



RISK BULLETIN

Landfill Safety

Landfills pose a variety of employee health and safety risks due to the nature of their operations, which can include construction, traffic, waste disposal, heavy equipment operations, and exposure to dangerous gases, noise, disease vectors, and chemicals. The objective of this paper is to provide an overview of the typical

hazards faced by solid waste employees and some hazard control programs that can reduce the risk of employee injury or illness. The programs discussed are intended as an overview of landfill safety topics and does not replace the need for OSHA regulation-specific training (e.g., 29 CFR 1910.120, etc.)



Injury statistics for the industry can be sobering. Each year four out of 10 solid waste workers have an injury requiring more than first aid. Two out of three injuries result in lost workdays, with an average of 12 lost workdays per injury. A worker also has about a one in 10 chance of losing an arm or leg during a 25-year working career. Typical injuries include cuts and bruises, sprains and strains including back injuries, broken bones, head trauma, severed appendages, chemical burns, puncture wounds, and crushing trauma. Fortunately, many injuries can be avoided if the employer analyzes the hazards at its facility and implements a detailed, site-spe-

cific health and safety plan that mitigates or controls hazards and exposures. Of course, such a plan is only effective when combined with initial and ongoing employee training and consistent enforcement of safety policies by supervisors and management.

LANDFILL HAZARDS AND CONTROLS OVERVIEW

Traffic And Heavy Equipment Hazards

Throughout the working day large trash collection trucks, bulldozers, compactors, dump trucks, and personal vehicles are delivering, dumping, moving, covering, or compacting trash. Hazards to workers include being struck or crushed by these vehicles and vehicle roll-over due to poor ground stability. To reduce pedestrian exposures and the potential for vehicle collisions, the landfill operator should design operations and traffic flow to segregate people and vehicles and limit contact between vehicles.

Whenever possible, use one-way traffic flows to minimize cross traffic and the need for backing up. Blind corners should be eliminated at intersections and mirrors installed when they cannot. Design and maintain roads to accommodate heavy equipment and vehicles (no tight corners, steep grades, rutted roads, potholes, etc.) Post speed limits and ensure that equipment is operated at slow speeds. Safe clearances from the working face should be established and at least one vehicle width maintained between vehicles while dumping at the face.

Being on foot at a landfill is particularly dangerous and requires both safe vehicles and safe workers. Limit the number of pedestrians whenever possible. Designate and clearly mark pedestrian paths and ensure that equipment operations are kept away from these areas. Require that delivery drivers remain in their cabs while unloading and move their trucks to a separate area away from mobile equipment when they exit the cab to secure doors or clean the trucks.

If workers must be on foot, visibility is of paramount concern. High-visibility clothing, such as reflective safety vests, should be worn by all pedestrians on site including delivery drivers when outside their cabs. Guiding vehicles by spotters is also a high-risk activity which should be eliminated when practical by improving the site design or providing adequate visibility aids for drivers. Whenever a spotter is required he/she must remain visible to the driver at all times and maintain continuous communications through a verbal or hand signal system.

Mobile equipment and delivery trucks require good, all-around visibility that eliminates blind spots. Video cameras are an effective and reasonably-priced means to monitor blind spots on the front, rear, and sides of vehicles. Color cameras work best because they quickly pick out the bright orange of reflective vests against the jumble of trash. Drivers, however, should never rely solely on the cameras. Best practices require that drivers check the work area to ensure there are no pedestrians in the vicinity. Workers on foot must never assume an equipment operator sees them and maintain a safe distance at all times since equipment can lose its footing and tip over.

Exposure To Waste Materials

Landfill managers are required to screen incoming wastes for hazardous materials. Even so, workers are potentially exposed to numerous

hazardous substances such as flammable, corrosive, or reactive materials; biological or radioactive substances; sharps; asbestos or lead; and compressed gases. Such substances can cause injury or illness by punctures or absorption through the skin, inhalation, or through contact with disease vectors such as rodents and insects. All solid waste workers should be trained to recognize hazardous materials and environments and know how to avoid exposures to them.

Instruct workers to always assume the worst case when working around waste materials.

Mandate that they wear the proper Personal Protective Equipment (PPE) to protect their skin, eyes, mouth, and nose, and avoid cuts to the skin or contact with chemicals. Provide workers with hand tools whenever possible to minimize manual contact with waste, and strictly forbid scavenging. Also

train them to react to identifiers of potentially hazardous or unauthorized waste. Labels, warning stickers, unusual odors, container type, and waste form offer clues as to the content or composition of wastes.

To protect against airborne contamination, workers should avoid causing or working in dust clouds. If mechanical means, such as dust extraction or filtering systems, cannot eliminate airborne waste, then workers must use suitable masks or respirators to block exposure. Selection should be made by a competent person to ensure PPE provides the correct protection for the situation or environment.



Disease vector control is important because birds, rodents, insects, and their waste products may transmit bacterial, viral, and parasitic infections through bites or direct contact with infected material. Avoid contact with animals and insects and the areas where they may live. Eliminate potential food and shelter sources and maintain good housekeeping. Workers must also practice good personal hygiene and keep hands away from the nose, eyes, and mouth until they can be washed with soap and running water before eating, drinking, or smoking. Minimum vaccination requirements for solid waste workers should include tetanus and, possibly, hepatitis A. Encourage workers to seek prompt medical attention following exposures or suspected exposures to disease vectors and be sure to let their physicians know the work they do.

Construction Hazards

Landfills can be active disposal and construction sites undergoing expansion, daily cover placement, excavations, and maintenance activities. Consequently, hazard concerns may include trench collapse, falls, work in confined spaces, being caught in equipment, and overexertion injuries.

Heavy equipment operations are too frequently the cause of accidents and traumatic injuries at landfills. Only trained operators should be allowed on construction equipment and access to active work areas strictly controlled. Operators should always be aware of potentially shifting ground conditions and take special care near slopes and trenches or on wet ground. Maintain safe clearances around construction equipment since soft areas are common at disposal sites and equipment can suddenly drop or slip. No employee should work around or under a raised bucket or blade and should never walk behind a moving piece of equipment.

Other types of equipment associated with landfill operations (conveyors, balers, sorters) can also be hazardous. Employees must be authorized and trained to use equipment and know how to stop a machine before they start it. Devise a maintenance policy that ensures equipment is kept in good repair or removed immediately from service if broken or defective. Guards and safety devices must remain in place except when removed to clean or service the equipment, and then replaced before the equipment is returned to service. No machinery should be capable of moving when dangerous parts can be touched by workers.

Excavations pose a variety of hazards. Employees can be struck by heavy equipment, caught in a trench collapse, or encounter hazardous atmospheres.

Equipment operators can also contact hazardous surfaces, overhead power lines, or underground installations. Excavation teams should always have an experienced, competent person on site to identify existing and predictable hazards and take meas-

ures to eliminate them. The competent person's pre-dig job planning must include a telephone call to the local utility or other agency that can identify, locate, and mark underground structures in the excavation area. The competent person must also ensure the stability of adjacent structures so they cannot become weakened and pose a threat to workers. Once excavation begins, prohibit entry inside or classify the soil type so that proper sloping, benching, or shoring may be implemented to prevent collapse. Other considerations will include water removal provisions, restricting vehicular traffic and overhead



load handling while workers are inside the excavation, providing adequate access and egress, “spoils” protection, testing for hazardous atmospheres, and availability of rescue equipment.

Typical solid waste exposures to fall hazards of six feet or greater occur when workers must stand on heavy equipment or trucks and containers, when working from inspection platforms, and when standing or working near the working face. Potential exposures should be analyzed and controls developed and described in a written Fall Protection Plan. Engineering controls are the preferred method of protecting against falls. These can include moving work to ground level if feasible; adding platforms, guardrails, and toe boards to provide permanent, secure access to elevated work areas; and ensuring floor openings, pits, skylights etc. are securely covered or guarded. When engineering controls will not eliminate the hazard, management must consider using personal fall prevention devices. These can include positioning belts, which are used only for restraining a worker in position, not for any vertical free fall protection; or full-body harnesses which wrap around the waist, shoulders and legs and, in the event of a fall, arrests the fall and distributes the force of the impact throughout the trunk of the body. Other options such as lifelines, ladder systems, and lanyards add versatility to fall protection systems and provide different benefits for individual situations. Connection devices and anchorage considerations are also a very important part of any system since it is only as strong as the devices that hold it together.

Construction workers at a landfill are also at risk for overexertion injuries due to manual lifting or handling tools, materials, and trash. Such injuries are best avoided by introducing better mechanization, such as using fork lifts or conveyors, and better job design that reduces or eliminates

the need for lifting. Another technique is to design containers or tools to limit the amount they can hold, which physically limits the amount an employee can lift. If some level of manual lifting is still necessary, make sure that employees are trained in proper lifting techniques and instruct them to get help when lifting heavy or awkward items.

Welding and cutting activities at any construction site require special safety controls to prevent exposures to burns, radiation, hazardous air contaminants, and fires. Landfills, however, have unique characteristics that require extra consideration when setting up a welding operation.

Workers should only weld in designated areas where fire hazards and combustibles are safe-guarded or removed. Use of a hot work permit system and a fire-watch may be necessary if fire safe areas cannot be guaranteed. Always use shielding to protect people in the area from the arc light and contain heat and hot spatter that could ignite trash and debris. Also ensure that personal lighters are banned from the work area. Several tragic accidents have occurred when hot slag ignited a lighter in a welder's pocket.

In areas where landfill gases may accumulate, local ventilation, which removes welding fumes and gases at their source, is preferable to general ventilation, which merely dilutes fumes and gases to atmosphere; routine air monitoring should be conducted. Welders are taught to evaluate coatings on weld media for flammability or toxicity before they start work. This is especially important at a landfill where workers cut up



debris for easier disposal. Workers should not weld or cut on painted or coated materials; remove surface coatings first if this is necessary. And workers must never weld or cut on used drums, barrels, tanks, or other containers unless they have been thoroughly cleaned.



Confined Space Hazards

Working in confined spaces is a construction hazard that deserves its own heading. The dangers of confined spaces can include flammable atmospheres, oxygen deficiency, toxic atmospheres, engulfment or collapse, and mechanical or electrical exposures. Landfill operators must identify confined spaces and devise a control program to mitigate the hazards. A confined space by definition has four characteristics: (1) It is large enough to allow access by an employee; (2) It has limited openings for employees to enter and exit; (3) It is not intended for continuous human occupancy; and (4) It contains (or potentially contains) hazards such as oxygen deficiency, toxic vapors, gases, or physical hazards. Examples of confined spaces include pipes and tanks, vessels, trenches, underground vaults, and crawlspaces.

The landfill operator must identify all permit-required confined spaces at its facility and develop a written confined space entry program. One of the most important aspects of the program is to train employees to recognize confined spaces and understand that entrance is prohibited except under carefully controlled conditions dictated by the permit requirements. Employees must never trust their senses to determine if the

air in a confined space is safe. They cannot see or smell many toxic gases and vapors, nor can they determine the level of oxygen present. Fatalities have resulted when employees leaned over an open tank to look inside, were overcome, and fell into the tanks where they died in the toxic atmosphere or from asphyxiation. Employees must also not conclude that the atmosphere in a confined space is safe because the materials stored there are benign. Toxic atmospheres can be created by the work being performed in the space, and by seepage from areas adjacent to the space.

A properly designed confined space entry permit identifies the space to be entered, the reason, the hazards associated with the space, the measure taken to isolate the space, atmospheric testing results, and the entry requirements. Entry requirements will vary depending on the circumstances, but should include some or all of the following elements: (1) The space must be isolated. This may require lock-out/tag-out of energy sources, blanking and blinding of pipes, removing valves, or blocking machine parts that have the potential to shift or move. (2) Atmospheric testing must be performed. In many cases initial and ongoing monitoring may be required. (3) The space must be ventilated. Continuous ventilation must be performed if the initial air testing is unacceptable, natural ventilation is not adequate, chemicals are introduced in the space for cleaning or other purposes, or welding or other hot work is performed. (4) An attendant must remain outside the space to observe the situation and the entrant, and order an evacuation if signs or symptoms of hazardous exposures are observed, or conditions not allowed by the permit develop. (5) Rescue procedures must be in place and appropriate rescue equipment available outside the confined space entrance.

Landfill Gases

Gases are a natural byproduct of landfill operations and are generated during the breakdown of organic compounds or released from containers that are delivered for disposal. Methane is the most likely landfill gas constituent to pose an explosion hazard and is explosive between its lower explosive limit (LEL) level of 5% by volume and its upper explosive limit (UEL) of 15% by volume. Other landfill gas constituents (such as ammonia, hydrogen sulfide, and benzene) are flammable, and some (such as carbon dioxide or nitrogen dioxide) are not flammable or explosive but can cause suffocation by displacing oxygen from an atmosphere.

Because of the potential for explosions, off-site migration, and employee over-exposure or asphyxiation, landfill gas should be monitored during the active life of the landfill and during the post-closure care period. Work areas and buildings located within 1,000 feet of the waste boundary should be monitored constantly using a combustible-gas indicator. Employees should also be equipped with portable gas detection instruments, especially if they must enter little-used areas and structures, and certainly for atmospheric testing before and during confined space entry.

Use monitoring action levels of one-half the regulatory levels or less. If gas readings exceed those levels, monitoring frequency should be increased until four consecutive readings are below these levels. If readings indicate rising levels, take action to determine and mitigate the source. If readings exceed LEL levels then take immediate action to evacuate workers, remove ignition sources, and vent structures.

It is important to perform frequent calibration checks on gas monitoring instrumentation to ensure proper function. Keep accurate records

of the calibration checks and return instruments to the manufacturer for testing and service as indicated in the owner's manual.

REGULATORY CONTROL PROGRAMS

Hazard Communication

The Hazard Communication Standard (29 CFR 1910.1200) requires that employees be told how to safely use, handle, and store hazardous substances present in their workplace. Chemical manufacturers must evaluate the hazards of their products and provide employers this information through container labeling and Material Safety Data Sheets (MSDS). OSHA regulations define the contents of an MSDS but the most important information provides the:

- Identity of the substance
- Physical and chemical characteristics
- Physical and health hazards
- Primary routes of exposure
- Exposure limits
- Carcinogenicity
- Precautions for safe use and handling
- Emergency and first aid procedures



Employers must communicate this information to their employees through a written Hazard Communication Plan. Elements of the plan should include:

- The identification and location of hazardous substances in the workplace (each chemical must have its own MSDS available)
- Labeling of chemical containers and appropriate hazard warnings regarding flammable, reactive, corrosive, or toxic properties
- A description of the labeling system

- Methods to inform employees of the hazards of non-routine tasks
- Hazards of chemicals in unlabeled pipes
- A description of employee training programs

Employee hazard communication training is required for new hires and whenever a new chemical is introduced to the workplace. Additionally, employers must develop methods to inform outside contractors, such as delivery truck drivers, of the hazards they may be exposed to while working at the facility.

PERSONAL PROTECTIVE EQUIPMENT AND RESPIRATORY PROTECTION

The objective of a Personal Protective Equipment (PPE) Program (CFR 1910.132 and 1910.134) is to protect employees from injury by creating barriers against workplace hazards. PPE is not a substitute for good engineering controls or safe work practices. It should be used in conjunction with these controls. The landfill employer should conduct a Hazard Assessment to identify workplace hazards and establish requirements for the selection and use of personal protective equipment. Sources of hazards to consider include:

- Falling objects
- Chemicals
- Material handling
- Heat
- Weather conditions
- Dust or vapors
- Tools and equipment
- Electricity
- Flying particles
- Noise
- Sharp objects or pinch points

Once hazards are identified, management must determine the adequacy of existing controls and select PPE that will provide employees additional protection. Provide only certified equipment that meets Cal/OSHA requirements or nationally recognized standards set by ANSI or similar organizations, and ensures adequate protection against the highest level of each anticipated hazard.

PPE is ranked in four levels from minimum risk to extreme risk. Level D (Minimal Risk) PPE is primarily a work uniform and may include items such as hard-hat, long pants and sleeves, gloves, and heavy shoes or boots. Level D PPE may not be used alone when respiratory or skin exposure haz-

ards exist. Level C (Moderate Risk) offers a limited level of respiratory and skin protection and may include cartridge air-purifying respirators, and neoprene or nitrile gloves. Level B (Severe Risk) requires the highest level of respiratory protection and a high level of skin protection. PPE at this level will require supplied air respirators and specialized clothing that leaves no exposed skin. Level A (Extreme Risk) affords the highest level of both respiratory and skin protection. typically, workers must receive specialized training and certification before working in environments that require Levels A or B PPE.

Respirator programs require more analysis and planning than other forms of PPE because airborne hazards are frequently invisible and odorless but, all too frequently, deadly. Possible airborne hazards at a landfill can include contaminants such as particulates (dusts, mists, fumes), gases, or vapors; or oxygen deficient atmospheres. Respiratory protection is required when



airborne exposures exceed legal limits or industry guidelines, and when engineering controls are not feasible. An OSHA defined “competent person” must first evaluate the level of hazardous substances in the air and then select a respirator that minimizes or mitigates the exposure.

Respirator choices begin with disposable, air-purifying masks and proceed up to self-contained breathing apparatus. Air-purifying respirators are most commonly used by solid waste workers. The simplest versions use a filter that removes particulate matter by physically trapping it (dust masks) or through electrostatic attraction. The more sophisticated respirators use chemical cartridges to remove gases and vapors by absorption and/or chemical reaction. Supplied-air respirators are required for Level A or Level B protection. These can be an “air-line” type with the air supply delivered from a source apart from the user, or a self-contained breathing apparatus (SCBA) where the air supply source is carried by the user.

Employers must have a written Standard Operating Procedure (SOP) if respirators are required in the workplace. The SOP should cover respirator selection; employee medical evaluations and fit testing; procedures for proper use; procedures for cleaning, storing, inspecting, and repairing respirators; employee training; and change-out schedules for cartridge-type respirators. OSHA requires that employees be medically cleared, trained, and fit tested before using respirators other than disposable dust masks.

Train employees so they understand when PPE is required, how it is to be used, and its limitations in protecting them.

Asbestos Hazards

Although landfill operators must screen for hazardous materials, asbestos can inadvertently enter the waste stream in the form of innocuous-looking building materials and other media.

Potential sources of asbestos include cement pipes, roofing shingles or felt, acoustical plaster, spray-on fireproofing, vinyl or asphalt floor tile, boiler gaskets, brake linings, heat-resistant gloves and aprons, wallboard, and heating ducts.

Asbestos is only dangerous if it becomes airborne or “friable”. Typically this occurs if asbestos-containing materials are damaged or are deteriorating due to age or neglect. Friable asbestos fibers are microscopic and easily inhaled. Serious diseases may occur if the fibers accumulate in the lungs, although they may not appear until years after the exposure. Asbestosis (scarring of the lung tissue), lung cancer, and mesothelioma (cancer of the chest cavity lining) are three of the main toxic effects attributed to asbestos exposure.



Consider the following guidelines to help prevent asbestos exposure: Avoid handling or disturbing materials which may contain asbestos. Suspected debris should be isolated, contained, and disposed of by trained and certified personnel. Use wet methods, such as wetting agents or wet cleaning processes, to ensure that asbestos fibers do not become airborne. Use HEPA filter ventilation systems and vacuum cleaners that trap and remove fibers from the work environment. Never use compressed air for cleaning and avoid dry sweeping, shoveling, or other dry clean-up methods. Wear appropriate respiratory protection and disposable protective clothing, and do not bring work clothing home for laundering.

Bloodborne Pathogens

Bloodborne pathogens are microscopic organisms present in infected human blood that can cause disease such as Hepatitis B and Human Immunodeficiency Virus (HIV). The most likely sources of exposure to bloodborne pathogens at landfills are biological products and contaminated medical wastes such as needles, sharps, bandages, hospital linens, and laboratory samples. Such wastes are legally banned from disposal in landfills, but pose a hazard if they inadvertently get through the screening process.



Employers must maintain an exposure control plan that includes employee recognition training and proper handling (or avoidance) of potentially contaminated materials. The first rule of exposure control is the practice of “Universal Precautions”, which dictates that all potentially contaminated materials are treated as if they are contaminated. This means employees should not handle suspected wastes without the use of appropriate engineering controls and PPE. Biohazards and medical wastes must be stored for disposal in sealed containers that contain the words “BIOHAZARD” and the universal biohazard symbol. Red bags or containers, however, may be substituted. Consequently, workers should be trained to assume that all red bags or containers contain infectious wastes.

If an inadvertent contact does occur, such as a puncture wound or splash to the mouth or eyes, the employer must provide post exposure evaluation and medical follow up. Employees should also be encouraged to receive Hepatitis B vaccinations to prevent infection.

Responding to Emergencies

Planning is the key to minimizing losses resulting from an emergency. The purpose of any emergency response plan (29 CFR 1910.38) is to establish procedures that will protect employees during an emergency and, if necessary, help safely evacuate the facility. All employees should frequently review emergency response plans and be familiar with the procedures. Their conduct and actions during the first few minutes of any emergency may save their lives as well as those of fellow workers and other members of the community.

Landfill operators should develop emergency plans for natural disasters, medical emergencies, hazardous spills, fire, atmospheric releases, evacuation, and security breaches. The plans should be written and provide the name and phone numbers of the emergency coordinator, responsible parties, and outside response agencies. A diagram of the facility with locations of flammables, stored hazardous materials, evacuation routes, assembly points, and emergency response equipment is also a valuable resource. Use the written plans as a reference for employee training and ensure employees receive classroom and “hands on” training at least annually. More frequent training is necessary for workers who are expected to play an active role in dealing with an emergency, such as fighting a fire or containing a spill. The written plans should also be provided to local professional emergency responders (fire department, spill response team, county disaster agency) so these organizations can familiarize themselves with your facility layout and response capabilities.

Spill response plans require special consideration since wastes of unknown origin and characteristics may inadvertently enter the landfill waste stream. Typically spills and releases at a landfill result from leaking waste containers, fuel or oil

leaks from vehicles and heavy equipment, gas releases, or spills while working with chemicals. In all cases, the best spill response is prevention. Ensure that personnel screening waste deliveries can identify banned substances because problem wastes may be poorly labeled, not containerized, or intentionally disguised. Audit landfill storage facilities for proper container storage and handling. Provide secondary containment in areas where materials are stored or where wastes may enter for sorting or processing. Isolate questionable containers or suspect materials and have spill kits available.



The proper response to a spill depends on the characteristics of the substance. What are the exposure limits? What is the flashpoint of the substance or its reactivity with other materials in the area? What is its specific gravity or vapor density? Is it a health hazard or an environmental risk? Workers need to know their limitations in identifying and contain-

ing the spilled material, and when to contact outside spill responders. Even if employees do not attempt to contain the spill, they must know how to protect themselves while they evacuate the area. This is an area where analysis of potential hazards and the provision of adequate PPE are especially important.

Control of Hazardous Energy

There are a variety of energy sources associated with the machinery, heavy equipment, and processes of landfill operations. Most workers

can easily identify electrical power; other sources can involve hydraulic, chemical, mechanical, pneumatic, and thermal energy. Some equipment and machinery may have multiple energy sources, such as power supplied through an electrical cord and additional energy stored in capacitors. Consequently, a written lock-out/tag-out (LOTO) procedure (29 CFR 1910.147) is required when workers service or maintain equipment where unexpected start up or release of energy could cause injury. (LOTO procedures typically do not apply if electrical is the only energy source, equipment can be unplugged, or the person performing the work has control of the plug).

LOTO program elements should describe equipment-specific procedures for shutting down, isolating, blocking, and securing machines or equipment; discuss available LOTO devices; and provide for employee training and annual program review. Depending on circumstances, it may also include provisions for outside contractors, group lockout (when more than one employee is working on a piece of equipment), and shift changes.

Steps in applying LOTO must be followed in order. Notify all employees who may be affected by the lockout. Check the equipment to ensure that no one is operating it, and then shut it down by the normal procedure. Set energy isolation devices (circuit breaker, disconnect switch, line valve etc.) to the “off” position and apply lock-out/tag-out hardware to ensure that another worker cannot move the devices back to the “on” position. The crucial next step is to release all stored energy in the equipment (opening drains, bleeding pneumatic lines, discharging capacitors), and then block any mechanism (fan blades, fly wheels, gears) that could inadvertently move. The final step before working on the

equipment is to try the controls to verify that it is locked out and not capable of operating.



Once work is complete, follow a reverse procedure for safe re-energization. Inspect the work area to ensure tools, blocks, and non-essential items are removed and that guards are in place. Ensure that all employees exposed to re-energized machinery are clear. Verify that equipment controls are in the “off” position, remove

the lock-out hardware, and then restore the energy.

Management should also consider a permit-required LOTO program for high hazard machin-

ery and equipment that have multiple energy sources, contain inherent potential hazards, operates at more than 600 volts, or is located in confined spaces. Such equipment must be identified in advance and specific LOTO procedures made a part of the permit process.

For more information regarding landfill safety please contact an XL Insurance risk control consultant at 800-327-1414.

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