 2 ESCBAs Mounted In Dual Box On Post – West End Cell Line 2 (5 Min)
44	CA/CC - 2 ESCBAs Mounted In Dual Box On Post – East End Cell Line 2 (5 Min)
45	CA/CC - 2 ESCBAs Mounted In Dual Box On Post – West End Cell Line 1 (5 Min)
46	CA/CC - 2 ESCBAs Mounted In Dual Box On Post – East End Cell Line 1 (5 Min)
47	CA/CC - 2 ESCBAs Mounted In Dual Box On Post - Center Of Cell Line 2 (5 Min)
48	CA/CC - 2 ESCBAs Mounted In Dual Box On Post - Cell Area Ground Level (5 Min)
49	CA/CC - 30 ESCBAs Mounted In Wall Bracket In Control Room (5 Min)
50	CA/CC - 24 ESCBAs Mounted In 12 Dual Boxes In Maintenance Shop Outside Wall (5 Min)
51	CA/CC - 16 ESCBAs Mounted In 8 Dual Boxes On Wall - Cell Renewal Building (5 Min)
52	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Cl2 Bullet Tank Catwalk (10 Min)
54	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Cl2 Bullet Tank Catwalk (10 Min)
55	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Cl2 Bullet Tank Catwalk (10 Min)
56	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Cl2 Bullet Tank Catwalk (10 Min)
57	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Caustic Rack Upper Deck (5 Min)
58	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Caustic Rack Upper Deck (5 Min)
59	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail – Loading Rack Shack (5 Min)
60	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Cl2 R/C Load Rack Upper Deck (5 Min)
61	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Valve Repair Rack Upper Deck (5 Min)
62	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Valve Repair Rack Upper Deck (5 Min)
63	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Valve Repair Rack Upper Deck (5 Min)
64	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail – Bottom Southside Stairs (5 Min)
65	CA/CC - 4 ESCBAs Mounted In 2 Dual Boxes On Wall - Barge Shack Ground Level (5 Min)
66	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Tank Farm Entry Ground Level (5 Min)
67	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Cl2 Expansion Drum Ground Level (5 Min)
68	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - 41750/41755 1st Deck (5 Min)
69	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - 41750/41755 1st Deck (5 Min)
70	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Sniff Gas Circ. Pumps Ground Level (5 Min)
71	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Cl2 Compressor Area (5 Min)
72	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Cl2 Compressor Area (5 Min)
73	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam – Beam 980 (5 Min)
74	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Primary Cooler Area 1st Deck (5 Min)
75	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Acid Supply Pumps Ground Level (5 Min)
76	CA/CC - 2 ESCBAs Mounted In Dual Box On Wall - Caustic Operators Shelter Ground Level (5 Min)
77	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Filter Press Deck Ground Level (5 Min)



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78	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Filter Press Deck 1st Deck (10 Min)
79	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Centrifuge Deck 1st Deck (10 Min)
80	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Centrifuge Deck 1st Deck (10 Min)
81	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail - Above Centrifuge Deck 2nd Deck (10 Min)
82	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail – 2nd Effect Preheater 2nd Deck (10 Min)
83	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail – 3rd Deck (10 Min)
84	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail – Middle 3rd Deck (10 Min)
85	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail – North 3rd Deck (10 Min)
86	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam – De-Super Condensate Pumps Ground Level (5 Min)
87	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Cooling Tower Pumps Ground Level (5 Min)
88	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Outside Sub 1 Ground Level (5 Min)
89	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Brine Tanks Ground Level (5 Min)
90	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Hypo Circulation Pumps Ground Level (5 Min)
91	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam Along Road (5 Min)
92	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam Along Road (5 Min)
93	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Brine Pumps Ground Level (5 Min)
94	CA/CC - 4 ESCBAs Mounted In 2 Dual Boxes On Wall - Brine Shed (5 Min)
95	VCM - 2 ESCBAs Mounted In Dual Box On Handrail - Fin Fan Deck - 2nd Deck (10 Min)
97	CA/CC - 2 ESCBAs Mounted In Dual Box On Wall – Manager's Office Building (5 Min)
98	CA/CC - 2 ESCBAs Mounted In Dual Box On Wall – CA/CC Maint Shop Upstairs (5 Min)
99	CA/CC - 6 ESCBAs Mounted In 3 Dual Boxes On Wall – CA/CC Outside Maint Shop Wall (5 Min)
100	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail – Bottom Of Stairs North End (5 Min)
101	VCM - 2 ESCBAs Mounted In Dual Box On Beam – Large Fin Fan West End (10 Min)
102	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam – HCL Storage 03-47530 Ground (5 Min)
103	CA/CC - 2 ESCBAs Mounted In Dual Box - Cell Area 1 Center (5 Min)
104	CA/CC - 2 ESCBAs Mounted In Dual Box - Cell Area 1 Center Outside (5 Min)
105	CA/CC - 2 ESCBAs Mounted In Dual Box - Cell Area 1 Outside West End (5 Min)
106	CA/CC - 2 ESCBAs Mounted In Dual Box - Cell Area 3 Outside (5 Min)
107	CA/CC - 2 ESCBAs Mounted In Dual Box - Cell Area 3 Center Outside (5 Min)
108	CA/CC - 2 ESCBAs Mounted In Dual Box - Cell Area 3 East End (5 Min)
109	CA/CC - 2 ESCBAs Mounted In Dual Box - Cell Area Between 2 & 3 East End (5 Min)
110	CA/CC - 2 ESCBAs Mounted In Dual Box - Cell Area Between 2 & 3 Center (5 Min)
111	CA/CC - 2 ESCBAs Mounted In Dual Box - Cell Area Handrail Between 2 & 3 (5 Min)
112	VCM – 2 ESCBAs Mounted In Dual Box – VCM Railcar Loading South Side (5 Min)
113	VCM – 2 ESCBAs Mounted In Dual Box – VCM Truck Loading (5 Min)
114	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail – Bottom Of Stairs Center Steps (5 Min)
115	CA/CC - 2 ESCBAs Mounted In Dual Box On Handrail – Hand Rail Bottom Steps (5 Min)
116	CA/CC - 2 ESCBAs Mounted In Dual Box On Beam - Cl2 Compressor Area Top Deck (5 Min)
117	CA/CC - 2 ESCBAs Mounted In Dual Box - Cell Area Between 1 & 2 East End Handrail (5 Min)
118	CA/CC - 4 ESCBAs Mounted In 2 Dual Box - Cell Area Center Handrail of 1 & 2 (5 Min)
119	CA/CC - 2 ESCBAs Mounted In Dual Box – Cell Area Between 1 & 2 West End Handrail (5 Min)
120	VCM – 2 ESCBAs Mounted In Dual Box – Hand Rail Ground North Side (5 Min)



HEALTH AND SAFETY PROGRAM 401 – Respiratory Protection

121	Utilities – 2 ESCBAs Mounted In Dual Box – Loading Rack, Top HCL Bullet Tank. (5 Min)
122	CA/CC- 2 ESCBAs Mounted in Dual Box on Beam - Acid Loading Area (5 Min)
123	CA/CC- 2 ESCBAs Mounted In Dual Box On Handrail – CA Filter First Level South Agitators (10 Min)
124	VCM – 2 ESCBAs Mounted In A Dual Box On Handrail – VCM R301 3rd Level West End (5 Min)