

<b>Environmental Standard Operating Procedure</b>	
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## **Title: Acid Cleaning (Chemical Process Tanks)**

### **1.0 PURPOSE**

The purpose of this Environmental Standard Operating Procedure (ESOP) is to provide environmental guidelines for acid cleaning or chemical treatment.

### **2.0 APPLICATION**

This guidance applies to those individuals who perform acid cleaning or chemical treatment aboard Marine Depot Maintenance Command Yermo CA.

### **3.0 PROCEDURE**

#### **3.1 Discussion:**

The Marine Corps mission requires very high levels of corrosion resistance from the metal parts used in its small arms and related gear. Various chemical treatment processes at MDMC Yermo utilize hazardous chemicals such as hydrochloric acid and magnesium phosphate to promote corrosion resistance. These chemicals impact air quality and must be handled properly to avoid impacts to human health and the environment. Potential hazards to humans include chemical burns through inhalation or contact with the skin or eyes. To minimize these potential health hazards, the chemical process tanks use negative pressure vapor collection hoods, which must be operated whenever chemical agents are present in open tanks. (Note: Chromium is not used).

#### **3.2 Operational Controls:**

The following procedures apply:

- a. Maintain Safety Data Sheets (SDS) for all materials associated with this practice.
- b. Ensure that current permit to operate (PTO) and Breakdown Notification is posted in an accessible area.
- c. Ensure that records of all required training and certifications are current and available for inspection.
- d. Ensure all Dip Tank personnel wear appropriate personal protective equipment (PPE) such as eye protection, chemical-resistant gloves, coveralls, apron and steel-toed boots, as necessary.

e. Keep fire extinguishers and spill kits readily accessible and near potentially hazardous areas.

f. Ensure eyewash station and safety shower is readily accessible near potentially hazardous areas and is in good operational condition.

g. Ensure that all equipment is maintained and kept in good operating condition at all times.

h. Verify that the vapor collection system is on whenever chemical agents are present in the tanks and the tanks are in use. Chemical process tanks use negative pressure. The positive movement of tank vapors into the hood inlet should be observable.

i. Keep acid process tanks closed at all times except when in use.

j. Ensure that the process tank has a freeboard height (distance from the top of the liquid to the top of the tank) of at least five (5) inches while the items are submerged.

k. Clean parts to be processed before treatment.

l. Ensure that parts are added or removed from the tank in a manner to prevent splashing.

m. Ensure that parts being removed from the tank have stopped dripping before complete removal from the tank.

n. Ensure that the speed of the hoist used to lower and remove parts from treatment tanks is slow enough to minimize the push or pull of solvent vapors out of the tank (speed requirement is 11.2 feet per minute (fpm) or less).

o. Notify Hazardous Waste Disposers (HWD) when chemicals need to be changed (e.g., decline of cleaning efficiency as verified by a pH test).

p. Only HWD and Dip tank operators are authorized to pump chemicals into approved drums and to remove the buildup of solids for disposal.

q. Hazardous waste will be handle in accordance with waste handling ESOPs.

r. Refill tank only to the designated fill level that is marked on tank. Tank refill must be monitored by tank operator at all times.

s. Ensure that an operator's log is maintained on-site and available for a three (3) year period which lists the chemical contained in each tank and the date and amount of chemical added. The operator's log should also include a daily self-inspection checklist.

t. Must document daily inspections of tanks in an inspection log book. Maintain records for 3 years.

### **3.3 Documentation and Record Keeping:**

The following records must be maintained:

- a. SDS for applicable hazardous materials.
- b. Training records and certifications for personnel.
- c. Inspection records.
- d. Maintenance records.
- e. Operator's log book.
- f. Spill reports.

### **3.4 Training:**

All personnel in CWC 226/284 must be trained in this ESOP, to include the following courses as applicable:

- a. Hazard Communication (HazCom) training.
- b. . On-the-job training from Supervisor and Journeymen

### **3.5 Emergency Preparedness and Response Procedures:**

In the event of an Emergency refer to MCLB Barstow's Integrated Contingency Management Plan (ICMP).

### **3.6 Inspection and Corrective Action:**

The Environmental Compliance Coordinator (ECC) at MDMC shall designate personnel to perform monthly inspections. The ECC shall ensure deficiencies noted during the inspections are corrected immediately. Inspections shall be conducted monthly. Actions taken to correct each deficiency shall be recorded on the inspection sheet.

## **4.0 REFERENCES**

- 29 Code of Federal Regulations (CFR) 1910 (Occupation Safety and Health Standards)
- 22 California Code of Regulations (CCR) 66265 (Interim Status Standards For Owners And Operators Of Hazardous Waste Transfer, Treatment, Storage, and Disposal Facilities)
- MCO P5090.2A (Marine Corps Environmental Compliance and Protection Manual)
- MCO P5100.8F (Marine Corps Occupational Safety and Health Program Manual)
- Mojave Desert Air Quality Management District Permit to Operate (MDAQMD PTO)
- MCLB Barstow ICMP

<b>Acid Cleaning (Chemical Process Tanks) Inspection Checklist</b>
Date:
Work Center/Location:

<b>Inspection Items</b>	<b>Yes</b>	<b>No</b>	<b>Comments</b>
1. Are SDSs for all materials associated with this practice current and available? <i>(29 CFR 1910, MCO P5100.8F)</i>			
2. Is a current PTO posted in an accessible area? <i>(MDAQMD PTO)</i>			
3. Are required training and certifications for all personnel maintained? <i>(22 CCR 66265, MCO P5090.2A)</i>			
4. Is appropriate PPE worn as necessary? <i>(29 CFR 1910, MCO P5100.8F)</i>			
5. Are spill kits and fire extinguishers kept near potential hazard areas? <i>(29 CFR 1910, MCO P5100.8F)</i>			
6. Is an eyewash station/emergency shower provided and operating properly? <i>(29 CFR 1910, MCO P5100.8F)</i>			
7. Is all equipment maintained and operating properly at all times? <i>(MCO P5090.2A)</i>			
8. Is vapor collection system verified to be on whenever chemical agents are present in the tanks and tanks are in use? Is positive movement of tank vapors observable? <i>(MDAQMD PTO)</i>			
9. Are acid process tanks kept closed at all times except when use? <i>(MDAQMD PTO)</i>			
10. Does the process tank have a freeboard height of at least 5 inches while the items are submerged? <i>(MDAQMD PTO)</i>			
11. Are all parts cleaned before treatment before adding into chemical process tanks? <i>(MCO P5090.2A)</i>			
12. Are parts added or removed from the tank in a manner so as to prevent splashing? <i>(MDAQMD PTO)</i>			
13. Are parts removed from the tank after dripping is complete?			

Inspection Items	Yes	No	Comments
<i>(MDAQMD PTO)</i>			
14. Is the speed of the hoist used to lower and remove parts from treatment tanks less than 11.2 fpm to minimize the push or pull of solvent vapors out of the tank? <i>(MDAQMD PTO)</i>			
15. Is the HWD notified when a change of chemicals is needed? <i>(MCO P5090.2A)</i>			
16. Is tank refilled to the designated fill level that is marked on tank? Is tank refill monitored by tank operator at all times? <i>(MDAQMD PTO)</i>			
17. Is operator's log is maintained on-site and available for a 3 year period, which lists the chemical contained in each tank, the date and amount of chemical added? Is a daily self-inspection checklist included? <i>(MCO P5090.2A)</i>			
18. Are daily inspections of tanks and weekly inspections of storage areas documented and maintained for 3 years? <i>(22 CCR 66265, MCO P5090.2A)</i>			
20. In the event of a major problem or emergency, are spills or flows quickly controlled by closing valves or shutting down pumps as needed, and is the appropriate incident responders notified? <i>(MCO P5090.2A, ICP)</i>			
21. Are spills cleaned and reported to the supervisor and the Environmental Office? Are all spills recorded in a log detailing the date, time, product spilled, quantity, location, cleanup actions taken, name of the person reporting the spill and incorporated into a report containing this information submitted to the MDMC Environmental Office? <i>(MCO P5090.2A)</i>			
22. Has any spilled product and product-contaminated debris been properly isolated and disposed? <i>(MCO P5090.2A)</i>			

**ADDITIONAL COMMENTS:**

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**CORRECTIVE ACTION TAKEN:**

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**Checklist completed by:**

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_