



# TRAINING OUTLINE

**COURSE TITLE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_ **INSTRUCTOR:** \_\_\_\_\_

**LOCATION:** \_\_\_\_\_ **TIME:** \_\_\_\_\_ **COMPANY:** \_\_\_\_\_

*Safety training was conducted on the above date by the instructor indicated. The following line items identify the topics covered during the training session.*

## SUMMARY OF TRAINING

### 1) Introduction

- a) History Behind HAZWOPER
- b) RCRA
- c) CERCLA
- d) HSWA
- e) SARA
- f) HAZWOPER
- g) Standards
- h) Why Training
- i) Additional Training
- j) Who is HAZWOPER for?
- k) Training Outline
- l) Regulations & Overview
- m) Site Characterization
- n) Drum Handling
- o) Confined Spaces
- p) Hazard Recognition
- q) Excavation
- r) Toxicology
- s) Personal Protective Equipment
- t) Air Sampling
- u) Decontamination
- v) Medical Surveillance
- w) Emergency Response
- x) Hazard Definitions
- y) Going Forward

### 2) Regulations & Overview

- a) OSHA & NIOSH
  - i. History of OSHA
  - ii. Mission of OSHA



# TRAINING OUTLINE

- iii. NIOSH

- iv. NIOSH's Mission

- b) **OSHA Standards: An Overview**

- i. What are OSHA Standards?

- ii. HAZWOPER Standard

- iii. When HAZWOPER Doesn't Apply

- iv. Conflicting or Overlapping Standards

- c) **Employer Responsibilities**

- i. Hazard-Free Workplace

- ii. Training

- iii. Provide PPE

- iv. Record Keeping

- v. Reporting

- d) **Worker Rights**

- i. Safe & Healthful Workplace

- ii. Know About Hazardous Chemicals

- iii. Know About Injuries & Illnesses

- iv. Complain or Request Corrections

- v. Training

- vi. Access to Exposure & Medical Records

- vii. File a Complaint with OSHA

- viii. Participate in an OSHA Inspection

- ix. Freedom from Retaliation

- e) **Worker Responsibilities**

- i. Read the OSHA Poster

- ii. Compliance

- iii. Report Hazards

- iv. Report Injuries or Illnesses

- v. Cooperate with OSHA

### 3) Site Characterization

- a) Standards

- b) **Hierarchy of Controls**

- i. Elimination or Substitution

- ii. Administrative Controls

- 1. Training

- iii. Engineering Controls

- iv. PPE

- c) Standard Operating Procedures



# TRAINING OUTLINE

- d) Standing Orders
- e) **Site Safety & Health Plan**
  - i. Safety & Health Risk
  - ii. Training
  - iii. Medical Surveillance
  - iv. Air Monitoring
  - v. Site Control
  - vi. Decontamination
  - vii. Emergency Response Plan
  - viii. Confined Spaces
  - ix. Spill Containment
  - x. Site Safety & Health Supervisor
- f) **Site Characterization**
  - i. Hazard Identification
  - ii. Project Team Leader
  - iii. **Preliminary Evaluation**
    - 1. Offsite Characterization
    - 2. Interviews & Records
    - 3. Site Access
    - 4. Perimeter Reconnaissance
    - 5. Aerial Photos
    - 6. Preliminary Site Map
    - 7. PPE Selection
  - iv. **Onsite Characterization**
    - 1. Onsite Survey
    - 2. Site Entry Team
    - 3. Sampling
    - 4. Environmental Factors
    - 5. Wind Barriers
    - 6. Pathways of Dispersion
- g) **Risk Assessment**
  - i. Hazard Identification
  - ii. What is Risk?
  - iii. Monitoring
  - iv. Ongoing Monitoring
  - v. Hazard Recognition
- h) **Documentation & Communication Plan**
  - i. Employee Notification



# TRAINING OUTLINE

- ii. Documentation
- iii. Field Logbook
- iv. Hazardous Substance Information Form
- v. **Communication Plan**
  - 1. Communication Systems
  - 2. Internal
  - 3. Alarms & Signals
  - 4. External

- i) **Site Control**

- i. Site Work Zones
  - ii. Exclusion Zone (EZ)
  - iii. Hot Line
  - iv. Establishing the Hot Line
  - v. Personnel in the Exclusion Zone
  - vi. Contamination Reduction Zone (CRZ)
  - vii. CRZ Layout
  - viii. Support Zone (SZ)
  - ix. SZ Layout
  - x. Command Post
  - xi. Refuges
  - xii. Evacuation Routes
  - xiii. Medical Stations
  - xiv. Field Lab Testing
  - xv. Administrative Activities
  - xvi. Conclusion

#### 4) Hazard Recognition

- a) Standards
- b) **Fire and Explosions**
  - i. Flammability
  - ii. Fire Triangle
  - iii. Flammable Solids
  - iv. Water-Reactive
  - v. Pyrophoric
  - vi. Oxidizers
  - vii. Organic Peroxides
  - viii. Unstable Reactive
- c) **Safety Hazards**
  - i. Carcinogens



# TRAINING OUTLINE

- ii. Ionizing Radiation
- iii. Air Quality
- iv. Oxygen Deficiency
- v. Struck By
- vi. Caught In and Between
- vii. Electrical
- viii. Lightning
- ix. Slips, Trips, Falls
- x. Ladders
- xi. Stairways
- xii. Dockboards
- xiii. Scaffolding
- xiv. Uneven Terrain
- xv. Heights
- xvi. Heat and Cold
- xvii. Hearing
- xviii. Ergonomics
- xix. Environmental Hazards
- xx. Other Hazards
- d) **Biological Hazards**
  - i. HPV B & C
  - ii. HIV/AIDS
  - iii. Other Biological Diseases
- e) **Identification**
- f) **Safety Data Sheets (SDSs)**
  - i. Section 1: Identification
  - ii. Section 2: Hazard Information
  - iii. Section 3: Composition
  - iv. Section 4: First Aid
  - v. Section 5: Firefighting
  - vi. Section 6: Accidental Release
  - vii. Section 7: Handling and Storage
  - viii. Section 8: Exposure Controls/PPE
  - ix. Section 9: Physical and Chemical Properties
  - x. Section 10: Stability and Reactivity
  - xi. Section 11: Toxicological Information
  - xii. Section 12: Ecological Information
  - xiii. Section 13: Disposal Considerations



# TRAINING OUTLINE

- xiv. Section 14: Transportation
- xv. Section 15: Regulatory Information
- xvi. Section 16: Other Information

## g) Labels

- i. Six Elements
  - ii. Manufacturer Information
  - iii. Product Identifier
  - iv. Signal Words
  - v. Hazard Statement
  - vi. Precautionary Statements
  - vii. Pictograms
  - viii. Health Hazard
  - ix. Flame
  - x. Exclamation Mark
  - xi. Gas Cylinder
  - xii. Corrosion
  - xiii. Exploding Bomb
  - xiv. Flame over a circle
  - xv. Skull and Crossbones
  - xvi. Environment
  - xvii. National Fire Protection Agency
  - xviii. HMIS
  - xix. Onsite Labeling
  - xx. DOT Classification
- ## h) Other Identification Methods
- i. Hazardous Waste Identification Process
  - ii. Hazardous Waste Site Characteristics
  - iii. Ignitibility
  - iv. Corrosivity
  - v. Reactivity
  - vi. Toxicity
  - vii. Training

## 5) Training

- a) Pre-Entry Training
- b) Training Elements
- c) General Site Worker
- d) Occasionally Onsite
- e) Monitored Areas



# TRAINING OUTLINE

- f) Management & Supervisors
- g) Equivalent Training
- h) Trainers

## 6) Confined Spaces

- a) Characteristics of a Confined Space
- b) Standards
- c) Two Options for Entry
- d) Non-Permit Required Confined Space
- e) Permit-Required Confined Space
- f) Hazardous Atmosphere

## 7) Testing

- a) Oxygen
- b) When to Test
- c) How to Test
- d) Oxygen Content
- e) Gas, Vapors, Dust
- f) Toxic Contaminants
- g) Sampling
- h) Sample Draw
- i) Diffusion
- j) Monitors
- k) Testing Equipment
- l) Measuring Limits
- m) Operational Limits

## 8) Toxicology

- a) Standards
- b) **Chemical Interactions with the Body**
  - i. Chemical Interaction with the Body
  - ii. Individual Characteristics
  - iii. Age
  - iv. Gender
  - v. Pre-Existing Conditions
  - vi. Genetics
  - vii. Toxic Chemicals
  - viii. Highly Toxic Chemicals
  - ix. Gosselin, Smith, and Hodge Table
  - x. Dose & Duration
- c) **Routes of Exposure**



# TRAINING OUTLINE

- i. Inhalation
- ii. How Inhalation Works
- iii. Cutaneous (Skin & Eye)
- iv. Chemical Absorption Through the Skin
- v. Direct Effects
- vi. Systemic Effects
- vii. Eyes
- viii. Acids
- ix. Alkali (Bases)
- x. Ingestion
- xi. Injection
- d) **States of Matter**
  - i. Solids
    - 1. Dust
    - 2. Metal Fumes
    - 3. Flammable Solids
    - 4. Plastics
    - 5. Polyurethane
  - ii. Liquids
    - 1. Combustible Liquids
    - 2. Flammable Liquids
    - 3. Volatile Liquids
    - 4. Aerosolized Liquids
    - 5. Corrosive Liquids
  - iii. Gases
    - 1. Corrosive Gases
    - 2. Asphyxiant Gases
- e) **Types of Toxicants**
  - i. Conditions & Symptoms: Acute & Chronic
  - ii. Acute Symptoms
  - iii. Chronic Symptoms
  - iv. Asphyxiants
    - 1. Hypoxia
    - 2. Carbon Monoxide
    - 3. Hydrogen Sulfide
    - 4. Hydrogen Cyanide
  - v. Neurotoxins
  - vi. Organic Solvents





# TRAINING OUTLINE

- vii. Heavy Metals
- viii. Mercury
- ix. Carcinogens
- x. Ionizing Radiation
- xi. Carcinogenic Chemicals
- xii. Carcinogenic Metals
- xiii. Allergens
- xiv. Irritants & Sensitizers
- xv. Sensitizers
- xvi. Teratogens
- xvii. Mutagens
- xviii. Radiation
  - 1. Non-Ionizing Radiation
  - 2. Ionizing Radiation

**f) Target Organ Toxicity**

- i. Hepatotoxins (Liver)
- ii. Nephrotoxins (Kidney)
- iii. Neurotoxins (Nervous System)
- iv. Hematopoietic Toxins (Blood)
- v. Reprotoxic (Reproductive System)
- vi. Pulmonary Toxins (Lungs)
- vii. Asbestosis
- viii. Chronic Bronchitis
- ix. Radiation
  - 1. Alpha Radiation
  - 2. Beta Radiation
  - 3. Gamma Radiation
  - 4. X-Rays
  - 5. Radiation Sickness

**g) Exposure Standards**

- i. IDLH
- ii. Threshold Limit Values (TLVs)
- iii. Lethal Dose (LD50)
- iv. Limit Measurements
- v. Chemical Combinations
- vi. Additive
- vii. Synergistic
- viii. Potentiation



# TRAINING OUTLINE

ix. Antagonistic

## 9) Site Monitoring

a) Standards

b) Monitoring Devices

i. Types of Air Sampling Devices

1. Direct Reading Instruments
2. On-Person or Clip-On Devices
3. Four-Gas Monitors
4. Single-Gas Monitors
5. Handheld Air Monitors
6. Flame Ionization Detector
7. Portable Infrared Spectrophotometer
8. Photoionization Detector
9. Oxygen Meter
10. Combustible Gas Indicator
11. Radiation Detectors
12. Colorimetric Indicator Tubes
13. Indirect Reading Instruments
14. Active Sampling Devices
15. Passive Sampling Devices

ii. Device Usage

1. Direct Reading Instruments
2. On-Person Devices
3. Handheld Devices
4. Colorimetric Tubes
5. Indirect Reading Instruments
6. Stationary Sampling Devices
7. Personal Sampling Devices
8. Passive Sampling Devices

iii. Calibration

1. On-Person & Handheld Monitors
2. Active Sampling Pumps

c) Sample Handling

- i. Laboratories
- ii. Sample Collecting
- iii. Direct Reading Instruments
- iv. Active Sampling
- v. Passive Sampling



# TRAINING OUTLINE

- vi. Documenting
- vii. Transport
- d) Air Monitoring
  - i. Initial Entry
  - ii. General Onsite Monitoring
  - iii. Perimeter Monitoring
  - iv. Periodic Monitoring
  - v. Personal Monitoring
  - vi. Additional Monitoring Locations
- e) Monitoring Variables
  - i. Temperature
  - ii. Windspeed
  - iii. Rainfall
  - iv. Moisture
  - v. Vapor Emissions
  - vi. Work Activities
- f) General Site Monitoring
  - i. Types of Samples
  - ii. Spills Samples
  - iii. Soil Monitoring
  - iv. Water Sampling
  - v. Sampling Equipment
  - vi. Sampling Equipment for Soils
  - vii. Hand Shovel
  - viii. Core Samplers & Soil Probes
  - ix. Soil Auger
  - x. Sample Pans
  - xi. Sampling Equipment for Liquids
  - xii. COLIWASA
  - xiii. Pipettes & Droppers
  - xiv. Bailers
  - xv. Sample Dippers
  - xvi. Weighted Bottle Sampler
  - xvii. Sampling Containers
  - xviii. Conclusion

## 10) Illumination, Sanitation, & New Technology

- a) Standards
- b) Illumination



# TRAINING OUTLINE

- i. What is Light?
- ii. How Does it Affect You?
- iii. Worker Visibility
- iv. Illumination Intensities
- v. Light Meter
- vi. LED Light Meter
- vii. Glare
- viii. Lighting Types
- ix. Personal or Portable
- x. Area Lighting
- xi. Task
- xii. Emergency Lighting
- xiii. Daylight
- xiv. Light Quality
- xv. Direction
- xvi. Electric Switches
- xvii. Maintenance

c) Sanitation

- i. Potable & Non-Potable Water
- ii. Toilets
- iii. Food Handling
- iv. Temporary Sleeping Quarters
- v. Washing Facilities
- vi. Showers & Change Rooms
- vii. Waste Disposal
- viii. Housekeeping

d) New Technology Programs

## 11) Material Handling

- a) Standards
- b) General
- c) Inspection & Planning
  - i. Symbols & Labels
  - ii. Deterioration & Pressure
  - iii. Monitor Area
  - iv. Planning
    - 1. Hazard Awareness
- d) Equipment
  - i. Drums & Other Containers



# TRAINING OUTLINE

1. Polyethylene or PVC-Lined Drums
2. Single-Walled Drums
3. Laboratory Packs
4. Plastic Drums
5. Steel Drums
6. Salvage Drums
7. Fiber Drums
8. 7A Type A Drums
9. TIH Overpack Drums
10. Seamless Drums
11. Lever Lock Closure Drums
12. UN Rating
- ii. Other Equipment
  1. Hand Trucks & Push Carts
  2. Drum Dollies
  3. Drum Cradles
  4. Drum Jacks
  5. Drum Stacker
  6. Vertical Drum Lifters
  7. Hydraulic Drum Dumpers
  8. Forklifts
  9. Thumbs & Grapples
  10. Front-End Loader
  11. Roller Conveyor
- e) Safe Work Practices
  - i. Spill Containment
  - ii. Communication
  - iii. Vehicle Safety
  - iv. PPE
  - v. Overpacks
  - vi. Pallets
  - vii. Containment Berms
  - viii. Ergonomics
  - ix. Awkward Postures
  - x. Shoulder Rolls
  - xi. Back Stretches
  - xii. Quadricep Stretches
  - xiii. Hamstring Stretches



# TRAINING OUTLINE

- xiv. Lifting
- xv. Feet
- xvi. Legs
- xvii. Hands
- xviii. Elbows
- xix. Back
- xx. Pushing & Pulling
- f) Handling Drums
  - i. Unidentified Drums
  - ii. Radioactive Waste
  - iii. Explosive or Shock-Sensitive
  - iv. Bulging Drums
  - v. Laboratory Packs
  - vi. Deteriorated or Leaking Drums
  - vii. Buried Drums
  - viii. Environmental Practices
- g) Opening Drums
  - i. Distance
  - ii. Ongoing Monitoring
  - iii. Correct Tools
  - iv. Reseal the Drum
  - v. Laboratory Packs
- h) Sampling & Characterization
  - i. Manual Sampling
  - ii. Sampling Characterization
  - iii. Contaminants of Concern
- i) Staging & Bulking
  - i. Drum Staging Areas
  - ii. Initial Staging Area
  - iii. Opening Area
  - iv. Sampling Area
  - v. Second Staging Area
  - vi. Bulking Area
  - vii. Bulking
  - viii. Tank Trailers
- j) Shipping
  - i. Traffic Control
  - ii. Driver Safety



# TRAINING OUTLINE

- iii. Loading Drums
- iv. Decontamination
- v. Identification
- vi. Packaging
- vii. Group I
- viii. Group II
- ix. Group III
- x. Types of Packaging
- xi. Single Packaging
- xii. Composite Packaging
- xiii. Inner & Outer Packaging
- xiv. Combination Packaging
- xv. Limited Quantities
- xvi. Exemption Packaging
- xvii. Packaging Responsibilities
- xviii. Labeling & Placards
- xix. Marking
- xx. Shipping Papers
- xxi. During Transport
- xxii. Incident Reporting
- xxiii. Telephone Incident Report
- k) Special Case Problems
  - i. Tanks & Vaults
  - ii. Vacuum Trucks
  - iii. Compressed Gas Cylinders
  - iv. Valves
  - v. Opening Cylinders
  - vi. Cylinder Safety Devices
  - vii. Pressure Relief Valves
  - viii. Rupture Discs
  - ix. Fusible Plugs
  - x. Ponds & Lagoons
  - xi. Aerobic Ponds
  - xii. Anaerobic Ponds
  - xiii. Facultative Ponds
  - xiv. Conclusion

## 12) Excavation

- a) Standards



# TRAINING OUTLINE

- b) Competent Person
- c) Soil Classification
  - i. Solids
  - ii. Gases
  - iii. Liquids
  - iv. Soil Cohesiveness
  - v. Stable Rock
  - vi. Type A
  - vii. Type B
  - viii. Type C
  - ix. Soil Testing
  - x. Test Methods
  - xi. Ribbon Test
  - xii. Dry Strength Test
  - xiii. Thump Penetration Test
  - xiv. Penetrometer
  - xv. Soil Mechanics
  - xvi. Soft Zone
  - xvii. Sloughing
  - xviii. Soft Pockets
  - xix. Shearing
  - xx. Rotational Failure
  - xxi. Vertical Pressure
  - xxii. Lateral Pressure
  - xxiii. Tension Cracks
  - xxiv. Sliding
  - xxv. Toppling
  - xxvi. Subsidence & Bulging
  - xxvii. Heaving or Squeezing
  - xxviii. Boiling
  - xxix. Trench Failure
  - xxx. Trench Failure: Stage One
  - xxxi. Trench Failure: Stage Two
  - xxxii. Trench Failure: Stage Three
  - xxxiii. Trench Failure: Stage Four
  - xxxiv. Trench Precautions
  - xxxv. Water Removal
  - xxxvi. Wellpoints





# TRAINING OUTLINE

- xxxvii. Direct Pumping
- xxxviii. Soil Weight
- d) Protective Systems
  - i. Protective Systems
  - ii. Trench Shoring
  - iii. Timber Shoring
  - iv. Aluminum Hydraulic Shoring
  - v. Whaler Systems
  - vi. Pre-Installation Inspection
  - vii. Shoring Installation
  - viii. Vertical Aluminum Installation
  - ix. Shore Removal
  - x. Shields
  - xi. Shield Inspection
  - xii. Rigging Gear
  - xiii. Machine Inspection
  - xiv. Lift Capacity
  - xv. Lift Capacity of a Backhoe
  - xvi. Sample Lift Capacity Charts
  - xvii. Lift Capacity of an Excavator
  - xviii. Shield Installation
  - xix. Sloping & Benching
  - xx. Trench Access, Egress
- e) Atmospheric Conditions
  - i. Hazardous Atmospheres
  - ii. Control Methods
- f) Common Hazards
  - i. Common Hazards
  - ii. Cave-In
  - iii. Electrocuting
  - iv. Struck-by
  - v. No Access
  - vi. Traffic Control
  - vii. Distractions
  - viii. Conclusion

## 13) Lockout/Tagout

- a) Standards
- b) General



# TRAINING OUTLINE

- i. Energy-Isolating Devices
  - ii. LOTO Exceptions
  - iii. Unplugging Equipment
  - iv. Hot Tap Operations
  - v. Minor Tool Changes
- c) Equipment
  - i. Durability
  - ii. Substantial
  - iii. Identifiable
  - iv. Standardized
  - v. Types of LOTO Devices
  - vi. Circuit Breaker Lockout
  - vii. Valve Lockout
  - viii. Plug Lockout
  - ix. Pneumatic Hose Lockout
  - x. Wall Switch Lockout
  - xi. Group Lock Boxes
  - xii. Hasp Lockouts
- d) Safe Operations
  - i. Energy Types
  - ii. Electrical
  - iii. Mechanical
  - iv. Hydraulic
  - v. Pneumatic
  - vi. Chemical
  - vii. Thermal
  - viii. Energy Control Program
    - 1. Employee Training
    - 2. Authorized Employees
    - 3. Affected Employees
    - 4. Other Employees
    - 5. Refresher Training
    - 6. Periodic Inspections
    - 7. Energy Control Procedures
    - 8. Lockout/Tagout Process
    - 9. Shutdown
    - 10. Notification of Employees
    - 11. Isolation



# TRAINING OUTLINE

- 12. Device Application
- 13. Verification of Isolation
- 14. Two of More Workers
- 15. Shift Change
- 16. Machine Restart

e) Hazards

- i. Electrocution
- ii. Burns
- iii. Crushing
- iv. Amputation
- v. Distractions
- vi. Conclusion

**14) Confined Spaces**

- a) Characteristics of a Confined Space
- b) Standards
- c) Two Options for Entry
- d) Non-Permit Required Confined Space
- e) Permit-Required Confined Space
- f) Hazardous Atmosphere
- g) Testing
  - i. Oxygen
  - ii. When to Test
  - iii. How to Test
  - iv. Oxygen
  - v. Gas, Vapors, Dust
  - vi. Toxic Contaminants
  - vii. Sampling
  - viii. Sample Draw
  - ix. Diffusion
  - x. Monitors
  - xi. Testing Equipment
  - xii. Measuring Limits
  - xiii. Operational Limits
  - xiv. Technical Considerations
  - xv. RF Protection
  - xvi. Response Time
  - xvii. Sensitivity
  - xviii. Reading Drifts



# TRAINING OUTLINE

- xix. Accuracy & Precision
- xx. Selectivity or Specificity
- h) Safe Operations
  - i. Know Your Duties
    - 1. Assigned Duties
    - 2. Entrant
    - 3. Attendant
    - 4. Entry Supervisor
    - 5. Others
    - 6. Employer
  - ii. Know Your Worksite
    - 1. Signage
    - 2. Protecting the Entrance
    - 3. Permit Program
    - 4. Permits
    - 5. Other Permits
  - iii. Hazards
    - 1. Oxygen Deficiency
    - 2. Consumption
    - 3. Displacement
    - 4. Reaction
    - 5. Oxygen Enrichment
    - 6. Toxic Atmosphere
    - 7. Asphyxiants
    - 8. Irritants
    - 9. Flammable or Explosive Atmospheres
    - 10. Distractions
    - 11. Fatigue
    - 12. Heat & Cold
    - 13. Emotional & Physical Health
  - iv. Rescue
    - 1. Evaluate
    - 2. Initial Evaluation
    - 3. Response Time
    - 4. Communication
    - 5. Assessment, Preparation, & Rescue
    - 6. Performance Evaluation
    - 7. Training



# TRAINING OUTLINE

- 8. Rescue by Non-Entry
- 9. Rescue by Trained Employees
- 10. Rescue by Others
- 11. Rescue Roles

## 15) Personal Protective Equipment

- a) Standards
- b) Controls
- c) PPE Program
  - i. PPE Training
  - ii. Hazard Assessment
  - iii. Electrical
  - iv. Impact & Compression
  - v. Fires & Burns
  - vi. Chemicals
  - vii. Harmful Dusts
  - viii. Light Radiation
  - ix. Falling Objects
  - x. Lacerations & Punctures
  - xi. Biological Hazards
  - xii. Periodic Hazard Inspections
  - xiii. Selecting PPE
  - xiv. PPE Maintenance
  - xv. Program Evaluation
- d) PPE Classifications
  - i. Respirators
    - 1. Air-Purifying Respirator
    - 2. Mechanical Filter Respirators
    - 3. Chemical Cartridge Respirators
    - 4. Powered Air-Purifying Respirators
    - 5. Mechanical Filter Respirators
    - 6. Air-Line Respirators
    - 7. Self-Contained Breathing Apparatus (SCBA)
    - 8. Inspection
    - 9. Cleaning & Storage
    - 10. Training
    - 11. Medical Evaluation
    - 12. Fit Testing
  - ii. Head Protection



# TRAINING OUTLINE

1. Hard Hats
2. Hard Hat Maintenance
3. Eye & Face Protection
4. Glasses, Goggles, & Face Shields
5. Eye Glasses & Contact Lenses
6. Hearing Protection
- iii. Body Protection
  1. Overalls & Coveralls
  2. Hooded Chemical-Resistant Suits
  3. Fully-Encapsulated Suits
- iv. Hand Protection
  1. Chemical-Resistant Gloves
  2. Butyl & Viton
  3. Neoprene
  4. PVC
  5. PVA
  6. Nitrile
  7. Proper Care of Protective gloves
  8. Other Gloves
- v. Foot Protection
  1. PPE Cleaning & Storage
- e) PPE Levels
  - i. Levels of PPE
  - ii. Level A
  - iii. Level B
  - iv. Level C
  - v. Level D
  - vi. Donning PPE
- f) Hazards
  - i. Routes of Exposure
  - ii. Inhalation
  - iii. Cutaneous
  - iv. Ingestion
  - v. Injection
  - vi. Permeation
  - vii. Degradation
  - viii. Breakthrough Time
  - ix. Heat & Cold Stress



# TRAINING OUTLINE

- x. Air Supply Consumption
- xi. Additional PPE
- xii. Communication
- xiii. Psychological Hazards
- xiv. Work Mission Duration
- xv. Air Supply Consumption
- xvi. Work Rate
- xvii. Fitness
- xviii. Body Size
- xix. Breathing Patterns
- xx. Reverse Skip Breathing
- xxi. Tactical Breathing
- xxii. Reilly Breathing Technique
- xxiii. Temperature
- xxiv. Cooling Supplies
- xxv. Ice Vests
- xxvi. Hard Hat Inserts
- xxvii. Special Conditions
- xxviii. Upgrading/Downgrading PPE
- g) Donning PPE
  - i. Donning Level A
  - ii. Donning Level B
  - iii. Donning Level C

## 16) Decontamination

- a) Factors of Contamination
  - i. Exposure Time
  - ii. Concentration
  - iii. Temperature
  - iv. Reactivity
  - v. Physical State of Waste
  - vi. Size of Molecule & Pore Size
- b) Contamination Prevention
  - i. Work Practice Controls
  - ii. Remote Sampling
  - iii. Equipment Protection
  - iv. Encasement
  - v. Disposables
- c) Decontamination Plan



# TRAINING OUTLINE

- i. Decontamination
- ii. Decontamination Plan
- iii. Decontamination Equipment
- iv. Decontaminating Personnel & PPE
- v. Heavy Equipment Decontamination
- vi. Decontamination Stations
- vii. Disposal of Clothing & Equipment
- viii. Disposal
- ix. Disposal Considerations
- x. Unknown Substances
- xi. Laundering
- xii. Showers & Changing Rooms
- d) Decontamination Methods
  - i. Physical Removal
  - ii. Loose Contaminants
  - iii. Adhering Contaminants
  - iv. Volatile Liquids
  - v. Chemical Removal
  - vi. Dissolving
  - vii. Using Water as a Solvent
  - viii. Dilute Acids and Bases as Solvents
  - ix. Solidification
  - x. Absorption and Adsorption
  - xi. Surfactants
  - xii. Inactivation
  - xiii. Sterilization

## **17) Decontamination Procedures**

- a) Aviation Industry
- b) Airline SOPs
- c) Checklists
- d) Decontamination Procedures
- e) Standard Operating Procedures
- f) Considerations Before Donning
- g) Stress Evaluation
- h) Donning
- i) PPE Check
- j) Decontamination Lines
- k) Decontamination Line Layout





# TRAINING OUTLINE

- l) Exclusion Zone Stations
    - i. Station 1: Segregated Equipment Drop
    - ii. Station 2: Boot Cover and Glove Wash
    - iii. Station 3: Boot Cover & Glove Rinse
    - iv. Station 4: Tape Removal
    - v. Station 5: Boot Cover Removal
    - vi. Station 6: Outer Glove Removal
  - m) Contamination Reduction Zone Stations
    - i. Station 7: Suit and Boot Wash
    - ii. Station 8: Suit and Boot Rinse
    - iii. Station 9: Tank Change and Redress
    - iv. Station 10: Safety Boot Removal
    - v. Station 11: Suit and Hart Hat Removal
    - vi. Station 12: SCBA Backpack Removal
    - vii. Station 13: Inner Glove Wash
    - viii. Station 14: Inner Glove Rinse
    - ix. Station 15: Facepiece Removal
    - x. Station 16: Inner Glove Removal
    - xi. Station 17: Inner Clothing Removal
  - n) Support Zone Stations
    - i. Station 18: Field Wash
    - ii. Station 19: Redress
  - o) Minimum Decontamination Layout
  - p) Decontaminating Equipment
  - q) Effectiveness Testing
  - r) Visual Observation
  - s) Natural Light
  - t) Ultraviolet Light
  - u) Wipe Sampling
  - v) Cleaning Solution Analysis
  - w) Offsite Permeation Testing
  - x) Training
  - y) Communication Plan
  - z) Emergency Decontamination
- 18) Medical Surveillance**
- a) Standards
  - b) Developing a Program
    - i. Hazard Recognition



# TRAINING OUTLINE

- ii. Other Hazards
- iii. Establishing Protocols
- iv. Addressing Specific Needs
- v. Maintaining Daily Details
- vi. Planning Meetings
- vii. Checklists
- viii. Establishing Work Environment
- ix. Participation
- x. Management Participation
- xi. Achievement
- xii. Medical Leadership
- xiii. Safety Advisor
- xiv. Training
- xv. Comprehension
- xvi. Language Interpreters
- xvii. Discussions & Questions
- xviii. Visual Training Techniques
- xix. Equipment Use
- xx. Following Signs
- xxi. First Aid Training
- xxii. Follow-Up Training
- xxiii. Role Identification
- xxiv. Predetermined Responses
- xxv. Non-job Illnesses
- xxvi. Communication with Medical Professionals
- xxvii. Cooperation with Local Hospital and Medical Specialists
- xxviii. Maps & Directions
- xxix. GPS Tracking
- xxx. Recommendations
- c) Pre-Employment Medical Exam
  - i. Pre-Employment Screening
  - ii. Medical & Occupational History
  - iii. Past Medical Records
  - iv. Job-Related Records
  - v. Communication
  - vi. Communication Hacks
  - vii. Physical Exam
  - viii. Setting a Baseline



# TRAINING OUTLINE

- ix. Establish Physical Capacity
- x. Ability to Work with PPE
- xi. Psychological Complications
- xii. Pulmonary Functions Tests
- xiii. Audiometric Tests
- xiv. Vision Tests
- xv. Echocardiogram (EKG)
- xvi. Chest X-Ray
- xvii. Follow-Up Irregularities
- xviii. Don't Sweat Tests
- xix. Physician's Written Opinion
- d) Periodic Medical Exams
  - i. Frequency
  - ii. Full vs. Partial Exams
  - iii. Termination Exam
  - iv. Temperature Exposure
  - v. Hydration
  - vi. Psychological Tests or Consultations
  - vii. Psychological Complications
  - viii. Therapy & Consultation
  - ix. Psychological Trauma
- e) Medical Records
  - i. Work-Related Incidents
  - ii. Accident Reports
  - iii. Medical Complaints
  - iv. Recordable Injuries
  - v. Non-Recordable First Aid
  - vi. Forms
  - vii. Injury Discrimination
  - viii. Providing Records to Government Officials
  - ix. Organization
  - x. Annual Summary
  - xi. Keeping Records for Multiple Agencies
  - xii. Advance Directives
  - xiii. Living Will
  - xiv. Durable Power for Attorney Healthcare
  - xv. Mental Health Directive
  - xvi. Latency Period



# TRAINING OUTLINE

- xvii. Privacy & Safety Debate
- xviii. Privacy Rule
- xix. Security Rule
- xx. PHI
- xxi. What You Can Do
- xxii. Insurance
- xxiii. OSHA Regulations
- xxiv. Standards
- xxv. State Plans

f) Program Review

- i. Evaluations
- ii. Evaluate and Reassess
- iii. Accident Investigations
- iv. Investigation Process
- v. Study Tendencies
- vi. Implementing Updates
- vii. Conclusion

## 19) Emergency Procedures

- a) Case Study
- b) Standards
- c) Pre-Emergency Planning
  - i. Pre-Emergency Planning
  - ii. Site Health Safety
  - iii. Emergency Response Plan
  - iv. ERP Content Requirements
- d) Personnel
  - i. Personal Roles
  - ii. Training
  - iii. Chain of Command
  - iv. Senior Official
  - v. Incident Commander
  - vi. Hazardous Materials Specialist
  - vii. Hazardous Materials Technician
  - viii. First Responder: Operations Level
  - ix. First Responder: Awareness Level
  - x. Chain-of-Command Training
  - xi. Offsite Responders
  - xii. Federal Response Organizations



# TRAINING OUTLINE

- xiii. Onsite Civilians
- xiv. Communications
- e) Worksite Safety
  - i. Emergency Recognition & Prevention
  - ii. Site Security & Control
  - iii. Site Mapping
  - iv. Work Zones
  - v. Exclusion Zones
  - vi. Contamination Reduction Zone
  - vii. Support Zone
  - viii. Safe Distances
  - ix. Refuges
  - x. Evacuation Routes
  - xi. Personal Locator Systems
  - xii. Passive Personal Locator System
  - xiii. Active Personal Locator System
  - xiv. Additional Security Measures
- f) Emergency Procedures Part 1
  - i. Initiating Emergency Response
  - ii. Assessing the Emergency
  - iii. Emergency Evacuation
  - iv. Public Evacuation
  - v. Emergency Transportation
  - vi. Victim Recovery Procedures
  - vii. Emergency Decontamination
  - viii. Emergency First Aid
  - ix. Drum & Container Handling
  - x. Pressurized Drums or Containers
  - xi. Opening Drums or Containers
- g) Emergency Procedures Part 2
  - i. Spill Response
  - ii. Spill Control
  - iii. Spill Elimination
  - iv. Overpack Drum
  - v. Absorption Materials
  - vi. Bonding Agents
  - vii. Neutralizing Materials
  - viii. Vapor Control



# TRAINING OUTLINE

- ix. Diking & Damming
- x. Fire Control
- xi. Portable Fire Extinguishers
- xii. Selecting a Fire Extinguisher
- xiii. Class A
- xiv. Class B
- xv. Class C
- xvi. Class D
- xvii. Extinguisher Agents
- xviii. UL Ratings
- xix. Extinguisher Access
- xx. Fire Extinguisher Maintenance
- xxi. Monthly Inspection
- xxii. Yearly Inspection
- xxiii. Hydrostatic Test
- xxiv. Six-Year Inspection
- xxv. Replacing Extinguishers
- xxvi. Operating an Extinguisher
- xxvii. Assess the Situation
- xxviii. Extinguisher Use
- xxix. Pull
- xxx. Aim
- xxxi. Squeeze
- xxxii. Sweep
- xxxiii. Post Use
- xxxiv. Fire Suppression Systems
- xxxv. Automatic Sprinkler Systems
- xxxvi. Fire Pumps
- xxxvii. Fixed Extinguishing Rooms
- xxxviii. Dry-Chemical System
- xxxix. Wet-Chemical System
- xl. Gaseous Agent System
- xli. Fire Department Connections
- xl.ii. Fire Hydrants
- xl.iii. Fire Access Roads
- xl.ii. Cleanup
- xl.ii. Response Follow-Up
- xl.ii. Documentation



# TRAINING OUTLINE

xlvi. Providing Records to Government Officials

xlvi. Conclusion

## 20) Conclusion

a) Practical Review

b) Congratulations