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Welcome to the *Hotel California*
Such a Lovely Place...



Such a Toxic Gas



Incident Summary

- February 13, 2012
- Mixture of cleaning products
- 30 employees taken to hospitals
- 210 guests evacuated

Media Coverage



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Posted: 1:39 p.m. Monday, Feb. 13, 2012

Hazmat spill at Monterey hotel sends 30 to hospital

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KTVU.com and wires

MONTEREY, Calif. — A Monterey hotel employee who accidentally mixed together two chemicals caused a hazardous materials incident Monday morning that sent 30 people to the hospital and prompted the evacuation of hundreds of guests, a city spokeswoman said.

At about 9:15 a.m., the Monterey Fire Department received a call reporting a hazardous materials incident in the basement of the Portola Hotel, located at 2 Portola Plaza, Monterey city spokeswoman Anne McGrath said.

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[Hotel reopens after chlorine-like gas leak](#)

The Portola Hotel and Spa has re-opened following the clean-up of a hazardous material spill that forced the evacuation of hotel guests and employees early this morning. A gas similar to chlorine gas was released when an employee accidentally mixed bleach and acid in the laundry room of the hotel.

30 people were transported to area hospitals for treatment of respiratory symptoms: 11 to Community Hospital of the Monterey Peninsula, 14 to Salinas Valley Memorial and 5 to Natividad Hospital. All of the injured were employees of the hotel. One guest did ask to be checked because of concerns about his health prior to traveling but was not hospitalized.

Monterey Fire responded to the scene at 9:15 this morning and ordered an evacuation of the guests and employees of the hotel, and employees at the adjacent Monterey Conference Center. No conferences were taking place at the time of the incident. 210 guests were evacuated.



Such a Toxic Gas



- Chlorine gas
 - Irritate and burn the skin, eyes, nose, throat and lungs
 - Coughing
 - Difficulty breathing
 - Vomiting / Nausea
 - Chest pain
 - Excess fluid in lungs
 - RADS
- Fluorosilicic Acid (FSA)
 - Irritate and burn the skin, eyes, nose, throat, lungs causing nosebleeds
 - Coughing
 - Difficulty breathing
 - Vomiting / Nausea
 - Fluorosis
 - Wheezing
 - Stomach pain
 - Weakness
 - Convulsions and death

Such a Toxic Gas

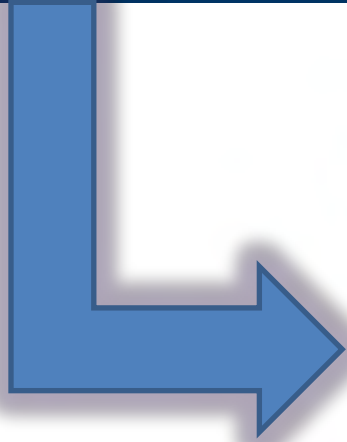


- Hydrofluoric acid (<1%)

“Effects may be delayed so treatment should be given even if exposure is suspected.”



Office of Emergency Services
County of Monterey



So, why investigate?



Incident Timeline

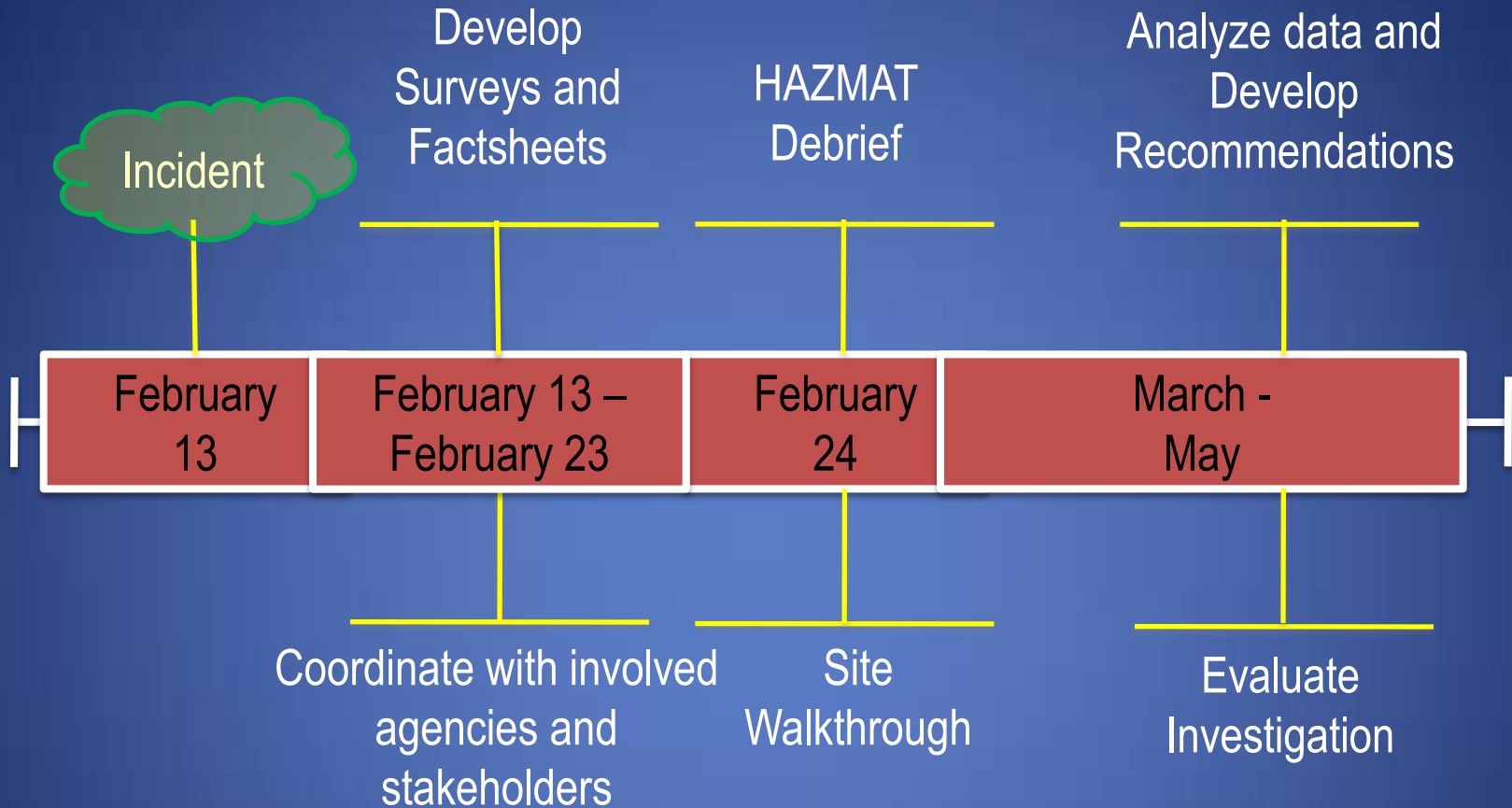
Incident	09:16
Laundry area isolation & evacuation	09:20
HAZMAT and First responder arrival	09:30
Entire Hotel Evacuated	10:00
Container secured	13:00
No CI detected in laundry room or upper floors	14:30
All clear from Monterey County HAZMAT	15:00

Investigation Objectives

- Identify health effects from exposure
- Analyze contributing factors
- Develop recommendations
- Evaluate methods of investigation

Methods of Initial Investigation

- Hazardous Materials Team incident debrief
- Walkthrough of hotel
- Interviews of exposed individuals
- Manager interviews



February 20- April 24: Telephone and in-person interviews conducted

Fire Department Hazmat Debrief







Site Walkthrough

- Opening conference
- Site walkthrough
- Interview of employees and managers





Elevator

Laundry











Chemical Levels

Solder Brine	-1 back up
Bulkier C	-3 back up
Deionized	-3 back up
Ammonium	-4 back up
Turbo Boost	-1 back up
Fluoride	-1 back up
Chem NTS	-22 Over -40

UNDERSTANDING MATERIAL SAFETY DATA SHEETS (MSDS)

Material Safety Data Sheets



CAUTION
KEEP ELECTRIC
PANEL AREA CLEAR

UNDERSTANDING MATERIAL SAFETY

Material Safety Data Sheet

SECTION I - CHEMICAL IDENTIFICATION

SECTION II - HAZARDOUS INGREDIENTS

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Section I - CHEMICAL IDENTIFICATION

This section identifies the chemical described in the MSDS. The manufacturer's name, address and emergency telephone number are provided should you need further assistance. The only time identity information will not be provided is if it's a trade secret, but full hazard protection data must be supplied.



Section II - HAZARDOUS INGREDIENTS

Outlined here are the hazardous ingredients that make up the chemical. For each ingredient you'll find The Chemical Abstract Service Number (CAS No.) which identifies the specific chemical as recognized by the American Chemical Society, and the Threshold Limit Value (TLV) and/or Permissible Exposure Limit (PEL) to indicate airborne concentration levels of the ingredients that most persons can safely be exposed to in an 8 hour period.



Section III - PHYSICAL/CHEMICAL CHARACTERISTICS

It is important to note whether or not the data given here deviates from what is normally found in the workplace. Be aware that the chemical's degree of hazard may vary according to your work environment. For example, a chemical in liquid form at room temperature may evaporate quickly in a hot environment, increasing the risk of fire or explosion.



Section IV - FIRE/EXPLOSION HAZARD DATA

This section indicates the chemical's potential to catch fire or explode. This information should be used to ensure that proper firefighting equipment is close at hand. The information listed includes: the lowest temperature at which the chemical can release enough flammable vapor to ignite (Flash Point), flammability limits, proper types of extinguishing media and special firefighting procedures.



Environmental conditions (unstable) chemicals to break materials and conditions to v

SECTION V - REACTIVITY

SECTION VI - HEALTH HAZARD

SECTION VII - SPILL AND LEAK

SECTION VIII - SPECIAL PROTECTION

SECTION IX - SPECIAL

RIAL SAFETY DATA SHEETS (MSDS)

Section V - REACTIVITY DATA

Environmental conditions such as temperature changes, direct sunlight and exposure to air or water may cause reactive (unstable) chemicals to breakdown (**decompose**) or to combine (**polymerize**), producing toxic or flammable substances. Incompatible materials and conditions to avoid are listed to help prevent a reaction. Consult this section when choosing storage procedures.



Section VI - HEALTH HAZARD DATA

This section explains how the chemical enters the body and the immediate (**Acute**) and long-term (**Chronic**) signs and symptoms of overexposure. Pre-existing medical conditions that may be aggravated through exposure are noted. Emergency and first aid procedures are listed, but it is suggested that all personnel be trained in preventive measures.



Section VII - SPILL AND LEAK PROCEDURES

Discussed in this section are the procedures to follow upon accidental release or spill, including the proper course of corrective action to take. Pay special attention to the directions for safe handling and proper disposal of the chemical.



Section VIII - SPECIAL PROTECTION INFORMATION

Preventive procedures are contained in this section. Included is a listing of the specific respiratory equipment needed, ventilation requirements and proper eye and handling protection. It is important to select the correct degree of protection for the job; pay attention to protective device materials and do not substitute. If in doubt, consult your Supervisor.



Section IX - SPECIAL PRECAUTIONS

This section describes any further storage, handling, health, or safety precautions not discussed in any previous section of the MSDS. For example, safety signs that should be posted near the chemical area may be listed. Notify management if the MSDS conflicts with plant procedures and refer any questions to safety personnel.













Pacific St

Indian Summer

Lighthouse Ave

Lighthouse Ave

Pacific St

Custom House Plaza

Spa On the Plaza

Monterey Conference Center

Venture Gallery

Pino's Italian Cafe

Double A Hotel Monterey

Chase ATM

Monterey

Del Monte Ave

Preliminary Results

- Relationship to Hotel
 - 30 employees went to hospital
- 17 interviewed
- 27 medical records abstracted

Descriptive Statistics

Variable	Interviewed N=17	Med. Record Review N=27
	N(%)	N(%)
Sex/Age		
Male	2 (8)	5 (19)
Female	15 (92)	22 (82)
Race/Ethnicity/Work		
Hispanic	15 (88)	26 (93)
White, non-Hispanic	2 (12)	1 (4)
Unknown	-	1 (4)
Managers	4 (31)	1 (4)
Workers	13 (76)	26 (96)

Descriptive Statistics

Variable	Interviewed (hospital) N=13
N(%)	
Contact with skin or eyes	
Yes	1 (7)
No	7 (54)
Not sure	5 (38)
Location	
1 st floor (corridor)	7 (54)
1 st floor (kitchen)	2 (15)
4 th floor, 5 th floor, 6 th floor	3 (23)
Driving to work	1 (7)

Reported Routes of Evacuation	N(%)
Stairs	5 (38)
Elevator	5 (38)
Nearest exit door	2 (15)
Don't Know/Refuse to answer	1 (8)

Reported Symptoms After the Accident	N(%)
Irritation, pain, or burning eyes	7 (54)
Burning nose, throat or lungs	6 (46)
Fatigue	5 (38)
Dizziness or lightheadedness	5 (38)
Nausea	5 (38)
Chest tightness or pain	5 (38)
Nausea	5 (38)

Reported Symptoms After the Accident	N(%)
Vomiting	4 (30)
Cough (chest congestion, increased phlegm)	4 (30)
Difficulty breathing (feeling out of breath)	4 (30)
Taste of chemicals in your mouth	3 (30)
Runny nose	2 (15)
Wheezing in your chest	2 (15)

Case Comments

- “They should not have told us to go back to work...”
 - Housekeeping staff
- “The safety trainings are presented in English and then translated at the end...”
 - Housekeeping staff

Recommendations

- Fluorosilicic Acid



- Drum Caps

- Labels



Recommendations

- Safety Signs / Trainings
- Evacuation Procedure
- Ventilation System



Investigation Challenges

- Language a barrier (slowed process)
- Management not cooperative
- Employees afraid
- Coordination with Cal-OSHA
- Survey tool needed fine tuning

Next Steps

- Survey data analysis
- Medical chart abstraction and analysis
- Develop recommendations
- Share findings
 - Hotel Management and Workers
 - Representatives of Monterey County
 - Cal/OSHA

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 - Airport Fire
 - HAZMAT Team
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