2018

CAL MARITIME

Hazardous Materials Management Program

INJURY ILLNESS PREVENTION PROGRAM

*This sheet should be completed each time the **Hazardous Materials Management Program (HMMP)** is reviewed and/or modified. The Director of Safety and Risk Management is delegated with the responsibility of administrative review and update of this program annually or more frequently as needed per CSU Chancellor's Executive Order 1039 Occupational Health and Safety Policy, 1069 Risk Management as well as Cal Maritime A&F Policy 09-004 IIPP.*

Version	Date Approved	Author	Revision Notes:
1.0	05/01/2016	Marianne Spotorno, CSP Dir. Safety & Risk Management	New Program Draft Document
2.0	09/01/2018	Marianne Spotorno, CSP Dir. Safety & Risk Management	Continuous Improvement. Language refinement.

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1.0 Purpose & Scope

The California State University Maritime Academy (Cal Maritime) is an institution committed to providing a high quality education, by combining classroom learning with applied technology, leadership development and global awareness and promoting environmental stewardship and sustainability. Cal Maritime is recognized for its environmental compliance efforts and reducing the quantity and toxicity of hazardous materials in order to protect human health, safety, and the environment is a part of the Cal Maritime mission and institutional identity.

The **Hazardous Materials Management Program described** here, provides information, guidelines, and Cal Maritime procedures for the purchasing, storage, use, and disposal of hazardous materials throughout the campus. The Hazardous Materials Management Plan describes ways to reduce, minimize, and/or eliminate the quantity and toxicity of hazardous materials that are used, stored, or disposed. The Hazardous Materials Management Plan will help Cal Maritime maintain compliance with regulatory requirements, increase consistency with the use and implementation of a Chemical Management System, and provide an opportunity for recognizing innovation for hazardous materials management and minimization.

There are several other Cal Maritime environmental, health, and safety programs related to the use, management, and disposal of hazardous materials. Some of these include the **Hazardous Materials Business Plan, Spill Prevention Control and Countermeasures Hazardous Communication, Flammable Materials Storage Plan**, and **Laboratory Safety Plan**. These plans provide specific guidance on waste disposal and laboratory safety to maintain compliance with applicable state and federal health, safety, and environmental regulations.

A "**hazardous material**," for the purposes of this plan and as defined by the United States Environmental Protection Agency (USEPA), is any physical, biological, or chemical item that has the potential to cause harm to living organisms or the environment. Many of the academic, research, and facility support departments throughout Cal Maritime use hazardous materials and therefore generate a wide variety of hazardous and non-hazardous wastes.

Hazardous materials are defined and regulated in the United States primarily by laws and regulations administered by the USEPA, Occupational Safety and Health Administration (OSHA), United States Department of Transportation (DOT), Department of Homeland Security (DHS), Drug Enforcement Agency (DEA), and Nuclear Regulatory Commission (NRC). In addition, the use, storage, and disposal of hazardous materials are within the jurisdiction of the California Department of Environmental Protection Agency (CalEPA) and are regulated by community right-to-know laws, building and fire codes, and emergency preparedness requirements.

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from manufacture to final disposal. This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also sets forth a framework for the management of non-hazardous solid wastes.

Californians are protected from hazardous waste and materials by a Unified Program that ensures consistency throughout the state in regard to administrative requirements, permits, inspections, and enforcement. CalEPA oversees the program as a whole, and certifies 83 local government agencies known as Certified Unified Program Agencies (CUPA) to implement the hazardous waste and materials standards set by five different state agencies - See more at: http://www.calepa.ca.gov/CUPA/#sthash.4HCtHXIU.dpuf

All regulated businesses and local governments are required to submit their regulatory reports electronically either to their local regulatory agency or with the California Environmental Reporting System known as CERS. The system supports electronic data exchange among businesses, local governments and U.S. EPA. Businesses may learn more about the electronic reporting requirements at Electronic Reporting and Surcharge. The public may access information submitted via the CERs system on the Unified Program Regulator Directory. - See more at: http://www.calepa.ca.gov/CUPA/#sthash.4HCtHXIU.dpuf

- The Cal Maritime campus is classified as a small quantity generator of RCRA hazardous waste by the USEPA.

- The T.S. Golden Bear is small quantity generator of RCRA hazardous waste by the USEPA.

1.1 Regulatory Standards Reference

Cal Maritime and its subcontractors shall comply with the following requirements.
In case of conflict or overlap of the below references, the most stringent provision shall apply.

- Occupational Safety and Health Act (OSHA), 1904, 1910, 1915,1917,1918,1926
- California Code of Regulations (CCR), Title 8, GISO, CSO, ESO
- Cal/OSHA Hazard Communication Standard (*§5194*).

1.2 CSU-System & Cal Maritime Specific Reference

For additional information on Cal Maritime environmental health and safety policies, refer to:

- CSU Executive Order 1039, 1056, 1069
- Cal Maritime Policy AF 09-003, AF 09-004

1.3 Other Resources

- N U. S. Department of Transportation (*DOT)*
- National Fire Protection Association (*NFPA)*
- Hazardous Materials Identification System (*HMIS*)
- DHS Chemicals of Interest https://www.dhs.gov/sites/default/files/publications/appendix-a-to-part-27-508.pdf

2.0 Administrative Duties & Responsibilities

It is the policy of the Cal Maritime to maintain a safe and healthy work environment for each employee (including student and contract employees), and to comply with all applicable occupational health and safety regulations. This Injury and Illness Prevention Program (IIPP) is intended to establish a framework for identifying and correcting workplace hazards within the department, while addressing legal requirements for a formal, written IIPP.

To assist Cal Maritime in providing a safe, compliant, environmentally sound, and more sustainable operation, each department or operational unit is expected to review, understand, and follow the guidance provided in the Injury Illness Prevention Program components and the and the function of the integrated campus safety management system (ICSMS) as related to operations under their control.

In a proactive behavior based environmental health and safety model that entire campus community participation reflects a process that embraces the ability to;

- Eliminate adverse conditions which may result in injury or illness,
- Recommend the establishment of programs to raise safety consciousness in the community, and
- Achieve and maintain a beneficial relationship through continuing communication on issues relating to environmental health and occupational safety.

2.1 Employees (Including Student workers)

It is the responsibility of all faculty and staff to proactively participate and subsequently comply with all applicable health and safety regulations, Cal Maritime policies, and established safe work practices. This includes, but is not limited to:

- Observing health and safety-related signs, posters, warning signals and directions.
- Learning about the potential hazards of assigned tasks and work areas.
- Taking part in appropriate health and safety training.
- Following all safe operating procedures and precautions.
- Participating in workplace safety inspections
- Using proper personal protective equipment.
- Inform coworkers and supervisors of defective equipment and other workplace hazards without fear of reprisal.
- Reviewing the building emergency plan and assembly area.
- Reporting unsafe conditions immediately to a supervisor, and stopping work if an imminent hazard is presented.

2.2 Department of Safety and Risk Management (SRM)

The Director of Safety and Risk Management (SRM), as delegated by the University President, is responsible for the implementation and administrative management for Cal Maritime's Injury Illness Prevention Program (IIPP) that meets the requirements of California Code of Regulations (CCR), Title 8, section 3203) as well as other applicable California and Federal Occupational Safety and Health (Cal-OSHA) requirements.
Further responsibilities are outlined below:

- Provide advice and guidance to all university personnel concerning IIPP compliance requirements;
- Provide centralized monitoring of campus activities related to implementation of campus IIPP;
- Ensure scheduled periodic safety inspections are performed in compliance with regulatory requirements and assist management staff in identifying unsafe or unhealthful conditions;
- Ensure safety and health training programs comply with regulatory requirements and university policy;
- Oversee the maintenance of safety and health records consistent with the requirements of this document and regulatory mandates;
- Ensure program audits, both scheduled and as required by a process, equipment or personnel change, or by a safety program mandate, are performed;

- Interpret existing or pending safety and health legislation and recommend appropriate compliance strategies to university personnel;
- Maintain centralized environmental and employee monitoring records, allowing employee access as directed by law.
- Conduct at least an annual review of this document and make the current revision available on the SRM web site.

2.3 Deans, Directors, Department or Operating Unit Management

Campus Department or Operating Unit Head leadership have an integral campus role and shall have a thorough understanding of Injury Illness Prevention Program components and the function of the integrated campus safety management system (ICSMS) as related to operations under their control.

- The Department Head has primary authority and responsibility to ensure the health and safety of the department's faculty, staff and students through the implementation of the Injury Illness Prevention Program components. This is accomplished by communicating the Cal Maritime's campus emphasis on health and safety, analyzing work procedures for hazard identification and correction, ensuring regular workplace inspections, providing health and safety training, and encouraging prompt employee reporting of health and safety concerns without fear of reprisal.
- Specific areas include employee and student (both student employees and students in academic programs) education and training, identification and correction of unsafe conditions, and record keeping. It is recognized that a substantial amount of responsibility falls at this level.
- Colleges and Departments are encouraged to designate an individual as the College or department safety coordinator, to assist with specific operational environmental health and safety process management components.

2.4 Supervisors and Principal Investigators

Supervisors play a key role in the implementation of the Cal Maritime's Injury Illness Prevention Program components. Supervisors may be Management, Senior Research Associates, Department Chairs, Principal Investigators, or others who oversee a project and/or staff. They are responsible for but not limited to:

- Communicating to their staff and students about Cal Maritime campus's emphasis on health and safety.
- Ensuring periodic, documented inspection of workspaces under their authority.
- Promptly correcting identified hazards.
- Modeling and enforcing safe and healthful work practices.
- Providing appropriate safety training and personal protective equipment.
- Implementing measures to eliminate or control workplace hazards.
- Stopping any employee's work that poses an imminent hazard to either the employee or any other individual.
- Encouraging employees to report health and safety issues without fear of reprisal.

2.5 Academic Programming Faculty and Advisors

It is the responsibility of Faculty, Academic Programming Advisors other Cal Maritime related activities and student clubs to:

- Develop procedures to ensure effective compliance and support of the Injury and Illness Prevention Program components as it relates to operations under their control. Specific areas of responsibility include student education and training, identification and correction of unsafe conditions, and incident reporting.
- Develop and maintain written classroom, laboratory, and activity procedures which conform to regulatory, campus and departmental guidelines.
- Instruct students in the recognition, avoidance, and response to unsafe conditions, including hazards associated with non-routine tasks and emergency operations
- Permit only those persons qualified by education and training to operate potentially hazardous equipment or use hazardous materials, unless under close supervision.
- Supervise students in the performance of activities.

2.6 Students- Cadets

Students are expected to always adhere to safety practices presented by faculty, technical staff, student assistants, graduate assistants or other authorized individuals. They must also report potentially hazardous conditions that become known to them. These reports should be made to their supervisors, faculty advisers, Department of Safety and Risk Management, or other responsible parties.

2.7 Hazardous Material Coordinators

Hazardous Material Coordinators may be principal investigators, professors, laboratory managers, laboratory supervisors, or other qualified personnel working in areas with hazardous materials. A Hazardous Material Coordinator may also be a Hazardous Material Handler and a Hazardous Material Purchaser. The Hazardous Material Coordinator is expected to perform the following activities:

- Work with the Office of Environmental Health and Safety to maintain a current hazardous material inventory in CMS, which includes forwarding information to the Department of Safety and Risk Management for entry assistance as needed or applicable.
- Confirm that Material Safety Data Sheets (SDS) for all chemicals are included in CMS. This may be accomplished by forwarding new SDS to the Department of Safety and Risk Management for chemicals and materials purchased that are not processed through Central Chemical Transfer so they may be entered in the system.
- Coordinate the annual and periodic inventories of the hazardous materials storage area(s).
- Coordinate completion of the Laboratory Check-In and Checkout forms when personnel leave, or move into, a laboratory.
- Coordinate completion of the Laboratory Decommissioning Checklist when a laboratory space is decommissioned.
- Coordinate the completion and submission of the appropriate paperwork required for purchase, use, storage, and disposal of hazardous materials.
- Coordinate hazardous materials disposal and complete associated documentation.
- Verify that the Hazardous Material Handlers whom they directly supervise receive appropriate
- Hazardous Materials Management Training and follow the procedures outlined in the Hazardous Materials Management Plan.
- Work with the Department of Safety and Risk Management to coordinate hazard assessments for tasks involving acutely toxic or explosive chemicals and verify that use of hazardous materials is in alignment with the Hazardous Materials Management Program.
- Promote an overall reduction in the usage of hazardous materials and subsequent generation of unwanted hazardous materials, whenever possible.

2.8 Hazardous Material Handlers

Hazardous Material Handlers include any individuals that use, store, and/or dispose of hazardous materials (or direct others that do these activities). A Hazardous Material Handler may also be a Hazardous Material Coordinator and a Hazardous Material Purchaser. Hazardous Material Handlers are expected to perform the following activities:

- Read and understand the Hazardous Materials Management Plan.
- Complete the Hazardous Materials Management Training.
- Purchase, use, store, and dispose of hazardous materials as described in the Hazardous Materials Management Program and other Cal Maritime policies and guidance. This includes completion and submission of the appropriate paperwork required for the purchase, use, storage, and disposal of hazardous materials.
- Inspect locations where hazardous materials are stored to verify that it is being managed properly.
- Complete the hazardous materials inventories, laboratory check-in/check-out forms, and project close-out/departure forms, as directed by the Hazardous Material Coordinator.
- Comply with the health, safety, and emergency response requirements of this plan.
- Reduce the usage of hazardous materials and subsequent generation of unwanted hazardous materials, whenever possible.

- Identify and use less toxic alternatives to hazardous materials, whenever possible.
- Provide feedback and ideas regarding improvements to the Hazardous Materials Management Program based upon their implementation of its guidelines and procedures.

2.9 Hazardous Material Purchasers

Hazardous Material Purchasers includes any individuals that purchase hazardous materials (or direct others that do these activities). A Hazardous Material Purchaser may also be a Hazardous Material Coordinator and a Hazardous Material Handler. Purchasers are expected to perform the following activities:

- Read and understand the Hazardous Materials Management Program.
- Complete the Hazardous Materials Management Training.
- Purchase hazardous materials as described in the Hazardous Materials Management Program, and other Cal Maritime policies and guidance. This includes completion and submission of the appropriate paperwork required for purchasing hazardous materials.
- Provide feedback and ideas regarding improvements to the Hazardous Materials Management Plan based upon their implementation of its guidelines and procedures.

3.0 General Requirements

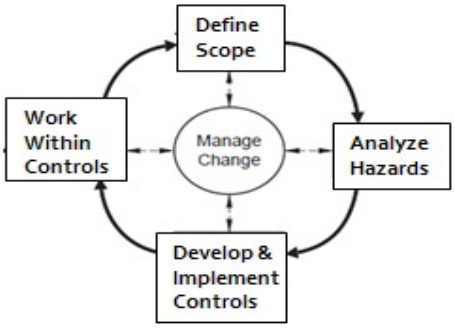
3.1 Hazard Identification, Risk Assessment & Control (HIRAC)

3.1.1 Integrated Campus Safety Management System (ICSMS)

Cal Maritime is committed to having all campus-related work performed safely and in a manner that strives for the highest degree of protection for the Campus Community. To achieve these goals, Cal Maritime implements, the principles of safety through an Integrated Campus Safety Management System (ICSMS).

Simply put, ICSMS applies a plan-do-check-act approach to campus safety management. Five core activities represent the plan-do-check-act approach, and comprise the underlying process for any construction work activity. The five core activities are:

1) Define the Scope of Work
2) Analyze the Hazards
3) Develop and Implement Hazard Controls
4) Perform Work Within Controls
5) Provide Feedback and Manage Change



The identification and analysis of workplace hazards is part of the pre-work planning process. The goal of this core activity is to ensure that the hazards associated with construction work activities are clearly understood and appropriately managed. All new campus work activities, changes to existing work or introduction of new equipment or processes (which introduce new hazards or increase the hazard level) need to be reviewed to analyze hazards, identify safety standards/requirements, and establish appropriate controls. Safety conditions and requirements need to be formally established and in place before construction work is initiated.

The campus Job Hazards Analysis (JHA) process is the principle method for achieving this.

3.1.2 Hazard Identification, Risk Assessment & Determining Control Table (HIRAC)

The EHS Hazard Identification, Risk Assessment and Determining Control Table (HIRAC) process is used to identify, assess and risk-rank Cal Maritime campus-related activities in order to ensure that Cal Maritime Campus Safety programs, activities and work controls are appropriately addressing construction risks. The initial HIRAC assessment and risk-ranking of campus-related activities was conducted during the third quarter, AY 2016-2017. The HIRAC assessment will be reviewed annually, when new campus-related activities are introduced that create or modify assessed risks, and when worksite observations or accident/incident experience identify previously unrecognized or incorrectly categorized risks.

3.1.3 Application of Hierarchy of Controls

In developing hazard controls and preparing the Job Hazard Analysis submittal, the campus shall select means and methods to mitigate worker exposure to workplace hazards using the Hierarchy of Controls as specified in the American National Standards Institute (ANSI) Z10-2005 Occupational Health and Safety Management Systems.
The campus shall make a good faith effort to analyze each hazard and identify the appropriate control(s) using the following hierarchy:

- Elimination or substitution of the hazards where feasible and appropriate;
- Use of engineering controls where feasible and appropriate;
- Application of work practices and administrative controls that limit worker exposures; and
- Provision and use of personal protective equipment

3.1.4 Job Hazards Analysis (JHA)

For the purposes of this section Job Hazard Analysis (JHA) and Job Safety Analysis (JSA) can be used synonymously. A JHA/JSA can be incorporated into a Pre Task Plan, provided there is a section for employees to review, comment and sign. Core components of the scope of work and relative hazards can be electronically completed ahead of time, provided there is room for current site conditions are able to be readily added as applicable. When the scope or conditions change, the change in work plan should be noted in a different colored pen with employee's initially that they have been briefed on the change.
The Department of Safety and Risk Management will work with individual Departments to develop a master Campus JHA library.

- Each employee scheduled to work in the activities identified below shall receive safety training in those activities prior to working on them.
- Subcontractors shall submit a Job Hazards Analysis (JHA) for those construction activities meeting the requirements for performing JHA (see below). The JHA shall be reviewed and authorized to proceed by the Cal Maritime Department of Safety and Risk Management before work commences.
- Subcontractor shall be responsible for submitting a JHA and work procedures to Cal Maritime Department of Safety and Risk Management for review a minimum of seven days prior to the start of work for most work activities.

3.1.4.1 JHA Requirements

A JHA shall be written based on the following conditions:

- Jobs with the highest injury or illness rates
- Jobs with the potential to cause severe or disabling injuries or illness, even if there is no history of previous accidents
- Jobs in which one simple human error could lead to a severe accident or injury
- Jobs that are new to your operation or have undergone changes in processes and procedures
- Jobs complex enough to require written instructions.

If not otherwise specified in a particular project specification, the JHA shall be performed in accordance with the OSHA 3071.

JHA processes. In general the JHA will include:

- Description of work phase or activity
- Identification of potential hazards associated with the activity
- Address further hazards revealed by supplemental site information (e.g., site characterization data, as-built drawings) provided by the subcontractors construction manager.
- A list of the Subcontractor's planned controls to mitigate the identified hazards
- Identification of specialized training required
- Identification of special permits required
- Name of the Subcontractor's Competent Person(s) responsible for inspecting the activity and ensuring that all proposed safety measures are followed.

3.2 Hazard Assessment

⚠ *Note: Each work task will have its own JHA, refer to the JHA Library for more details.*

GENERAL HAZARD IDENTIFICATION & CONTROL MEASURES FOR CHEMICAL & EQUIPMENT USE			
TASK	**HAZARD**		**HAZARD CONTROLS & PROTECTION MEASURES**
CHEMICAL & EQUIPMENT USE	**Trip or fall hazards**		⚓ Walking/working surfaces training for working around uneven, wet and slippery surfaces (includes warning to others of slippery surfaces); use cord cover and keep out of traffic areas
	Cuts, crush, pinch, etc. during operation and/or maintenance of equipment		⚠ Keep protective guards in place; disconnect from power source before servicing; use lockout-tagout; use PPE; keep away from power lines
	Periodic lifting/climbing/bending/stooping		⚓ Use proper lifting techniques; Ergonomic training; use dolly/cars.
	Exposure to hazardous and carcinogenic chemicals		⚓ Wear PPE (gloves, respirators, safety glasses, etc.) as appropriate; refer to MSDS; report spills immediately; practice universal precautions; ⚓ prohibit eating & drinking in work areas; use fume hood whenever necessary; ⚓ ensure fume hood is working properly; ⚓ keep small quantities of keep chemicals to limits size of spills; ⚓ eliminate use carcinogenic materials as much as possible; ⚓ limit exposure to know substances and use protective coverings; ⚓ have absorbent materials handy in case of spills; refer to materials safety data sheet
	Cuts/punctures from sharp instrument		⚓ Use caution and proper techniques; sterilize equipment; ⚓ use sharps containers
	Skin burns, eye/nasal irritation, spills		⚓ Good ventilation, chemicals stored in small quantities to keep spills to minimum and to provide easy handling. ⚓ Store flammables in fire- resistant cabinets. ⚓ Have absorbent materials readily available in case of spills
	Potential electrical shock		⚓ Avoid working around electrical equipment or outlets; ensure insulation on electrical cord is unbroken

TRAINING REQUIREMENTS

DO NOT use this equipment unless an instructor or shop supervisor has instructed you in the safe use and operation and has authorized you to operate this equipment.

✓ IIPP ✓ Dept. Specific ✓ Operators/Owner's Manual ✓ Other:

PERSONAL PROTECIVE EQUIPMENT










Eye Protection	Foot Protection	Hand Protection	Hearing Protection	Body Protection	Head Protection	Respiratory Protection	Fall Protection	Face Shield	OTHER
When exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation...	When working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, or will protect the affected	When hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns	When exposed to a time weighted average noise level of 85 dBA or higher over an 8 hour work shift.	When exposure to: Intense heat, hot metals, other hot liquids Impacts from materials that can cut, burn Hazardous chemicals Or potentially infectious materials	Where there is a potential for injury to the head from falling objects and/or when there is a risk of impact to head	May be required if removal of contaminants from the air does not fall below permissible exposure level.	When there is a risk of falling from a height greater than 4ft GSO 6ft CSO 6ft MSO When working in confined space	Face shield can be used over the glasses if there is a presence of a lot of flying debris.	

3.3 General Safety Requirements

3.3.1 Hazardous Material Determination

This section presents terminology used to classify the type and degree of hazard associated with certain materials used at Cal Maritime. Definitions presented herein are primarily taken from the publication "Terms of Environment: Glossary Abbreviations and Acronyms" (EPA# 175-B-97-001, Revised December 1997). Official determination of the definitions presented may be found in laws and related regulations published in the federal register, state and local laws, and scientific/technical documents. Specific information for a hazardous material may typically be obtained from a SDS. Contact the Department of Safety and Risk Management for additional information or assistance with the determination of hazardous materials.

3.3.2 Classes/Types of Hazardous Materials

There are many different types of hazardous materials used at Cal Maritime. A hazardous material can be a liquid, solid, or gas and may exhibit one or more potentially dangerous physical or chemical properties. The following types of hazardous materials are those most often encountered at Cal Maritime:

- **Corrosive Liquids/Solids**: Materials that cause visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. The USEPA definition of a corrosive liquid (listed under 40 CFR 261.22) is an aqueous substance that has a pH less than or equal to 2 standard units (SU) or greater than or equal to 12.5 SU. Corrosive chemicals include strong acids and bases, dehydrating agents, nonmetal chlorides, and halogens..
- **Oxidizers**: A material, which is not necessarily combustible, but can readily undergo an oxidation or reduction reaction that may contribute to the combustion of other materials (i.e., they may become catalysts for fire hazards). Common examples of oxidizing agents at CAL MARITIME include hydrogen peroxide and nitric acid. Within this same classification are peroxidizable compounds which are materials that can form explosive peroxide crystals when exposed to moisture or air. Common peroxidizables include ether, ethyl and diethyl ether, tetrahydrofuran, and dioxane.
- **Flammable/Combustible Liquids**: Materials that may easily burn and are classified or grouped as either flammable or combustible by their flashpoints. Flammable liquids will ignite (i.e., catch on fire) and burn easily at normal working temperatures (e.g., flashpoint below 140 degrees F). Combustible liquids have the ability to burn at temperatures that are usually above working temperatures (e.g., flashpoint between 141 and 200 degrees F). Common flammable liquids at Cal Maritime include acetone, isopropanol, and ethanol.
- **Flammable/Combustible Solids**: A material that may ignite or explode under normal conditions. Examples include sulfur, activated carbon, phosphorus, magnesium, and oily rags.
- **Compressed Gas**: Liquefied, non-liquefied, and dissolved gases or mixtures of gases stored under high pressures. Hazardous gases include flammable, nonflammable, oxidizing, reactive, as well as poisonous gases. Examples of compressed gases include helium, argon, hydrogen, acetylene, propane, nitrogen, nitrous oxide, and anhydrous ammonia.
- **Radioactives**: Materials that emit ionizing radiation. Refer to the **Radiation Protection Program** for additional information on radioisotopes and the handling, storage, and disposal of these materials.
- **Explosives:** Materials that contain stored energy that can produce an explosion and must be handled with extreme caution. Explosives should never be shaken or dropped and should be kept away from open flames. Examples include acetylene, trinitrobenzene, azides, and perchlorates of heavy metals.
- **Toxic Materials:** This category includes chemicals with inhalation hazards, poisons, and infectious substances. Swallowing, bodily contact, or inhalation of gases released by toxic substances may cause irritation of skin and mucous membranes, or in more severe cases, serious illness. Some examples include lead, mercury, acetone, and formaldehyde.
- **Organic Liquids/Solids**: Animal, plant-produced, or synthetic substances containing mainly carbon, hydrogen, nitrogen, and oxygen which may be solid or aqueous. Examples of organic liquids include benzene, toluene, and xylene compounds such as paint thinners.

- **Inorganic Liquids/Solids**: Materials of mineral origin and which typically do not have a carbon structure. Examples include hydrogen peroxide, sodium sulfide, and silver nitrate.

3.3.3 Characteristics of Hazardous Materials

Hazardous materials may exhibit one or more of the following characteristics:

- **Ignitability**: A material's ability to ignite.
- **Corrosivity**: The ability for a material to destroy metal. Examples include substances that are highly acidic or basic.
- **Reactivity**: The ability of a chemical to create explosions and/or toxic fumes, gases, and vapors when mixed with water or other materials.
- **Toxicity**: The measure of the adverse effect exerted on the human body by a poisonous material.
- **Ecotoxicity**: The potential to cause biological, chemical, or physical stressors when released to an ecosystem.
- **Volatility**: The measure of a material's ability to vaporize.
- **Radioactivity**: The measure of particle emission due to nuclear instability.
- **Chemical Instability**: The inability of a substance to be handled and stored without undergoing unwanted chemical changes.
- **Shock-Sensitive**: Materials that may explode when subjected to shock or friction.
- **Incompatibles**: Materials that react dangerously when mixed with certain other materials.
- **Water Reactive**: The ability for a chemical to react with water to produce a flammable or toxic gas or other hazardous conditions. Examples of water reactive chemicals include alkali metals such as lithium, sodium, and potassium, acid anhydrides, and acid chlorides.
- **Light-Sensitive**: The ability for a material to degrade in the presence of light, often forming new compounds which may be hazardous, or resulting in conditions such as pressure build-up inside a container which may be hazardous. Examples of light sensitive materials include chloroform, tetrahydrofuran, ketones and anhydrides.
- **Pyrophoric**: Materials that may ignite spontaneously upon contact with air. Examples of pyrophoric materials are silicon tetrachloride, and white (also called yellow) phosphorus.

3.3.4 Hazardous Materials Purchasing

The rationale for having a Hazardous Materials Purchasing Policy is to improve the cataloging of hazardous materials being ordered and brought to Cal Maritime and help to reduce the overall quantity and/or toxicity of chemicals on campus. The American Chemical Society (ACS) urges people who work with chemicals to adopt the motto, "Less is Better."

When purchasing hazardous materials, individuals must consider not only the quality and cost of purchases, but also the social and environmental factors related to purchases. The purchase, use, storage, and disposal of a hazardous material may present many challenges for Cal Maritime including health and safety risks, operational and disposal costs, and increased potential for regulatory penalties. Each carefully made purchase will help Cal Maritime provide a safer work environment, promote a more sustainable campus environment, and reduce overall costs associate with maintaining compliance with environmental, health, and safety regulations. It is important that each individual purchasing hazardous materials understands and accepts responsibility for the purchases by:

1) Becoming familiar with prohibited and restricted purchases;
2) Reviewing the list of materials available;
3) Researching alternatives;
4) Correctly tracking purchases and avoiding unnecessary purchases (i.e., excessive volumes); and,
5) Properly managing the materials after they are on-campus.

3.3.5 Purchasing Policy

Chemical purchases should only be made by Hazardous Materials Management Plan trained personnel. This will help ensure compliance with the procedures outlined in this program and assist Cal Maritime in meeting the objectives of the Hazardous Materials Management Plan.

The purchaser should review the list of special handling requirements, restricted storage quantities, and the Department of Safety and Risk Management notification requirements for the specific hazardous material. In general, the Department of Safety and Risk Management must receive notification at the time of purchase for any hazardous material that is classified as acutely toxic or explosive. The Department of Safety and Risk Management should also be notified if a hazardous material has an anticipated extreme cost of disposal, if an acute waste will be generated, or if hazardous material creation (e.g., synthesis) is anticipated.

The Department of Safety and Risk Management has implemented several programs for targeted chemical reduction including mercury replacement and peroxide reduction programs. In general, reagents containing arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver should not be used if a suitable alternative exists. Avoid purchasing compressed gas cylinders containing toxic or reactive chemicals, mercury (in any form), peroxide formers, uranyl acetate, and uranyl nitrate. Questions should be directed to the Department of Safety and Risk Management for any material likely to fit the definition of classifications described above.

Note: Dimethyl mercury is not permitted at Cal Maritime.

Prior to the purchase of a hazardous material, individuals should check for available existing quantities of the hazardous material they need in CMS. In the event that borrowing, sharing, or surplus material adoption can be performed, guidelines provided in the Hazardous Materials Management Plan should be followed and ownership must be updated in CMS. In addition, alternatives should be evaluated to determine if a less toxic or non-toxic chemical may be substituted.

Hazardous materials may be purchased by trained individuals approved for Purchasing Card (P-Card) or Purchase Order acquisitions. Hazardous materials may not be purchased with personal credit cards. In addition, the Cal Maritime purchasing guidelines and policies for P-Card usage must be followed for hazardous material purchases. By utilizing these methods of purchasing hazardous materials, the purchaser acknowledges that he/she has read and is willing to comply with the Hazardous Materials Management Plan, understands the types of hazardous materials that require notification to the Department of Safety and Risk Management, and accepts responsibility for any hazardous material acquired from receipt until proper disposal unless ownership is properly transferred to another handler.

Individuals are encouraged to use approved vendors for purchasing hazardous materials through the methods described in this document. These vendors are required to comply with their sales contracts established with Cal Maritime, including providing SDS information for each hazardous materials purchase. In the event a hazardous material is purchased in limited quantities through private means, the handler must coordinate use, storage, and disposal of the hazardous material(s) with a Hazardous Material Coordinator or the Department of Safety and Risk Management.

All hazardous chemicals must be included in the CMS inventory and a printed copy kept readily available by the department using the chemical.

As required by OSHA, a SDS must be provided for all hazardous material purchases. The only exception is the use of household consumer products when they are used in the workplace in the same manner that a consumer would use them (unless employees will work with the hazardous chemical in a manner that would expose them at a duration or frequency greater than a normal consumer would experience). Limited quantities of hazardous materials that are typical consumer commodities are exempt from the Hazardous Materials Management Program. However, these materials must be used,

stored, and disposed of in accordance with the manufacturer's instructions or current Cal Maritime disposal policies outlined in the Program.

Summary of Procedures for Purchasing Hazardous Materials at Cal Maritime	
1	Only personnel trained in accordance with the Hazardous Materials Management Plan should make a hazardous material purchase.
2	Review the list of special handling requirements, restricted storage quantities, and the Department of Safety and Risk Management notification requirements for the specific hazardous material.
3	Notify the Department of Safety and Risk Management
4	Review Green Chemistry alternatives
5	Order only the quantity needed (i.e., larger/bulk quantities do not necessarily save Cal Maritime money when storage, safety, and disposal issues are considered).
6	Purchase the hazardous material from an approved Cal Maritime vendor, if feasible.
7	Confirm that the MSDS is forwarded to the Department of Safety and Risk Management if purchased through private means.
8	Store the chemical in accordance with guidelines outlined in the Hazardous Materials Management Program.

3.3.6 Purchasing Compressed Gases

Only trained and approved individuals may purchase gases at Cal Maritime. The purchase of gases using a P-card is not authorized**.** Gas cylinders should be purchased from vendors that accept the return of empty cylinders and purchasers should notify the Department of Safety & Risk Management prior to ordering gases. By purchasing specific chemical gas cylinders, a Hazardous Material Coordinator and/or Hazardous Material Handler must acknowledge that he/she is aware of requirements for storage of compressed gases and is able to comply.

Compressed gases may be flammable, reactive, corrosive or toxic and these properties must be considered when developing experimental procedures and designing apparatus. Gases, when not handled properly or not contained in properly designed vessels, may be extremely hazardous and may have a high potential for explosion. All procedures and experimental apparatus used in the handling of extremely toxic gases and gases with a high potential for explosion, should be approved in writing by the Cal Maritime Department of Safety and Risk Management, prior to implementation.

3.3.7 Purchasing Hazardous Materials

As required by OSHA, a SDS must be provided for all hazardous material purchases, with exception of household consumer products when they are used in the workplace in the same manner that a consumer would use them. However, if employees will work with the household consumer product in a manner that would expose them at a duration or frequency greater than a normal consumer would experience, then an SDS is required. The SDS is a summary of safety information for a hazardous substance or material. OSHA requires manufacturers and importers of chemicals to develop a SDS for these materials. The SDS must include the chemical and common names of all ingredients that have been determined to be health hazards if they constitute 1% or greater of the product's composition or 0.1% for carcinogens. The SDS typically includes information about a chemical's toxicity, health hazards, physical properties, fire and reactivity data, as well as storage, spill, and handling precautions.

Obtaining hazardous environmental samples (i.e., soil and water samples containing high concentrations of hazardous materials) from an off-site location is not permitted without prior consultation with the Department of Safety and Risk Management.

Prior to setting-up or taking over the responsibility of a laboratory or area where hazardous chemicals are or will be stored, a Laboratory Check-In Form must be completed and submitted to the Department of Safety and Risk Management. A Laboratory Check-Out Form must also be completed when a laboratory is vacated. A Laboratory Decommissioning Form is used when a laboratory or storage area is to be completely eliminated.

3.3.8 Use and Storage of Hazardous Materials

The use and storage of hazardous chemicals is a significantly regulated activity and is a critical aspect of overall management. Please refer to the Chemical Hygiene or Laboratory Safety Plan for more detailed information regarding the safe and proper chemical use and storage at Cal Maritime.

Hazardous chemicals may only be used in areas intended for such use. Hazardous chemicals should never be used in areas lacking the appropriate infrastructure and proper means of ventilation. For example, hazardous chemicals should not be used in offices, dormitories, apartments, or other residential environments. Hazardous chemicals must never be used or stored in carpeted areas. Hazardous chemicals may not be removed from Cal Maritime property without prior written approval by a Dean, Director, or other appropriate administrator.

As part of the main focus of the Hazardous Materials Management Program, the number and amount of chemicals stored in laboratories should be reduced to an absolute minimum. Chemicals should be stored based on their compatibility; compatible chemicals can be stored alphabetically. Incompatible chemicals must be physically segregated during storage. Corrosives, flammable liquids, oxidizers, and highly reactive chemicals must be separated and stored properly to avoid an unwanted chemical reaction.

Chemicals should be stored in a well-planned and coordinated manner. Specially designed cabinets should be used to store hazardous chemicals. Hazardous chemicals should not be stored under sinks. Chemically compatible bins should be used as secondary containment and to segregate incompatible materials. The outside of the storage area, such as doors or covers, should be labeled in a general manner to inform others about the presence of hazard materials and further labeled in accordance with applicable regulatory requirements

Flammable liquids must be stored in safety cans, flammable storage cabinets, or flammable storage refrigerators. There are maximum container size requirements for different classes of flammable liquids and limits for the maximum amounts stored in a laboratory. In addition, there may be maximum time limits for certain hazardous materials.

Large containers of reagents should be stored on low shelving, preferably in trays to contain all leaks and spills. Chemicals should not be stored on the floor, on bench tops, or inside fume hoods unless they are in active use. Hazardous materials must be properly labeled. The Department of Safety and Risk Management should be contacted for additional information and assistance regarding storage and organization of hazardous materials.
All Hazardous Material Handlers must understand and follow the elements of Cal Maritime's hazardous material storage practices, as outlined in the following table:

SUMMARY OF PROCEDURES FOR HAZARDOUS MATERIAL STORAGE

1. Store all hazardous materials in a manner to minimize exposure to staff and students.
2. Evaluate hazardous materials on an annual basis to determine their usability and need for disposal.
3. Evaluate hazardous materials stored for a period greater than five years for potential disposal.
4. Review the SDS to confirm special storage information.
5. Do not store incompatible materials together.
6. Dispose of peroxide-forming compounds (i.e., ethers including dioxane) one year after receipt and opening, two years if unopened (and no expiration date), and prior to manufacturers expiration date.
7. Store flammable materials in flammable storage cabinets.
8. Do not store hazardous chemicals under sinks.
9. Do not store acids and bases, due to their corrosive nature, within the flammable storage cabinets or in other areas immediately next to combustible, flammable, or other hazardous materials that violently react with acids or bases.
10. Do not store hazardous materials in alphabetical order unless they have already been separated into their appropriate hazard classification.

11. Use spill trays for storing hazardous materials.
12. Dispose of unwanted or unusable chemicals promptly

3.3.9 Distributing Hazardous Materials

Distribution of hazardous materials should only occur in an area authorized for the use of hazardous materials, such as a designated laboratory or satellite storage location. Hazardous Material Handlers are encouraged to share hazardous materials whenever possible in an effort to minimize the overall quantity of hazardous materials stored at Cal Maritime at any given time. Materials available for another handler at no cost are listed in the CMS chemical surplus list. A handler with a CMS account can "adopt" the material, which will add the material to their inventory. Hazardous Material Handlers should coordinate with the Department of Safety and Risk Management for transfer of the material if transportation is necessary. The CMS inventory must be updated to reflect the most current location of the material.

Students utilizing hazardous materials outside of a typical area authorized for use of hazardous materials must coordinate activities through a Hazardous Material Handler before beginning activities. The Hazardous Material Coordinator is expected to work with the Department of Safety and Risk Management to verify that the material is acceptable and the area in which the material will be used meets health and safety requirements. Small quantities of consumer commodities are not subject to this verification.

3.3.10 Container Labeling Requirements

Containers must be dated and labeled with the chemical constituents and hazard. It is recommended that the owner's name be included on the label. Labels on incoming containers must not be removed or defaced. Dating is especially important in the case of compounds that have a specified shelf life, such as those that will form peroxides (e.g., ethyl ether). Labeling nomenclature must match the information cataloged in CMS.

Identifying unknown materials for disposal is extremely costly. Hazardous Material Handlers who are leaving the University are responsible for identifying and coordinating the proper disposal of the chemical waste in their laboratory. Contact the Department of Safety and Risk Management for additional information and assistance.

For secondary (e.g., transfer) containers, the chemical names must be spelled out on labels. Chemical formulas, acronyms, and abbreviations are not acceptable as the only identification of the contents of a container. Laboratory samples, including field specimens and newly synthesized compounds, must be identified as accurately as possible. For field specimens that include preservative, the preservative must be identified. In cases where the container is unable to be labeled, steps should be taken to ensure the contents are easily identified (e.g., label the rack, box, or other outer container).

3.3.11Hazardous Material Inventory Management

Cal Maritime Chemical Inventory Management System (CMS)

All hazardous chemicals used at Cal Maritime must be registered through CMS. The National Fire Protection Association (NFPA) also recommends that a current inventory of all hazardous and non-hazardous materials be maintained. An accurate inventory of hazardous materials is a vital aspect of promoting health and safety, as well as maintaining environmental compliance. In addition, due to OSHA requirements, an up-to-date SDS must be available to all personnel that are exposed to the hazardous material. The SDS is included in CMS.

Hazardous Material Handlers are expected to be familiar with CMS. Training on the CMS program is provided through the Department of Safety and Risk Management and is required for Hazardous Material Handlers that access the system.

Hazardous materials must be properly labeled with a barcode sticker and electronically added to the CMS inventory. The materials must remain in CMS until it is depleted or removed for disposal. A request for an inventory change should be forwarded to the Department of Safety and Risk Management. For example, when a chemical is depleted, the user (or

designated Hazardous Material Handler) should mark the container as "empty" in CMS. Alternatively, the barcode sticker should be removed from the empty container and immediately sent to the Department of Safety and Risk Management.

Inventory Schedule

The inventory of hazardous materials must be kept up-to-date and should be managed using the CMS system. Updates to the database are critical in assessing the overall performance and improvements made with regard to waste reduction and crediting the proper groups with those reductions. The Department of Safety and Risk Management monitors al hazardous chemical data for new chemical purchases. It is the responsibility of the departmental Hazardous Material Coordinator to ensure that the inventory is updated (either by themselves or directly by the Hazardous Material Handler) when a new chemical is purchased or when it is depleted, disposed, or distributed to another location. Information regarding inventory changes should be forwarded to the Department of Safety and Risk Management if assistance is required for data entry.

At minimum, an annual inventory should be conducted in all areas where hazardous materials are stored. Hazardous Material Handlers should follow the checklist. It is also recommended that voluntary periodic inventories be conducted throughout the year to keep CMS up-to-date to minimize the number of chemicals that have to be entered during the annual inventory. The schedule may be flexible dependent upon the quantities and types of hazardous materials managed in an area.

As part of the annual and/or periodic inventories, the Hazardous Material Handlers should identify chemicals for disposal. It is recommended that clean-out inventories be coordinated with the Department of Safety and Risk Management to ensure unwanted inventory items are easily retrieved by the Hazardous Waste Coordinator.

The Department of Safety and Risk Management conducts an inventory audit of areas that store hazardous materials every operating quarter.

Inventory Closeout

The hazardous material inventory must be kept up-to-date in Cal Maritime CMS. Hazardous Material Coordinators are responsible for verifying that hazardous materials remaining in inventory are in active use and coordinates with the disposal schedule to regularly remove unwanted materials. When a hazardous material is removed from inventory, the material must be properly disposed and removed from Cal Maritime CMS.

Occasionally, larger hazardous material inventories must be closed out due to project completion, departing faculty, departing student researchers, or special projects. In the event of a large inventory closeout, the Hazardous Material Handlers must coordinate with the Hazardous Material Coordinator and the Department of Safety and Risk Management before the project completion or departure. Hazardous Material Handlers are encouraged to notify the Department of Safety and Risk Management as soon as possible so that hazardous materials can be transferred to other trained individuals or properly disposed of safely and in a timely manner.

3.3.12 Hazardous Material Minimization

Minimization is any action that reduces the quantity and/or toxicity of hazardous materials purchased, stored, or disposed of as a hazardous waste. Minimization efforts contribute to positive environmental and financial outcomes for the campus. It is encouraged that the minimization of hazardous materials should be an integral part of the inquiry process, experiment design, and operating procedures.

Source Reduction

Source reduction is an activity that reduces or eliminates the quantity of hazardous materials at the source and the quantity of waste generated. This can be accomplished by purchasing hazardous materials in smaller quantities, targeting chemicals for reduction, material substitution of less hazardous materials, and laboratory process modification.

Cal Maritime encourages users to purchase hazardous material quantities that are either below regulatory storage thresholds, or that will be used in one year, whichever is less. Although some cost savings can be realized when purchasing chemicals in bulk, there are additional costs associated with the storage, disposal, and management of the bulk material. Whenever possible, Hazardous Material Handlers should determine if users from other departments require the same chemical and evaluate opportunities to "share" in purchases. Contact the Department of Safety and Risk Management to help identify other users of similar chemicals to coordinate shared purchases.

The Department of Safety and Risk Management has implemented several programs for targeted chemical reduction. Refer additional information on chemicals that should be avoided. The USEPA has also identified 36 chemicals that should be targeted for minimization. Cal Maritime encourages that hazardous materials users try to avoid the use of these target chemicals.

Material substitution may involve activities such as chemical substitution or green chemistry. Examples of substitution include spirit-filled or digital instruments in place of mercury- containing devices, biodegradable detergents in place of solvents, and latex-based paints rather than oil-based paints and thinners.

Process modification, such as micro-scale experiments or pre-experiment quantification, such as pre-weighing or using pre-measured packets, should be evaluated and conducted using prudent practices. Hazardous Material Handlers are encouraged to consider demonstrations or video presentations as a substitute for some educational experiments. Improved laboratory operations, such as reducing spillage and labeling all chemicals, will help to minimize the use of hazardous materials and create less waste and emissions.

EXAMPLE SOURCE REDUCTION IDEAS

- Purchase quantities that are either below regulatory storage thresholds or that will be used in one year, whichever is less.
- Share in the bulk chemical purchase between departments or locations.
- Don't purchase "targeted" chemicals, if possible.
- Use older chemicals before newer ones (and use before the expiration date).
- Label all containers to avoid generating "unknown" chemical wastes.
- Maintain a current inventory and only purchase if the chemical is not in the inventory.
- When purchasing a chemical, consider using a chemical no longer needed by another department or area.
- Replace toxic chemicals with less toxic or non-toxic alternatives.
- Use video demonstrations as a substitute for some student experiments.
- Purchase and use pre-weighed or pre-measured reagent packets.
- Use detergent and hot water for cleaning in lieu of solvents.
- Use micro-scale experimentation.
- Dispose of materials as soon as it is determined that they are no longer needed.
- Follow good laboratory practices to minimize mixing of waste streams, excess use, and spillage.
- Implement automation/instrumentation that will reduce hazardous material use.

Reprocessing

Reuse and/or recycling is encouraged when technically feasible. Reprocessing occurs when a hazardous material is used for another purpose, reused in the same process, or reclaimed for another process. For example, Cal Maritime purchased a solvent recovery unit in 2009. The specialized equipment required for solvent recovery can occasionally be obtained through cost sharing or other incentives. Contact the Department of Safety and Risk Management for additional information on the implementation of this option.

Examples of typical methods of minimization through reprocessing include:

EXAMPLE REUSE/RECYCLING IDEAS
▪ When solvents are used for cleaning purposes, use contaminated solvents for the initial cleaning, whenever possible, and use new solvents for the final rinse. ▪ Treat photographic waste with a silver recovery unit (contact the Department of Safety and Risk Management for additional information). ▪ Re-circulate unused, excess chemicals within your department or suggest sharing with other departments. ▪ Install solvent recovery systems (contact the Department of Safety and Risk Management for more information). ▪ Advertise by-products or wastes created during hazardous material use in case another user can beneficially re-use them.

On-Site Treatment

Treatment of hazardous materials should only be utilized as a minimization effort if coordinated with the Department of Safety and Risk Management. Regulations require strict procedures in how on-site treatment can occur. The most common treatment is acid base neutralization during laboratory experiments. Hazardous Material Handlers should consider including detoxification and/or neutralization steps in laboratory procedures when they are initially designed.

In addition, certain chemicals, such as formaldehyde or ethidium bromide gels, can be detoxified prior to disposal. Only treat a material if it renders it non-hazardous or reduces its volume. Guidance on treatment and/or detoxification should be obtained from the Department of Safety and Risk Management and conducted only with written approval.

3.3.13 Hazardous Material Disposal

The **Hazardous Waste Management Plan** provides guidance on the storage, labeling and disposal requirements of hazardous, universal and non- hazardous wastes. Proper packaging of hazardous waste is necessary for safe transportation from point of origin to ultimate disposal. The selection of appropriate containers helps prevent leaks and spills that may result in human exposure or environmental release during material handling, storage, and transport. Routine handling occurs on the campus, in transit to the disposal facility or during the disposal process. The Department of Safety and Risk Management provides for the distribution of proper hazardous waste containers. Determination of waste container type is based primarily on the chemical characteristics of the waste contained, waste generation rate, satellite accumulation area considerations and disposal method. The selection of appropriate containers is only to be completed by the Coordinator of Hazardous Waste or the Hazardous Waste Specialist.

In support of the University's ongoing efforts to minimize costs, control liability, and maintain a sound environmental program, every effort will be made by Cal Maritime to minimize the generation of hazardous waste. To accomplish this objective, Cal Maritime has developed a Waste Minimization Strategy designed to identify and develop opportunities to control chemical use and reduce waste generation. Various methods have been identified and implemented, including:

WASTE MINIMIZATION STRATEGY

- Carefully evaluate the need to purchase chemicals to begin with, and then only if other alternatives are not available.
- Purchasing Control: purchase materials only in amounts required for use in planned teaching or research.
- Periodic Inventory Evaluation: evaluate laboratory reagents for current use, transfer to virtual stockroom or disposal**.**
- Surplus List: utilize CMS to match on-campus chemicals to avoid the disposal of useful materials.
- Environmental Management: Make every effort to reduce the volume of the solid waste stream, reduce the toxicity of the solid waste stream, increase re-use and recycling efforts, and promote pollution prevention at the University.
- Bulk materials whenever possible to maximize disposal cost efficiency.

3.3.14 Sustainability

Sustainability is a major component of the University's mission and institutional identity. Cal Maritime wishes to integrate sustainability across their curriculum, operations, research and engagement through initiatives in biodiversity, climate, food, and culture. With the implementation of the policies and procedures outlined in the Hazardous Materials Management Program, Cal Maritime will be working towards accomplishing climate sustainability initiatives by reducing their indirect emissions. Steps toward reaching the biodiversity initiative will be accomplished by reducing the waste generated (i.e., less impact on the environment).

The Hazardous Materials Management Program has been established with objectives for use, storage, and disposal of hazardous materials to encourage sustainable policies and practices in operations, research, curriculum, and engagement. Recommendations for green chemical substitution, waste minimization, hazardous material inventory reuse, and toxics reduction policies are several examples of how sustainability can be incorporated into every day research and education practices.

3.3.15 Chemical Lab Safety Overview

The Department is responsible for ensuring the proper handling and disposal of all chemical hazardous waste on campus. In order to ensure that waste is handled properly it is vital that the information provided be as accurate as possible. Refer to the Chemical Hygiene Plan for more details.

Be specific – let us know what chemicals are in the waste container. "Aqueous waste" could be many different things. If there are three chemicals in the container

- Fill in the "Satellite Accumulation Start date" – This date lets us know how long waste has been stored in the lab. By law, waste can only be stored in a lab for a limited period of time.
- **DO NOT** fill in the "Final Accumulation Start Date" - this is for EH&S use only. We fill this date in on the day that the waste is picked up.
- **DO NOT** mix incompatible chemicals in a hazardous waste container – chemical reactions that occur in hazardous waste containers may generate heat and result in the failure of the container. They may also result in improper handling of the waste since the products of the reaction have different chemical properties than what was originally put in the container

Personal Protective Equipment (PPE) is the last line of defense for protecting yourself from hazards present in the lab. Only use PPE that fits properly – PPE that is too small or too large can limit your movement, get in the way and may even be uncomfortable. Know what PPE you need – when working in the laboratory make sure you know what PPE you need to protect yourself. This information can be found on SDS sheets, from your lab supervisor or you can call EH&S at 707-654-1076. Never re-use disposable gloves – over time disposable gloves can wear out, and are even degraded by certain chemicals. Wear them once and throw them away.

Before using a respirator contact EH&S to be fit-tested – CAL-OSHA requires all users of respirators to be fit tested annually and pass a physical.

Lab coat, gloves and safety glasses – this is the minimum level of PPE that must be worn in labs at Cal Maritime. You can always wear more PPE when needed, but make sure you wear a lab coat, gloves and safety goggles or safety glasses at a minimum.

Refer to the Personal Protection Equipment Program for more details

Chemical Storage Chemicals must be segregated by hazard class when stored in order to reduce the probability of incompatible chemicals mixing. Uncontrolled mixing of chemicals can result in reactions that are detrimental to the health and safety of lab personnel. The following are guidelines for the safe storage of chemicals. As always, consult a Safety Data Sheet (SDS) for more specific information.

Refer to the Chemical Hygiene Plan for more details

Laboratory Safety Chemical Fume Hoods The fume hood is often the primary control device for protecting laboratory workers when working with flammable and/or toxic chemicals. OSHA's Laboratory standard requires that fume hoods be maintained and function properly when used.

Before using a fume hood:

- Make sure that you understand how the hood works.
- You should be trained to use it properly.
- Know the hazards of the chemical you are working with; refer to the chemical's Material Safety Data Sheet if you are unsure.
- Ensure that the hood is on.
- Make sure that the sash is open to the proper operating level, which is usually indicated by arrows on the frame.
- Make sure that the air gauge indicates that the air flow is within the required range.

When using a fume hood:

- Never allow your head to enter the plane of the hood opening. For example, for vertical rising sashes, keep the sash below your face; for horizontal sliding sashes, keep the sash positioned in front of you and work around the side of the sash.
- Use appropriate eye protection.
- Be sure that nothing blocks the airflow through the baffles or through the baffle exhaust slots.
- Elevate large equipment (e.g., a centrifuge) at least two inches off the base of the hood interior.
- Keep all materials inside the hood at least six inches from the sash opening. When not working in the hood, close the sash
- Do not permanently store any chemicals inside the hood.
- Promptly report any hood that is not functioning properly to your supervisor. The sash should be closed and the hood "tagged" and taken out of service until repairs can be completed.
- When using extremely hazardous chemicals, understand your laboratory's action plan in case an emergency, such as a power failure, occurs.

Laboratory Safety Labeling & Transfer of Chemicals

Permanent Container Labels

Employers must ensure that no worker uses, stores, or allows any other person to use or store any hazardous substance in a laboratory if the container (including bags, barrels, bottles, boxes, cans, cylinders, drums and reaction vessels) does not meet the following labeling requirements in OSHA's Hazard Communication standard

- The identity of the chemical and appropriate hazard warnings must be shown on the label.
- The hazard warning must provide users with an immediate understanding of the primary health and/or physical hazard(s) of the hazardous chemical through the use of words, pictures, symbols, or any combination of these elements.
- The name and address of the manufacturer, importer or other responsible party must be included on the label.
- The hazard label message must be legible, permanently displayed and written in English.

Portable (Secondary) Container Labels

Often, laboratory operations require transferring chemicals from the original labeled container into a secondary container (e.g., beaker, flask, or bottle). Portable containers must comply with the labeling requirements listed above if any of the following events occur:

- The material is not used within the work shift of the individual who makes the transfer.
- The worker who made the transfer leaves the work area.
- The container is moved to another work area and is no longer in the possession of the worker who filled the container.
- Labels on portable containers are not required if the worker who made the transfer uses all of the contents during the work shift.
- When a secondary container is used for longer than one shift or does not meet the requirements outlined in the Permanent Container Labels section, above, a label needs to be applied to the secondary container. This label must contain two key pieces of information: the identity of the hazardous chemical(s) in the container (e.g., chemical name) and the hazards present.
- There are many ways to communicate this hazard information.
- Employers should select a system that will work for each location.

Replacement Container Label

The existing label on a container entering the workplace from a supplier must not be removed, altered or defaced. If a chemical container's original label must be replaced, the new label must contain the same information as the original. Only use labels, ink and markings that are not soluble in the liquid content of the container.

3.3.16 Security Considerations

Security of hazardous materials is an integral part of an effective health and safety program, as well as being a requirement for certain DHS listed chemicals. Follow these steps to ensure a secure working environment when working with hazardous materials:

- Keep storage areas for hazardous materials closed and locked when unoccupied.
- Keep an accurate record of hazardous materials used, project materials, and those items that support project activities.
- Notify Cal Maritime police if materials are damaged or missing from areas where hazardous materials are stored.
- Inspect packages that contain hazardous materials upon arrival to verify that they match what was ordered.
- Properly store and secure hazardous materials when not in active use.
- Do not allow unauthorized persons to come into contact with hazardous materials.
- Discuss security-specific requirements with supervisor and colleagues.

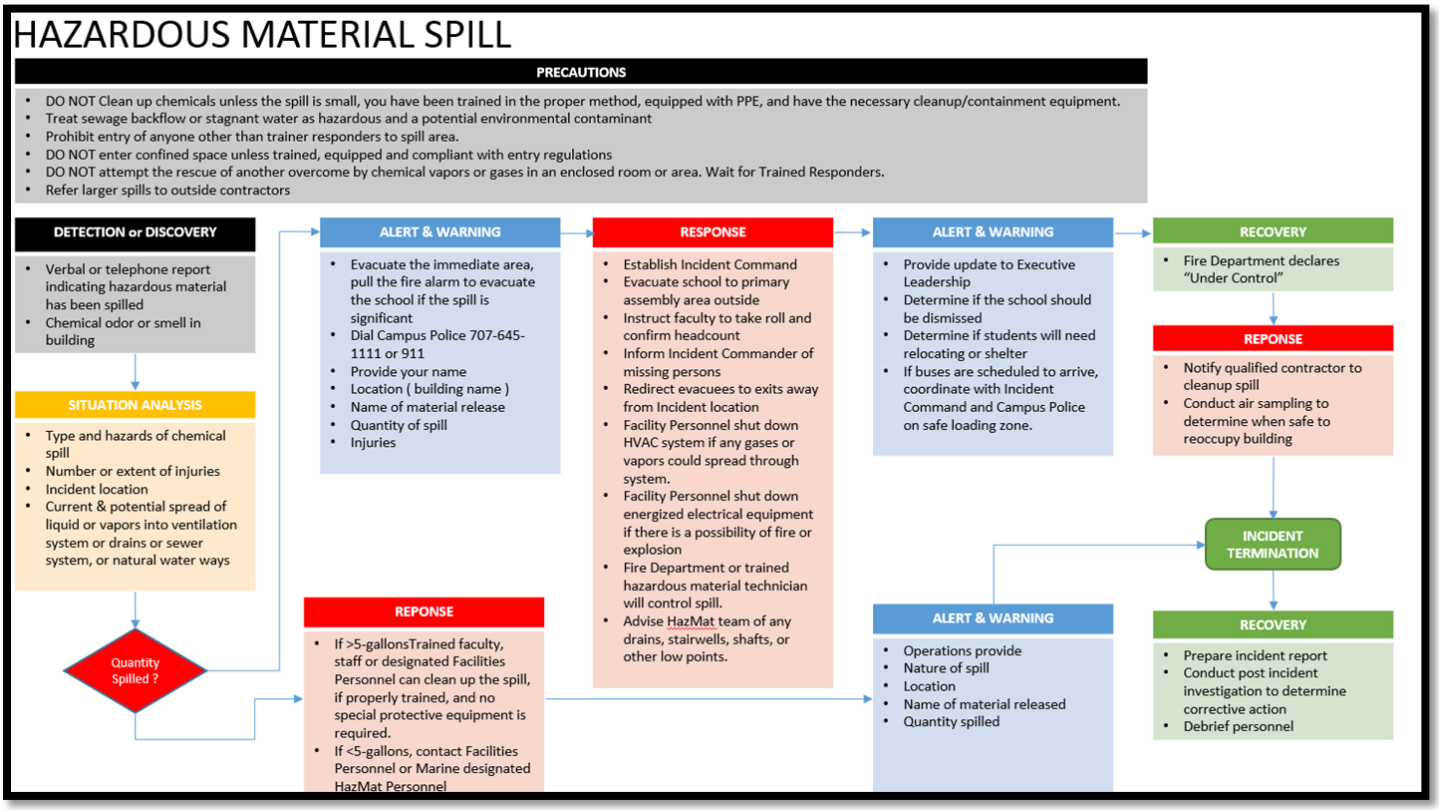
3.4 Regulatory Reporting Overview

The Department of Safety and Risk Management is responsible for maintaining hazardous material information for the California Environmental Reporting System (CERS) is a statewide web-based system to support California Unified Program Agencies (CUPAs). The CERS Consolidated Emergency Response/Contingency Plan has been prepared to: unify emergency response and contingency plan requirements for hazardous materials and hazardous wastes; provide for basic contingency planning for an average small to mid-size facility; and incorporate minimal regulatory requirements.

Other supplements or amendments may be required for facilities of exceptional size or having exceptional operations or processes that warrant additional contingency planning. Emergency planning documents include but are not limited to; Hazardous Materials Business Plan, Spill Prevention Control and Countermeasure (SPCC) Plan, provided that it satisfies the HSC and 22 CCR requirements for content, Location Maps and Spill Reporting Protocols.

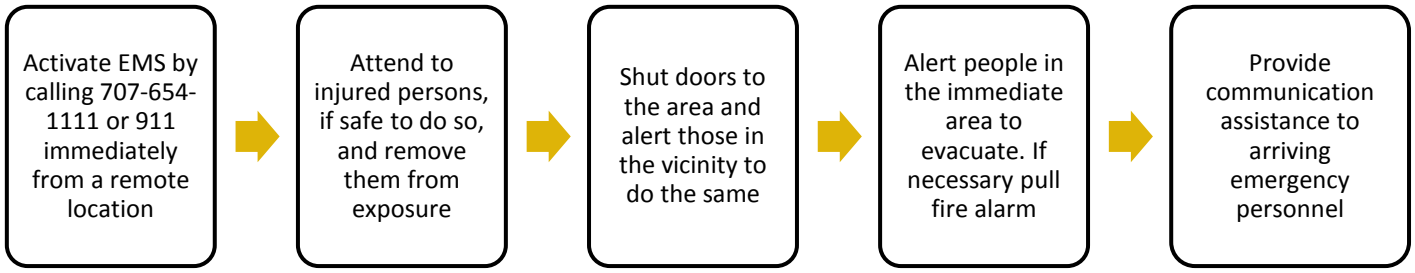
3.5 Emergency Planning

The range and quantity of hazardous substances used on Campus require preplanning to respond safely to chemical spills. Only knowledgeable and experienced personnel should do the cleanup of a chemical spill. Spill kits with instructions, absorbents, reactants, and protective equipment should be available to clean up minor spills. A minor chemical spill is one that the facility staff is capable of handling safely without the assistance of safety and emergency personnel. All other chemical spills are considered major. Contact the Department of Safety & Risk Management to ensure proper procedures are taken to clean up the spill.



Major Chemical Spill

If the situation is life or health threatening in a Lab setting or you are unsure:

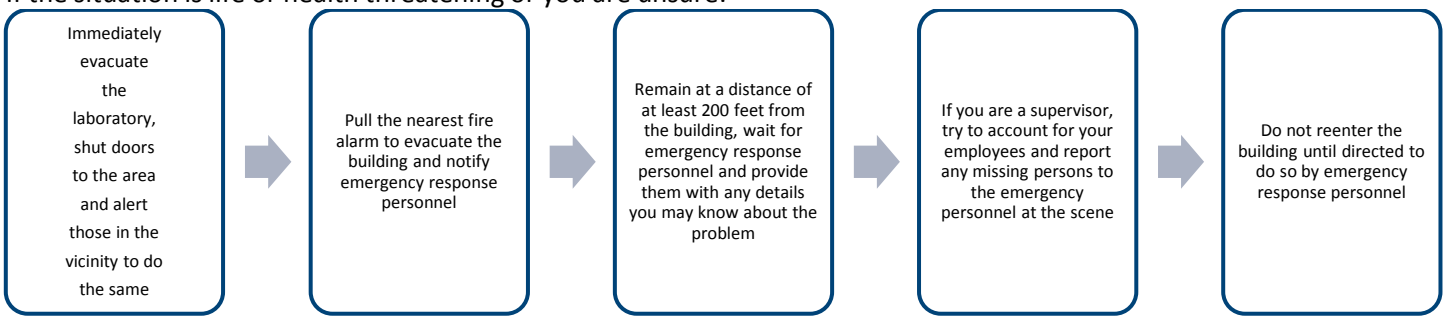


Minor Chemical Spill

- If the situation is not health threatening and trained people and proper cleanup equipment are on hand, you may clean up the spill and dispose of waste materials properly.
- However, even under seemingly innocuous conditions, it is recommended that SRM be consulted to be sure that the right steps are being taken to clean up the spill.
- Wear Protective equipment including safety goggles, appropriate gloves and lab coat
- Avoid breathing vapors from the spill
- For inorganic acids and bases, use appropriate neutralizer. Absorb neutralized spill, collect residue, place in container, label, and dispose as chemical waste
- For other chemicals, absorb spill with appropriate material, collect residue, place in container, label, and dispose as chemical waste
- Clean area with detergent and water

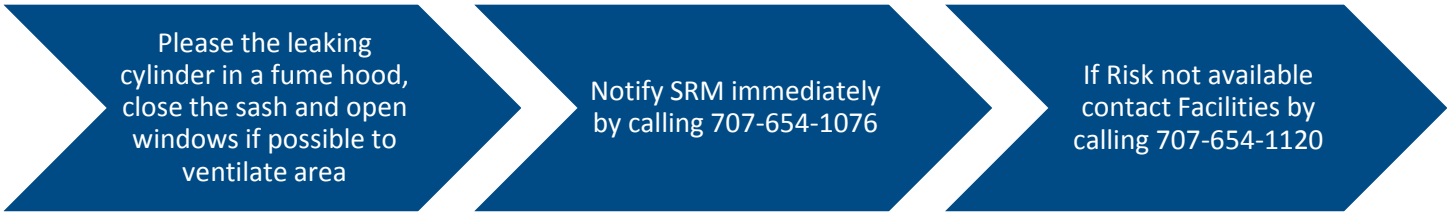
Major Toxic or Flammable Gas Leak

If the situation is life or health threatening or you are unsure:

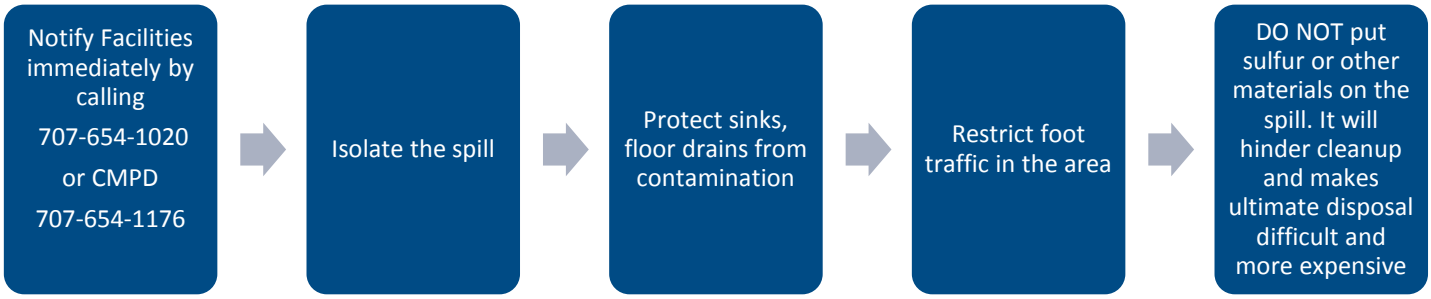


Minor Toxic or Flammable Gas Leak

If the situation is not health threatening



Mercury Spill



Unusual or Out-of-Place Odor

Contact Facilities at 707-654-1120 to report odor. As described in the **Hazardous Materials Management Program**, Hazardous Material Handlers should consider the following criteria before working with any hazardous material:

- Potential receptors involved with the location and type of hazardous material use/storage.
- Toxicity, reactivity, and flammability of the material.
- The amounts involved and nature of use.
- The expected duration of exposure to the material.
- Potential routes of entry for the material (i.e., inhalation, ingestion, injection, skin contact).
- Potential by-product or waste generation.

Information on a hazardous material can be found in the SDS for that material which must be maintained in Cal Maritime - CMS. If a spill or release of a hazardous material occurs, response actions taken should follow the Emergency Procedures Program, Integrated Contingency Plan, Laboratory Safety Plan, and/or Site-Specific Spill Response Procedures.

- Releases must immediately be reported to the Department of Safety and Risk Management. In the event of a hazardous material release:
- Alert all persons nearby.
- Avoid breathing aerosols of the released material.
- If flammables are released and the area is safe, turn off or remove any potential sources of ignition (e.g., lights, motors, Bunsen burners).
- Evacuate the area and seal the area if feasible (i.e., cover or contain spills, close doors).
- Secure the area to prevent others from entering (i.e., lock doors and post signs).
- Immediately notify a supervisor of the incidents, including chemical(s) involved and nature and volume of the release.
- During regular work hours contact the Department of Safety and Risk Management at 707-654-1076, and during non-working hours, contact Cal Maritime Police at 1111 for advice and assistance.

4.0 Training Requirements

Effective dissemination of safety information lies at the very heart of a successful Injury and Illness Prevention Program. It is essential to provide training for employees concerning general safe work practices as well as specific instruction with respect to hazards unique to each employee's job assignment.

Training content is determined by the Department of Safety and Risk Management, as well as Department Management which is based upon observed hazards, type of equipment, Department need, and work requirements.

- Providing training from within the department as a part of academic programming, or
- Training provided by CSU-System, or
- Training provided by Cal Maritime SRM, or
- A training provider outside the University.

Note: All outside trainer venders are to be reviewed and content approved by SRM. The Department of Safety and Risk Management, in conjunction with various departments have developed training programs designed to meet general safe work practice requirements. These programs are elements of larger programs which service broad campus needs.

Hazardous Materials Management Training is intended to help participants understand the goals and objectives of the Hazardous Materials Management Plan and provide guidance on how to follow the policies and procedures contained in the Plan. It is the responsibility of the Hazardous Material Coordinator to ensure that Hazardous Material Handlers, from professors to students, all obtain appropriate training and receive the guidance necessary to follow the procedures outlined in the Hazardous Materials Management Plan. Personnel must complete the Hazardous Materials Management Training within six months of employment or assignment to a location where hazardous materials are used or stored and every three years thereafter.

- Components of the hazardous materials training include:
- Roles and responsibilities.
- Understanding the definition of a hazardous material.
- Guidelines for purchasing hazardous materials.
- Hazardous materials management.
- Ways to minimize quantity and toxicity of hazardous materials.
- Ways to minimize hazardous materials usage and waste generation.
- Procedures for maintaining an inventory of hazardous materials.
- Health and safety requirements for use and storage of hazardous materials.
- Procedures for completing the Hazardous Materials Management Plan forms.

The training will be conducted through the Department of Safety and Risk Management in conjunction with existing training programs associated with hazardous and universal waste management. A special separate training module will be available to those that do not currently take hazardous waste and universal waste management training. The training will be provided using Blackboard so that it is accessible for all users at their convenience. Additional live training will be conducted as determined by the Department of Safety and Risk Management.

Employees expected to utilize chemicals as part of their job duties must be adequately trained prior to using such chemicals.

Employees should be trained in the following areas:

- Be able to recognize hazards associated with different types of chemicals and equipment; and the safety precautions necessary for use.
- The PPE required to be worn during the use of chemicals.
- The proper use of tools and other equipment, be able to recognize defects in tools, which may render them out of service.
- When applicable, provide access to the manufacturer specification and manual's for specific equipment to be used.

- Department-developed standard operating procedures (SOPs) outlining specific safety precautions for certain tools or activities.
- Signs and symptoms related to the exposures to hazardous chemicals used in the work area;
- Methods that may be used to detect the presence or release of a hazardous chemical.
- This could include industrial hygiene monitoring, the use of continuous monitoring devices, visual appearance, or odors of chemicals;
- Details of manufacturer labels, SDSs and workplace labeling system, and how that information can be used to assure safe handling and storage; and
- Procedure for addressing non-routine tasks involving hazardous chemicals.

Frequency

- Supervisors and Principal Investigators must provide employees information and training regarding the physical and health hazards of the chemicals in the work area before assigning employees to work with hazardous chemicals. Refresher training is required whenever a new chemical hazard is introduced into the workplace or a new or updated SDS is received.

Non-Routine Tasks

- Employees must be provided training or refresher training prior to engaging in a non- routine task. Employees must be provided hazard notification and precautionary measures to avoid or minimize the potential for risk of exposure.

Retraining may be necessary to maintain employee knowledge of working with chemicals or if a near-miss or injury has occurred.

Training is to be documented and kept in a readily accessible location by the Department designee for access reference as needed by Department Management, Department of Safety & Risk Management, or regulatory agency (e.g. CalOSHA). Submit the completed training roster of attendees to the Department of Safety & Risk Management.

Refer to Cal/OSHA Safety & Health Training and Instruction Requirements as outlined in Appendix C of the Injury Illness Prevention Program.

5.0 Document Control & Recordkeeping

Essential records, including those legally required for Workers' Compensation, insurance audits and government inspections will be maintained for as long as required. Individual Departments and/or Colleges will also keep records of steps taken to establish and maintain the Injury and Illness Prevention Program.
They must include:

- Records of scheduled and periodic inspections to identify unsafe conditions and work practices. The documentation includes the name of the person(s) conducting the inspection, the unsafe conditions and work practices identified, and the corrective action(s) taken. These records will be maintained for at least three years.
- Documentation of health and safety training for each employee. Specifically, employee name or other identifier, training dates, type(s) of training and the name of the training provider will be included. Records will be retained for at least three years. Standard forms for maintaining this information can be obtained from the Department of Safety and Risk Management.

Detailed recordkeeping is a vital aspect of promoting health and safety, as well as maintaining environmental compliance. The success of the program can only be measured if everyone participates and maintains the required records. Records and reporting documents are required for purchasing, storing, use, and disposal of hazardous materials. The forms are indicated throughout the Hazardous Materials Management Program and include:

- Follow P-Card or Purchase Order procedures.
- Laboratory Check-In/Check-Out Form.
- Laboratory Decommissioning Checklist.
- Laboratory Safety Inspection Checklist.
- Up-to-date inventory in campus CMS or equivalent hard copy.
- SDS kept electronically in campus CMS and kept readily available in hard copy binders at department locations.

Each Department is responsible for maintaining their own records of machine safeguarding inspections / surveys. In addition, Departments must maintain training records of personnel who have been trained on this program and/or to specific equipment as may be necessary to demonstrate training compliance to a regulatory agency. Documents such as JSAs, SOPs, operation manuals, signage, etc… may all function to demonstrate record keeping, safe-operation, warning and training activities.

Departmental policies for recordkeeping should also be followed. In addition, records for Hazardous Materials Management Training are maintained by recording the names of those that have completed the Hazardous Materials Training Module in Blackboard (via computer) or participated in a live training class. Training records should include the date of training, training provided, and attendee's names.

Non-Compliance Responsibility

State, local, or federal inspection program fines or penalties that are incurred as a result of the clear mismanagement of hazardous materials or waste shall be the direct responsibility of the department/groups where the violations occurred. Also, unnecessary costs associated with the clear mismanagement of hazardous materials shall be the responsibility of the department/group where the mismanagement occurred.

The Department of Safety and Risk Management will be working with all departments to provide guidance and support to maintain compliance with environmental, health, and safety regulations and prevent potential fines and penalties. Examples of hazardous materials mismanagement may include retaining unknown wastes, improper disposal of materials down the drain, improper management of peroxidizable chemicals, inappropriate use of dioxin or dioxin-containing.

If modifications are made to any machine, keep all documentation (drawings, specs, receipts, etc.) for as long as the equipment is in service or owned by the University.

Retain all training records for ten years after employees have retired or left University employment. For students, retain records for ten years after the student's projected graduation date.

Training records will be kept in each department and copies will be forwarded to the Department of Safety and Risk Management.

Departments must maintain the following records as part of the hand and portable power tool safety program.

- Employee training records
- Specialized SOPs
- Manufacturer specifications/manuals
- Maintenance/service records

Record	Timeframe/Frequency	Location of Record	Retention Period*
Hazardous Materials Management General Awareness	Initial, Annual Refresher for affected employees.	Document on Employee's Safety Training Checklist	3-Years
Hazardous Materials Management Users/Handlers	Initial, Annual Refresher for affected employees.	Document on Employee's Safety Training Checklist	3-Years
Hazardous Materials Management Users/Handlers	Post incident and/or process management change for affected employees.	Document on Employee's Safety Training Checklist	3-Years

Refer to the Injury Illness Prevention Program Document Retention Table and/or California State University Systemwide for more information.

Appendix A: Definitions

General Definitions

ANSI:	American National Standards Institute
Authorized person:	Means a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the jobsite.
Competent person:	A competent person is a person who is **capable** of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees. The competent person has the **authority** to impose prompt corrective measures to eliminate these hazards. *Examples:* • **Excavation** - Inspectors 1541 • **Fall Protection** Plan implementers & supervisors 1671.1 • **Lift Slab Construction** 1522.1
Confined Space:	Is a space that (1) is large enough and so configured that an employee can enter bodily, (2) has limited or restricted means for entry or exit (e.g., tanks, vessels, vaults, shafts, pits), and (3) is not designed for continuous occupancy.
Construction Manager:	Is the Cal Maritime employee responsible for the supervision and field management of day-to-day needs of a construction project. It may be a project superintendent, a craft supervisor, or a lead person.
Construction work:	For purposes of this section, "Construction work" means work for construction, alteration, and/or repair, including painting and decorating. Construction: is any combination of engineering, procurement, erection, installation, assembly, demolition, or fabrication used to create a new facility, or to alter, add to, rehabilitate, dismantle, or remove an existing facility. It also includes the alteration and repair (including dredging, excavating, and painting) of buildings, structures, or other real property, as well as any construction and excavation activities conducted as part of environmental remediation efforts.
Controlled Access Zone (CAZ)	Means an area in which certain work (e.g., overhand bricklaying) may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems and access to the zone is controlled
Imminent Danger:	Is any condition or practice that could reasonably be expected to cause death or serious physical harm (permanent or prolonged impairment of the body or temporary disablement requiring hospitalization) to employees or the public unless immediate actions are taken.
Project Manager:	Is the Cal Maritime employee representative with overall responsibility for a project. This person ensures subcontractor compliance with subcontract documents, including performance, schedule, budget, and safety.
Shall:	Means mandatory
Should:	Means recommended
Subcontractor:	Is a firm that has sole contractual responsibility for execution of the construction work related to a project, and for compliance with all safety, health, and environmental codes, standards, and regulations.
Qualified Person:	A qualified person is a person **designated** by the employer; and by reason of **training**, experience, or instruction has demonstrated the ability to perform safely all assigned duties; &, when required is properly licensed in accordance with federal, state, or local laws and regulations. Examples: • Mobile Crane & Tower **Crane** Operators 5006.1(a) • **Scaffold** Erection & Dismantling Supervisors 1637(k)(1) • **Demolition** 1736 • **Personal Fall Arrest** System supervisors 1670(b)

Definitions (cont.) **Key Hazard Materials Definitions-**

Nearly all chemicals, including many common household cleaners and paints, are considered "hazardous." A hazardous material is a material that, because of its quantity, concentration, or physical or chemical characteristics, may pose a physical, environmental, or health risk. Examples include chemicals that are toxic, corrosive, flammable, highly reactive, explosive, and/or emit ionizing radiation. Some common terms used when describing hazardous materials include:

Chemicals of Interest	A list of chemicals and their corresponding screening threshold quantities developed by the DHS. Institutions, including colleges and universities that possess a chemical of interest at or above a regulatory screening threshold quantity must complete and submit a consequence analysis (i.e., Top-Screen) to the DHS as part of the Federal Chemical Facility Anti-Terrorism Standards.
Hazard:	A chemical, biological, radioactive, or physical agent, which may cause an adverse effect on the human body. Hazards may be acute, toxic, or chronic.
Acutely Toxic:	A material that has the potential to produce a lethal dose or lethal concentration to living tissues under certain conditions. Refer to list of acutely toxic chemicals.
Toxic:	Materials that may present an unreasonable risk of injury to the health of living things or the environment.
Toxin:	A chemical agent that adversely affects the human body. These may include hepatotoxins, nephrotoxins, neurotoxins, and reproductive toxins. Examples of chemical toxins include dibromochloropropane, halogenated hydrocarbons, mercury, lead, and carbon tetrachloride.
Carcinogen:	An agent capable of causing cancer. Refer to sample list of laboratory carcinogens.
Irritant:	A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.
P-Listed (Acute) Hazardous Waste:	The USEPA has designated certain chemical wastes as "acutely hazardous" and placed special restrictions on their accumulation and disposal. When these chemicals become a waste, both the residual chemical and the empty containers must be disposed of as an "acute" P-Listed hazardous waste. There are hundreds of P-Listed wastes and they are identified 40 CFR 261.33. Generators with acutely hazardous waste are subject to different accumulation limits for those wastes.
Sensitizer:	A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.
Shock-Sensitive:	Materials that may undergo sudden explosion with movement, friction, or heat. The label and MSDS will indicate if a chemical is shock-sensitive. Some chemicals become more shock-sensitive with age. Unless the manufacturer has added an inhibitor, most shock-sensitive materials should be disposed within a year.
Tier II Reportable Chemical:	A hazardous chemical present in quantities equal to or greater than established threshold amounts outlined Title III of the Superfund Amendments and Reauthorization Act of 1986 (Section 312, Public Law 99-499, 42 U.S.C. Section 11022). A hazardous chemical under Title III includes those substances for which an MSDS must be maintained under OSHA's Hazard Communication Standard.

Definitions (cont.) Chemical Definitions-

Article	A manufactured item (1) which is formed to a specific shape or design during manufacture; (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (3) which does not release, or otherwise result in exposure to a hazardous substance under normal conditions of use or in a reasonably foreseeable emergency resulting from workplace operations.
Classification	To identify the relevant data regarding the hazards of a chemical; review those data to ascertain hazards associated with the chemical; and decide whether the chemical will be classified as hazardous, and the degree of hazard where appropriate, by comparing the data with the criteria for health and physical hazards. Typical classifications might be flammable, corrosive, reactive and toxic.
Hazardous chemical	Any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, a hazard not otherwise classified, or is included in the *Director's List of Hazardous Substance*.
Health hazard	A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with the established scientific principles that acute or chronic health effects may occur in exposed employees. Health Hazard Criteria can be found in *29 CFR §1910.1200- Appendix A* (8 CCR §5194 Appendix A references this federal regulation). Hazards are listed as "H" codes on GHS- compliant labels and safety data sheets (SDSs).
Immediate use	The hazardous substance will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.
Label	An appropriate group of written, printed, graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.
Near miss	As defined by *OSHA*, refers to incidents where no property was damaged and no personal injury sustained, but where, given a slight shift in time or position, damage and/or injury easily could have occurred.
Physical hazard	A chemical that is classified as posing one of the following hazardous effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; combustible liquid; water reactive; or in contact with water emits flammable gas. Physical Criteria can be found in *29 CFR§1910.1200 Appendix B* (8 CCR §5194- Appendix B references this federal regulation).
Pictogram	A composition that may include a symbol plus other graphic elements, such as a border, background pattern or color that is intended to convey specific information about the hazards of a chemical.
Precautionary statement	A phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to hazardous chemicals, or improper storage or handling. Statements are listed as "P" codes on GHS-compliant labels and SDSs
Pyrophoric gas	A chemical that will ignite spontaneously in air at a temperature of 130 degrees F (54.4 degrees C) or below.
Safety data sheet (SDS)	Written or printed material concerning a hazardous chemical that is prepared in accordance with 8 CCR §5194(g).
Signal word	A word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used are "danger" and "warning." "Danger" is used for the more severe hazards, while "warning" is used for the less severe.
Simple asphyxiant	A substance or mixture that displaces oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those individuals who are exposed, leading to unconsciousness and death
Trade secret	Any confidential formula, pattern, process, device, information, or compilation of information which gives its user an opportunity to obtain a business advantage over competitors who do not know or use it. A trade secret shall not include chemical identify information which is readily discoverable through qualitative analysis
Use	To package, handle, react, or transfer
Workplace label	Non-original manufacturer label"- Label placed on a secondary (workplace) container. When hazardous material is removed/transferred from the original manufacturer labeled container to another container (secondary (workplace) container), the secondary (workplace) container must have a workplace label with the exception of portable containers that will contain chemicals for immediate use.

Appendix B: Lab/Shop Safety Assessment

Environmental Health & Safety Laboratory Safety Assessment

Evaluator(s)				**Date**	
Department		**Location**			

Please check Yes, No, Not Applicable for each item.
All No responses require follow-up within 30 days, unless otherwise noted and all Serious Violations require 3 day follow-up.
Retain original copy at the Department level. Submit copy to the Department of Safety & Risk Management

ADMINISTRATIVE/DOCUMENTATION

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
1	Appropriate signage posted (Right to Know) at all entrances to lab	CCR Title 24 §5003.5, NFPA704						
2	Building Emergency Evacuation Route posted	CCR Title 19 §3.09,						
3	Lab staff are aware of and have access to campus-wide Chemical Hygiene Plan	CCR Title 8 §5191,						
4	CIS updated within past 12 months	CCR Title 8 §5194(e), CCR Title 27§15280,						
5	Emergency contacts posted at entrance to laboratory	CCR Title 8 §3220,						
6	Department Illness and Injury Prevention Plan available and up-to- date.	CCR Title 8 §3203,						
7	Emergency Action Plan available and up-to-date	CCR Title 8 §3220,						
8	Emergency assistance information posted	CCR Title 8 §3400(f)						
9	Hazard Assessment certified within year and roster up-to-date	CSU Policy,						
10	Medical Surveillance Program properly documented	CCR Title 8 §5191(g),						
11	Readily accessible SDS's (hard copy or online)	CCR Title 8 §5194(g),						
12	Annual self-inspection complete	CCR Title 8 §3203						
13	Staff aware of procedure to report exposures or concerns	CCR Title 8 §5191						
14	Staff aware of procedure to report incidents and near misses	CCR Title 8 §5191						
15	Written Standard Operating Procedures available and current	CCR Title 8 §5191,						
16	Appropriate safety information posted on equipment	A&F 09-004 (IIPP)						
17	Centrifuges are maintained to ensure safe operation	A&F 09-004 (IIPP)						
18	Moving parts of equipment properly guarded (opening < 1/2")	CCR Title 8 §4184,						
19	Secondary containment for vacuum pump present	A&F 09-004 (IIPP)						

NOTES:

GENERAL SAFETY

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
20	Ceiling tiles in place and in good repair	NFPA						
21	Ergonomic evaluations done for computer work in excess of 4 hours	CCR Title 8 §5110						
22	Food and drink stored away from haz mat; consumed outside of lab	CCR Title 8 §5191 A,						
23	Mechanical devices used for pipetting	CCR Title 8 §5191 A,						
24	Spills promptly cleaned by individuals trained to respond to spill	CCR Title 8 §5191A,						
25	Floor is in good repair to prevent slips, trips and falls	CCR Title 8 §5191A						
26	Furnishings in lab easily decontaminated	CCR Title 8 §5191A						
27	Lab surfaces clean, organized, free of chemical contamination	CCR Title 8 §3362, §5191A						
28	Sink available near exit for hand washing (soap and paper towels)	CCR Title 8 §3366						
29	Sinks labeled "**Industrial Water – Do Not Drink**"	CCR Title 8 §1524						
30	Lab air negative to hallway	CCR Title 8 §5191 A						
31	Refrigerators/freezers appropriately labeled according to use	CCR Title 8 §5191 A,						
32	Ergonomic evaluations completed for repetitive motion activities	CCR Title 8 §5110						
33	Vacuum systems fitted with traps or protective filter	A&F 09-004 (IIPP)						

NOTES:

GENERAL ELECTRICAL

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
34	3-prong plugs in 3-prong outlets	A&F 09-004 (IIPP)						
35	Appropriate clearance in front of electrical panels (36")	NFPA 70-110.26/408.4,						
36	Electrical cords not a trip hazard	NFPA 70						
37	Plugs, cords and receptacles in good condition	A&F 09-004 (IIPP)						
38	Extension cords used only temporarily	CCR Title 8§2500.8,						
39	No overloaded outlets, no daisy-chained extension cords or strips	NFPA 70-400.7B,						
40	GFCI devices used within 6' of water source (post 2010)	NFPA 70-210.8(B)(5),						

41	High voltage equipment clearly labeled	CCR Title 8 §2932						
42	High voltage equipment properly guarded	CCR Title 8 §2932						
43	Major equipment plugged directly into outlet	A&F 09-004 (IIPP)						
44	Appropriate personnel trained in Lock Out/Tag Out program	CCR Title 8 §3314						
45	Power strips near liquids have GFCI protection	A&F 09-004 (IIPP)						

NOTES:

FIRE

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
46	Aisles, exits, adjoining hallways free of obstruction	CCR Title 8 §3272,						
47	Fire alarms, bells, horns and/or strobes free of obstruction	CCR Title 24 §901.8						
48	Fire extinguisher properly mounted	CCR Title 8 §6151						
49	Fire extinguisher maintenance tag current	CCR Title 8 §6151						
50	Fire extinguisher available as required	CCR Title 8 §6151						
51	Fire extinguisher fully charged; pin and/or security seal intact	CCR Title 8 §6151						
52	Fire doors unobstructed and easily closed	CCR Title 8 §3225,						
53	18” of clearance between stored items and fire sprinklers, 24” w/o sprinklers	CCR Title 8 §6170(c)10						

NOTES:

FUMES

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
54	Audible/visual alarm and/or visual airflow monitor functional	CCR Title 8 §5154.1(e),						
55	Chemical work done more than 6” from front of hood	CCR Title 8 §5191A,						
56	Certified within one year	CCR Title 8 §5154.1(e),						
57	Fume hood illumination is working							
58	Functional fume hood not used for	CCR Title 8 §5191A,						

	storage, cluttered							
59	Users understand how to check for airflow and annual certification sticker	CCR Title 8 §5154.1						
60	Fume hood users have completed specific fume hood training	CCR Title 8 §5154.1						
61	Proper sash height indicated and adhered to	CCR Title 8 §5154.1						

NOTES:

GAS

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
62	Compressed gas cylinders stored upright and adequately secured	CCR Title 8 §4650,						
63	Compressed gas cylinders labeled with contents and hazards	CCR Title 8 §4650						
64	Compressed gas cylinders have full/empty tags attached	CCR Title 8 §4649,						
65	Compressed gas cylinders properly segregated if stored	CCR Title 8 §4650,						
66	Toxic gases properly stored in ventilated cabinet/fume hood	CCR Title 8 §4650						
67	Compressed gas cylinders capped when not in use	CCR Title 8 §4650,						

NOTES:

PERSONAL PROTECTION EQUIPMENT

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
68	Eye protection available and used as required by Cal Maritime PPE policy	CCR Title 8 §3382,						
69	Equipment or process sound levels that may exceed 85 dBA	CCR Title 8 §5096,						
70	Face shield available if required	CCR Title 8 §3382,						
71	Gloves worn when skin contact with hazards may occur	CCR Title 8 §3384,						
72	Glove(s) removed prior to exiting lab, handling telephone, etc.	CCR Title 8§5193(4)(F),						
73	Appropriate gloves available for use	CCR Title 8 §3384,						

	with hazardous activities							
74	Lab coats, appropriate to activity are worn	CCR Title 8 §3383,						
75	Long pants worn as required by Cal Maritime PPE policy	EO 1039, AF 09-004						
76	PPE properly cleaned and disinfected or properly disposed of	CCR Title 8 §3387, §3383,						
77	Respirator users have been evaluated by EH&S and included in campus respiratory protection program	CCR Title 8 §5144,						
78	Adequate supply of specialty PPE available	CCR Title 8 §3380(f),						
NOTES:								

EMERGENCY ACTION PLAN

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
79	Emergency eyewash/showers accessible within 10 sec	CCR Title 8 §5162(c),						
80	Emergency eyewash and shower stations free of obstruction	CCR Title 8 §5162(c),						
81	Tests for eyewash and shower current and documented	CCR Title 8 §5162(e) ,						
82	Appropriate chemical spill kits available	CCR Title 8 §5191A,						
83	First Aid Kit available, stocked with unexpired products	CCR Title 8 §3400(c)						
NOTES:								

WASTE MANAGEMENT

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
84	Biomedical waste (red bag) properly disposed of	HSC §117600-118360						
85	Secondary containment used for biomedical waste	CCR Title 8 §5193						
86	Chemical waste containers compatible with contents; good condition	CCR Title 22 §66265.171,						
87	Chemical waste containers closed except when in use	CCR Title 22§66265.173,						

88	Hazardous waste in secondary containment	CCR Title 24§5005,						
89	Chemical waste containers properly tagged/dated/labeled for disposal	CCR Title 22§66262.34,						
90	All wastes within regulatory time limits	CCR Title 22§66262.34,						
91	Tight fitting lid in place on biomedical waste	HSC§ 118280						
92	Universal waste properly labeled/discarded/contained; < 1 year	CCR Title 22§66273.35,						

NOTES:

EARTHQUAKE PREPAREDNESS/ SEISMIC

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
93	Heavy items are stored on lower shelves	CCR Title 8 §5191 A,						
94	Shelving, file cabinets 5' or over and other tippable items anchored	CCR Title 8 §5191 A,						
95	Overhead storage is secured	CCR Title 8 §5191 A,						
96	Hazardous material storage shelves have lip or guard	CCR Title 24 §5003.9.9,						

NOTES:

MACHINE GUARDING

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
97	Machines as specifically having a grinding, shearing, punching, pressing, squeezing, drawing, cutting, rolling, mixing or similar action, in which an employee comes within the danger zone shall be guarded at the point of operation.	CCR Title 8 ,§4184						
98	All saws, cutting tools, heads, shears, and knives that are part of any machine shall be kept sharp, properly set up, adjusted and firmly secured.	CCR Title 8 ,§4186						
99	All point of operation guards shall be properly set up, adjusted and maintained in safe and efficient working condition in conformance with Figure G-8 and Table G-3 or other guard configurations which will	CCR Title 8 ,§4186						

	prevent the operator's hand from entering the point of operation							
100	All repair work performed on metal forming and/or cutting machines, such as punch presses, press brakes, forming rolls, shears, power presses, forging presses and hammers, shall be made: In accordance with the recommendation of the manufacturer(s) or in with good engineering practices	A&F 09-004 (IIPP)						

NOTES:

TRAINING

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
101	All personnel completed Fundamentals of Lab Safety	EO/Cal Maritime Policy						
102	Specialized training for lab specific hazards documented	CCR Title 8 §3203, §5191, §5194						
103	Spill training documented	CCR Title 8 §5191						
104	Training on lab specific SOPs documented	CCR Title 8 §5191						
105	Training on Chemical Hygiene Plan documented	CCR Title 8 §5191						
106	Training on IIPP documented	CCR Title 8 §3203						
107	Training to manage or handle hazardous waste documented							
108	Training on Campus Emergency Response							

NOTES:

OTHER

#	ITEM	REGULATORY REFERENCE	YES	NO	NA	ACTION NEEDED	OWNER	COMPLETED DATE
109								
110								
111								
112								

113								
114								
115								

NOTES:

CONDITION ANALYSIS / CORRECTIVE ACTION SUMMARY

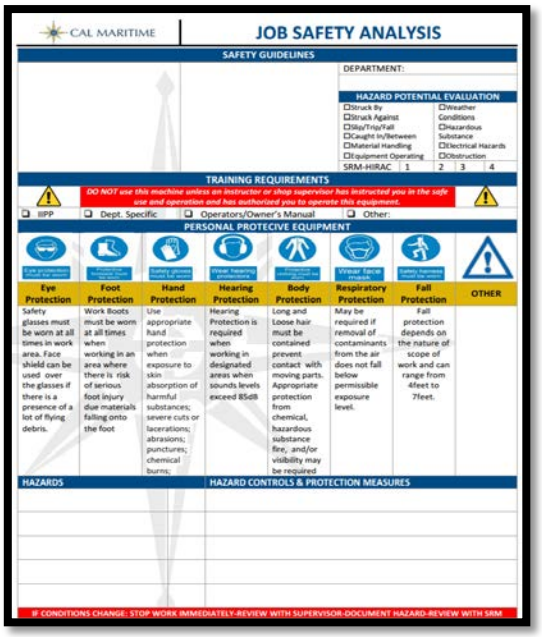
TIMELINES	WORK ORDER	Same Day	24-hours	15-days	30-days	PROJECT	30-days	90-days	6-month	1-year	Other

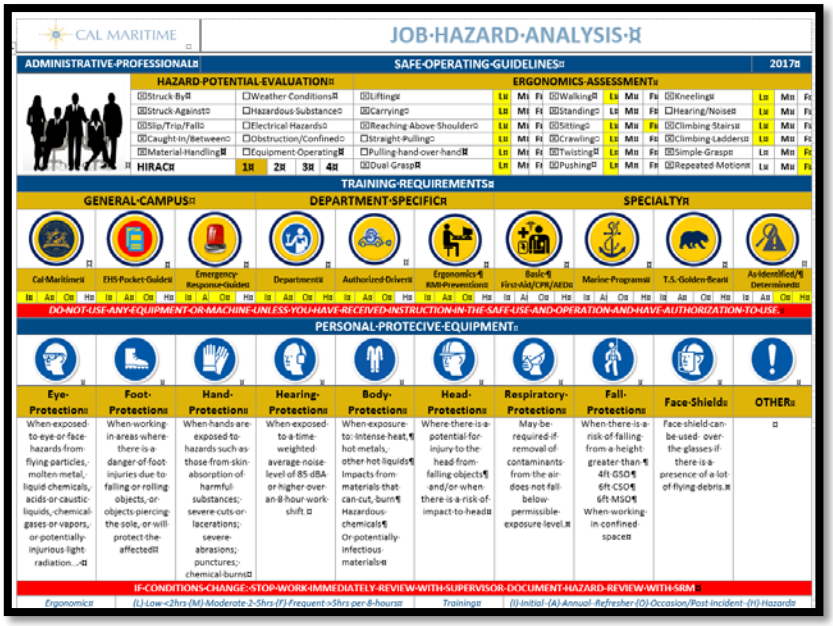
#	CATEGORY	ITEM	ACTION NEEDED	WORK ORDER/ PROJECT #					COMPLETION DATE
			Remove/Repair/ Replace	#	P1	P2	P3	P4	

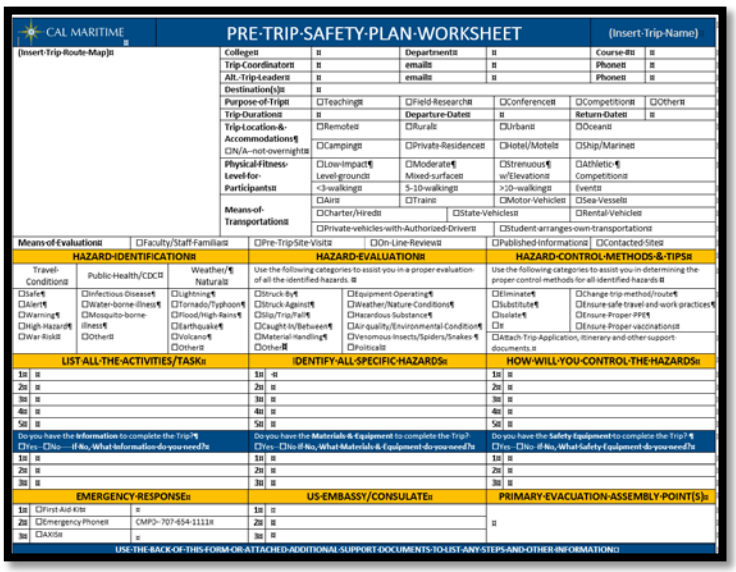
Appendix C: Hazard Assessment & Controls

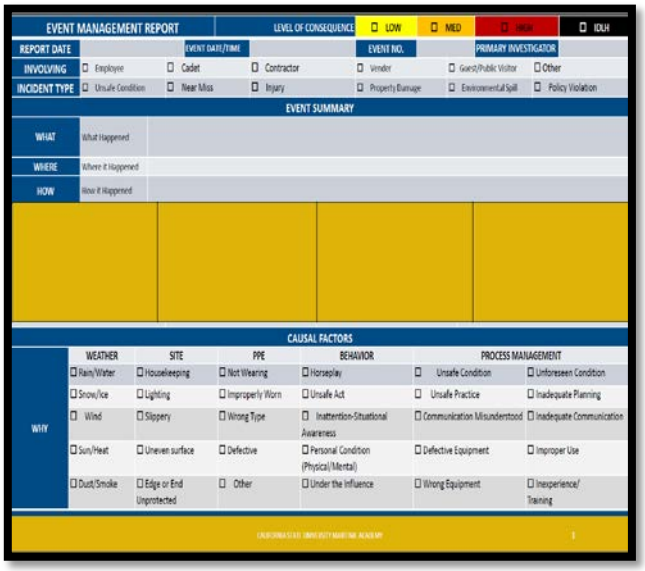
Templates available for download on the Safety & Risk Management webpage, under the Hazard Assessment & Controls section.

Samples-









Appendix D: Accumulation Station Log

ACCUMULATION STATION												Waste pick up scheduled for	
Container No.:	Waste Name:	Physical State (Select)			Container Size:	Container Type (Select)						Manufacturer	Age of Waste	Remarks
Enter a container number, #1, #2, #3, etc. for each waste item being picked up.	Record the type of waste. Please be as specific as possible. If this information is not listed, the waste may have to undergo costly	Liquid	Solid	Gas	Enter the size of the container (such as 5 gallon can, 55 gallon drum, etc.).	Metal	Glass	Plastic	Cardboard	Cloth	Other	Enter the name of the manufacturer of the material that is now being declared a waste.	The age of the waste or Accumulation Start Date, is based upon when the material was first placed in	In this area please enter any additional information that may be helpful to the packaging or shipping party. This could include: PH, components of the waste, container integrity, or anything else that may
1		☐	☐	☐		☐	☐	☐	☐	☐	☐			
2		☐	☐	☐		☐	☐	☐	☐	☐	☐			
3		☐	☐	☐		☐	☐	☐	☐	☐	☐			
4		☐	☐	☐		☐	☐	☐	☐	☐	☐			
5		☐	☐	☐		☐	☐	☐	☐	☐	☐			
6		☐	☐	☐		☐	☐	☐	☐	☐	☐			
7		☐	☐	☐		☐	☐	☐	☐	☐	☐			
8		☐	☐	☐		☐	☐	☐	☐	☐	☐			
9		☐	☐	☐		☐	☐	☐	☐	☐	☐			
10		☐	☐	☐		☐	☐	☐	☐	☐	☐			
11		☐	☐	☐		☐	☐	☐	☐	☐	☐			
12		☐	☐	☐		☐	☐	☐	☐	☐	☐			
13		☐	☐	☐		☐	☐	☐	☐	☐	☐			
14		☐	☐	☐		☐	☐	☐	☐	☐	☐			
15		☐	☐	☐		☐	☐	☐	☐	☐	☐			
If you have any questions please contact the Department of Safety & Risk Management.														**Page 1 2**

Appendix E: Emergency Response

To download and/or print this poster refer to SRM website: Campus Emergency Poster , Campus Emergency Response Guide

CAL MARITIME

EMERGENCY PROCEDURES

911 | **Campus Police: 707-654-1111**

Note: Dialing 911 directly will not immediately dispatch Cal Maritime Police Department.
Dialing 707-654-1111 will simultaneously dispatch Cal Maritime Police Department as well as other Local Agency Emergency Responders.

Evacuation

- Do not use elevators, use nearest stairs and exit.
- Follow directions given by the building monitors or Campus Officials
- Go to designated evacuation point and do not return to building until instructed to do so.
- Assist persons with mobility needs.

Fire

- Evacuate the building and notify occupants as you leave.
- Do not return until authorized by emergency personnel
- Do not use elevators
- Fire Extinguisher Instructions if trained:
- P- Pull pin
- A- Aim at the base of fire
- S-Squeeze handle
- S-Sweep from side to side

Hazardous Spill

- For spills not involving immediate danger, that are confined; contain and notify the Department of Safety & Risk Management (SRM) at 707-654-1076.
- For uncontained spill, contact Cal Maritime Police Department & SRM
- If immediate hazard or emergency exists, dial 707-654-1111.
- Move away or evacuate the area.

Medical

- For all medical emergencies dial 707-654-1111
- Be ready to describe natures and severity of the medical emergency.
- Provide the Campus location.
- Keep the victim calm and comfortable.
- Provide basic first aid/CPR/AED if trained.
- Report all work related injuries immediately to: Department of Safety & Risk Management and to Human Resources

Earthquake

- Drop, Cover, Hold under a table or desk or against an interior wall until the shaking has stopped.
- After shaking has stopped check yourself and others for injuries.
- Evacuate the building.
- Move towards the safest location away from building, tree's, power lines.
- Follow the instruction of the building monitors or Campus officials and be prepared for aftershocks

Bomb Threat

- Report all threatening calls to Cal Maritime Police Department
- Ask Caller: When the bomb is going to explode.
- Where the bomb is located?
- What does the bomb look like?
- Why did you place the bomb?
- If suspicious object is found: Do not handle and dial 707-654-1111 immediately

Shelter in Place

- Stay in building; close and lock doors and windows.
- Move away from windows
- Do not use elevators
- Remain in shelter area until emergency personnel announce that it is safe

Active Shooter

- **RUN:** leave your belongings behind. If there is an escape path attempt to evacuate. Help others if possible
- **HIDE:** If you cannot get out safely. Hide. Lock or barricade doors. Silence your cell phone and stay quiet.
- **FIGHT:** as a last resort, and if you life is in danger, you may attempt to incapacitate the shooter. Work in unison with others.

RELEASE REPORTING REQUIREMENTS MATRIX

This matrix summarizes pertinent emergency notification requirements and may not be all inclusive. For precise legal requirements, review specific laws and regulations.

OIL SPILLS

TYPES OF RELEASES	AMOUNT	WHO REPORTS?	TO WHOM	WHEN	LEGAL AUTHORITY
(Federal) Navigable Waters*	Any Amount "Harmful quantity"***	Any person in charge of a vessel or facility (offshore or onshore)	NRC *(800) 424-8802 or (202) 267-2675*	Immediately, when it can be done safely	Federal Water Pollution Control Act (FWPCA) §311 33 CFR 153.203 40 CFR 110.6
(State of California) Marine Waters*	Any amount	Any party responsible for the discharge/threatened discharge; Responding local or state agency	Cal OES *(800) 852-7550* --- *NRC*	Immediately, but not later than 15 minutes after discovery of the spill or threatened release	California Government Code CGC 8670.25.5; 8670.26 *California State Oil Spill Contingency Plan* --- FWPCA §311 33 CFR 153.203 40 CFR 302.6
(State of California) State Waters*	Any amount of oil or petroleum product	Any person	Cal OES or RWQCB	Immediately upon knowledge of a release.	California Water Code CWC 13272 (a) CGC 8670.25.5; 8670.26 *California State Oil Spill Contingency Plan*
Oil Discharges to Land (Including Onshore drilling, exploration, or production operation)	≥ 1 barrel (42 gallons) --- 5 barrels or more uncontained in certain San Joaquin Valley oil fields - if no threat to state waters; 10 barrels or more contained in certain San Joaquin Valley oil fields if identified in spill contingency plan - if no threat to state waters.	Facility owner or operator	Cal OES	Immediately upon knowledge of a release.	Public Resources Code (PRC) 3233 --- San Joaquin Valley Field Rule (August 1998) --- CWC 13272 (f) --- *California State Oil Spill Contingency Plan*
Aboveground Storage Tanks (ASTs)	≥ 1 barrel (42 gallons)	Facility owner or operator of a tank facility	Cal OES, CUPA, and/or 911	Immediately upon knowledge of a release.	HSC 25270.8

February 2014

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RELEASE REPORTING REQUIREMENTS MATRIX

HAZARDOUS MATERIALS INCIDENTS (*may include oil & radioactive materials*)					
TYPES OF RELEASES	**AMOUNT**	**WHO REPORTS?**	**TO WHOM**	**WHEN**	**LEGAL AUTHORITY**
CERCLA HS Release	≥ RQ	Person in charge of a facility	NRC	Immediately upon knowledge of a release. Written report to follow.	CERCLA §103 (a) 40 CFR 302.6
EPCRA EHS Release	≥ RQ	Owner/Operator of facility	NRC SERC and LEPC CUPA/FD (In CA)	Immediately upon knowledge of a release. Written report to follow.	EPCRA §304 40 CFR 355
Release or Threatened Release (except transporting on highway)	If there is a reasonable belief that the release poses a significant hazard to human health & safety, property, or environment.**	Handler	Cal EMA CUPA/AA and/or 911	Immediately upon knowledge of a release.	HSC 25507
Illegal Discharges or Threatened Discharges of Hazardous Waste	Any amount that is observed or has knowledge of likely to cause injury to public health and safety.	Designated Government Employee	Local Health Officer or local Board of Supervisors	Within 72 hours	HSC 25180.7(b)
Highways	Any transportation release.	Any person who causes the spill.	CHP (who then notifies Cal EMA)	Immediately upon knowledge of a release.	California Vehicle Code (CVC) 23112.5
Railroads	Release/threatened release that may harm person, property, or environment.**	Railroads regulated by the State PUC & FRA	Appropriate emergency response agency and Cal EMA	Immediately upon knowledge of a release.	PUC General Order No. 161, Rule #3, 8-7-91
Hazardous Waste Discharge Transporters	Any spill in CA Federal notification: A situation carrier deems appropriate; person hospitalized or killed; public evacuation ≥ 1hr; operational flight pattern or route of aircraft is altered; major transp. artery or facility closed ≥ 1 hr; infectious or radioactive materials involved; marine pollutant > 119 gals or > 882 lbs	Transporter who discharged waste	CHP NRC	Immediately upon knowledge of a release. As soon as practical, but no later than 12 hours after accident occurs Written Report: to DTSC and DOT within 30 days.	CVC 23112.5 CVC 2453 22 CCR 66263.15 22 CCR 66263.30 49 CFR 171.15 49 CFR 171.16

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RELEASE REPORTING REQUIREMENTS MATRIX

HAZARDOUS MATERIALS INCIDENTS (CONTINUED) (*may include oil & radioactive materials*)					
TYPES OF RELEASES	**AMOUNT**	**WHO REPORTS?**	**TO WHOM**	**WHEN**	**LEGAL AUTHORITY**
Pipelines	Every rupture, explosion or fire ≥ 5 barrels	Pipeline operator	Fire Dept Cal EMA	Immediately Written report: to State Fire Marshal within 30 days	CGC 51018(c)
ASTs	Any release or threatened release	Facility owner or operator	Cal EMA CUPA/AA	Immediately upon knowledge of a release.	HSC 25507
Underground Storage Tanks (USTs)	Any release, if it poses significant hazard	Facility owner or operator	Cal EMA, CUPA/AA	Immediately upon knowledge of a release.	HSC 25507
	Into secondary containment – no fire or explosion hazard and no deterioration	Facility owner or operator	Cal EMA, CUPA/AA	Do not have to report BUT do need to record on the *Operator's Monitoring Report*.	HSC 25294
	Escapes from secondary containment; or from a primary containment if no secondary containment; or if there's a fire or explosion hazard or deterioration	Facility owner or operator	CUPA/AA Cal EMA	Within 24 hours after the release has been detected Full written report within 5 working days	HSC 25295 HSC 25507
Releases beyond TSD Facility Boundary	A harmful quantity that could threaten human health or environment.	Facility owner or operator; TSDF Emergency Coordinator	Cal EMA NRC	Immediately upon knowledge of a release.	CERCLA §103 (b) 22 CCR 66264.56(d) HSC 25507
Releases within TSD Facility Boundary	Any release that poses a significant hazard. Imminent or actual emergency situation that could threaten human health or environment.	Owner/Operator of facility TSDF Emergency Coordinator (designated in the Contingency Plan).	Cal EMA, CUPA/AA Local ER agencies	Immediately upon knowledge of a release. Written report: to DTSC within 15 days.	HSC 25507 22 CCR 66264.51 22 CCR 66264.52 22 CCR 66264.56

RELEASE REPORTING REQUIREMENTS MATRIX

Federal Contact Numbers

National Response Center (NRC)*	(800) 424-8802 or (202) 267-2675
United States Environmental Protection Agency (USEPA), Regional Response Center http://www.epa.gov/osweroe1/content/reporting/index.htm	(800) 321-7349 or (415) 947-8000 *(General number)* (415) 947-4400 *(Spill Phone)* (800) 424-9346 *(SARA Title III Hotline)* (800) 300-2193 *(Region IX Duty Officer)*
Occupational Safety & Health Administration (OSHA)	(800) 321-OSHA (415) 625-2547 *(main public number – Region IX)*
United States Coast Guard (USCG) Captain of the Port/Federal On-Scene Coordinator (FOSC)	(310) 521-3805 (Sector *Los Angeles/Long Beach*) (619) 278-7033 (Sector *San Diego*) (415) 399-3547 (*Sector San Francisco*)
United States Department of Transportation (USDOT)	Contact -via- National Response Center (NRC)

* **Note:** One call to the NRC fulfills the requirement to report releases of hazardous substances under CERCLA and several other regulatory programs, including those under CWA § 311, RCRA, and the USDOT's Hazardous Materials Transportation Act (HMTA). Anybody who discovers a hazardous substance release or oil spill is encouraged to contact the federal government, regardless of whether they are the responsible party.

State Contact Numbers

California Emergency Management Agency (Cal EMA) Warning Center	(800) 852-7550 or (916) 845-8911
California Highway Patrol (CHP)	**911**
State Fire Marshall (SFM)	(916) 324-8922 *(Emergencies only)*
CA Dept. of Conservation, Division of Oil, Gas & Geothermal Resources (DOGGR)	See attached list (Page 7) San Joaquin Valley Field Rule ftp://ftp.consrv.ca.gov/pub/oil/regulations/field_rule.pdf

Appendix F: Accident Incident Management

To download and/or print this poster refer to SRM website: Accident Incident Management Poster

Appendix G: Training Log

TRAINING SIGN IN SHEET

Subject		**Date**	
Instructor Name			
Department			
Course Level	❑ Awareness	❑ Competent Person	❑ Certified Person	❑ Other
Frequency	❑ Initial	❑ Annual-Refresher	❑ Process Change	❑ Post Incident

The attendees listed have satisfactorily participated and been tested per Regulation/University training requirements.

	PRINT NAME	STATUS (Staff, Faculty, Student)	SIGNATURE
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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Retain Original at Department Level & Submit Copy to Risk Management