

## Tier 1 Annual HAZWOPER Refresher Training Case Study Answers

### **The Situation:**

An active solid waste landfill in your jurisdiction had a major collapse of a closed face on Friday, March 14<sup>th</sup> at 3:00pm. The collapse was adjacent to an active cell and two heavy equipment operators were injured as a result. A bull dozer operator sank into the subsurface about 7 feet, but he escaped with minor cuts and bruises. Nearby a dump truck driver suffered a concussion when his head hit the side window of the cab when his truck suddenly slid 15 feet down the active cell.

The landfill manager activated the facility response plan and rescue crews safely retrieved the two workers. However, during the rescue, they noted aromatic odors emanating from the collapsed area. One of the rescue crew, who once worked at a hazardous waste landfill, swears that the odors were from hazardous materials and mentioned this fact during an interview with a local news station that arrived on scene within 30 minutes of the incident.

The landfill collapse quickly generated much interest from news media, environmental activists, and local politicians who were anxious to know why this incident occurred, how the landfill will be repaired and when. Naturally they are especially interested in the “hazardous waste.” The hazardous waste issue is fueled by rumors that the landfill had been illegally accepting hazardous waste, e-waste, other forbidden materials for years.

Because of the publicity, your manager has dispatched you and a colleague to the scene at 4:10pm to conduct an inspection of the situation. In the briefing with your manager, he is tense and brief. He states that he want “photographs of the collapse and information about the presence of the illegal wastes.” He then gives you the facility file which is sparse but has an aerial photograph (below) You and your colleague grab your gear and head to the landfill, about a 35 minute drive from the office.



While driving to the scene, you both start to discuss the situation with excitement and hesitation. About 10 minutes from the landfill gate you realize that this could be a serious health and safety issue, especially since you had your 40-hour HAZWOPER course many years ago. However, your colleague reminds you that the basic topics are covered every year in the 8-hour HAZWOPER refresher that the CIWMB’s LEA Training program provided—thank goodness for the CIWMB! You both discuss how to conduct your job safely and arrive on-scene with renewed confidence that you can safely complete your tasks.

**Instructions:**

Find a partner and answer provide written answers to the following:

- 1) Identify the primary hazards associated with conducting your tasks at the incident.
  - Trip, slip, fall
  - Heavy equipment and other vehicles
  - Airborne gases and vapors (methane, VOCs, etc.)
  - Subsidence of landfill
- 2) Identify any other potential hazards.
  - Hazardous materials (liquids, gases, and solids, potentially numerous types)
  - Fire (heavy equipment could have released fuel onto combustible materials)
- 3) List the instruments, if any, that you would use during this type of inspection. Describe the purpose of the instrument and provide the action levels for each instrument.
  - Multigas (LEL, O<sub>2</sub>, H<sub>2</sub>S, CO) for common airborne gases. Action levels: LEL = 10%, O<sub>2</sub> = <19.5% or >25%, H<sub>2</sub>S = 10 ppm, CO = 25 ppm
  - PID for VOCs. Action level: 1 ppm
  - Radiation (maybe) for ionizing radiation. Action level = 2 mR/hr
- 4) What, if any, personal protective equipment should you use during the inspection?
  - Level D (hard hat, safety glasses, safety vest, steel toe/shank boots)
- 5) Discuss the decontamination procedures that you will implement if you encounter hazardous materials.
  - Inspector should not come in contact with hazardous materials!
  - If by chance the inspector does become contaminated then soap and water wash of bare skin and removal of contaminated clothing.
- 6) Is there a potential for a confined space entry? Why or why not? If there is a potential for confined space, then what procedures will you follow?
  - Yes, subsurface areas deeper than 4 feet.
  - No confined space entry should be made! This can be completed during a next phase if necessary.
- 7) If one of you is injured during the inspection, who are your emergency contacts and what are their phone numbers?
  - Agency dependant; the agency health and safety manager at a minimum must be contacted.
  - Local hospital; phone number is location dependant.
  - Local emergency responders; phone number is 911.
- 8) Do you need a site safety officer (SSO)? If yes, who is that person? What qualifications are required for a SSO?
  - Not a requirement but a good idea.
  - There are not specific qualifications but the SSO should be familiar with the hazards of the incident.
- 9) If OSHA were to arrive on-scene and request to see your certifications for the work that you are conducting what would you provide?

- None required, this is not a hazardous waste site or an emergency response. However, if the OSHA representative demanded certifications then following would be appropriate:
  - 40 hour HAZWOPER cert
  - 8 hour HAZWOPER cert
  - annual medical exam cert
  - respirator fit test cert, if a respirator was used.

- 10) Describe the major steps to complete the inspection. The description should be sufficient to be used as a mini work plan.
- Conduct tailgate health and safety meeting.
  - Check function of air monitoring instrumentation.
  - Meet with on-scene officials for briefing on incident situation and hazards.
  - Conduct investigation (do not go near areas where subsidence/collapse of landfill has occurred).
  - Record air monitoring measurements if detected above normal levels, take action if necessary.
  - Collect photographic documentation if can be done safely.
  - Interview workers about potential hazardous materials, if possible. Do Not go near areas that potentially could contain hazardous materials!
  - Exit controlled area and debrief health and safety concerns.
  - Check with on-scene official before exiting facility.
- 11) Describe your emergency plan.
- Exit to a pre-designated safe place.
  - Notify on-scene officials that you are safe.
- 12) After you complete the inspection, a newspaper reporter asks you questions about your findings. What should you tell the reporter?
- Agency dependant, but in general typically no response should be provided for an ongoing investigation.
- 13) Your colleague stumbles during the inspection and braces his fall with his hand thus receiving a small one inch long cut on the palm. It is not very deep with minimal blood. What, if any, are your actions?
- Administer first aid before leaving the area
  - Report the incident to agency health and safety authority
  - Complete agency required reports if necessary
- 14) Describe other relevant health and safety issues that you feel are pertinent to you conducting the inspection in this type of situation.
- Open ended responses