

An Emergency Without Precedent

*Protecting the safety & health
of workers at the Fresh Kills landfill*

By Linda DeNenno

FOR AN ENVIRONMENTAL SERVICES FIRM experienced in handling all types of emergencies—from responses to Legionnaire's disease outbreaks to fertilizer spills in major waterways—nothing could have prepared it for the events of and following Sept. 11, 2001. The MARCOR team first arrived on site Sept. 17 and met with New York police and fire departments, the FBI and the CIA. When the group finally left the Staten Island landfill 10 months later, it had processed 1.8 million tons of World Trade Center (WTC) debris, a forensic recovery effort that left all involved emotionally drained, yet proud and wiser. While much has been written from many perspectives about this chapter in the nation's history, this story can yield some valuable lessons for the SH&E professional.

Marshalling Resources

When company personnel finally left the landfill, located across the New York harbor within viewing distance of the WTC site, it had logged more than 63,000 manhours with only one reportable accident—a neck and back strain—and two nonrecordables. This record was accomplished while working in a cramped space where heavy equipment was being operated 24 hours a day, seven days a week, and where contaminants were continuously present. To explain how this record was accomplished, let's start at the beginning.

Almost immediately after Sept. 11, the company began contacting those in charge at the WTC site to offer assistance. It was eventually called in by a disaster-recovery firm under contract with the state of

New York, which knew about MARCOR's HazMat and environmental support services and the fact that personnel could be on site within hours. The team was charged with processing and combing through all debris brought to the landfill so that the police, CIA and FBI could search for forensic evidence.

Due to the nature of the event, many things had to occur simultaneously. When Mayor Rudolph Guiliani said that the recovery effort would run non-stop until it was completed, it was determined that a team of approximately 60 heavy equipment operators was needed. With no time for any meaningful training, all had to be seasoned professionals—experts in their field. Each had to pass tests on safety procedures, maintenance and operating the equipment, and each had to be willing to work an average of 12 to 15 hours a day, seven days a week, until the work was done.

To find these people, qualified employees from MARCOR offices throughout the country were called, and an alert was broadcast through television. Based on verbal qualifications regarding each person's years of experience and the types of equipment used, operators were recruited from many states. An excavation company from West Virginia was also employed; this company actually shut down its other operations and came to the site.

Getting personnel and equipment to

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and health due to the extremely dangerous conditions present on many levels. Before the operators started, a safety and health plan was devised that incorporated not only a company plan written by a CIH, but also the U.S. Army Corps of Engineers' plan and the landfill's plan, as well as other plans being implemented at the site. All potential hazards, which included noise, flying debris, exposure to asbestos and other hazardous chemicals, vehicles and moving equipment, and slips, trips and falls, were reviewed with each employee.



Operators were also brought into compliance with the company's drug and alcohol program and medical surveillance policy. Each operator had to take a drug test and a physical exam as required for respirator clearance in accordance with 29 CFR 1910.134. Vital signs were checked and a pulmonary function test (PFT) was conducted and each person was required to complete a medical questionnaire. A health management company also reviewed these records to make sure the employees could be medically cleared to wear a respirator.

Next, all personnel received training in bloodborne pathogens (29 CFR 1910.1030) because of the bodily and potentially hazardous fluids present on this site. Workers learned how bodily fluids are transferred, what they should



The team logged more than 63,000 manhours with only one reportable accident and two nonrecordables. This record was accomplished while working in a cramped space where heavy equipment was being operated 24 hours a day, seven days a week, and where contaminants were continuously present. At the beginning of the project and throughout its duration, all potential hazards, which included noise, flying debris, exposure to asbestos and other hazardous chemicals, vehicles and moving equipment, and slips, trips and falls, were reviewed with each employee. In addition, all employees received training in bloodborne pathogens, asbestos awareness and HazCom.



do if they made contact with the fluids, and how to protect themselves from being contaminated. All 62 company personnel were offered hepatitis vaccines as well. The issue of protection naturally leads to a discussion of PPE. Due to the presence of bloodborne pathogens and other hazards, each worker was required to wear safety goggles, protective gloves, hardhats, work boots and respirators.

In addition, a CIH visited the site two times to provide site-specific training. Each worker participated in asbestos awareness training. HazCom was also addressed, with MSDS provided for any hazardous chemicals that might be present.

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Stressful Situations

Once the first workers and equipment were mobilized, the top priority became ensuring worker safety

Next on the list of safety precautions was equipment competency testing. MARCOR's project manager for decommissioning, dismantlement and asset recovery services conducted field tests and hands-on evaluation. This ensured that each person's competency in the field was verified and that only those operators who could perform professionally and safely were retained.

Part of the competency training extended to an area to which only experienced workers had been exposed—the ability to handle the psychological stress of working in gruesome situations. Those employees who asked to be taken off the job were accommodated, and psychologists were available on site as needed. In the end, the Associated Press reported that a total of 19,550 body parts were retrieved during the 10-month recovery effort. These were sent to forensic laboratories for identification.

Throughout the project, everyone's work was checked and rechecked by government officials, the prime contractor, OSHA and EPA. With so many eyes watching, if someone removed a hardhat even for just a moment, s/he would be asked to immediately correct the situation.

Combing Through the Evidence

What exactly did the work at this site involve? As debris was removed from the WTC site, it was loaded onto barges and sent to the landfill. On the dock, it was loaded onto 100- to 110-ton off-the-road dump trucks and driven to the top of the landfill. According to Pete Spagnola, site superintendent, everyone on the site was looking for four things: the black boxes (flight recorders and data recorders from both planes); body parts; personal effects; and air-
plane parts.

The sorting began behind the first screens. Large excavators with grapples pulled out the large steel beams. Remaining materials were picked up and dumped onto vibrating 7-foot x 20-foot screens. Small pieces fell through the rails into the box at the bottom, while the two- to three-foot materials vibrated off the rails and fell in front of the screens. There, FBI, CIA and police employees clad in full safety gear—which included white Tyvek suits, half-face respirators, rubber gloves and boots, hardhats and safety glasses—raked through it, looking for evidence.

Responding to an Emergency

Although no equivalent precedent exists for what transpired on and following Sept. 11, 2001, SH&E professionals can learn some lessons from this experience.

- **Don't be afraid to reach out.** Although MARCOR was ultimately brought on board for the forensic recovery effort by a prime environmental contractor, key decision makers knew the firm was available and positioned to respond.

- **Be prepared to deal with unexpected obstacles.** With bridges and roads into New York City blocked, it was difficult to get personnel and equipment to the landfill. Police were asked to intervene so the team could get started.

- **Know manpower sources.** Due to the nature of this event, there was no time to train inexperienced equipment operators. Be aware of the qualifications of the company's personnel and maintain a stable of dependable, qualified temporary employment agencies.

- **Have standard operating procedures in place.** One reason the firm was able to respond was its SOPs, which are documented and communicated to all personnel. These cover bloodborne pathogens, asbestos, respiratory protection and HazCom right-to-know. Having such established procedures leaves no questions on how to deal with issues such as drug testing.

- **Be ready to do it the old-fashioned way.** Although various resources were available (such as the health management company to screen workers), when it came time to find housing for scores of workers with no notice, company personnel simply got on the phone and called hotels directly, negotiating price along the way.

- **Assess the emergency and address the contaminant(s).** For example, it was clear that bloodborne pathogens would be present at the site. And although EPA eliminated asbestos as a possible contaminant, asbestos awareness training was still provided as a precautionary measure.

- **Have access to adequate PPE.** Keep enough safety goggles, hardhats, protective gloves and respirators on hand for immediate use.

- **Deal with workers' sensitivities.** The psychological stress of working in such an environment affects people in different ways. Be ready to provide counseling and respect an individual's feelings if s/he asks to be taken off the job.

- **Know applicable regulations.** In a situation like this, everyone is watching. Management must stress safety and health, and no mistake must go unchallenged. All involved must understand that work should be done right the first time.

The small materials were moved to another area and put through trommel screens connected to several conveyor belts. On the belts, these materials were screened down to pieces that ranged in size from ½ inch to six inches. Police handpicked through much of the debris. Metal was sent to recyclers and the balance was landfilled.

Knowing so much of the essence of the WTC victims remains at the Fresh Kills landfill is why many of their families want the National Park Service to designate the site a national memorial. Glenn McCracken, a MARCOR vice president, who was closely involved with the entire effort, agrees with that sentiment. At a recent presentation, he said, "It started as the nation's largest landfill, then became the largest crime scene in New York, supported by the largest forensic recovery effort in American history. Now, it's sacred ground." ■

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