Appendix R – Operating Plan

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ZION LANDFILL, INC.
ZION, ILLINOIS

OPERATING PLAN

May 2022

OPERATING PLAN
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EXHIBITS

1.0 INTRODUCTION

This Operating Plan addresses proposed procedures for facility operations at Zion Landfill (the Landfill) and for maintenance and monitoring of the engineered systems at the facility. These procedures have been developed based on the Landfill's experience and knowledge regarding safe and efficient landfill operations, as well as regulatory requirements. Many of these procedures are currently in place and have been reviewed and permitted by the Illinois Environmental Protection Agency (IEPA) for the existing Landfill. The Landfill will operate at all times to protect the public health, safety and welfare under the direction of an experienced operator certified by the IEPA.

It is noted that the IEPA has granted separate operating permits for the operation of the Site 1 Phase A and B units, which are located within the Facility Boundary. GFL Everglades Holdings, LLC (GFL) is the owner of these units, while BFI Waste Systems of North America, LLC (BFI) serves as the permitted operator. The IEPA operating permits outline specific operating requirements for the Site 1 Phase A and B landfill units, which shall continue to remain the responsibility of BFI. GFL is familiar with the operating plan for these units, is in frequent communication with BFI, and coordinates the inter-related activities at the site.

It is also noted that the Cleveland Corporation operates a recycling facility on Green Bay Road that is within 500 feet of the Landfill. While the Landfill does not share in operations with the Cleveland Corporation, the Landfill does communicate with the Cleveland Corporation, as well as its other neighbors, regarding site operations as needed.

Landfill employees will be trained on the Landfill's operating procedures, and landfill management will be responsible for ensuring that employees comply with the plan. A copy of the operating plan will be maintained at the Landfill office for reference by landfill management and employees to ensure proper management of landfill operations.

2.0 PERSONNEL REQUIREMENTS AND TRAINING

Landfill employees will be trained on operating procedures and safety practices prior to performing any unsupervised work and on a regular basis thereafter. The specific areas of training for an employee will vary depending on the responsibilities of their job category. Personnel will be proficient in the following areas necessary for safe operation of the facility.

- ❑ Safety procedures;
- ❑ Emergency procedures;
- ❑ Fire control;
- ❑ Scalehouse and scale procedures;
- ❑ Load checking requirements;
- ❑ Operating procedures;
- ❑ Truck queuing;
- ❑ Unloading;
- ❑ Vector, litter, and dust control; and
- ❑ Equipment operation and maintenance.

An outline of the training program is provided in **Exhibit 1**.

Worker protection and safety will be further ensured by complying with the standards and guidelines of the federal Occupational Safety and Health Administration's (OSHA) worker safety regulations.

Supervision and daily operations at the Landfill will be performed by the personnel identified below. Staffing levels will vary depending on incoming waste volumes, season, and the level of non-routine activity during a given period. It is anticipated that, at a minimum, one person will be employed for each position identified. There will be some overlap and cross-training in the duties of each position to account for vacation/sick periods and changes in employment. Either the General Manager or another designated person with the appropriate authority to commit Company resources will be certified in Illinois as a Certified Landfill Operator, with all necessary endorsements issued by the IEPA.

General Manager

The General Manager has overall responsibility for development and operation of the Landfill. The General Manager will supervise the Operations Manager's activities to assure that they are performed in accordance with this Operating Plan. Along with a corporate compliance staff, the General Manager verifies all incoming waste is handled properly, that all routine tasks necessary for proper operation of the Landfill are performed, and that sufficient equipment is available.

Operations Manager

The Operations Manager is responsible for the day-to-day operations of the Landfill. This includes supervising personnel, directing equipment and maintenance activities, and ensuring that the Landfill is operated and maintained in accordance with the permit. All Landfill personnel will receive direction from the Operations Manager.

Scalehouse Attendant

The Scalehouse Attendant operates the Landfill scales, maintains scale tickets, ensures proper manifesting of all special waste loads, and performs load inspections. The Scalehouse Attendant will also perform office-related activities including administrative tasks. The Scalehouse Attendant will be stationed at the scalehouse during operating hours to process and record all entering waste vehicles and scale transactions, and to inform vehicle drivers of the location of the active face.

Equipment Operators

Heavy equipment operators will be employed to construct, operate, and maintain the Landfill. Operators will be utilized as necessary depending on the season, volume of incoming waste, and level of construction activity. Adequate personnel will be made available to properly meet the needs of the site. The equipment operators may also be responsible for daily maintenance and minor repairs of all landfill equipment in accordance with the equipment manufacturer's recommended maintenance program.

Certain activities such as major earth moving, cell construction, and final cover construction may be performed by qualified contractors.

General Laborers

A sufficient number of general laborers may be employed to support construction and operating activities. Part-time or full-time employees will be provided as necessary for tasks such as litter control, mowing, and general maintenance.

Gas System Technicians

The Landfill will employ gas system technicians to oversee, monitor, and adjust operations of the gas collection and control system. Technicians may be employees of the Landfill or subcontracted by the Landfill. Technicians will perform both routine and as-needed services to maintain proper gas collection and control system operations.

Landfill Administrators

A sufficient number of administrators will be employed to perform the administrative support functions necessary to operate the Landfill.

3.0 EQUIPMENT

The equipment required for construction and operation of the Landfill will vary depending on the level of construction activity, season, and incoming waste volumes. The required equipment will be purchased, rented, or or leased and will be maintained on-site during the operational life of the Landfill.

While equipment needs and availability may change, typical equipment that may be utilized at the Landfill includes the following:

- ❑ Articulated Dump Trucks
- ❑ Water Wagon or Truck
- ❑ Backhoe Loaders
- ❑ Graders
- ❑ Excavators
- ❑ Compactors
- ❑ Bulldozers
- ❑ Earth-Hauling Scrapers or Trucks
- ❑ Sweeper
- ❑ Tippers

Qualified subcontractors may be hired to perform all or a portion of the Landfill earthwork or other construction activities. The subcontractors may provide additional equipment to complete tasks, at the discretion of the Landfill and the subcontractor. This equipment may include dump trucks, water wagons, loaders, graders, compactors, dozers, or other equipment as necessary.

4.0 UTILITIES

The following utilities are currently active and will be maintained at the Landfill unless replaced by an equal or improved utility service:

- ❑ Electrical service to the Landfill's office, maintenance building, scalehouse, and environmental control systems (e.g., leachate / condensate sumps, landfill gas system) as needed;

- ❑ Phone service to the Landfill's office, maintenance building, and scalehouse;

- ❑ Two-way radio or cellular communication between supervising equipment operator(s), General Manager, and office;

- ❑ Water supply to the office and maintenance building; and
- ❑ Sanitary service to office and maintenance building.

Utilities will be provided and maintained at the site during the operating period of the Landfill for safety and compliance with the requirements of 35 Ill. Admin. Code, Part 811.

5.0 OPERATION CONTROLS

The following restrictions and guidelines will be implemented at the site to maintain security, safety, and cleanliness.

Operating Hours

The expanded Landfill will maintain the hours of operation currently permitted by the IEPA. Waste acceptance will not occur outside of the hours of 6:00 a.m. to 4:30 p.m. Monday through Friday, or 6:00 a.m. to 1:00 p.m. Saturday. Waste acceptance on Saturday may be extended to occur from 6:00 a.m. to 4:00 p.m. when a holiday that delays waste collection services is observed on a weekday during the preceding week; at a minimum, these holidays will include: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas Day. The Landfill will typically remain closed on Sundays and major holidays. However, there may be certain situations that require the Landfill to be open for waste acceptance beyond the posted hours of operation. The Landfill must obtain advance approval by the City each time it intends to stay open for waste acceptance beyond the above operating hours. The Landfill will contact the Mayor or the Director of Public Works and Engineering to obtain permission. Additionally, the Landfill must notify the IEPA that it stayed open beyond posted hours by 5:00 p.m. the next business day. The notification will contain a detailed description of the situation requiring extended hours, such as facilitating clean-up after a natural disaster, the extended days, and hours of operation.

Consistent with the current permit and practices, Landfill operations, including Landfill construction activities, application of daily cover, maintenance, etc. may occur until no later than 8:00 p.m. except under extreme conditions. Mechanics may be working in the off hours.

Access Controls

The primary access to the Landfill will be a gated entrance located on Green Bay Road north of its intersection with 9th Street. This entrance will be used for all customers, leachate tankers, soil trucks, and visitors.

A secondary entrance is located on 9th Street in the vicinity of the maintenance building. This entrance will primarily be used by Landfill employees and will not be used by customers, leachate tanker trucks, or trucks removing soils from the facility. An additional secondary entrance is proposed to be located on Russell Road in the vicinity of the proposed Site 2 North Expansion, also to be used by Landfill employees or maintenance vehicles only, with the exception of City Police and Fire Departments, who will have access rights to the proposed access road on Russell Road and the existing entrance located on Green Bay Road. In the event of an emergency that requires use of an alternate entrance by waste collections vehicles, transfer trailers, tanker trucks, and construction vehicles, the City shall be notified by the landfill owner/operator within 48 hours of said event, and an explanation of the reason the alternate entrance is needed will be supplied, in accordance with the conditions of the Siting Ordinance.

A gravel entrance road leading to a gravel perimeter access road will be constructed as shown in **Drawing D11**. Existing gravel access roads within the facility will be maintained, with the exception of a road segment along the southern boundary of the horizontal expansion area, which must be removed at the time of construction of Cell 1. Perimeter access roads will generally be 25-feet wide, and they will be used on a daily frequency during operating hours.

Facility personnel and signage placed at the Landfill entrances will direct customers, vendors, and visitors to the appropriate areas during operating hours. Access to the active face and other areas within the facility boundary will be controlled by use of fences, gates, and natural barriers at all times.

A permanent sign will be posted in a conspicuous location near the facility's main entrance with the following information:

- ❑ A statement that disposal of hazardous waste is prohibited;
- ❑ A statement that Special Wastes must be permitted by the IEPA and must be accompanied by an identification record and manifest;
- ❑ The Landfill permit number issued by the IEPA Bureau of Land;
- ❑ The Landfill hours of operation;
- ❑ The prohibition of unauthorized dumping and trespassing;
- ❑ The penalty for unauthorized dumping and trespassing;
- ❑ A name and telephone number to call in case of emergency; and
- ❑ The name, address, and telephone number of the Landfill Operator.

Litter Control Procedures

A number of operating procedures will be employed at the Landfill to minimize and control litter. These procedures are identified in the Litter Control Plan contained in **Exhibit 2** and generally include:

- ❑ Vehicle tarping requirements
- ❑ Active area maintenance and cover application
- ❑ Use of litter control devices such as portable and permanent fences
- ❑ Wind speed monitoring
- ❑ Litter patrols

Mud Tracking Control

The perimeter roadways that are routinely used by waste hauling vehicles within the facility will have either a paved or an aggregate surface to help control mud tracking. Roads within the landfill footprint that are used by waste hauling vehicles will be stabilized as necessary using aggregate, sand, wood chips, etc. to further prevent mud tracking. Trucks delivering waste to the landfill will travel at least one mile along interior perimeter access roads between the active disposal area and facility entrance / exit,

allowing excess mud to be removed from truck tires prior to exiting the Landfill. A street sweeper or other methods may be used to remove mud or debris from on-site roads and truck tires, as necessary.

Air Quality Plan

The facility will be operated in a manner that minimizes the impact to air quality by:

- ❑ Prohibiting open burning of waste;
- ❑ Operating the landfill gas control system in accordance with appropriate permit conditions and regulations;
- ❑ Maintaining a hard-surface, paved entrance road to minimize dust;
- ❑ Implementing an effective dust control program to minimize dust emissions and migration; and
- ❑ Monitoring in accordance with the Landfill's air permit.

Wind Erosion / Fugitive Particulate Matter Emission Control Plan

The facility will maintain a Wind Erosion / Fugitive Particulate Matter Emission Control Plan to specify procedures to minimize the potential for dust and other particulate matter to migrate from the facility. The plan is included in **Exhibit 3**.

Noise Control Plan

The Landfill will implement a comprehensive Noise Control Plan to specify procedures to maintain operations within regulatory noise limits and ensure continued safe operation with reduced volume back-up alarms. The Noise Control Plan is included in **Exhibit 4**.

Odor Control Plan

The Landfill will implement a comprehensive Odor Control and Monitoring Plan to specify procedures to monitor, control and mitigate odors that may emanate from the Landfill during periods of routine operations, site work, and repair. The Odor Control and Monitoring Plan is included in **Exhibit 5**.

Bird and Vector Control Plan

Vectors (e.g., rodents, birds, insects, etc.) are controlled through cover placement, maintenance of vegetation, and maintaining good drainage to eliminate ponding of water. Daily cover, including soil and permitted alternate daily cover materials, is used to provide a physical barrier and to prevent vectors from accessing the buried waste for nesting places or food sources. Maintaining positive drainage will minimize breeding habitats for insects. Additional control measures, such as the use of a professional exterminator, will be implemented as necessary.

Bird populations will be controlled at the facility through the use of proper landfill operational practices as described in this Operating Plan and additional bird deterrent measures. The Landfill will continue to utilize the services of the USDA Animal and Plant Health Inspection Service (APHIS) Wildlife Services (WS) to implement a Bird Monitoring and Control Plan, including detailed procedures to minimize and/or prevent birds from accessing the facility. The Bird Monitoring and Control Plan is included in **Exhibit 6**.

Open Burning

Open burning of municipal solid waste is prohibited at the Landfill. The only open burning activity that may occur on-site is the flaring of landfill gas and burning of vegetation cleared from the property in accordance with IEPA and/or local regulations. Flaring of landfill gas will be in compliance with the permit requirements, emissions standards, and air quality standards contained in 35 Ill. Admin Code Subtitle B: Air Pollution Regulations. All open burning of cleared vegetation will be conducted in conformance with 35 Ill. Admin. Code Part 237.

Salvaging and Scavenging

No salvaging, scavenging, reuse/recycling, or similar operation will occur at the Landfill without prior submittal and approval by the IEPA. If the Landfill exercises these options, the operations will be managed in a safe and sanitary manner so that they do not interfere with the daily operation of refuse disposal or violate the requirements of 35 Ill. Admin Code, Sections 812 through 815. The operations, if exercised, will not delay the landfill construction or affect the design or use of the liner, leachate collection system, intermediate cover, final cover, or monitoring devices per 35 Ill. Admin. Code, Section 811.108. Tires and white goods would be placed in roll-off boxes and managed per Section 811.108(c).

6.0 WASTE ACCEPTANCE PROCEDURES

Waste will be inspected to verify that it is an authorized waste (i.e., both permitted by IEPA and approved for acceptance by the Landfill based on internal review processes and waste acceptance protocols) that is acceptable for disposal in the Landfill. Accurate and up to date records will be maintained on-site for all wastes received and accepted at the Landfill.

Type of Waste Accepted for Disposal

Waste materials accepted for disposal will consist only of general municipal refuse, construction and demolition debris, contaminated soil, certified non-special waste, and non-hazardous special waste. A comprehensive load checking program will be implemented to detect and eliminate the attempted disposal of any unauthorized wastes. A detailed description of the load checking program is provided in **Section 8.0**.

The following wastes will NOT be accepted for disposal or any other use at the Landfill:

- ❑ Hazardous Waste, as defined in accordance with 35 Ill. Admin. Code 721.103;
- ❑ “Toxic waste” under the Toxic Substances Control Act (TSCA);
- ❑ Electronic wastes, as defined in accordance with Public Act 095-0959, Electronic Products Recycling and Reuse Act;
- ❑ Liquid wastes (unless properly solidified prior to disposal or the waste is from a household or is in a small container similar in size to that normally found in household waste and the container was designed for use other than storage);
- ❑ Aluminum dross materials;

- ❑ Regulated Radioactive or Low-Level Radioactive Waste (as defined by the Atomic Energy Act, U.S.C. 201 1, et seq. or the Illinois Low-Level Radioactive Waste Management Act, 420 ILCS 20/3, et seq. or the implementing regulations of either);

- ❑ PCB containing remediation wastes prohibited from disposal at a RCRA Subtitle D landfill by the Toxic Substances Control Act, 15 U.S.C. §2601 et seq. (1976);

- ❑ Potentially Infectious Medical Wastes as defined in accordance with 35 Ill. Admin. Code 1420.102;

- ❑ Universal Waste Batteries as defined and restricted in accordance with 35 Ill. Admin. Code 733.102;

- ❑ Universal Waste Pesticides as defined and restricted in accordance with 35 Ill. Admin. Code 733.103

- ❑ Universal Waste Thermostats as defined and restricted in accordance with 35 Ill. Admin. Code 733.104;

- ❑ Universal Waste Lamps as defined and restricted in accordance with 35 Ill. Admin. Code 733.105;

- ❑ Universal Waste Mercury-Containing Equipment as defined and restricted in accordance with 35 Ill. Admin. Code 733.106;

- ❑ Landscape Waste, except as allowed by Section 22.22 of the Illinois Environmental Protection Act;

- ❑ Whole or processed asphalt roofing shingles not commingled with other municipal waste or general construction and demolition debris, if a site where asphalt roofing shingles are recycled under a Beneficial Use Determination (BUD) issued by IEPA pursuant to Section 22.54 of the Illinois Environmental Protection Act is located within 25 miles of the landfill;

- ❑ Whole Trees;

- ❑ Tires, except as allowed by Section 55 of the Illinois Environmental Protection Act, and 35 Ill. Admin. Code 848;

- ❑ White Goods, except as allowed by Section 22.28 of the Illinois Environmental Protection Act;

- ❑ Lead-Acid Batteries in accordance with Section 22.23 of the Illinois Environmental Protection Act;

- ❑ Grease Trap Sludge in accordance with Section 22.30 of the Illinois Environmental Protection Act;

- ❑ Gypsum fine resulting from processing of construction and demolition debris;

- ❑ Used Motor Oil, except as allowed by Section 21.6 of the Illinois Environmental Protection Act, and 35 Ill. Admin. Code 739; and

- ❑ Coal combustion residuals, unless required approvals by the City of Zion Mayor and Commissioners are received, at which time a modification to the facility operating permit would be requested.

RCRA-empty drums will only be accepted as long as they are either intact with one end open or crushed with both ends open. Drums containing waste must be available for inspection.

This list of unauthorized wastes may change as the result of future legislation. The General Manager and operations personnel will be made aware of any modifications to waste classifications that result from such legislation.

Wet Waste

Wet waste, including sludges, dewatered sediments, and hydro-excavation wastes, are anticipated to be accepted and will be co-disposed with municipal solid waste. Any such waste received at the facility will be spread over municipal solid waste near the working face of the landfill and will be thoroughly mixed using typical landfill machinery. These commingled wastes will be compacted and covered on a daily basis.

The landfill will also accept incidental materials that have the potential to generate hydrogen sulfide (e.g. drywall commingled with other construction and demolition debris). This material will also be co-disposed with municipal solid waste. However, homogenous loads of drywall (e.g. bulk loads of only drywall) or construction and demolition debris processing fines that have a high potential to generate significant volumes of hydrogen sulfide or other total reduced sulfur compounds are not anticipated to be accepted.

If homogenous loads of drywall, construction and demolition debris fines, or wet waste other than those described above are desired to be accepted, Zion Landfill will first notify and obtain written approval from the City of Zion in accordance with the Siting Ordinance. Such a request for approval will be in the form of a letter and will also include a description of the waste, the process in which it was generated, and volume proposed to be accepted. If approved for acceptance, the burial location of the material will be recorded in the facility operating record (in three dimensions).

Weighing and Control of Waste Volumes

The Landfill will maintain accurate and up to date records of wastes that are accepted for disposal. A scale will be provided near the main Landfill entrance so that trucks may be weighed. The scale will be certified on a regular basis, and proof of certification will be maintained on site. A functioning radioactive waste detector will be located in the scalehouse to detect radioactive materials for all loads entering the Landfill. Calibration and testing of the radioactive waste detector will be completed annually. Also, an elevated platform or camera system will be installed at the scalehouse in order to inspect special waste trucks. Daily records of the total tons of wastes delivered to the Landfill will be kept on file at the Landfill for inspection by the IEPA.

Recordkeeping

The Landfill operator will maintain an accurate record of operations at the facility for compliance with local, state, and federal requirements. At a minimum, the following information will be maintained at the Landfill or an alternative location specified to the IEPA:

- ❑ All information submitted to the Agency pursuant to 35 Ill. Admin. Code, Parts 812 and 813;

- ❑ Records of daily, weekly, monthly, and annual waste receipts;
- ❑ Records of nonhazardous special waste acceptance, special waste profile identification sheets, special waste recertifications, certifications of representative samples, special waste laboratory analyses, special waste analysis plans, and any waivers of requirements;
- ❑ Annual facility report (per 35 Ill. Admin. Code, Section 813.501);
- ❑ Documentation of compliance with location standards;
- ❑ Load checking records, inspection records, training procedures, and notification procedures;
- ❑ Construction acceptance reports;
- ❑ Leachate disposal information;
- ❑ Any demonstration, certification, monitoring results, testing, analytical data, or remediation plans pertaining to the groundwater, leachate, and landfill gas monitoring programs;
- ❑ Maintenance information pertaining to landfill equipment, facilities, survey inspections, and repairs;
- ❑ Closure and post-closure care plan and any monitoring, testing, or analytical data required by 35 Ill. Admin. Code, Parts 811 or 812; and
- ❑ Cost estimates and financial assurance documentation required by 35 Ill. Admin. Code, Part 811, Subpart G.
- ❑ Inspection records, training procedures, and notification procedures required by Section 811.23;

The above records will be submitted to the IEPA as required. The Landfill's annual report will be submitted to the IEPA each year during its operating life and post-closure monitoring period

7.0 NONHAZARDOUS SPECIAL WASTES

Nonhazardous special wastes are defined as industrial process wastes or pollution control wastes that have been determined to be nonhazardous pursuant to Section 3001 of the Resource Conservation and Recovery Act of 1976 (42 USC 6901 et. seq.) and pursuant to the Illinois Pollution Control Board regulations.

Nonhazardous special wastes will be accepted at the Landfill in accordance with regulations and permit requirements. General procedures for managing nonhazardous special waste and maintaining related records are outlined below. However, the General Manager may impose additional requirements for the transportation, disposal and handling of special wastes to ensure protection to the environment, employees, and the Landfill.

Facility Sign

A prominent sign is maintained at the Landfill's primary entrance stating that disposal of hazardous waste is prohibited. The sign also states that special waste will be accepted only if accompanied by an identification record and a manifest (unless the waste is exempt from manifest requirements).

Profile Identification Record

Generators of special waste must obtain the Landfill's approval of the waste prior to transporting the waste to the facility. The first step in special waste acceptance consists of the generator providing to the Landfill a special waste profile identification sheet. The special waste profile identification sheet shall be supplied by the generator and certify the following per 35 Ill. Admin. Code Part 811.409:

- ❑ The generator's name and address;
- ❑ The transporter's name and telephone number;
- ❑ The name of the waste;
- ❑ The process generating the waste;
- ❑ Physical characteristics of the waste (e.g., color, odor, solid or liquid, and flashpoint);
- ❑ The chemical composition of the waste;
- ❑ The metals content of the waste;
- ❑ Absence of hazardous characteristics, including identification of wastes deemed hazardous by the USEPA or the IEPA;
- ❑ Absence of PCB and dioxin containing wastes prohibited from disposal at a RCRA Subtitle D landfill by 40 CFR 761; and
- ❑ Any other information, such as the results of tests performed in accordance with 35 Ill. Admin. Code Section 811.202, that can be used to determine whether 1) the special waste is regulated as a hazardous waste as defined by 35 Ill. Admin. Code Part 721, 2) the special waste is of a type that is permitted for, or has been classified in accordance with 35 Ill. Admin. Code Part 809, for disposal at the Landfill, and 3) whether the method of disposal at the Landfill is appropriate for the waste.

Each subsequent shipment of a special waste from the same generator must be accompanied by a special waste manifest, a copy of the original special waste profile identification sheet, and either of the following:

- ❑ A special waste recertification by the generator describing whether there have been changes in the following: laboratory analysis (copies to be attached), raw material in the waste-generating process, the waste-generating process itself, the physical or hazardous characteristics of the waste, and new information on the human health effects of exposure to the waste; or
- ❑ Certification indicating that any change in the physical or hazardous characteristic of the waste is not sufficient to require a new special waste profile.

Special Waste Manifests

All special wastes accepted for disposal shall be accompanied by a manifest. Manifests shall include the following information at a minimum:

- ❑ The name of the special waste generator;
- ❑ When and where the special waste was generated;
- ❑ The name of the special waste transporter;
- ❑ The name of the solid waste management unit;
- ❑ The date of delivery to the Landfill;
- ❑ The name, special waste stream profile number, and quantity of special waste delivered;
- ❑ The signature of the person who delivered the special waste to the transporter, acknowledging such delivery;
- ❑ The signature of the special waste transporter, acknowledging receipt of the special wastes; and
- ❑ The signature of the person who accepted the special waste at the Landfill, acknowledging acceptance of the special waste.

The Landfill will be designated on the manifests as the final destination point. Any subsequent delivery of the special waste or any portion or product thereof to a special waste transporter will be conducted under a manifest initiated by the Landfill.

All special waste transporters must present four (three plus the original) copies of the manifest. The transporter will retain one copy, and the Landfill will:

- ❑ Retain the original;
- ❑ Send one copy of the completed transportation record to the person who delivered the special waste to the special waste transporter (usually the generator, or another special waste management facility);
- ❑ Send one copy of each signed manifest to the IEPA in accordance with the requirements of 35 Ill. Admin. Code Part 809; and
- ❑ Send information on rejected loads to the IEPA in a quarterly report, as required by 35 Ill. Admin. Code Part 809.

The Landfill will retain the records of special waste transactions for a minimum period of three years. Completed manifests will be made available to the IEPA at reasonable times for inspection and photocopying pursuant to Section 4(d) of the Illinois Environmental Protection Act.

Waste Analysis Plan

Except for special wastes for which the Landfill obtains a different, waste-specific authorization from the IEPA, a representative sample of each special waste stream must, at a minimum, be analyzed for the following parameters:

- ❑ Paint filter;

- ❑ Flashpoint;
- ❑ Reactive sulfide;
- ❑ Reactive cyanide;
- ❑ Total phenols;
- ❑ pH; and
- ❑ The organic and inorganic Toxicity Characteristic Constituents listed in 35 Ill. Admin. Code Section 721.124 by the Toxicity Characteristics Leaching Procedure (TCLP).

The following exceptions and clarifications apply to the above analytical requirements:

- ❑ Total sulfide analysis may be substituted for reactive sulfide, only if the total sulfide concentration does not exceed 10 parts per million (ppm);
- ❑ Total cyanide analysis may be substituted for reactive cyanide, only if the total cyanide concentration does not exceed 10 ppm;
- ❑ Total concentration analyses may be substituted for TCLP analyses except where the total concentrations exceed the TCLP limits specified in 35 Ill. Admin. Code Section 721.124, unless an alternate test has been approved by the IEPA;
- ❑ Analysis of the eight pesticide Toxicity Characteristic Constituents (D012, D013, D014, D015, D016, D017, D020, and D031) can be waived if the Generator certifies that they are not expected in the waste based on the nature of the waste and generator's business;
- ❑ Petroleum-contaminated media and debris from Leaking Underground Storage Tank (LUST) sites subject to corrective action under 35 Ill. Admin. Code Parts 731 and 732 are only required to be analyzed for flash point, paint filter test, and TCLP lead;
- ❑ An MSDS or SDS for off-specification, unused, or discarded commercial or chemical products may be used to determine the presence of hazardous constituents in lieu of analytical results;
- ❑ Notwithstanding the exception for manufactured gas plant waste contained in 35 Ill. Admin Code 721.124(a), no manufactured gas plant waste shall be disposed in a non-hazardous waste landfill, unless the waste: 1) has been tested for the organic and inorganic Toxicity Characteristic Constituents listed in 35 Ill. Admin. Code 721.124(b) by the Toxicity Characteristics Leaching Procedure (TCLP) and 2) the analysis has demonstrated that the waste does not exceed the regulatory levels for any contaminant given in the table contained in 35 Ill. Admin. Code 721.124(b); and
- ❑ Complete TCLP analysis is not required in the case of an emergency cleanup provided: 1) the IEPA Emergency Response Unit (ERU) authorizes the waste stream analytical exemption, 2) the Operator obtains assurance that the Generator has received an incident number from the Illinois Emergency Management Agency, and 3) the waste was analyzed for the chemical constituents required by the IEPA ERU.

Pursuant to 35 Ill. Admin. Code 722.111 the generator of a solid waste is required to determine if the waste is hazardous and comply with all applicable hazardous waste regulations. For any waste that has been determined to be hazardous, the results of quality assurance testing for the treatment program, taken at an appropriate frequency to demonstrate that the waste is no longer hazardous, must be obtained. Verification that the waste meets the land disposal restrictions must also be documented. These requirements are in addition to the other standard special waste test requirements.

Special waste streams that originally required analysis will be reanalyzed at least once every 5 years and whenever the composition of the waste changes.

Test methods employed for detailed analysis to characterize and to identify waste are provided in the following reference materials:

- ❑ EPA-600/4-79-020: "Methods for Chemical Analysis of Water and Wastes",
- ❑ SW-846: "Test Procedures for Evaluating Solid Waste, Physical/Chemical Methods", and
- ❑ "Standard Methods for the Examination of Water and Waste Water," 15th Edition, American Public Health Association, 1980.

Acceptance Criteria

Non-hazardous special waste shall meet the following criteria prior to acceptance:

- ❑ Does not contain a listed hazardous waste;
- ❑ Does not contain PCB remediation wastes which are prohibited from being disposed in a municipal solid waste landfill by the Toxic Substances Control Act (TSCA), 15 U.S.C. §2601 et seq. (1976);
- ❑ Does not exhibit the characteristics of ignitability, reactivity, corrosivity, or toxicity as defined by 35 Ill. Admin. Code Part 721 Subpart C;
- ❑ Does not contain total phenol concentrations greater than 1,000 ppm, unless specific information demonstrates that the material is not a threat to human health or the environment;
- ❑ Does not contain reactive cyanide concentrations greater than 250 ppm unless specific information to show it does not present danger to human health or the environment is provided. Wastes with between 10 and 250 ppm reactive cyanide can only be accepted if the Generator provides a signed certification that none of the following have occurred:
    - The waste has never caused injury to a worker because of HCN generation
    - That the OSHA work place air concentration limits of HCN have not been exceeded in areas where the waste is generated, stored, or otherwise handled; and
    - That air concentrations of HCN above 10 ppm have not been encountered in areas where the waste is generated, stored, or otherwise handled.

- ❑ Does not contain reactive sulfide concentrations greater than 500 ppm unless specific information to show it does not present danger to human health or the environment is provided. Wastes with between 10 and 500 ppm reactive sulfide can only be accepted if the Generator provides a signed certification that none of the following have occurred:

    - The waste has never caused injury to a worker because of H_2S generation;

    - That the OSHA work place air concentration limits of H_2S have not been exceeded in areas where the waste is generated, stored, or otherwise handled; and

    - That air concentrations of H_2S above 10 ppm have not been encountered in areas where the waste is generated, stored, or otherwise handled.

RCRA Empty Containers

RCRA empty containers received as a special waste shall meet the following criteria:

- ❑ Have a rated capacity less than 110 gallons;

- ❑ Have not formerly held 'P' listed hazardous waste or TSCA regulated quantities of PCBs or empty compressed gas cylinders;

- ❑ Meet the definition of empty as provided in 35 Ill. Admin. Code Section 721.107(b); and

- ❑ For drums, one or both ends must be removed and the drums crushed flat.

Where possible, a copy of the MSDS or SDS for products last contained in the drum shall be obtained and kept on file.

Special Waste Recordkeeping

The Operator will retain copies of all special waste profile identification sheets, special waste recertifications, certifications of representative samples, special waste laboratory analyses, special waste analysis plans, and any waivers of requirements (prohibitions, special waste management authorization, and operating requirements) at the Landfill or other location acceptable to the IEPA until the end of the post-closure care period.

Declassification of Special Waste

On August 19, 1997, Public Act 90-502 created Section 22.48 of the Illinois Environmental Protection Act to exclude certain non-liquid, nonhazardous industrial process wastes and pollution control wastes from the definition of special waste provided that generators certify that these wastes meet the following requirements:

- ❑ The waste material is non-liquid (as determined by paint-filter test SW-846 Method 9095) and is nonhazardous.

- ❑ The waste is not regulated asbestos-containing material as defined in 40 CFR 61.141.

- ❑ The waste does not contain polychlorinated biphenyls (PCBs) regulated in accordance with CFR 761.

- ❑ The waste is not formerly a hazardous waste that has been rendered nonhazardous.

- ❑ The waste is not a result of shredding recyclable material (e.g., auto fluff).

Additionally, each certification provided by a generator must include:

- ❑ A statement explaining how the generator determined the waste is neither hazardous nor a liquid.

- ❑ A description of the process that generates the waste.

- ❑ Any relevant material safety data sheets.

- ❑ Results from analytical testing (signed and dated by the person who completed the analysis) or explanation why testing was needed.

Certification allows qualifying nonliquid, nonhazardous industrial process wastes and pollution control wastes to be transported as nonspecial waste without manifesting or using licensed special waste haulers. Waste disposal facilities do not require special waste authorization from IEPA to accept certified wastes.

Certifications must be signed and retained by the generator for 3 years following termination of the process that generated the waste. Certifications must be provided when requested by the IEPA, the waste hauler, or the waste disposal facility.

In accordance with 35 IAC 811.107(m), bulk or non-containerized liquid waste may not be placed in MSWLF units, unless one of the following conditions is true:

- ❑ The waste is household waste other than septic waste;

- ❑ The waste is leachate or gas condensate derived from the MSWLF unit and the MSWLF unit, whether it is a new or existing MSWLF unit or lateral expansion, is designed with a composite liner and leachate collection system that complies with the requirements of Sections 811.306 and811.309; or

- ❑ The Agency has issued an RD&D permit pursuant to 35 Ill. Adm. Code 813.112(a)(2) that allows the placement of non-containerized liquids in the landfill, and that permit is in effect.

In addition, containers holding liquid waste may not be placed in an MSWLF unit, unless one of the following is true:

- ❑ The container is a small container similar in size to that normally found in household waste;

- ❑ The container is designed to hold liquids for use other than storage; or

- ❑ The waste is household waste.

8.0 LOAD CHECKING PROGRAM

A comprehensive load checking program will be implemented at the Landfill to detect and eliminate attempts to dispose of unauthorized wastes. The program includes: 1) customer education; 2) employee training; 3) regular inspection checkpoints; 4) random load inspections; 5) special waste

load checks, 6) record-keeping; and, 7) guidelines for handling hazardous or unauthorized wastes. The following paragraphs describe these components of the load checking program in more detail.

Customer Education

Commercial/industrial and construction and demolition haulers that utilize the Landfill will be subject to a pre-approval process. The haulers will be notified by the Landfill of the types of materials that are acceptable and unacceptable for disposal. The haulers will be required to properly instruct their drivers to reject unauthorized waste materials at the curb or other point of collection.

Employee Training

Facility employees involved with the load checking program will be familiar with the list of unauthorized wastes and load inspection procedures. Employees will be trained in the identification of unauthorized wastes, including familiarity with typical containers, markings, labels and placards that might aid in recognizing unauthorized wastes. Trained personnel will be provided with literature in this regard. Periodic personnel meetings will be held to ensure that staff members involved with the load checking program remain aware of waste acceptance criteria, including any additions to the list of unauthorized wastes.

Regular Checkpoints

Routine load checking will be the responsibility of employees, particularly those that work at the entrance area and those that work at or near the active fill area. Employees will monitor vehicles entering the Landfill, watch for any potentially unauthorized waste, and alert management if suspect wastes are observed. For each load there will be several checkpoints (in addition to the curbside checkpoint discussed above):

- ❑ Scalehouse checkpoints. Only authorized vehicles will be allowed beyond the scalehouse. The scalehouse attendant will refuse entry to any unauthorized vehicle or any vehicle observed to contain unauthorized waste;

- ❑ Active face checkpoints. Material will be observed by the equipment operators as it is discharged at the active face; and

- ❑ Checkpoints during compaction at active face. Material will be inspected by the Landfill compactor operator as it is compacted at the active face.

Random Inspections

Random inspections will be conducted for a minimum of three loads of waste per week as required by the IEPA. The General Manager may designate an employee to be responsible for conducting the inspections. Trucks selected for random inspection will be directed to deposit their loads in a location near the active fill area where the inspection can occur without interfering with the landfilling operations. Assuming no unauthorized waste materials are found during the inspection, the driver will be allowed to leave and the inspected waste material will be promptly moved to the active fill area for proper disposal.

Special Waste Load Checks

Loads of special waste will be checked for the presence of unacceptable materials. The special waste load checking procedures are described below:

- ❑ All loads stop at the scalehouse;
- ❑ Scalehouse attendant inspects the manifests and the load to confirm that the waste appearance is similar to that described on the Profile Identification Record;
- ❑ Scalehouse attendant evaluates whether load is acceptable and conforms to the IEPA permit and Landfill pre-authorization;
- ❑ Scalehouse attendant notifies the General Manager if the load is suspected to be unacceptable, and obtains authorization to reject the load. The Generator is notified and arrangements are made to return the load to the Generator. Information regarding rejected special waste loads will be promptly reported to the IEPA; and
- ❑ Scalehouse attendant signs the manifest if the load is acceptable. The manifests are then distributed appropriately.

Record Keeping

Formal load inspections and rejections involving suspect waste materials will be documented in writing by the inspector and retained by the Landfill for a minimum of five years. At a minimum, the following information will be logged for each formal inspection and rejection that takes place:

- ❑ Date and time of inspection;
- ❑ Name of the hauling firm;
- ❑ Name of the driver;
- ❑ Vehicle license plate number;
- ❑ Source of the waste as reported by the driver;
- ❑ Inspector observations; and
- ❑ Signatures of inspector and driver.

Handling of Unauthorized Wastes

If any regulated unauthorized wastes are identified during the load checking programs, or are otherwise discovered to be improperly deposited at the Landfill, the Landfill will promptly notify 1) the Illinois Environmental Protection Agency (no later than 5:00 pm the next business day after the day it is detected), 2) the person responsible for shipping the wastes to the Landfill, and 3) the waste generator (if known). Waste loads that appear similar to loads suspected of containing regulated unacceptable waste will not be accepted.

If the unauthorized waste has not been unloaded, it will remain on the transportation vehicle. If the suspect waste has already been unloaded, the Landfill will coordinate the cleanup and the removal of the waste, consulting with the IEPA and the generator during the process. A photographic and written record of the unauthorized waste incident will be made, with copies of the report placed in the Landfill records.

Special precautionary measures will be undertaken prior to accepting subsequent waste loads from the person or source responsible for previously shipping unacceptable wastes to the Landfill. Special precautionary measures may include, but not necessarily be limited to, questioning the driver regarding the waste contents and origin prior to allowing its discharge at the Landfill, not allowing repeat offenders and visually inspecting the waste as it is discharged at the Landfill.

Temporary Waste Storage

As is currently permitted by IEPA, frozen loaded roll-off containers may be stored at the Landfill with the following conditions, unless otherwise approved by the IEPA:

- ❑ No more than 15 loaded containers will be stored at one time;
- ❑ All containers shall be emptied at the active fill area of the Landfill within three business days from when the containers arrive at the Landfill;
- ❑ The containers will be tarped at all times;
- ❑ The containers will be stored in the designated storage areas; and
- ❑ No containers with putrescible waste that may harbor vectors or have offensive odors may be stored.

As also currently permitted by IEPA, loaded waste transfer trailers may be parked at the Landfill with the following conditions, unless otherwise approved by the IEPA:

- ❑ Trailers will be parked in an area with certified liner and close to the active fill area of the Landfill;
- ❑ No more than 20 trailers will be parked overnight;
- ❑ Waste within the parked trailers will be disposed during the next operating day;
- ❑ Trailers will remain tarped overnight; and
- ❑ The facility will use odor control methods to control and eliminate odors.

9.0 SURVEY CONTROLS

A grid coordinate system has been established at the facility for horizontal control and is shown on the facility drawings. Vertical control is based on established elevation control benchmarks. Additional survey monuments will be established by a Licensed Surveyor as appropriate to maintain onsite horizontal and vertical control.

Onsite survey control monuments will be inspected annually. Damaged monuments will be replaced by a Licensed Surveyor. On-site survey control monuments will also be resurveyed by a Licensed Surveyor no less frequently than once every 5 years, unless otherwise approved by the IEPA.

Record drawings of newly constructed features will be prepared at regular intervals coinciding with the preparation of construction reports. The record drawings will document the location, size, and

elevation of the constructed features. The record drawings will be included with the IEPA acceptance reports required by 35 Ill. Admin. Code, Section 811.505 (d).

10.0 CELL DEVELOPMENT

The facility will be developed in phases, generally progressing south to north. Cell development will generally proceed sequentially by phase number. The area fill method will be used to develop the landfill. Each development phase will likely not be completely filled to final grade prior to developing and placing waste into subsequent phases in order to ease facility operations. However, the site development phasing provides for sequential construction, filling, and closure of parts of the unit throughout the operating life. The final cover will be constructed in phases as portions of the landfill achieve final grade.

11.0 WASTE PLACEMENT AND COMPACTION

Solid waste will be landfilled in tiers, each having a thickness of approximately 10 to 20 feet. Waste placement will generally occur in the lowermost tier. However, higher tiers within the Landfill may be designated for waste placement during inclement weather in order to ensure operating safety and efficiency.

Solid waste will generally be placed at the toe of the active face and pushed upwards in relatively thin lifts using a compactor, bulldozer, or other appropriate heavy equipment. Heavy equipment will not be allowed to operate directly above the liner and leachate drainage and collection system until at least 5 feet of waste covers the landfill floor in order to not overstress these landfill components. Therefore, the initial lift of solid waste over the landfill floor will be pushed over the top of the active face.

The floor liner system may be covered with at least 5 feet of solid waste prior to onset of extended periods of freezing weather in order to prevent the earth liner from freezing to the extent practicable. During periods of sustained freezing temperatures and prior to the granting of operating authorization from the IEPA, the Landfill shall confirm that the overlying materials provide sufficient protection against freeze-damage to the earth liner system as described in the Landfill's CQA Plan. Floor liner systems suspected of being damaged by freezing temperatures shall be further tested to demonstrate that the earth liner retains its specified hydraulic conductivity and/or shall be reconstructed in accordance with the specifications. Such reconstruction shall be subject to the requirements of the CQA Plan.

The first 5 feet of solid waste on the landfill floor will be visually inspected to ensure that it is free of construction and demolition debris and other debris that could damage the underlying geotextile. The first lift is to be carefully placed in order to prevent tears and excessive wrinkles in the geotextile.

The waste will be compacted using landfill compactors or bulldozers to minimize void space and settlement unless precluded by extreme weather conditions to meet the requirements of 35 Ill. Admin. Code Section 811.105.

The waste will be covered at the end of each operating day. Waste that will not be covered by an additional lift of waste or final cover within 60 days of placement will be covered with intermediate cover. Prior to placing waste over previously placed waste, the operator will remove at least a portion of the previously placed daily or intermediate cover to ensure that leachate will drain to the collection system. Waste slopes that remain longer than 60 days following placement will be no steeper than 3

(horizontal) to 1 (vertical). Moveable, temporary fencing shall be used to prevent blowing litter when the refuse is above the natural ground line.

12.0 SIZE AND SLOPE OF THE ACTIVE FACE

The size of the active face will vary and be dependent upon the amount of waste received during any particular day. The active face will be limited to that necessary to receive the waste and to ensure that the Landfill will be operated in a safe and efficient manner. The slope of the active face will be no steeper than 3 (horizontal) to 1 (vertical). Based on the maximum expected daily waste receipts and historical operating practices at the Landfill, the active face is not expected to exceed 200 x 300 feet.

13.0 COVER MATERIALS AND PLACEMENT

The use of daily, intermediate, and final cover layers serves to control vectors and minimize blowing litter, odor, ponding, and moisture infiltration. On-site materials will be used for cover materials, to the extent they are available.

Daily Cover

As required by 35 Ill. Admin. Code Part 811.106, a minimum of six inches of clean soil or an approved alternative daily cover will be placed over the active face at the end of each working day, typically within 1 hour of receipt of the last load of waste.

Alternate cover materials may be used only upon demonstration to the IEPA that minimum daily cover performance standards will be met. If used, alternate daily cover materials will be placed so that they provide litter control, vector control, odor control, and minimize the threat of fires, all in a manner which meets the requirements of 35 Ill. Adm. Code 811.106.

Currently, the following are permitted as alternate daily cover materials (ADCM) at the Landfill:

- ❑ Geotextile fabric;
- ❑ Reinforced rubber membrane panels (“Night-Cap”);
- ❑ Polypropylene non-woven fabrics
- ❑ Polyethylene membranes;
- ❑ Plastic Film;
- ❑ Non-Woven geotextile fabric;
- ❑ Spunbound non-woven fabric;
- ❑ Slit-film woven fabric
- ❑ Composite geotextile/plastic membranes;
- ❑ Tarps;
- ❑ Petroleum-contaminated soils;
- ❑ Used foundry sand;
- ❑ End-product compost;

- ❑ Processed landscape waste;
- ❑ Clean construction or demolition debris (excluding C&D fines or bulk wallboard);
- ❑ Coal combustion ash (fly ash);
- ❑ Rejected paper pulp;
- ❑ Shredded tires; and
- ❑ Wood Chips.

Other materials may be used for ADCM as authorized by the IEPA. The total area to which ADCM has been applied shall not exceed 60,000 square feet at any time. Daily cover soil shall be used on any additional area that has not been covered with intermediate or final cover. Areas where ADCM has been applied must be covered with conventional soil cover or additional waste within six (6) days of initial application. Use of ADCM is further regulated by a number of conditions stipulated in the current IEPA Bureau of Land permit.

ADCM will only be used when weather conditions are conducive to its ability to prevent blowing litter, fire, odors, and access of waste materials to vectors. Geosynthetic, tarpaulin, or fabric cover systems will be adequately anchored to prevent wind damage and ADCM displacement. Damage to the ADCM will be repaired prior to continued use, or the damaged area will be covered with at least 6 inches of soil. ADCM previously used as daily cover will not be reused for any purpose outside the waste boundaries. ADCM will be used in a manner consistent with IEPA permit approvals.

A written record of ADCM usage will be maintained. The record will include the date, weather conditions, ADCM used, and description of its performance. A summary of this information will be included in the facility's annual reports.

Intermediate Cover

Intermediate cover will be placed on all areas that will not be actively filled or receive final cover for a period of 60 days or more consistent with IEPA regulations. Intermediate cover will be sloped to provide adequate drainage and prevent ponding of water. A minimum of one foot of compacted clean soil will be placed on surfaces that require intermediate cover. The intermediate cover shall be repaired as necessary to maintain the required slopes and thickness.

Final Cover

Final cover will be placed as soon as practical after the permitted waste elevations are attained. Final cover will be certified by an Illinois Licensed Professional Engineer in accordance with the CQA Plan. Refer to the Facility Closure Plan for additional details regarding operations and maintenance related to the final cover.

14.0 CONTEMPORANEOUS CLOSURE AND STABILIZATION OF WASTE

Landfilling will continue in each incrementally developed fill area, to the extent practical for safe and efficient operations, until the final slopes and grades are achieved. Filling activities will then move to the next area. Areas in which the final lift of waste has been placed and stability achieved will receive final cover and be vegetated. This development and sequencing plan will provide a continuum of development, operation, and closure, and will allow contemporaneous stabilization and closure of the unit.

15.0 MAINTENANCE PROGRAM

All systems and structures will be inspected and maintained on a regular basis to ensure proper operation. The frequency of inspection will vary based on the system or structure being evaluated. In general:

- ❑ Landfill personnel will inspect safety equipment, fencing, gates, roads and other systems as part of their daily operating responsibilities.
- ❑ Landfill monitoring systems will be inspected at each sampling event.
- ❑ The active face will be inspected by the General Manager or a designated employee at the end of each operating day to ensure that daily cover has been properly applied.
- ❑ The final cover system will be inspected quarterly to ensure that the cover is in good condition.

Inspection and maintenance activities will continue during the post-closure care period as described in the Post-Closure Care Plan. An example facility inspection and maintenance plan is provided in **Exhibit 7**. The following narrative summarizes the inspection and maintenance plan.

Equipment

A preventive maintenance program will be established for landfill operating equipment to maximize performance and availability. In general, equipment will be inspected and maintained in accordance with the manufacturer's recommendations. A schedule will be followed for conducting routine preventive maintenance activities such as changing filters, changing and/or adding lubricants, introducing antifreeze, etc. Standby equipment will be cleaned, recharged, etc. as needed in order to maintain its readiness. If any equipment or associated parts are found to be faulty or worn out, the equipment will be repaired or replaced as soon as practical. Equipment will be available for use at the Landfill during all hours of operations.

Leachate Systems

The leachate collection and management systems will be inspected on a routine basis for evidence of clogging or need for general system repair. Areas specifically targeted for maintenance inspections include: pumps and controls, collection points, the leachate storage system, leachate containment structures, and collection pipe. Any observed damage or deficiencies will be quickly repaired following detection.

The leachate collection system includes cleanout risers that can be accessed from the ground surface. The leachate management system has been designed to safely handle leachate during routine maintenance and repair activities.

Monitoring Systems

Landfill gas monitoring probes and groundwater monitoring wells will be inspected during regular sampling events for structural integrity and proper function. Damaged probes or wells will be repaired or replaced as soon as practical. The continuous methane detection devices located in buildings at the facility will be inspected based on manufacturer recommendations. A log of the inspections will be maintained on-site.

Cover Systems

Areas with daily cover will be inspected and maintained each operating day. The integrity of intermediate cover will be inspected on a quarterly basis and following major storm events and periods of prolonged or rapid snow melt. Any intermediate cover that becomes excessively eroded or damaged will be regraded and compacted to ensure the waste is covered at all times.

The final cover will receive a protective soil layer and vegetative cover. The integrity of the final cover will be inspected a minimum of once per quarter throughout the Landfill's operating period. Post-closure period inspection frequencies are described in the Post-Closure Care Plan. Any eroded or damaged area will be promptly repaired. Preventive measures will be employed to control erosion of the protective soil layer in areas where the vegetative cover has not yet been established.

As part of the normal maintenance activities, the final cover will be monitored for settlement. If areas of differential settling are observed that could cause ponding of water on the cover, the area will be regraded.

Drainage/Erosion Control Systems

All stormwater basins, diversion ditches, perimeter ditches, terrace berms, and culverts will be routinely inspected for siltation and erosion. As necessary, these structures will be cleaned, regraded, relined, rip-rapped, or otherwise repaired to restore design capacities and correct problem areas.

All erosion and sediment control devices will be routinely inspected in accordance with the site NPDES permit and Lake County Watershed Development Permit. As necessary, silt accumulations will be removed and the devices repaired or expanded to maintain adequate erosion/siltation control and runoff water quality.

Access Controls

Structures such as fences that are used to restrict access to the facility will be inspected regularly to ensure their continued integrity. Any structures exhibiting signs of collapse or damage will be repaired. Temporary fencing, security services, or other measures will be used to prevent unauthorized access to the facility and active face until the permanent structures are repaired.

Roads

On-site roadways will be kept in good operating condition at all times. Roads will be graded, and potholes will be filled as necessary to keep the surface safely passable. Mud accumulations and debris which may fall from outgoing vehicles will be removed as necessary to prevent tracking from the facility. Snow will be cleared during and/or following heavy snowfalls. Dust will be controlled by periodic watering of the roads, as necessary, using water obtained from the stormwater detention basin areas.

16.0 LEACHATE EXTRACTION SYSTEM OPERATIONS

The Landfill utilizes a leachate collection system to remove liquid. The proposed Site 2 North Expansion leachate collection system will tie into the currently permitted system in operation at the existing permitted Landfill.

Operation of the Leachate Collection System

Leachate will flow by gravity through the leachate drainage blanket into perforated HDPE collection pipes spaced at intervals along the bottom of the Landfill. The collection pipes will be sloped to extraction pointes located along the perimeter of the waste boundary. Leachate will be removed from the collection points using an appropriate pump. A force main will be used to pipe leachate from the collection points to the leachate storage tanks.

Pumps, meters, valves, and monitoring stations that control and monitor the flow of leachate are part of the facility and will accessible to the Operator.

Leachate Extraction System

The leachate (which includes landfill gas condensate) extraction and lift stations are designed to operate automatically, although leachate extraction pumps used to remove excess liquids from landfill gas wells may be operated intermittently. These systems rely upon mechanical and electrical components that require routine system checks and maintenance to ensure satisfactory performance. Maintenance will depend upon the specific components that are selected, but generally will be performed in accordance with the manufacturer's recommendations.

A manifold and valving system at each leachate extraction sump will be manually operated to direct leachate into a storage tank. Landfill gas condensate drains directly into the leachate collection system via landfill gas condensate drip legs. These drip legs require no mechanical parts.

Response Plan to Potential Leachate Runoff

The Landfill will immediately respond to leachate seeps to prevent leachate from commingling with stormwater runoff. Response procedures shall include the following as appropriate.

- ❑ Identify the source of the leachate and take action to prevent additional leachate from escaping. Action may include adding cover materials and inspecting the leachate collection system to confirm it is functioning as designed.

- ❑ Contain leachate runoff to the smallest area possible prior to being discharged beyond the facility boundary. Containment can consist of placing earthen berms, constructing diversion ditches, adsorbing the leachate with soil or other absorbents, etc.

- ❑ Remove and properly dispose of soil contaminated by leachate.

Leachate Disposal

The leachate level within the leachate storage tank(s) will be routinely checked and the tank(s) will be emptied as needed. Tanker trucks will be parked over a primary spill containment pad while transferring leachate. This pad is designed to catch and contain minor spills. These pads can be drained into the secondary containment of the leachate tanks by opening a valve. In the event of a significant spill, the valve will be opened so that the leachate is contained and can be removed efficiently. Once loaded, the tanker truck will haul the leachate to an IEPA permitted treatment or disposal facility.

17.0 LANDFILL GAS COLLECTION AND CONTROL SYSTEM OPERATIONS

The landfill gas collection and control system for the proposed Site 2 North Expansion will tie into the existing landfill gas collection system. The existing Landfill has an active landfill gas collection system to control odors and landfill gas migration. An "active" system means that blowers are used to withdraw landfill gas into the pipes comprising the collection system, causing the Landfill to operate under a vacuum.

The Landfill has implemented a Startup, Shutdown, and Malfunction (SSM) Plan for the landfill gas collection and control system. All incidents involving startups, shutdowns, and malfunctions are recorded and reported to IEPA semi-annually. The Landfill is subject to and complies with NESHAP as it relates to startups, shutdowns, and malfunctions. The SSM Plan is maintained at the Landfill and updated as required by regulations.

The landfill gas collection and control system will require routine attention to ensure that landfill gas is adequately controlled in compliance with applicable regulations, the system is functioning properly, and the system operations do not contribute to a landfill fire. Routine system monitoring and operations will include the following:

- ❑ Landfill gas quality and pressure (vacuum) monitoring at each gas extraction wellhead. Measurements, at a minimum, will include methane content, nitrogen content, oxygen content, carbon dioxide content, temperature, and pressure.

- ❑ Wellfield balancing to ensure that nitrogen, oxygen, temperature, and pressure are within acceptable ranges.

- ❑ Monthly surface emissions monitoring to identify any potential landfill gas sources.

- ❑ Control system inspections and monitoring, including gas transmission header pipe vacuum and flow. Additional monitoring activities will depend upon the specific control system equipment.

- ❑ Control system maintenance, as recommended by the equipment manufacturer.

- ❑ Telemetry for landfill gas flares, providing immediate notification to Landfill management in the event of a shutdown.

- ❑ At least three ambient air monitoring locations will be chosen, and samples must be taken no higher than 1 inch above the ground and 100 feet downwind from the edge of the waste boundary or at the property boundary, whichever is closer to the waste boundary.

- ❑ All buildings within the facility will be monitored for methane by utilizing continuous detection devices located at likely points where methane might enter each building.

ZION LANDFILL, INC.
ZION, ILLINOIS

EXHIBIT 1

PERSONNEL TRAINING PROGRAM OUTLINE

Zion Landfill
Personnel Training Program Outline

Facility personnel involved in waste management activities complete a comprehensive program of classroom and on-the-job instruction to ensure that the landfill is operated in compliance with all applicable regulations, including those enforced by the Illinois Environmental Protection Agency and the Occupational Safety and Health Administration. The major elements of the training program, as applicable to specific positions include the following:

Waste Management Regulations, Policies and Procedures

- Regulatory and Permit Requirements Review of Site Operating Practices Use of Protective Equipment
- Load Checking Procedures
- Contingency Plan Review
- Stormwater NPDES Permit Requirements
- Spill Prevention Control and Countermeasures (SPCC) Plan
- Bird Control Plan
- Recordkeeping and Retention Requirements Landfill Gas Monitoring

OSHA Hazard Communication Program

- OSHA Hazard Communication Standard
- Safety Data Sheets
- Emergency Phone Numbers for All Vendors of Hazardous Chemicals
- Hazardous Chemicals Safety Training

Safety and Health

- Employee Safety and Health Program
- Hazardous Energy Control Program
- Confined Space Entry
- Hearing Conservation Program
- Respiratory Protective Program

On-The-Job Training

- Equipment Operation
- Load Inspection
- Field Inspection

Training is conducted as new employees are hired and as employees perform new duties. Classroom reviews of the initial training and other pertinent training issues are conducted annually.

ZION LANDFILL, INC.
ZION, ILLINOIS

EXHIBIT 2

LITTER CONTROL PLAN

Zion Landfill
Litter Control Plan

A number of operating procedures will be employed at the Landfill to minimize and control litter. These procedures include:

- ❑ Incoming refuse vehicles will be required to be fully enclosed or to have covers or tarps to prevent waste from blowing out of the vehicles.

- ❑ The active fill area will be kept as small as possible (while allowing for safe operation), and will be covered at the end of each day with daily cover materials that will include soil, wood chips, synthetic covers, or other alternate daily cover materials as approved by the IEPA.

- ❑ The Landfill will use portable fences and a facility boundary fence to contain litter. Portable fences will be used to prevent blowing litter when fill operations are occurring above the natural ground line. Portable fencing will be placed downwind of the wind direction on each operating day when filling is occurring at the landfill's plateau. The length of the fencing will be long enough to accommodate changes in wind direction throughout the operating day.

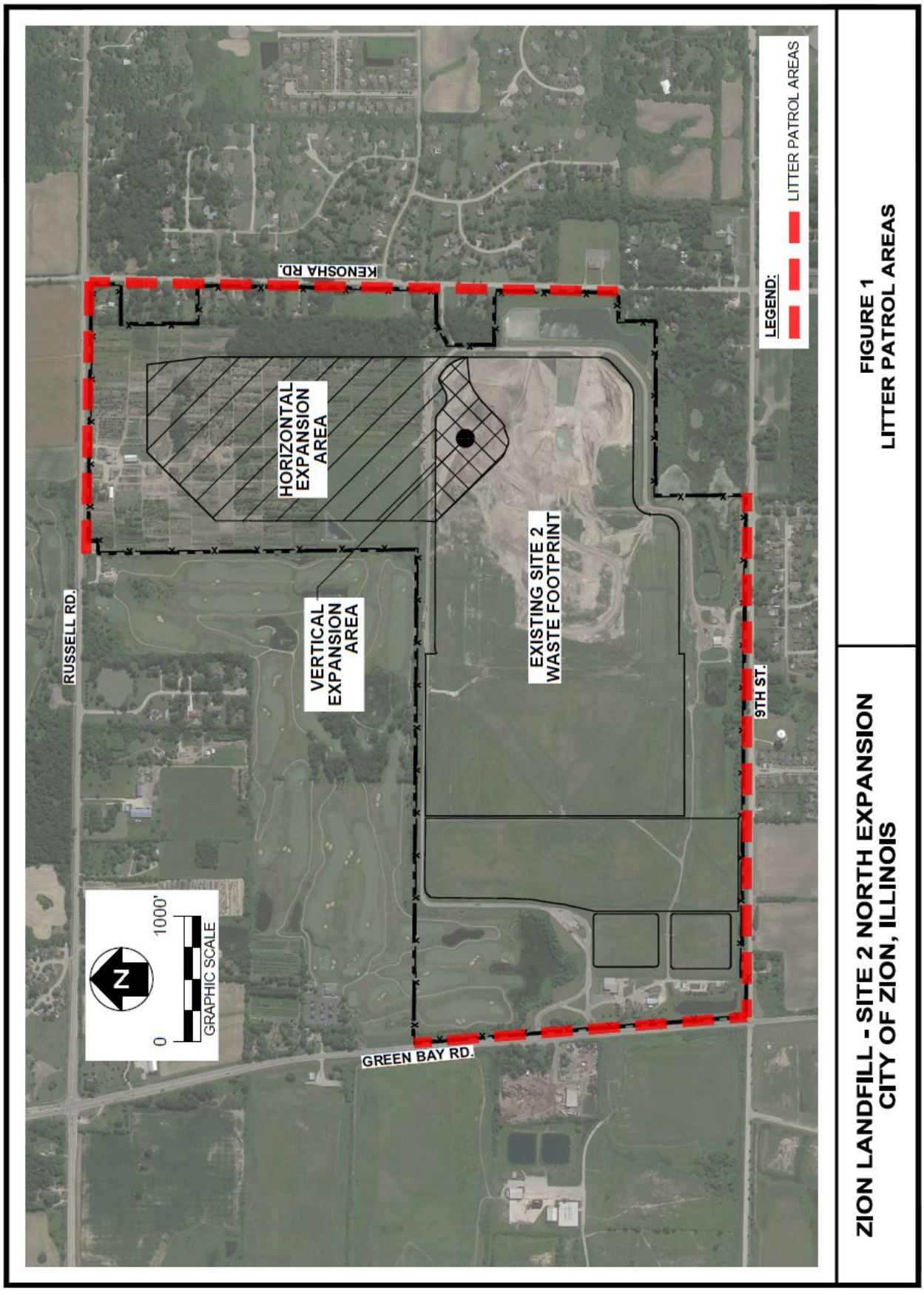
- ❑ The Landfill will construct a perimeter litter fence, approximately 20-feet tall, from the north side of Foreman Drive, northward toward Russell Road. The initial section of this fence will be constructed prior to filling the first expansion cell. This section, as well as each subsequent section, will extend at least 200 feet north of the northern extent of the cell to be filled, except for the northernmost cell. The northernmost section of fence will end near the proposed north basin.

- ❑ Untarping of transfer trailers will not occur along the eastern perimeter road, located closest to North Kenosha Road.

- ❑ Loads known to be sources of material that becomes easily airborne will be scheduled during suitable weather conditions.

- ❑ The Facility will monitor an on-site wind gauge and will suspend waste acceptance when sustained wind speeds reach 40 miles per hour, over a 15-minute period. Operations may resume once wind speeds do not meet or exceed 40 miles per hour, continuously, for 15 minutes.

- ❑ Management will direct laborers to patrol the Facility, as well as surrounding property (see **Figure 1**), to collect any litter escaping from the active fill area, including litter caught by the portable and perimeter fencing. After high wind events, defined as events where weather conditions in combination with current filling operations, increases the likelihood of windblown litter escaping the Facility, the collection of any observed offsite litter will generally be prioritized over litter contained on-site by fencing. Focus areas will be determined from site management's inspections of the areas downwind of the facility during and following the high wind event. If litter is found outside of the Facility, laborers will be directed to collect litter from community areas extending beyond the patrol areas in **Figure 1**. The collected litter will be placed in plastic bags and transported to the active face for disposal.


KENOSHA RD.
HORIZONTAL EXPANSION AREA
VERTICAL EXPANSION AREA
EXISTING SITE 2 WASTE FOOTPRINT
RUSSELL RD.
9TH ST.
GREEN BAY RD.
LEGEND:
LITTER PATROL AREAS
N
0
1000'
GRAPHIC SCALE
ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS
FIGURE 1
LITTER PATROL AREAS

ZION LANDFILL, INC.
ZION, ILLINOIS

EXHIBIT 3

WIND EROSION / FUGITIVE PARTICULATE MATTER EMISSION CONTROL PLAN

Zion Landfill
Wind Erosion / Fugitive Particulate Matter Emission Control Plan

Condition 1.a.i.A. of the Section 3 of the CAAPP permit for the Zion Landfill (Landfill or facility) issued on 6/24/2015 requires the site to "*follow good air pollution control practices to minimize fugitive particulate matter emissions…"* This Wind Erosion / Fugitive Particulate Matter Emission Control Plan (Plan) details the procedures used to accomplish and document compliance with this and subsequent permit conditions. Condition 3.1.a.ii.C requires that this Plan include*:*

(1) A map or diagram showing the location of all fugitive particulate matter emissions generating activities and/or where control measures are typically applied on a regular basis, including the location, identification, length, and width of roadways, and volume and nature of expected traffic or other activity.

> **Attachment 1** contains a map identifying the current and planned future asphalt paved surfaces, as well as typical vehicle types and quantities. The site will extend and maintain asphalt paved roads to primary access locations into the landfill footprint; these access locations will change over time as the Landfill is developed. Unpaved road lengths outside the landfill footprint will be minimized and generally limited to areas not utilized by vehicles delivering waste to the Facility; unpaved road lengths will vary with site conditions as landfill development progresses. The speed limit on unpaved sections of road will be 25 miles per hour.

(2) Description of the standard control measures including type of measure, frequency and, if applicable, application rates;

> The primary control measure utilized is the proactive application of water spraying via a dedicated water truck on days when fugitive particulate matter is most likely to form based on recent and current climatic conditions. The site supplements these efforts with the deployment of a dedicated sweeper on asphalt paved surfaces. Hours of operation for each unit is tracked daily, with monthly summaries provided as shown in **Attachment 3**.
>
> During construction and final cover construction events, the general contractor will employ dust control methods that include watering, re-grading and sweeping of roads to minimize fugitive dust formation.
>
> Seeding will be applied on all landfill or stockpile slopes that will remain idle for at least one growing season in an effort to establish vegetative cover. The success of this effort will be monitored and supplemented as necessary to minimize dust emissions from these surfaces.

(3) Description of any secondary control measures that would be used based on circumstances (freezing temperatures, recent rain, dry weather, etc.) with identification of the circumstances in which they would be used and identify any triggers for implementation of additional control measures, e.g., presence of extended dust plumes following passage of vehicles, with description of those additional dust control measures.

Fugitive dust from facility haul roads is unlikely to occur on days when it is raining, or there is snow or frozen conditions. On these dates, the precipitation and/or frozen weather conditions would take the place of road watering.

(4) *Description of corrective actions that will be implemented in the event of visible emissions across the property line and/or observation of areas affected by wind erosion and/or reentrainment. Such corrective action may include but is not limited to the application of a protective cover on landfill surfaces, the spraying of surfactant solution or water on a regular basis, or other equivalent treatment methods;*

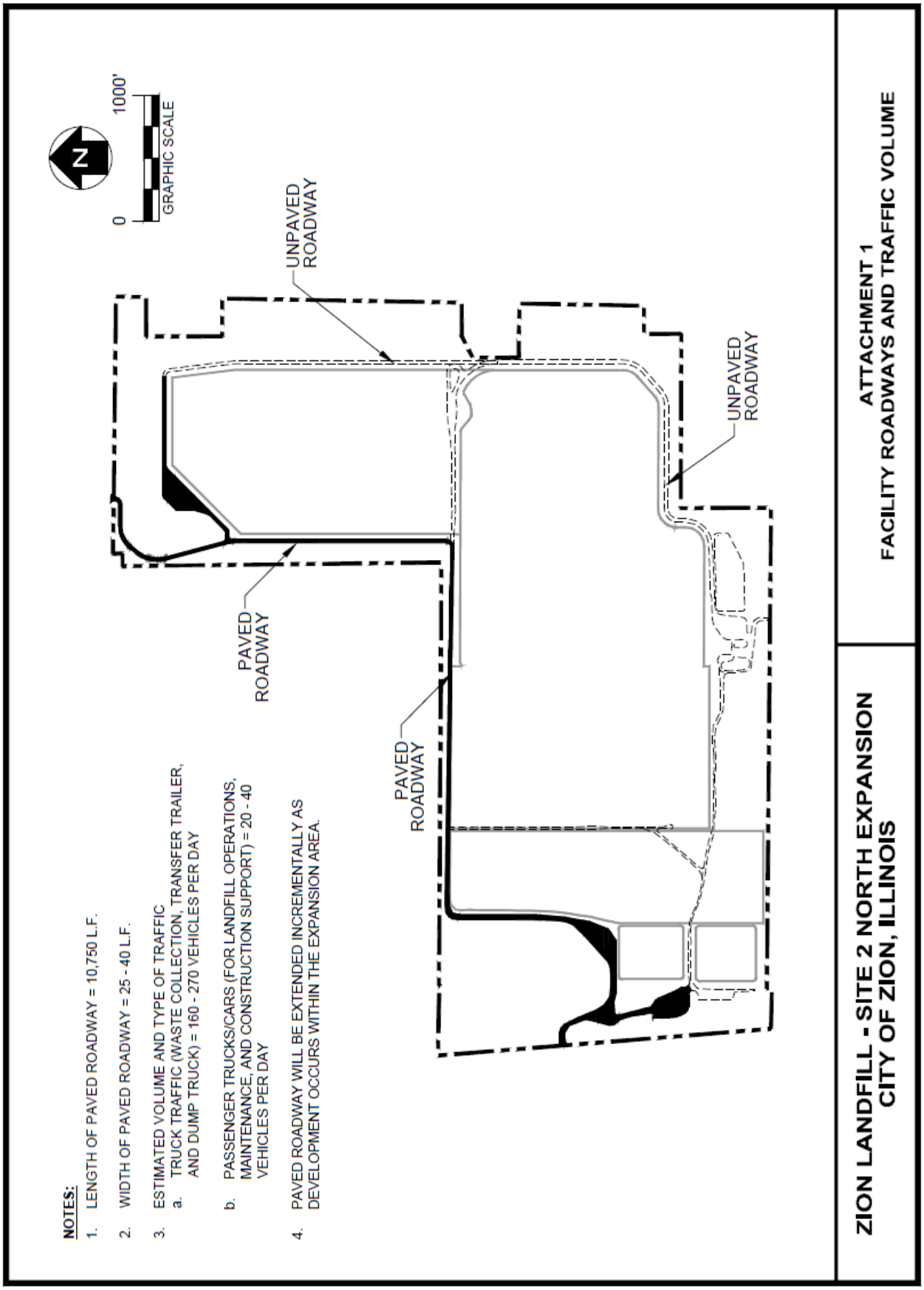
If a dust complaint is received and verified, or visible emissions are observed across the property line, either during required periodic inspections or regular daily observations, corrective action will be taken as soon as possible. Corrective actions may include, but are not limited to, spray application of water, use of chemical dust suppressants, operation of a street sweeper, changing traffic patterns, and cessation or modification of activities causing the emissions. All complaints will be added to the site's complaint log, and a representative from the Landfill will respond to the complainant within three business days.

(5) *Assumptions and/or observations regarding the quantity and nature of vehicle traffic at the source as related to source operations.*

Zion Landfill is an active municipal solid waste landfill. As such, the primary truck traffic at the facility will be comprised of refuse disposal vehicles. These range in size from civilian pick-up trucks, to front and rear end residential loaders, to transfer trailers. The facility also receives roll-off trucks and dump trucks. The number of trucks received in a day can vary from less than one hundred to several hundred.

The CAAPP permit requires that routine (quarterly) fugitive dust inspections be performed and documented. Fugitive dust inspections will normally be conducted on a monthly basis. Inspection frequency will be increased to weekly during weeks when cell construction and/or final cover construction activities are being conducted. The inspection form is included in **Attachment 2**. Records are maintained on site which will include safety data sheets (SDS) for any chemical dust suppressants. The chemical dust suppressant SDS will be made available for public review upon request from the public.

Additionally, the CAAPP permit requires that the site document the implementation of the dust control measures. Water Truck and Sweeper Vehicle hours are logged (See **Attachment 3**) and these records are maintained on site. The water truck generally dispenses up to 7,000 gallons per hour of operation. Any unusual incident requiring additional measures that cannot be controlled by these vehicles is documented as well.


N
0
1000'
GRAPHIC SCALE
UNPAVED ROADWAY
UNPAVED ROADWAY
PAVED ROADWAY
PAVED ROADWAY
NOTES:
1. LENGTH OF PAVED ROADWAY = 10,750 L.F.
2. WIDTH OF PAVED ROADWAY = 25 - 40 L.F.
3. ESTIMATED VOLUME AND TYPE OF TRAFFIC
a. TRUCK TRAFFIC (WASTE COLLECTION, TRANSFER TRAILER, AND DUMP TRUCK) = 160 - 270 VEHICLES PER DAY
b. PASSENGER TRUCKS/CARS (FOR LANDFILL OPERATIONS, MAINTENANCE, AND CONSTRUCTION SUPPORT) = 20 - 40 VEHICLES PER DAY
4. PAVED ROADWAY WILL BE EXTENDED INCREMENTALLY AS DEVELOPMENT OCCURS WITHIN THE EXPANSION AREA.
ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS
ATTACHMENT 1
FACILITY ROADWAYS AND TRAFFIC VOLUME

Attachment 2 - Quarterly Inspection Form
Zion Landfill
Wind Erosion / Fugitive Particulate Matter Emission Control Plan

Inspection Date and Time:	
Inspector Name (print):	Inspector Signature:
Weather Conditions:	

OBSERVED CONDITIONS			
Inspected Areas	No visible particulate matter emissions at nearest downwind property line	Visible particulate matter emissions at nearest downwind property line*	Area snow or ice covered, or recent precipitation sufficient to eliminate visible particulate matter emissions at nearest downwind property line
Main Haul Road to Scale House			
Parking Areas			
Landfill Roads			
Landfill Active Area			
Landfill Cover			
Landfill Construction Area			
Soil Stockpiles			
Asbestos Containing Waste Deposited Areas			

* NOTE: Take immediate corrective action to avoid particulate matter emissions. See Wind Erosion/ Fugitive Matter Emission Control Plan for additional information.

COMMENTS:

_____

_____

_____

_____

Attachment 3 - Dust Control Measure Log For the Year _____

(a) Month	(b) Sweeper Vehicle (hours)	(c) Water Truck (hours)	(d) Were there any extreme incidents or weather conditions requiring additional control measures? If, yes, identify dates and actions taken.
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

NOTES:
(a) This table should be updated on a quarterly basis, minimum.
(b) The average speed of the sweeper vehicle is approximately 5 mph.
(c) The water truck generally dispenses up to 7,000 gallons per hour of operation.
(d) CAAPP permit Section 5.4.a.iv states, "If the fugitive particulate matter program fails to address or inadequately addresses an event that meets the characteristics of a wind erosion, reentrainment, or fugitive event but was not included in the program at the time the Permittee developed the plan, the Permittee shall revise the program within 45 days after the event to include detailed procedures for operating, monitoring, and maintaining the source during similar events and a program of corrective action for similar events."

ZION LANDFILL, INC.
ZION, ILLINOIS

EXHIBIT 4

NOISE CONTROL PLAN

Zion Landfill
Noise Control Plan

The Facility will be operated in accordance with 35 Ill. Admin. Code Section 900. Machinery designated for operations at the landfill will be equipped with mufflers or other sound dissipative devices as required for compliance with 35 Ill. Admin. Code Sections 901.101 through 901.103 and Section 901.121.

Quieter back-up alarms shall be used on all Facility heavy equipment that backs up frequently (i.e., bulldozers, compactors, loaders and articulating dump trucks). Additionally, third party construction equipment that backs up frequently, and is scheduled to be on site for at least 60 days, will be equipped with quieter backup alarms. Quieter alarms, or similar backup devices that meet OSHA requirements (29 CFR Part 1926.602.a.9) may be selected from the list below, or from equivalent quieter alarms:

1. Manually adjustable backup alarms
    a. Preco Model 45, 100 and 300 series
    b. Ecco Model 500 and 600 series

2. Automatically adjustable backup alarms
    a. Preco Model 100 series
    b. Ecco Model 800 and 900 series

3. Community sensitive backup alarms
    a. Brigade SMART bbs-tek;

Earthen berms surrounding the facility will serve to dampen noise from the operational activities. The berms will be vegetated upon completion to increase the dampening effect of the berms. The landfill expansion footprint and screening berms have been designed in a way that allows for sustainability of a large portion of the tall trees located on the east side of the expansion. This tree line will also help dampen the noise from the facility. The screening berm locations as well as the stand of trees are shown on the Design Drawings in the Siting Application.

ZION LANDFILL, INC.
ZION, ILLINOIS

EXHIBIT 5

ODOR CONTROL AND MONITORING PLAN

Zion Landfill
Odor Control and Monitoring Plan

TABLE OF CONTENTS

Attachments

1.0 INTRODUCTION

This odor control plan (Plan) was prepared to provide Zion Landfill (Site) personnel as a guide for addressing odors that may originate from the landfill facility. Odors originating from a landfill facility generally do not present a health risk, but objectionable odors can sometimes be considered a nuisance if exceeding an established threshold of measurable concentration for an extended duration. This plan will assist Zion Landfill personnel with:

- Monitoring the landfill and associated facility features for odors
- Identifying the source of objectionable odor(s)
- Responding to odor complaints
- Minimizing the potential for odor migration

2.0 POTENTIAL ODOR SOURCES

Potential sources at the Site that may generate odor include:

- Landfill gas (LFG) generated by decomposition of waste
- Daily waste handling and disposal, especially certain WWTP sludges
- Components of leachate and landfill gas collection systems (i.e., sumps, lift stations, tanks, vaults, forcemain air release valves, etc.)

Non-facility sources of odors in the vicinity of the Site may include:

- Surrounding agriculture and industrial land uses

3.0 ODOR MONITORING

3.1 General

Early detection of odors ensures that potential odor sources can be reviewed and appropriate actions to address odors are taken as quickly as possible. Site personnel will regularly monitor the perimeter of the landfill for the presence of odors utilizing olfactory senses and other methods outlined in this Plan. Monitoring will also take place as soon as practical after receipt of an odor complaint. Odor monitoring will primarily be the responsibility of the general manager and the operations manager, because of their overall knowledge of Site operations. Additional measures such as surface emission monitoring (SEM), as discussed in this Plan, will also be utilized to proactively identify areas of the landfill with insufficient gas collection.

3.2 Odor Monitoring Techniques and Equipment

The following odor monitoring techniques/equipment will be utilized as part of the odor monitoring program:

- Olfactory senses will be utilized to characterize the odor level and source (i.e., garbage, leachate, landfill gas (LFG), other).

- A handheld or portable field meter (Scentometer) will be used to measure the odor concentration based on the dilution to threshold (D/T) ratio as defined by equation No. (1). Readings will be taken per manufacturer recommendations and industry protocols.

$$D/T = \frac{Volume\ of\ carbon\ filtered\ air}{Volume\ of\ odorous\ air} \quad (1)$$

- A handheld or portable field meter (Jerome Series 600 Model or equivalent) will be used to monitor for Hydrogen Sulfide (H_2S) at levels as low as 5 parts per billion by volume (ppbv).

- A full meteorological station will be installed on the roof of the landfill office or equivalent location within the facility boundary. This station will measure wind speed and direction, temperature, humidity, and precipitation. A data logger will record and transmit these measurements to a centralized location.

- Permanent H_2S meters may be installed around the perimeter of the Site and will be designed for continuous monitoring and recording of low-level hydrogen sulfide concentrations (<5 ppbv). The monitors will be housed inside weatherproof enclosures and will provide continuous real time data. Please refer to **Section 3.5** for the landfill gas quality criteria for installation of the permanent H_2S meters.

3.3 On-Site Odor Monitoring

On-site odor monitoring using olfactory senses will occur once daily whenever the landfill is open and will be performed by site personnel. Any odors detected at the perimeter of the landfill will be characterized and documented in the facility's operating record along with any incorporated corrective actions.

At least once weekly, the landfill site personnel will perform on-site odor monitoring at locations shown on **Attachment A**. If an odor is detected at a sample location using olfactory senses, then field scentometer (D/T) and H_2S readings (if weather conditions are within manufacturer's recommended operational range) will be measured and recorded. Additional data as described in **Section 3.9** "Recordkeeping" will be collected and recorded. At least once per month, a third-party contractor will perform the weekly on-site odor monitoring.

3.4 Off-Site Odor Monitoring

At least once weekly, the landfill site personnel will perform off-site odor monitoring at locations shown on **Attachment A**. At each sample location, field scentometer (D/T), and H_2S concentrations (if weather conditions are within manufacturer's recommended operating range) will be measured and recorded. Additional data as described in **Section 3.9** "Recordkeeping" will be collected and recorded. At least once per month, a third-party contractor will perform the weekly off-site odor monitoring.

3.5 Continuous Perimeter H_2S Sampling

One of the primary sources of odors at landfill is H_2S in the landfill. As the H_2S concentration in landfill gas increase the potential for off-site odors increases. The concentration of H_2S is controlled by several factors including the types of waste the landfill accepts.

If the landfill gas H_2S concentration, measured at the flare inlet, is greater than 2,000 ppm for more than three consecutive months, the Site will submit to the City of Zion and Lake County a plan for permanent perimeter H_2S monitoring. This plan will be submitted within 20 business days

of receipt of the third monthly H_2S laboratory data. The instrumentation will be installed within 60 business days of approval by the City of Zion and Lake County.

The monitoring of H_2S at the centralized flare station or permitted centralized destruction unit shall be performed at the following frequency:

- Annual H_2S monitoring when H_2S concentrations are less than 1,000 ppm;
- Semi-annual monitoring when H_2S concentrations are between 1,001 ppm and 1,500 ppm;
- Quarterly monitoring when H_2S concentrations are between 1,501 ppm and 1,750 ppm; and
- Monthly monitoring when H_2S concentrations are greater than 1,750 ppm and the Site is not performing continuous perimeter H_2S Sampling.

3.6 Event Driven Monitoring

If the Site, City of Zion, Lake County, SWALCO or the IEPA receives an odor complaint believed to be caused by the Site, and the Site is timely notified of the complaint and location of complaint, landfill personnel and/or contractors will perform odor monitoring at the location of the odor complaint. Odor monitoring will include the elements required under **Section 3.4** "Off-Site Odor Monitoring". During landfill operating hours, event driven monitoring will be performed within 2 hours of receipt of an odor complaint in which a location was provided. If an odor complaint is received during non-operating landfill hours, the event driven monitoring will be performed at the reported location of the complaint during the next operating day. If multiple complaints are received from the same general area, odor monitoring within that general area will be performed rather than from each individual location.

3.7 Odor Monitoring Schedule

A summary of the different odor monitoring that will be performed at the facility is summarized in **Table 1**.

Table 1
Odor Monitoring Schedule

	Olfactory	Scentometer (D/T)	H_2S Meter
On-site Monitoring - Daily	X		
On-site Monitoring Locations - Weekly (except during week 3rd party conducts monthly monitoring)	X	X	X
Off-site Monitoring Locations - Weekly (except during week 3rd party conducts monthly monitoring)	X	X	X
Third Party On-Site and Off-Site Locations - Monthly	X	X	X
Permanent Perimeter Locations (see **Section 3.5**)			X
Note: If H_2S monitoring cannot be completed due to weather conditions outside manufacturer's recommended operating range, documentation of those conditions will be recorded on an "Odor Monitoring Form" (see **Attachment B**).			

3.8 Confirmation Sampling Procedures

In the event of a field scentometer D/T reading of 4 or greater (a D/T level of 4, 5 or 6 is designated on the scentometer as a reading of <7), or an instantaneous or continuous H_2S reading of 15 ppb above background readings, the landfill will perform confirmation sampling procedures as outlined below:

- Review odor descriptor to typical odor descriptors related to landfills (i.e., rotten egg, leachate, fresh trash, etc.).
- Location of odor reading in relationship to landfill (i.e., upwind or downwind); and
- Confirmation sample taken between 30 and 60 minutes after the initial reading for both field scentometer and H_2S sampling.

If the odor is confirmed based on the procedures listed above (i.e., the follow-up D/T reading remains at 4 or greater, or H_2S reading remains greater than 15 ppb above background), the corrective actions to address the odor will be implemented as discussed in **Section 4.0**. All confirmed odors will be reported to the City of Zion and Lake County Health Department within 24 hours.

3.9 Recordkeeping

During weekly monitoring, the location of all odor measurements, associated values and description of any detected odor will be recorded. The date, time, temperature, precipitation, humidity, barometric pressure, and wind speed and direction at the time of odor monitoring will also be recorded. Additional comments regarding odor description and characteristics and possible source of the detected odor may also be recorded. This information will be recorded on an "Odor Monitoring Form" (example in **Attachment B**). Similar information will be recorded for responses to odor complaints (i.e., event driven monitoring).

Access to review the continuous H_2S raw data will be transmitted to a central computer system and will be available to City of Zion or Lake County representatives during normal business hours. All odor monitoring data will be maintained in the Site's operating record and made available for review to the City of Zion or Lake County representatives with prior notice.

4.0 CONFIRMED ODOR CORRECTIVE ACTION RESPONSE

4.1 Short-term Corrective Actions

If site personnel confirm the Site is the source of an odor using the procedures set forth in **Section 3.8**, the Site will implement appropriate and necessary corrective actions. Corrective actions implemented and timing of the actions to address the odor will depend on the source of the odor and the time of day. Short-term corrective actions will be initiated within 24 hours of a confirmed odor event as defined by **Section 3.8**. Appropriate short-term odor control actions may include but are not limited to:

- Placement of additional cover materials
- Adjustments to the Site's gas system
- Evaluate and make repairs to cover penetrations (i.e., boots)
- Evaluate LFG pump repair or replacement
- Use of odor neutralizers

Additional descriptions of these corrective actions are presented in **Section 5.0**.

4.2 Long-term Corrective Actions

If the Site determines, using the confirmation sampling procedures set forth in **Section 3.8**, that the short-term corrective actions implemented under **Section 4.1**, did not remedy the confirmed odor event attributed to the landfill facility within 3 business days, the Site will initiate development of a long-term corrective action plan to address the confirmed odors by a combination of field investigation and review of gas monitoring data. Potential long-term corrective actions may include but are not limited to:

- Enhanced daily cover, intermediate cover, or the use of temporary geomembrane cover
- Additional temporary or permanent landfill gas collectors (vertical, horizontal, etc.)
- Upsizing, replacing, or regrading of landfill vacuum piping
- Upsizing, replacing, or installation of additional landfill gas blowers
- Installation, repair or replacement of pumps to dewater landfill gas collectors
- Revised waste acceptance and/or waste handling practices

Notification that the Site will be implementing long-term corrective actions will be submitted to the City of Zion and Lake County Health Department within 5 business days of the initial confirmed odor monitoring event as defined by **Section 3.8**. A conceptual long-term corrective action plan will be submitted to the City of Zion and Lake County Health Department within 15 business days of the initial confirmed odor event.

4.3 Corrective Action Recordkeeping

The Landfill will log corrective actions that were taken to address odors attributed to the Site that were confirmed per **Section 3.8**. The log will discuss what corrective actions were implemented, when they were implemented, the effectiveness of the corrective actions and if additional corrective actions are necessary. The corrective action log will be submitted to City of Zion and the Lake County Health Department on a monthly basis.

5.0 ODOR PREVENTION

Odor minimization and control is a priority at the Site. The following is a discussion of the efforts that will be made to prevent or minimize the occurrence of off-site odors which could result in odor detections equal to or greater than a D/T value of 4 on the scentometer scale and/or H_2S concentrations above 15 ppb of background levels as discussed in **Section 3.8**.

5.1 Covering of Waste

5.1.1 Daily Cover

Odors will be minimized by keeping the working face as small as practical and placing daily cover at the end of each working day. Site personnel will cover the working face with a minimum of 6 inches of daily cover soil or approved alternate daily cover materials at the end of each operating day. The Facility's Operating Plan will discuss how alternate daily cover materials that have the potential to generate odors (i.e. landscape waste, C&D materials, petroleum contaminated soils) will be managed to minimize odor generation.

Certain types of waste may have stronger odors than other waste. Acceptance of wastes known to have stronger odors will generally be limited to before 1:00 p.m. These wastes will be placed in the working face and immediately covered with other waste, daily cover soil, or alternate daily cover materials.

5.1.2 Intermediate Cover

Placement of intermediate cover and construction of the final cover system helps minimize landfill odors. Areas of the landfill not covered within 60 days of placement with additional waste or final cover shall have an intermediate cover of compacted clean soil with a minimum thickness of one foot applied to it. The intermediate cover shall be monitored and maintained until the area is filled over with additional waste, or final cover is applied. All cracks, rills, gullies and depressions shall be repaired to minimize infiltration, prevent standing water and reduce landfill gas seepage through the soil cover. To the extent possible, intermediate cover will be removed prior to placing additional waste to minimize leachate ponding in the waste mass.

5.1.3 Final Cover

The final cover consists of two feet of clay covered by a geomembrane with three feet of protective cover above the geomembrane. Final cover will be constructed during the construction season that follows a large contiguous area (5 acres or greater) receiving the final lift of waste, including sides slopes.

5.1.4 Supplemental Cover

Supplemental soil cover may be applied to areas with daily or intermediate cover determined to be sources of off-site odor. The use of temporary geomembrane cover over areas with intermediate cover may be utilized to address problem areas if supplemental soil cover is not effective as discussed in **Section 4.2** “Long-Term Corrective Actions”.

The landfill expansion siting and IEPA permit applications shall include design and operating plans for addressing surface emissions and “fresh waste” odors from the proposed eastern waste slope adjacent to N. Kenosha Road.

5.2 Landfill Gas Management

5.2.1 Landfill Gas Extraction

The landfill gas collection and control system (GCCS) is an important tool necessary to reduce landfill gas odors and greenhouse gas emissions. The Site’s gas collection system consists of horizontal and/or vertical gas wells installed as areas are filled. Landfill gas may also be extracted from leachate collection and cleanout pipes. Expansion of the system will occur as needed. The landfill’s GCCS will be designed, operated, and maintained in accordance with the Site’s GCCS Design Plan and applicable municipal solid waste landfill New Source Performance Standards (NSPS), Emission Guidelines (EG) and National Emission Standards for Hazardous Air Pollutants (NESHAP) regulatory requirements.

The Site will continue taking a proactive approach to gas collection by installing gas system infrastructure in new cells as the cell is being filled vs. waiting until final grades are reached. Additional horizontal or vertical gas wells will be installed if surface emissions monitoring (SEM), or odor monitoring, indicate the improvements are warranted.

5.2.2 Landfill Gas Extraction and Conveyance System Monitoring and Repair

Odor prevention is further enhanced by regular monitoring of the gas extraction system. The landfill gas extraction system is monitored monthly for vacuum (wellhead and system), and gas quality. Gas quality readings include percent methane, percent oxygen, percent carbon dioxide, balance gas, and temperature. The physical condition of the individual gas wellhead is also reviewed monthly.

Water levels within vertical landfill gas wells will be performed on an annual basis while the landfill is operational. Gas wells outside of final cover areas exhibiting less than 50% open screening available due to the accumulation of liquids will be monitored quarterly until 2 consecutive readings indicate greater than 50% open screening is available.

Site personnel will review wellfield monitoring data and, if excessive pressure drops impacting gas collection are noted, investigate potential causes and implement necessary and appropriate corrective actions.

In the event that repair or construction of the system is necessary, Site personnel will use isolation valves within the system to isolate the area where work is being conducted. This practice allows those areas of the landfill gas collection system where construction is not being performed to continue extracting landfill gas.

5.2.3. Landfill Gas Flares

The flare temperature is monitored with one or more thermocouples to confirm the presence of a flame whenever landfill gas is routed to the flare. In the event the flame goes out, or thermocouple temperature drops below programmed set points, the blowers shut down and the automated fail-safe valve closes to prevent free venting of landfill gas. The flare control system is also connected to an automatic dialer that notifies appropriate landfill personnel via phone and e-mail of any alarm issues. These notifications allow for staff to provide a prompt response to conditions in order to minimize the amount of time the flare is not running. The Site will maintain destruction capacity for 100% of the collected landfill gas flows.

5.2.4 Gas System Preventive Maintenance

Preventive maintenance of the gas system helps ensure that the gas system is always working properly. The main mechanical components of the landfill gas extraction system are the blowers, flares and 3rd party Landfill Gas to Energy (LFGTE) facility. Scheduled preventive maintenance is performed on the landfill owned components dedicated to the proper operation of the gas collection system. Major repairs or scheduled rebuilds are normally performed by an outside contractor. The landfill is not dependent on the operation of the LFGTE plant, as the capacity of the existing landfill blowers/flares exceeds the projected gas generation flows for the landfill.

The Site has backup blowers for both the open and enclosed flares. These have been purchased to avoid significant down time in the event of unexpected total failure of one of the blowers. Maintenance and repairs of the GCCS should be scheduled to ensure continuous operation of at least one flare to reduce back-up of landfill gas in the waste mass to reduce the potential gas malodors.

5.3 Odor Neutralizers or Masking Agents

Odor neutralizers or masking agents may be used to enhance odor control. In accordance with the conditions of the Siting Ordinance, the existing perimeter odor neutralizing system along Kenosha Road shall be expanded or utilized in the Site 2 North Expansion area prior to waste acceptance. Prior to the use of masking agents, approval will be obtained from the IEPA, if needed.

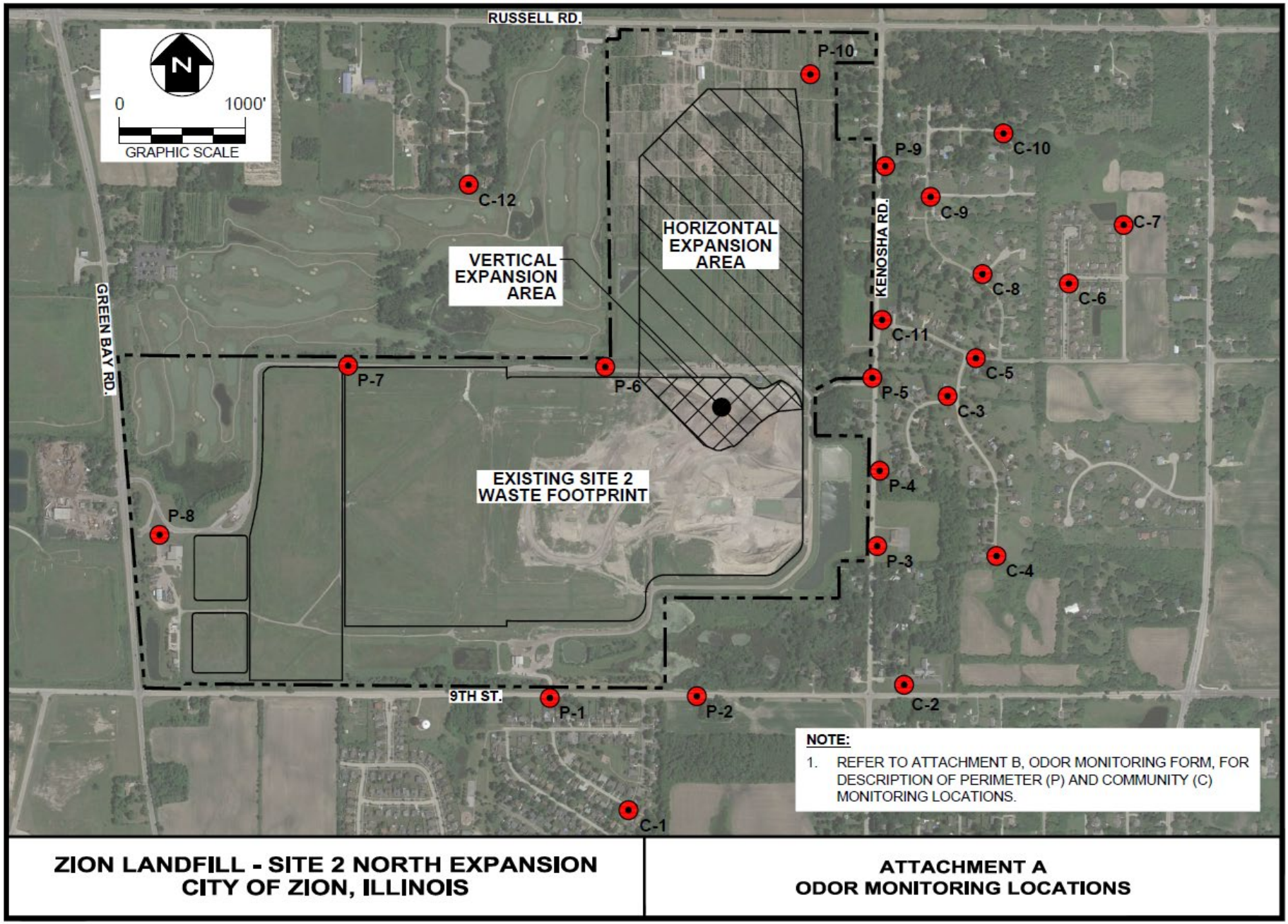
5.4 Surface Emission Monitoring (SEM)

A scan of the landfill surface is performed in accordance with the Site's Illinois EPA CAAPP Permit and applicable NSPS, EG and NESHAP requirements to identify areas where landfill gas may be escaping through the surface. In the event that methane is detected above 500 ppmv (parts per million volume), prompt action (i.e., short-term corrective actions) will be taken in accordance with the Site's Illinois EPA CAAPP Permit and applicable NSPS, EG and NESHAP regulations to reduce the emissions below 500 ppmv. All safely traversable perimeter slopes will be included in the monitoring.

6.0 PROVISIONS FOR PLAN AMENDMENT

This odor control plan has been developed as a guide to identify, prevent and address potential odor issues at the Site. This plan will be amended as needed.

Attachment A - Odor Monitoring Locations



Attachment B - Odor Monitoring Form

Date: _____ **Inspector Name:** _____ **Temperature:** _____

Precipitation: _____ **Humidity:** _____ **Barometric Pressure:** _____ **Wind Speed & Direction:** _____

Location		Reading 1			Reading 2 (if applicable per Section 3.8, Confirmation Sampling Procedures)			Notes / Comments
		D/T Ratio	H_2S	Time	D/T Ratio	H_2S	Time	
P-1	South LF Entrance							
P-2	9th St & Lorelei Dr							
P-3	N Kenosha Rd at Church Parking							
P-4	East LF Area							
P-5	N. Kenosha Rd & Forman Rd							
P-6	SE Corner of Golf Course							
P-7	NW Road Curve							
P-8	Office Parking Lot							
P-9	N. Kenosha Rd & Block Ln							
P-10	NE Corner of LF							
C-1	Lorelei Dr & Timothy St							
C-2	9th St at Church Parking Lot							
C-3	Meadow Ct & Meadow Ln							
C-4	End of Meadow Ln							
C-5	5th St & Meadow Ln							
C-6	Prairie Ridge Dr & 4th St							
C-7	End of N Fossland Ave							
C-8	N Prairie Ave & Clearview Ct							
C-9	N Prairie Ave & 3rd St							
C-10	W Oak Ln (NE Curve)							
C-11	N Kenosha Rd & 5th St							
C-12	End of Oakcrest Ln							

(Continued on Next Page)

Attachment B - Odor Monitoring Form (cont'd.)

Date: _____ **Inspector Name:** _____

Corrective action* taken:

_____

_____

_____

_____

*Corrective action to be taken if 2 Scentometer readings in one location within 1 hour result in a D/T ratio > 4 or 2 H_2S readings in one location within 1 hour result in sustained concentrations > 15 ppb above background.

Attachment C - Odor Complaint Response Form

Log #:	
Complainant Information	
Name:	
Phone Number:	
Address:	
Complaint Details	
Date Complaint Received:	
Time Complaint Received:	
Date of Incident (if different):	
Time of Incident (if different):	
How Reported:	
Location:	
Level of Odor, Scale (1 to 4):	
Type of Odor (Gas / Garbage / Other):	
Temperature:	
Wind Speed & Direction:	
Precipitation:	
Skies:	
Barometric Pressure:	
Response:	

ZION LANDFILL, INC.
ZION, ILLINOIS

EXHIBIT 6

BIRD MONITORING AND CONTROL PLAN

Zion Landfill
Bird Monitoring and Control Plan

The Zion Landfill (Landfill) has historically maintained a Cooperative Service Agreement (Agreement) with the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Wildlife Services (WS) to assist in reducing potential disease threats, property damage, and nuisance issues caused by birds and other wildlife potentially attracted to the Landfill as a food source. The Landfill relies on APHIS WS to implement an integrated wildlife damage management program to reduce these threats and to maintain wildlife populations as an acceptable level.

The Landfill will continue to maintain the Agreement, in same or similar form, during the operation of the Landfill Expansion. A copy of the current Agreement with APHIS WS is provided in this Plan, outlining the monitoring and control procedures to be implemented by APHIS WS and the scope of assistance or effort required from the Landfill.

ZION LANDFILL, INC.
ZION, ILLINOIS

EXHIBIT 7

FACILITY INSPECTION AND MAINTENANCE PLAN

FEATURE	INSPECTION FREQUENCY	ACTIONS
Access Roads		
Entrance gate security	Each operating day	Repair gate as necessary to maintain security
Dust control	Continuously each operating day	Add water or dust suppressant as necessary
Mud tracking at the entrance	Each operating day	Sweep/clean paved entrance road
		Clean tracked mud
		Identify source and remedy as appropriate
Storm Water Management System		
Perimeter ditches and diversion berms	Quarterly and after 2-inch rains	Repair erosion and vegetation
		Remove accumulated silt
Letdown pipes and culverts	Quarterly and after 2-inch rains	Clear entrance obstructions
		Check energy dissipators
Evidence of leachate contamination	Continuously each operating day	Manage as leachate, remedy source
Sediment basin berms	Quarterly and after 2-inch rains	Repair erosion and vegetation
		Eliminate burrowing animals
Sediment basin siltation	Quarterly	Remove silt before reaching the intermediate berm crest
Sediment basin low level discharge	Monthly and after 2-inch rains	Replace filter as needed
Landfill Cover		
Erosion, rills and gullies	Monthly and after 2-inch rains	Repair erosion extending 4-inches deep
Leachate seeps	Each operating day	Repair as required
Vegetation cover	Monthly and after 2-inch rains	Repair in accordance with Post-Closure Care Plan

FEATURE	INSPECTION FREQUENCY	ACTIONS
Screening Vegetation		
Trees and plantings along berms and roadways	Annual	Inspect for suitability of screening and removal of dead vegetation; replace as needed to maintain screening
Liner Protective Cover		
Minimum 18 inches on sidewall liner prior to waste placement	Prior to waste placement	Add protective soil as required
Proper freeze protection	Prior to placing first lift of waste over liner system during freezing weather	Add protective cover as required
Leachate/Condensate Management Systems		
Leachate extraction pumps	Quarterly	Check proper operation, repair and/or replace as needed to achieve desired performance
Leachate collection piping system	As necessary (e.g., incidences of reduced flow)	Clean using high-pressure water jets
Leachate tank, and leachate/condensate leak detection sumps	Weekly	Inspect for leaks
Leachate / condensate level in tank	Each operating day	Empty as required
Leachate / condensate spills on truck loading splash pad	After each use	Clean pad of spills and drain to tank
Automatic leak detection systems	Annually	Check for proper operation
Groundwater Monitoring Wells		
Check security	Quarterly	Repair as required
Check surface seal	Quarterly	Repair as required

FEATURE	INSPECTION FREQUENCY	ACTIONS
Landfill Gas Management System		
Flare station	Each operating day	Restart if not operating
Well heads and connections	Monthly	Check for proper connection and operation, repair and/or replace as needed
Gas extraction wells	Quarterly	Settlement – position of pipe boot / HDPE sleeve
Continuous gas monitors	Quarterly	Check for proper function
Perimeter gas probes	Monthly	Check for proper security and surface seal
Liquid levels in vertical landfill gas wells	Annual	Check liquid levels to confirm >50% open screening is available; if not, increase frequency to quarterly until 2 consecutive readings indicate >50% open screening is available
Survey Monuments		
Check integrity	Annually	Replace or repair as necessary
Resurvey by Licensed Surveyor	Every 5 years	