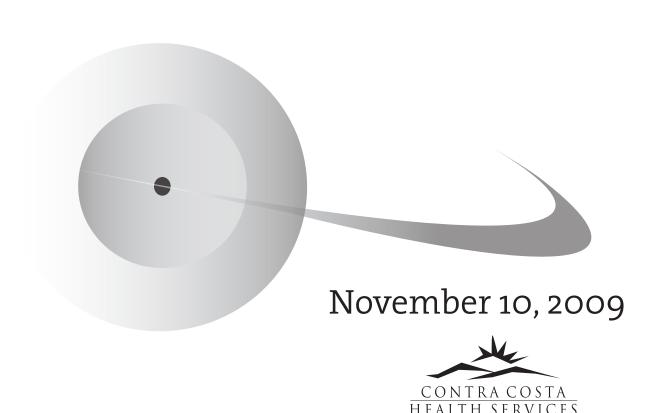
INDUSTRIAL SAFETY ORDINANCE

Annual Performance Review & Evaluation Report



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Table of Contents

Executive Summary	3
Public Participation	3
Audits	4
Major Chemical Accidents or Releases	4
Conclusion	4
Introduction	5
Annual Performance Review and Evaluation Report	6
Effectiveness of Contra Costa Health Services' Implementation of the Industrial Safety Ordinance	8
Effectiveness of the Procedures for Records Management	9
Number and Type of Audits and Inspections Conducted	9
Number of Root Cause Analyses and/or Incident Investigations Conducted by Health Services	10
Health Services' Process for Public Participation	10
Effectiveness of the Public Information Bank	11
Effectiveness of the Hazardous Materials Ombudsman	13
Other Required Program Elements Necessary to Implement and Manage the	
Industrial Safety Ordinance	13
Regulated Stationary Sources	14
The Status of the Regulated Stationary Sources' Safety Plans and Programs	14
Locations of the Regulated Stationary Sources Safety Plans	14
Annual Accident History Report and Inherently Safer Systems Implemented	
as Submitted by the Regulated Stationary Sources	15
Status of the Incident Investigation, including the Root Cause Analyses Conducted by the	
Regulated Sources	•
Major Chemical Accidents or Releases	-
Legal Enforcement Actions Initiated by Health Services	
Penalties Assessed as a Result of Enforcement	19
Total Fees, Service Charges, and Other Assessments Collected Specifically	
for the Industrial Safety Ordinance	19
Total Personnel and Personnel Years Used by Health Services to Implement	
the Industrial Safety Ordinance	
Comments From Interested Parties Regarding the Effectiveness of the Industrial Safety Ordinance	
The Impact of the Industrial Safety Ordinance on Improving Industrial Safety	
City of Richmond Industrial Safety Ordinance	
Attachment A: Hazardous Materials Ombudsman Report	
Attachment B: Regulated Sources Accident History & Inherent Safety Implementation	B-1

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Executive Summary

The Industrial Safety Ordinance requires regulated facilities to implement safety programs to prevent chemical accidents from occurring that could have a detrimental impact to the surrounding communities. The requirement of the Industrial Safety Ordinance is one of the most stringent in the United States, if not the world. The Industrial Safety Ordinance is also designed to include participation from all of the stakeholders, including industry, agencies, elected officials, and the public.



This is the first year since the Board of Supervisors passed the County's Industrial Safety Ordinance that there has not been a Major Chemical Accident or Release in the County. The trend since the adoption of the Industrial County Ordinance has been fewer and fewer Major Chemical Accidents or Releases each year. This is an indication of the success of the County's Industrial Safety Ordinance, the regulated facilities implementation of the requirements and the oversight from the Accidental Release Prevention Programs Engineers.

The Accidental Release Prevention Programs Engineers are continuing to develop ways to improve the overall implementation of the Industrial Safety Ordinance. The Hazardous Materials Programs Staff participated with the Center for Chemical Process Safety in writing the second edition of the book *Inherently Safer Chemical Processes* that was published in Spring 2009. The staff has also been working with the Contra Costa County regulated businesses in the development of the Safety Culture Guidance Document.

The U.S. Chemical Safety and Hazard Investigation Board has recognized the efforts of Contra Costa County ensuring that the process safety requirements are being implemented by the regulated businesses in their DVD Anatomy of a Disaster: Explosion at BP Texas City Refinery.

Public Participation

The Hazardous Materials Programs has a very strong public outreach process and is constantly looking at ways to improve this process. The following items have been implemented based on recommendations from interested stakeholders and the actions taken this year:

- Public outreach was conducted at existing venues
 - » Chevron Richmond Refinery Audit Findings were shared at the Recycle More Earth Day Event in Richmond in June 2009
- Most recent audit findings summarized in easily read format in both English and Spanish
- Information on regulated businesses in an easily read format in English and Spanish
- Industrial Safety Ordinance Information Sheet in English and Spanish

Audits

Audits of the regulated businesses are required at least once every three years to ensure that the facilities have the required programs in place and are implementing the programs. The audits that were completed this year are:

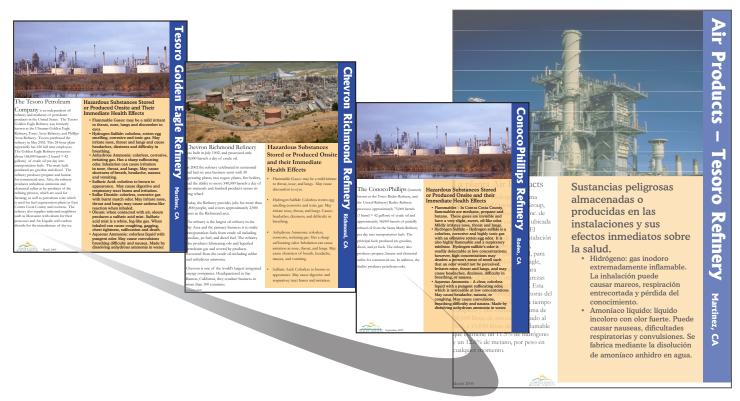
- General Chemical Richmond Works—January 2009
- Shell Oil Refinery May 2009
- Air Products at Tesoro Golden Eagle Refinery August 2009
- Air Products at Shell Martinez Refining Company—August 2009

Major Chemical Accidents or Releases

Another measure of the effectiveness of the Industrial Safety Ordinance is by the number and severity of the Major Chemical Accidents or Releases that have occurred. Since the last report to the Board there has been no Major Chemical Accidents or Releases at a County or City of Richmond Industrial Safety Ordinance or the California Accidental Release Prevention Program regulated business or a non-regulated business. As mentioned earlier, this is the first time that this has occurred since the adoption of the Industrial Safety Ordinance.

Conclusion

The number and severity of the Major Chemical Accidents or Releases have been decreasing since the implementation of Industrial Safety Ordinance. The implementation of the Industrial Safety Ordinance has improved and, in most cases, is being done as required by the ordinance. It is believed that by continuing implementation of the Industrial Safety Ordinance and strengthening the requirements of the Ordinance that the possibility of accidents that could impact the community has decreased.



Introduction

The Board of Supervisors passed the Industrial Safety Ordinance because of accidents that occurred at the oil refineries and chemical plants in Contra Costa County. The effective date of the Industrial Safety Ordinance was January 15, 1999. The ordinance applies to oil refineries and chemical plants with specified North American Industry Classification System (NAICS) codes that were required to submit a Risk Management Plan to the U.S. EPA and are program level 3 stationary sources as defined by the California Accidental Release Prevention (Calarp) Program. The ordinance specifies the following:

- Stationary sources had one year to submit a Safety Plan to Contra Costa Health Services stating how the stationary source is complying with the ordinance, except the Human Factors portion (completed January 15, 2000)
- Contra Costa Health Services develop a Human Factors Guidance Document (completed January 15, 2000)
- Stationary sources had one year to comply with the requirements of the Human Factor Guidance Document that was developed by Contra Costa Health Services (completed January 15, 2001)
- For major chemical accidents or releases, the stationary sources are required to perform a root cause analysis as part of their incident investigations (ongoing)
- Contra Costa Health Services may perform its own incident investigation, including a root cause analysis (ongoing)
- All of the processes at the stationary source are covered as program level 3 processes as defined by the California Accidental Release Prevention Program
- The stationary sources are required to consider Inherently Safer Systems for new processes or facilities or for mitigations resulting from a process hazard analysis
- Contra Costa Health Services will review all of the submitted Safety Plans and audit/inspect all of the stationary source's Safety Programs within one year of the receipt of the Safety Plans (completed January 15, 2001) and every three years after the initial audit/inspection (ongoing)
- Contra Costa Health Services will give an annual performance review and evaluation report to the Board of Supervisors

The 2006 amendments to the Industrial Safety Ordinance requires or expands the following:

- 1. Expands the Human Factors to included Maintenance and all of Health and Safety
- 2. Requires the stationary sources to perform Safety Culture Assessments one year after the Hazardous Materials

 Programs develops guidance on the performing a Safety Culture Assessment

Requires the stationary sources to Perform SecurityVulnerability Analysis

The seven stationary sources now covered by the Industrial Safety Ordinance are:

- 1. Air Products at the Shell Martinez Refining Company
- 2. Air Products at the Tesoro Golden Eagle Refinery
- 3. Shell Martinez Refining Company
- 4. General Chemical West in Bay Point
- 5. ConocoPhillips Rodeo Refinery
- 6. Tesoro Golden Eagle Refinery
- 7. Air Liquide Large Industries



The Air Liquide Rodeo Hydrogen Facility began operation in July 2009 and is located adjacent to the ConocoPhillips Rodeo Refinery. The facility produces purified hydrogen for industrial customers and also produces steam and electricity for the ConocoPhillips Refinery.

Contra Costa Health Services completed and issued the Contra Costa County Safety Program Guidance Document on January 15, 2000. The stationary sources were required to comply with the Human Factors section of this guidance document by January 15, 2001. Health Services is working with the stationary sources developing the Safety Culture Assessment Guidance, which should be completed within the next six months.

Contra Costa Health Services has reviewed all of the Safety Plans submitted to the department and has started the fourth round of audits of the stationary sources, as required by the ordinance. In addition, Contra Costa Health Services has performed a specialized audit for all the stationary sources for their Human Factors programs and for Inherently Safer Systems completed in 2002. The status of the reviews and audits are discussed within the report.

Annual Performance Review and Evaluation Report

The Industrial Safety Ordinance specifies that the contents of the annual performance review and evaluation report contain the following:

- A brief description of how Health Services is meeting the requirements of the ordinance as follows:
 - » Effectiveness of the Department's program to ensure stationary source's compliance with the ordinance
 - » Effectiveness of the procedures for records management
 - » Number and type of audits and inspections conducted by Health Services as required by the ordinance

- » Number of root cause analyses and/or incident investigations conducted by Health Services
- » Health Services' process for public participation
- » Effectiveness of the Public Information Bank
- » Effectiveness of the Hazardous Materials Ombudsperson
- » Other required program elements necessary to implement and manage the ordinance
- A listing of stationary sources covered by the ordinance, including for each:
 - » The status of the stationary source's Safety Plan and Program
 - » A summary of all stationary sources' Safety Plan updates and a listing of where the Safety Plans are publicly available
 - » The annual accident history report submitted by the regulated stationary sources and required by the ordinance
 - » A summary, including the status of any root cause analyses and incident investigations conducted or being conducted by the stationary sources and required by the ordinance, including the status of implementation of recommendations
 - » A summary, including the status, of any audits, inspections, root cause analyses and/or incident investigations conducted by Health Services, including the status for implementing the recommendations
 - » Description of inherently safer systems implemented by the regulated stationary source
 - » Legal enforcement actions initiated by Health Services, including administrative, civil, and criminal actions
- Total penalties assessed as a result of enforcement of the ordinance
- Total fees, service charges, and other assessments collected specifically for the support of the ordinance
- Total personnel and personnel years used by the jurisdiction to directly implement or administer the ordinance
- Comments from interested parties regarding the effectiveness of the local program that raise public safety issues
- The impact of the ordinance in improving industrial safety

Effectiveness of Contra Costa Health Services' Implementation of the Industrial Safety Ordinance

Health Services has developed policies, procedures, protocols, and questionnaires to implement both the California Accidental Release Prevention Program and the Industrial Safety Ordinance. The policies, procedures, protocols, and questionnaires for these programs are listed below:

- Audits/Inspections Policy
- Conducting the Risk Management Plan/Safety Plan
 Completeness Review Protocol
- Risk Management Plan Completeness Review
 Questionnaires
- Safety Plan Completeness Review Questionnaires
- Conducting Audits/Inspections Protocol
- Safe Work Practices Questionnaires
- CalARP Program Audit Questionnaires
- Safety Program Audit Questionnaires
- Conducting Employee Interviews Protocol
- Employee Interview Questionnaires
- Public Participation Policy
- Dispute Resolution Policy
- Reclassification Policy
- Covered Process Modification Policy
- CalARP Internal Performance Audit Policy
- Conducting the Internal Performance Audit
- CalARP Internal Audit Performance Audit Submission
- Fee Policy
- Notification Policy
- Unannounced Inspection Policy
- Risk Management Plan Public Review Policy



Health Services has developed the Contra Costa County CalARP Program Guidance Document and the Contra Costa County Safety Program Guidance Document. These documents give guidance to the stationary sources for complying with the Industrial Safety Ordinance. The policies, procedures, protocols, and questionnaires, are available through Health Services. The guidance documents can be downloaded through Health Services' Website: http://www.cchealth.org/groups/hazmat/industrial safety ordinance guidance.php

Effectiveness of the Procedures for Records Management

Health Services has set up hard copy and computer files for each of the stationary sources. The files include the following folders:

- 1. Annual status reports
- 2. Audits & Inspections
- 3. Communications
- 4. Completeness Review
- 5. Emergency Response
- 6. Incident Investigation
- 7. Trade Secret Information



The paper files for the stationary sources are kept in a central location. The Accidental Release Prevention Programs staff has files set up on the Health Services Network where the files for each of the different stationary sources are found and are accessible to each of the Accidental Release Prevention Programs Engineers, Supervisor, and the Hazardous Materials Programs Director. The Accidental Release Prevention Programs files also contain regulations, policies, information from the U.S. EPA, the Governor's Office of Emergency Services, the U.S. Chemical Safety and Hazards Investigation Board, and other information pertinent to the engineers. The risk management and safety plans received are kept at two different Health Services locations: the Hazardous Materials Program Offices and the Accidental Release Prevention Program Offices.

Number and Type of Audits and Inspections Conducted

Health Services was required to audit and inspect all seven regulated stationary sources that were required to comply with the Industrial Safety Ordinance within one year after the initial submittal of their Safety Plans. Health Services reviewed all of the Safety Plans and audited/inspected all of the stationary sources' Safety Programs within that year (2000). Health Services performed focused audits of the stationary sources for their Human Factors Programs (this was not included in the original audit/inspection, since the stationary sources were not required to have their Human Factors Program in place until January 2001) and Inherently Safer Systems in 2001 and 2002. Additional focused audits were performed to look at how two stationary sources would manage the organizational change in case there was a strike and non-striking personnel were used instead of the striking personnel (2002). Health Services completed the second round of audits for all of the Industrial Safety Ordinance

stationary sources in 2003 and 2004 and began a third round of audits in Fall 2005, which were completed in the Spring of 2007. The fourth round of audits was completed in August January 2009. Air Liquide submitted a Risk Management Plan and Safety Plan to CCHS in July of 2009.

When Health Services reviews a Safety Plan, a Notice of Deficiencies is produced that documents what changes to their Safety Plan a stationary source are required to make before Health Services determines that the Safety Plan is complete. The stationary source has 60 to 90 days to respond to the Notice of Deficiencies. When the stationary source has responded to this Notice of Deficiencies, Health Services will review the response. Health Services will either determine that the Safety Plan is complete or will work with the stationary source until the Safety Plan is determined to be complete. When the Safety Plan is deemed complete, Health Services will open a public comment period on the Safety Plan and will present the plan in a public meeting or venue. Health Services will respond to all written comments in writing and when appropriate use the comments in the audit/inspection of the regulated stationary sources.

Health Services will issue Preliminary Audit Findings after an audit/inspection is complete. The stationary source will have 90 days to respond to these findings. Health Services will review the response from the stationary source on the Preliminary Audit Findings. When the stationary source has developed an action plan to come into compliance with the regulations, Health Services will issue the Preliminary Audit Findings for public comment and will present the findings in a public meeting or venue. Health Services will consider any public comments that were received during the public comment period and if appropriate will revise the Preliminary Audit Findings. When this is complete, Health Services will issue the Final Audit Findings and will respond in writing to any written public comments received. Table I lists the status of Health Services review of the different stationary sources' Safety Plans and audit and inspections of their Safety Programs.

Number of Root Cause Analyses and/or Incident Investigations Conducted by Health Services

Health Services has not performed any incident investigations, including a root cause analysis, within the last year. A listing of the Major Chemical Accidents or Releases can be found on the Health Services website at the following address: http://www.cchealth.org/groups/hazmat/accident_history.php. This list includes accidents that occurred prior to the adoption of the Industrial Safety Ordinance.

Health Services' Process for Public Participation

Health Services, in 2005, worked with the community and developed materials that would describe the Industrial Safety Ordinance using a number of different approaches. The community representatives suggested that Health Services look at existing venues that are attended by the public that the Health Services' can present and receive comments on Preliminary Audit Findings and the stationary source's Safety Plans. Health Services presented the Audit Findings for General Chemical Bay Point Works to the Municipal Advisory Council in Bay Point on November 4, 2008.

Effectiveness of the Public Information Bank

The Hazardous Materials Programs section of Health Services Website http://www.cchealth.org/groups/hazmat/includes the following information:

- Industrial Safety Ordinance
 - » Description of covered facilities
 - » Risk Management Chapter discussion
 - Copy of the ordinance



Table I

Industrial Safety Ordinance Stationary Source Status

BUS_NAME Air Liquide	Safety Plan (SP) Received 7/10/2009	Notice of Deficiencies (NOD) Issued- SP	Safety Plan Complete	SP Public Meeting Date	Audit/ Inspection	Audit Public Meeting	SP Human Factors (HF) Update	NOD Issued - HF SP	HF-SP Determined Complete	HF Audit/ Inspection	HF Audit Public Meeting
Air Products – Shell & Tesoro	6/26/2003 7/14/2005 12/1/2006	8/24/2007	9/14/2007	5/8/2003 9/23/2007	2/27/2004 1/22/2007 7/20/2009	9/24/2006 9/23/2007	1/16/2001	5/10/2001	6/19/2001	5/3/2002	5/8/2003
General Chemical/Bay Pt. Works	1/14/2000 12/10/2003 10/9/2007	6/12/2000 7/28/2008	12/20/2000 3/17/2004 12/13/2008	1/2/2001 5/1/2003 11/16/2005 1/31/2006 11/4/2008	8/11/2000 6/20/2003 8/29/2005 1/7/2008	1/2/2001 11/16/2005 1/31/2006 11/8/2006 1/2/2007 11/4/2008	1/15/2001	7/23/2001	11/6/2001	5/20/2002	5/1/2003
ConocoPhillips - Rodeo	1/15/2000 8/10/2005 8/7/2009	3/14/2000 3/28/2006	5/30/2000 8/9/2002 11/5/2007	6/15/2000 4/9/2002 10/7,13/07	6/30/2000 8/1/2003 8/15/2006 10/6/2008	4/9/2002 6/22/2004 7/8/2004 10/7,13/07	1/12/2001	9/10/2001	3/18/2002	11/5/2001	4/9/2002
Shell Martinez Refinery	1/14/2000 7/22/2002 1/11/2006	7/19/2000 3/21/2003 8/15/2006	4/9/2001 9/15/2003 11/2/2006	5/8/2003 9/24/2006 9/23/2007	10/31/2000 11/26/2004 10/23/2006 4/30/2009	5/8/2003 9/24/2006 9/23/2007	1/16/2001	11/9/2001	1/3/2002	4/29/2002	5/8/2003
Tesoro Golden Eagle Refinery	6/21/2002 6/22/2007	7/30/2007	6/21/2003 11/5/2007	9/23/2007	9/8/2003 11/7/2005 8/18/2008	9/24/2006 9/23/2007	1/12/2001	9/18/2001	12/14/2001	12/3/2001	5/6/2003

- » Land Use Permit Chapter discussion
 - Copy of the ordinance
- » Safety Program Guidance Document
- » Frequently Asked Questions
- » Public Outreach strategies
- California Accidental Release Prevention (CalARP) Program
 - » Contra Costa County's California Accidental Release Prevention Program Guidance Document
 - » Program Level description
 - » Discussion on Public Participation for both CalARP Program and the Industrial Safety Ordinance
 - » A map locating the facilities that are subject to the CalARP Program and are required to submit a Risk Management Plan to Health Services. The map links to a description of each of the facilities and the regulated substances handled.
- Hazardous Materials Inventories and Emergency Response Program
 - » Descriptions
 - » Forms
- Underground Storage Tanks
 - » Description of the program
 - » Copies of the Underground Storage Tanks Health & Safety Code sections
 - » Underground Storage Tanks forms
- Green Business Program
 - » Description of the Green Business Program with a link to the Association of Bay Area Government's website on the Green Business Program
- Hazardous Materials Incident Response Team
 - » Including information of the Major Chemical Accidents or Releases that have occurred
 - » The County's Hazardous Materials Incident Notification Policy
 - » A link to the ConocoPhillips Fenceline Monitors
- Hazardous Materials Program Incident Search
 - » On-line search of the hazardous materials incident database for incidents that have occurred from 1993 to current year by entering a date range, address, city, and/or facility name

- Facility Search
 - » On-line search of the facilities that handle hazardous materials by name of the facility, street name, and city or any combination of the three
- Unannounced Inspection Program
 - » Lists the facilities that are subject to unannounced inspections under the Unannounced Inspection Program
- Hazardous Materials Interagency Task Force
 - » Includes a matrix of who has what hazardous materials and regulatory responsibilities
 - » Minutes from past meetings
 - » Presentations from past meetings
- Incident Response
 - » Accident History that list summaries of major accidents from industrial facilities in Contra Costa County from most recent to 1992
- Additional resource links for more information

Effectiveness of the Hazardous Materials Ombudsman

The Board of Supervisors created the Hazardous Materials Ombudsperson position in 1997. This position was filled in April 1998. The Board believed that the ombudsperson would be a conduit for the public to express their concerns about how Hazardous Materials Programs personnel are performing their duties. Attachment A is a report from the Hazardous Materials Ombudsman on the effectiveness of the position.

Other Required Program Elements Necessary to Implement and Manage the Industrial Safety Ordinance

The California Accidental Release Prevention (CalARP) Program is administered in Contra Costa County by Contra Costa Health Services. The Industrial Safety Ordinance expands on this program. Stationary Sources are required to submit a Risk Management Plan to Health Services that is similar to the Safety Plans that are submitted. Health Services reviews these Risk Management Plans and performs the CalARP Program audit simultaneously with the Industrial Safety Ordinance audit.

Health Services performs Unannounced Inspections of the stationary sources that are part of the CalARP Program and are also required to submit a Risk Management Plan to the U.S. EPA. These inspections look at a focused portion of the CalARP Program or Industrial Safety Ordinance requirements, as well as elements from the other Hazardous Materials Programs.

Regulated Stationary Sources

The Status of the Regulated Stationary Sources' Safety Plans and Programs

All of the stationary sources that are regulated by the Industrial Safety Ordinance were required to submit their Safety Plans to Health Services by January 15, 2000 and to have their Safety Programs completed and implemented. The stationary sources were also required to have a Human Factors Program in place that follows the County's Safety Program Guidance Document by January 15, 2001. The status of each of the regulated stationary sources is given in Table I and includes the following:

- When the latest updated Safety Plan was submitted
- When the Notice of Deficiencies were issued
- When the plan was determined to be complete by Health Services
- When the public meeting was held on the Safety Plan
- When the audits were complete
- When the public meetings were held on the preliminary audit findings

- When the Human Factors to the Safety Plan were revised
- When the Notice of Deficiencies were issued for the Human Factors revised Safety Plan
- When the Human Factors Safety Plan was determined to be complete
- When the Audit/Inspection was completed
- When the Human Factors Audit preliminary findings
 Public Meeting was held

Locations of the Regulated Stationary Sources Safety Plans

Each of the regulated stationary sources was required to submit their Safety Plan to Health Services on January 15, 2000 and an updated Safety Plan that includes the implementation of the stationary source's Human Factors Program by January 15, 2001. The regulated stationary sources are required to update their Safety Plan, at least, once every three years. These plans are available for public review at the Hazardous Materials Programs Offices at 4333 Pacheco Blvd., Martinez. When Health Services determines that the Safety Plan is complete and prior to going out for a 45-day public comment period, Health Services will place the plan in the library(ies) closest to the regulated stationary source. Below in Table II is a listing of the regulated stationary sources with the location of each of their Safety Plans.



Table II

Location of Safety Plans - Libraries

Regulated Stationary Source	Location 1	Location 2	Location 3
Air Products at Shell	Hazardous Materials Programs Office	Martinez Public Library	
Air Products at Tesoro	Hazardous Materials Programs Office	Martinez Public Library	
Shell Refining – Martinez	Hazardous Materials Programs Office	Martinez Public Library	
General Chemical West Bay Point Works	Hazardous Materials Programs Office	Bay Point Public Library	
ConocoPhillips Rodeo Refinery	Hazardous Materials Programs Office	Rodeo Public Library	Crockett Public Library
Tesoro Golden Eagle Refinery	Hazardous Materials Programs Office	Martinez Public Library	

Annual Accident History Report and Inherently Safer Systems Implemented as Submitted by the Regulated Stationary Sources

The Industrial Safety Ordinance requires the stationary sources to update the information on their accident history in their Safety Plans and include how they have used inherently safer processes within the last year. Table III is a listing of some of the inherently safer systems that have been implemented by the different stationary sources during the same period. Attachment B includes the individual reports from the stationary sources.

Table III

Inherently Safer Systems

Regulated Stationary Source	Inherently Safer System Implemented	Design Strategy	Category
Air Products at Shell Martinez Refinery	no new inherently safer systems implemented		
Air Products at Tesoro	no new inherently safer systems implemented		
ConocoPhillips- Rodeo Refinery	Reduction of inventory by removing piping/equipment from the process (1 time)	Inherent	Minimization
	Removed sample stations at process unit (1 time)	Inherent	Simplify
	Revised equipment metallurgy, components, controls features (14 times)	Passive	Simplify
	Reduced the potential of a hazard by moving to an alternate location, reduced exposure potential (3 times)	Passive	Moderate
General Chemical West Bay Point Works	Reduced the impact of the hazard by adding sensors (1 time)	Passive	Moderate
	Minimize exposure to the hazard by changing design features and materials of construction (2	Passive	Simplify
Shell Martinez Refinery	Reduced exposure potential with change of energy source, design feature (2 times)	Passive	Substitution
	Upgraded equipment metallurgy and design features to reduce potential of a hazard or the frequency (t4 times)	Passive	Moderate
	Reduced potential of exposure by adding alarm limits (2 times)	Active	Moderate
Tesoro Golden Eagle Refinery	Eliminated equipment (3 times)	Inherent	Simplify
	Reduced potential of a hazard or the frequency by changing design features (9 times)	Passive	Simplify

Status of the Incident Investigations, Including the Root Cause Analyses Conducted by the Regulated Stationary Sources

The Industrial Safety Ordinance requires the regulated stationary sources to do an incident investigation with a root cause analysis for each of the major chemical accidents or releases as defined by the following:

"Major Chemical Accident or Release" means an incident that meets the definition of a Level 3 or Level 2 incident in the Community Warning System incident level classification system defined in the Hazardous Materials Incident Notification Policy, as determined by Contra Costa Health Services; or results in the release of a regulated substance and meets one or more of the following criteria:

- Results in one or more fatalities
- Results in greater than 24 hours of hospital treatment of three or more persons
- Causes on- and/or off-site property damage (including cleanup and restoration activities) initially estimated at \$500,000 or more. On-site estimates shall be performed by the regulated stationary source. Off-site estimates shall be performed by appropriate agencies and compiled by Health Service
- Results in a vapor cloud of flammables and/or combustibles that is more than 5,000 pounds

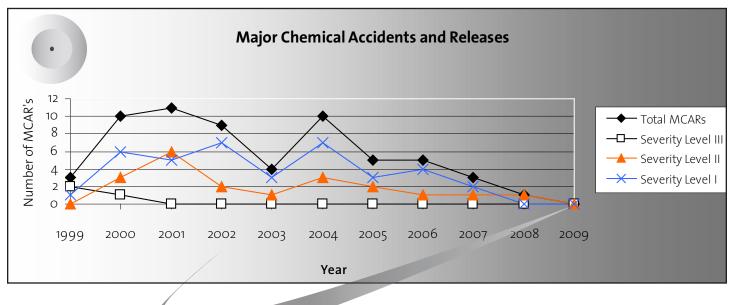
The regulated stationary source is required to submit a report to Health Services 30 days after the root cause analysis is complete. There is no record of any major chemical accidents or releases that have occurred within the last year In Contra Costa County.

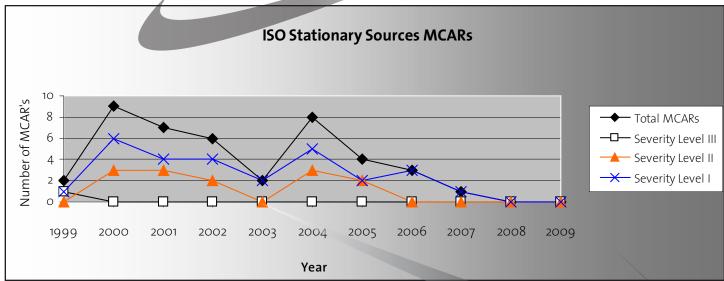
Major Chemical Accidents or Releases

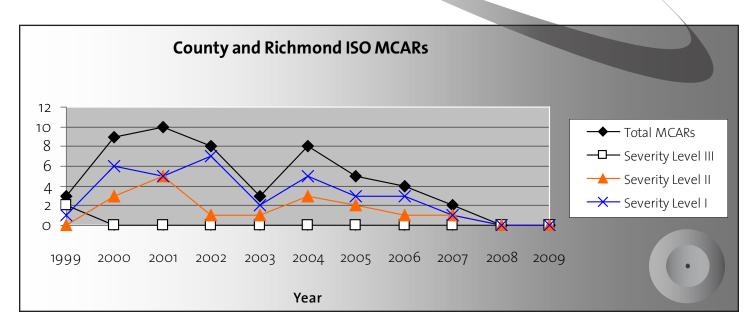
Health Services has analyzed the Major Chemical Accidents or Releases (MCAR) that have occurred since the implementation of the Industrial Safety Ordinance. The analysis includes the number of MCARs and the severity of the MCARs. Three different levels of severity were assigned:

- Severity Level III—A fatality, serious injuries, or major onsite and/or offsite damage occurred
- Severity Level II An impact to the community occurred, or if the situation was slightly different the accident may have been considered major, or there is a recurring type of incident at that facility
- Severity Level I—A release where there was no or minor injuries, the release had no or slight impact to the community, or there was no or minor onsite damage

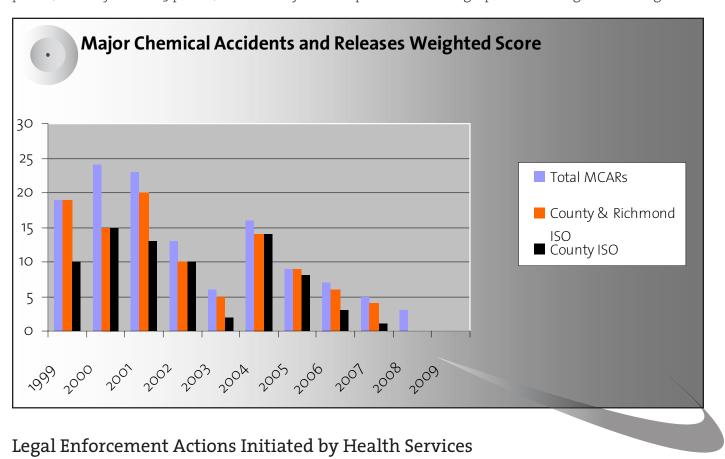
Below are charts showing the number of MCARs from January 1999 through September 2008 for all stationary sources in Contra Costa County, the MCARs that have occurred at the County's Industrial Safety Ordinance stationary sources, and a chart showing the MCARs that have occurred at the County and the City of Richmond's Industrial Safety Ordinance stationary sources. The charts also show the number of severity I, II, and III MCARs for this period. NOTE: The charts do not include any transportation MCARs that have occurred.







A weighted score has been developed giving more weight to the higher severity incidents and a lower weight to the less severe incidents. The purpose is to developed a metric of the overall process safety of facilities in the County, the facilities that are covered by the County and the City of Richmond Industrial Safety Ordinances, and the facilities that are covered by the County's Industrial Safety Ordinance. A Severity Level II incident is given 9 points, Severity Level II 3 points, and Severity Level I 1 point. Below is a graph of this weighted scoring.



As part of the enforcement of the Industrial Safety Ordinance and the Calarp Program, Health Services issues Notice of Deficiencies on the Safety and Risk Management Plans and issues Audit Findings on what a stationary source is required to change to come into compliance with the regulations. Table I shows the action that has been taken by Health Services. Health Services has not taken any action through the District Attorney's Office for noncompliance with the requirements of the Industrial Safety Ordinance.

Penalties Assessed as a Result of Enforcement

No penalties have been assessed this year for noncompliance with the Industrial Safety Ordinance.

Total Fees, Service Charges, and Other Assessments Collected Specifically for the Industrial Safety Ordinance

The fees charged for the Industrial Safety Ordinance are to cover the time that the Accidental Release Prevention Engineers use to enforce the ordinance, the position of the Hazardous Materials Ombudsman, outreach material, and to cover a portion of the overhead for the Hazardous Materials Programs. The fees charged for administering this ordinance and the Richmond Industrial Safety Ordinance for the fiscal year 2008–09 are \$439,861.

Total Personnel and Personnel Years Used by Health Services to Implement the Industrial Safety Ordinance

The Accidental Release Prevention Programs Engineers have reviewed resubmitted Safety Plans, prepared and presented information for public meetings, performed audits of the stationary sources for compliance with both the California Accidental Release Prevention Program and Industrial Safety Ordinance and did follow-up work after a Major Chemical Accident or Release. The following is a breakdown of the time that was spent on the County's and the City of Richmond's Industrial Safety Ordinances:

- Four ISO/Calarp Program facilities audits were done between November 2008 and October 2009. It takes four or five engineers four weeks to perform an ISO/Calarp Program on site portion of the audit. The audit process includes off site time that includes a quality assurance process, working with the facility to address any questions, posting public notices, addressing any questions from the public, and issuing the final report. The total time taken to perform the four audits in 2009 is 3800 hours. Approximately 1/3 of the time is dedicated to the Industrial Safety Ordinance for a total of 1,266 hours.
- Developing Safety Culture Assessment Guidance and establishing Process Safety Measurement 80 hours
- Reviewing information for the website 20 hours
- Reviewing Safety Plans and following up with the facilities on any deficiencies 59 hours
- Health Services Communications Office or the Accidental Release Prevention Engineers prepare material for presentations and public meetings—total approximately 40 personnel hours.
- Working with Public Health Division on preparing meetings and material for the Spanish Speaking
 Communities 40 personnel hours
- Total of 1,550 hours is the approximate personnel time spent on the Industrial Safety Ordinance, or 0.92 personnel years.

This is not including the Ombudsman time spent helping prepare for the public meetings, working with the engineers on questions arising from the Industrial Safety Ordinance, and answering questions from the public on the Industrial Safety Ordinance.

Comments From Interested Parties Regarding the Effectiveness of the Industrial Safety Ordinance

No comments were received on the County's or the City of Richmond's Industrial Safety Ordinances during the last year.

The Impact of the Industrial Safety Ordinance on Improving Industrial Safety

Four programs are in place to reduce the potential of an accidental release from a regulated stationary source that could impact the surrounding community. The four programs are the Process Safety Management Program administered by Cal/OSHA, the federal Accidental Release Prevention Program administered by the U.S. EPA, the California Accidental Release Prevention Program administered locally by Health Services, and the Industrial Safety Ordinance administered by Health Services. Each of the programs is very similar, with the Industrial Safety Ordinance being the most stringent. The prevention elements of the program level 3 regulated stationary sources under the federal Accidental Release Prevention Program is identical to the Process Safety Management Program. The main differences between the Federal Accidental Release Prevention and the Calarpprograms are as follows:

- 1. The number of chemicals regulated
- 2. The threshold quantity of these chemicals
- 3. An external events analysis, including seismic and security and vulnerability analysis, is required
- 4. Additional information in the Risk Management Plan
- 5. Health Services is required to audit and inspect stationary sources at least once every three years
- 6. The interaction required between the stationary source and Health Services

The differences between the CalARP and the Industrial Safety Ordinance Safety Programs are as follows:

- Stationary sources are required to include a root cause analysis with the incident investigations for Major
 Chemical Accidents or Releases
- The stationary sources are required to consider inherently safer practices
- All of the process at the regulated stationary source are covered
- Managing changes in the organization for operations, maintenance, and emergency response
- The implementation of a Human Factors Programs

The Board of Supervisors amended the County's Industrial Safety Ordinance to expand the requirement of the ordinance in 2006. These amendments are as follows:

- Expand the Human Factors section of the Industrial Safety Ordinance to include the following:
 - » Maintenance procedures
 - » Management of Organizational Changes
 - Maintenance personnel
 - A job task analysis for each of the positions that work in operations, maintenance, emergency response
 and Health and Safety

- Include temporary changes in the Management of Organizational Change
- A requirement that the stationary sources perform a Security and Vulnerability Analysis and test the effectiveness of the changes made as a result of the Security and Vulnerability Analysis
- The stationary sources perform a Safety Culture Assessment

Work is being done to develop Safety Culture Assessment guidance. The Industrial Safety Ordinance Guidance document is being updated to include the remaining changes to the ordinance. The Accidental Release Prevention Engineers have participated with the Center for Chemical Process Safety on developing the second edition of the *Inherently Safer Chemical Processes* book that is referenced in the ordinance and with the Center for Chemical Process Safety on developing process safety metrics for leading and lagging indicators.

All of these requirements will and have lowered the probability of an accident occurring. Contra Costa County has been recognized in the Chemical Safety and Hazard Investigation Board Report on the BP March 23, 2005 Texas City Investigation as an alternative model for doing process safety inspections. The report states: "Contra Costa County and the U.K. Health and Safety Executive conduct frequent scheduled inspections of PSM and major hazard facilities with highly qualified staff." This was done to compare to the number of OSHA process safety management audits. Carolyn W. Merritt, the Chemical Safety and Hazard Investigation Board Chair, at that time, also recognized Contra Costa County in testimony to the House of Representatives Committee on Education and Labor chaired by Representative George Miller. Senator Barbara Boxer, during a hearing to consider John Bresland's nomination to the Chemical Safety and Hazard Investigation Board as the Chair (replacing Carolyn Merritt), asked Mr. Bresland about the Contra Costa County program for process safety audits of refineries and chemical companies. The Chemical Safety and Hazard Investigation Board also mentions Contra Costa County in a DVD, Anatomy of a Disaster: Explosion at BP Texas City Refinery, on the resources given to audit and ensure facilities are complying with the regulations.

City of Richmond Industrial Safety Ordinance

The City of Richmond passed its version of the Industrial Safety Ordinance on December 18, 2001 that became effective on January 17, 2002. Richmond's Industrial Safety Ordinance mirrors the County's Industrial Safety Ordinance, with the exceptions of the 2006 amendments to the County's Ordinance. Richmond's Industrial Safety Ordinance covers two stationary sources: Chevron and General Chemical West Richmond Works.

Chevron and General Chemical West Richmond Works submitted their Safety Plans to Health Services, which have been reviewed by Health Services. The public comment period for these plans ended in January 2004. Public meetings held in 2004 in North Richmond and Richmond discussed Chevron and General Chemical West Richmond Works audit findings. The second Richmond Industrial Safety Ordinance/Calarp Program audits for these facilities occurred in 2006 and public meetings were held in June 2007 at Hilltop Mall at "Lessons from Katrina," the 2007 Neighbor Works Week Homeownership Faire & Disaster Preparedness Expo.

Health Services followed up on the January 15, 2007 fire at the Chevron Refinery. The follow-up included a public meeting, City Council meetings, meetings with Chevron on the investigation and the root cause analysis. Chevron Richmond Refinery was audited for the third time for RISO/Calarp program in April 2008 and the final report has been finalized and results were available at the Recycle More Earth Day Event in Richmond in June 2009. Copies of the audit results are available at the Richmond Library and a summary of the audit is also available on Contra Costa Health Services' website (www.cchealth.org).

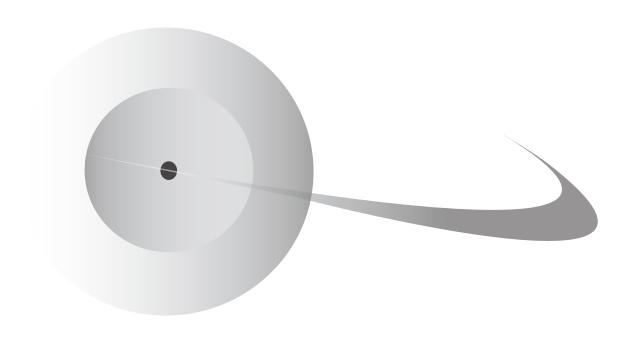
Contra Costa Health Services performed an RISO/CalARP program audit at General Chemical Richmond in January of 2009. The final report is being completed for the next public event in Richmond.



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ATTACHMENT A

Hazardous Materials Ombudsman Report



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Hazardous Materials Ombudsman Evaluation October 2008 through September 2009

I. Introduction

On July 15, 1997 the Contra Costa County Board of Supervisors authorized creation of an Ombudsman position for the County's Hazardous Materials Programs. The first Hazardous Materials Ombudsman began work on May 1, 1998. The Contra Costa County Board of Supervisors adopted an Industrial Safety Ordinance on December 15,1998. Section 450–8.022 of the Industrial Safety Ordinance requires the Health Services Department to continue to employ an Ombudsman for the Hazardous Materials Programs. Section 450–8.030(B)(vii) of the Industrial Safety Ordinance requires an annual evaluation of the effectiveness of the Hazardous Materials Ombudsman, with the first evaluation to be completed on or before October 31, 2000.

The goals of section 450–8.022 of the Industrial Safety Ordinance for the Hazardous Materials Ombudsman are:

- To serve as a single point of contact for people who live or work in Contra Costa County regarding environmental health concerns, and questions and complaints about the Hazardous Materials Programs.
- 2. To investigate concerns and complaints, facilitate their resolution, and assist people in gathering information about programs, procedures, or issues.
- 3. To provide technical assistance to the public.

The Hazardous Materials Ombudsman currently accomplishes these goals through the following program elements:

- Continuing an outreach strategy so that the people who live and work in Contra Costa County can know about and utilize the program.
- 2. Investigating and responding to questions and complaints, and assisting people in gathering information about programs, procedures, or issues.
- 3. Participating in a network of environmental programs for the purpose of providing technical assistance.

This evaluation covers the period from October, 2008 through September, 2009 for the Hazardous Materials Ombudsman program. The effectiveness of the program shall be demonstrated by describing that the activities of the Hazardous Materials Ombudsman meet the goals established in the Industrial Safety Ordinance.

II. Program Elements

1. Continuing an Outreach Strategy

This period, efforts were focused on maintaining the outreach tools currently available. Copies of the Ombudsman Brochure were translated into Spanish and were distributed to the public at meetings, presentations, public events, and through the mail. A contact person was also established in Public Health that could receive calls from the public in Spanish and serve as an interpreter to respond to these calls. In addition to explaining the services provided by the position, the brochure also provides the phone numbers of several other related County and State programs. The web page was maintained for the program as part of Contra Costa Health Services web site. This page contains information about the program, links to other related web sites, and information about upcoming meetings and events. A toll-free phone number is still published in all three Contra Costa County phone books in the Government section.

2. Investigating and Responding to Questions and Complaints, and Assisting in Information Gathering

A. Responding to Questions and Complaints

During this period, the Hazardous Materials Ombudsman received 190 information requests. This is a 28% increase over the previous period. Over 95 percent of these requests occurred via the telephone, and have been requests for information about environmental issues. Requests via e-mail are slowly increasing, mainly through referrals from Health Services main web page. Most of these requests concern problems around the home such as asbestos removal, household hazardous waste disposal, pesticide misuse and lead contamination.

Information requests about environmental issues received via the telephone were generally responded to within one business day of being received. Many of the information requests were answered during the initial call. Some requests required the collection of information or written materials that often took several days to compile. Telephone requests were responded to by telephone unless written materials needed to be sent as part of the response.

Complaints about the Hazardous Materials Programs can also be received via telephone and in writing. Persons that make complaints via telephone are also asked to provide those complaints in writing. During this period, the Hazardous Materials Ombudsman received one request for help with activities or actions of the Hazardous Materials Programs. A property owner who's property was the site of an illegal drug lab requested help in understanding the basis for the bill received for the Department's activities associated with the clean-up of the property. The matter was resolved to the satisfaction of the property owner.

B. Assisting in Information Gathering

Many of the environmental pollution issues that Contra Costa residents are concerned about are on-going regulatory programs or industrial activities. Helping people to participate in these regulatory activities or to effectively advocate their interests about an industrial activity usually means providing them with more information or advice than can be done with a single phone call. Often these issues are complex and can take months to resolve.

One way of helping the public to gather information is to ensure the public has the opportunity to be informed about, and participate in, important decisions related to environmental protection. The Hazardous Materials Ombudsman has done this by organizing, promoting and facilitating public involvement in Industrial Safety Ordinance Public Participation. The ordinance requires that public meetings be held at various stages of the process. The Hazardous Materials Ombudsman has worked closely with the Hazardous Materials Programs staff and the Board of Supervisors to develop an intensive public outreach strategy for the Industrial Safety Ordinance. During this period, the Ombudsman helped the Hazardous Materials Program develop programs and prepare information for public presentations about audits completed during the year.

3. Participating in a Network of Environmental Programs for the Purpose of Providing Technical Assistance.

Technical assistance means helping the public understand the regulatory, scientific, political, and legal aspects of issues. It also means helping them understand how to effectively communicate their concerns within these different arenas. This year, the Ombudsman continued to staff a number of County programs and participate in other programs to be able to provide technical assistance to the participants and the public.

- CAER (Community Awareness and Emergency Response)—This non-profit organization addresses industrial accident prevention, response and communication. The Ombudsman participated in the Emergency Notification subcommittee of CAER.
- Hazardous Materials Commission In 2001, the Ombudsman took over as staff for the commission. As staff to the commission, the Ombudsman conducts research, prepared reports, writes letters and provides support for 3 monthly Commission meetings. During this period, the Ombudsman analyzed the results of a public survey developed to solicit concerns about hazardous materials and attitudes about relative risk, conducted two town hall forums about Household Hazardous Waste issues with County Supervisors, held an educational forum on cumulative impacts, conducted research on

brownfield issues in the county, and conducted research on the status of Household Hazardous Waste collection in the County.

• Public and Environmental Health Advisory Board—As staff to the Environmental Health subcommittee of PEHAB, the Ombudsman completed are port on pest management is sues in the County in March, 2001. In response to this report, the Board of Supervisors asked Health Services and the County Agricultural Commissioner to convene a Task Force to develop an Integrated Pest Management Policy for the County. The Ombudsman represented Health Services asco-chair of this Task Force from 2001 till March of 2007. During this period the Ombudsman continued to represent Health Services on the Task Force.

The Ombudsman also participated in a regional program developing public education programs about the consumption of contaminated fish out of San Francisco Bay and the Delta as a result of PEHAB's concern about the Environmental Justice issues raised by the significant subsistence fishing by Contra Costa residents. The Ombudsman also helped the members of PEHAB prepare comments on the Bay Area Air Quality Management District's flare control rule.

- Asthma Program The Ombudsman participated in the Public Health Department's asthma program as a resource on environmental health issues. The Ombudsman also participated in county-wide asthma coalition meetings, and represented the Asthma program at regional meetings pertaining to asthma issues, particularly diesel pollution. The Ombudsman oversaw the completion of a \$170,000 CalTrans grant that allowed Asthma Advocates and other County residents to get involved in landuse issues related to diesel pollution and goods movement. The Ombudsman gave presentations to 10 High School classes on asthma and air pollution.
- East County Environmental Justice Collaborative—During this period the Ombudsman provided technical assistance to the East County Environmental Justice Collaborative, a Public Health Department project in Bay Point and Pittsburg. This project was funded by grants from the Federal EPA and the San Francisco Foundation that the Ombudsman helped secure. The role of the Ombudsman in this project was to help community residents understand the risks presented to them by various environmental sources of pollution so that they could better determine which of these, if any, were

of concern to them. The Ombudsman helped develop research materials and gave presentations to residents as part of this project.

- Bay Area Air Quality Management District's Community Air Risk Evaluation Program—During this period the Ombudsman was appointed to represent the Public Health Division on the advisory board to this Air District program. This advisory board meets quarterly to discuss implementation of this program that identifies and creates strategies to address health risks in communities with high air pollution emissions in the Bay Area. Two of these areas are in Contra Costa County.
- Richmond General Plan Health Element Data Group—During this period the Ombudsman provided technical assistance to the City of Richmond as part of an effort to evaluate the effectiveness of the implementation of the new Health Element of their updated General Plan.

The Hazardous Materials Ombudsman also attended workshops, presentations, meetings and trainings on a variety of environmental issues to be better able to provide technical assistance to the public. Topics included Environmental Justice, emergency management practices, health mitigations for consumption of contaminated fish, effective techniques for public education and outreach, and diesel pollution.

III. Program management

The Hazardous Material Ombudsman continued to report to the Public Health Director on a day-to-day basis during this period, while still handling complaints and recommendations about the Hazardous Materials Programs through the Health Services Director. The duties of the Hazardous Materials Ombudsman also included management of the Caltrans grant about Goods Movement. The Ombudsman also was a member of Health Services Emergency Management Team and participates on its HEEP management team. The Ombudsman also assisted the Asthma program in the writing of grants to fund ongoing programs. During this period the Ombudsman also served as Logistics Coordinator in the Departmental Operations Center established to respond to the H1N1 flu outbreak in April.

IV. Goals for the 2009/10 period

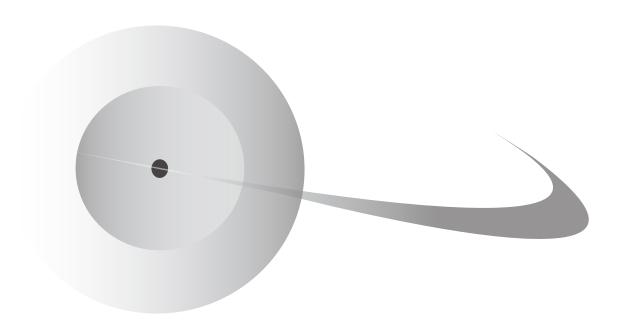
In this period, the Ombudsman will provide essentially the same services to Contra Costa residents as was provided in the last period. The Ombudsman will continue respond to questions and complaints about the actions of the Hazardous Materials Programs; answer general questions that come from the public and assist them in understanding regulatory programs; staff the Hazardous Materials Commission and the Public and Environmental Health Advisory Board; provide technical support to the Asthma program; and participate in the Integrated Pest Management Taskforce, the CAER Emergency Notification committee, the Air District CAER

Advisory Board, and the Richmond Health Element Data Group. As a new activity this period, the Ombudsman will represent Contra Costa Health Services in a one-year long national project sponsored by the Center for Disease Control to address public health and chemical exposures.

In this period, the Ombudsman will continue efforts to re-distribute his brochures throughout the County and promote his services via the County's website. He will also continue to give presentations to community groups and governmental agencies to promote the services of the position. The Ombudsman will also continue to seek out and pursue funding from grants, settlements and penalties for environmental projects in Contra Costa County, with the appropriate partners.

ATTACHMENT B

Regulated Sources Accident History & Inherent Safety Implementation



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CONTRA COSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Document No.:	Date Effective:	Page: B-1 of 18
Policy	Document Owner:	Approved By:	Revision No.:

June 15, 2009

	Name and address of Stationary Source: <u>Air Products</u> Shell Martinez Refinery, 110 Waterfront Road, Martinez, CA 94553
	Contact name and telephone number (should CCHS have questions): Michael Cabral, (925) 372-9302
-	Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):
-	Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii))
;	List of locations where Safety Plans are/will be available for review, including contact telephone numbers if th source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHS Office, 4333 Pachec Boulevard, Martinez; Martinez Library (library closest to the stationary source); Air Products – See contact i #2, above.
;	Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450 8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Sectio 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history):

Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):

July 1	Title: INDUSTRIAL SAFETY ORDINANCE ANNUAL PERFORMANCE REVIEW AND EVALUATION				
CONTRA COSTA HEALTH SERVICES	Document No.:	Date Effective:	Page: B-2 of 18		
HAZARDOUS MATERIALS PROGRAMS Policy	Document Owner:	Approved By:	Revision No.:		
9. Summary of inherently safer systems in reduction (i.e., intensification) and substitu-					
10. Summarize the enforcement actions (include over to the <i>Contra Costa County Distri</i> Section 450-8.028 of County Ordinance 98	ict Attorney's Office)	taken with the Station	onary Source pursuant		
11. Summarize total penalties assessed as	1. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No.				
12. Summarize the total fees, service charges ISO (450-8.030(B)(4)): CalARP Program Chapter of the Industrial Safety Ordinance	fees for these eight				
13. Summarize total personnel and personnel this Chapter (450-8.030(B)(5)): 4400 Management Chapter of the Industrial Saf	hours were used to				
14. Copies of any comments received by the sthe effectiveness of the local program that					
15. Summarize how this Chapter improves inc	dustrial safety at your	stationary source (450	-8.030(B)(7)):		
16. List examples of changes made at your Ordinance (e.g., recommendations from subject to CalARP regulations; recomm likelihood of accidental releases:	PHA's, Compliance	Audits, and Incident 1	Investigations in units n		

17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in

response to major chemical accidents or releases:

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INDUSTRIAL SAFETY ORDINANCE ANNUAL PERFORMANCE REVIEW AND EVALUATION		
Document No.:	Date Effective:	Page: B-3 of 18
Document Owner:	Approved By:	Revision No.:

June 15, 2009

*A	ttach additional pages as necessary
1.	Name and address of Stationary Source: Air Products Track 1. Tracks Define we (College Fools - Array) Solana West Marking CA - 04552
2.	Tract 1, Tesoro Refinery (Golden Eagle - Avon), Solano Way, Martinez, CA 94553 Contact name and telephone number (should CCHS have questions): Michael Cabral, (925) 372-9302
3.	Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):
4.	Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):
5.	List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHS Office, 4333 Pacheco Boulevard, Martinez; Martinez Library (library closest to the stationary source); Air Products – See contact in #2, above.
6.	Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history):
7.	Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the
	status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)):
8.	Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):

9. Summary of inherently safer systems implemented by the source including but not limited to inventory

reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)):_

July 1		TY ORDINANCE ANNUA	
CONTRACOSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Document No.:	Date Effective:	Page: B-4 of 18
Policy	Document Owner:	Approved By:	Revision No.:

10.	Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the <i>Contra Costa County District Attorney's Office</i>) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)): None
11.	Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): None
12.	Summarize the total fees, service charges, and other assessments collected specifically for the support of the <i>ISO</i> (450-8.030(B)(4)): CalARP Program fees for these eight facilities are - \$420,000, the Risk Management Chapter of the Industrial Safety Ordinance fees are - \$524,000.
13.	Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 4400 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
14.	Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues (450-8.030(B)(6)):
15.	Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)):
16.	List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases:
17.	Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases:

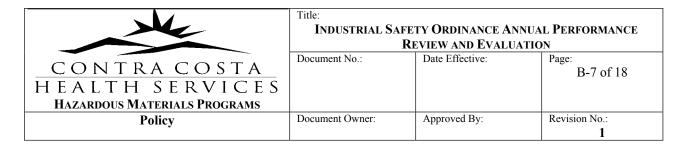
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CONTRACOSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Document No.:	Date Effective:	Page: B-5 of 18
Policy	Document Owner:	Approved By:	Revision No.:

June 24, 2009

Name and address of Stationary Source: ConocoPhillips Rodeo Refinery, 1380 San Pablo Avenue,
Rodeo, CA 94572
Contact name and telephone number (should CCHS have questions): John Driscoll 510-245-4466
Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)): The Safety Plan was last revised in July 2006 and is scheduled for an update in 2009.
Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)): The original Safety Plan for this facility was filed with Contra Costa Health Services on January 14, 2000. A revised plan was filed on April 7, 2000 with the updated recommendations requested by CCHS. A Human Factors Amendment was submitted on January 15, 2001. In conjunction with CCHSs required 2 nd public meeting on our plan and audit findings, we submitted a complete revision of the plan to reflect the change in ownership of our facility and to update where needed. We took this opportunity to include Human Factors within the plan instead of having it as an amendment. On August 9, 2002 the plan was resubmitted. Public meetings for our plans were held on June 22, 2004 in Rodeo and July 8, 2004 in Crockett. As required the Plan was fully updated in August 2005 on the 3 year cycle. The Plan was reviewed by CCHS and was revised on July 28, 2006 with recommended changes. The next update is scheduled for July 2009
List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHS Office, 4333 Pacheco Boulevard, Martinez; Rodeo Public Library; Crockett Public Library (libraries closest to the stationary source).
Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history):
Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)):

July 1		TY ORDINANCE ANNUA	
CONTRACOSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Document No.:	Date Effective:	Page: B-6 of 18
Policy	Document Owner:	Approved By:	Revision No.:

The 2008 CalARP/ISO audit findings are in preliminary draft technical review status with CCHS 9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)): See Attachment 1 10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)): None 11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalties have been assessed against any facility. 12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): CalARP Program fees for these eight facilities are - \$420,000, the Risk Management Chapter of the Industrial Safety Ordinance fees are - \$524,000. (NOTE: These fees include those for the County and City of Richmond ISO facilities) 13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 4400 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance. 14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues (450-8.030(B)(6)): No comments have been received 15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)): In conjunction with the ConocoPhillips Corporate Health Safety Environment Management Systems the ISO is another tool in the continuation of improving health and safety performance 16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases: Units not covered by RMP, CalARP, and PSM are covered under the ISO and PHAs are scheduled and performed on all these units. A list of inherently safer systems as required by the ISO for PHA recommendations and new construction is attached 17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: None have occurred since the last report



Attachment 1

June 2008 - June 2009 ISS improvements

Туре	ISS category	Description
Project	Passive	Upgraded pump components to better metallurgy
Project	Passive	Upgraded gaskets on coke drum heads
Project	Passive	Upgraded motor on emergency shutoff valve
Project	Passive	Upgraded metallurgy of tank floor
Project	Passive	Installed firewall between transformers
Project	Passive	Upgraded coker blowdown valve metallurgy
Project	Passive	Upgraded motor on emergency shutoff valve
Project	Passive	Upgraded metallurgy of sour service piping for corrosion improvement
Project	Passive	Upgraded controls for sulfur plant for advanced control system with safety shutdowns
Project	Passive	Upgraded metallurgy of piping of caustic system
Project	Passive	Reduced exposure by adding mechanism to remove steam from coke drums prior to deheading
Project	Passive	Upgraded process catalyst for gas turbine exhaust
Project	Passive	Upgraded pump components to better metallurgy
Project	Passive	Installed Emergency Isolation Valve below vessel
Project	Passive	Upgraded piping with internal coating to improve corrosion
Project	Passive	Upgraded metallurgy of reactor internals
Project	Passive	Relocated operations of main process unit to remote control room
Project	Inherent	Removed 30 ft piping (deadleg)
Project	Inherent	Removed sample stations at process unit

July 1	Title: INDUSTRIAL SAFETY ORDINANCE ANNUAL PERFORMANCE REVIEW AND EVALUATION		
CONTRA COSTA HEALTH SERVICES	Document No.:	Date Effective:	Page: B-8 of 18
HAZARDOUS MATERIALS PROGRAMS			
Policy	Document Owner:	Approved By:	Revision No.:
			1

Jι	ine 30, 2009
*A	ttach additional pages as necessary
1.	Name and address of Stationary Source: General Chemical Bay Point Works, 501 Nichols Road, Bay Point, California 94565
2.	Contact name and telephone number (should CCHS have questions): <u>Jim Craig</u> , 925-458-7363
3.	Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)): <u>General Chemical – BPW Safety Plan and Program are currently in place.</u> The Safety Plan and program are reviewed regularly for improvement opportunities
4.	Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)): As a result of 2008 CCHS ISO audit recommendations a PHA discussion section was added to the safety plan in September 2008. Other changes to the plan included minor updates on the organization chart and on references to the location of emergency contact information. The changes were submitted to CCHS in October 2008.
5.	List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the

6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history): There has been no major chemical accidents or releases at Bay Point Works between the last and the current annual performance review and evaluation submittal

Boulevard, Martinez; Bay Point Library (library closest to the stationary source).

source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHS Office, 4333 Pacheco

- 7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)): There has been no root cause analysis for major chemical accident or release performed during this period
- 8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)): An audit was conducted in January 2008, resulting in 76 recommendations. General Chemical has addressed 85% of those recommendations and is currently working to resolve the rest.
- 9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)): The facility installed additional Ammonia sensors in areas surrounding the anhydrous ammonia tank and also replaced the 70% Hydrofluoric acid tank. Currently BPW is in the process of replacing a glass distillation column with PTFE lined stainless steel, implementing a project for automated / remote shutdown of drum fill level, and RFID monitoring of drum fill process to insure against the filling of inappropriate product.

		TY ORDINANCE ANNUA	
CONTRACOSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Document No.:	Date Effective:	Page: B-9 of 18
Policy	Document Owner:	Approved By:	Revision No.:

- 10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the *Contra Costa County District Attorney's Office*) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)): None
- 11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): None
- 12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the *ISO* (450-8.030(B)(4)): CalARP Program fees are \$\$420,000 and the Risk Management Chapter of the Industrial Safety Ordinance fees are \$524,000. These numbers include the fees for both the County and City of Richmond facilities.
- 13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 4400 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
- 14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues (450-8.030(B)(6)): The Facility has not received any comments (that may not have been received by the Department) regarding the effectiveness of the local program.
- 15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)): <u>This chapter helps the facility prevent chemical accidents and minimize the potential risks and exposure to employees, community and the environment.</u>
- 16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases: The facility has conducted PHAs on all units including those that are not subject to CalARP regulations. The facility has implemented many recommendations from these PHAs. The plant has also provided more internal and external safety training for employees. Additionally, BPW has made and continues to make many changes to procedures in order to take full advantage of programs such as human factors.
- 17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: There has been no emergency response activities in response to major chemical accidents of releases during period

		TY ORDINANCE ANNUA	
CONTRACOSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Document No.:	Date Effective:	Page: B-10 of 18
Policy	Document Owner:	Approved By:	Revision No.:

June 30, 2009

*A	ttach additional pages as necessary
1.	Name and address of Stationary Source: Shell Oil Products U.S. Martinez Refinery 3485 Pacheco Blvd., Martinez, CA 94553
2.	Contact name and telephone number (should CCHS have questions): Ken Axe; 925-313-5371
3.	Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)): <u>SMR's Safety Plan was last updated in September 2007</u> , incorporating updates addressing findings from the October/November 2006 CalARP/ISO audit. <u>SMR's Safety Program is being implemented</u> . <u>SMR's Safety Program was most recently reviewed by CCHS during the CalARP/ISO audit conducted in May 2009</u> .
4.	Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)): There were no updates to the Safety Plan document made during the current reporting period (July 1, 2008 to June 30, 2009). SMR's Safety Plan was last updated in September 2007, incorporating updates addressing findings from the October/November 2006 ISO/CalARP audit.
5.	List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHS Office, 4333 Pacheco Boulevard, Martinez; Martinez Public Library (library closest to the stationary source).
6.	Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history): There were no MCAR's in the current reporting period (July 1, 2008 to June 30, 2009), and therefore no updates to the Accident History.
7.	Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)): There were no MCAR's in the current reporting period (July 1, 2008 to June 30, 2009), and therefore no RCA's were required.

Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)): <u>81 of the 82 action items arising from the October/November 2006 CalARP/ISO audit have been implemented (and reviewed in the course of the May 2009 CalARP/ISO audit). The remaining recommendation (associated with a "consider" item) is scheduled to be implemented by yearend 2010, as originally planned. There have been no</u>

Summary of inherently safer systems implemented by the source including but not limited to inventory

B-10

reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)): See Attachment 1, Table 1.

RCA's or Incident Investigations conducted by the Department.

July 1		TY ORDINANCE ANNUA	
CONTRACOSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Document No.:	Date Effective:	Page: B-11 of 18
Policy	Document Owner:	Approved By:	Revision No.:

10.	Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the <i>Contra Costa County District Attorney's Office</i>) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)): None
11.	Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalities have been assessed against any facility.
12.	Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): CalARP Program fees for these eight facilities are - \$420,000, the Risk Management Chapter of the Industrial Safety Ordinance fees are - \$524,000. (NOTE: These fees include those for the County and City of Richmond ISO facilities)
13.	Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 4400 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
14.	Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues (450-8.030(B)(6)): None received.
15.	Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)): <u>SMR has integrated requirements of the Industrial Safety Ordinance into our Health, Safety, and Environment Management System; in the context of our HSE MS, the ISO requirements help drive continual improvement in our HSE performance.</u>
16.	List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases: See Attachment 1, Table 2.

17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: There were no MCAR's in the current reporting period (July

1, 2008 to June 30, 2009).

	Title: INDUSTRIAL SAFETY ORDINANCE ANNUAL PERFORMANCE REVIEW AND EVALUATION		
CONTRA COSTA HEALTH SERVICES	Document No.:	Date Effective:	Page: B-12 of 18
HAZARDOUS MATERIALS PROGRAMS Policy	Document Owner:	Approved By:	Revision No.:
·			1

Attachment 1

Table 1. Summary of Implemented ISS

ISS Item Number	ISS Type	Source/Study	Description
R2006733-017-2	Passive/Moderation	ISS Existing	Replaced bottom de-heading valves on Delayed Coker Drums with slide valves (integral chute moderates potential consequences)
R20051044-001-5	Substitution	ISS Existing	Replace propane storage for Recovered Oil thermal oxidizer with natural gas piping.
R2009086-001	Passive/Moderation	ISS Existing	Installed passive leak-limiting valves on 3 sample stations in DHT.
R2009089-002	Passive/Simplify	ISS Existing	Installed passive fail-safe trip systems in SRU.
M20071559-001	Passive/Moderation	Project	Modified water drain piping on butane spheres to moderate potential consequences of butane release through water drains.
M20071609-001	Passive/Moderation	Project	Modified water drain piping on propane vessels to moderate potential consequences of propane release through water drains.

Table 2. ISO-only Recommendations Implemented (not required by CalARP)

Recommendation Number	Source/Study	Description
R2007770-006	РНА	Established alarm and action limits on pressure to reduce the potential for blowing a water seal in CO Boilers, potentially resulting in an MCAR.
R2007770-008	PHA	Established alarm and action limit on low oxygen in CO Boilers to reduce the potential for MCAR.

July 1	Title: INDUSTRIAL SAFETY ORDINANCE ANNUAL PERFORMANCE REVIEW AND EVALUATION		
CONTRA COSTA HEALTH SERVICES	Document No.:	Date Effective:	Page: B-13 of 18
HAZARDOUS MATERIALS PROGRAMS			
Policy	Document Owner:	Approved By:	Revision No.:
•			1

June 30, 2009

*Attach additional pages as necessary

1. Name and address of Stationary Source:

Tesoro Golden Eagle Refinery 150 Solano Way Martinez, CA 94553

- 2. Contact name and telephone number (should CCHS have questions):
 - Alan Savage at (925) 335-3490 or Sabiha Gokcen at (925) 370-3620.
- 3. Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)):
- An updated Safety Plan was submitted to Contra Costa Health Services on June 22, 2007. Contra Costa Health Services has completed four audits of the safety programs. The first audit was in September, 2000 on the safety programs. The second audit was in December, 2001 and focused on Inherently Safer Systems and Human Factors. An unannounced inspection occurred in March, 2003. CalARP/ISO audits were conducted in August, 2003, November-December, 2005 and most recently August-October, 2008. All safety program elements required by the ISO have been developed and are implemented.
- 4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)):
- The original Safety Plan for this facility was filed with Contra Costa Health Services on January 14, 2000. An amended plan, updated to reflect CCHS recommendations and ownership change, was filed on November 30, 2000. A Human Factors Amendment was submitted on January 15, 2001. A Power Disruption Plan was submitted, per Board of Supervisor request, on June 1, 2001. An amended Safety Plan, updated to reflect ownership change was submitted on June 17, 2002.
- The Safety Plan for this facility will be updated whenever changes at the facility warrant an update or every three years from June 17, 2002. An updated Safety Plan will be submitted this year along with an updated RMP. In addition, the accident history along with other information is updated every year on June 30. Most recently, updated Safety Plan was submitted to Contra Costa Health Services on June 22, 2007.
- 5. List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHS Office, 4333 Pacheco Boulevard, Martinez library
- 6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section

July 1		TY ORDINANCE ANNUA	
CONTRACOSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Document No.:	Date Effective:	Page: B-14 of 18
Policy	Document Owner:	Approved By:	Revision No.:

450-8.016(E)(1) for all major chemical accidents or releases occurring between the last accident history report submittal (January 15) and the annual performance review and evaluation submittal (June 30)):

There have been no accidents meeting the major chemical accident or release criteria during this reporting period.

7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)):

Status of Root Cause Analysis Recommendations:

All investigation recommendations from root cause analyses submitted to CCHS are closed except as noted below.

For the March 24, 2006 #2HDS fire investigation, one recommendation remains open. It is a long-term recommendation updating the P&IDs to include metallurgy on the P&IDs.

8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)):

"CCHS Information": CCHS completed an audit on September 15, 2000, December, 2001, August, 2003, November/December, 2005 and August-October, 2008. There are no RCA or Incident Investigations that have been conducted by the Department.

Facility status of audit recommendations: All recommendations from CCHS audits prior to 2008 are closed. For the 2008 audit, there are 73 recommendations total in the audit. 25 of those recommendations are closed, which is 34% of the recommendations. The status of the remaining 48 recommendations was included in the response to CCHS submitted on 5/4/09. Please refer to that submittal.

9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)):

Golden Eagle is submitting a list of the Inherently Safer Systems (ISS) that meet the criteria for Inherent or Passive levels only and that were completed within the last year (see attached).

10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)):

"CCHS Information": none

11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)):

	Title: INDUSTRIAL SAFETY ORDINANCE ANNUAL PERFORMANCE REVIEW AND EVALUATION		
CONTRACOSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Document No.:	Date Effective:	Page: B-15 of 18
Policy	Document Owner:	Approved By:	Revision No.:

"CCHS Information": No penalties have been assessed against any facility.

12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)):

"CCHS Information": CalARP program fees for these eight facilities are \$420,408.42. The Risk Management Chapter of the Industrial Safety Ordinance fees are \$524,243.94.

13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)):

"CCHS Information": 4400 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.

14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)):

This facility has not received any comments to date regarding the effectiveness of the local program.

15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)):

Chapter 450-8 improves industrial safety by expanding the safety programs to all units in the refinery. In addition, the timeframe is shorter to implement recommendations generated from the Process Hazard Analysis (PHA) safety program than state or federal law. This has resulted in a faster implementation of these recommendations.

Chapter 450-8 also includes requirements for inherently safer systems as part of implementing PHA recommendations and new construction. This facility has developed an aggressive approach to implementing inherently safer systems in these areas.

<u>Chapter 450-8 has requirements to perform root cause analyses on any major chemical accidents or releases (MCAR). This facility has applied that rigorous methodology to investigate any MCARs that have occurred since January, 1999.</u>

Chapter 450-8 requires a human factors program. This facility has developed a comprehensive human factors program and is in the process of implementing the program.

16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not

	Title: INDUSTRIAL SAFETY ORDINANCE ANNUAL PERFORMANCE REVIEW AND EVALUATION		
CONTRACOSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Document No.:	Date Effective:	Page: B-16 of 18
Policy	Document Owner:	Approved By:	Revision No.:

subject to CalARP regulations; recommendations from RCAs) that significantly decrease the severity or likelihood of accidental releases.

This question was broadly answered under question 15 above. Some examples of changes that have been made due to implementation of the ordinance are as follows. There are some units that were not covered by RMP, CalARP or PSM. Those units are now subject to the same safety programs as the units covered by RMP, CalARP and PSM. They have had PHAs performed on them according to the timeline specified in the ISO and the PHA recommendations have been resolved on the timeline specified in the ISO. A list of inherently safer systems as required by the ISO for PHA recommendations and new construction is attached to this filing as mentioned in the response to question 9. With respect to Compliance Audits, there was a compliance audit performed in June, 2006 in addition to the CCHS audits mentioned above. All audit findings are being actively resolved. Root Cause Analysis findings and recommendations for MCARs are listed in the response under question 6.

17. Summarize the emergency response activities conducted at the source (e.g., CWS or CAN activation) in response to major chemical accidents or releases:

Please refer to #6 which has the CWS classifications for the major chemical accidents and releases as well as any information regarding emergency responses by agency personnel.

INDUSTRIAL SAFETY ORDINANCE ANNUAL PERFORMANCE REVIEW AND EVALUATION	Date Effective: Page: B-17 of 18	Approved By: Revision No.:
Title: INDUSTRIAL SAI	Document No.:	Document Owner:
	CONTRA COSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Policy

Description	A passive level of risk reduction was implemented through equipment design features which reduce the frequency of the hazard.	An inherent level of risk reduction was implemented through the elimination of equipment.	An inherent level of risk reduction was implemented through the elimination equipment.	A passive level of risk reduction was implemented through equipment design features which reduce the frequency of the hazard.	A passive level of risk reduction was implemented through design features which reduce the frequency of the hazard.	A passive level of risk reduction was implemented through equipment design features which reduce the frequency of the hazard.	A passive level of risk reduction was implemented through equipment design features which reduce the frequency of the hazard.	A passive level of risk reduction was implemented through equipment design features which reduce the frequency of the hazard.	An inherent level of risk reduction was implemented through the elimination of equipment.
Implementation Basis (PHA or Project)	РНА	РНА	РНА	РНА	РНА	РНА	РНА	РНА	РНА
Level of Risk Reduction (Inherent or Passive)	Passive	Inherent	Inherent	Passive	Passive	Passive	Passive	Passive	Inherent
ltem	A009-2005-004	A015-2002-143	A015-2002-149	A026-2006-ISS-01	A045-2007-002	A054B-2005-010-S	A054B-2005-031-S	A054N-2004-129	A060-2007-003

	Title:		
	INDUSTRIAL SAFET	INDUSTRIAL SAFETY ORDINANCE ANNUAL PERFORMANCE	L PERFORMANCE
	RE	REVIEW AND EVALUATION	Z
CONTRA COSTA HEALTH SERVICES HAZARDOUS MATERIALS PROGRAMS	Document No.:	Date Effective:	Page: B-18 of 18
Policy	Document Owner:	Approved By:	Revision No.:

Implementation Basis (PHA or Project)	A passive level of risk reduction was implemented through equipment design features which reduce the frequency of the hazard.	PHA A passive level of risk reduction was implemented through equipment design features which reduce the frequency of the hazard.
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Level of Risk Reduction (Inherent or Passive)	Passive	Passive
Item	A073-2004-ISS-04	A082-2006-360

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