Crude Oil / Hazmat By Rail Operational Response Guide 2015

Office Of Emergency Services

COUNTY OF Placer

COUNTY OF NEVADA CALIFORNIA

FOR OFFICIAL USE ONLY

Dedication

This guidebook is dedicated to the 47 men, women and children who lost their lives on July 6, 2013, in Lac Mégantic, Canada

Acknowledgment

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The following agencies have contributed to this guidebook:

Placer County Office of Emergency Services
California Specialized Training Institute
Town of Truckee
Truckee Police Department
Truckee Fire Protection District
Cal Fire
Placer County Sheriff's Department
American Red Cross
Placer County Water Agency
Auburn City Police Department
South Placer Fire Protection District
American Medical Response
Sutter Roseville Medical Center
Rocklin Police and Fire Departments
Roseville Fire Department
California Department of Fish and Wildlife (OSPR)
Nevada County Office of Emergency Services
California Office of Emergency Services
Alta Fire Department
Placer County Fire Department
Placer and Nevada County PIO's
Colfax City Fire Department
California Highway Patrol
Kinder Morgan
Placer Hills Fire Protection District
Loomis Fire Department
National Guard 95th Civil Support Team
Lincoln Fire Department
Sutter – Auburn Faith Hospital
Union Pacific Railroad
Placer County GIS Department
Placer County Environmental Health
North Tahoe Fire
EMC² Emergency Management Consultants

Semper Paratus

Crude Oil / Hazmat By Rail Operational Plan
Placer and Nevada Counties
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Emergency Response Guide
Modified Guide 128 / Crude Oil

NOTIFICATION

- UP Railroad – UP Response Management Communication Center (RMCC)
  **** (888)-877-7267 ****
- CalOES State Warning Center – (800) 852-7550

FIRE OR EXPLOSION

- Heavy Crude Oil may not ignite readily.
- Sweet Crude Oil may be highly flammable.
- Containers may explode when heated.
- Ruptured tank cars may move a great distance.

HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Fire may produce irritating, corrosive and/or toxic gases. (See SDS / Appendix 4.2)

PUBLIC SAFETY

- As an immediate precautionary measure, isolate spill or leak for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personal away – Initiate Site Access Control
- Stay upwind.
- Many gases / vapors are heavier than air and will spread along ground and collect in low or confined areas (sewers, basement, tanks) – control ignition sources.
- Keep out of low areas.

PROTECTIVE CLOTHING

- Wear full turnouts with positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is recommended by the manufacture; HOWEVER, it may provide limited thermal protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 500 meters (1/3 Mile).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1000 Meters (.6 miles) in all directions, also consider evacuation 1000 meters (.6 miles) in all directions.
- Use mass notification systems to warn public.
- Refer to Section 3 in this guidebook for mapping assistance.
- Refer to Appendix 4.1 for a list of evacuation centers - **** Evacuation centers may need time to activate and staff **.**

Emergency Response Guide
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1.1 Introduction

The production of crude oil in North America has increased by over 500% in the last 5 years – the majority of this product is being transported by rail. While the public has enjoyed low gas prices at the pump, First Responders and Emergency Managers are scrambling to address the increased volume over rail. Major derailments in United States and Canada are well documented; these incidents were used as case studies to enhance the credibility of this operational guide.

Incidents that involved fire and explosions almost exclusively involve crude oil from the Bakken region of North Dakota. Bakken crude is lighter and sweeter (less sulfur) than the typical crude seen in Canada, Texas, and the Middle East. Bakken crude has a lower flash point and is considered highly flammable. In addition to the chemical and physical hazards of the product, the tank cars used to transport this product are poorly designed and have a high rate of failure when derailed.

Placer and portions of Nevada County are situated in a rail corridor that connects the Sierra Nevada Mountains to the San Francisco Bay area. While crude oil is not currently traveling via this route, many believe that when the refineries in the Bay Area are retrofitted to accept Bakken crude, the Sierra Nevada route will be used to bring crude to Bay Area refineries. Never the less, a variety of hazardous materials travel this route and comprise 7% of all commodities being transported by the railroad. Crude oil is currently being transported into Placer County via the Northern route through the communities of Sheridan, Lincoln and Roseville.

Cooperation from the Railroad officials including Union Pacific (UP) and Burlington Northern Santa Fe (BNSF) is essential for any coordinated response plan. Through a Unified Command, the railroad will bring a wealth of specialized equipment and personnel through on-call staff and regional contractors. These resources take time to assemble and respond. First Responders will be on scene for a period of time and charged with scene stabilization and the protection of the public. This operational guide will cover the first two operational periods while more definitive resources are being mobilized.

Crude oil incidents will continue to occur. Prevention, mitigation, and preparation efforts through all levels of government continue to work towards a safer solution. The enhanced awareness, response capabilities, interagency coordination, and training of our First Responders and Emergency Managers will ensure a more desirable outcome if a crude oil incident were to happen in either Placer or Nevada counties.

1.2 Assumptions

The following assumption are made when this operational guide is activated:

- ❑ While this guide emphasizes an incident with crude oil, the checklists were constructed with best practices that can accommodate a wide range of hazardous materials.

- ❑ This plan emphasizes the three priorities in any hazardous material incident:
  - The safety of the first responder and the affected public;
  - The preservation of the environment;
  - To minimize the loss of personal property.

- ❑ The Incident Commander will operate under a Unified Command. (Fire / Law / Rail)

- ❑ This plan shall conform to NIMS/SEMS and utilize best practices within the Incident Command System (ICS). Responders operating under this guide should have a solid understanding of the Incident Command System.

- ❑ This is a multi-jurisdictional / multi-disciplinary plan to meet the needs of the on scene Incident Commanders and local Emergency Managers.

- ❑ This operational guide is designed for the first two operational periods (24-48 hrs.); therefore, it only covers the incipient stage of Recovery.

- ❑ Operational priorities are checklist driven. Detailed descriptions of operations and staff positions can be found in the Emergency Operations Plan (EOP) or the Field Operations Guide (FOG).

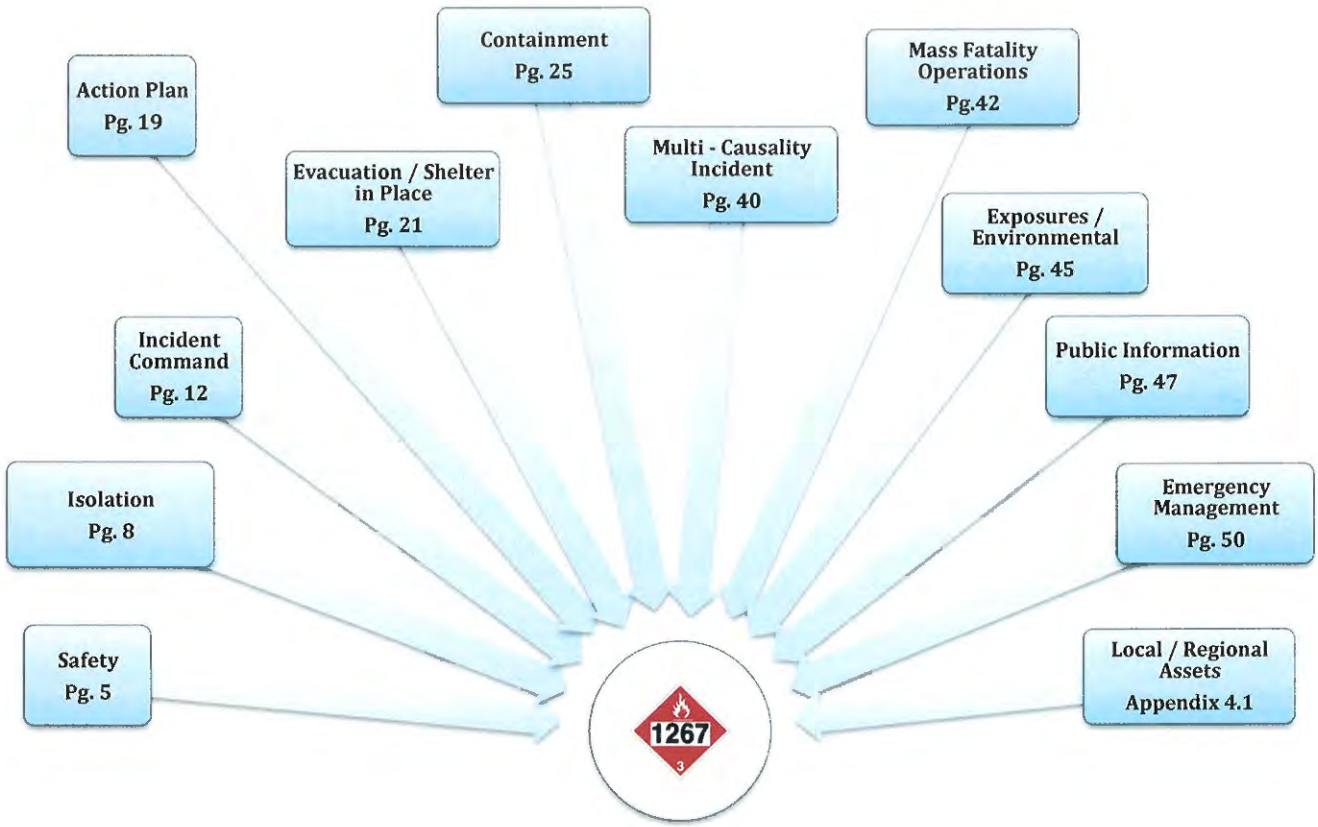
- ❑ The Incident Commander(s) should be well versed in the command of hazardous material incidents.

- ❑ This plan does not supersede field operations and emergency management techniques set forth in local jurisdictional plans.

- ❑ This document is a guideline and could not be written to accommodate every perceivable scenario. A common sense, educated approach will and should be used if the information needed is not present in this guide.

1.3 Profile of an Indicent / Quick Reference Guide

Railroad incidents involving hazardous materials are inherently dangerous and can be complex to mitigate. Often it is helpful to delegate various functions to specific first responders to facilitate rapid mitigation. Although it is very difficult to perdict the outcome or the potential issues an incident commander may face, history has shown that preparation for these potential issues is prudent.



Profile of an Incident – Oil By Rail

Mitigation through the Incident Command System is the only option for success. Incident Commanders should use every tool available including this Operation Guide. For guidelines on specific components, the page number is listed within the diagram above.

1.4 Agencies Roles and Responsibilities

- ❑ Local Government / First Responders (Law/Fire)
  - Incident Command (Unified)
  - Type III Incident Management Team staffing
  - Incident Stabilization
  - Protective Measures (Evacuation / Shelter in Place)
  - Emergency Medical Services
- ❑ Union Pacific / Burlington Northern Santa Fe Railroad
  - Incident Command (Unified)
  - Subject matter experts
  - HazMat team resources – incident stabilization
  - Local and regional assets
  - Responsible Party
- ❑ County Office of Emergency Services
  - Emergency Management
  - Disaster Proclamation
  - Recovery Operations
- ❑ County Department of Health and Human Services
  - Shelter Operations
- ❑ County Environmental Health
  - Public Health Liaison
  - Support on scene Hazmat Teams
  - Liaison to State and Federal Environmental agencies
  - Monitor long term cleanup and remediation processes
- ❑ California Office of Emergency Services
  - Regional mutual aid resource ordering
  - Type I and II Incident Management Team Staffing
  - Notification – Spill Request
- ❑ California Department of Fish and Wildlife, Office of Spill Prevention and Response (OSPR)
  - Management of site cleanup and mitigation
  - Incident Command (Unified)
  - Natural resource damage assessment
  - Identify potential wildlife impacts

Section 2.0

Operations / Emergency Management

2.1 Incident Strategies / Priorities

2.1.1 General Incident Safety

- ❑ Approach Incident from the upwind, upgrade, and up stream.
- ❑ Use DOT ERG (Guide 128 – Page i) recommendations for establishing safe distances and safety information.
- ❑ On Fire? Consider a blast radius of .6 miles (1km – historical reference).
- ❑ Gather intelligence and conduct a safe assessment before inspecting the scene – understand the problem:
    - Train Consist / Waybill
        - Located in the lead locomotive or with train crew
        - **Call UP Response Management Communication Center (888)-877-7267**
        - Call Cal OES State Warning Center at (800) 852-7550
        - Contact CHEMTREC at (800) 424-9300
    - Interview Conductor and Engineer if available.
    - Observe placards and type of containers/railcars.
    - Reference material on scene.
    - Use monitoring devices to detect hazardous materials.
    - One product or multiple commodities?
    - Use your senses.
- ❑ Position vehicle away from the incident / use binoculars.
- ❑ Establish a dedicated Safety Officer.
- ❑ Initiate a Site Safety Plan / Respiratory Protection Plan.
- ❑ Verify all information / intelligence.
- ❑ Consider all Modes of Operation:
    - Offensive
    - Defensive
    - Non-intervention
- ❑ Eliminate any ignition sources.
- ❑ Consider current and expected weather.
- ❑ Consider worst-case scenario.
- ❑ Prepare for First Responder rescue.
- ❑ Maintain two (2) in, two (2) out – especially in Immediately Dangerous to Life and Health (IDLH) conditions.

Site Safety Plan

- ❑ Designate an on-scene dedicated Safety Officer.
- ❑ Designate an Assistant Safety Officer – HazMat.
- ❑ Complete Site Safety Plan (Appendix 4.3).

Accountability of Incident Personnel

- ❑ Establish an accountability system:
  - Placer County Firefighter Accountability Tags System (FATS)
  - Agency Specific System
  - "T" Card System

Railroad / Railcar Safety (Can be used at a safety briefing)

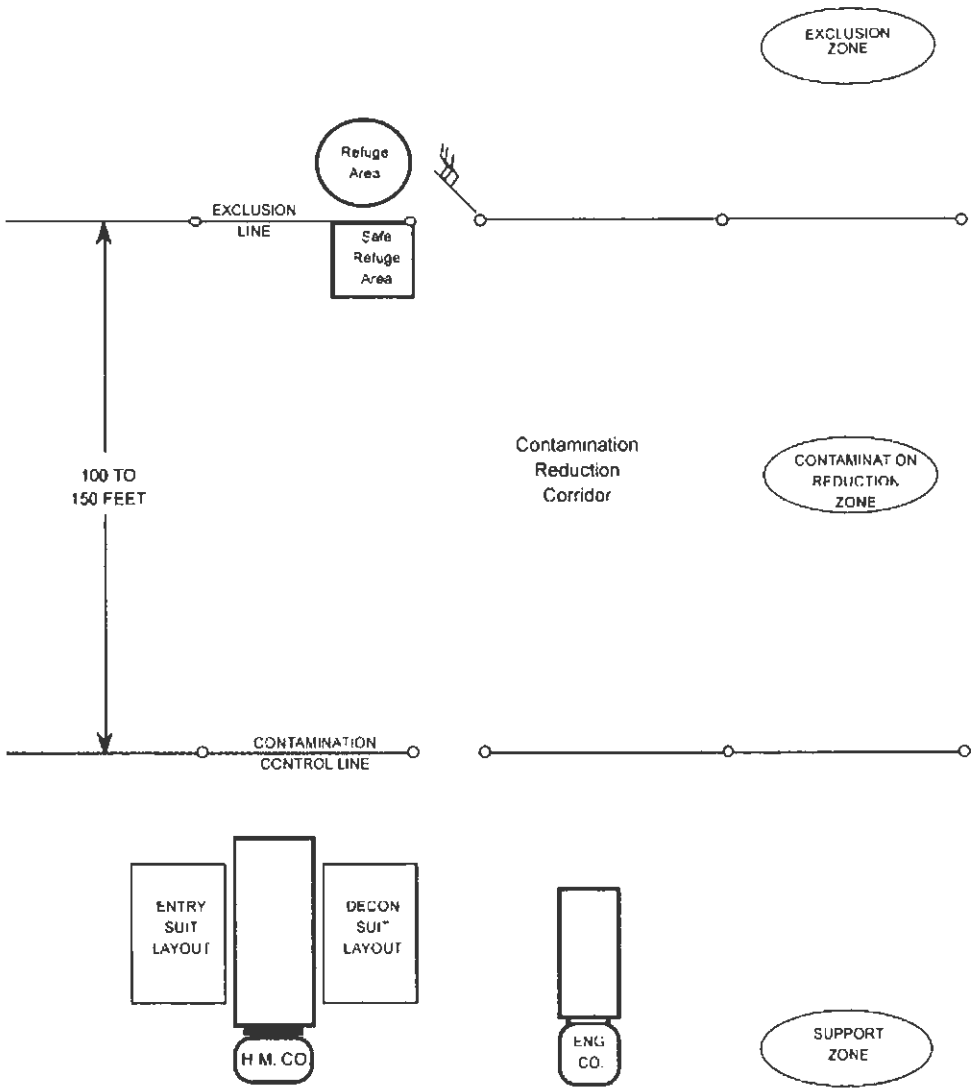
- ❑ Expect movement on any track, in any direction, at any time. The only exception to constant movement is when a track has been "blue flagged," similar to "lock out-tag out."
- ❑ Avoid walking between rails.
- ❑ Make sure blue flags are in place and switches are locked prior to climbing on equipment in a rail yard.
- ❑ Establish spotters up and down the track (1.5 miles min).
- ❑ Look both directions before stepping across or getting close to tracks.
- ❑ Keep at least 30 feet from passing trains and equipment.
- ❑ Never place anything on the track unless it is required by a specific task.
- ❑ Never throw anything off of a tank car.
- ❑ Always leave 25 feet between you and any standing rail car when crossing tracks.
- ❑ Always face the direction from which a train is traveling.
- ❑ Never walk or set equipment between opposing rails on any track.
- ❑ Tripping hazards are common in rail environments. Never put your foot where your eyes haven't been.
- ❑ Correct personal protective equipment must be used (Level A,B,C,D) – refer to the site safety plan (Appendix 4.3).
- ❑ Be mindful of possible electrical hazards associated with locomotives.
- ❑ Keep a safe distance from rail equipment. At least thirty feet from passing equipment, and at least twenty-five feet from standing equipment.
- ❑ Run hose lines under rails. Dig out the ballast from between crossties, then replace once any fires have been extinguished.
- ❑ Ensure standing equipment (tank cars) is properly tied down by using either handbrakes, or, if inoperable, by chocking the wheels.
- ❑ Positively identify contents of railcars prior to approaching.
- ❑ Tank Car Safety:
  - Identify the material in the tank car
  - Understand how each valve, relief devices, and other switches and devices works before activating
  - Make sure the tank car is secure – lock out / tag out / blue flag
  - Use only Fire Department ladders to access the man way
  - Use non sparking tools if available
  - Never cross a tank car at the coupler

Activity Log:

Time	Notable Events

2.1.2 Isolation / Deny Entry

- ❑ Control all access / entry points to the incident
- ❑ Control Perimeter between all entry points
  - Determine size with Emergency Response Guide (ERG) – pg. i
    - Fire - .6 miles / 1 Km
- ❑ Control access inside perimeter (including responders)
- ❑ Establish Zones
  - Exclusion / Hot Zone
  - Contamination Reduction / Warm Zone
  - Support / Cold Zone
- ❑ Establish a traffic pattern



Activity Log:

Time	Notable Events

2.1.2 Notifications

- ❑ Information Needed:
  - Name / Agency of person reporting
  - Location of Hazmat release
  - Nature of problem (spill, fire, derailment)
  - Quantity released – Reporting Quantity for crude oil is 42 gallons
  - Potential Hazards and Exposures
  - Waterway impacted to include storm drains

- ❑ If the release of oil is on land and is not discharged or threatening to discharge into State Waters; AND (a) does not cause harm or threaten to cause harm to the public health and safety, the environment, or property; AND (b) is under 42 gallons, **then no notification to the Cal OES State Warning Center is required.**

- ❑ **Minimum Mandatory Notifications**
  - **Cal OES - State Warning Center (800) 852-7550 or (916) 845-8911**
    - **Obtain a Control Number**
      - **_____ (Insert control number)**

- ❑ CalOES, if notified, will assist in the notification of the following agencies:
  - **NOTE: This does not alleviate the notifications requirements of the responsibility party or any other notifications mandated by the local jurisdiction.**
    - Department of Fish and Wildlife – Office of Spill Prevention and Response (OSPR)
    - Regional Water Quality Control Board
    - Cal Environmental Protection Agency
    - State Lands Commission
    - Division of Oil, Gas, and Geothermal Resources
    - Any Appropriate Local Administrating Agency
  - Refer to the Site Safety Plan (Appendix 4.3) for additional information on notifications.

- ❑ Local Notifications
  - Placer County Public Safety Answering Points (PSAP)
    - Auburn (West Slope)
    - Truckee (East Slope)
    - Cal Fire - Grass Valley
    - Roseville
    - Rocklin

        - Lincoln
    - Sutter Roseville Medical Center / Disaster Control Facility
    - California Highway Patrol
    - Office of Emergency Services (via local PSAP)
        - Placer
        - Nevada

- ❑ Federal Notification
    - National Response Center (NRC) 800-424-8802
    - Federal Bureau of Investigation (terrorism) 916-481-9110

- ❑ Resource Request (Appendix 4.1)
        - Local Assets
        - Regional Assets

- ❑ Report on Conditions Notifications (Elected officials and administrative staff)
    - Conditions
    - Actions
    - Needs
    - Potential Exposures
    - Mode of Operation (Offensive / Defensive / Non Intervention)

Activity Log:

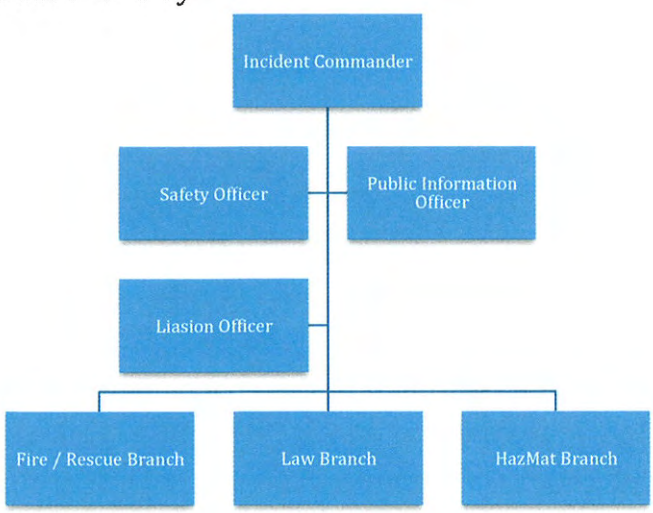
Time	Notable Events

2.1.4 Command

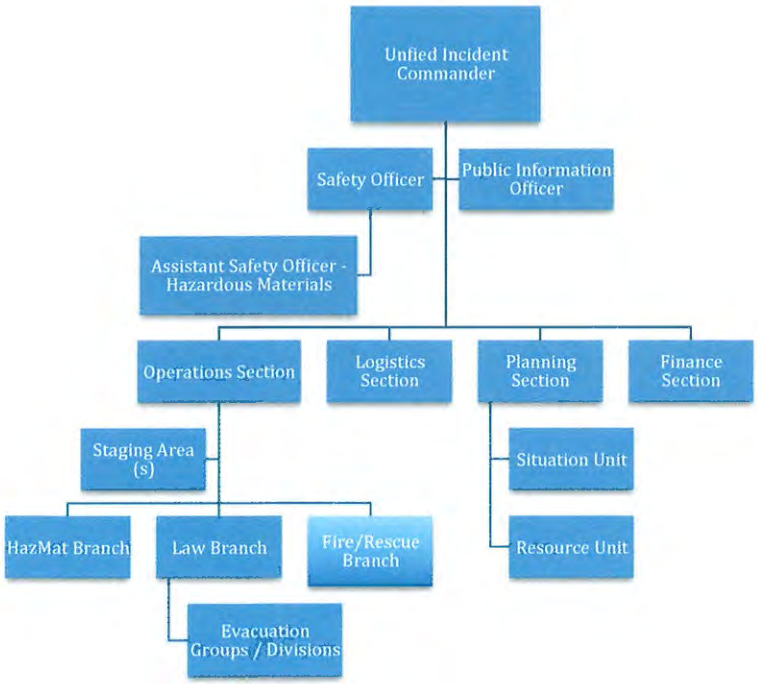
- ❑ Establish a Unified Command Post.
  - Fire
  - Law
  - Railroad
- ❑ Determine overall strategic goals to protect life, environment, and property.
- ❑ Ensure welfare and safety of incident personnel.
  - Verify an accountability system is in place
  - Ensure appropriate PPE is worn by all responders
  - Establish a two (2) in / two (2) out policy
  - Implement appropriate decontamination procedures
  - Assess scene to determine zones
  - Ensure Medical Unit is established
- ❑ Identify substance and chemical/physical properties
  - Crude oil has varying chemical properties.
    - Use extra caution with Bakken region crude oil.
- ❑ Define and announce mode of operations.
  - Offensive Mode
  - Defensive Mode
  - Non – Intervention Mode
- ❑ Establish a preliminary communications plan and assign tactical frequencies.
- ❑ Initiate victim rescue / extrication if resources allow.
  - Consider victim survivability profile
- ❑ Isolate the area and establish a perimeter.
- ❑ Request County Incident Management Team (if available) or additional overhead positions.
- ❑ Supervise Command and General Staff.
- ❑ Assess incident situation.
  - Confirm local, state, and federal notifications have been made
- ❑ Authorize protective actions.
  - Evacuation
  - Shelter in Place
- ❑ Establish a Staging Area and Manager.
- ❑ Appoint a Command Staff (As Needed).
  - Safety Officer
  - Assistant Safety Officer - HazMat
  - Liaison Officer
  - Public Information Officer
- ❑ Appoint General Staff (As Needed).

- Operations Section Chief
  - Designate Branch Directors
    - HazMat Branch
    - Law Branch
    - Fire / Rescue Branch
    - Multi-Casualty Branch
    - Air Operations Branch
- Planning Section Chief
- Logistics Section Chief
  - Prepare for night or foul weather operations
  - Order Mobile Command Post if Needed (Appendix 4.1)
  - Activate a Medical Unit
- Finance Section Chief

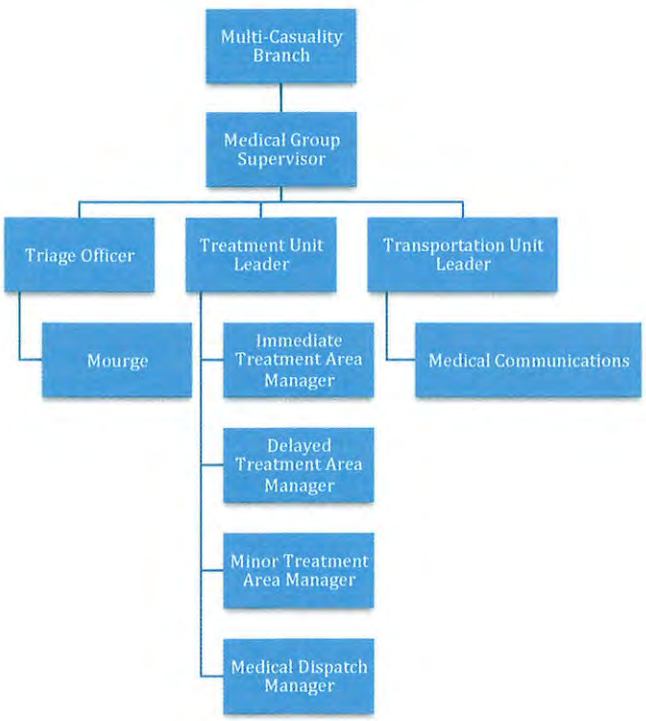
- ❑ Confirm dispatch and arrival times of activated resources.
- ❑ Confirm work assignments.
- ❑ Request Mutual Aid (see Appendix 4.1 for specialized equipment).
- ❑ Prepare / Approve an Incident Action Plan (IAP).
  - Verify that objectives are incorporated and prioritized
- ❑ Request or give periodic progress reports/briefings including external agencies (hospitals / other departments).
- ❑ Authorize release of information to the media.
- ❑ Insure planning meetings are conducted.
- ❑ Work with Emergency Management staff to declare state of emergency according to local, state, federal protocols.
- ❑ Keep CEO / City Managers / Elected Officials informed on incident-related problems and progress.
- ❑ **Initial** Incident Command System:



- ❑ Multi-Division/Group Response Organization:



- ❑ Add Multi-Causality Branch if Needed



❑ Add Air Operations if Needed

Notes:

Time	Notable Events

2.1.5. IDHA - Identification and Hazard Assessment

- ❑ Train Documentation: Consist / Waybill
  - Contact the Conductor or train crew, typically found in the lead locomotive.
  - Union Pacific Railroad – Union Pacific Response Management Communication Center - (888) 877-7267
  - Four parts:
    1. Tonnage Graph: Listing each car in the train by initial and number beginning with the first car and showing each car's numerical position in the train marking all cars containing hazardous materials with a series of capital "H's"

    2. Position in Train Document: Bearing a "Notice of Rail Cars/Units Containing Hazardous Materials," the product's four-digit ID number with car initials and numbers repeated, whether or not the car is loaded (L) or empty (E) and, what the car last contained (Residue).

    3. Train Listing and Hazardous Material Description: Lists again showing car initial and number, its position in the train, name of the shipper and receiver, emergency telephone number, the product's hazard class, proper shipping name, and Standard Transportation Commodity Code (STCC) Number. The STCC structure is a system of assigning specific numbers to a specific article/commodity or a group of articles/commodities when transported by rail.

    4. Special Handling Instructions: Describes emergency handling precautions.

- ❑ CHEMTREC: (800) 424-9300 - can provide valuable information and guidance when limited information is available about the product or incident. Types of information Emergency Service Specialists will request when you call:
  - Caller's name, title & organization
  - Callback number at scene
  - Dispatch center phone number
  - Description of incident and actions taken
  - Type and number of injuries/exposures
  - Material involved, including name of products and trade names
  - Carrier and trailer or car number
  - UN, NA (placard) or STCC number of the products
  - Points of origin and destination

- Names of consignee and shipper
- Type or description and number of containers/packages
- Specific information needed immediately (SDS, medical help, etc.)
- Size of or amount of release
- Location, time, weather at the scene

❑ Software – Hazmat Team

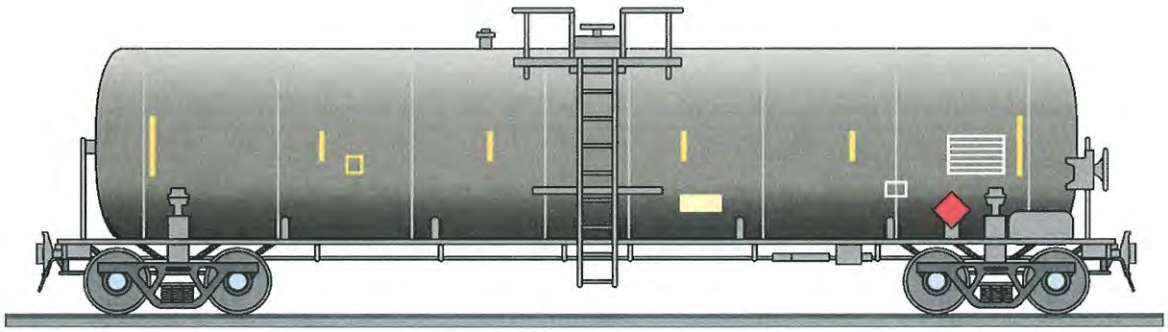
❑ Crude Oil Specifics
- Properties of crude oil can vary significantly by region
- Common varieties include "Light Sweet Crude" and "Heavy Crude"
- Unit Train: Typical way crude oil is transported

- Contact UP Railroad – UP Response Management Communication Center - (888) 877-7267 to ascertain the type of crude being transported:
  - Light Sweet Crude
    - May contain flammable gases including:
      - Butane
      - Pentane
      - Propane
      - Benzene
      - Toluene
      - Ethyl benzene
      - Xylenes
    - May contain inhalation risk from hydrogen sulfide gas.
    - More volatile flash point than heavy crude.
  - Heavy Crude (often from Texas, Canada, Middle East)
    - Likely contains inhalation risk from hydrogen sulfide gas.
    - Typically lower volatility than Light Sweet Crude.
    - May contain flammable gases including:
      - Butane
      - Pentane
      - Propane
      - Benzene
      - Toluene

- Ethyl benzene
- Xylenes

- ❑ SDS for Crude Oil (Appendix 4.2)
- ❑ DOT Emergency Response Guide 128 (Modified) – Pg. i
- ❑ Placard:

- ❑ Tank Car DOT 111
  - 30,000 gallons capacity



- ❑ Technical reference material -Hazmat Team documents and library

Notes:

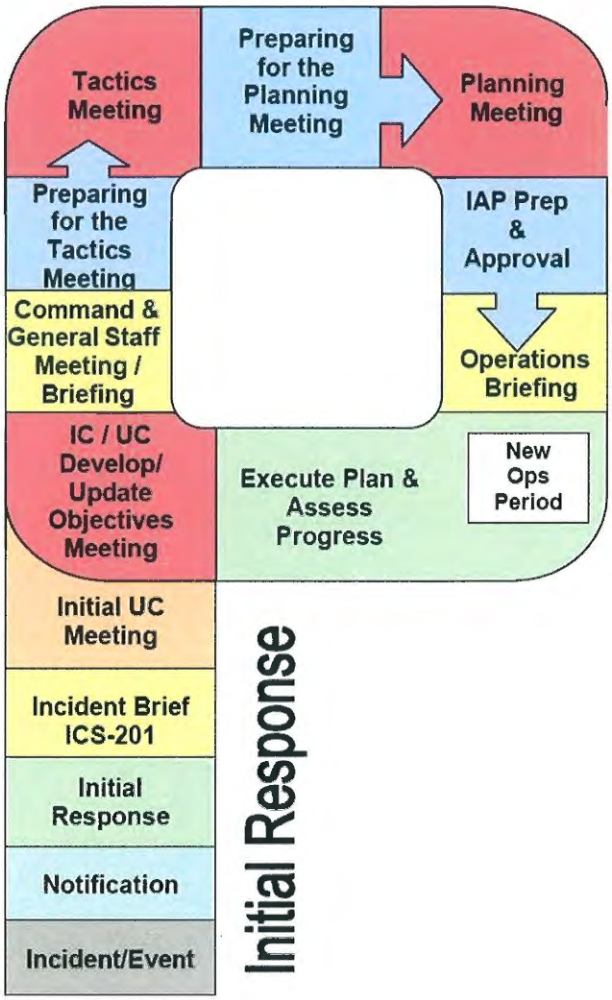
Time	Notable Events

2.1.6. Action Plan

- ❑ Assign a Planning Section Chief.
    - Objective: Create an Incident Action Plan (IAP) that is consistent with mitigation strategies and addressing the overall priorities of a hazardous material incident:
        - Safety
        - Isolation
        - Notifications
        - Command
        - IDHA
        - Action Plan
        - Protective Measures
        - Containment
        - Personal Protective Equipment
        - Decontamination
        - Documentation
        - Disposal

IAP Components: (Appendix 4.5)

- ❑ Incident Commander
    - Incident Briefing (ICS 201)
    - Incident Objectives (ICS 202)
- ❑ Planning Section / Resource Unit
    - Organization Assignment List (ICS 203) or Chart (ICS 207)
    - Assignment List (ICS 204)
- ❑ Planning Section / Situation Unit
    - Maps
    - Intelligence
- ❑ Logistics Section / Communication Unit
    - Incident Radio Communications Plan (ICS 205)
- ❑ Medical Unit
    - Medical Plan (ICS 206)
- ❑ Safety Officer
    - Safety Message Plan (ICS 208)
    - HazMat Site Safety Plan (Appendix 4.3)
- ❑ Operations
    - Operational Planning Worksheet (ICS 215)
- ❑ Consider the Planning "P" as a model for an Oil by Rail incident:



Activity Log:

Time	Notable Events

2.1.7 Protective Measures

- ❑ Protective action considerations:
  - Materials involved
    - Chemical, physical, toxicology, flammable properties
  - Population threatened
    - Who are they and can they leave?
  - Responder resources and capabilities
  - Time of day and expected duration of incident
  - Current and predicted weather
  - Ability to communicate with the public
  - Geographic location

Evacuation - typically used in a fire / explosion scenario

**** Allow time for Shelter Staff to arrived at shelter location****

- ❑ Identify threats to health and safety.
- ❑ Establish a Public Information Officer / Joint Information Center (JIC).
- ❑ Establish Law Enforcement Branch.
  - Establish Evacuation Groups / Divisions
- ❑ Objectives:
  - Identify residents, businesses, public buildings and other areas from which occupants and property may need to be evacuated
  - Locate and identify special needs individuals that require extraordinary care.
  - Provide a timely, safe, orderly evacuation of affected areas
  - Provide prompt information dissemination to the affected areas
  - **Activate local evacuations plans (if available)**
- ❑ Resource Notifications.
  - Identify resources to assist in evacuations
    - Mutual Aid Law Enforcement
    - Local OES Office
    - Public Information Officers
    - Public Works
    - Public Health
    - Local Hospitals and Disaster Control Facilities
    - Red Cross
    - Salvation Army
    - Community Emergency Response Team (CERT)
    - Search and Rescue (SAR)
- ❑ Identify inner perimeter of evacuation area.
  - Checkpoints
  - Road Blocks
  - Road Closures
- ❑ Identify outer perimeter of evacuation area.
  - Checkpoints

- Road Blocks
- Road Closures

- ❑ Identify safe routes of travel.
- ❑ Identify Evacuation Centers (Appendix 4.1).
- ❑ Activate mass notification systems.
  - Auto Dialing systems
    - Everbridge – Placer County
    - Nexile - Truckee
    - Code Red – Nevada County
  - Television
  - Radio
  - Websites
  - Social Media
  - Local Sirens
- ❑ Provide security for evacuated areas.

Shelter In Place (SIP) – typically used in a toxic environment

- ❑ Has enough community outreach been conducted / does the public understand what shelter in place means?
- ❑ Identify threats to health and safety.
- ❑ Establish a Public Information Officer / Joint Information Center (JIC).
- ❑ Objectives:
  - Create a temporary safe refuge area by using the residence or business place
  - Limit travel in the affected area, when the process of evacuation puts the public in harms way.
  - Provide clear information and instruction on the shelter in place process
- ❑ Identify Immediate Danger to Life and Health (IDLH) perimeter of SIP area.
  - Consult with HazMat Technical Reference Unit if available
    - Cameo / Aloha Plume Modeling
  - Checkpoints
  - Road Blocks
  - Road Closures
- ❑ Identify outer perimeter of SIP area.
  - Checkpoints
  - Road Blocks
  - Road Closures
- ❑ Resource Notifications.
  - Identify resources to assist with Shelter in Place Operations
    - Local Office of Emergency Services
    - Public Health
    - Local Hospitals and Disaster Control Facilities
    - Public Information Officer

- ❑ Utilize mass notification systems:
  - Auto Dialing systems
    - Everbridge – Placer County
    - Nexile - Truckee
    - Code Red – Nevada County
  - Television
  - Radio
  - Websites
  - Social Media
  - Local Sirens

Mass Notification Sample Messages (customize to your needs)

- ❑ Evacuation.
  - "This is (agency)_____. A hazardous substance (unknown or) identified as _____ has been spilled/released at _____.
  - Emergency responders have closed off the area and are keeping people out. Please avoid the areas which includes _____.
  - People living or working nearby have been asked to evacuate to _____ as a precaution while emergency responders contain the material. The affected areas include _____. A Red Cross shelter has been set up at _____ to assist those who have been evacuated. Children attending the _____ School have been evacuated and are being cared for at the _____.
  - No injuries have been reported. Additional information will be provided as soon as it is available. You can receive more information by monitoring local radio or television stations, or by visiting the (agency)_____ website at _____."

- ❑ Shelter in Place.
  - "This is (agency)_____. A hazardous substance (unknown or) identified as _____ has been spilled/released at _____.
  - Emergency responders have closed off the area and are keeping people out. Please avoid the area which includes _____.
  - People living or working nearby have been asked to Shelter in Place as a precaution while emergency responders contain the material.
  - Remain inside your residence or place of business and:
    - Lock doors, close windows, air vents and fireplace dampers.
    - Turn off fans, air conditioning and forced air heating systems.
    - Seal all windows, doors and air vents with plastic sheeting and duct tape.
    - Make sure you have emergency supplies.
    - Tune in to local radio or TV stations to receive updates.

- If your children are at school, do not pick them up until the danger has passed and shelter-in-place orders have been lifted. School officials have shelter-in-place procedures. You will only endanger yourself by leaving a safe area during the emergency.

- The affected areas include _____. Children attending the _____ School are sheltering in place also.
- No injuries have been reported. Additional information will be provided as soon as it is available.
- You can receive more information by monitoring local radio or television stations, or by visiting the (agency)_____ website at _____."

Notes:

Time	Notable Events

2.1.8 Containment and Control

- ❑ Conduct a Risk Assessment – Use this assessment tool to objectively understand the severity of the incident. This is just one piece of information to help the Incident Commander determine the mode of operation; use this value in conjunction with other information / intelligence gathered at the scene.

Hazmat Risk Assessment Model

Risk = (Severity: Container) X (Severity: Material) X Probability X Exposure

Severity: Container Size

1	Slight	Small
2	Minimal	Less than 55 gallons
3	Significant	More than 55 gallons
4	Major	Small pressure vessel/gas cylinder
5	Catastrophic	Large pressure vessel/gas cylinder

Severity: Material State

1	Slight	Solid
2	Minimal	Liquid w/low vapor pressure
3	Significant	Liquid w/high vapor pressure
4	Major	Flammable/Toxic Gas
5	Catastrophic	Explosive / BLEVE

Probability: Stress

1	Impossible/Remote	No Stress
2	Unlikely	Possible mechanical stress
3	50/50	Mechanical stress visible
4	Greater then 50%	Thermal or chemical stress
5	Very Likely	Combined stress

Exposure: People

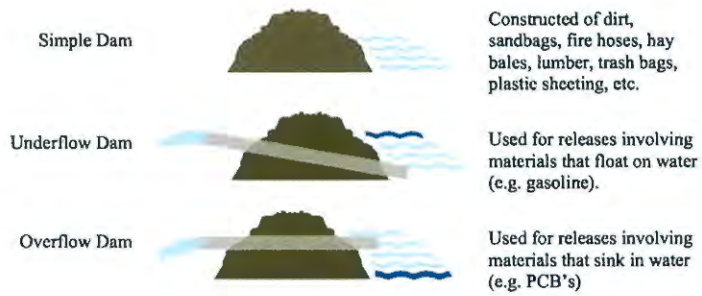
1	None	Vacant land
2	Average	Structures nearby, possibly occupied
3	Above Average	Structures nearby, confirmed occupied
4	High	People and structures adjacent to scene
5	Great	Large number of people at the scene

Values	Degree of Risk
320-625	Unacceptable
108-319	High
24-107	Substantial
5-23	Moderate
1-4	Low

- ❑ Decide on a "Mode of Operation"
  - Non-Intervention
  - Containment (Defensive)
  - Control (Offensive)

- ❑ Non-intervention Strategy
  - No direct action to stop, slow, contain or restrict the release
  - When to not intervene:
    - Actions would be unsafe - risk is unacceptable:
      - Presence of explosives
      - Pressure vessels subject to thermal stress
      - Material that may polymerize
      - Visible vapor cloud
      - Threat of fire
    - No threat to life
    - Lack of response resources
    - Lack of proper PPE

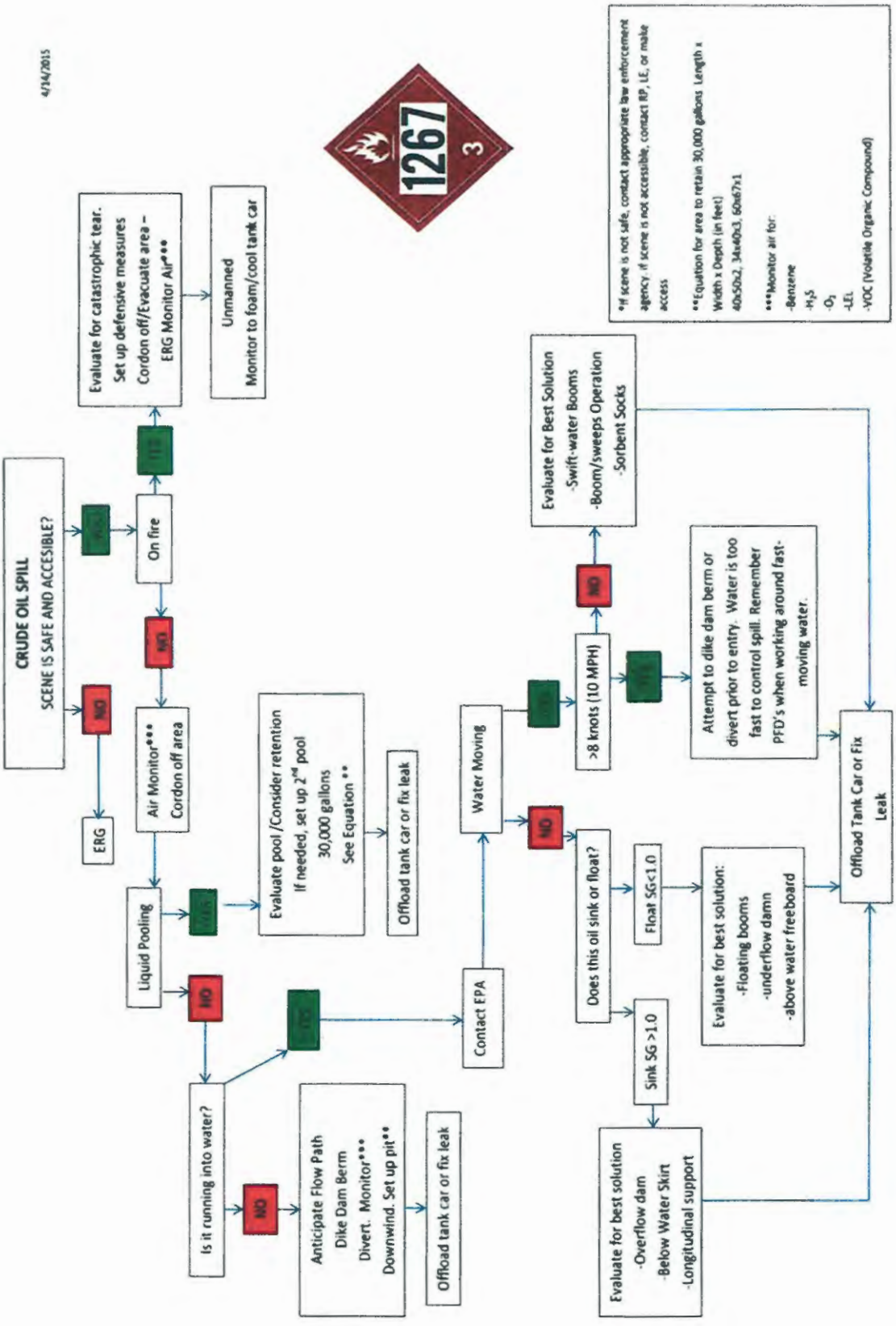
- ❑ Defensive Containment Strategy
  - Safe acts to restrict, slow or redirect the spread of hazmat.
  - Typical methods:
    - Dike
    - Dam
    - Divert
    - Disperse
    - Dilute
    - Cover
    - Foam



- ❑ Offensive "Control" Strategy
  - Safe acts to actually stop, control or stabilize the release.
  - Typical Methods
    - Plug and patch
    - Absorb / Adsorb
    - Transfer
    - Containerize
    - Stop (shut off valve)
    - Extinguish - See Firefighting Flow Chart (pg. 29)

Notes:

Time	Notable Events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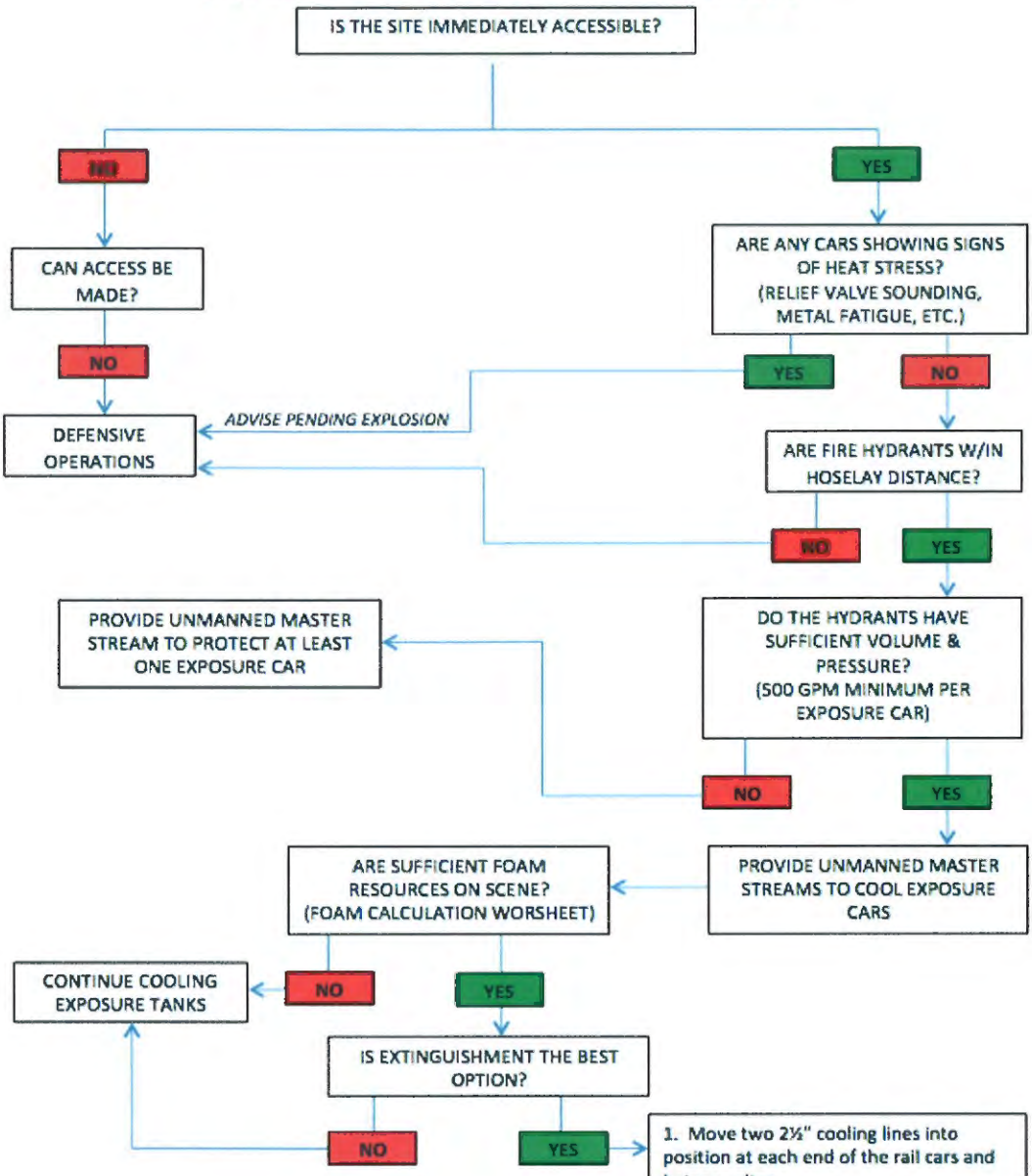
3
CRUDE OIL SPILL
SCENE IS SAFE AND ACCESIBLE?
YES
NO
On fire
YES
NO
Evaluate for catastrophic tear.
Set up defensive measures
Cordon off/Evacuate area –
ERG Monitor Air***
Unmanned
Monitor to foam/cool tank car
ERG
Air Monitor***
Cordon off area
Liquid Pooling
YES
NO
Evaluate pool /Consider retention
If needed, set up 2nd pool
30,000 gallons
See Equation **
Offload tank car or fix leak
Is it running into water?
NO
YES
Anticipate Flow Path
Dike Dam Berm
Divert. Monitor***
Downwind. Set up pit**
Offload tank car or fix leak
Contact FPA
Water Moving
YES
NO
>8 knots (10 MPH)
YES
NO
Evaluate for Best Solution
-Swift-water Booms
-Boom/sweeps Operation
-Sorbent Socks
Attempt to dike dam berm or
divert prior to entry. Water is too
fast to control spill. Remember
PFD's when working around fast-
moving water.
Does this oil sink or float?
Float SG<1.0
Sink SG >1.0
Evaluate for best solution:
-Floating booms
-underflow damn
-above water freeboard
Evaluate for best solution
-Overflow dam
-Below Water Skirt
-Longitudinal support
Offload Tank Car or Fix
Leak
*If scene is not safe, contact appropriate law enforcement
agency. If scene is not accessible, contact RP, LE, or make
access
**Equation for area to retain 30,000 gallons Length x
Width x Depth (in feet)
40x50x2, 34x40x3, 60x67x1
***Monitor air for:
-Benzene
-H_2S
-O_2
-LEL
-VOC (Volatile Organic Compound)

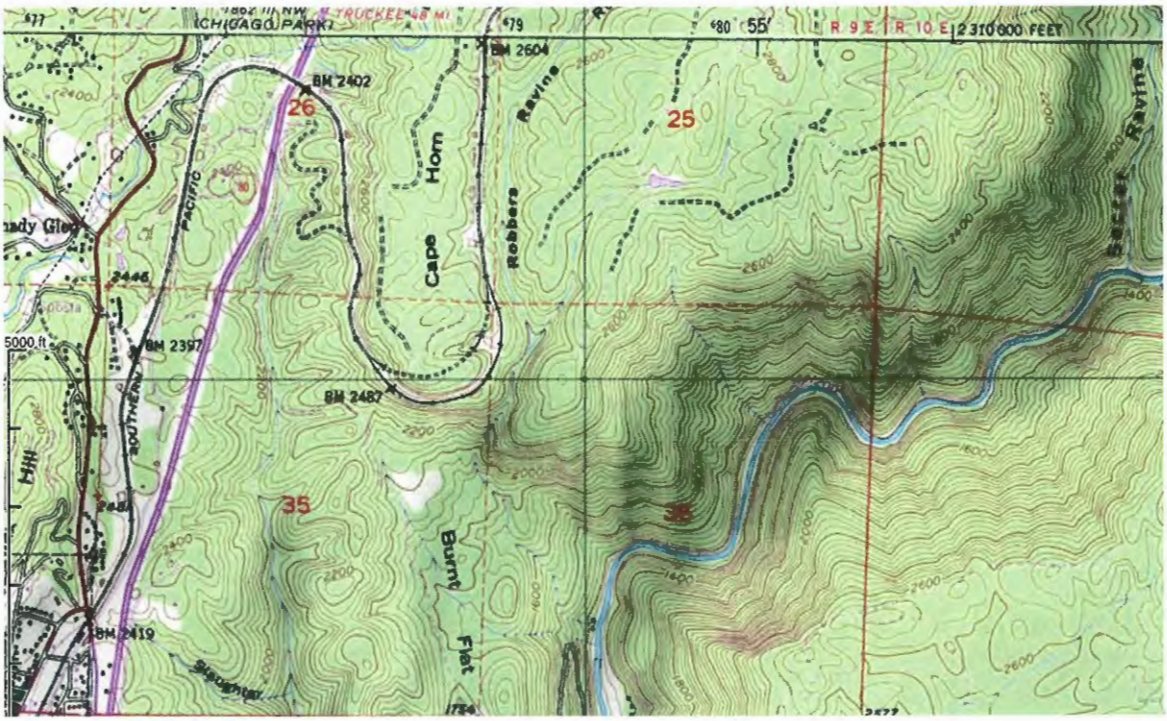
FIREFIGHTING FLOWCHART



** Use caution to minimize 2½" cooling line spray or runoff to affect foam blanket.*

Oil into the North Fork of the American River

Background:
The State of California (CalOES) has designated the "Cape Horn" area as a "High Hazard Area." This is the only area in Placer and Nevada Counties that holds this designation. The topographic features illustrate the obvious reason why this area is considered hazardous. Due to the close proximity of the North Fork of the American River special response strategies are warranted. The canyon walls are steep and have direct access to the river via seasonal creeks that have formed natural funnels to the river. The catastrophic release of just one tank car (30,000 gals) would most likely cause crude oil to enter the American River. Diking, damming, and booming operations are all viable options to contain the crude oil and minimize environmental impact. The Alta Fire Department and Truckee Fire Department both have equipment to provide swift water booming operations for this area.



Average (16 years) River Flows:

January	1500 CFS (5.25 mph)	July	400 CFS (1.4 mph)
February	1400 CFS (4.9 mph)	August	100 CFS (.35 mph)
March	2000 CFS (7 mph)	September	100 CFS (.35 mph)
April	1700 CFS (5.95 mph)	October	100 CFS (.35 mph)
May	1700 CFS (5.95 mph)	November	200 CFS (.7 mph)
June	750 CFS (2.6 mph)	December	1000 CFS (3.5 mph)

Iowa Hill Bridge
Booming Site "A"
39.04012°N / 120.90263° W

Direction to site:

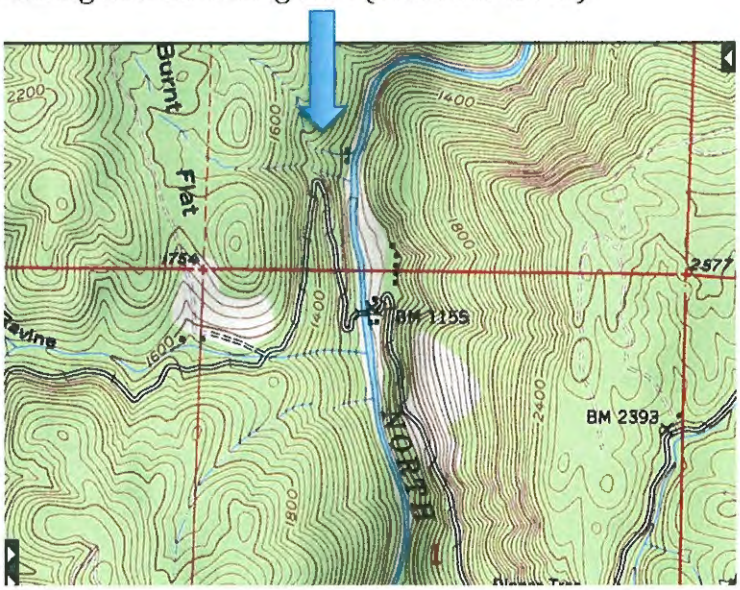
- I-80 to Colfax, Canyon Way to Iowa Hill Rd. – 3.1 miles to bridge.

River width:

- 75-100 ft.

Notes:

- Large staging area at the Mineral Bar Campground
- Best river access – North side rear restrooms
- Good all around access to river
- Campground busy from Spring to Fall
- Possible diking and damming site: (seasonal creek)



Yankee Jim Bridge
Booming Site "B"
39.04018° N / 120.90263° W

Direction to site:

- I-80 to Colfax, Canyon Way to Yankee Jim Rd., proceed 4.5 miles to bridge.
- Access from Foresthill via Yankee Jim Rd. – 7.5 miles to bridge

River width:

- 50-75 ft.

Notes:

- South side access to river via well established path
- North side access to river via single track path near restroom
- 3 Ton weight limit on bridge

Ponderosa Bridge
Booming Site "C"
38.99984º N / 120.94019º W

Direction to site:

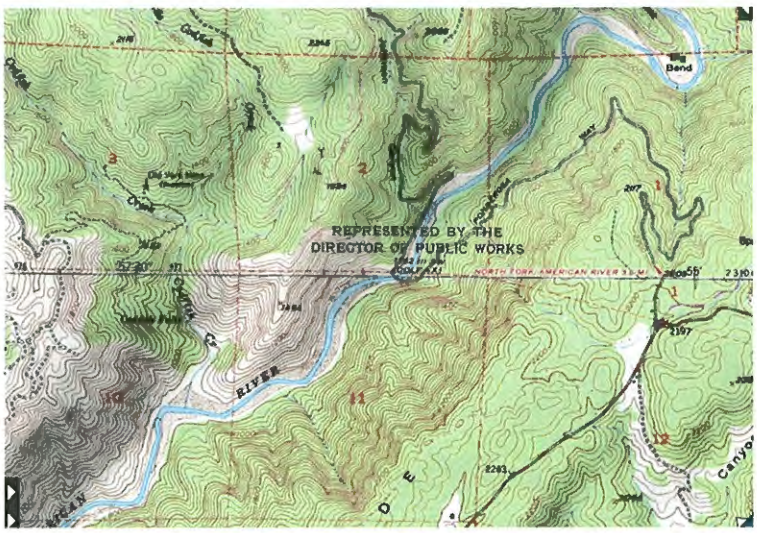
- I-80 to Weimar, Ponderosa Way - 5.2 miles to bridge.
- Access from Foresthill via Ponderosa Way – 3.3 miles to bridge.

River width:

- 50-75 ft.

Notes:

- Best access to river on North side
- Access on both sides of river via established trails
- 5 Ton weight limit on bridge



2.1.9 Personal Protective Equipment (PPE)

- ❑ Crude oil fires are hazardous and require dermal and respiratory protection for all personnel responding to and working in the vicinity of the oil fire. The use of personal protective equipment is mandatory for crude oil fires. The Incident Commander and Incident Site Safety Plan should describe what level of personal protective equipment is required for each phase of the emergency event. The following is a list of standard PPE:

    - Helmet
    - Turnout Coat and Pants
    - Nomex Hood
    - Latex Gloves (to be worn under firefighter gloves to provide secondary protection against absorption of chemicals through wet gloves
    - Firefighting Gloves
    - Boots
    - Self Contained Breathing Apparatus
    - Tyvex Suits (optional – to provide secondary protection against absorption of chemicals through primary protective clothing)
    - Additional information is located in the Crude Oil SDS (Appendix 4.2)

Notes:

Time	Notable Events

2.1.10 Documentation

- ❑ Initiate the Planning Section

- ❑ Assign Documentation Unit Leader
- ❑ Required documentation:
  - Incident Action Plan – minimum (Appendix 4.5)
    - ICS Forms 201, 202, 203, 204, 205, 206
  - Unit logs
    - ICS Form 214
  - After Action Report
    - Products / Commodities involved (estimated released)
    - Geography / Location
    - Chronologies of events
    - Potential Threats, including environmental
    - Environmental Sampling and Monitoring
    - Proper laboratory results
    - Incident Command Structure
    - Operations – Strategy /Tactics
    - Health and Safety
    - Lessons Learned
  - Chain of custody documentation
  - Health and safety documentation – potential exposures
  - HazMat Site Safety Plan

Activity Log:

Time	Notable Events

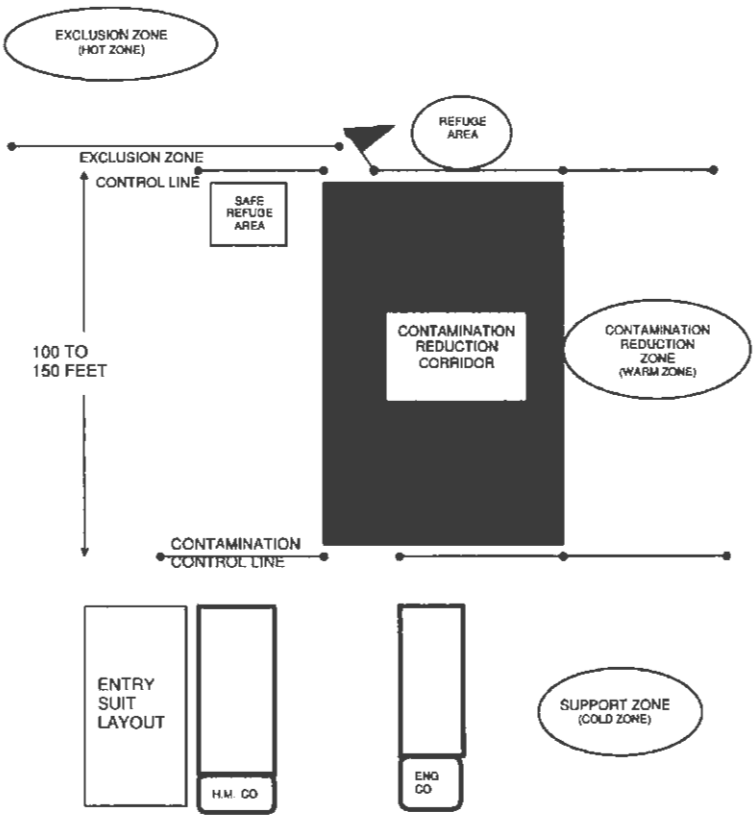
2.1.11. Decontamination

- ❑ Assign Decontamination Unit Leader.
- ❑ Request specialized mass decontamination resources (Appendix 4.1)
- ❑ General decontamination procedures for crude oil incidents:
- ❑ Establish and clearly identify the Contamination Reduction Zone (Warm Zone). The best location for a decon station would be uphill from the Exclusion Zone (Hot Zone), and upwind so that airborne contaminants blow back toward the Exclusion Zone (Hot Zone). If the wind changes, the decon station may have to be relocated.

    - Close proximity to vital services (running water, electricity) is extremely beneficial for decontamination operations.
    - The Contamination Reduction Zone should be accessible to emergency medical units.
    - Cover the entire Decontamination Corridor with plastic sheeting or tarps. Sorbents rolls should be used to line the decontamination corridor to reduce slippage and absorb oil.
    - Clearly identify the Decontamination Corridor using barrier tape, delineator posts and traffic cones. Place the delineator posts and traffic cones on the top of the plastic sheeting or tarps, and then attach barrier tape to these units to clearly mark the Decontamination Corridor.
    - Establish and clearly identify the point of entry from the Exclusion Zone into the Contamination Reduction Zone and the exit corridor into the Support Zone (Cold Zone).
    - Clearly identify, using barrier tape, delineator posts and traffic cones a clean (uphill) side and a dirty (downhill) side of the Decontamination Corridor. The clean side should be used to pass uncontaminated supplies and equipment into the Contamination Reduction Zone, while the dirty side contains all of the contaminated equipment and supplies used or removed during decontamination operations.
    - Weather conditions will be a significant factor during decon operations. Suitable shelter (tents) should be utilized for inclement weather conditions.
    - Water used during decon procedures must be carefully controlled and kept to a minimum. Water generated from decontamination procedures shall be treated as hazardous waste. Establish a means to collect and dispose of this waste appropriately.
    - Establish an equipment drop zone at the edge of the Exclusion Zone for contaminated equipment. Small equipment such as pumps and hand tools should be placed into wading pools in this zone. If required this equipment may be re-used in the Exclusion Zone without decontaminating.

- Disposable personal protective equipment that is heavily contaminated will be disposed of without decontaminating. Contaminated rain gear, tyvec suits, gloves, etc., should be placed into garbage pails lined with 6ml debris bags.
- Establish a primary decontamination wash (wading pool) and rinse (wading pool) as the first step near the Exclusion Zone to wash the most significant contamination off of the PPE.
- Establish a secondary decontamination wash (wading pool) and rinse (wading pool) about 10 feet away from the first wash to assure thorough decontamination of PPE.
- (Decontamination Solution) Any dish washing liquid, especially ones with enhanced grease cutting properties diluted with water are acceptable as the decon solution for PPE. The decon solution should be mixed in the provided white 5 gallon pails. A stronger Citrus based cleaning solution can be used for wiping down equipment and hand tools.
- When decontaminating personnel the brush strokes should always be done in a downward motion. This will reduce the risk of any backsplash into the facial area. Sorbents can also be used for wiping off contaminated areas of clothing or equipment. Wiping should mainly be done in the secondary wash after the heaviest contamination has been removed in the primary decon wash.
- Oiled sorbents and rags generated during decon procedures should be placed into garbage pails lined with 6ml debris bags and when full should be labeled and placed into a port a tank. Chairs will be utilized in the decon zone and can be placed in any areas were response personnel are being decontaminated, such as in the decon pools or where PPE is being removed.
- Splash goggles must always be left on until decon procedures have been fully completed.
- All debris bags should be labeled appropriately.
- If using Air Purifying Respirators (APR) - establish an area to change respirator cartridges if required. Contaminated cartridges will be placed into 6ml debris bags that will be labeled and kept segregated from other waste for appropriate disposal.
- Establish an area near the Support Zone end of the Decontamination Corridor to remove rain suits, Tyvec suits, rubber boots and other items, that can be reused during spill response operations. These items will be placed into an appropriate container (wading pool) for further inspection before being reissued back into the field.
- After the responders PPE has been removed, hand wipes and facial wipes should be available to those personnel that require further cleaning.
- All used equipment and hand tools (pumps, rakes, shovels etc.) and other contaminated items should remain in the Decontamination Corridor until it can be determined if these items can be decontaminated.

- All contaminated articles (tarps, plastic sheets, wading pools, delineator posts etc.) must be collected for further decon or disposal. All contaminated items shall be placed into lined (6-ml debris bags) garbage pails or lined over pack drums and must be properly and clearly labeled for proper disposal, or further cleaning.



Activity Log:

Time	Notable Events

2.1.12 Disposal

- ❑ In general, the shipper initiates any contact with cleanup organizations. Through the Unified Command Post, arrangements can be made to facilitate an early dispatch of appropriate resources for cleanup and recovery.
- ❑ Union Pacific approved contractors for cleanup and disposal – Expect these resources within 24 hours:
    - NRC Environmental, Oil Spill Response Organization certified by U.S. Coast Guard, located in Chico CA, Sacramento CA, Alameda CA, Long Beach CA, Fontana CA, San Diego CA.
    - Clean Harbors located in Benicia CA, Oil Spill Response Organization certified by U.S. Coast Guard.
    - H2O Environmental located in Reno NV, Las Vegas NV, Oil Spill Response Organization certified by U.S. Coast Guard.
    - Patriot Environmental located in Richmond CA, Bakersfield CA, Santa Paula CA, Long Beach CA, Ontario CA, San Diego CA. Oil Spill Response Organization certified by U.S. Coast Guard.
    - United Pumping Services located in The City of Industry CA.
    - Jim Dobbas, Heavy Equipment
- ❑ Ensure the Staging Area can accommodate the large amount of inbound contracted equipment.

Activity Log:

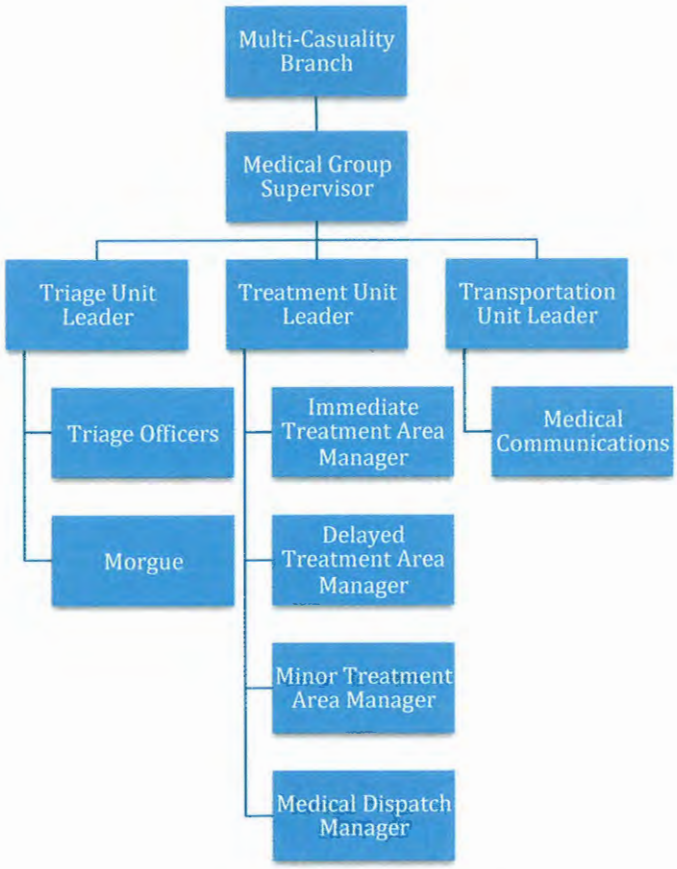
Time	Notable Events

2.2 Multi-Casualty Incident (MCI)

- ❑ MCI Defined –Five (5) IMMEDIATE or DELAYED patients or a total of ten (10) MINOR patients.
- ❑ Notify Disaster Control Facility (CF)
  - Sutter Roseville Medical Center (Western slope of Placer County) – (916) 786-3033
  - Tahoe Forest Hospital (Tahoe Basin and Eastern slope of Nevada and Placer Counties) – (530) 587-3205
  - Sierra Nevada Memorial Hospital (Western slope of Nevada county) – (530) 272-3682
- ❑ Mobilize Resources
  - Equipment and Supplies
    - Medical Group Implementation Supplies
    - Medial Supply Cashes / Disaster Trailers
    - Rescue Equipment
    - Specialized Equipment
  - Personnel
    - ALS Personnel
    - BLS Personnel
    - Litter Bearers
    - Task Forces
    - Hospital Emergency Response Team(s) (HERT)
  - Transportation
    - Ground Ambulances
    - Air Ambulances
    - Buses
    - Task Forces
  - Mass Decon Capabilities
- ❑ Develop ICS structure as needed
  - Medical Group/Division Supervisor
    - Treatment Unit Leader
    - Triage Unit Leader
    - Treatment Dispatch Manager
    - Medical Supply Coordinator
    - Morgue Manager
  - Patient Transportation Group Supervisor
    - Medical Communications Coordinator
    - Air Ambulance Coordinator
    - Ground Ambulance Coordinator
- ❑ Scene Size-up / Update Disaster Control Facility
  - Classification of Incident
    - MCI Trauma
    - MCI Medical

  - MCI HazMat
  - MCI Burns
- Approximate number of patients
- Name of Incident
- Estimated time when triage will be complete

❑ Activate Mass Fatality Plan if needed



Notes:

Time	Notable Events

2.3 Mass Fatality Operations

2.3.1 First Responder Operations / Guidelines - Handling the deceased

- ❑ Be prepared to assist the Coroner's Recovery Team (2 First Responders : 1 Investigator).
- ❑ Be prepared to provide mass decon if necessary.
- ❑ Be prepared to search and discover additional victims.
- ❑ Be prepared to extricate victims if necessary.
- ❑ Be prepared to provide logistical support
- ❑ Law enforcement - establish perimeter control and morgue security.
- ❑ Law enforcement – provide security at the Family Assistance Center, if established.
- ❑ Law enforcement may be needed to assist in scene documentation.
- ❑ **IF AT ALL POSSIBLE – DO NOT MOVE THE DECEASED.**
    - **Only move deceased if needed to access the living.**
- ❑ Do not remove any personal effects from the body. The personal effects must remain with the body.
- ❑ Attach a tag (triage tag) or label to the body with the following information:
    - Date and time found.
    - Exact location where found.
    - Name/address of decedent, if known.
    - If identified, how and when.
    - Name/phone of person making identity or filling out tag.
    - If the body is contaminated, if so – with what?
- ❑ Notify the Law Enforcement agency (Law Branch) of the location / identity of the body
- ❑ Keep insects and animals away from the body
- ❑ Bodies must be secured or safeguarded at all times until the arrival of the coroner or his authorized representative.

2.3.2 Coroner Response Checklist

- ❑ Establish contact and check-in with the Unified Command Post.
- ❑ Assume an ICS position (Branch, Division, or Unit).
- ❑ Initial Assessment
    - Nature of terrain
    - Structures
    - Special Conditions
    - Check condition of remains
    - Obtain estimated number of dead from the Triage Unit Leader
    - Estimate the time of recovery operations
- ❑ Determine which hospital(s) the injured have been taken to - Contact the on-scene Transportation Group Leader – Notify hospitals of mass fatality operations
    - East Placer
        - Incline Village Community Hospital (775) 833-4100

        - St. Mary's Regional Medical Center – Reno (775) 770-3000
        - Tahoe Forest Hospital Truckee – (530) 587-3205
            - Disaster Control Facility – Nevada County (East slope)
        - Renown Regional Medical Center – Reno (775) 982-4102
    - West Placer
        - Sierra Nevada Memorial Hospital – Grass Valley (530) 272-3682
            - Disaster Control Facility – Nevada County (West slope)
        - Sutter Auburn Faith Hospital – Auburn (530) 888-4550
        - Sutter Roseville Medical Center – Roseville (916) 786-3033
            - Disaster Control Facility – Placer County
        - Kaiser Permanente Roseville – Roseville (916) 784-4000
        - UC Davis Medical Center – Sacramento (916) 734-3790
            - Disaster Control Facility – Sacramento County

- ❑ Determine resource needs
    - Number of personnel for recovery operation
        - Consider early activation of mutual aid
        - Consider an early declaration of local emergency – coordinate with the Incident Command Post and Office of Emergency Services
        - Consider early activation of the Disaster Mortuary Operations Response Team (DMORT)
    - Communication Needs
        - Placer County Communication Van
        - Command Vehicle (see appendix 4.1)
    - Specialized Personnel
            - Sheriff Search and Rescue Teams
            - Anthropologist – Dr. P. Willey, Chico State (916) 898-4793
            - Odontologist – Dr. J Normstrom, Auburn (530) 885-0439
            - Pathologist – Northern California Forensic Pathology, Sacramento (916) 482-6237 / Dr. G. Reiber (916) 874-9581
            - Video crew / photographer
    - Specialized equipment and supplies
        - Containers for remains
        - Body bags
        - Plastic tarps
        - Polyethylene sheeting
        - Re-closeable plastic bags
- ❑ Establish the following units
    - Survey and Recovery Unit
    - Transportation Unit

- Receiving Unit
- Search Unit
- Property Unit
- Fingerprint Unit
- Autopsy Unit
- Dental Unit
- Record Unit
- Ante Mortem Information Unit
- Certification Unit

❑ Consider activation of a Family Assistance Center
❑ Consider integration with the Joint Information Center

Diagram

Activity Log:

Time	Notable Events

2.4 Exposures

2.4.1 Kinder-Morgan Pipeline

- ❑ **Emergency Contact Number: "Orange Control Center" – (714) 560-4850 0r (213) 624-9461**
  - In most cases Kinder-Morgan will be notified by the UP Railroad in the case of an incident / accident.
  - K-M Pipeline will dispatch the closest "Line Rider" to liaison with the Command Post.
- ❑ **Signs of a Pipeline Leak or Rupture**
  - Brown or discolored vegetation amid healthy plants
  - Dirt being blown into the air
  - Colorful sheens on water surfaces
  - Fire at or below ground level
  - Stains or pools of hydrocarbons not usually present in the right-of-way
  - Bubbles coming from bodies of water
  - A loud roar or hissing sound
  - Distinctive petroleum type odors or smells
- ❑ **Normal Pipeline Operations**
  - Runs the entire length of the county, mostly using the Railroad right-of-way. (Refer to Section 3 / maps)
  - Diameter of pipe ranges from 4" to 10"
  - Pressures range from 100 psi to 2000+ psi / highest pressures will be near booster stations.
  - Depth of pipeline burial ranges from surface to 4+ feet
  - Several critical pumping stations are located along the route.
  - Pipeline may contain gasoline, diesel, or jet A fuel.

Activity Log

Time	Notable Events

2.4.2 County Water Agencies – Canal/Waterway Issues

Emergency Contact Numbers

Pacer County Water Agency

- Director of Field Services – Canals
  - Office: 530-823-4865
  - Cell: 530-308-9834
- Director of Technical Services
  - Office: 530-823-4848
  - Cell: 530-308-5373

PG&E:	415-973-5661
Nevada Irrigation District:	530-273-6185
San Juan Water District:	916-791-6936

City and Towns

City of Lincoln:	916-434-2490
City of Rocklin:	916-625-5560
City of Auburn:	530-823-4211
Town of Loomis:	916-652-1840
City of Colfax	530-346-2313
City of Roseville:	916-774-5714
Town of Truckee PUD:	530-587-3896

Applegate Community Water Association:	530-878-2617
Dutch Flat Mutual:	530-389-2409 / 916-625-4100
Heather Glen C.S.D.:	530-878-3916
Meadow Vista Community Water District:	530-878-0828
Weimar Institute – Private Line:	530-613-6008 / 530-613-1620
Weimar Water Company:	530-906-5181

Activity Log:

Time	Notable Events

2.5 Public Information Officer (PIO) Joint Information Center (JIC)

- ❑ Arrive safely with appropriate personal safety clothing
- ❑ Report to the Incident Command Post (ICP) and receive briefing from the Incident Commander (IC)
  - Magnitude and scope of event
  - Type of product – where the oil came from (Bakken?) and where it's going
  - Current situation and statistics (units/personnel on scene - gallons released)
  - Areas of county impacted including down wind and down stream impacts
  - Emergency objectives and priorities
  - Actions taken
  - City and Town EOC activations
  - Limits on information to be released
  - Existing or anticipated problems / issues
- ❑ Consult with the Incident Commander regarding any immediate emergency information or instructions to be disseminated and/or restrictions on information to be released.
- ❑ Identify public information priorities, particularly those involving saving lives, reducing injuries, and protecting property.
- ❑ Initiate and maintain an activity log (ICS 214) and record the following information / requests
  - By date and time, note arrival time, to whom you report to, decisions made, positions activated, personnel assigned to report to the PIO, actions taken.
  - Log request from the media, and information needed / required to respond
  - Lists items that require follow-up
- ❑ Identify available internal and external communications capabilities
- ❑ Determine the need for PIO Support and assign additional staff.
  - Joint Informational Center
  - Emergency Operations Center (EOC) PIO
  - Field Assistant PIO
- ❑ Notify local hospitals and Disaster Control Facilities
  - Consider asking hospital PIO to join JIC
- ❑ Develop plans to disseminate emergency information immediately using:
  - Television
  - Radio
  - County / City / Town / Agency Websites
  - Social Media Outlets
  - Mass notification systems

        - Everbridge – Placer County
        - Code Red – Nevada County
        - Nixle – Truckee
    - Other Public Warning Systems
- ❑ Request media to relay lifesaving information such as evacuations and shelter locations and/or shelter in place instructions
- ❑ Establish a Media Center, as appropriate, in the vicinity of, but separate from the Command Post
    - Insure uphill, upwind, upstream location
- ❑ Coordinate press conferences as requested by the Incident Commander
- ❑ Media releases are to include the following information
    - Incident name, if known
    - What has happened; what is threatened
    - Which areas are affected? Provide only confirmed information about the extent of the impact
    - Identify agencies on scene and how issue is being resolved. Identify the Incident Command / Unified Command
    - Evacuation shelters if established.
    - What should people do or not do to protect personal and family safety? Identify evacuation routes or shelter in place instructions. Specify areas to be avoided.
    - Clarify where to call / go for help?
    - Provide information about animal care and evacuation
    - Provide direction on where to obtain additional information
        - Television
        - Radio
        - County / City Town / Agency Websites
        - Social Media Outlets
        - Mass notification systems
            - Everbridge – Placer County
            - Code Red – Nevada County
            - Nixle - Truckee
    - Instruct public NOT TO CALL 911, except to report emergencies
    - Conclude with anything else essential to public safety or reassurance.
- ❑ Establish a regular media briefing schedule
- ❑ Provide rumor control as necessary
- ❑ Approve all media releases through the Incident Commander, copies to the Planning Section for documentation.
- ❑ Continue to log PIO activities using the Unit Log (ICS 214)
- ❑ Update WebEOC

Activity Log:

Time	Notable Events

2.6 Emergency Management

2.6.1 Rapid Needs Assessment (RNA)

- ❑ Assess the goals of response
  - Life Safety (save lives and protect health)
  - Preserve the Environment
  - Restore Area to normal as fast as possible
- ❑ Break down disaster in to "Multiple Events"
- ❑ Assess resource needs for each event
- ❑ Assess interagency coordination efforts, suggest adjustments
- ❑ WebEOC Activation – Provide updates and significant events
- ❑ What other entities should be involved to help the RNA process
  - Hospital and Care Facilities
  - Schools
  - Amateur Radio Groups
  - Civil Air Patrol
  - Community Emergency Response Teams
  - Neighbor Watch Groups
  - Search and Rescue Groups
  - IT and GIS Experts
  - Other Volunteer Groups
- ❑ Review Hazard Analysis
  - Determine RISK
  - Determine VULNERABILITY
  - Determine EFFECT
  - Determine CONSEQUNCES
  - Establish PRIORITIES
  - Capture RESULTS
- ❑ Establish planning time line
  - Incident
  - Safe assess
  - Reports to EOC
  - Reports to State
- ❑ Identify Subject Matter Experts (SME)
- ❑ Identify basic tools / resources to conduct the RNA
  - Staff / Accountability
  - Communication Capability
    - Traditional First Responder Nets
    - Amateur Radio
    - Land Line / Cell / Sat Phones
    - Text / Tweet
    - Fax
    - Email
    - WebEOC

- Transportation
- Appropriate safety gear / PPE

- ❑ Establish Central Data Collection Center
  - WebEOC
  - County / City EOCs
- ❑ Rapid Needs Assessments should be quick and provide initial situational reports to a centralized data collection center - include:
  - Identify Life Safety Targets / Problems
  - Estimate of Resources Needed
  - Other Key life Safety Observations
- ❑ Consider Variables
  - Magnitude
  - Actual impact area / zone
  - Time
  - Season / Weather
  - Special Community Events
  - Recourses Immediately Available
  - Importance to the Community
  - Safety Issues
  - Political Issues
  - Developing Threats
  - Analysis Expertise Needed
- ❑ Action Planning Steps
  - Quickly identify disaster variables
  - Quickly readjust / reprioritize life safety targets
  - Quickly ID / readjust available RNA teams
  - Quickly develop a RNA initial action plan
  - Receive data from RNA teams, assess and share data with appropriate locations/entities
  - Continue to monitor and adjust as needed

Activity Log:

Time	**Notable Events**

2.6.2 Advance Planning

- ❑ Development of an Advance Plan consisting of potential response and recovery related issues likely to occur beyond the next operational period, generally within 36 to 72 hours.
- ❑ Update WebEOC
- ❑ Assign an Advanced Planning Manager
    - o Review all available status reports, Action Plans, and other significant documents. Determine potential future impacts of the emergency; particularly issues which might modify the overall strategic EOC objectives.
    - o Provide periodic briefings for the EOC Director and General Staff addressing Advance Planning issues.
    - o Supervise the Advance Planning Unit.
    - o Establish and maintain a position log and other necessary files. Monitor the current situation report to include recent updates.
    - o Meet individually with the general staff and determine best estimates of the future direction and outcomes of the emergency.
    - o Develop an Advance Plan identifying future policy related issues, social and economic impacts, significant response or recovery resource needs, and any other key issues likely to affect EOC operations within a 36 to 72 hour time frame.
    - o Submit the Advance Plan to the Planning/Intelligence Section for review and approval prior to conducting briefings for the General Staff and EOC Director.
    - o Review Action Planning objectives submitted by each section for the next operational period. In conjunction with the General Staff, recommend a transition strategy to the EOC Director when EOC activity shifts predominately to recovery operations.

Activity Log:

Time	Notable Events

2.6.3 Volunteer Management

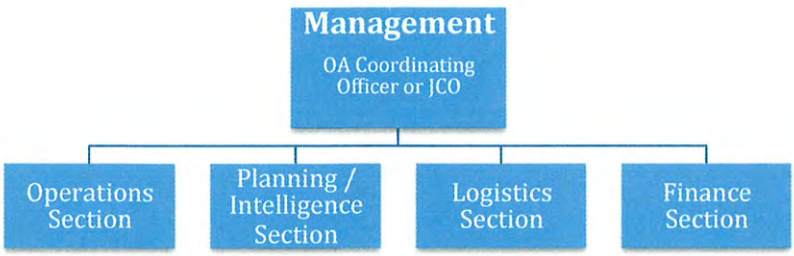
- ❑ If volunteers are needed, considering using:
  - Sheriffs Department Search and Rescue
  - Community Emergency Response Teams (CERT)
  - Volunteers in Police Services
  - American Red Cross
- ❑ Appoint a Volunteer Coordinator.
- ❑ Ask for assistance in screening, orienting, and assigning volunteers to departments and organizations in need of additional personnel from local, non-profit agencies experienced in volunteer management. (Under a Presidential Declaration, a non-profit organization may receive compensation if they are contracted by the jurisdiction.)
- ❑ Establish a staging area where volunteers are screened, oriented and assigned.
- ❑ Ensure that there are provisions for feeding, transportation, safety, and shelter of convergent volunteers.
- ❑ Ensure that volunteers understand that although they are not eligible for any monetary compensation, they will be covered by workers compensation. (However, only those volunteers registered as Disaster Service Workers are covered.)
- ❑ Establish a written checklist of duties for volunteer jobs
- ❑ Ensure that the jurisdiction's legal counsel is aware of volunteer activities and prepared to address any liability issues surrounding the use of volunteers.
- ❑ Contact other jurisdictions, agencies and departments and identify post-disaster tasks to which volunteers could be assigned.
- ❑ Update WebEOC on progress and procedures.

Activity Log:

Time	Notable Event

2.6.4 Recovery

- ❑ Establish Recovery Task Force (RFT)
  - Operational Area Coordinating Officer (Emergency Management / OES Program Manager)
    - Advise pre-designated Recovery staff and jurisdictions of the need to begin activation of formal recovery operations.
    - Initiate contact with Cal OES
    - Initiate and Maintain a Recovery Log
    - Ensure Emergency Management Organization (EMO) is maintaining appropriate damage and cost-related documentation
    - Determine time, date and location for community meetings
    - Advise PIO of recovery operations
  - Assign a Jurisdiction Coordinating Officer (JCO)
  - Develop an organizational structure to manage Recovery (See EOP for roles and responsibilities)



- ❑ Conduct Initial Damage Estimates (IDE).
  - Windshield Survey
  - Safety Assessment
  - Damage Assessment
- ❑ Conduct Preliminary Damage Assessment (PDA).
- ❑ Local Proclamation of Disaster.
- ❑ Declaration of Disaster.
  - Governor's Proclamation
  - Cal OES Directors Concurrence
  - Presidential Declaration
- ❑ Establish Recovery Assistance Facilities.
  - Local Assistance Center (City and County)
  - Disaster Recovery Center (Federal Government)
  - Joint Field Office (Federal Government)
- ❑ Consider a debris removal and disposal plan.
- ❑ Update WebEOC with progress reports.

Activity Log:

Time	Notable Events

2.7 Environmental Health

General Checklist:

- ❑ Provide assistance with the assessment of threats to the public health and environment.
- ❑ Determine level of hazmat response (Level I,II,III)
- ❑ Update WebEOC
- ❑ Provide a Liaison with State and Federal Agencies.
    - California Environmental Protection Agency
        - Air Resources Board
        - Department of Toxic Substance Control
    - California State Water Board
    - California Department of Fish and Wildlife (OSPR)
    - Placer County Air Pollution Control District
    - United States Environmental Protection Agency
- ❑ Represent the Health Officer on the scene
- ❑ Assist in the completion of the OES spill report.
- ❑ Provide technical information and assistance as a member of the multidisciplinary team responding to hazardous materials incidents.
    - Review chemical plume data, models, and projections.
    - Make recommendations and provide information to the IC regarding evacuations and shelter in place operations.
    - Provide site-specific information regarding spill location and down stream exposures (i.e. drinking water intakes).
- ❑ As the Health Officer's designee, declare evacuated areas safe for re-entry by the public.
- ❑ Liaison with the local Hazmat Team and assist in the identification of the "hazard category" of unknown substances.
- ❑ Provide regulatory oversight of the disposal of hazardous materials/wastes.
- ❑ Provide initial oversight of mitigation actions at hazardous materials incidents, ensuring compliance with state and federal requirements as well as with storm water management plans
- ❑ Access the "Emergency Reserve Account for Hazardous Materials Incidents" administered by the Cal/EPA - Department of Toxic Substances Control.
- ❑ Initiate referrals to State agencies, such as the Regional Water Quality Control Board and the Department of Toxic Substances Control, for oversight of corrective action requirements when a hazardous materials release may have resulted in significant impacts to soil and/or groundwater.
- ❑ Respond to requests for information and assistance regarding public health and environmental concerns, which are not related to hazardous materials incidents.

- ❑ Staff disaster assistance centers and provide technical expertise in the public health aspects of disaster response including: water disinfection, adequate wastewater disposal, food protection, solid waste disposal, communicable disease control, vector control, and assessment of mass shelter operations.
- ❑ Participate in the Advanced Planning Unit or provide information to the Advanced Planning Manager (Section 2.6.2)
- ❑ Develop Objectives for the current and next operational period; submit to the Planning Section Chief.
- ❑ Determine specific costs, including time, incurred in mitigation in order to establish claim for reimbursement.

Notes:

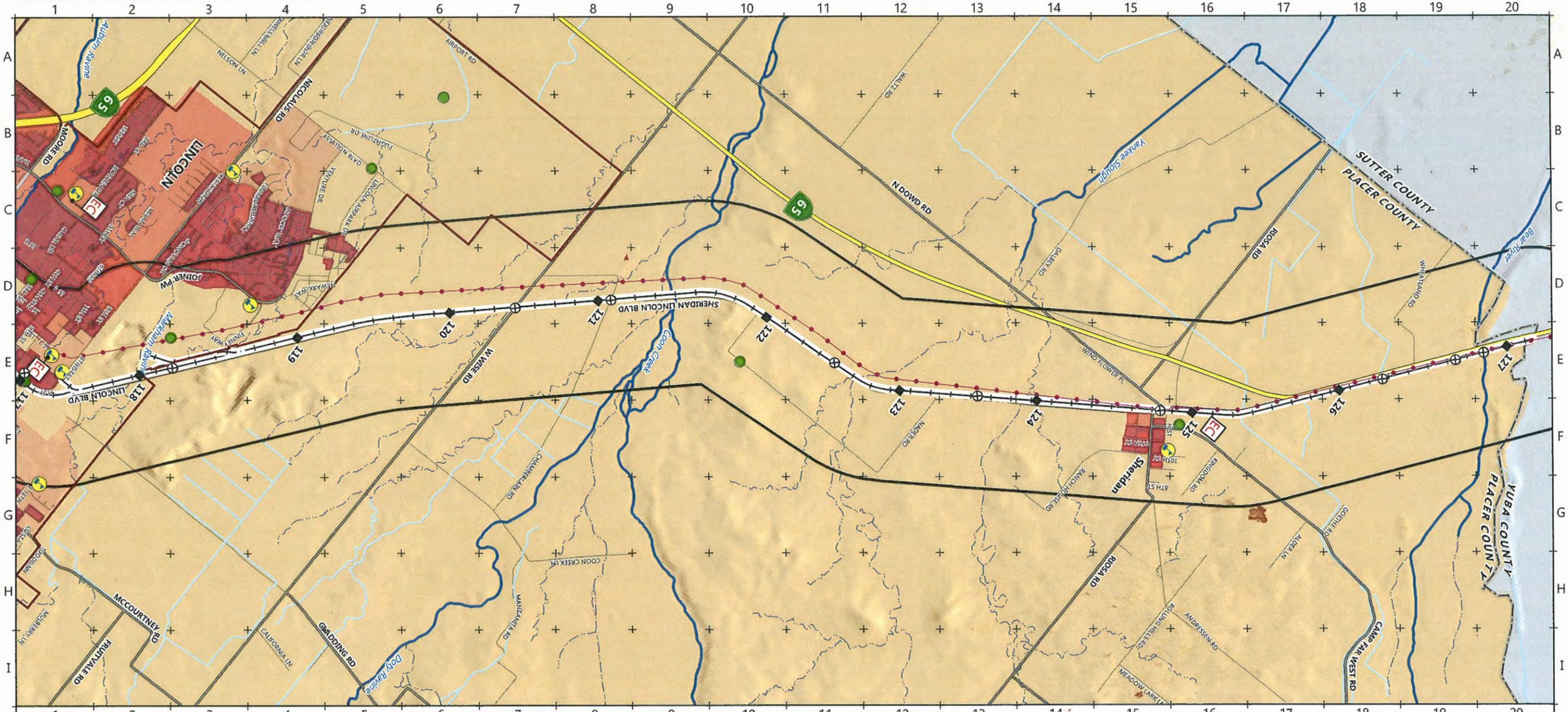
Time	Notable Events

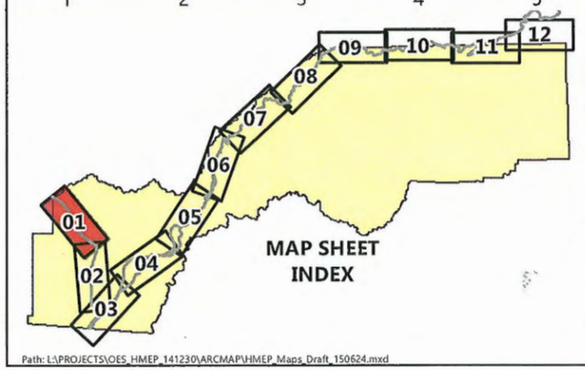
Section 3.0

Area Maps

Oil and Hazardous Materials by Rail Contingency Plan

Map Sheet 1





LEGEND

POPULATION/ACRE
- 0-1
- 1-2
- 2-3
- 3-4
- 4-5
- 5-10
- 10-50
- 50-100
- 100-250

- RAILROAD BUFFER (0.6 MI)
- COUNTY BOUNDARY
- CITY LIMITS
- RAILROAD
- PIPELINE
- INTERSTATE
- HIGHWAY
- MAJOR ROADS
- OTHER ROADS
- LAKES
- PERENNIAL STREAM
- INTERMITTENT STREAM
- CANAL
- PCWA CANAL TO PLANT OR HYDRANT
- PCWA CANAL NOT TO PLANT OR HYDRANT
- RAILROAD CROSSING
- RAILROAD MILE MARKER
- EVACUATION CENTER
- CRITICAL INFRASTRUCTURE
- SCHOOL

0 0.25 0.5 0.75 1 Miles

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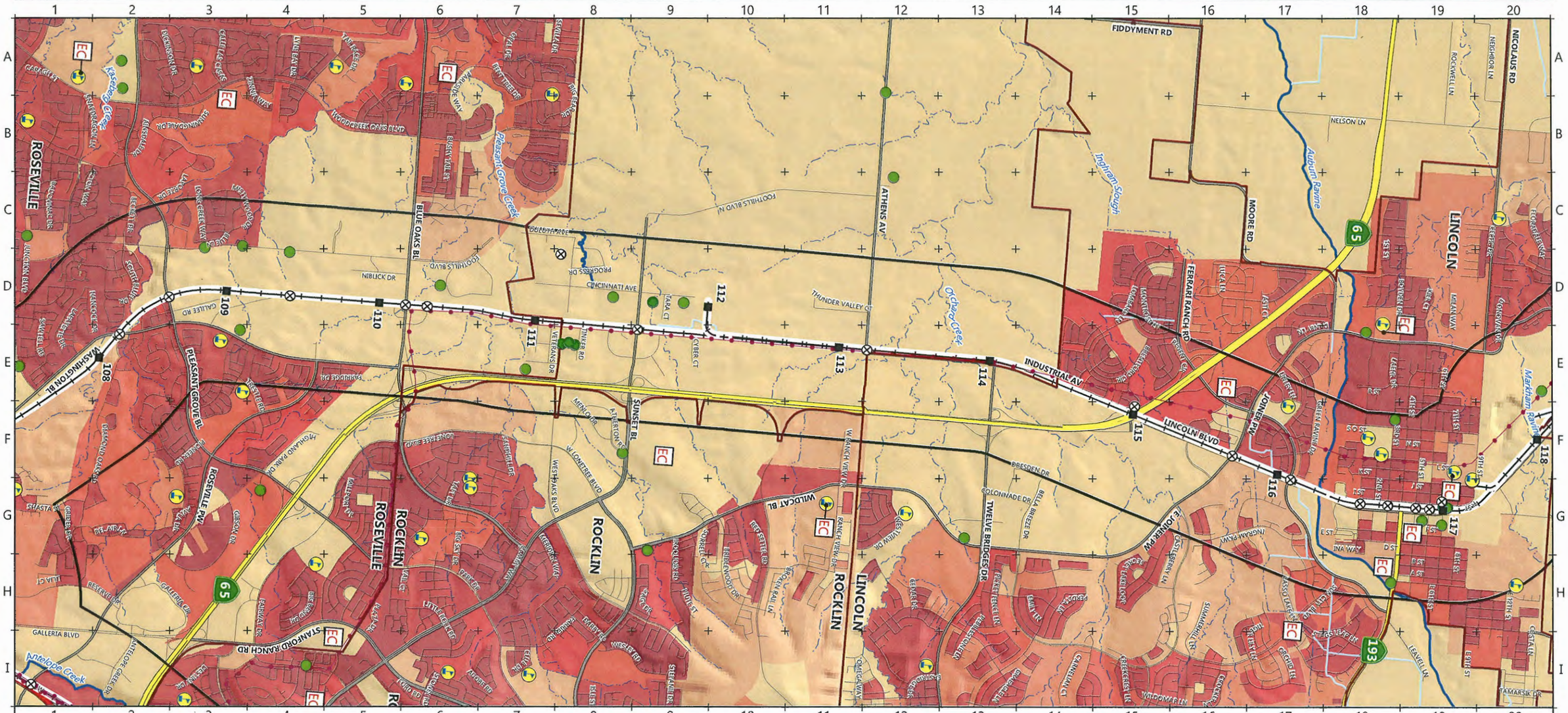
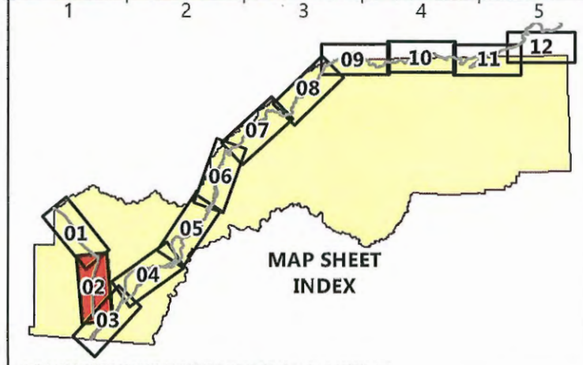
Oil and Hazardous Materials by Rail
Contingency Plan

Map Sheet 2





LEGEND

POPULATION/ACRE							
0-1	4-5	RAILROAD BUFFER (0.6 MI)	INTERSTATE	LAKES	RAILROAD CROSSING
1-2	5-10	COUNTY BOUNDARY	HIGHWAY	PERENNIAL STREAM	RAILROAD MILE MARKER
2-3	10-50	CITY LIMITS	MAJOR ROADS	INTERMITTENT STREAM	EVACUATION CENTER
3-4	50-100	RAILROAD	OTHER ROADS	CANAL	CRITICAL INFRASTRUCTURE
	100-250	PIPELINE		PCWA CANAL TO PLANT OR HYDRANT	SCHOOL
				PCWA CANAL NOT TO PLANT OR HYDRANT	

0 0.25 0.5 0.75 1 Miles

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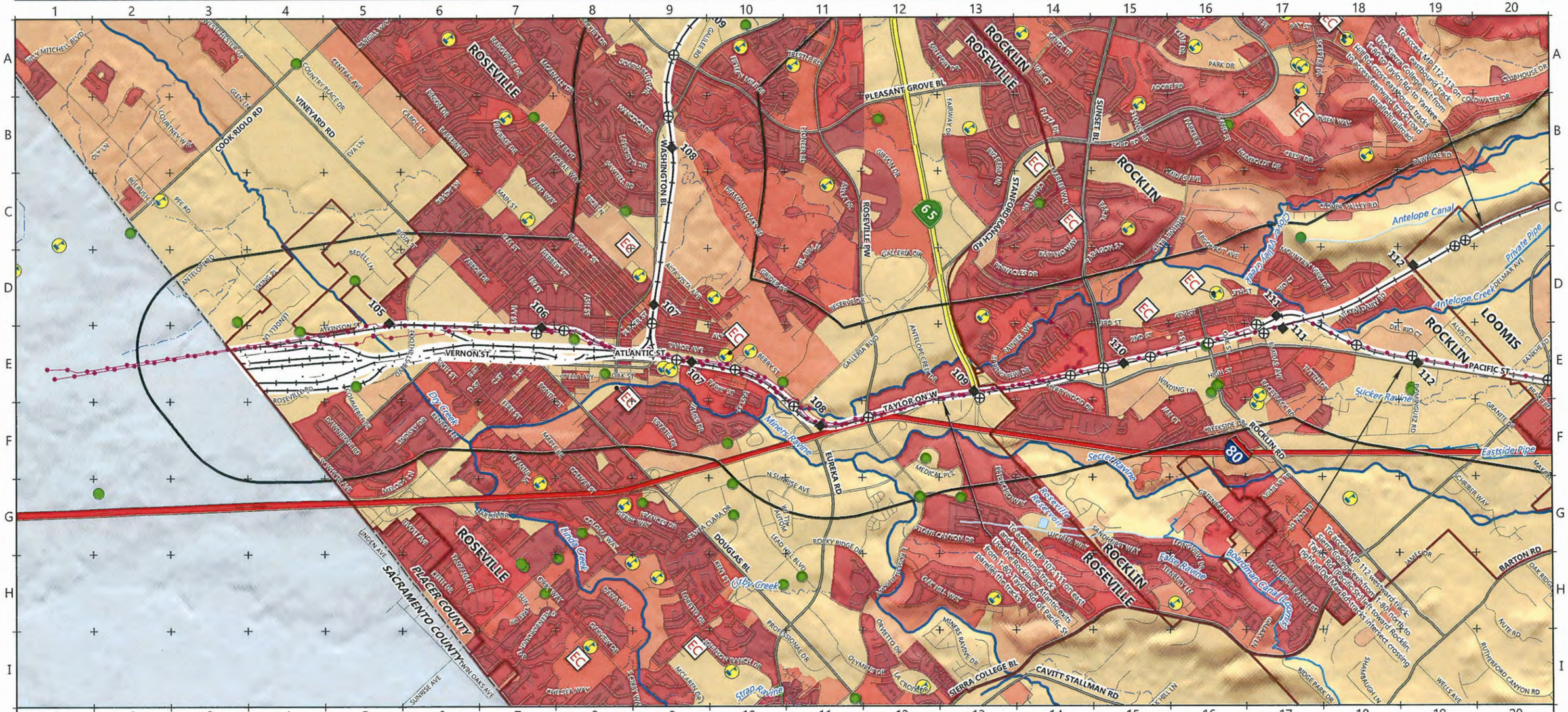
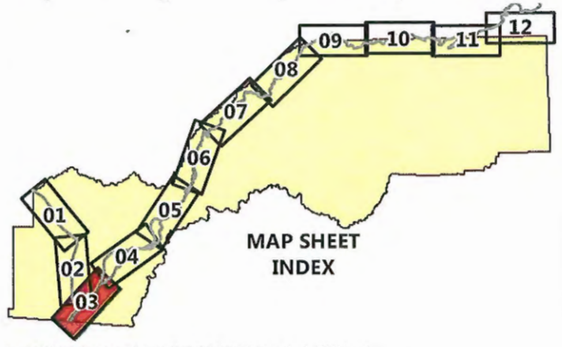
Oil and Hazardous Materials by Rail Contingency Plan

Map Sheet 3





LEGEND

POPULATION/ACRE			
0-1	4-5	RAILROAD BUFFER (0.6 MI)	INTERSTATE
1-2	5-10	COUNTY BOUNDARY	HIGHWAY
2-3	10-50	CITY LIMITS	MAJOR ROADS
3-4	50-100	RAILROAD	OTHER ROADS
	100-250	PIPELINE	

LAKES	RAILROAD CROSSING
PERENNIAL STREAM	RAILROAD MILE MARKER
INTERMITTENT STREAM	EVACUATION CENTER
CANAL	CRITICAL INFRASTRUCTURE
PCWA CANAL TO PLANT OR HYDRANT	SCHOOL
PCWA CANAL NOT TO PLANT OR HYDRANT	

0 0.25 0.5 0.75 1 Miles

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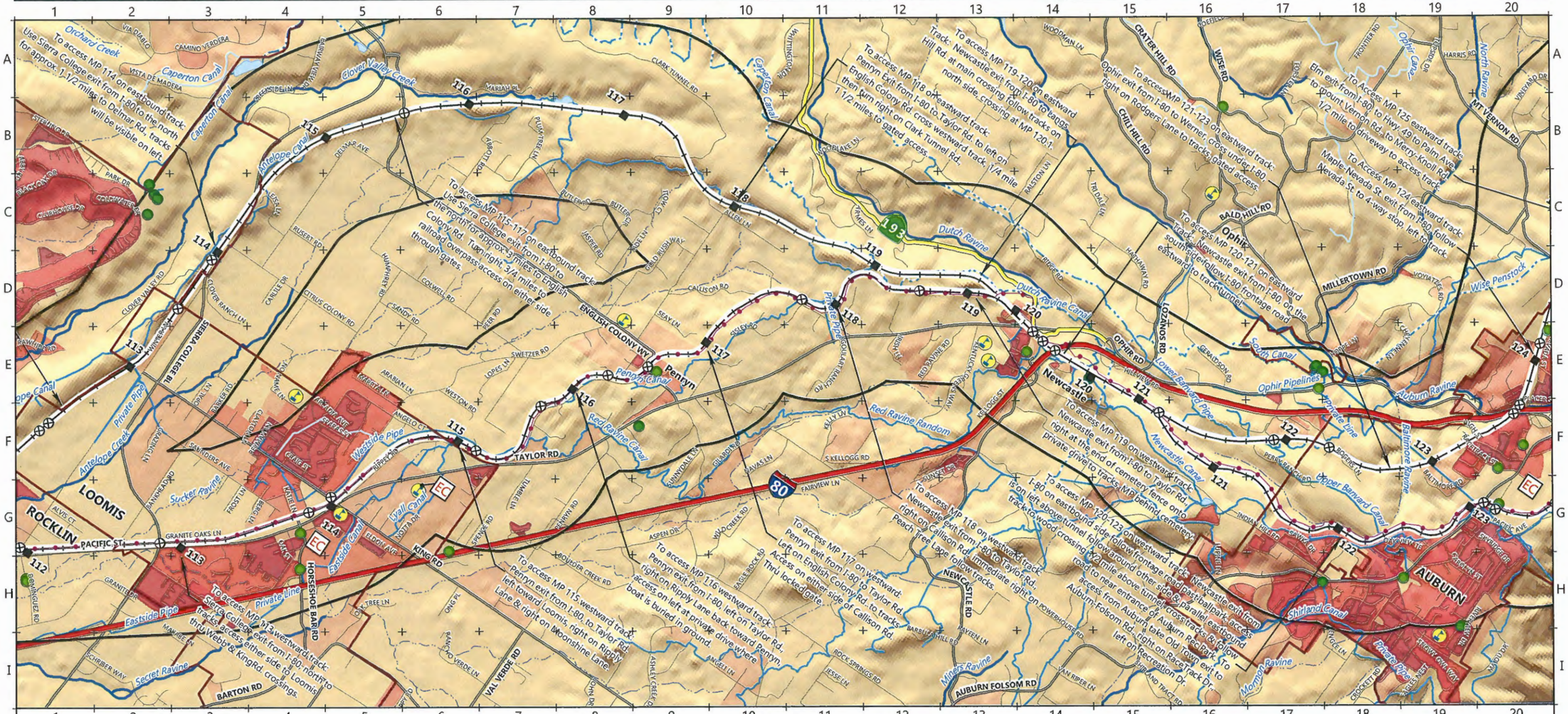
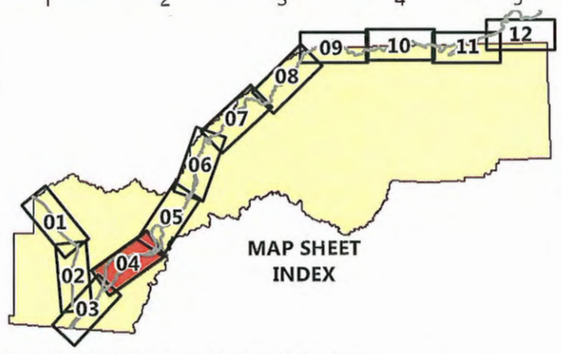
Oil and Hazardous Materials by Rail Contingency Plan

Map Sheet 4





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LEGEND

POPULATION/ACRE
- 0-1
- 1-2
- 2-3
- 3-4
- 4-5
- 5-10
- 10-50
- 50-100
- 100-250

- RAILROAD BUFFER (0.6 MI)
- COUNTY BOUNDARY
- CITY LIMITS
- RAILROAD
- PIPELINE
- INTERSTATE
- HIGHWAY
- MAJOR ROADS
- OTHER ROADS
- LAKES
- PERENNIAL STREAM
- INTERMITTENT STREAM
- CANAL
- PCWA CANAL TO PLANT OR HYDRANT
- PCWA CANAL NOT TO PLANT OR HYDRANT
- RAILROAD CROSSING
- RAILROAD MILE MARKER
- EC EVACUATION CENTER
- CRITICAL INFRASTRUCTURE
- SCHOOL

0 0.25 0.5 0.75 1 Miles

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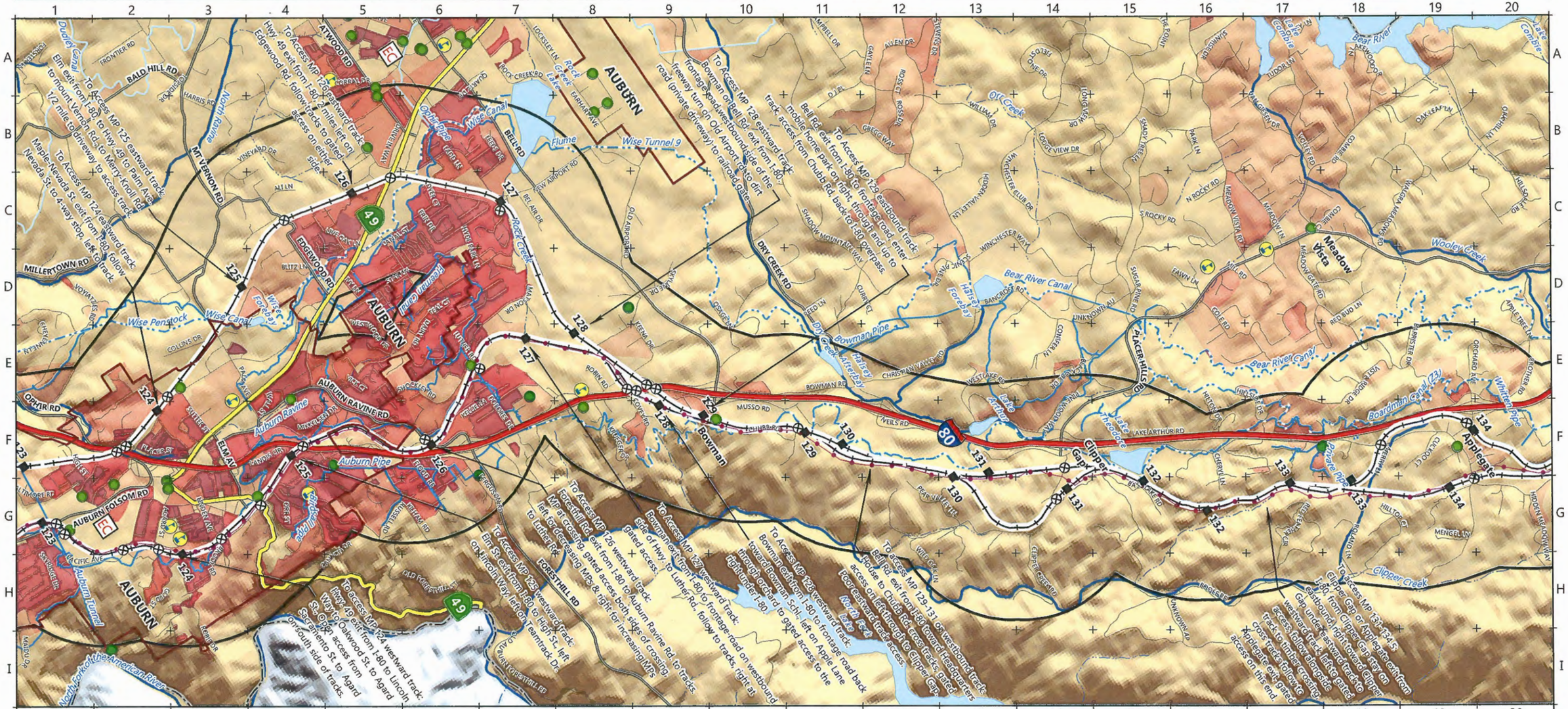
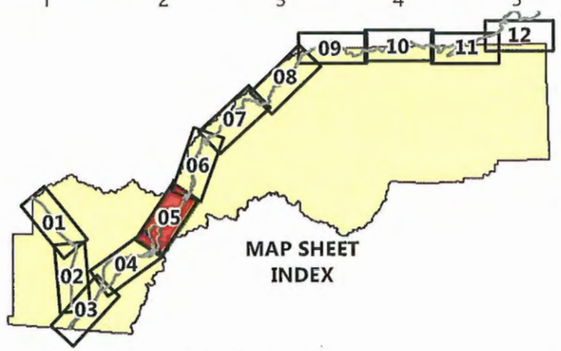
Oil and Hazardous Materials by Rail Contingency Plan

Map Sheet 5





LEGEND

POPULATION/ACRE							
0-1	4-5	RAILROAD BUFFER (0.6 MI)	INTERSTATE	LAKES	RAILROAD CROSSING
1-2	5-10	COUNTY BOUNDARY	HIGHWAY	PERENNIAL STREAM	RAILROAD MILE MARKER
2-3	10-50	CITY LIMITS	MAJOR ROADS	INTERMITTENT STREAM	EVACUATION CENTER
3-4	50-100	RAILROAD	OTHER ROADS	CANAL	CRITICAL INFRASTRUCTURE
	100-250	PIPELINE		PCWA CANAL TO PLANT OR HYDRANT	SCHOOL
				PCWA CANAL NOT TO PLANT OR HYDRANT	

0 0.25 0.5 0.75 1 Miles

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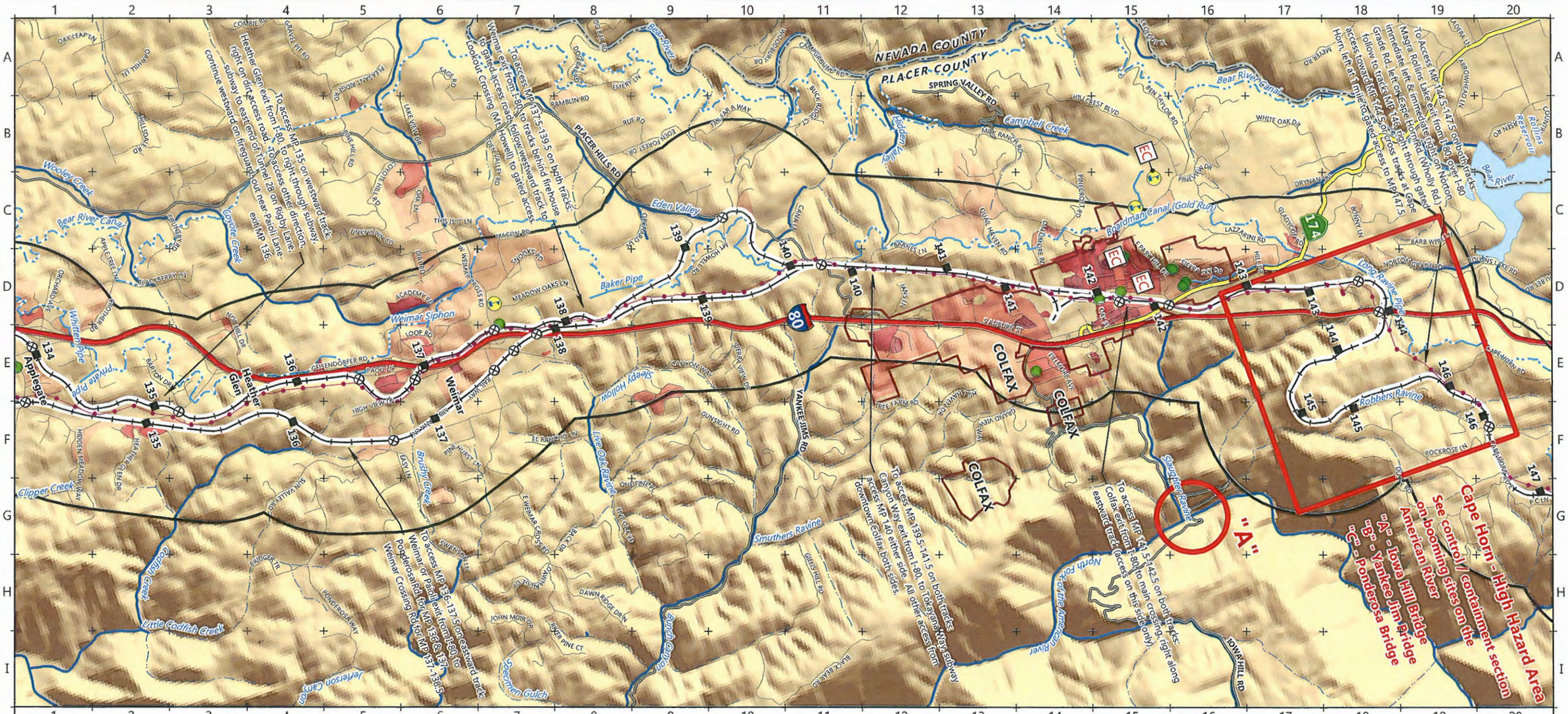
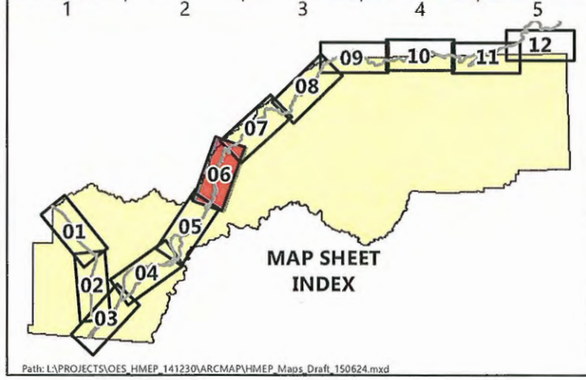
Oil and Hazardous Materials by Rail
Contingency Plan

Map Sheet 6





LEGEND

POPULATION/ACRE							
0-1	4-5	RAILROAD BUFFER (0.6 MI)	INTERSTATE	LAKES	RAILROAD CROSSING
1-2	5-10	COUNTY BOUNDARY	HIGHWAY	PERENNIAL STREAM	RAILROAD MILE MARKER
2-3	10-50	CITY LIMITS	MAJOR ROADS	INTERMITTENT STREAM	EVACUATION CENTER
3-4	50-100	RAILROAD	OTHER ROADS	CANAL	CRITICAL INFRASTRUCTURE
	100-250	PIPELINE		PCWA CANAL TO PLANT OR HYDRANT	SCHOOL
				PCWA CANAL NOT TO PLANT OR HYDRANT	

0 0.25 0.5 0.75 1 Miles

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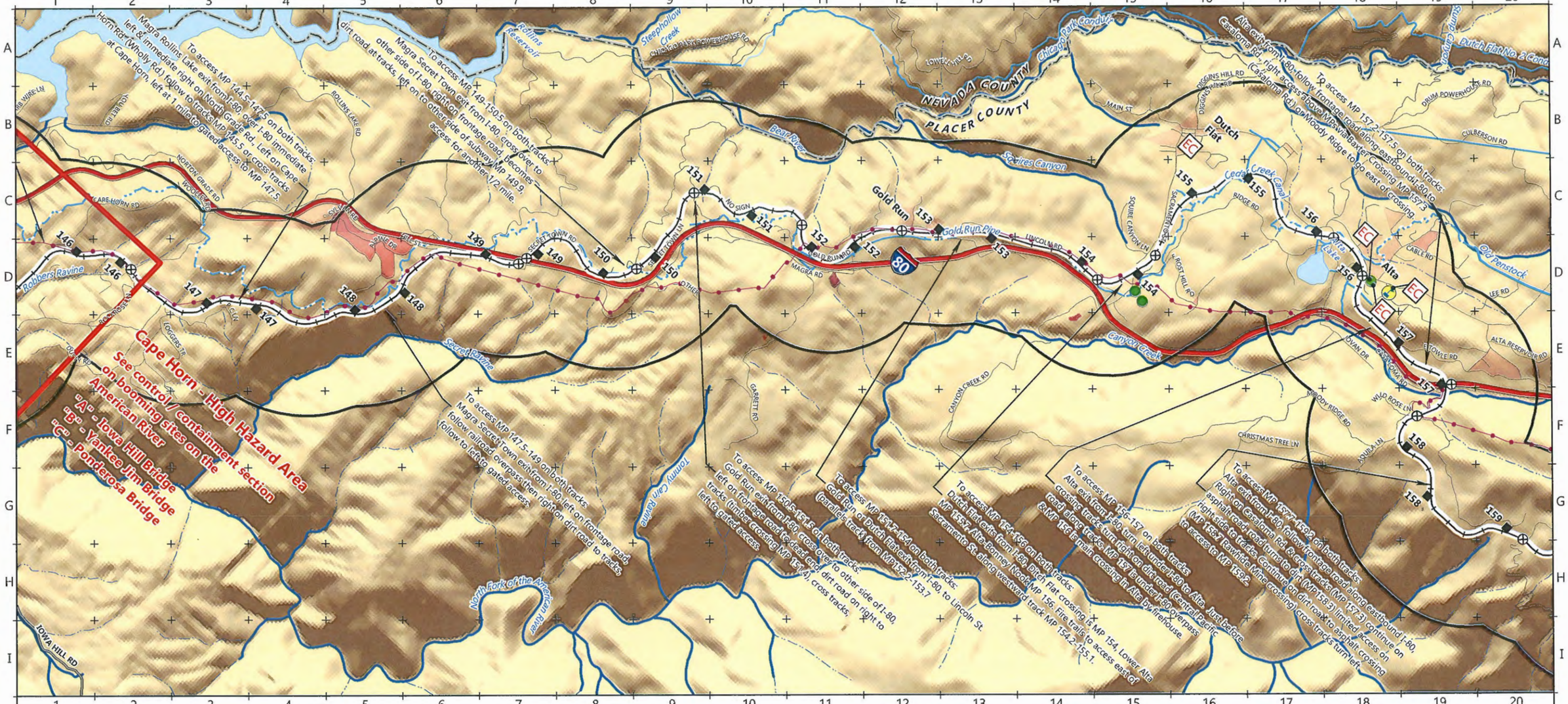
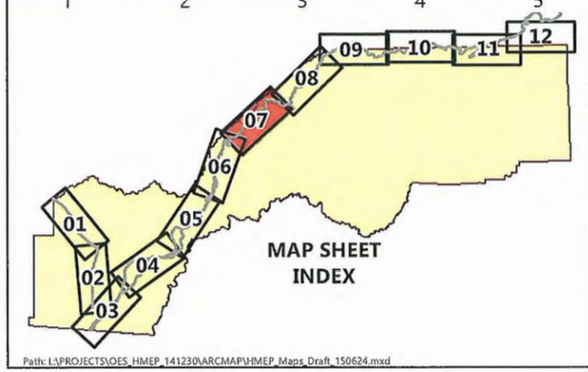
Oil and Hazardous Materials by Rail
Contingency Plan

Map Sheet 7





LEGEND

POPULATION/ACRE			
0-1	4-5	RAILROAD BUFFER (0.6 MI)	INTERSTATE
1-2	5-10	COUNTY BOUNDARY	HIGHWAY
2-3	10-50	CITY LIMITS	MAJOR ROADS
3-4	50-100	RAILROAD	OTHER ROADS
	100-250	PIPELINE	

LAKES	RAILROAD CROSSING
PERENNIAL STREAM	RAILROAD MILE MARKER
INTERMITTENT STREAM	EVACUATION CENTER
CANAL	CRITICAL INFRASTRUCTURE
PCWA CANAL TO PLANT OR HYDRANT	SCHOOL
PCWA CANAL NOT TO PLANT OR HYDRANT	

0 0.25 0.5 0.75 1 Miles

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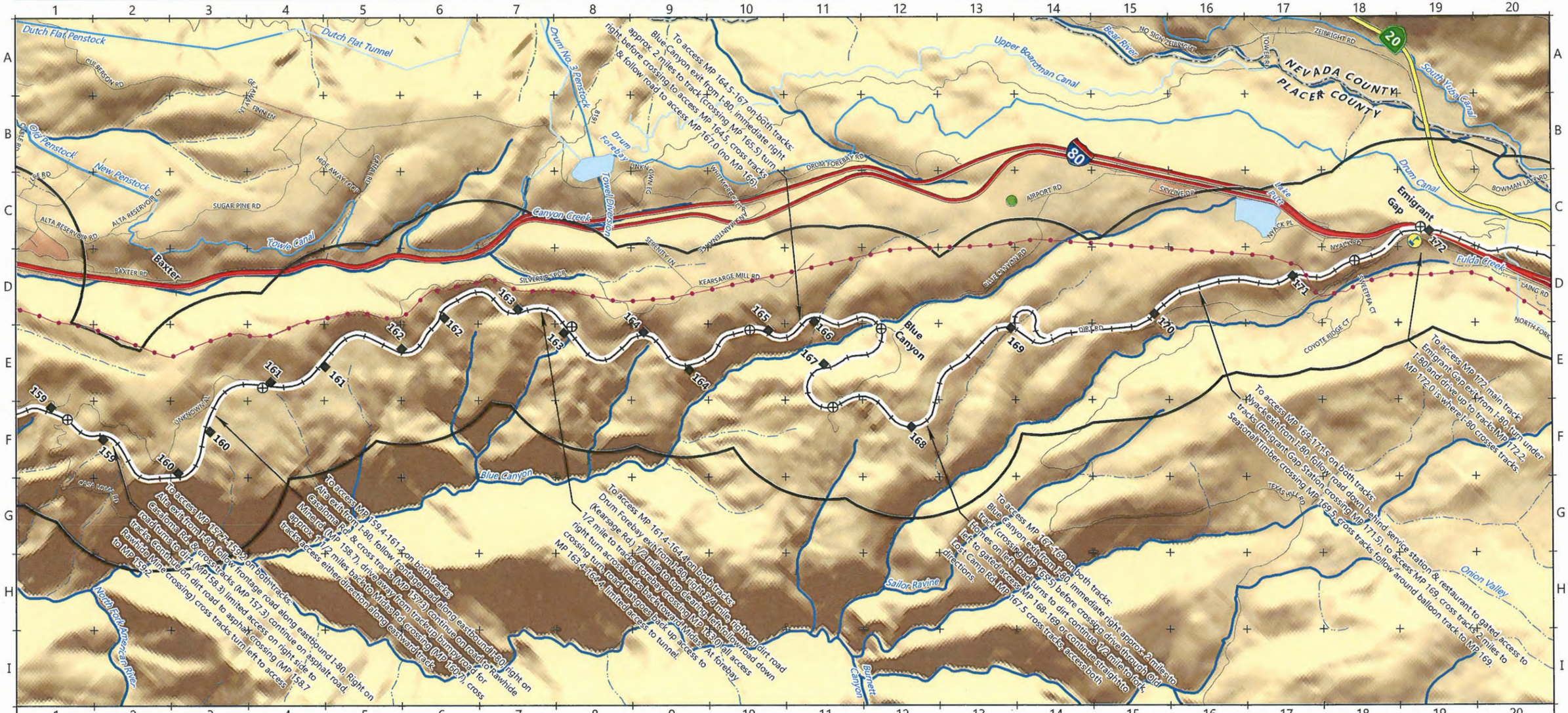
Oil and Hazardous Materials by Rail Contingency Plan

Map Sheet 8



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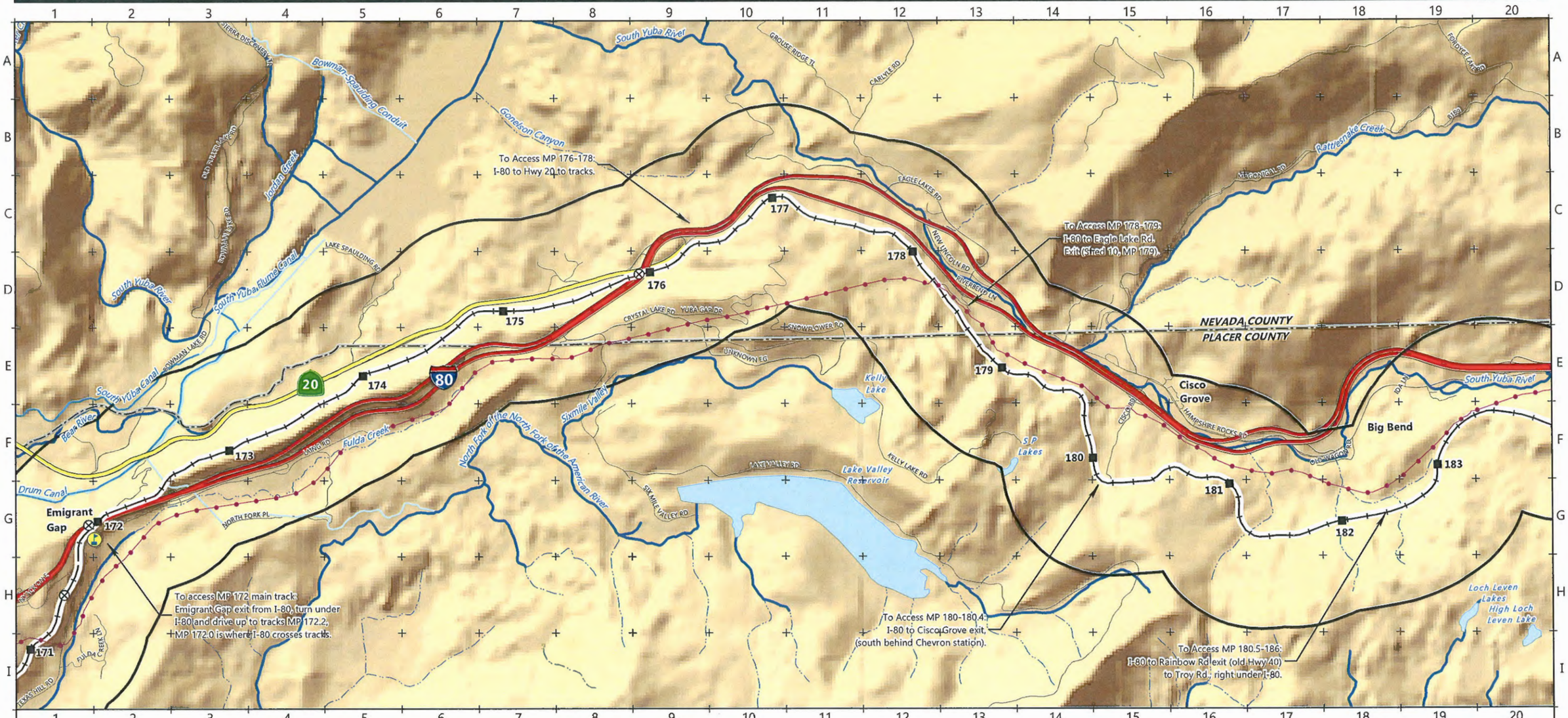
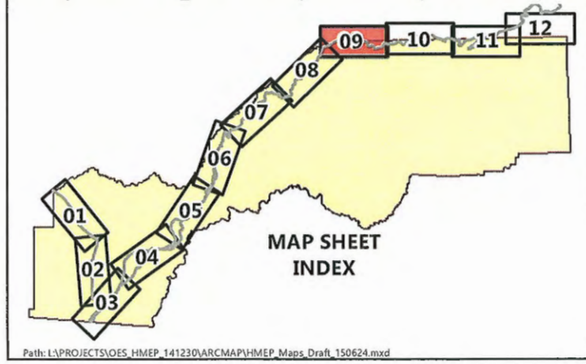
6/24/2015

Oil and Hazardous Materials by Rail Contingency Plan

Map Sheet 9





LEGEND

POPULATION/ACRE							
0-1	4-5	RAILROAD BUFFER (0.6 MI)	INTERSTATE	LAKES	RAILROAD CROSSING
1-2	5-10	COUNTY BOUNDARY	HIGHWAY	PERENNIAL STREAM	RAILROAD MILE MARKER
2-3	10-50	CITY LIMITS	MAJOR ROADS	INTERMITTENT STREAM	EVACUATION CENTER
3-4	50-100	RAILROAD	OTHER ROADS	CANAL	CRITICAL INFRASTRUCTURE
	100-250	PIPELINE		PCWA CANAL TO PLANT OR HYDRANT	SCHOOL
				PCWA CANAL NOT TO PLANT OR HYDRANT	

N

0 0.25 0.5 0.75 1
Miles

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Oil and Hazardous Materials by Rail Contingency Plan

Map Sheet 10

To Access MP 190-191:
I-80 to Soda Springs exit,
right to Serene Lakes Rd,
right to tracks

To Access MP 192:
I-80 to Soda Springs exit,
right 2 miles to Northern shed

To Access MP 180.5-186:
I-80 to Rainbow Rd exit (old Hwy 40)
to Troy Rd, right under I-80.

NEVADA COUNTY
PLACER COUNTY

Soda Springs

Donner

MAP SHEET INDEX

LEGEND

POPULATION/ACRE
0-1
1-2
2-3
3-4
4-5
5-10
10-50
50-100
100-250

RAILROAD BUFFER (0.6 MI)
COUNTY BOUNDARY
CITY LIMITS
RAILROAD
PIPELINE
INTERSTATE
HIGHWAY
MAJOR ROADS
OTHER ROADS
LAKES
PERENNIAL STREAM
INTERMITTENT STREAM
CANAL
PCWA CANAL TO PLANT OR HYDRANT
PCWA CANAL NOT TO PLANT OR HYDRANT
RAILROAD CROSSING
RAILROAD MILE MARKER
EC EVACUATION CENTER
CRITICAL INFRASTRUCTURE
SCHOOL

0 0.25 0.5 0.75 1 Miles

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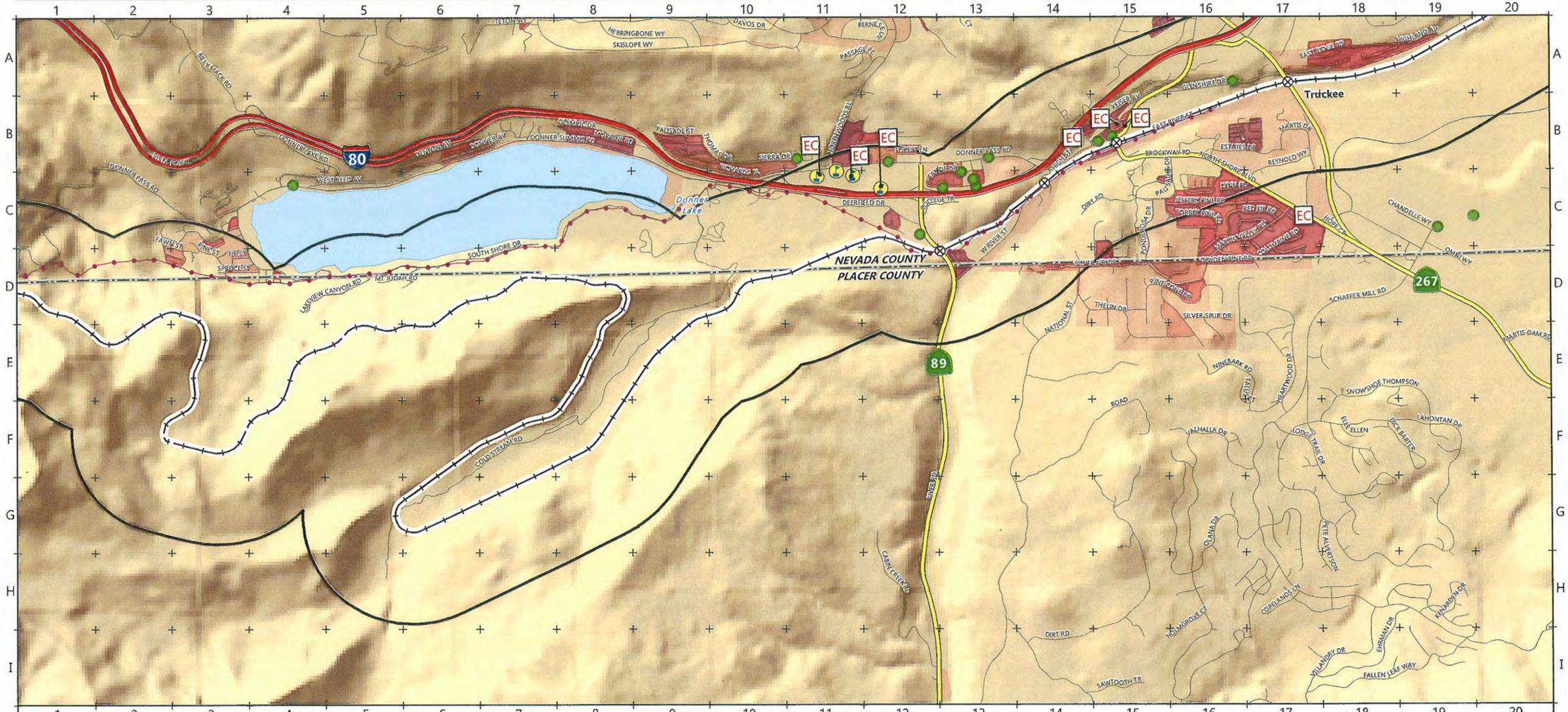
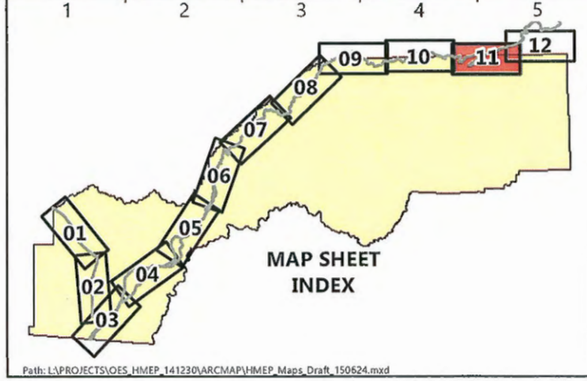
Oil and Hazardous Materials by Rail Contingency Plan

Map Sheet 11





LEGEND

POPULATION/ACRE
- 0-1
- 1-2
- 2-3
- 3-4
- 4-5
- 5-10
- 10-50
- 50-100
- 100-250

- RAILROAD BUFFER (0.6 MI)
- COUNTY BOUNDARY
- CITY LIMITS
- RAILROAD
- PIPELINE
- INTERSTATE
- HIGHWAY
- MAJOR ROADS
- OTHER ROADS
- LAKES
- PERENNIAL STREAM
- INTERMITTENT STREAM
- CANAL
- PCWA CANAL TO PLANT OR HYDRANT
- PCWA CANAL NOT TO PLANT OR HYDRANT
- RAILROAD CROSSING
- RAILROAD MILE MARKER
- EVACUATION CENTER
- CRITICAL INFRASTRUCTURE
- SCHOOL

0 0.25 0.5 0.75 1 Miles

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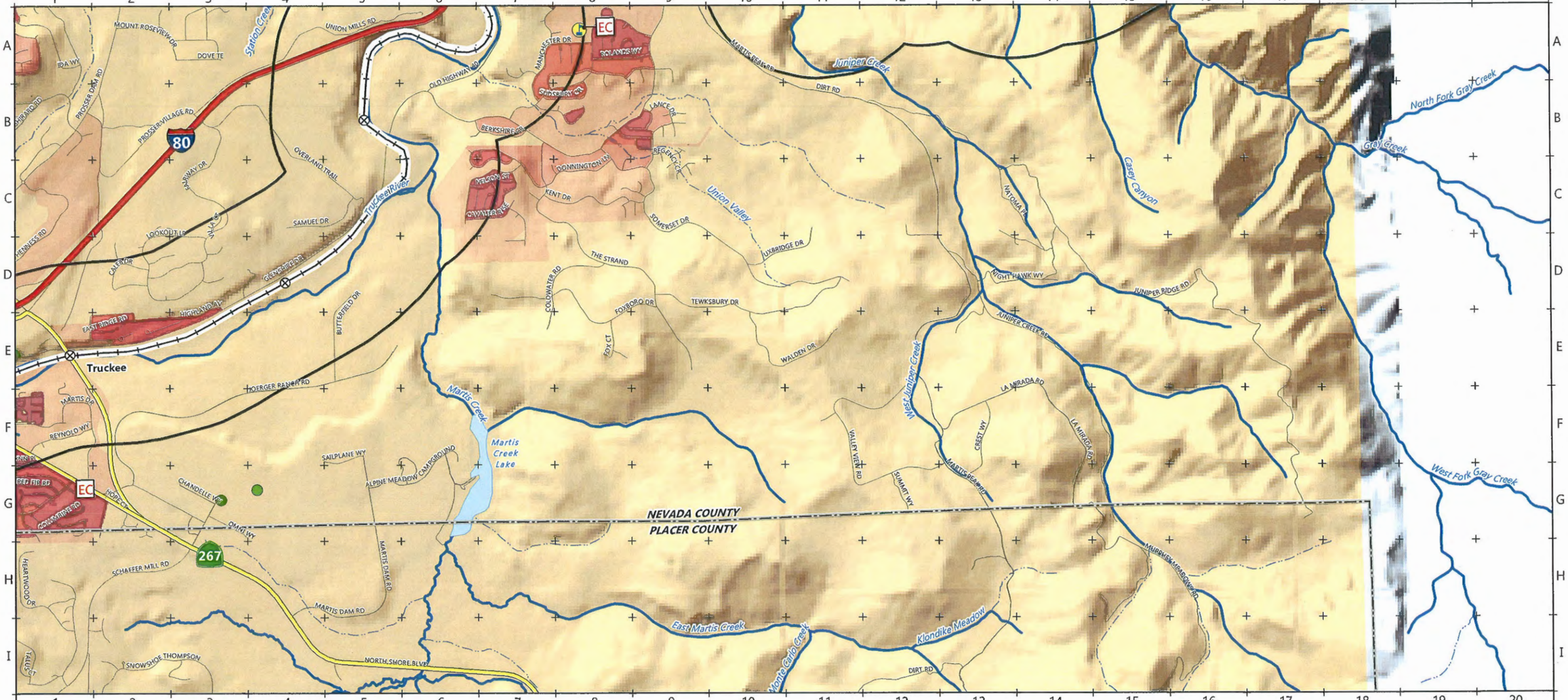
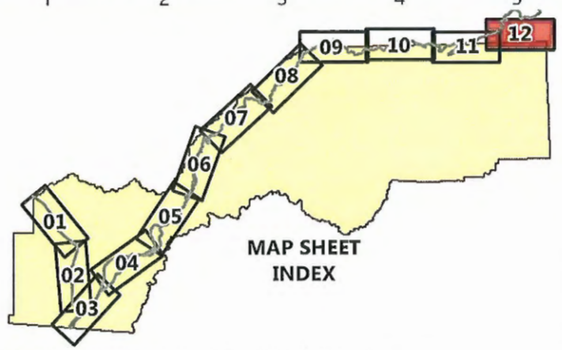
Oil and Hazardous Materials by Rail Contingency Plan

Map Sheet 12





LEGEND

POPULATION/ACRE							
0-1	4-5	RAILROAD BUFFER (0.6 MI)	INTERSTATE	LAKES	RAILROAD CROSSING
1-2	5-10	COUNTY BOUNDARY	HIGHWAY	PERENNIAL STREAM	RAILROAD MILE MARKER
2-3	10-50	CITY LIMITS	MAJOR ROADS	INTERMITTENT STREAM	EVACUATION CENTER
3-4	50-100	RAILROAD	OTHER ROADS	CANAL	CRITICAL INFRASTRUCTURE
	100-250	PIPELINE		PCWA CANAL TO PLANT OR HYDRANT	SCHOOL
				PCWA CANAL NOT TO PLANT OR HYDRANT	

N

0 0.25 0.5 0.75 1 Miles

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6/24/2015

Section 4.0

Appendix

Appendix 4.1

- **Local / Regional Assets**
- **Petro-Chemical Mutual Aid Organization**
- **95th Civil Support Team (National Guard)**
- **Placer / Nevada County Evacuation Centers**
- **Private Rental Companies**

4.1 Appendix – Local/Regional Assets
Quick Reference

LOCAL / REGIONAL ASSETS

Local / Regional Assets

Resource	Home Base / Owner	Contact Information / Comments
Air Monitoring Equipment		
• Particulate monitoring - portable	Northern Sierra Air Quality Management District	(530) 274-9360
• Hazmat / Chemical Monitoring • Area Reas	Roseville Hazmat	Roseville Police / Fire Dispatch
• Hazmat / Chemical Monitoring • Area Reas	Truckee Hazmat	Grass Valley Emergency Command Center
• Hazmat / Chemical Monitoring • Area Reas	Cal Fire / Auburn Hazmat	Grass Valley Emergency Command Center
• Hazmat / Chemical Monitoring • Area Reas	State Air Recourses Board	CalOES State Warning Center
Aircraft – Fixed Wing		
• Gippsland GA8 Airvan(1) Infrared Capabilities • Cessna 206 (1)	Auburn - CHP	
• OV-10 Bronco (Seasonal)	Grass Valley Cal Fire	Grass Valley Emergency Command Center
• Cessna 206	Auburn – Civil Air Patrol	CAP National Operations Center (NOC)
Aircraft – Rotor (Non-EMS)		
• Eurocopter – Type 2 (2) – also ALS	Auburn - CHP	Placer County / Nevada County Sheriff Dispatch
• Eurocopter – Type 2	Auburn - Placer County Sheriff	Placer County Sheriff Dispatch
Aircraft – Rotor EMS		
• All EMS Helicopters		Grass Valley Emergency Command Center
Breathing Air Fill Stations		
• Portable Cascade System - (Type I)	Roseville – Roseville Fire Dept.	Roseville Police / Fire Dispatch
• Portable Cascade System- (Type I)	Placer County Fire – Ophir Station 182	Grass Valley Emergency Command Center

• Portable Cascade System – (Type II)	South Placer Fire Protection District – "BSU 16"	Placer County Sheriff Dispatch Center
• Portable Cascade System – (Type II)	Grass Valley / Nevada County Consolidated Fire	Grass Valley Emergency Command Center
• Portable Cascade System – (Type II)	Higgins Corner Fire Protection District – Nevada County Consolidated	Grass Valley Emergency Command Center
Boom – Still Water		
• North Lake Tahoe 2 – 200' Hydrophobic Booms	North Lake Tahoe Fire	
• United States Coast Guard – 500'	USCG – Lake Tahoe Station	
Boom – Swift Water		
• Boom – Swift Water 500'	Truckee Fire Department	Grass Valley Emergency Command Center
• Boom - Swift Water 500'	Alta Fire Department	Grass Valley Emergency Command Center
Command Posts - Mobile		
• Command Post	Placer County Sheriff	Placer County Sheriff Dispatch Center
• "Command 1"	Nevada County Consolidated Fire	Grass Valley Emergency Command Center 35' Trailer
• Mobile Command Post	City of Roseville	Roseville Police / Fire Dispatch
• Mobile Command Post	City of Auburn	Auburn Police Department
Communication Equipment – Portable Radio / Mobile Repeaters		
• 2 Portable Repeaters	Placer County SAR	Placer County Sheriff Dispatch Center
• 1 Tactical Repeater	City of Roseville	Roseville Police / Fire Dispatch
• 25 Bendix King Portable Radios	City of Roseville	Roseville Police / Fire Dispatch
• 10 Bendix King Portable Radios	South Placer Fire Protection District	Placer County Sheriff Dispatch Center
• "Command 1"	Nevada County / Cal Fire	Grass Valley Emergency Command Center Command Post w/ bank of portable radios (30) and repeaters

• "Comm 27"	Cal Fire	Grass Valley Emergency Command Center Communication unit with band of portable radios and repeaters
Culvert / Pipe		
• 24" / 16" / 12" – 100' Each	Town of Truckee	Grass Valley Emergency Command Center
• Limited Supply	City of Roseville	Roseville Police and Fire Dispatch
• Limited Supply	City of Rocklin	Rocklin Police and Fire Dispatch
• Various Diameters – good supply	Nevada County	Access through local PSAP
• Various Diameters – good supply	Placer County	Access through local PSAP
Decon Supplies		
• Mass Decon Trailer	City of Rocklin	Rocklin Police and Fire Dispatch
• Mass Decon / Hazmat Trailer	Nevada County Consolidated	Grass Valley Emergency Command Center
Flood Lights - Portable	Private Vendor – Rental Company	See appendix for See Rental Companies listing
• Type I - (4)1000 watts lights • 6000 watt Generator		
• Type II – (6) 500 watts lights 5000 watt generator		
• Type III – (3) 500 watts light • 3000 watt generator		
Foam (Local)		
• Foam 23 – 1060 gallons	Rocklin Fire / Cross Staffed	Rocklin Police and Fire Dispatch
• 1100 gallons (4 totes @ 275 gal. each)	UP Railroad - Roseville Yard	RMCC: (888) 877-7267
• Kinder Morgan -1200 gallons	Rocklin Kinder Morgan	OCC: (714) 560-4850 0r (213) 624-9461
• Engine 96 – 1500 GPM	Truckee Fire Protection District	Type I Engine / ARFF – 50 gallons A/B Foam 100-200 gallons of foam in storage
Foam (Regional)		
• Foam 62 – 720 Gallons	Sac Metro Fire	Sacramento Regional Fire / EMS Communications
• Foam Trailer – 2000 gallons	Sac International Airport	Sacramento Regional Fire / EMS Communications

• Foam Trailer – 410 gallons	Mather Airport	Sacramento Regional Fire / EMS Communications
• Foam 43 – 660 gallons	West Sacramento Fire	↓
• Foam 243 – 530 gallons	West Sacramento Fire	
• Foam 75 – 500 gallons	Consumnes Fire	
• Foam Trailer – 1060	Sparks NV. Fire Department	Similar to Rocklin Fire Trailer
• 3 ARFF Trucks – 400 gallons of foam with 500 lbs. of Dry Chemical	Reno Airport	Fire: (775) 328-6500 Police (775) 328-6470 Operations (775) 328-6490
Kinder Morgan – 1150 gallons	Kinder Morgan – Bradshaw Ave.	OCC: (714) 560-4850 0r (213) 624-9461
Kinder Morgan – 1000 gallons	Kinder Morgan - Reno	OCC: (714) 560-4850 0r (213) 624-9461
Food		
• Field Kitchen o Mobile Kitchen Unit (MKU) o Food Dispensary Unit (FDU)	Cal Fire	Grass Valley Emergency Command Center 4-6 hour response time MKU – up to 1000 people FDU – up to 250 people
• Salvation Army		Roseville – (916) 784-3382 Auburn – (530) 889-3990 Grass Valley - (530) 274-3500 Reno – (775) 688-4559
Generators		
• Type 1 – 2000 Kw	Private Vendor – Rental Company	See Appendix 4.1 for See Rental Companies list
• Type II – 1500 Kw		↓
• Type III – 600 Kw		
Hazmat Teams (Local)		
• HazMat Team – Type 1	Roseville Fire Department	Roseville Police and Fire Dispatch
• HazMat Team – Type 2	Truckee Fire Department	Grass Valley Emergency Command Center
• Hazmat Team – Type 2	Placer County Fire / Cal Fire - Auburn	Grass Valley Emergency Command Center

Hazmat Teams (Regional)		
• HazMat Team – Type 1	City of Sacramento Fire Department	Sacramento Regional Fire / EMS Communications
• HazMat Team – Type 1	Sac Metro Fire	Sacramento Regional Fire / EMS Communications
• HazMat Team – Type 1	Washoe County Fire Dept.'s	Access via Mutual Aid Systems
• HazMat Team – Type 1	City of Reno Fire Department	Access via Mutual Aid Systems
Heavy Equipment – Back Hoes		Access through local PSAP
• (1)-type II	City of Rocklin	
• (4)-type II	Placer County - Auburn	
• (2)-type II	Placer County – Tahoe City	
• (1)-type II	City of Auburn	
• (1)-type II	Town of Colfax	
• (2)-type II	Town of Truckee	
• (12)-type II	Nevada County – Western Slope	
• (2)-type II	Nevada County - Truckee	
Heavy Equipment - Dozers		
• (1) Dozer - Type II	Auburn – Cal Fire	Grass Valley Emergency Command Center
• (1) Dozer – Type II	Nevada City – Cal Fire	Grass Valley Emergency Command Center
• (4) Dozer – Type II / III	Nevada County – West Side	Access through local PSAP
• (1) Dozer – Type II/III	Placer County	Access through local PSAP
Heavy Equipment - Dump Truck		
• (5) - 10 yard / Type II	City of Roseville	Access through local PSAP
• (1) – 5 yard / Type III	City of Rocklin	
• (12) – 10 Yard / Type II	Placer County	
• (10) – 6 Yard / Type III	Placer County	
• (1) – 10 yard / Type II	City of Auburn	
• (1) – 10 yard / Type II	Town of Colfax	
• (1) – 10 yard / Type II	Town of Truckee	
• (10) - 10 yard / Type II	Nevada County – Nevada City	

• (2) – 10 yard / Type II	Nevada County - Truckee	Access through local PSAP
Heavy Equipment, Wheel Loader – Skid Steer (Small)		
• (7) Type I – 60 to 80 HP	Placer County	
• (1) Type II - 53 to 71 HP	City of Roseville	Roseville Police and Fire Dispatch
• (1) Type II - Bobcat	City of Rocklin	Rocklin Police and Fire Dispatch
• (3)Type III - 38 to 51 HP (Skid Steer)	Nevada County	Access through local PSAP
• (2) Type II - Bobcat	Nevada County	
• (1) Type II - Bobcat	Placer County	
•		
Incident Command Teams		
• Placer County Type 3		Placer County Sheriff Dispatch Center
• CAL FIRE Type 1		Grass Valley Emergency Command Center
Large Diameter Hose (Fire) 5"		
• (8) Type 1 Engines – 1000' / 1500 GPM	Roseville Fire Department	Roseville Police / Fire Dispatch
• (3) Type 1 Engines – 1000' / 1500 GPM	Rocklin Fire Department	Rocklin Police / Fire
• (3) Type 1 Engines – 500-800' / 1500 GPM	South Placer Fire District	Placer County Dispatch
• (1) Type I Engine -	Town of Loomis	Placer County Sheriff Dispatch
• (2) Type I Engines	Auburn City Fire Department	Grass Valley Emergency Command Center
• (1) Type 1 – Engine – 600' / 1500 GPM	Penryn Fire Department	Placer County Sheriff Dispatch
• (8) Type I Engines – 1000' / 1500 GPM	Nevada County Consolidated Grass Valley / Nevada City	Grass Valley Emergency Command Center
• (4) Type I Engines - 1000' / 1500 GPM	Truckee Fire	Grass Valley Emergency Command Center
Portable Pumps – Clean Water		
• Type II – 8" Suction / 2000 gpm	Private Vendor – Rental Company	See Appendix 4.1 for See Rental Companies list

• Type III – 6" Suction / 2000 gpm	Private Vendor – Rental Company	See Appendix 4.1 for See Rental Companies list
• Type IV – 4" Suction / 700 gpm		
Portable Pumps – Waste Water		
• Type I – 12" Suction /8600 gpm		
• Type II – 10" Suction / 6000 gpm		
• Type III – 8" Suction / 4500 gpm		
• Type IV – 6" Suction / 1900 gpm		
• Other – 4" Suction / 885 gpm		
Portable Water Tanks		
• Portable Water Tank – 10,000 gallons	Roseville – UP Railroad	RMCC: (888) 877-7267
Sand (1.3 tons = 1 yard)		
• +130 Tons	Town of Truckee	Access through local PSAP
• 6.5 Tons	City of Colfax	
• 24-48 Tons	City of Rocklin	
• 13.5 Tons	Nevada County	
• +500 Tons	Placer County	
• +500 Tons	City of Roseville	
Vacuum Trucks / Vactor Trucks		
• (3) Type I – 2000 gallon	City of Roseville	
• (1) Type III– 500 gallon - Trailer	City of Rocklin	
• (3) Type 1 – 2000 gallon	Placer County	
• (2) Type I/II	Nevada County	
Variable Message Signs (VMS)		
• (4) 6' X 10' – Type 1	Placer County	

• (2) 6' X 10' – Type 1	Nevada County	Access through local PSAP
• (5) 6' X 10' – Type 1	City of Roseville	
• (2) 6' X 10' – Type 1	City of Rocklin	
• (1) 6' X 10' – Type 1	City of Auburn	

Time	Notable Events / Resources Ordered

Petro – Chemical Mutual Aid Organization (PMAO)
Bay Area Assets

Petro – Chemical Mutual Aid Organization (PMAO) – Typical Task Force
• Foam Aerial
  ○ 1000 gal foam
  ○ 1500 gpm pump
  ○ 75' aerial
  ○ 500' LDH (Storz)
• Foam Tender
  ○ 4000 gals. Foam
  ○ 150 gpm pump
• Engine (2)
  ○ 3000-3500 gpm pump
  ○ 800-1000 gals foam
  ○ 700-1000' LDH (Storz)
• Truck (1)
  ○ 2000 gpm pump
  ○ 95' aerial
  ○ 750 gals. foam
  ○ 1000' LDH (Storz)
Other PMAO Resources
• Foam Trailer
  ○ 5000 gpm pump
  ○ 2000 gals. Foam
  ○ 400' LDH (Storz)
• Foam Pod
  ○ 3000 gals. Foam
• HazMat 60
	Bay Area Refineries / Chemical Manufactures
	• Chevron (Richmond)
	• Dow (Pittsburg)
	• Phillips 66 (San Francisco)
	• Shell (Martinez)
	• Tesoro (Martinez)
	• Valero (Benicia)
		Chevron Dispatch:
		(510) 242-5555
		Dow Chemical Dispatch
		(925) 432-5555
		Provide the following information:
		❑ Incident Location
		❑ Staging Location
		❑ On-Scene Contact
		❑ On-Scene Contact Phone Numbers
		❑ On-Scene Radio Channel / COMMs
		❑ PMAO Contact:
		❑ Incident Description:
		  ○ Tank Fire
		  ○ Truck/Trailer Fire
		  ○ Railcar Fire
		❑ Type of fire (Fully involved tank, seal fire, dike fire, contained spill, uncontained spill)
		❑ Product involved
		❑ Number of tanks or tankcars
		❑ Size of container
		❑ Type of container / tank car
		❑ Site access issues
		❑ On Scene Recourses:
		  ○ Local / Mutual Aid Apparatus
		  ○ Water Resources
		  ○ Available LDH: Quantity and Coupling type
		  ○ Available Foam : Quantity and Type

○ Level A capabilities • Monitor Unit 60 ○ 2 – 1000 gpm Hydro-foal nozzles • "Big Sucker" ○ 5000 gpm pump w/ drafting capabilities ○ (4) 5" discharges • "6K Pump" ○ 6000 gpm diesel pump ○ (6) 5" discharges • "Six Gun" ○ 1000-6000 gpm Hydro-foam Nozzle Trailer with matching JRC's for foam • Hose Trailers ○ (1) Hose Trailer with 3500' of 5" hose – storz couplings ○ (2) portable hydrants with (4) 2 ½" outlets • (2) Quick Attack Dry Chem Trucks ○ 1000 gpm deck guns ○ 500 lbs. dry chemical		

95t h CST Capabilities

Request:

- Incident Commander City/County EOC -> Regional EOC (if available) -> CalOES 916-845-8911 -> CA JOC 916-854-3440 -> CSTStaff Duty Officer(SDO) 510-780-0683*

Communication Support

- Voice (secure /unsecure), Data/Internet (secure/unsecure), remote communication capabilities, interoperability radio support, remote/ isolated communications location, VTC, satellite phones, UHF/VHF, SATCOM, GPS remote tracking, microwave, etc.

Operations Support.

- Site Safety Plans
- Common Operating Picture Development
- Liaison with higher and follow on DOD elements
- Unit synchronization
- C4 (Command, Control, Computers and Communications)
- Aerial Photography and Satellite imagery (Modeling)

Area Air Monitoring, point detection, and air contamination analysis.

- Area RAE, HAPSITE ER (portable GCMS) Multi RAE five gas meter.

Sampling Capabilities.

- Air, Liquid, Wipe/Swab, Solid/Soil, Sludge, Vegetation, Powder/Crystalline

Contamination analysis capabilities

- Mobile laboratory with ability to analyze environmental samples for possible chemical contamination using GCMS (for public health concerns)
- FTIR / RAMAN Detection Systems

Plume Modeling.

- Provides information on population and support facilities using Homeland Security Infrastructure Program (HSIP)
- Provides Down-Range hazard plume modeling.
- Reach-back with National Atmospheric Release Advisory Center (NARAC) and Defense Threat Reduction Agency (DTRA)
- Consequence Assessment Tool Set (CATS)
- Hazardous Predictions And Assessment Capabilities (HPAC)
- GIS integration and Analysis
- CAMEO
- Local DCO and National DTRA

Technical DECON.

Placer County Evacuation Centers

***** Allow time for Shelter Staff to arrived at shelter location*****

Alta / Dutch Flat

- Alta-Dutch Flat Elementary School - 34050 Alta Bonny Nook Rd., Alta
- Alta Fire Station and Community Center - 33950 Bonny Nook Rd., Alta
- Camp Alta - 794 Alta Power House Rd, Alta
- Dutch Flat Community Center – 933 Stockton St., Dutch Flat
- Sierra First Baptist Church – 33990 Bonny Nook Rd., Alta

Auburn

- Auburn Freedom Church – 4065 Grass Valley Hwy., Auburn
- Auburn Veteran's Memorial Hall – 100 East St., Auburn
- Gold Country Fair Grounds – 1273 High St., Auburn
- Placer High School – 275 Orange St., Auburn
- Regional Park – 3770 Richardson Dr., Auburn
- Senior Center – 11577 E Ave., Auburn

Colfax

- Colfax High School – 24995 Ben Taylor Rd., Colfax
- Colfax Veteran's Memorial Hall – 22 Sunset Circle, Colfax
- Sierra Vista Community Center – 55 School St., Colfax

Foresthill

- Calvary Bible Church – 20801 Todd Valley Rd., Foresthill
- Canyon Assembly of Gods Church - 23221 Foresthill Rd., Foresthill
- Church of Jesus Christ of Later Day Saints - 20895 Todd Valley Rd., Foresthill
- Foresthill Divide Middle School – 22888 Foresthill Rd., Foresthill
- Foresthill Elementary School – 24750 Main St., Foresthill
- Foresthill High School – 23319 Foresthill Rd., Foresthill
- Foresthill Veteran's Memorial Hall – 24601 Harrison St., Foresthill
- The Carpenters Place – 5845 Sunset Dr., Foresthill

Granite Bay

- Eureka School - 5455 Eureka Rd., Granite Bay
- Fellowship Church – 5635 Douglas Blvd., Granite Bay
- Granite Bay High School – 1 Grizzly Way, Granite Bay

Kings Beach

- Boys & Girls Club of North Tahoe – 8125 Steelhead Ave., Kings Beach
- Kings Beach Elementary – 8125 Steelhead Ave., Kings Beach

Lincoln

- Club Lincoln – 830 Groveland Lane, Lincoln
- Kalaga Springs Lodge – 1167 Sun City Blvd., Lincoln
- Lincoln Community Center – 2010 1st St. Lincoln
- Lincoln High School – 790 J St., Lincoln
- Lincoln Veteran's Memorial Hall – 541 5th St., Lincoln
- McBean Park Pavilion – 65 McBean Park Dr., Lincoln

Loomis

- Del Oro High School – 3301 Taylor Rd., Loomis
- Loomis Veteran's Memorial Hall – 5945 Horseshoe Bar Rd., Loomis

Rocklin

- Granite Oaks Middle School – 2600 Wyckford Blvd., Rocklin
- Rocklin Community Center – 5480 Fifth St., Rocklin
- Rocklin Events Center – 2650 Sunset Blvd., Rocklin
- Rocklin High School – 5301 Victory Land, Rocklin
- Spring View Middle School – 5040 Fifth St., Rocklin
- Whitney High School – 701 Wildcat Blvd., Rocklin
- William Jessup University – 333 Sunset Blvd., Rocklin

Roseville

- Eskaton Village – 10001 Diamond Creek Blvd., Roseville
- Maidu Community Center – 1550 Maidu Dr., Roseville
- Oakmont High School – 1710 Cirby Way, Roseville
- Placer County Fairgrounds – 800 All American Blvd., Roseville
- Roseville High School – 1 Tiger Way, Roseville
- Roseville Veteran's Memorial Hall – 110 Park Dr., Roseville
- Wilson C. Riles Middle School – 4747 PFE Rd., Roseville
- Woodcreek Golf Club – 5880 Woodcreek Oaks Blvd., Roseville
- Woodcreek High School – 2551 Woodcreek Oaks Blvd., Roseville

Sheridan

- Stewart Hall – 6005 Camp Far West Rd., Sheridan

Tahoe City

- North Tahoe Event Center – 8318 North Lake Blvd., Tahoe City
- North Tahoe School / High School – 2945 Polaris Rd., Tahoe City
- Rideout Community Center / Elementary School – 740 Timberland Ln.
- Tahoe Lake Elementary – 375 Grove St., Tahoe City

Nevada County Evacuation Centers

***** Allow time for Shelter Staff to arrived at shelter location*****

Grass Valley

- Bear River High School – 11130 Magnolia Rd., Grass Valley
- Courthouse Athletic Club – 722 Freeman Ln., Grass Valley
- First Baptist Church – 1866 Ridge Rd., Grass Valley
- Grass Valley Seventh Day Adventist 12889 Osborne Rd., Grass Valley
- Grass Valley Methodist Church – 236 S. Church St., Grass Valley
- Grass Valley Veteran's Memorial Hall – 255 S. Auburn St., Grass Valley
- Higgins Lyons Community Association – 22490 Hacienda Dr., Grass Valley
- Lyman Gilmore Middle School – 10837 Rough and Ready Hwy., Grass Valley
- Magnolia Intermediate School – 22431 Kingston Lane, Grass Valley Nevada
- County Fair Grounds – 11228 McCourtney Rd. Grass Valley
- Nevada Union High School – 11761 Ridge Rd., Grass Valley
- Peace Lutheran Church ELCA – 828 W. Main St., Grass Valley
- Pleasant Ridge School – 16229 Duggans Rd., Grass Valley
- Sierra Foothill High School – 140 Park Ave., Grass Valley

Lake Wildwood

- Lake Wildwood Community Center – 18955 Wildflower Dr., Lake Wildwood

Nevada City

- Ananda Community Center – 14618 Tyler Foote Rd., Nevada City
- Nevada City Elementary – 505 Merlin St., Nevada City
- Nevada City Elks Lodge – 518 North Hwy 49, Nevada City
- Nevada City Veterans Building – 415 N. Pine St., Nevada City

North San Juan

- North San Juan Senior Center – 29190 Hwy 49, North San Juan
- North San Juan Fire Department – 10057 Reservoir Rd. North San Juan

Penn Valley

- Penn Valley Fire Department – 10513 Spencerville Rd. Penn Valley
- Pleasant Valley School – 14685 Pleasant Valley Rd. Penn Valley
- Ready Springs Elementary School – 10862 Spencerville Rd., Penn Valley
- Williams Ranch School – 14804 Pleasant Valley Rd. Penn Valley

Truckee

- Community Arts Center – 10046 Church St., Truckee
- Glenshire Elementary School – 10990 Dorchester Rd., Truckee
- Sierra Bible Church – 11460 Brockway Rd., Truckee
- Sierra High School – 11661 Donner Pass Rd., Truckee
- Sierra Mountain Community Education Center – 11603 Donner Pass Rd., Truckee
- Sierra Mountain Middle School – 11603 Donner Pass Rd., Truckee
- Truckee Elementary School – 11911 Donner Pass Rd., Truckee
- Truckee High School – 11725 Donner Pass Rd., Truckee
- Veterans Building – 10214 High St., Truckee

Rental Companies

Placer County Rental Companies

Placer Equipment Rental
2155 Grass Valley Hwy. Auburn CA
(916) 988-1729

Hertz Equipment Rental
10680 Industrial Ave., Roseville, CA
(916) 781-9400

River City Rentals
2155 Grass Valley Hwy., Auburn CA
(530) 885-8852

Sun Belt Rentals
4480 Yankee Hill Rd., Rocklin CA
(916)624-8226

United Rentals
4700 Pacific St., Rocklin CA
(916) 624-0641

Sunbelt Rentals
10005 Allantown Dr., Roseville CA
(916) 789-1234

Sacramento County Rental Companies

River City Rentals
11325 Folsom Blvd, Rancho Cordova CA

Sunbelt Rentals
3751 Commerce Dr., West Sacramento CA
(916) 372-2555

Greenback Equipment Rentals
9325 Greenback Lane, Orangevale CA
(916) 850-2690

All Star Rents
(866) 255-7827

Hertz Equipment Rental / DW Pumps
2345 Evergreen Ave., West Sacramento CA
(916) 376-8475

Nevada County Rental Companies

Gold-n-Green Equipment Rental
302 Railroad Ave., Grass Valley CA
(530) 273-0064

HBE Hansen Brothers Enterprises
11727 LaBarr Meadows Rd., Grass Valley CA
(530) 273-3381

Truckee Rents
10410 River Park Place, Truckee CA
(530) 587-7832

Washoe County Rental Companies

Sunbelt Rentals
695 Farrari-Mcleod Blvd. Reno NV
(775) 343-7488

All Star Rents
(866) 255-7827

Coan Equipment of Nevada
580 Spice Island Court, Sparks NV
(775) 355-0444

Hertz Equipment Rental
1610 Kleppe Lane, Reno NV
(775) 348-0140

Ahern Rentals
3750 N. Virginia St., Reno NV
(775) 322-8228

H&E Equipment Services
845 N. Hill Blvd., Reno NV
(775) 358-3323

United Rentals
12905 Old Virginia Rd., Reno NV
(775) 348-0140

America Rents
10450 S. Virginia St., Reno NV
(775) 284-1223

Appendix 4.2

Crude Oil Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Crude Oil, Sweet or Sour
Synonyms	Sweet Crude Oil, Sour Crude Oil, Heavy Crude Oil (Sweet or Sour), Synthetic Crude Oil (Sweet or Sour), Crude Oil Blend (Sweet or Sour), Petroleum Crude (Sweet or Sour), Field Crude (Sweet or Sour), Desalted Crude (Sweet or Sour)
Chemical Family	Petroleum Hydrocarbon
Intended Use	Refinery Feedstock
MARPOL Annex I Category	Crude Oils
Supplier	

24 Hour Emergency Numbers	**Chemtrec:** 800-424-9300
	California Poison Control: 800-356-3219

2. HAZARDS IDENTIFICATION

GHS Classification

H224	Flammable liquid – Category 1
H304	May be fatal if swallowed and enters airways – Category 1
H319	Eye damage/irritation – Category 2
H335	May cause respiratory irritation – Category 3
H336	Specific target organ toxicity (single exposure) – Category 3
H350	Carcinogenicity – Category 1B
H373	Specific target organ toxicity (repeated exposure) - Category 2 (bone marrow, liver, thymus)
H411	Hazardous to the aquatic environment, chronic toxicity – Category 2

Hazards Not Otherwise Classified

May contain or release poisonous hydrogen sulfide gas

Label Elements




Signal Words Danger

GHS Hazard Statements

H225	Highly flammable liquid and vapor
H350	May cause cancer
H304	May be fatal if swallowed and enters airways
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness
H373	May cause damage to organs through prolonged or repeated exposure
H316	Causes mild skin irritation
H402	Harmful to aquatic life
H412	Harmful to aquatic life with long lasting effects

GHS Precautionary Statements

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P210	Keep away from heat/sparks/open flames/hot surfaces – no smoking

2. HAZARDS IDENTIFICATION

P233	Keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilating/lighting equipment
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P264	Wash thoroughly after handling
P271	Use only outdoors or in a well-ventilated area
P273	Avoid release to the environment
P280	Wear protective gloves / protective clothing / eye protection / face protection
P361, P352,P362	IF ON SKIN OR HAIR: Remove/take off immediately all contaminated clothing. Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse.
P305,P351,P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P313	If eye irritation persists, get medical advice/attention
P301,P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331	Do NOT induce vomiting
P304,P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P370,P378	In case of fire: Use dry chemical, carbon dioxide, or foam for extinction
P391	Collect spillage
P405	Store locked up
P403,P233, P235	Store in a well-ventilated place. Keep container tightly closed, Keep cool
P501	Dispose of contents/container to approved facility

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS Registration No.	Concentration (%)
Crude Oil	8002-05-9	100
Benzene	71-43-2	0.1 - 5
n-Butane	106-97-8	1 - 7
Cyclohexane	110-82-7	< 1 - 4
Cyclopentane	287-92-3	< 1 - 2
Ethyl Benzene	100-41-4	< 1 - 3
n-Heptane	142-82-5	1 - 5
n-Hexane	110-54-3	1 - 5
Hexane (all isomers)	mixture	2 - 8
Hydrogen Sulfide	7783-06-4	< 0.1 - 3
Methylcyclohexane	108-87-2	1 - 4
Naphthalene	91-20-3	< 2
n-Nonane	111-84-2	1 - 4
n-Octane	111-65-9	1 - 5
n-Pentane	109-66-0	1 - 6
Polynuclear Aromatic Hydrocarbons (PAH)	mixture	< 1 - 10
n-Propane	74-98-6	1 - 4
Toluene	108-88-3	< 1 - 2
1,2,4 Trimethyl Benzene	95-63-6	< 1 - 2
Xylene, all isomers	1330-20-7	< 1 - 3

4. FIRST AID MEASURES

Inhalation (Breathing)

Move the exposed person to fresh air. If not breathing, clear airways and give artificial respiration. If breathing is difficult, humidified oxygen should be administered by qualified personnel. Seek medical attention if breathing difficulties continue.

Eye Contact

Flush eyes with water for at least 15 minutes. Hold eyelids apart to ensure complete irrigation of the eye. Remove contact lenses, if worn, after initial flushing. Do not use eye ointment. Seek medical attention.

Skin Contact

Remove contaminated shoes and clothing, and flush affected areas with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, clean affected area thoroughly with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Launder or discard contaminated clothing.

Ingestion (Swallowing)

Aspiration hazard. Do not induce vomiting or give anything by mouth because the material can enter the lungs and cause severe lung damage. If spontaneous vomiting is about to occur, place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. Do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention

.

Most Important Symptoms and Effects

Acute: Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue
Delayed: Dry skin and possible irritation with repeated or prolonged exposure

Potential Acute Health Effects

Inhalation: Breathing high concentrations may be harmful. Mist or vapor can irritate the throat and lungs. Breathing this material may cause central nervous system depression with symptoms including nausea, headache, dizziness, fatigue, drowsiness or unconsciousness. This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. Hydrogen sulfide and other hazardous vapors may evolve and collect in the headspace of storage tanks or other enclosed vessels. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat and respiratory tract, blurred vision, photophobia (light sensitivity) and pulmonary edema (fluid accumulation in lungs). Severe exposures can result in nausea, vomiting, muscle weakness or convulsions, respiratory failure and death.
Eye Contact: This product can cause eye irritation from short-term contact with liquid, mists or vapors. Symptoms include stinging, watering, redness and swelling. Effects may be more serious with repeated or prolonged contact. Hydrogen sulfide vapors may cause moderate to severe eye irritation and photophobia (light sensitivity).
Skin Contact: This product is a skin irritant. Contact may cause redness, itching, burning and skin damage. This material may contain polynuclear aromatic hydrocarbons that have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to an exaggerated sunburn, and is temporary in duration if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), skin eruptions (pimples) and possible skin cancers.
Ingestion: Ingestion may result in nausea, vomiting, diarrhea and restlessness. Aspiration (inadvertent suction) of liquid into the lungs must be avoided as even small quantities in the lungs can produce chemical pneumonitis, pulmonary edema or hemorrhage and even death.

Potential Chronic Health Effects

Chronic effects of overexposure are similar to acute effects including central nervous system (CNS) effects and CNS depression. Effects may also include irritation of the digestive tract, irritation of the respiratory tract, nausea, vomiting and skin dermatitis.

4. FIRST AID MEASURES

Notes to Physician

This material may contain or liberate hydrogen sulfide. In high doses, hydrogen sulfide may produce pulmonary edema and respiratory depression or paralysis. The first priority in treatment should be providing adequate ventilation and administering 100% oxygen. If unresponsive to supportive care, nitrites (amyl nitrite by inhalation or sodium nitrite by I.V.) may be an effective antidote, if delivered within the first few minutes of exposure. For adults, the dose is 10 ml of a 3$NaNO_2$ solution (0.5 gm $NaNO_2$ in 15 ml water) IV over 2 to 4 minutes. The dosage should be adjusted in children or in the presence of anemia and methemoglobin levels, arterial blood gases, and electrolyties should be monitored.

Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis. Inhalation overexposure can produce toxic effects, monitor for respiratory distress. If cough or breathing difficulties develop, evaluate for upper respiratory tract inflammation, bronchitis and pneumonitis.

Skin contact may aggravate an existing dermatitis. High pressure injection injuries may cause necrosis of underlying tissue regardless of superficial appearance.

Federal regulations (29 CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (i)(1)(i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i)(4)(i), provide a urine sample at the end of the shift for measurement of urine phenol.

5. FIRE FIGHTING MEASURES

Flammability Classification

OSHA Classification (29 CFR 1910.1200): Flammable Liquid
NFPA Class-1B Flammable Liquid
NFPA Ratings: Health: 3, Flammability: 3, Reactivity: 0

Flash Point

< 38°C, < 100°F (ASTM D-56)

Flammable Limits

Lower Limit: 1.1%
Upper Limit: 6.0%

Autoignition Temperature

310°C, 590°F

Combustion Products

Highly dependent on combustion conditions. Fume, smoke, carbon monoxide, carbon dioxide, sulfur and nitrogen oxides, aldehydes and unburned hydrocarbons.

Fire and Explosion Hazards

This material is extremely flammable and can be ignited by heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment and electronic devices such as cell phones, computers, calculators and pagers which have not been certified as intrinsically safe). Vapors are heavier than air and can accumulate in low areas. May create vapor/air explosion hazard indoors, in confined

5. FIRE FIGHTING MEASURES

spaces, outdoors or in sewers. Vapors may travel considerable distances to a remote source of ignition where they can ignite, flash back or explode. Product can accumulate a static charge that may cause a fire or explosion. A product container, if not properly cooled, can rupture in the heat of a fire.

Extinguishing Media Dry chemical, carbon dioxide or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Long duration fires involving crude or residual oil stored in tanks may result in a boilover. The contents of the tank may be expelled beyond the containment dikes or ditches. All personnel should be kept back a safe distance when a boilover is anticipated. Use water spray to cool fire-exposed containers and to protect personnel. Isolate immediate hazard area and keep unauthorized personnel out. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water. Avoid spreading burning liquid with water used for cooling. For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by regulations, a self-contained breathing apparatus should be worn. Wear other appropriate protective equipment as conditions warrant.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Extremely Flammable. Spillage of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof electrical equipment is recommended. Product may contain or release poisonous hydrogen sulfide gas. If the presence of dangerous amounts of H_2S around the spilled product is suspected, additional or special actions may be warranted including access restrictions and the use of protective equipment. Stay upwind and away from spill/release. Isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment as conditions warrant per Exposure Controls/Personal Protection guidelines.

Environmental Precautions Stop the leak if it can be done without risk. Prevent spilled material from entering waterways, sewers, basements or confined areas. Contain release to prevent further contamination of soils, surface water or groundwater. Clean up spill as soon as possible using appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil.

Methods for Containment and Clean Up Immediate cleanup of any spill is recommended. Build dike far ahead of spill for containment and later recovery or disposal of spilled material. Absorb spill with inert material such as sand or vermiculite and place in suitable container for disposal. If spilled on water, remove with appropriate equipment like skimmers, booms or absorbents. In case of soil contamination, remove contaminated soil for remediation or disposal in accordance with applicable regulations.

Reporting Report spills/releases as required, to appropriate local, state and federal authorities. US

6. ACCIDENTAL RELEASE MEASURES

Coast Guard and Environmental Protection Agency regulations require immediate reporting of spills/release that could reach any waterway including intermittent dry creeks. Report spill/release to the National Response Center at (800) 424-8802. In case of accident or road spill, notify Chemtrec at (800) 424-9300.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Extremely flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas.

Use non-sparking tools and explosion-proof equipment. Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. Explosion-proof electrical equipment is recommended and may be required by fire codes.

Warning! Use of this material in spaces without adequate ventilation may result in the generation of hazardous levels of combustion products and/or inadequate oxygen levels for breathing. Odor is an inadequate warning for hazardous conditions.

To prevent and minimize fire or explosion risk from static accumulation and discharge, effectively bond and/or ground product transfer system. Do not use electronic devices (such as cellular phones, computers, calculators, pagers, etc.) in or around any fueling operation or storage area unless the devices are certified as intrinsically safe. Electrical equipment and fittings should comply with local fire codes.

Precautions for Safe Storage

Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces and all sources of ignition. Post area warnings: 'No Smoking or Open Flame'. Keep away from incompatible material. Outdoor or detached storage of portable containers is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

In a tank, barge or other closed container, the vapor space above materials containing hydrogen sulfide may result in concentrations of H_2S immediately dangerous to life or health. Check atmosphere for oxygen content, H_2S and flammability prior to entry.

Portable containers should never be filled while they are in or on a motor vehicle or marine craft. Static electricity may ignite vapors when filling non-grounded containers or vehicles on trailers. To avoid static buildup, do not use a nozzle lock open device. Use only approved containers. Keep containers tightly closed. Place the container on the ground before filling. Keep the nozzle in contact with the container during filling.

Empty containers retain liquid and vapor residues and can be dangerous. Do NOT pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat, flame, sparks, static electricity or other sources of ignition; they may explode and cause injury or death. Do not attempt to refill or clean containers since residue is difficult to remove. Empty drums should be completely drained, properly closed and returned to the supplier or a qualified drum reconditioner. All containers should be disposed of in an environmentally safe manner in accordance with government regulations.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component	ACGIH Exposure Limits	OSHA Exposure Limits	NIOSH Exposure Limits
Crude Oil	5 mg/m^3 TWA 10 mg/m^3 STEL	5 mg/m^3 TWA	2500 mg/m^3 IDLH
Crude Oil Exposure Limits Above Are Applicable to Oil Mist, If Generated			
Benzene	0.5 ppm TWA 2.5 ppm STEL Skin	1 ppm TWA 5 ppm STEL Skin	0.5 ppm TWA 1 ppm STEL Skin 500 ppm IDLH
n-Butane	800 ppm TWA	800 ppm TWA	800 ppm TWA
Cyclohexane	100 ppm TWA	300 ppm TWA	300 ppm TWA 1300 ppm IDLH
Cyclopentane	600 ppm TWA		600 ppm TWA
Ethyl Benzene	100 ppm TWA 125 ppm STEL	100 ppm TWA 125 ppm STEL	100 ppm TWA 125 ppm STEL 800 ppm IDLH
n-Heptane	400 ppm TWA 500 ppm STEL	500 ppm TWA	85 ppm TWA 440 ppm Ceiling 750 ppm IDLH
n-Hexane	50 ppm TWA Skin	500 ppm TWA	50 ppm TWA 1100 ppm IDLH
Hexane (all isomers)	500 ppm TWA 1000 ppm STEL Skin		100 ppm TWA 510 ppm IDLH Ceiling
Hydrogen Sulfide	1 ppm TWA 15 ppm STEL	20 ppm Ceiling 50 ppm Peak	5 ppm TWA 10 ppm Ceiling 100 ppm IDLH
Methylcyclohexane	400 ppm TWA	500 ppm TWA	400 ppm TWA 1200 ppm IDLH
Naphthalene	10 ppm TWA 15 ppm STEL Skin	10 ppm TWA	10 ppm TWA 15 ppm STEL Skin 250 ppm IDLH
n-Nonane	200 ppm TWA		200 ppm TWA
n-Octane	300 ppm TWA	500 ppm TWA	75 ppm TWA 385 ppm Ceiling 1000 ppm IDLH
n-Pentane	600 ppm TWA	1000 ppm TWA	120 ppm TWA 610 ppm Ceiling 1500 ppm IDLH
Polynuclear Aromatic Hydrocarbons (PAH)	0.2 mg/m^3 TWA	0.2 mg/m^3 TWA	80 mg/m^3 IDLH
PAH Limits Above Are Applicable to Coal Tar Pitch Volatiles as Benzene Solubles			
n-Propane	1000 ppm TWA	1000 ppm TWA	1000 ppm TWA 2100 ppm IDLH
Toluene	50 ppm TWA Skin	200 ppm TWA 300 ppm Ceiling 500 ppm Peak-10 min	100 ppm TWA 150 ppm STEL 500 ppm IDLH
1,2,4 Trimethyl Benzene	25 ppm TWA	25 ppm TWA	25 ppm TWA
Xylene, all isomers	100 ppm TWA 150 ppm STEL	100 ppm TWA 150 ppm STEL	900 ppm IDLH

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional for further information.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component	ACGIH Exposure Limits	OSHA Exposure Limits	NIOSH Exposure Limits
ACGIH - American Conference of Government Industrial Hygienists, OSHA - Occupational Safety and Health Administration, NIOSH - National Institute for Industrial Safety and Health, TWA - Time Weighted Average (8 hour average for ACGIH and OSHA, 10 hour average for NIOSH), STEL - 15 Minute Short Term Exposure Level, Skin - indicates potential for cutaneous absorption of liquid or vapor through the eyes or mucous membranes, Ceiling - Ceiling Level, Peak - Acceptable peak over the ceiling concentration for a specified number of minutes, IDLH - Immediately Dangerous to Life and Health			

Personal Protective Equipment

General Considerations

Consider the potential hazards of this material, applicable exposure limits, job activities and other substances in the work place when designing engineering controls and selecting personal protective equipment.

Engineering Controls

Use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels below the recommended exposure limits. An emergency eye wash station and safety shower should be located near the work station.

Personal Protective Equipment

If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, personal protective equipment (PPE) is recommended. A hazard assessment of the work should be conducted by a qualified professional to determine what PPE is required.

Respiratory Protection

A respiratory protection program that meets or exceeds OSHA 29 CFR 1910.134 and ANSI Z.88.2 should be followed whenever workplace conditions warrant the use of a respirator. When airborne concentrations are expected to exceed the established exposure limits given in Section 8, use a NIOSH approved air purifying respirator equipped with organic vapor cartridges/canisters. Use a full-face positive-pressure supplied air respirator in circumstances where air-purifying respirators may not provide adequate protection or where there may be the potential for airborne exposure above the exposure limits. If exposure concentration is unknown, IDLH conditions exist or there is a potential for exposure to hydrogen sulfide above exposure limits, use a NIOSH approved self contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode.

Eye Protection

Eye protection that meets or exceeds ANSI Z.87.1 is recommended if there is a potential for liquid contact to the eyes. Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Chemical goggles should be worn during transfer operations or when there is a likelihood of misting, splashing or spraying of this material. A face shield may be necessary depending on conditions of use.

Skin and Body Protection

Avoid skin contact. Wear long-sleeved fire-retardant garments while working with flammable and combustible liquids. Additional chemical-resistant protective gear may be required if splashing or spraying conditions exist. This may include an apron, arm covers, impervious gloves, boots and additional facial protection.

Hand Protection

Avoid skin contact. Use impervious gloves (e.g., PVC, neoprene, nitrile rubber). Check with glove suppliers to confirm the breakthrough performance of gloves. PVC and neoprene may be suitable for incidental contact. Nitrile rubber should be used for longer term protection when prolonged or frequent contact may occur. Gloves should be worn on clean hands and hands should be washed after removing gloves. Also wash hands with plenty of mild soap and water before eating, drinking, smoking, using toilet facilities or leaving work.

Personal Protective Equipment

Special Considerations Workplace monitoring plans should consider the possibility that heavy metals such as mercury may concentrate in process vessels and equipment presenting the possibility of exposure during sampling and maintenance operations. Mercury and other heavy metals may be present in trace quantities in crude oil, raw natural gas and condensates. Storage and processing of these materials can result in these metals, including elemental mercury, accumulating in enclosed vessels and piping, typically at the low point of the processing equipment. Mercury may also concentrate in sludges, sands, scales, waxes and filter media.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Amber to black liquid	**Physical Form**	Liquid
Odor	Strong hydrocarbon, sulfurous odor possible	**Odor Threshold**	Not established
pH	Neutral	**Vapor Pressure**	0.6 - 10 psi (Reid RVP)
Vapor Density	>1 (air = 1)	**Boiling Point/Range**	0-1000°F/-17-538°C
Percent Volatile	>50%	**Partition Coefficient**	2 - 6
Specific Gravity	0.7 - 1.03 @ 60°F	**Density**	5.8 - 8.6 lb/gal @ 60°F
Molecular Weight	Not determined	**Evaporation Rate**	Not established
Flash Point	<100°F/<38°C	**Test Method**	ASTM D-56
Explosive Limits	1.1% LEL, 6.0% UEL	**Autoignition Temperature**	590°F/310°C
Solubility in Water	Slightly soluble in water		

10. STABILITY AND REACTIVITY

Stability Stable under normal anticipated storage and handling temperatures and pressures. Extremely flammable liquid and vapor. Vapor can cause flash fire.

Conditions to Avoid Avoid high temperatures and all possible sources of ignition. Prevent vapor accumulation.

Incompatibility (Materials to Avoid) Avoid contact with strong oxidizing agents such as strong acids, alkalies, chlorine and other halogens, dichromates or permanganates, which can cause fire or explosion.

Hazardous Decomposition Products Hazardous decomposition products are not expected to form curing normal storage. The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

Hazardous Polymerization Not known to occur

11. TOXICOLOGICAL INFORMATION

Overview This product is an amber to black liquid with a strong hydrocarbon odor, it may also have a sulfurous or rotten egg odor. Hydrogen sulfide, an extremely flammable and very toxic gas may be present. This product is a volatile and extremely flammable liquid that may cause flash fires. Keep away from heat, sparks and flames and other sources of ignition. This product contains benzene, which may cause cancer or be toxic to blood forming organs. It contains polynuclear aromatic hydrocarbons

11. TOXICOLOGICAL INFORMATION

that are confirmed human carcinogens. It contains material that has caused cancer based on animal data. Never siphon this product by mouth. If swallowed, this product may be aspirated into the lungs and cause lung damage or death.

This material may contain benzene, ethyl benzene, naphthalene and polynuclear aromatic hydrocarbons (PAH) at concentrations above 0.1%. Benzene and PAH are considered to be known human carcinogens by OSHA, IARC and NTP. IARC has identified several individual PAH as probably carcinogenic to humans (Group 2A) and ethyl benzene, naphthalene and several individual PAH as possibly carcinogenic to humans (Group 2B) based on laboratory animal studies.

Toxicological Information of the Material

Acute Toxicity

Dermal: Low Toxicity: LD50 > 2000 mg/kg (rabbit)
Causes mild skin irritation. Repeated exposure may cause skin dryness or cracking that can lead to dermatitis.

Inhalation: Hydrogen Sulfide is Extremely Toxic: LC100 = 600 ppm(v), 30 min (man)
Product expected to have low degree of toxicity by inhalation: LC 50 > 5 mg/l (vapor)
Effect of overexposure may include irritation of the digestive tract, irritation of the respiratory tract, nausea, vomiting, diarrhea and signs of central nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue). Continued inhalation may result in unconsciousness and/or death.

Ingestion: Product expected to have low degree of toxicity by ingestion: Oral LD50 > 5 g/kg (rat), > 10 g/kg (mice)
Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Eye Damage / Irritation

Causes serious eye irritation.

Sensitization

Skin: Not expected to be a skin sensitizer
Respiratory: Not expected to be a respiratory sensitizer

Specific Target Organ Toxicity

Single Exposure: High concentrations may cause irritation of the skin, eyes, digestive tract, irritation of the respiratory tract, nausea, vomiting, diarrhea and signs of central nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue). Continued inhalation may result in unconsciousness and/or death.

Repeated Exposure: May cause damage to organs or organ systems through prolonged or repeated exposure. Laboratory animal studies of dermal and inhalation exposure routes have demonstrated toxicity to the liver, bone marrow, blood, spleen and thymus.

Conditions Aggravated by Overexposure

Disorders of the organs or organ systems that may be aggravated by significant exposure to this material or its components include the skin, respiratory system, liver, kidneys, CNS, cardiovascular system and blood-forming system.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity

May cause cancer.

Causes cancer in laboratory animals. Chronic application of crude oil to mouse skin resulted in an increased incidence of skin tumors.

The International Agency for Research on Cancer (IARC) concluded in its Crude Oil Monograph that there is limited evidence of carcinogenicity in animals, and that crude oil is not classifiable as to its carcinogenicity in humans (Group 3). It has not been listed as a carcinogen by NTP or OSHA.

Germ Cell Mutagenicity

Inadequate information available, not expected to be mutagenic.

Reproductive and Developmental Toxicity

Inadequate information available. Dermal exposure to crude oil during pregnancy resulted in limited evidence of developmental toxicity in laboratory animals. Decreased fetal weight and increased resorptions were noted at maternally toxic doses. No significant effects on pup growth or other developmental landmarks were observed postnatally.

Additional Information

Hydrogen Sulfide (H_2S). This material may contain or liberate H_2S, a poisonous gas with the smell of rotten eggs. Odor is not a reliable indicator of exposure because olfactory fatigue causes the smell to disappear. H_2S has a broad range of effects depending on the airborne concentration and length of exposure:
10 ppm: eye and respiratory tract irritation
100 ppm: coughing, headache, dizziness, nausea, eye irritation, loss of sense of smell in minutes
200 ppm: potential for pulmonary edema after 20 minutes
500 ppm: loss of consciousness after short exposures, potential for respiratory arrest
1000 ppm: Immediate loss of consciousness may lead rapidly to death, prompt cardiopulmonary resuscitation may be required.

Polycyclic Aromatic Compounds (PAHs): This material may contain varying concentrations of PAHs that have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to a sunurn and is temporary if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), skin eruptions (pimples) and possible skin cancers.

Toxicological Information of Components

Benzene 71-43-2

Acute Data:
Dermal LD50 > 9400 mg/kg (Rabbit), (Guinea Pig)
LC50 = 9980 ppm (Mouse); 10000 ppm/7hr (Rat)
Oral LD50 = 4700 mg/kg (Mouse); 930 mg/kg (Rat); 5700 mg/kg (Mammal)
Carcinogenicity: Benzene is an animal carcinogen and is known to produce acute myelogenous leukemia (a form of cancer) in humans. Benzene has been identified as a human carcinogen by NTP, IARC and OSHA.
Target Organs: Prolonged or repeated exposures to benzene vapors has been linked to bone marrow toxicity which can result in blood disorders such as leukopenia, thrombocytopenia, and aplastic anemia. All of these diseases can be fatal.
Developmental: Exposure to benzene during pregnancy demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased body eight and increased skeletal variations in rodents. Alterations in hematopoeisis have been observed in the fetuses and offspring of pregnant mice.

11. TOXICOLOGICAL INFORMATION

Mutagenicity: Benzene exposure has resulted in chromosomal aberrations in human lymphocytes and animal bone marrow cells, and DNA damage in mammalian cells in vitro

Cyclohexane 110-82-7

Acute Toxicity:
Dermal LD50 => 2 g/kg (Rabbit)
LC50 > 4,044 ppm (4-hr, Rat)
Oral LD50 > 2 g/kg (Rat)
Target Organs: Cyclohexane can cause eye, skin and mucous membrane irritation, CNS depressant and narcosis at elevated concentrations. In experimental animals exposed to lethal concentrations by inhalation or oral route, generalized vascular damage and degenerative changes in the heart, lungs, liver, kidneys and brain were identified.
Developmental: Cyclohexane has been the focus of substantial testing in laboratory animals. Cyclohexane was not found to be genotoxic in several tests including unscheduled DNA synthesis, bacterial and mammalian cell mutation assays, and in vivo chromosomal aberration. An increase in chromosomal aberrations in bone marrow cells of rats exposed to cyclohexane was reported in the 1980's. However, a careful reevaluation of slides from this study by the laboratory which conducted the study indicates these findings were in error, and that no significant chromosomal effects were observed in animals exposed to cyclohexane. Findings indicate long-term exposure to cyclohexane does not promote dermal tumorigenesis.

Ethyl Benzene 100-41-4

Acute Toxicity:
Dermal LD50 = 17800 mg/kg (Rabbit)
LC50 = 4000 ppm/4 hr; 13367 ppm (Rat)
Oral LD50 = 3500 mg/kg (Rat)
Carcinogenicity: Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC. Ethyl benzene has not been listed as a carcinogen by NTP or OSHA.
Target Organs: In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study there was mild damage to the kidney (tubular hyperplasia), liver (eosinophilio foci,hypertrophy, necrosis), thyroid (hyperplasia) and pituitary (hyperplasia).

n-Hexane 110-54-3

Acute Toxicity:
Dermal LD50 = >2,000 mg/kg (Rabbit)
LC50 > 3,367 ppm (4 hr, Rat)
Oral LD50 > 5,000 mg/kg (Rat)
Target Organs: Excessive exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical sensory numbness and paresthesias of distal portions of the extremities. Motor weakness is typically observed in muscles of the toes and fingers but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone. Prolonged exposure to high concentrations of n-hexane (>1,000 ppm) has resulted in decreased sperm count and degenerative changes in the testes of rats but not those of mice.

Hydrogen Sulfide 7783-06-4

Acute Toxicity:
Dermal - No data
LCLo= 600 ppm, 30 min (Human)
Hydrogen sulfide concentrations will vary significantly depending on the source and sulfur content of the crude. Sweet crudes (<0.5% sulfur) may contain toxicologically significant levels of hydrogen

11. TOXICOLOGICAL INFORMATION

sulfide in the vapor spaces of bulk storage tanks and transport compartments. Concentrations of H_2S as low as 10 ppm over an 8 hour workshift may cause eye or throat irritation. Prolonged breathing of 50-100 ppm H_2S vapors can produce significant eye and respiratory irritation. Sour crudes commonly contain extremely high concentrations of H_2S (500-70,000 ppm) in the vapor spaces of bulk storage vessels. Exposure to 250-600 ppm for 15-30 minutes can produce headache, dizziness, nervousness, staggering gait, nausea and pulmonary edema or bronchial pneumonia. Concentrations >1,000 ppm will cause immediate unconsciousness and death through respiratory paralysis. Rats and mice exposed to 80 ppm H_2S, 6 hrs/day, 5 days/week for 10 weeks, did not produce any toxicity except for irritation of nasal passages. H_2S did not affect reproduction and development (birth defects or neurotoxicity) in rats exposed to concentrations of 75-80 ppm or 150 ppm H_2S, respectively. Over the years a number of acute cases of H_2S poisonings have been reported. Complete and rapid recovery is the general rule. However, if the exposure was sufficiently intense and sustained causing cerebral hypoxia (lack of oxygen to the brain), neurologic effects such as amnesia, intention tremors or brain damage are possible.

Naphthalene 91-20-3

Acute Toxicity:

Dermal LD50 = >2.5 g/kg (rat)

LC50 = >340 mg/m^3/1H (rat)

Oral LD50 = 490 mg/kg; 2.6 g/kg (rat)

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and rice. The National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

Toluene 108-88-3

Acute Toxicity:

Dermal LD50 = 14 g/kg (Rabbit)

LC50 = 8,000 ppm (4-hr, Rat)

Oral LD50 = 2.5 - 7.9 g/kg (Rat)

Target Organs: Epidemiology studies suggest that chronic occupational overexposure to toluene may damage color vision. Subchronic and chronic inhalation studies with toluene produced kidney and liver damage, hearing loss and central nervous system (brain) damage in laboratory animals. Intentional misuse by deliberate inhalation of high concentrations of toluene has been shown to cause liver, kidney, and central nervous system damage, including hearing loss and visual disturbances.

Developmental: Exposure to toluene during pregnancy has demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased fetal body weight and increased skeletal variations in both inhalation and oral studies.

1,2,4 Trimethyl Benzene 95-63-6

Acute Toxicity:

Dermal LD50 = No data available

LC50 = 18 gm/m^3/4hr (Rat)

Oral LD50 = 3-6 g/kg (Rat)

Xylenes 1330-20-7

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:
Dermal LD50 >3.16 ml/kg (Rabbit)
LC50= 5000 ppm/4 hr. (Rat)
Oral LD50 = 4300 mg/kg (Rat)
Target Organs: A six week inhalation study with xylene produced hearing loss in rats.
Developmental: Both mixed xylenes and the individual isomers produced limited evidence of developmental toxicity in laboratory animals. Inhalation and oral administration of xylene resulted in decreased fetal weight, increased incidences of delayed ossification, skeletal variations and resorptions.

12. ECOLOGICAL INFORMATION

Toxicity

This material is expected to be toxic to aquatic organisms. A range of measurements of aquatic toxicity has been obtained in laboratory studies of crude oils. Variability in results may be related in part to the source of the crude oil, or it may reflect different approaches to testing. However, those studies using dispersions of whole oil, employing water soluble fractions, and water accommodated fractions have generally given LC50 or EC50 values in the range 10 to 100 mg/l or greater when expressed in terms of oil loading rate. These values are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions.
Classification H411, Chronic Category 2
LL/EL/IL50 – 10 to 100 mg/l (fish, aquatic invertebrates, algae, microorganisms)
Coating action of oil can kill birds, plankton, aquatic life, algae and fish.

Persistence and Degradability

Most crude oils are not regarded as readily biodegradable. Most of the nonvolatile constituents are inherently biodegradable. Some of the highest molecular weight components are persistent in water. The individual hydrocarbon components of this material are differentially soluble in water with aromatic hydrocarbons tending to be more water soluble than aliphatic hydrocarbons. If spilled, the lighter components of crude oil will generally evaporate but depending on local environmental conditions (temperature, wind, soil type, mixing or wave action in water, etc), photo-oxidation and biodegradation, the remainder may become dispersed in the water column or absorbed to soil or sediment. Because of their differential solubility, the occurrence of hydrocarbons in groundwater will be at different proportions than the parent material. Under anaerobic conditions, such as in anoxic sediments, rates of biodegradation are negligible.

Persistence per IOPC Fund Definition

Persistent

Bioaccumulative Potential

Contains components with the potential to bioaccumulate. The octanol water coefficient values measured for the hydrocarbon components of this material range from less than 2 to greater than 6, and therefore would be considered as having the potential to bioaccumulate. Based upon spill investigation analysis, oils containing polynuclear aromatic hydrocarbon compounds similar to this material were shown to bioaccumulate in tissues of various aquatic organisms.

Mobility

Air: Contains volatile components. Lighter components will volatilize in the air. In air, the volatile hydrocarbons undergo photodegradation by reaction with hydroxyl radicals with half lives varying from 0.5 days for n-dodecane to 6.5 days for benzene.
Water: Spreads on a film on the surface of water. Significant proportion of spill will remain after one day. Lower molecular weight aromatic hydrocarbons and some polar compounds have low but significant water solubility. Some higher molecular weight

12. ECOLOGICAL INFORMATION

compounds are removed by emulsification and these also slowly biodegrade while others adsorb to sediment and sink. Heavier fractions agglomerate to form tars, some of which sink.
Soil: Some constituents may be mobile and contaminate groundwater.

Other Adverse Effects Films form on water and may affect oxygen transfer and damage organisms.

13. DISPOSAL CONSIDERATIONS

Recover or recycle if possible. It is the responsibility of the generator to determine the toxicity and physical properties of the material generated so as to properly classify the waste and ensure disposal methods comply with applicable regulations.

This material, if discarded as produced, is not a RCRA "listed" hazardous waste. However, it should be fully characterized for ignitability (D001), reactivity (D003) and benzene (D018) prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Do not dispose of tank water bottoms by draining onto the ground. This will result in soil and groundwater contamination. Waste arising from spillage or tank cleaning should be disposed of in accordance with applicable regulations.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a qualified drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14. TRANSPORTATION INFORMATION

United States Department of Transportation (US DOT)

Transportation of Dangerous Goods (TDG) Canada

Shipping Description: Petroleum Crude Oil, 3, UN1267, I or II
Shipping Name: Petroleum Crude Oil
Hazard Class and Division: 3
ID Number: UN1267
Packing Group: I or II
Label: Flammable Liquid
Placard: Flammable / 1267
Reportable Quantity: None established for this material
Emergency Response Guide: 128

International Maritime Dangerous Goods Code (IMDG)

Shipping Description: Petroleum Crude Oil, 3, UN1267, I or II
Shipping Name: Petroleum Crude Oil
Hazard Class and Division: 3
UN Number: 1267
Label: Flammable Liquid
EMS Guide: F-E, S-E
Not a DOT Marine Pollutant per 49 CFR 71.8

14. TRANSPORTATION INFORMATION

European Agreements Concerning the International Carriage by Rail (RID) and by Road (ADR)

Shipping Name: Petroleum Crude Oil
Hazard Class: 3
Packing Group: I or II
Label: Flammable Liquid
Danger Number: 33
UN Number: 1267

International Civil Aviation Organization (ICAO) / International Air Transport Association (IATA)

Shipping Name: Petroleum Crude Oil
UN/ID Number: UN1267
Hazard Class/Division: 3
Packing Group: I or II
Labels: Flammable
Emergency Response Guide: 3H

15. REGULATORY INFORMATION

United States Federal Regulatory Information

EPA TSCA Inventory

This product and/or its components are listed on the Toxic Substances Control Act (TSCA) Inventory

EPA SARA 302/304 Emergency Planning and Notification

This material contains the following chemicals subject to reporting under the Superfund Amendments and Reauthorization Act of 1986 (SARA): Material contains hydrogen sulfide, considered an extremely hazardous substance. TPQ– 500 lb, EPCRA RQ – 100 lb

EPA SARA 311/312 (Title III Hazard Categories)

Acute Health: Yes
Chronic Health: Yes
Fire Hazard: Yes
Pressure Hazard: No
Reactive Hazard: No

EPA SARA Toxic Chemical Notification and Release Reporting (40 CFR 372) and CERCLA Reportable Quantities (40 CFR 302.4)

Component	CAS Number	Concentration	RQ
Benzene	71-43-2	< 5 %	10 lb
Cyclohexane	110-82-7	< 4 %	1000 lb
Ethyl Benzene	100-41-4	< 3 %	1000 lb
n-Hexane	110-54-3	< 5 %	5000 lb
Naphthalene	91-20-3	< 2 %	100 lb
Polynuclear Aromatic Hydrocarbons	mixtures	0.1 %	1 lb
Toluene	108-88-3	< 2 %	1000 lb
1,2,4 Trimethyl Benzene	95-63-6	< 2 %	not listed
Xylene, all isomers	1330-20-7	< 3 %	100 lb

CERCLA Section 101(14) excludes crude oil and crude oil fractions, including hazardous constituents of petroleum, from the definition of hazardous substances. The petroleum exclusion applies to this product.

EPA CWA and OPA

This product is classified as an oil under Section 311 of the Clean Water Act (CWA) and Oil Pollution Act of 1990 (OPA), subject to spill reporting requirements.

15. REGULATORY INFORMATION

Canadian Regulatory Information

DSL/NDSL Inventory This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the Regulations..

Workplace Hazardous Materials Information System (WHMIS) Hazard Class
B2 - Flammable Liquid
D1A – Material Causing Immediate and Serious Toxic Effects - Very Toxic Material
D2A: Material Causing Other Toxic Effects Very Toxic
D2B - Material Causing Other Toxic Effects - Toxic Material

European Union Regulatory Information

Labeling Product is dangerous as defined by the European Union Dangerous Substances / Preparations Directives
Contains: Benzene

Symbol
F+ Extremely Flammable
T Toxic

Risk Phrases
R12-45--65-52/53
Extremely flammable. May cause cancer. Irritating to skin. Harmful: may cause lung damage if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases
S23-36-28-53-62
Do not breathe vapor. Wear suitable protective clothing. After contact with skin, wash immediately. Avoid exposure - obtain special instructions before use. If swallowed, do not induct vomiting: seek medical advice immediately and show this container or label.

California Proposition 65

This product may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects, or other reproductive harm and which may be subject to the warning requirements of California Proposition 65. Chemicals known to the State of California to cause cancer, birth defects or other reproductive harm are created by the combustion of this product.
Carcinogens: Benzene, Ethyl Benzene, Naphthalene, various Polynuclear Aromatic Hydrocarbons
Developmental Toxicity: Benzene, Toluene
Male Reproductive Toxicity: Benzene

Carcinogen Identification by International Agency for Research on Cancer

	Group 1	Carcinogenic to Humans	Benzene, Coal Tar Pitch Volatiles (per 29 CFR 1910.1200.1002, OSHA has defined coat tar pitch volatiles to include the fused polycyclic hydrocarbons which volatize from the distillation residues of coal, petroleum (excluding asphalt), wood and other organic matter
	Group 2A	Probably Carcinogenic to Humans	Several Individual Polycyclic Aromatic Hydrocarbons
	Group 2B	Possibly Carcinogenic to Humans	Ethyl Benzene, Naphthalene, Several Individual Polycyclic Aromatic Hydrocarbons
	Group 3	Not Classifiable	Crude Oil, Toluene, Xylenes

16. OTHER INFORMATION

383 Madison Avenue, 10th Floor
New York, NY 10017

Suite 600, Vintage Towers II, 326 11th Avenue SW
Calgary, Alberta
T2R 0C5

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

Appendix 4.3

Hazmat Site Safety Plan

HAZMAT SITE-SAFETY PLAN

INCIDENT INFORMATION	
Name	
Location	
Date	
Time	
Incident #	
OES #	

INITIAL SIZE-UP	
Situation Found	
Product Name(s)	
Actions Prior to Arrival	
Observed Reactions	

COMMUNICATIONS PLAN		
PRIMARY	Command	
	Hazmat Group	
	Entry Team	
EMERG.	1 hand above head = OK	
	1 hand waived at waist = NO	
	2 hands above head = HELP	

PRODUCT FACTS	
Physical State	
Quantity Released	
Quantity Potential	
Container Status	

Incident Commander

Hazmat Group

Hazmat Safety

Entry Team Work Period

_____ minutes

Site Access Control

Technical Reference

Hazmat Medical

- **AMBULANCE**
- **HOSPITAL**

Safe Refuge Area

Entry Team

1. ON Air: OFF Air:
2. ON Air: OFF Air:
3. ON Air: OFF Air:

Back-Up Team

1. ON Air: OFF Air:
2. ON Air: OFF Air:
3. ON Air: OFF Air:

Decon Team

1. ON Air: OFF Air:
2. ON Air: OFF Air:
3. ON Air: OFF Air:

Hazards/Risks:

Mitigation Goals:

Decon Method(s)

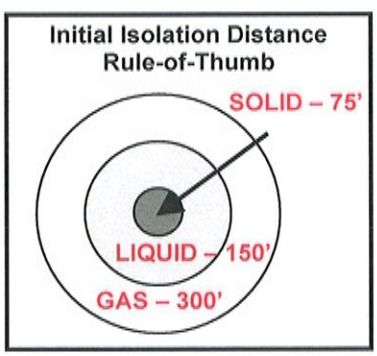
- ☐ Discard
- ☐ Dilution
- ☐ Absorption
- ☐ Nuetralization

Number of Pools

SITE ACCESS CONROL – SITE MAP

Identify Control Zones:

- Exclusion Zone
- Decontamination Zone
- Support Zone
- Anticipated Plume(s)



Geographic Risks?

- ☐ Waterways: _____
- ☐ Transportations Routes: _____
- ☐ Schools: _____
- ☐ Public Assemblies: _____

Isolation / Evacuation Distances:

- ☐ Initial Isolation Distance(s) _____
- ☐ Evacuation Distance(s) _____
- ☐ Shelter-In-Place Zone(s) _____

Wind Direction and Speed?

Slope / Drainage?

TECHNICAL REFERENCE DATA SHEET - 1

Product Name		Shipping Name	

DOT ID #		DOT Hazard Class		Guide #		CAS#	

STCC#		Hazard Class		Physical State	

Container Type		Quantity Released		Quantity Potential	

MFG/Shipper		Contact Phone #	

PROPERTIES & CHARACTERISTICS	Source #1	Source #2	Source #3
Boiling Point			
Flash Point			
Vapor Pressure			
Flammable Limits	LEL: UEL:	LEL: UEL:	LEL: UEL:
Vapor Density			
Specific Gravity			
Water Solubility			
Water Reactivity			
Ionizing Potential			
Corrosivity – PH			
Oxidizer			
Radioactivity			
TLV–TWA			
PEL or REL			
IDLH			
Exposure Route(s)			
Target Organs			
Molecular Weight			
Polymerization Risks			
Isolation Distance			
Evacuation Distance			

TECHNICAL REFERENCE DATA SHEET - 2

Product Name		Shipping Name	

Additional Information:

Secondary Contamination Potential:

Signs/Symptoms of Exposure:

Treatment for Exposure:

Evacuation Required	☐ YES ☐ NO	Shelter-In-Place Option	☐ YES ☐ NO

CONTROL ZONES		EVACUATION DISTANCES	
Exclusion Zone		Initial Evacuation	Feet in all directions
Contamination Reduction Zone		Follow-Up Evacuation Distances	Feet / Mile(s) Wide
Support Zone			Feet / Mile(s) Downwind

PERSONAL PROTECTIVE CLOTHING		
PPE	ENTRY TEAM	DECONTAMINATION REDUCTION TEAM
Suit (Level & Type)		
Gloves		
Boots		
Respiratory Protection	☐ SCBA ☐ APR – Type:	☐ SCBA ☐ APR – Type:

DECONTAMINATION PROCEDURES		
Decontamination Solutions	☐ Water	☐ 5% Trisodium Phosphate
	☐ Soap & Water	☐ 10% Calcium Hypochlorite
	☐ Other:	

PRODUCT SAMPLING & FIELD IDENTIFICATION

5-STEP QUICK TEST					
Physical State					
General Appearance					
RADIOACTIVITY	Type	☐ Alpha ☐ Beta ☐ Gamma ☐ NONE			
	Milli-R/hr	____ @ 1' | ____ @ 5' | ____ @ 10' | ____ @ 20' | ____ @ 50' | ____ @ ____'			
PH	Product		OXIDIZER/ACID TEST	Product	
	In Air			In Air	
WATER REACTIVITY	☐ None ☐ Effervesces ☐ Floats ☐ Sinks ☐ Swims ☐ Other:				
WATER SOLUBILITY	☐ Dissolves ☐ Sinks or Suspends ☐ Floats ☐ Emulsifies ☐ Dissolves ☐ Becomes Stringy or Curdles ☐ Flakes out of Solution				
FLAMMABILITY	Solid	☐ Ignites ☐ Doesn't Ignite ☐ Other:			
	Liquid	☐ Flammable ☐ Combustible ☐ Other:			
TOXICITY	☐ Pesticide Odor	☐ Other:			
REACTIVITY	☐ NONE ☐ Polymerization ☐ Peroxide Formation ☐ Air ☐ Water				

CHEMICAL DETECTION & MONITORING TOOLS	
Instrument	Findings
Ahura FirstDefender (RAMAN)	
Smiths Detection HazMatID	
Smiths Detection APD2000	
Smiths Detection HGVI (IMS/PID/TGS)	
PID (10.6 eV)	
Dräger Colorimetric Tubes	
HazCat	
MicroCat Microscope	
Raytek Infrared Thermometer	

ENTRY TEAM OPERATIONAL WORK PLAN

Entry Team

1.
ON Air:
OFF Air:

2.
ON Air:
OFF Air:

3.
ON Air:
OFF Air:

PERSONAL PROTECTIVE CLOTHING	
PPE	ENTRY TEAM
Suit (Level & Type)	
Gloves	
Boots	
Respiratory Protection	☐ SCBA ☐ APR – Type:

ENTRY OBJECTIVES

ENTRY TIME LOG			
Enter Exclusion Zone	Exit Exclusion Zone	Enter Decon Corridor	Exit Decon Corridor

TOOLS & EQUIPMENT NEEDED FOR ENTRY

OPERATIONAL WORK PERIOD
☐ Minute SCBA
☐ Workload (H=10;M=5;L=0)
☐ Temperature (H=10;M=5;L=0)
☐ Walk-In Time
☐ Walk-Out Time
– ☐ Decontamination Time
☐ Net SCBA Operational Work Period

PRODUCT ASSESSMENT & SAMPLING		
☐ Radioactivity?	☐ CHP Radiological Detector	☐ Bio-Threat Chemical Agent Detection Tickets
☐ Oxidizer? (KI Paper)	☐ Canaberra Radiation Detector	☐ Biocapture 650
☐ Acid or Base? (PH Paper)	☐ AHURA / RAMAN	☐ SDT Ultrasonic Listening Device
☐ Thermal? (Raytek / TIC)	☐ Smith APD2000	☐ Remote Video Camera
☐ O2 Atmosphere? (CGI)	☐ CGI	☐ Night Vision Monocular
☐ Flammable Atmosphere? (CGI)	☐ PID	☐ Refrigerant Leak Detector
☐ Toxins? (Colorimetric Tubes)	☐ Raytek	
	☐ Dräger Colorimetric Tubes	

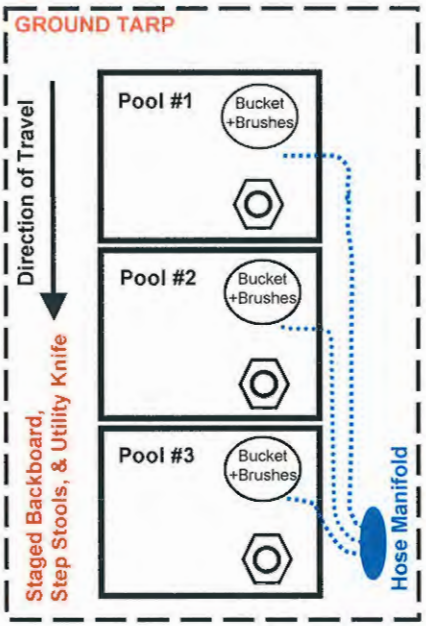
DECONTAMINATION REDUCTION TEAM PLAN

Decon Team

1. ON Air:
   OFF Air:
2. ON Air:
   OFF Air:
3. ON Air:
   OFF Air:

DECON TEAM PPE	
Suit (Level & Type)	
Gloves	
Boots	
Respiratory Protection	☐ SCBA ☐ APR – Type:

DECON METHOD			
DILUTION ⬇	Absorption	Neutralization	Discard
☐ Water		☐ 5% Trisodium Phosphate	
☐ Soap & Water		☐ 10% Calcium Hypochlorite	
☐ Other:			
NUMBER OF POOLS:			



DECON SET-UP PROCEDURES

1. Identify DECON corridor location and place tarp.
2. Set-up proper number of pools (fold-down pool sides appropriately).
3. Secure water supply and set-up manifold w/one spray wand to each pool.
4. Place one pylon in each pool to provide a balance point for users.
5. Place one stiff & soft bristle brush in a 5-gallon bucket at each pool.
6. Stage plastic step stools for use in balancing a backboard (if needed).
7. Stage one backboard & utility knife (for emergency suit extrication) – precautionary measures.
8. Stage needed resources for post-DECON suit testing (i.e. PH paper, Oxidizer Acid Test paper).
9. Stage garbage bags for bagging suits (for secondary DECON upon return to quarters).

DECON OPERATIONAL PROCEDURES

1. DECON Team members must maintain operational awareness throughout the entry. Entrants in the Exclusion Zone must be continually monitored.
2. DECON Team members must communicate clearly with entrants. Entrants often will not be able to hear verbal prompts. Continually assess the condition of the entrants (air supply, heat stress, etc.).
3. Only SOFT bristled brushes should be used on the entrant's suit and SCBA facepiece. STIFF bristled brushed should only be used to clean boots.
4. Special attention must be given to gloves and boots during the DECON process.
5. Two taps on the leg using a brush will prompt the entrant to turn 180 degrees or step.
   a. Step-In Pool and begin DECON.
   b. Two taps and rotate 180 degrees.
   c. Two taps again, entrant rotates 180 degrees and lifts one boot (using pylon for balance).
   d. Two taps again, entrant places clean boot in next pool and raises next boot for cleaning.
   e. Two taps again, entrant steps completely into next pool.
6. Upon completion, perform on-site testing to verify DECON of PPE; materials should be bagged for transport to quarters where secondary DECON will be performed.
7. Samples, tools, and monitoring equipment must be properly decontaminated (incident specific).

Hazmat Medical

AMBULANCE

*** REQUIRED FOR ALL ENTRIES

HOSPITAL

☐ PRE ☐ POST Entry Notification Given

MEDICAL MONITORING "REMOVE FROM WORK" CRITERIA	
Body Temperature	>100.4°F
Pulse Rate	>90 BPM (at rest) >110 BPM (after work)
Body Weight Loss	>3%
Other	Other signs & symptoms of heat related illness

MEDICAL MONITORING WORKSHEET

Name	Age	Pre-Entry		Post-Entry	
		Pulse	Temp	Pulse	Temp

PERSONAL PROTECTIVE EQUIPMENT USE LOG

Name	Suit	Boot	Gloves	Exposure

WEATHER OBSERVATIONS; ATMOSPHERIC & RADIOLOGICAL MOITORING

CURRENT WEATHER OBSERVATIONS				
Time	Temperature	Wind Speed	Wind Direction	Relative Humidity

ANTICIPATED WEATHER CONDITIONS

FIELD DETECTION OF GASSES & VAPORS						
Time	Location	O2	LEL	CO	H2S	Toxic(s)

RADIOLOGICAL MONITORING				
Time	Location	Alpha	Beta	Gamma

NOTIFICATIONS and EMERGENCY PROCEDURES

Agency	Telephone	Time Notified	Person Contacted	NOTES
State Warning Center	(800) 852-7550			OES Control Number:
Placer County OES	Day- (530) 886-5300 Night - (530) 886-5375			
Placer County Health	(530) 745-2300			
California Department of Fish & Game	(916) 324-9829			
California EPA Toxic Substance Control	(916) 255-3545			
U.S. Coast Guard National Response Cntr.	(800) 424-8802			
United States EPA Spill Notification	(800) 300-2193			
Receiving Hospital				

EMERGENCY PROCEDURES	
Event	**Procedure**
EQUIPMENT FAILURE	In the event of an equipment failure that affects the safety of the personnel working in the exclusion zone, entry personnel shall immediately exit the exclusion zone and take refuge at the "Safe Refuge Area".
ENTRANT RESCUE	In the event a rescue of entry personnel is required, the Back-Up Team shall be deployed with specific instructions given by the Hazmat Group Supervisor.
FIRE or EXPLOSION	In the event of a fire or explosion, either the Fire Suppression Group will be deployed with specific instructions given by the Hazmat Group Supervisor or the Evacuation Alarm will be sounded.
EVACUATION ALARM	Alarm Signal:
ENTRANT EVACUATION	The primary entrant escape route shall be the most direct and safest route between the entrant's location and the "Safe Refuge Area".
SUPPORT STAFF EVACUATION	All support personnel shall evacuate to: _____ Following the evacuation, the situation shall be evaluated and personnel shall be directed to take the appropriate corrective actions.

PRE-ENTRY SAFETY MESSAGE, PLAN REVIEW, POST-ENTRY BRIEFING, and MITIGATION PLAN

PRE-ENTRY SAFETY MESSAGE
☐ All personnel have the required training to perform the task(s) or function(s) assigned.
☐ All personnel have the required training to wear and/or operate assigned protective equipment and tools.
☐ All ENTRY and DECON personnel have been medically screened.
General Hazards & Safety Precautions:

PLAN REVIEW			
ALL ENTRY, Back-Up, and DECON personnel have been briefed on the plan prior to entry. This plan shall be available for review by all personnel. Changes shall NOT be made to this plan without the approval of the Hazmat Safety Officer			
Hazmat Safety Officer	Signature:	Date:	Time:
Hazmat Group Supervisor	Signature:	Date:	Time:
Incident Commander	Signature:	Date:	Time:

POST-ENTRY BRIEFING	
Chemicals believed to be involved in incident	Common signs & symptoms of exposure
Any personnel who believe they may have been exposed to an involved substance shall complete an RFD exposure report and notify their immediate supervisor immediately.	

MITIGATION PLAN

INCIDENT TERMINATION – This completed Site Safety Plan and supporting documentation shall be forwarded to the Incident Commander following incident termination. The IC will ultimately forward all documentation to the HAZMAT Battalion Chief.

EVACUTION & SHELTER-IN-PLACE INSTRUCTIONS

EVACUATION INSTRUCTIONS

- ☐ Stay calm.
- ☐ If evacuation is MANDATORY: Take critical items (medicine, purse, wallet, and keys) only if they are immediately available. DO NOT take pets.

  If evacuation is PRECAUTIONARY: Take essential items (diapers, baby food, cloths, and money); Leave a message on the door indicating your anticipated destination.
- ☐ Secure your home - turn off all appliances (stove, lights, air conditioners and/or heaters) and lock doors.
- ☐ Maximize transportation (carpool); keep windows and vents in the vehicle CLOSED.
- ☐ Go immediately to the home of a friend or relative outside of the evacuation area, or to a designated evacuation center.
- ☐ Law enforcement officers will be stationed at intersections along the way to direct you.
- ☐ If transportation is needed, contact : _____
- ☐ Children attending the following schools will be evacuated to:

School	Evacuation Location
Do not drive to your child's school – Children should be picked-up at the shelter	

- ☐ The released hazardous material is toxic. The signs and symptoms of overexposure are as follows:

- ☐ If you believe you have been exposed and are experiencing the signs and symptoms previously noted, seek medical assistance outside of the evacuation area or at the medic station located at :

  _____

SHELTER-IN-PLACE INSTRUCTIONS

- ☐ Get inside your home (or other building) as soon as possible.
- ☐ Close all doors, windows, fireplace dampers, vents, or other openings. Use duct tape, foil, or plastic wrap to seal leaks.
- ☐ Turn off ALL heating, ventilation, and/or air conditioning systems – close vents.
- ☐ Close drapes, curtains, and shades. Stay away from external windows.
- ☐ Use stairwells whenever possible – limit the use of elevators.
- ☐ Use telephones only if you need immediate emergency service.
- ☐ Turn on the radio or television for update information and instructions.
- ☐ Stay inside until authorities announce that it is safe to come out.

Appendix 4.4

DOT Guidelines – Crude Oil

U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

COMMODITY PREPAREDNESS AND INCIDENT MANAGEMENT REFERENCE SHEET

PETROLEUM CRUDE OIL

CAS NO. 8002-05-9
UN 1267
DOT Hazard Class: 3
FLAMMABLE LIQUID
ERG Guide No. 128

HAZARD RATING = HIGH

DOT Hazard Classification and NFPA 704 - Standard System for the Identification of the Hazards of Materials for Emergency Response

TRANSPORTATION AND PLANNING CONSIDERATIONS

- With the increased production of oil from shale reserves in states such as North Dakota and Texas, there has been a dramatic increase in the transportation of crude oil by rail. Rail shipments of crude oil from these regions are typically made using unit trains. Unit trains of crude oil are single commodity trains that generally consist of over 100 tank cars, each carrying approximately 30,000 gallons of crude oil.
- Unit trains typically move from one location (e.g., shipper's production facility or transloading facility) to a single destination (e.g., petroleum refinery). Given the usual length of these trains (over a mile long), derailments can cause road closures, create significant detours, and require response from more than one direction to access the scene of the incident.
- In the event of an incident that may involve the release of thousands of gallons of product and ignition of tank cars of crude oil in a unit train, most emergency response organizations will not have the available resources, capabilities or trained personnel to safely and effectively extinguish a fire or contain a spill of this magnitude (e.g., sufficient firefighting foam concentrate, appliances, equipment, water supplies).
- Responses to unit train derailments of crude oil will require specialized outside resources that may not arrive at the scene for hours; therefore it is critical that responders coordinate their activities with the involved railroad and initiate requests for specialized resources as soon as possible.
- These derailments will likely require mutual aid and a more robust on-scene *Incident Management System* than responders may normally use. Therefore, pre-incident planning, preparedness and coordination of response strategies should be considered and made part of response plans, drills and exercises that include the shippers and rail carriers of this commodity.

- Tank cars carrying crude oil may also be found in general freight (manifest) trains that are made up of shipments of many different commodities from many different shippers. In these situations, emergency responders need to consider the potential impact that tank cars containing other hazardous commodities may have on tank cars containing crude oil if a release occurs, and vice-versa.
- To determine what specific commodities or hazardous materials may be involved, responders should obtain a train consist from the train crew or by contacting the rail carrier's emergency contact number.

HAZARD SUMMARY

- Petroleum crude oil is a light to dark colored liquid hydrocarbon containing flammable gasses. It is not a uniform substance and its physical and chemical properties may vary from oilfield to oilfield or within wells located in the same oilfield. Light, sweet crude oils contain flammable gasses such as butane and propane (unless it is known that the gasses have been removed). These gasses can readily ignite if released, when they come in contact with an ignition source. These crude oils may also contain hydrogen sulfide, a toxic inhalation hazard material, in the vapor space of the tank car. Due to the characteristics of crude oil, in an accident scenario, the behavior of this product may range from that of gasoline for the lighter (sweet) crude oils to diesel fuel for the heavier (sour) crude oils.
- Releases may create vapor/air explosion hazards indoors, in confined spaces, outdoors, or in sewers. Remove sources of heat, sparks, flame, friction and electricity, including internal combustion engines and power tools. Use caution when approaching the scene and positioning apparatus. Implement air monitoring as soon as possible to detect the presence of combustible gasses.
- Volatile vapors released from the spill area may create flammable atmospheres. Some crude oil vapors may be heavier than air and accumulate in low areas, and travel some distance to a source of ignition and flash back.
- When working in flammable atmospheres (where any concentration of lower explosive limit (LEL) exists), extreme caution must be taken to avoid creating ignition sources. This includes but is not limited to the use of non-sparking tools and intrinsically safe/explosion-proof equipment.
- The more volatile materials in crude oil may be present in air in high concentrations creating an inhalation hazard. There is also the possibility that the crude oil may contain varying concentrations of benzene or hydrogen sulfide. Products of combustion may also include toxic constituents. Responders should wear self-contained breathing apparatus (SCBA) to avoid potential exposure.
- Use water fog spray to cool containers, control vapors, and to protect personnel and exposures. Direct the cooling water to the top of the tank. There is some potential that containers of liquid that are not properly cooled may rupture violently if exposed to fire or excessive heat. Stay away from ends of tank(s) involved in fire, but realize that shrapnel may travel in any direction.

- **DO NOT APPLY WATER DIRECTLY INSIDE A TANK CAR. Apply water from the sides of the tank car and from a safe distance to keep fire exposed containers cool. Use unmanned fire monitors for cooling tank cars when available. Withdraw immediately in case of rising sound from venting pressure relief devices or discoloration of tank.** If available, dry chemical extinguishing agents, such as potassium bicarbonate (i.e., Purple K) may also be used in conjunction with Class B foams.

- Improper application of fire streams may create a dangerous phenomenon known as a *slopover*, thereby increasing risks to emergency responders. **A *slopover* results when a water stream is applied to the hot surface of burning oil. The water is converted into steam causing agitation of the liquid and burning oil to slop over the sides of the tank car. This can occur within 10 minutes of the product becoming involved in fire.** Note: *Slopover* will not occur in a pool of crude oil on the ground.

- Hazardous combustion/decomposition products may be released by this material when exposed to heat or fire. These can include carbon monoxide, sulfur oxides, nitrogen oxides and aldehydes. Response personnel should exercise extreme caution on-scene and wear appropriate personal protective clothing and equipment, including respiratory protection.

- Apply Class B firefighting foam as you would on fires involving other hydrocarbons. Class B foam blankets prevent vapor production and ignition of flammable and combustible liquids. Foam is most effective on static fires that are contained in some manner. Firefighting foam is not effective on hydrocarbon fuels in motion (i.e., three dimensional fires) that include product leaking or spraying from manways, valves, fractures in the tank shell (e.g., rips, tears, etc.) or spills on sloping terrain.

- As a general rule, **DO NOT** flush crude oil spills with water. Most crude oils are not water soluble and will have a tendency to float on water. Some crude oils will sink and some fractions of crude oil are water soluble. For those crude oils that float on water, burning crude oil may be carried away from the immediate area and may reignite on the surface of the water.

- Prevent runoff from entering storm/sewer systems and sensitive areas, as this may create a serious hazard and potential environmental problems. Notify proper authorities, downstream sewer and water treatment operations, and other downstream users of potentially contaminated water. Runoff may be flammable and/or toxic and should be contained, treated and disposed of in accordance with applicable federal, state and local environmental regulations.

RAILROAD SAFETY PROCEDURES

Emergency response personnel should always be aware of the potential for serious injury when working in and around railcars, tracks and related equipment. The following safe operating practices should be followed when involved in emergency response operations at the scene of a crude oil train derailment:

- **Expect a train or rail equipment to move on any track from either direction at any time.**

- Watch for movement in both directions before crossing tracks. If the tracks are clear, walk single file at a right angle to the rails.
- Trains can approach with little or no warning. You may not be able to hear them due to atmospheric conditions, terrain, noisy work equipment, or passing trains on other tracks. Stand a minimum of 25 feet away from the tracks if possible, and face the train when rail equipment is passing through.
- Always contact the railroad to advise them of your presence – they may not know that you are on-scene or that they have a problem. Work with the railroad to be sure the track is "blue flagged" – the railroad's version to provide protection by their lock-out, tag-out process.
- Never stand, walk or sit on railway tracks, between the rails or on the ends of ties. Never step on the rail - step over it. The rail can be a slip, trip, or fall hazard. Never put your feet on moveable parts of a rail car such as couplers, sliding sills or uncoupling levers.
- Do not occupy the area between adjacent tracks in multiple track territory when a train is passing. If crossing between two stationary railcars, ensure there is at least 50 feet between them.
- Be especially careful working in rail yards and terminal areas. Tank cars are pushed and moved, and can change tracks often. Cars that appear to be stationary or in storage can begin to move without warning. Be sure that any rail equipment is secured against movement (wheels chocked, hand brakes secured, etc.) before attempting to work on or near it. Keep at least 25 feet away from the end of a car or locomotive to protect yourself from sudden movement.
- Never move equipment across the tracks unless at an established road crossing or under the supervision of a railroad representative.
- If it is necessary to climb rail equipment, use three points of contact at all times. The ladders on rail equipment may curve around the car making it difficult to find the rung with your foot. The first step on to rail equipment is typically some distance off of the ground. When descending the ladder, step - do not jump from the last step. Normally, there is ballast around the tracks which can be uneven and shift, causing a fall hazard. Locomotive steps are considered ladders. Always face the locomotive going up and coming down.
- Never cross over or under rail equipment -- use the ladders, handholds and crossover platforms or walk around the attached equipment. Remember to block the feet and tie off ladders at the top. When laddering tank cars or box cars, always consider using two points of access - the second being a point of escape should the other become inaccessible for any reason. Plan to use your own ladders.
- Avoid the use of cell phones when within 25 feet of live tracks.
- Be aware of the location of structures or obstructions where clearances are close.
- Stay away from track switches since they can be remotely operated.

EMERGENCY PROCEDURES

Emergency response organizations should use the following framework and incident management best practices to prepare for, and safely and effectively respond to a crude oil rail transportation incident.

1. PRE-INCIDENT PLANNING AND PREPAREDNESS

- Emergency responders should determine the rail carriers of hazardous materials moving through their communities and ascertain if crude oil is one of the products being transported. This can be accomplished by contacting the individual rail carrier and requesting a list of the hazardous commodities transported through the community via the Association of American Railroads (AAR) Circular No. OT-55 protocol. This information can assist in preparing emergency response plans and procedures.

Note: A copy of the latest version of AAR Circular OT-55 and other related hazardous materials reference materials can be downloaded at http://www.boe.aar.com/boe-download.htm.

- Emergency responders should contact and engage the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) within their jurisdiction. The SERCs and LEPCs can be a valuable resource in obtaining information concerning the hazardous commodities being transported through the community, such as crude oil, as well as providing assistance with emergency planning, preparedness and response activities. LEPCs and emergency responders can seek planning information and commodity-specific training at www.TRANSCAER.com and selecting a state or region to determine the designated contacts.

- Emergency responders should also contact the railroads to identify appropriate points-of-contact and the railroad's hazardous materials response personnel that they are likely to interface with during an emergency. This can help to establish lines of communication and access to information and resources prior to an incident. The railroads can also provide extensive rail specific emergency response training at no cost to emergency responders. Information may be obtained via the railroad's web site or by contacting their media/public relations department.

- Emergency responders should identify the appropriate 24-hour emergency contact numbers for the major (Class I) railroads and ensure they are listed in their emergency operations and response plans. The emergency contact numbers for the Class I railroads are listed below.

Company	Emergency Telephone Number
BNSF Railway	(800) 832-5452
Canadian National (CN) Railway	(800) 465-9239
Canadian Pacific (CP) Railway	(800) 716-9132
CSX Transportation	(800) 232-0144
Kansas City Southern Rail Network	(877) 527-9464
Norfolk Southern Railroad	(800) 453-2530
Union Pacific Railroad	(888) 877-7267

Note: Emergency responders should also contact any Short Line or Regional Railroads that service their areas to obtain emergency contact information. These organizations should also be part of any pre-incident planning, preparedness and training/exercise activities.

- Emergency responders should establish contact with their state and local environmental protection agency representative(s) to identify potential air monitoring and spill control resource capabilities. These resources should be included in the organization's emergency response plan.

- Emergency responders should contact federal agencies such as the U.S. Coast Guard to determine the level of assistance that may be provided in the event of a spill in navigable waterways located in their jurisdiction. This resource, as well as other federal resources, can be contacted through the National Response Center (NRC) at 1-800-424-8802.

- Organizations should include a railroad annex in their emergency response plan that specifically addresses crude oil rail transportation emergency response operations. This annex should include:

    - hazard analysis that identifies the potential risks to people and property
    - emergency contact lists
    - resource listings
    - equipment inventories
    - foam and water supply requirements for operations at remote sites
    - incident management system roles and responsibilities
    - mutual aid response assets
    - law enforcement scene security and control operations
    - support and recovery assets

Note: Emergency response plans and procedures should be developed in close coordination with the railroad since they will play a critical role in response and recovery operations. Tests and drills should be conducted to exercise the plan at regular intervals to identify any issues that might require corrective action prior to an actual incident.

2. INCIDENT MANAGEMENT PRINCIPLES

- Initial site management and control will be a critical benchmark in managing the problem.

- Isolate and secure the area. Establish a secure perimeter and entry control points to prevent unauthorized personnel from entering the scene. This can be accomplished with tape, barricades, traffic cones, or assigned fire service or law enforcement personnel.

- The location of the restricted area should be communicated to all impacted personnel operating on the scene. Begin a site assessment from a safe distance, upwind and uphill. An Incident Command Post (ICP) should be established outside the impacted area as soon as possible.

- Follow initial guidance provided by the *Emergency Response Guidebook* (ERG) if practical. Establish a Staging Area in the cold zone for responding equipment and personnel.

- The *National Incident Management System* (NIMS) should be the framework used to manage all incident operations. Information on NIMS can be obtained at http://www.fema.gov/national-incident-management-system. Unified Command should be established that integrates those agencies and organizations with legal or jurisdictional responsibility. Liaisons should be provided at the ICP by assisting or cooperating agencies to ensure effective communication and coordination of resources.

- Due to the size, duration and complexity of these incidents, Incident Commanders should consider the possibility of additional support from regional or state *All-Hazard Incident Management Teams* (AHIMTs).

Note: AHIMTs are a multi-agency/multi-jurisdictional team for extended incidents formed and managed at the local, state or tribal level. It is a designated team of trained personnel from different departments, organizations, agencies and jurisdictions. AHIMTs are deployed as a team representing multiple disciplines who manage major and/or complex incidents requiring a significant number of local, state or tribal resources. They do not assume command of the incident; they help local officials manage incidents that extend into multiple operational periods and require a written Incident Action Plan (IAP). These incidents can include weather-related disasters such as a tornado, earthquake, or flood or major hazardous materials incidents such as train derailments.

- Emergency responders should anticipate a large number of liaison agencies operating at the scene (e.g., U.S. Coast Guard, Environmental Protection Agency, National Transportation Safety Board, Chemical Safety Board, private contractors). In addition, non-emergency regional and municipal agencies may have a role to play and need to be integrated into the command structure.

- The railroad will integrate its response assets into the public safety NIMS structure. While the exact structure will vary based on the scope and nature of the incident scenario, it will often be integrated as the Railroad Branch within the Operations Section.

- Large-scale incidents may require activation of the jurisdiction's Emergency Operations Center (EOC). The EOC should be fully staffed and the roles and responsibilities of all participating agencies must be clearly defined in the organization's emergency response plan.

3. PROBLEM IDENTIFICATION

- Identify, confirm, and verify the presence of the hazardous material(s) and the extent of the problem. This can be done through shipping papers (i.e., train consist), placards, labels, container shapes, markings/colors and senses (e.g., observable plume).

- Identify the rail carrier and locate the train crew. The conductor will have the complete train consist immediately available on the scene. Maintain contact with the conductor and crew until they are relieved by a railroad official(s).

- Notify the rail carrier's emergency operations center to have rail traffic stopped to avoid entering the location of the incident to avoid further risk to personnel operating at the scene. Request that a copy of the train consist or wheel report be sent to the ICP.

- Responding railroad officials may also have copies of the train consist. In the absence of shipping papers, emergency responders should use binoculars from a safe distance upwind, and try to locate any 4-digit identification numbers on the placards (or orange panels) displayed on the rail cars. If shipping papers, placards, markings, or labels are destroyed, the reporting marks and number on the railcar can be used to identify the commodities present.

- When contacting the railroad, provide the following information:

    - Your name, location, organization name and telephone number
    - Location of incident (provide the railroad with the DOT Crossing Number or the railroad milepost so the specific location can be identified)
    - Type and number of containers involved
    - Presence of markings, labels, reporting marks or placards on tank car
    - Presence of smoke, fire or spill
    - Extent of damage
    - Topography
    - Weather conditions
    - If pictures can be taken from a safe position, do so and send to a railroad representative as quickly as possible

- Be aware of utilities that commonly run next to or in the railroad right-of-way. As part of your scene size up, look for downed signal and communication lines, power lines, buried utilities and above ground switch heating systems.

4. HAZARD ASSESSMENT AND RISK EVALUATION

- The hazard assessment and risk evaluation process is a critical step to identify the level of danger posed by an incident involving the product(s), containers and their behavior, which is generally related to their physical and chemical properties.

- Risks refer to the probability of suffering harm or loss and are different at each incident and need to be evaluated by the Incident Commander.

- Emergency responders can use a number of reference materials such as the ERG, Safety Data Sheets (SDSs), technical specialists available by contacting the shipper or railroad, or contacting the Chemical Transportation Emergency Center (CHEMTREC) at 1-800-424-9300, or the 24-hour emergency contact telephone number required to be included on the shipping papers by the federal hazardous materials regulations.

- Evaluate the risks of personnel intervening directly in the incident. Consider the limitations of the people involved and the ability to have adequate resources available on site (e.g., sufficient firefighting foam concentrate, water supplies, appliances, equipment, trained personnel and technical expertise) and the ability to sustain operations for extended periods of time (hours or days).

- The level of risk will be influenced by the following factors:

    - Hazardous nature of the material(s) involved
    - Quantity of the material(s) involved
    - Type(s) of stress applied to the container and breach / release scenarios
    - Proximity of exposures and nature of terrain
    - Level of available resources (*e.g., adequate foam supply, location of foam supply, response time and appliances/equipment*)

- Emergency response personnel need to consider the following factors that may influence the behavior of a hazardous material:

    - Inherent properties and quantity of the material
    - Design characteristics of the container
    - Environmental factors (*e.g., weather, topography, surrounding physical structures*)

- The following factors should be considered to help estimate the potential impact of the problem:

    - Has the container been breached? If so, is product flowing?
    - Where will the container and its contents go if released?
    - Why are the container and its contents likely to go there?
    - How will the container and its contents get there?
    - When will the container and its contents get there?
    - What harm will the container and its contents cause when they get there?
    - How much material has been released? What is the proximity of the release to people, property and the environment?
    - Is the material on fire? Are other tank cars at risk of becoming involved?
    - Do you have the capability of successfully controlling fire spread, which in some cases may require a minimum of approximately 500 gallons per minute per exposed tank car?

- Are adequate foam supplies and equipment available for post-fire operations that may last for several hours or days?

- For non-fire spill scenarios:

  - Have the concentrations of any flammable or toxic vapors present been determined using air monitoring instruments? What are the flammability and toxicity readings?
  - Has the need for continuous air monitoring been properly evaluated and discussed with technical specialists?
  - Can sources of ignition be removed and/or eliminated?
  - Are adequate foam supplies and equipment available for vapor suppression?

Note: Agencies should refer to the most recent edition of NFPA 11 - *Standard for Low-Medium-and High-Expansion Foam* for information concerning the specific requirements for foam application.

- Based on the results of the hazard assessment and risk evaluation process, are there adequate resources available to respond to the scene within a reasonable timeframe so that intervention efforts will be successful?

Note: An initial benchmark to assess your agency's capability to successfully manage an incident involving a unit train carrying crude oil is your operational capability to respond to and successfully manage a gasoline tank truck incident (which typically involves approximately 9,000 gallons of gasoline). With regard to quantity of product, one tank car of crude oil is equivalent to approximately three gasoline tank trucks. The potential magnitude of this type of incident must be considered when preparing emergency plans and operational procedures.

- Emergency responders should use the information and options selected as the foundation to develop an IAP for the incident. An IAP should be developed for any incident that has the potential to last at least 24 hours, and a new/updated IAP developed for each successive operational period.

- **If your agency is not fully prepared and capable in terms of resources, equipment and properly trained personnel to intervene, defensive or non-intervention strategies will likely be the preferred strategic option.**

5. SELECT PROPER PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT

- Assure that emergency responders are using the proper personal protective equipment (PPE) and clothing equal to the hazards present. Structural firefighting protective clothing (SFPC) and positive-pressure SCBA should be the initial level of PPE selected.

- Rescue should be performed from an uphill and upwind location, if possible.

- Any changes in the level of PPE should be based on the results of air monitoring operations. Continuous monitoring with a combustible gas indicator and instruments capable of detecting toxic components of crude oil vapors (e.g., hydrogen sulfide, etc.) are important in ensuring site safety. These instruments can include detector tubes or photoionization detectors (PIDs).

CAUTION: SFPC will provide thermal protection for fires involving crude oil; however SFPC is porous and will absorb liquids. For scenarios that do not and will not include the possibility of fire, such as spill control and clean-up activities, including decontamination, chemical liquid splash protective clothing protection and a compatible NIOSH-approved respirator may be required depending on the properties of the product.

- Information and guidance on the selection of personal protective equipment for oil spill response is available in American Petroleum Institute (API) *Recommended Practice* (RP) 78 – *Personal Protective Equipment Selection for Oil Spill Responders*. Copies of the RP can be obtained by contacting API at (202) 682-8000 or on-line at www.api.org (Product No. G09801).

6. LOGISTICS AND RESOURCE MANAGEMENT

- Order specialized equipment and technical resources early in the incident. If you are unsure of your initial resource requirements, always call for the highest level of assistance available. **Do not wait to call for additional resources or activate mutual aid agreements.**

- Establishing a Logistics Section early in the incident will be critical in providing the necessary support, resources and services to meet operational objectives. **The size, scope and resources needed to successfully manage a crude oil rail transportation incident will overwhelm the capability of most emergency response agencies.**

- Emergency planning and response agencies must identify their logistical needs, identify agencies or organizations that can meet those requirements, and effectively manage the resources available from those identified sources within the NIMS framework.

- The railroads will be the primary providers of logistical support and resources. Rail carriers can provide emergency response resources, air monitoring and environmental management capabilities, technical specialists and contractors to safely manage the consequences of a crude oil train derailment. For example, rail carriers may use the services of private contractors to provide air monitoring and toxicology assessments.

- The time required for assets to arrive on scene and initiate operations must be taken into account since long delays can diminish operational effectiveness. Logistics for access, positioning and movement should be considered, including the need for escorts to facilitate prompt access to the scene.

- Technical specialists and contractor support can also be made available from the shipper and can be obtained by contacting the 24-hour emergency telephone number provided on shipping papers or by contacting CHEMTREC at 1-800-424-9300.

- Emergency responders may also obtain assistance from the NRC by calling 1-800-424-8802. For example, the NRC can provide 24-hour access to federal government agency resources and technical assistance. The NRC also serves as the EPA's *Hazardous Materials Hotline* and the USCG *Oil Spill Hotline*.

7. SELECT AND IMPLEMENT RESPONSE OBJECTIVES

- The initial stage of an incident involving crude oil should include an analysis of appropriate site specific response procedures and potential effects that an incident would have on nearby life, property, critical systems and the environment.

- The ERG should be used by all emergency responders to obtain initial response guidance for crude oil incidents.

- **Traditional firefighting strategies and tactics may not be effective in these situations.** These incidents also need to be approached and managed as a hazardous materials problem to ensure that proper and appropriate technical assistance and the support of outside resources are notified and requested as soon as possible.

- Use the railroad's emergency telephone number to establish communication with the railroad and stay in constant communication with the railroad. If the train crew is disabled or unavailable, the train consist is available from the Railroad Emergency Telephone Number point-of-contact and can be sent to the scene via e-mail or fax.

- Confirm your location with the Railroad Emergency Telephone Number point-of-contact by observing mile posts or the individual grade crossing identification numbers at or near the scene.

- Coordinate operations with the railroad, chemical shippers and manufacturers, CHEMTREC and/or the shipper's 24-hour emergency contact to ensure that you have access to all the information available concerning the commodity and tank car(s) involved in the accident.

- Utilize the railroads' hazardous materials personnel when they arrive on scene. They can assist with size-up and damage assessment. These personnel have been specifically trained to respond to railroad emergencies and derailments.

- **Based on the collection, evaluation and verification of response information, emergency responders need to determine whether the incident should be handled offensively, defensively or by non-intervention. Remember that offensive tactics significantly increase the risks to emergency responders.**

- The following factors should be considered as part of developing the initial response strategy:

QUESTION	RESPONSE CONSIDERATIONS
Are there any life safety exposures in danger that responders must address right now? Can responders safely evacuate or protect in place?	Number of people to be protected, ability of public to move, available time, resources needed, adequate facilities to shelter evacuees.
Can responders safely approach the incident?	Location of the incident, access and terrain, number of tank car(s), extent of damage, size of spill, leak or fire involved.
Do responders fully understand the nature and scope of the problem?	Hazard assessment and risk evaluation must be completed and the results shared with technical specialists from the railroad and/or shipper.
If a fire is involved, do responders have immediate access to sufficient foam and water supplies that are required for effective fire control/suppression operations?	Most fire departments will not have adequate foam, water or spill control resources for an initial attack on a crude oil derailment scenario with large fires. Defensive operations will likely be required until sufficient foam concentrate, water, spill control and related support resources are on-scene.
If a spill is involved, do responders have the necessary spill control equipment readily available on-site?	Do responders have spill control and vapor suppression equipment/chemical available on- site?
Can fire suppression agents be effectively applied to the tank car(s) involved? Can cooling water be effectively applied to any exposures impacted by direct flame impingement?	Fire suppression agents and cooling water must be able to reach their intended targets to be effective. If access, supply or equipment is limited, the ability of suppression agents and cooling water to reach the affected area(s) will be diminished.
If not on fire, can potential ignition sources be removed and/or eliminated?	Vehicle traffic may need to be curtailed. Automatic switching systems (i.e. industrial air conditioning units, traffic signals) need to be switched off, etc.
Will extinguishment improve or worsen the incident and what is the environmental impact of doing so?	In some situations, the best and safest response option may be defensive or non-intervention tactics which allow the fires to burn out. Attempting to extinguish the fire(s) may cause additional risk to personnel and damage to the environment. The decision to protect exposures and let the product burn must be considered.

Have appropriate notifications been made or has the organization's emergency response plan been activated?	These incidents cannot be safely and effectively managed alone. Additional technical support and resources must be requested immediately in accordance with the agency's emergency response plan. The railroads and shippers will be the primary means of technical support and resources and are an integral component of the organization's emergency response plans, procedures and operations.

The following examples are provided as operational considerations for first responders regarding the scope, magnitude and resource requirements for responding to and managing a crude oil unit train derailment:

EXAMPLE A: DERAILMENT NO FIRE (*SPILL*)

- Implement emergency response plan.
- Ensure the railroad is notified via their Emergency Contact Number.
- Call the 24-hour emergency contact number for the shipper listed on the shipping papers available from the train crew. If this information is not available from the train crew, contact the Railroad Emergency Contact Number.
- Contact CHEMTREC at 1-800-424-9300 if there is no emergency contact telephone number listed for the shipper or other technical assistance is needed.
- Conduct a hazard assessment and risk evaluation to determine the scope and magnitude of the problem, resource requirements and response options. Do not overlook obvious physical hazards that may be present such as damaged rail and other equipment that may have sharp/jagged edges.
- Conduct continuous air monitoring as appropriate.
- Confinement operations (i.e., spill control tactics) are a priority to limit the size and spread of the release – damming and diking may be required to limit the potential for the spill to migrate beyond the immediate area and cause extensive environmental damage.
- If foam supplies and equipment are available on-site, foam should be applied for vapor suppression.
- Refer to the ERG for recommended isolation distances.

EXAMPLE B: DERAILMENT WITH FIRE (*UNIT TRAIN, 1 CAR RELEASE, CONTAINED SPILL, WITH FIRE*)

- Implement emergency response plan.
- Ensure the railroad is notified via their Emergency Contact Number.
- Call the 24-hour emergency contact number for the shipper listed on the shipping papers available from the train crew. If this information is not available from the train crew, contact the Railroad Emergency Contact Number.
- Contact CHEMTREC at 1-800-424-9300 if there is no emergency contact telephone number listed for the shipper or other technical assistance is needed.
- Conduct a hazard assessment and risk evaluation to determine the scope and magnitude of the problem, resource requirements and response options. Do not overlook obvious physical hazards that may be present such as damaged rail and other equipment that may have sharp/jagged edges.
- Conduct continuous air monitoring as appropriate.
- Confinement operations (i.e., spill control tactics) are a priority to limit the size and spread of the release – damming and diking may be required to limit the potential for the spill to migrate beyond the immediate area and cause environmental damage.
- If fire suppression strategies are selected, responders will need to refer to the ERG for recommended isolation distances.
- If fire suppression operations are initiated, responders need sufficient foam concentrate supplies, adequate water supply, foam appliances, equipment and properly trained personnel to effectively implement and sustain fire suppression and post-fire suppression operations.
- **CRITICAL QUESTION:** Do you have the ability to extinguish a single tank car containing 30,000 gallons of crude oil? Based on the guidance in NFPA 11, *Standard for Low-Medium- and High-Expansion Foam* (2011 edition) -- for a spill scenario greater than one (1) inch in depth, agencies will need a minimum of approximately **216 gallons of 3% foam concentrate** available for the first 15 minutes of the operation based on a spill area of approximately 3,000 sq. ft. In addition, reapplication of foam will normally be necessary to maintain an adequate foam blanket.

Note: If 1% foam concentrate is available and used, approximately 72 gallons of foam concentrate would be required for the first 15 minutes of the operations.

- **If you do not have the capability to safely and effectively implement and sustain this strategy, defensive or non-intervention strategies should be pursued.**

EXAMPLE C: DERAILMENT WITH FIRE (*UNIT TRAIN, MULTIPLE CAR INVOLVEMENT, RELEASE, SPILL, WITH FIRE*)

- Implement emergency response plan.
- Ensure the railroad is notified via their Emergency Contact Number.
- Call the 24-hour emergency contact number for the shipper listed on the shipping papers available from the train crew. If this information is not available from the train crew, contact the Railroad Emergency Contact Number.
- Contact CHEMTREC at 1-800-424-9300 if there is no emergency contact telephone number listed for the shipper or other technical assistance is needed.
- Conduct a hazard assessment and risk evaluation to determine the scope and magnitude of the problem, resource requirements and response options. Do not overlook obvious physical hazards that may be present such as damaged rail and other equipment that may have sharp/jagged edges.
- Conduct continuous air monitoring as appropriate.
- Confinement operations (i.e., spill control tactics) are a priority to limit the size and spread of the release – damming and diking may be required to limit the potential for the spill to migrate beyond the immediate area and cause environmental damage.
- If fire suppression strategies are selected, responders will need to refer to the ERG for recommended isolation distances.
- If fire suppression operations are initiated, responders need sufficient foam concentrate supplies, adequate water supply, foam appliances, equipment and properly trained personnel to effectively implement and sustain operations.
- The resource requirements to safely and effectively respond to an incident of this magnitude will exceed the capabilities of most emergency response organizations. In situations of this nature, the amount of foam concentrate that is required to be available on-site to begin suppression operations per NFPA 11 (2011 edition), -- for a spill scenario greater than one (1) inch in depth, is approximately **26,000 gallons of 3% foam concentrate** for the first 15 minutes of the operation based on a spill area of approximately 360,000 sq. ft. In addition, reapplication of foam will normally be necessary to maintain an adequate foam blanket.

Note: If 1% foam concentrate is available and used, approximately 8,666 gallons of foam concentrate would be required for the first 15 minutes of the operations.

NOTE: THE STRATEGY FOR THIS TYPE OF INCIDENT THAT PROVIDES THE HIGHEST LEVEL OF SAFETY TO RESPONDERS IS DEFENSIVE TO PROTECT EXPOSURES OR NON-INTERVENTION.

8. CLEAN-UP AND POST-EMERGENCY OPERATIONS

- Establish a decontamination corridor in the warm zone away from the contaminated area. Ensure that all protective clothing and equipment is isolated for proper disposal and/or cleaning.
- Ensure proper decontamination of emergency personnel before they leave the scene. Crude oil vapors can saturate protective clothing and be carried off-site. Personnel should monitor for hazardous vapors before removing PPE.
- Use a massive water rinse on the outer shell of protective clothing. Maintain appropriate respiratory protection throughout the decontamination process.
- Contain all runoff since it may contain harmful contaminants. Properly dispose of in accordance with applicable federal, state and local environmental regulations.
- Conduct a post-incident analysis to properly document the incident and identify follow-up activities.

Appendix 4.5
ICS Forms

ICS 201	**Incident Briefing**
ICS 202	**Incident Objectives**
ICS 203	**Organization Assignment**
ICS 204	**Assignment List**
ICS 205	**Communication Plan**
ICS 205A	**Communications List**
ICS 206	**Medical Plan**
ICS 207	**Incident Organization Chart**
ICS 208	**Safety Message/Plan**
ICS 214	**Unit Log**
ICS 215	**Operational Planning Worksheet**

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Date Time: HHMM

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment):

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command): Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.

6. Prepared by: Name: Position/Title: Signature: _____

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Date Time: HHMM

7. Current and Planned Objectives:

8. Current and Planned Actions, Strategies, and Tactics:

Time:	Actions:
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
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HHMM	
HHMM	
HHMM	

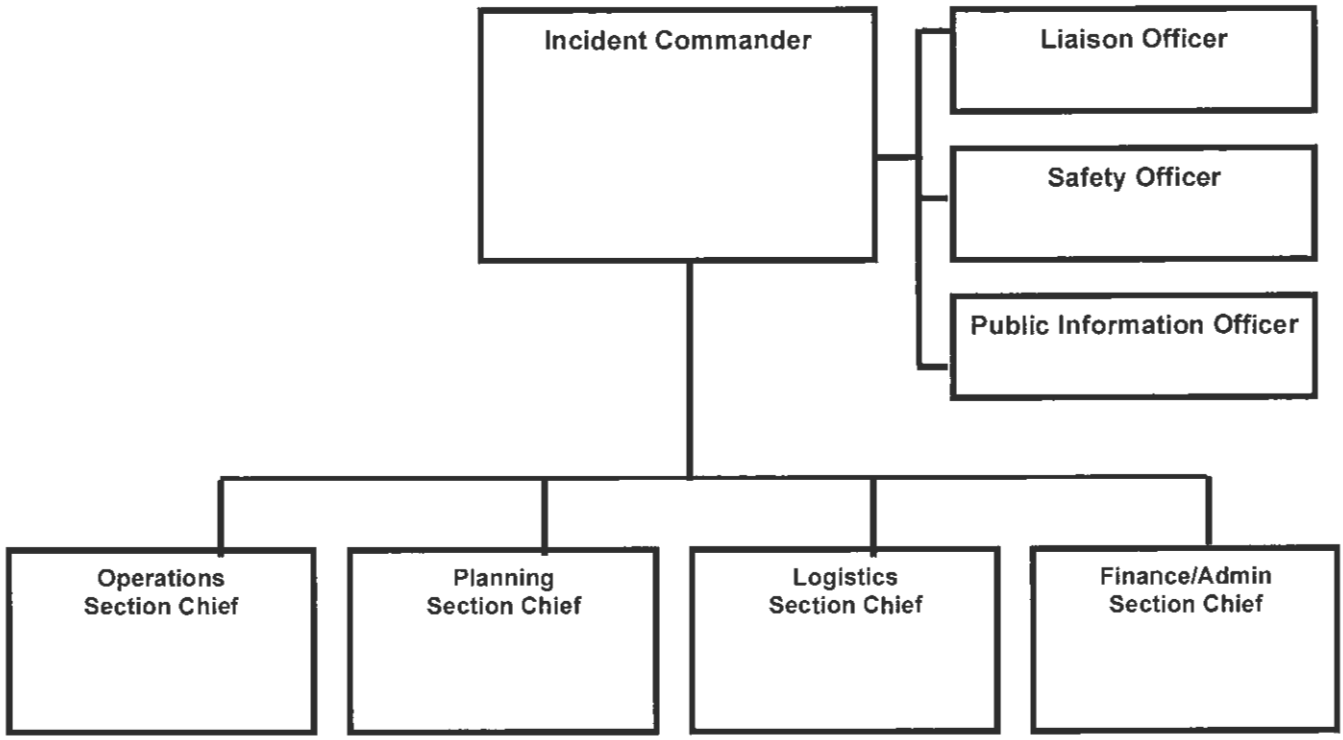
6. Prepared by: Name: Position/Title: Signature: _____

Date/Time: Date

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Date Time: HHMM

9. Current Organization (fill in additional organization as appropriate):



6. Prepared by: Name:	Position/Title:	Signature: _____
ICS 201, Page 3	Date/Time: Date	

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

10. Resource Summary:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Notes (location/assignment/status)
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	

6. Prepared by: Name: Position/Title: Signature: _____

Date/Time: Date

ICS 201
Incident Briefing

Purpose. The Incident Briefing (ICS 201) provides the Incident Commander (and the Command and General Staffs) with basic information regarding the incident situation and the resources allocated to the incident. In addition to a briefing document, the ICS 201 also serves as an initial action worksheet. It serves as a permanent record of the initial response to the incident.

Preparation. The briefing form is prepared by the Incident Commander for presentation to the incoming Incident Commander along with a more detailed oral briefing.

Distribution. Ideally, the ICS 201 is duplicated and distributed before the initial briefing of the Command and General Staffs or other responders as appropriate. The "Map/Sketch" and "Current and Planned Actions, Strategies, and Tactics" sections (pages 1–2) of the briefing form are given to the Situation Unit, while the "Current Organization" and "Resource Summary" sections (pages 3–4) are given to the Resources Unit.

Notes:

- The ICS 201 can serve as part of the initial Incident Action Plan (IAP).
- If additional pages are needed for any form page, use a blank ICS 201 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Date/Time Initiated** • Date, Time	Enter date initiated (month/day/year) and time initiated (using the 24-hour clock).
4	**Map/Sketch** (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)	Show perimeter and other graphics depicting situational status, resource assignments, incident facilities, and other special information on a map/sketch or with attached maps. Utilize commonly accepted ICS map symbology. If specific geospatial reference points are needed about the incident's location or area outside the ICS organization at the incident, that information should be submitted on the Incident Status Summary (ICS 209). North should be at the top of page unless noted otherwise.
5	**Situation Summary and Health and Safety Briefing** (for briefings or transfer of command): Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.	Self-explanatory.
6	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
7	**Current and Planned Objectives**	Enter the objectives used on the incident and note any specific problem areas.

Block Number	Block Title	Instructions
8	**Current and Planned Actions, Strategies, and Tactics** • Time • Actions	Enter the current and planned actions, strategies, and tactics and time they may or did occur to attain the objectives. If additional pages are needed, use a blank sheet or another ICS 201 (Page 2), and adjust page numbers accordingly.
9	**Current Organization** (fill in additional organization as appropriate) • Incident Commander(s) • Liaison Officer • Safety Officer • Public Information Officer • Planning Section Chief • Operations Section Chief • Finance/Administration Section Chief • Logistics Section Chief	• Enter on the organization chart the names of the individuals assigned to each position. • Modify the chart as necessary, and add any lines/spaces needed for Command Staff Assistants, Agency Representatives, and the organization of each of the General Staff Sections. • If Unified Command is being used, split the Incident Commander box. • Indicate agency for each of the Incident Commanders listed if Unified Command is being used.
10	**Resource Summary**	Enter the following information about the resources allocated to the incident. If additional pages are needed, use a blank sheet or another ICS 201 (Page 4), and adjust page numbers accordingly.
	• Resource	Enter the number and appropriate category, kind, or type of resource ordered.
	• Resource Identifier	Enter the relevant agency designator and/or resource designator (if any).
	• Date/Time Ordered	Enter the date (month/day/year) and time (24-hour clock) the resource was ordered.
	• ETA	Enter the estimated time of arrival (ETA) to the incident (use 24-hour clock).
	• Arrived	Enter an "X" or a checkmark upon arrival to the incident.
	• Notes (location/ assignment/status)	Enter notes such as the assigned location of the resource and/or the actual assignment and status.

INCIDENT OBJECTIVES (ICS 202)

1. Incident Name:	2. Operational Period:	Date From: ate	Date To: ate
		Time From:	Time To:

3. Objective(s):

4. Operational Period Command Emphasis:

General Situational Awareness

5. Site Safety Plan Required? Yes ☐ No ☐

Approved Site Safety Plan(s) Located at: _____

6. Incident Action Plan (the items checked below are included in this Incident Action Plan):

☐ ICS 203	☐ ICS 207	Other Attachments:
☐ ICS 204	☐ ICS 208	☐ _____
☐ ICS 205	☐ Map/Chart	☐ _____
☐ ICS 205A	☐ Weather Forecast/Tides/Currents	☐ _____
☐ ICS 206		☐ _____

7. Prepared by: Name: Position/Title: Signature: _____

8. Approved by Incident Commander: Name: Signature: _____

ICS 202	IAP Page	Date/Time: Date

ICS 202
Incident Objectives

Purpose. The Incident Objectives (ICS 202) describes the basic incident strategy, incident objectives, command emphasis/priorities, and safety considerations for use during the next operational period.

Preparation. The ICS 202 is completed by the Planning Section following each Command and General Staff meeting conducted to prepare the Incident Action Plan (IAP). In case of a Unified Command, one Incident Commander (IC) may approve the ICS 202. If additional IC signatures are used, attach a blank page.

Distribution. The ICS 202 may be reproduced with the IAP and may be part of the IAP and given to all supervisory personnel at the Section, Branch, Division/Group, and Unit levels. All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 202 is part of the IAP and can be used as the opening or cover page.
- If additional pages are needed, use a blank ICS 202 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident. If needed, an incident number can be added.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Objective(s)**	Enter clear, concise statements of the objectives for managing the response. Ideally, these objectives will be listed in priority order. These objectives are for the incident response for this operational period as well as for the duration of the incident. Include alternative and/or specific tactical objectives as applicable. Objectives should follow the SMART model or a similar approach: **S**pecific – Is the wording precise and unambiguous? **M**easurable – How will achievements be measured? **A**ction-oriented – Is an action verb used to describe expected accomplishments? **R**ealistic – Is the outcome achievable with given available resources? **T**ime-sensitive – What is the timeframe?
4	**Operational Period Command Emphasis**	Enter command emphasis for the operational period, which may include tactical priorities or a general weather forecast for the operational period. It may be a sequence of events or order of events to address. This is not a narrative on the objectives, but a discussion about where to place emphasis if there are needs to prioritize based on the Incident Commander's or Unified Command's direction. Examples: Be aware of falling debris, secondary explosions, etc.
	General Situational Awareness	General situational awareness may include a weather forecast, incident conditions, and/or a general safety message. If a safety message is included here, it should be reviewed by the Safety Officer to ensure it is in alignment with the Safety Message/Plan (ICS 208).
5	**Site Safety Plan Required?** Yes ☐ No ☐	Safety Officer should check whether or not a site safety plan is required for this incident.
	Approved Site Safety Plan(s) Located At	Enter the location of the approved Site Safety Plan(s).

Block Number	Block Title	Instructions
6	**Incident Action Plan** (the items checked below are included in this Incident Action Plan): ☐ ICS 203 ☐ ICS 204 ☐ ICS 205 ☐ ICS 205A ☐ ICS 206 ☐ ICS 207 ☐ ICS 208 ☐ Map/Chart ☐ Weather Forecast/ Tides/Currents Other Attachments:	Check appropriate forms and list other relevant documents that are included in the IAP. ☐ ICS 203 – Organization Assignment List ☐ ICS 204 – Assignment List ☐ ICS 205 – Incident Radio Communications Plan ☐ ICS 205A – Communications List ☐ ICS 206 – Medical Plan ☐ ICS 207 – Incident Organization Chart ☐ ICS 208 – Safety Message/Plan
7	**Prepared by** • Name • Position/Title • Signature	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
8	**Approved by Incident Commander** • Name • Signature • Date/Time	In the case of a Unified Command, one IC may approve the ICS 202. If additional IC signatures are used, attach a blank page.

ORGANIZATION ASSIGNMENT LIST (ICS 203)

1. Incident Name:	2. Operational Period: Date From: Date Date To: Date Time From: HHMM Time To: HHMM

3. Incident Commander(s) and Command Staff:	
IC/UCs	
Deputy	
Safety Officer	
Public Info. Officer	
Liaison Officer	

4. Agency/Organization Representatives:	
Agency/Organization	Name

5. Planning Section:	
Chief	
Deputy	
Resources Unit	
Situation Unit	
Documentation Unit	
Demobilization Unit	
Technical Specialists	

6. Logistics Section:	
Chief	
Deputy	
Support Branch	
Director	
Supply Unit	
Facilities Unit	
Ground Support Unit	
Service Branch	
Director	
Communications Unit	
Medical Unit	
Food Unit	

7. Operations Section:		
Chief		
Deputy		
Staging Area		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Air Operations Branch		
Air Ops Branch Dir.		

8. Finance/Administration Section:	
Chief	
Deputy	
Time Unit	
Procurement Unit	
Comp/Claims Unit	
Cost Unit	

9. Prepared by: Name:	Position/Title:	Signature: _____
ICS 203	IAP Page	Date/Time: Date

ICS 203
Organization Assignment List

Purpose. The Organization Assignment List (ICS 203) provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position/unit. It is used to complete the Incident Organization Chart (ICS 207) which is posted on the Incident Command Post display. An actual organization will be incident or event-specific. **Not all positions need to be filled.** Some blocks may contain more than one name. The size of the organization is dependent on the magnitude of the incident, and can be expanded or contracted as necessary.

Preparation. The Resources Unit prepares and maintains this list under the direction of the Planning Section Chief. Complete only the blocks for the positions that are being used for the incident. If a trainee is assigned to a position, indicate this with a "T" in parentheses behind the name (e.g., "A. Smith (T)").

Distribution. The ICS 203 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 203 serves as part of the IAP.
- If needed, more than one name can be put in each block by inserting a slash.
- If additional pages are needed, use a blank ICS 203 and repaginate as needed.
- ICS allows for organizational flexibility, so the Intelligence/Investigations Function can be embedded in several different places within the organizational structure.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Incident Commander(s) and Command Staff** • IC/UCs • Deputy • Safety Officer • Public Information Officer • Liaison Officer	Enter the names of the Incident Commander(s) and Command Staff. Label Assistants to Command Staff as such (for example, "Assistant Safety Officer"). For all individuals, use at least the first initial and last name. For Unified Command, also include agency names.
4	**Agency/Organization Representatives** • Agency/Organization • Name	Enter the agency/organization names and the names of their representatives. For all individuals, use at least the first initial and last name.
5	**Planning Section** • Chief • Deputy • Resources Unit • Situation Unit • Documentation Unit • Demobilization Unit • Technical Specialists	Enter the name of the Planning Section Chief, Deputy, and Unit Leaders after each position title. List Technical Specialists with an indication of specialty. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.

Block Number	Block Title	Instructions
6	**Logistics Section** • Chief • Deputy **Support Branch** • Director • Supply Unit • Facilities Unit • Ground Support Unit **Service Branch** • Director • Communications Unit • Medical Unit • Food Unit	Enter the name of the Logistics Section Chief, Deputy, Branch Directors, and Unit Leaders after each position title. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
7	**Operations Section** • Chief • Deputy • Staging Area **Branch** • Branch Director • Deputy • Division/Group **Air Operations Branch** • Air Operations Branch Director	Enter the name of the Operations Section Chief, Deputy, Branch Director(s), Deputies, and personnel staffing each of the listed positions. For Divisions/Groups, enter the Division/Group identifier in the left column and the individual's name in the right column. Branches and Divisions/Groups may be named for functionality or by geography. For Divisions/Groups, indicate Division/Group Supervisor. Use an additional page if more than three Branches are activated. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
8	**Finance/Administration Section** • Chief • Deputy • Time Unit • Procurement Unit • Compensation/Claims Unit • Cost Unit	Enter the name of the Finance/Administration Section Chief, Deputy, and Unit Leaders after each position title. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
9	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

ASSIGNMENT LIST (ICS 204)

1. Incident Name:	2. Operational Period: Date From: Date To: Time From: Time To:	3. Branch: Division: Group: Staging Area:

4. Operations Personnel:

	Name	Contact Number(s)
Operations Section Chief:		XXX-XXX-XXXX
Branch Director:		XXX-XXX-XXXX
Division/Group Supervisor:		XXX-XXX-XXXX

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Contact (e.g., phone, pager, radio frequency, etc.)	Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information

6. Work Assignments:

7. Special Instructions:

8. Communications (radio and/or phone contact numbers needed for this assignment):

Name	/Function	Primary Contact: indicate cell, pager, or radio (frequency/system/channel)
	/	
	/	
	/	
	/	

9. Prepared by: Name: Position/Title: Signature: _____

ICS 204
Assignment List

Purpose. The Assignment List(s) (ICS 204) informs Division and Group supervisors of incident assignments. Once the Command and General Staffs agree to the assignments, the assignment information is given to the appropriate Divisions and Groups.

Preparation. The ICS 204 is normally prepared by the Resources Unit, using guidance from the Incident Objectives (ICS 202), Operational Planning Worksheet (ICS 215), and the Operations Section Chief. It must be approved by the Incident Commander, but may be reviewed and initialed by the Planning Section Chief and Operations Section Chief as well.

Distribution. The ICS 204 is duplicated and attached to the ICS 202 and given to all recipients as part of the Incident Action Plan (IAP). In some cases, assignments may be communicated via radio/telephone/fax. All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 204 details assignments at Division and Group levels and is part of the IAP.
- Multiple pages/copies can be used if needed.
- If additional pages are needed, use a blank ICS 204 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Branch** **Division** **Group** **Staging Area**	This block is for use in a large IAP for reference only. Write the alphanumeric abbreviation for the Branch, Division, Group, and Staging Area (e.g., "Branch 1," "Division D," "Group 1A") in large letters for easy referencing.
4	**Operations Personnel** • Name, Contact Number(s) – Operations Section Chief – Branch Director – Division/Group Supervisor	Enter the name and contact numbers of the Operations Section Chief, applicable Branch Director(s), and Division/Group Supervisor(s).
5	**Resources Assigned**	Enter the following information about the resources assigned to the Division or Group for this period:
	• Resource Identifier	The identifier is a unique way to identify a resource (e.g., ENG-13, IA-SCC-413). If the resource has been ordered but no identification has been received, use TBD (to be determined).
	• Leader	Enter resource leader's name.
	• # of Persons	Enter total number of persons for the resource assigned, including the leader.
	• Contact (e.g., phone, pager, radio frequency, etc.)	Enter primary means of contacting the leader or contact person (e.g., radio, phone, pager, etc.). Be sure to include the area code when listing a phone number.
5 (continued)	• Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information	Provide special notes or directions specific to this resource. If required, add notes to indicate: (1) specific location/time where the resource should report or be dropped off/picked up; (2) special equipment and supplies that will be used or needed; (3) whether or not the resource received briefings; (4) transportation needs; or (5) other information.

Block Number	Block Title	Instructions
6	**Work Assignments**	Provide a statement of the tactical objectives to be achieved within the operational period by personnel assigned to this Division or Group.
7	**Special Instructions**	Enter a statement noting any safety problems, specific precautions to be exercised, dropoff or pickup points, or other important information.
8	**Communications** (radio and/or phone contact numbers needed for this assignment) • Name/Function • Primary Contact: indicate cell, pager, or radio (frequency/system/channel)	Enter specific communications information (including emergency numbers) for this Branch/Division/Group. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics. In light of potential IAP distribution, use sensitivity when including cell phone number. Add a secondary contact (phone number or radio) if needed.
9	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

1. Incident Name:	2. Date/Time Prepared: Date: Date Time:	3. Operational Period: Date From: Date Date To: Date Time From: Time To:

4. Basic Radio Channel Use:

Zone Grp.	Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	TX Tone/NAC	Mode (A, D, or M)	Remarks

5. Special Instructions:

6. Prepared by (Communications Unit Leader): Name: Signature: _____

ICS 205	IAP Page	Date/Time: Date

ICS 205
Incident Radio Communications Plan

Purpose. The Incident Radio Communications Plan (ICS 205) provides information on all radio frequency or trunked radio system talkgroup assignments for each operational period. The plan is a summary of information obtained about available radio frequencies or talkgroups and the assignments of those resources by the Communications Unit Leader for use by incident responders. Information from the Incident Radio Communications Plan on frequency or talkgroup assignments is normally placed on the Assignment List (ICS 204).

Preparation. The ICS 205 is prepared by the Communications Unit Leader and given to the Planning Section Chief for inclusion in the Incident Action Plan.

Distribution. The ICS 205 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit. Information from the ICS 205 is placed on Assignment Lists.

Notes:

- The ICS 205 is used to provide, in one location, information on all radio frequency assignments down to the Division/Group level for each operational period.
- The ICS 205 serves as part of the IAP.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Date/Time Prepared**	Enter date prepared (month/day/year) and time prepared (using the 24-hour clock).
3	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
4	**Basic Radio Channel Use**	Enter the following information about radio channel use:
	Zone Group	
	Channel Number	Use at the Communications Unit Leader's discretion. Channel Number (Ch #) may equate to the channel number for incident radios that are programmed or cloned for a specific Communications Plan, or it may be used just as a reference line number on the ICS 205 document.
	Function	Enter the Net function each channel or talkgroup will be used for (Command, Tactical, Ground-to-Air, Air-to-Air, Support, Dispatch).
	Channel Name/Trunked Radio System Talkgroup	Enter the nomenclature or commonly used name for the channel or talk group such as the National Interoperability Channels which follow DHS frequency Field Operations Guide (FOG).
	Assignment	Enter the name of the ICS Branch/Division/Group/Section to which this channel/talkgroup will be assigned.
	RX (Receive) Frequency (N or W)	Enter the Receive Frequency (RX Freq) as the mobile or portable subscriber would be programmed using xxx.xxxx out to four decimal places, followed by an "N" designating narrowband or a "W" designating wideband emissions. The name of the specific trunked radio system with which the talkgroup is associated may be entered across all fields on the ICS 205 normally used for conventional channel programming information.
	RX Tone/NAC	Enter the Receive Continuous Tone Coded Squelch System (CTCSS) subaudible tone (RX Tone) or Network Access Code (RX NAC) for the receive frequency as the mobile or portable subscriber would be programmed.

Block Number	Block Title	Instructions
4 (continued)	TX (Transmit) Frequency (N or W)	Enter the Transmit Frequency (TX Freq) as the mobile or portable subscriber would be programmed using xxx.xxxx out to four decimal places, followed by an "N" designating narrowband or a "W" designating wideband emissions.
	TX Tone/NAC	Enter the Transmit Continuous Tone Coded Squelch System (CTCSS) subaudible tone (TX Tone) or Network Access Code (TX NAC) for the transmit frequency as the mobile or portable subscriber would be programmed.
	Mode (A, D, or M)	Enter "A" for analog operation, "D" for digital operation, or "M" for mixed mode operation.
	Remarks	Enter miscellaneous information concerning repeater locations, information concerning patched channels or talkgroups using links or gateways, etc.
5	**Special Instructions**	Enter any special instructions (e.g., using cross-band repeaters, secure-voice, encoders, private line (PL) tones, etc.) or other emergency communications needs). If needed, also include any special instructions for handling an incident within an incident.
6	**Prepared by** (Communications Unit Leader) • Name • Signature • Date/Time	Enter the name and signature of the person preparing the form, typically the Communications Unit Leader. Enter date (month/day/year) and time prepared (24-hour clock).

COMMUNICATIONS LIST (ICS 205A)

1. Incident Name:	2. Operational Period:	Date From:	Date To:
		Time From:	Time To:

3. Basic Local Communications Information:

Incident Assigned Position	Name (Alphabetized)	Method(s) of Contact (phone, pager, cell, etc.)

4. Prepared by: Name:	Position/Title:	Signature:
ICS 205A | IAP Page	Date/Time: Date	

ICS 205A
Communications List

Purpose. The Communications List (ICS 205A) records methods of contact for incident personnel. While the Incident Radio Communications Plan (ICS 205) is used to provide information on all radio frequencies down to the Division/Group level, the ICS 205A indicates all methods of contact for personnel assigned to the incident (radio frequencies, phone numbers, pager numbers, etc.), and functions as an incident directory.

Preparation. The ICS 205A can be filled out during check-in and is maintained and distributed by Communications Unit personnel. This form should be updated each operational period.

Distribution. The ICS 205A is distributed within the ICS organization by the Communications Unit, and posted as necessary. All completed original forms must be given to the Documentation Unit. If this form contains sensitive information such as cell phone numbers, it should be clearly marked in the header that it contains sensitive information and is not for public release.

Notes:

- The ICS 205A is an optional part of the Incident Action Plan (IAP).
- This optional form is used in conjunction with the ICS 205.
- If additional pages are needed, use a blank ICS 205A and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Basic Local Communications Information**	Enter the communications methods assigned and used for personnel by their assigned ICS position.
	• Incident Assigned Position	Enter the ICS organizational assignment.
	• Name	Enter the name of the assigned person.
	• Method(s) of Contact (phone, pager, cell, etc.)	For each assignment, enter the radio frequency and contact number(s) to include area code, etc. If applicable, include the vehicle license or ID number assigned to the vehicle for the incident (e.g., HAZMAT 1, etc.).
4	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

MEDICAL PLAN (ICS 206)

1. Incident Name:	2. Operational Period:	Date From:	Date To:
		Time From:	Time To:

3. Medical Aid Stations:

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

4. Transportation (indicate air or ground):

Ambulance Service	Location	Contact Number(s)/Frequency	Level of Service
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS

5. Hospitals:

Hospital Name	Address, Latitude & Longitude if Helipad	Contact Number(s)/ Frequency	Travel Time		Trauma Center	Burn Center	Helipad
			Air	Ground			
					☐ Yes Level: ____	☐ Yes ☐ No	☐ Yes ☐ No
					☐Yes Level: ____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level: ____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level: ____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:	☐ Yes ☐ No	☐ Yes ☐ No

6. Special Medical Emergency Procedures:

☐ Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.

7. Prepared by (Medical Unit Leader): Name: Signature: _____

8. Approved by (Safety Officer): Name: Signature: _____

ICS 206
Medical Plan

Purpose. The Medical Plan (ICS 206) provides information on incident medical aid stations, transportation services, hospitals, and medical emergency procedures.

Preparation. The ICS 206 is prepared by the Medical Unit Leader and reviewed by the Safety Officer to ensure ICS coordination. If aviation assets are utilized for rescue, coordinate with Air Operations.

Distribution. The ICS 206 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). Information from the plan pertaining to incident medical aid stations and medical emergency procedures may be noted on the Assignment List (ICS 204). All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 206 serves as part of the IAP.
- This form can include multiple pages.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Medical Aid Stations**	Enter the following information on the incident medical aid station(s):
	• Name	Enter name of the medical aid station.
	• Location	Enter the location of the medical aid station (e.g., Staging Area, Camp Ground).
	• Contact Number(s)/Frequency	Enter the contact number(s) and frequency for the medical aid station(s).
	• Paramedics on Site? ☐ Yes ☐ No	Indicate (yes or no) if paramedics are at the site indicated.
4	**Transportation** (indicate air or ground)	Enter the following information for ambulance services available to the incident:
	• Ambulance Service	Enter name of ambulance service.
	• Location	Enter the location of the ambulance service.
	• Contact Number(s)/Frequency	Enter the contact number(s) and frequency for the ambulance service.
	• Level of Service ☐ ALS ☐ BLS	Indicate the level of service available for each ambulance, either ALS (Advanced Life Support) or BLS (Basic Life Support).

Block Number	Block Title	Instructions
5	**Hospitals**	Enter the following information for hospital(s) that could serve this incident:
	• Hospital Name	Enter hospital name and identify any predesignated medivac aircraft by name a frequency.
	• Address, Latitude & Longitude if Helipad	Enter the physical address of the hospital and the latitude and longitude if the hospital has a helipad.
	• Contact Number(s)/ Frequency	Enter the contact number(s) and/or communications frequency(s) for the hospital.

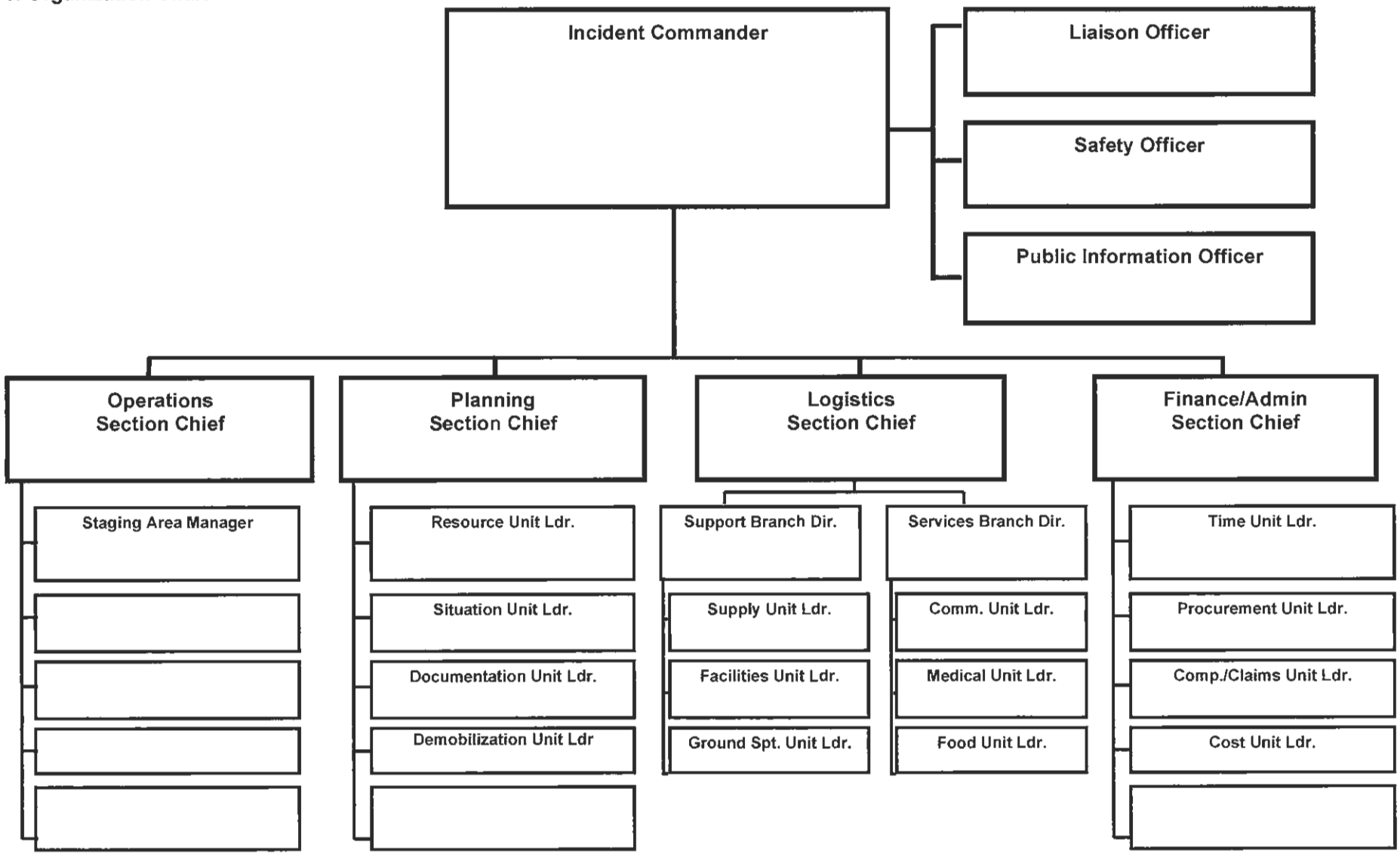
	• Travel Time
	  • Air
	  • Ground
		Enter the travel time by air and ground from the incident to the hospital.

	• Trauma Center ☐ Yes Level:_____	Indicate yes and the trauma level if the hospital has a trauma center.
	• Burn Center ☐ Yes ☐ No	Indicate (yes or no) if the hospital has a burn center.
	• Helipad ☐ Yes ☐ No	Indicate (yes or no) if the hospital has a helipad. Latitude and Longitude data format need to compliment Medical Evacuation Helicopters and Medical Air Resources
6	**Special Medical Emergency Procedures**	Note any special emergency instructions for use by incident personnel, including (1) who should be contacted, (2) how should they be contacted; and (3) who manages an incident within an incident due to a rescue, accident, etc. Include procedures for how to report medical emergencies.
	☐ Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.	Self explanatory. Incident assigned aviation assets should be included in ICS 220.
7	**Prepared by** (Medical Unit Leader) • Name • Signature	Enter the name and signature of the person preparing the form, typically the Medical Unit Leader. Enter date (month/day/year) and time prepared (24-hour clock).
8	**Approved by** (Safety Officer) • Name • Signature • Date/Time	Enter the name of the person who approved the plan, typically the Safety Officer. Enter date (month/day/year) and time reviewed (24-hour clock).

INCIDENT ORGANIZATION CHART (ICS 207)

1. Incident Name:	2. Operational Period: Date From: Date Date To: Date Time From: Time To:

3. Organization Chart



ICS 207	IAP Page	4. Prepared by: Name:	Position/Title:	Signature:	Date/Time:

ICS 207
Incident Organization Chart

Purpose. The Incident Organization Chart (ICS 207) provides a **visual wall chart** depicting the ICS organization position assignments for the incident. The ICS 207 is used to indicate what ICS organizational elements are currently activated and the names of personnel staffing each element. An actual organization will be event-specific. The size of the organization is dependent on the specifics and magnitude of the incident and is scalable and flexible. Personnel responsible for managing organizational positions are listed in each box as appropriate.

Preparation. The ICS 207 is prepared by the Resources Unit Leader and reviewed by the Incident Commander. Complete only the blocks where positions have been activated, and add additional blocks as needed, especially for Agency Representatives and all Operations Section organizational elements. For detailed information about positions, consult the NIMS ICS Field Operations Guide. The ICS 207 is intended to be used as a wall-size chart and printed on a plotter for better visibility. A chart is completed for each operational period, and updated when organizational changes occur.

Distribution. The ICS 207 is intended to be **wall mounted** at Incident Command Posts and other incident locations as needed, and is not intended to be part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit.

Notes:

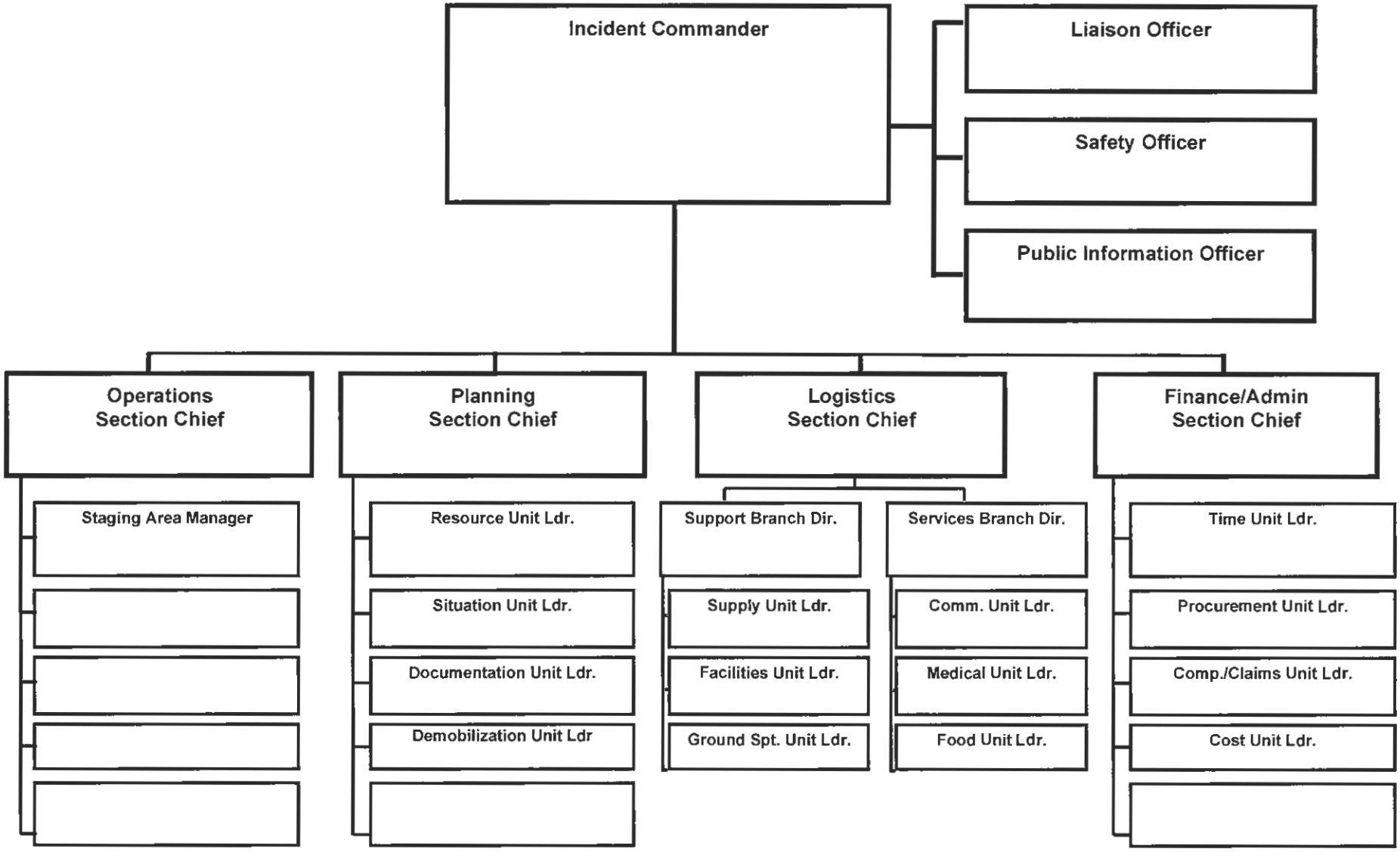
- The ICS 207 is intended to be **wall mounted** (printed on a plotter). Document size can be modified based on individual needs.
- Also available as 8½ x 14 (legal size) chart.
- ICS allows for organizational flexibility, so the Intelligence/Investigative Function can be embedded in several different places within the organizational structure.
- Use additional pages if more than three branches are activated. Additional pages can be added based on individual need (such as to distinguish more Division/Groups and Branches as they are activated).

Block Number	Block Title	Instructions
1	**Incident Name**	Print the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Organization Chart**	• Complete the incident organization chart. • For all individuals, use at least the first initial and last name. • List agency where it is appropriate, such as for Unified Commanders. • If there is a shift change during the specified operational period, list both names, separated by a slash.
4	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

INCIDENT ORGANIZATION CHART (ICS 207)

1. Incident Name:	2. Operational Period: Date From: Date Date To: Date Time From: HHMM Time To: HHMM

3. Organization Chart



ICS 207	IAP Page	4. Prepared by: Name:	Position/Title:	Signature: _____	Date/Time:

ICS 207
Incident Organization Chart

Purpose. The Incident Organization Chart (ICS 207) provides a **visual wall chart** depicting the ICS organization position assignments for the incident. The ICS 207 is used to indicate what ICS organizational elements are currently activated and the names of personnel staffing each element. An actual organization will be event-specific. The size of the organization is dependent on the specifics and magnitude of the incident and is scalable and flexible. Personnel responsible for managing organizational positions are listed in each box as appropriate.

Preparation. The ICS 207 is prepared by the Resources Unit Leader and reviewed by the Incident Commander. Complete only the blocks where positions have been activated, and add additional blocks as needed, especially for Agency Representatives and all Operations Section organizational elements. For detailed information about positions, consult the NIMS ICS Field Operations Guide. The ICS 207 is intended to be used as a wall-size chart and printed on a plotter for better visibility. A chart is completed for each operational period, and updated when organizational changes occur.

Distribution. The ICS 207 is intended to be **wall mounted** at Incident Command Posts and other incident locations as needed, and is not intended to be part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 207 is intended to be **wall mounted** (printed on a plotter). Document size can be modified based on individual needs.
- Also available as 8½ x 14 (legal size) chart.
- ICS allows for organizational flexibility, so the Intelligence/Investigative Function can be embedded in several different places within the organizational structure.
- Use additional pages if more than three branches are activated. Additional pages can be added based on individual need (such as to distinguish more Division/Groups and Branches as they are activated).

Block Number	Block Title	Instructions
1	**Incident Name**	Print the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Organization Chart**	• Complete the incident organization chart. • For all individuals, use at least the first initial and last name. • List agency where it is appropriate, such as for Unified Commanders. • If there is a shift change during the specified operational period, list both names, separated by a slash.
4	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

SAFETY MESSAGE/PLAN (ICS 208)

1. Incident Name:	2. Operational Period:	Date From:	Date To:
		Time From:	Time To:

3. Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan:

4. Site Safety Plan Required? Yes ☐ No ☐

Approved Site Safety Plan(s) Located At:

5. Prepared by:	Name:	Position/Title:	Signature:
ICS 208	**IAP Page**	Date/Time: Date	

ICS 208
Safety Message/Plan

Purpose. The Safety Message/Plan (ICS 208) expands on the Safety Message and Site Safety Plan.

Preparation. The ICS 208 is an optional form that may be included and completed by the Safety Officer for the Incident Action Plan (IAP).

Distribution. The ICS 208, if developed, will be reproduced with the IAP and given to all recipients as part of the IAP. All completed original forms must be given to the Documentation Unit.

Notes:
- The ICS 208 may serve (optionally) as part of the IAP.
- Use additional copies for continuation sheets as needed, and indicate pagination as used.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan**	Enter clear, concise statements for safety message(s), priorities, and key command emphasis/decisions/directions. Enter information such as known safety hazards and specific precautions to be observed during this operational period. If needed, additional safety message(s) should be referenced and attached.
4	**Site Safety Plan Required?** Yes ☐ No ☐	Check whether or not a site safety plan is required for this incident.
	Approved Site Safety Plan(s) Located At	Enter where the approved Site Safety Plan(s) is located.
5	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

ACTIVITY LOG (ICS 214)

1. Incident Name:	2. Operational Period:	Date From:	Date To:
		Time From:	Time To:

3. Name:	4. ICS Position:	5. Home Agency (and Unit):

6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)

7. Activity Log:

Date/Time	Notable Activities

8. Prepared by: Name:	Position/Title:	Signature:
ICS 214, Page 1	Date/Time: Date	

ACTIVITY LOG (ICS 214)

1. **Incident Name:**	2. **Operational Period:** Date From: Date To: Time From: Time To:

7. Activity Log (continuation):

Date/Time	Notable Activities

8. Prepared by: Name: Position/Title: Signature: ____________

Date/Time: Date

ICS 214
Activity Log

Purpose. The Activity Log (ICS 214) records details of notable activities at any ICS level, including single resources, equipment, Task Forces, etc. These logs provide basic incident activity documentation, and a reference for any after-action report.

Preparation. An ICS 214 can be initiated and maintained by personnel in various ICS positions as it is needed or appropriate. Personnel should document how relevant incident activities are occurring and progressing, or any notable events or communications.

Distribution. Completed ICS 214s are submitted to supervisors, who forward them to the Documentation Unit. All completed original forms must be given to the Documentation Unit, which maintains a file of all ICS 214s. It is recommended that individuals retain a copy for their own records.

Notes:

- The ICS 214 can be printed as a two-sided form.
- Use additional copies as continuation sheets as needed, and indicate pagination as used.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Name**	Enter the title of the organizational unit or resource designator (e.g., Facilities Unit, Safety Officer, Strike Team).
4	**ICS Position**	Enter the name and ICS position of the individual in charge of the Unit.
5	**Home Agency** (and Unit)	Enter the home agency of the individual completing the ICS 214. Enter a unit designator if utilized by the jurisdiction or discipline.
6	**Resources Assigned**	Enter the following information for resources assigned:
	• Name	Use this section to enter the resource's name. For all individuals, use at least the first initial and last name. Cell phone number for the individual can be added as an option.
	• ICS Position	Use this section to enter the resource's ICS position (e.g., Finance Section Chief).
	• Home Agency (and Unit)	Use this section to enter the resource's home agency and/or unit (e.g., Des Moines Public Works Department, Water Management Unit).
7	**Activity Log** • Date/Time • Notable Activities	• Enter the time (24-hour clock) and briefly describe individual notable activities. Note the date as well if the operational period covers more than one day. • Activities described may include notable occurrences or events such as task assignments, task completions, injuries, difficulties encountered, etc. • This block can also be used to track personal work habits by adding columns such as "Action Required," "Delegated To," "Status," etc.
8	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

OPERATIONAL PLANNING WORKSHEET (ICS 215)

1. Incident Name:

2. Operational Period: Date From: Date To:
Time From: Time To:

3. Branch	4. Division, Group, or Other	5. Work Assignment & Special Instructions	6. Resources													7. Overhead Position(s)	8. Special Equipment & Supplies	9. Reporting Location	10. Requested Arrival Time
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																

11. Total Resources Required													
12. Total Resources Have on Hand													
13. Total Resources Need To Order													

14. Prepared by:

Name:

Position/Title:

Signature:

Date/Time: Date

ICS 215
Operational Planning Worksheet

Purpose. The Operational Planning Worksheet (ICS 215) communicates the decisions made by the Operations Section Chief during the Tactics Meeting concerning resource assignments and needs for the next operational period. The ICS 215 is used by the Resources Unit to complete the Assignment Lists (ICS 204) and by the Logistics Section Chief for ordering resources for the incident.

Preparation. The ICS 215 is initiated by the Operations Section Chief and often involves logistics personnel, the Resources Unit, and the Safety Officer. The form is shared with the rest of the Command and General Staffs during the Planning Meeting. It may be useful in some disciplines or jurisdictions to prefill ICS 215 copies prior to incidents.

Distribution. When the Branch, Division, or Group work assignments and accompanying resource allocations are agreed upon, the form is distributed to the Resources Unit to assist in the preparation of the ICS 204. The Logistics Section will use a copy of this worksheet for preparing requests for resources required for the next operational period.

Notes:

- This worksheet can be made into a wall mount.
- Also available as 8½ x 14 (legal size) and 11 x 17 chart.
- If additional pages are needed, use a blank ICS 215 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Branch**	Enter the Branch of the work assignment for the resources.
4	**Division, Group, or Other**	Enter the Division, Group, or other location (e.g., Staging Area) of the work assignment for the resources.
5	**Work Assignment & Special Instructions**	Enter the specific work assignments given to each of the Divisions/Groups and any special instructions, as required.
6	**Resources**	Complete resource headings for category, kind, and type as appropriate for the incident. The use of a slash indicates a single resource in the upper portion of the slash and a Strike Team or Task Force in the bottom portion of the slash.
	• Required	Enter, for the appropriate resources, the number of resources by type (engine, squad car, Advanced Life Support ambulance, etc.) required to perform the work assignment.
	• Have	Enter, for the appropriate resources, the number of resources by type (engines, crew, etc.) available to perform the work assignment.
	• Need	Enter the number of resources needed by subtracting the number in the "Have" row from the number in the "Required" row.
7	**Overhead Position(s)**	List any supervisory and nonsupervisory ICS position(s) not directly assigned to a previously identified resource (e.g., Division/Group Supervisor, Assistant Safety Officer, Technical Specialist, etc.).
8	**Special Equipment & Supplies**	List special equipment and supplies, including aviation support, used or needed. This may be a useful place to monitor span of control.
9	**Reporting Location**	Enter the specific location where the resources are to report (Staging Area, location at incident, etc.).
10	**Requested Arrival Time**	Enter the time (24-hour clock) that resources are requested to arrive at the reporting location.

Block Number	Block Title	Instructions
11	**Total Resources Required**	Enter the total number of resources required by category/kind/type as preferred (e.g., engine, squad car, ALS ambulance, etc.). A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/ Task Forces in the bottom portion of the slash.
12	**Total Resources Have on Hand**	Enter the total number of resources on hand that are assigned to the incident for incident use. A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/Task Forces in the bottom portion of the slash.
13	**Total Resources Need To Order**	Enter the total number of resources needed. A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/Task Forces in the bottom portion of the slash.
14	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).