APPENDIX R

LANDFILL OPERATIONS

1. PERSONNEL TRAINING PROGRAM OUTLINE
2. BIRD CONTROL PLAN
3. FACILITY INSPECTION AND MAINTENANCE PLAN
4. SUBSIDENCE PLAN
5. LITTER FENCE PRODUCTS
6. CONSTRUCTION PHASING PLAN
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 Requirements
- Bird Control Plan
- Record Keeping and Retention Requirements
- Landfill Gas Monitoring
- Leachate Recirculation Management

**OSHA Hazard Communication Program**
- OSHA Hazard Communication Standard
- Material 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.
APPENDIX R.2

BIRD CONTROL PLAN
BIRD CONTROL PLAN

PEORIA CITY/COUNTY LANDFILL NO. 3

DECEMBER 2012
Introduction

This Bird Control Plan (Plan) has been prepared to minimize the presence of birds at the Peoria City/County Landfill No. 3 Facility (Facility). Peoria City/County Landfill, Inc.’s affiliated companies currently utilize similar bird and vector control measures at other landfills it operates and has found the measures to be effective at deterring bird habitation at these landfills. Peoria City/County Landfill, Inc. (PCCLI) will submit this Plan to the Illinois Environmental Protection Agency as part of its Development Permit Application for the proposed Peoria City/County Landfill No. 3. If granted approval by the IEPA, PCCLI will implement this Plan as part of its routine operations at the proposed waste unit. If bird control measures are deemed necessary on other landfill units within the Facility Boundary, PCCLI will perform activities outlined within this plan at the units to the extent practicable and permitted based on other contract, permit, and site access restrictions.

Birds are typically the most common unwanted vectors at landfill sites. Bird control measures will be conducted in a manner to minimize bird populations. A component of bird control will be to minimize the habitat and food sources that may attract prey species such as small mammals, snakes, and insects.

Consistent bird control at the landfill will result in fewer birds attempting to forage at the landfill on a daily basis. Preventing the birds from feeding will force them to rely on natural habitats for foraging. This will assure that bird population levels will remain at carrying capacity for natural habitats within the area rather than being influenced by resources obtained at the landfill’s working face.

It is important to note that the Plan is not designed to make the entire landfill free of birds or prey species. Portions of the site may remain in natural habitats (e.g. grasslands; wetlands) and the program will not intentionally disturb species using these locations.

Bird Control Staff

Bird Controller

One staff member (Bird Controller) will be assigned the responsibility for bird control. A backup person will be available to cover bird control during lunch hours or periods of illness or vacation time. The Operations Manager may be the Bird Controller.

Responsibilities of the Bird Controller include the following:

- Becoming familiar with the Plan and understanding all procedures and the importance of effective bird control;
• Preventing excessive populations of birds from roosting nocturnally in the natural habitats remaining on the landfill site;

• Mitigating hazardous bird species when necessary;

• Conducting daily patrols to monitor bird activities; document bird species or bird groups (e.g., blackbirds, European starlings, gulls, vultures, pigeons, etc.) and estimating numbers in flocks to create a baseline of acceptable / unacceptable flock size that triggers mitigation (i.e.; >100 blackbirds or >50 gulls);

• In the event of unacceptable flock size, developing procedures that may include modifying operations to cover putrescible waste attractant immediately and/or notifying airport of increased bird hazard;

• Coordinating the activities of support personnel (e.g. equipment operators);

• Maintaining equipment, monitoring supplies, and ordering supplies;

• Record keeping;

• Evaluating program effectiveness and adjusting the program accordingly;

• Staying abreast of bird control techniques commonly used in the industry to determine if, or when, supplemental control methods should be integrated into the program for increased effectiveness;

• Submitting a monthly report to the landfill Operations Manager outlining the effectiveness of the bird control techniques and, if appropriate, adjustments to be implemented; and

• Conducting periodic safety reviews.

Other Bird Control Staff

Equipment Operators (e.g. compactor operator) will be used as additional bird control staff due to the fact that, while performing daily landfill operational tasks, they are in a good position to respond quickly to periodic bird occurrence at the face if the need arises. Equipment operators will be considered assistants to the Bird Controller. The equipment operators will inform the Bird Controller as soon as possible when birds and/or bird prey are observed at the active face. Prompt attention to bird occurrence will be performed.
Training

PCCLI will assign primary bird management responsibilities to the Bird Controller who will be trained along with all other bird control staff in the operation and safe handling of the bird control equipment. The Bird Controller will be responsible for staying abreast of the latest techniques and programs for managing wildlife at landfills. A review of these techniques shall be completed at a minimum annual frequency. PCCLI shall provide the Bird Controller reasonable access to workshops and/or training regarding these techniques, as appropriate.

Based on the current requirements in this plan, bird control staff will be trained in the proper distance to shoot from, proper loading of the pyrotechnic pistols, and the types of birds and potential prey which should be controlled at the landfill. The Bird Controller shall also train all bird control staff in any new bird control techniques that are implemented. Training will be completed on an annual basis.

Bird Control Techniques

Prey Species Control

PCCLI will monitor for prey species and other vectors at the landfill unit. PCCLI will operate the Peoria City/County Landfill No. 3 in a manner to minimize habitat and food sources for birds and prey, such as small mammals, snakes and insects. Daily cover, including soil and permitted alternate daily cover materials, will be used to provide a physical barrier and to prevent animals from accessing the buried waste for nesting places or food sources. Maintaining positive drainage will also minimize breeding habitats for insects. Additional control measures, such as the use of a professional exterminator to eliminate potential bird prey, will be implemented as reasonable.

To the extent practicable, food, water, or cover will be eliminated on the landfill and immediately adjacent buffer by habitat modification. All operating personnel at the facility will be trained in the implementation of the following measures to minimize the landfill as an attractant or potential habitat:

- The size of the working face will be kept as small as practicable;
- Especially odiferous waste will be covered as soon as possible after unloading;
- At least 6 inches of soil (or Alternate Daily Cover (ADC)) will be placed on the working face at the end of each operating day to prevent access to the buried waste;
- The landfill will be graded to eliminate standing water;
• The landfill cover soils will be inspected regularly for cracks and gulleys that may attract birds. Repairs shall be implemented as necessary; and

• Blowing litter will be minimized by limiting the working face, using portable fences, and active collection by laborers.

**Auditory Repellents for Birds**

Auditory repellents such as pyrotechnics or screamer siren cartridges will be used as bird deterrents at the Peoria City/County Landfill No. 3. The devices provide several stimuli that alarm birds, including: noise, flash of light, concussion and smoke.

The Bird Controller will complete daily patrols to determine whether nuisance birds are present at the landfill. Patrols shall be completed at varying times of day such that birds will not become habituated to the daily patrol. When necessary, the Bird Controller or other trained employee shall launch Screamer Siren cartridges in accordance with the manufacturer’s operating instructions at the active area of the landfill. PDC has used Reed-Joseph bird control screamer siren equipment at its other landfill facilities for the past 18 years with a high degree of success. Product information for the Reed-Joseph equipment is provided in Attachment 1. Required permits to purchase and/or operate bird control auditory repellents will be appropriately secured, as necessary.

A small single-barrel launcher (15 mm) that resembles a starter pistol will be used as the delivery system for the scare devices. The screamer has a range of approximately 125 to 225 feet and it makes a loud siren-type sound as it travels. This device resembles a small rocket as it travels along its trajectory. Firing will not be performed too frequently or when birds are outside the effective range as this may reduce the overall effectiveness of the technique and may contribute to habituation.

The following methods will be used when stimuli are being deployed:

• The devices will be fired only when the targeted birds are within the effective range of the devices

• A banger or a screamer will be fired so that it passes as closely as possible to at least one of the birds.

• The procedure will be repeated whenever birds approach.

• The pyrotechnics will continue to be fired at the birds as long as they persist in their attempts to access the working face.

• If gulls or other birds land within view of the active face, the Bird Controller will use a vehicle to get within effective range and fire to disperse the birds. In cases where the primary Bird Controller is away
from the working face, an equipment operator or other employee will prevent birds from landing at the face.

The following activities will not be permitted:

- Firing pyrotechnic devices randomly when birds are not present.
- Firing devices when passing birds show no inclination to approach the site.

**Supplemental Controls**

Various other procedures are available for bird control and some may be used at the discretion of the Operations Manager to supplement the auditory repellents. The supplemental techniques will be used only for temporary use or as needed to assist bird control personnel in achieving their mission with the greatest efficiency. They are listed herein so landfill personnel and other readers of this plan are familiar with the options. None of the supplemental methods listed in this plan are considered adequate for effective bird control if used as the primary or only method of control nor are they considered as an essential part of the bird control program. The supplemental methods listed below will be used only on an as needed basis.

- **Distress Calls** -- Distress calls that are species specific shall be utilized as needed to ensure that the invasive bird species identifies the site as a danger. These distress calls will be used in combination with stuffed effigies of birds in a pre-fatal pose.

- **Physical Barriers** -- Overhead wires provide effective protection from birds in a number of situations. Typically, parallel strands or grids of wires (mono-filament line or stainless steel wire) can be erected over the working face, ponds or other areas that may be attractive to birds. The distance between wires may range up to 20 feet and the elevation of the wires will be sufficient for equipment movement underneath. Portable systems have been designed for use at the working face of landfills. Netting may be substituted for wires in some cases.

- **Propane Cannons** -- Propane cannons also are available to supplement the pistols and their use may be feasible at locations away from the working face where birds may attempt to loaf. Propane cannons shall be set off by remote triggers when birds are present. Automatically scheduled shots shall not be utilized, in order to minimize the potential for birds to habituate to them. One or two propane cannons may be made available for use if considered necessary for effective control.
• **Bioacoustics** -- Recorded bird alarm calls may be used in attempts to increase the effectiveness of other control measures. The bird control vehicle may be equipped with a loud speaker system for broadcasting gull, starling or blackbird alarm calls as pyrotechnics are fired thereby adding another disturbing stimulus. Such species specific additives have been found to be unnecessary in most cases but they may be useful in situations where pyrotechnic noise is a concern.

• **Grape Based Spray** -- Grape based sprays are made from grape skin extracts and are very bitter. The spray is non-toxic and biodegradable and will not harm wildlife or vegetation. The spray shall be applied before the presence of birds, such as in a roosting tree or other loafing area.

• **Other Non-lethal Methods** -- Evil eye balloons, falcon or helium kites, effigies of targeted bird species (see Distress Calls above), reflective tapes and assorted other devices are marketed as bird control measures. Some of these are temporarily effective but birds tend to habituate to them within a short time. None of these devices represent long-term solutions, particularly at landfills. When used in combination with pyrotechnics or other methods, some of the devices may take some pressure off bird control personnel by reducing the amount of travel between bird landing areas. In general, however, most of these items should be considered novelties.

• **Lethal Methods** -- In the unlikely event that non-lethal methods are ineffective of deterring nuisance birds from the landfill, PCCLI should utilize Federal and/or State depredation permit(s) to mitigate the hazard. Depredation permits should be acquired as soon as possible with prior approval from the Peoria City/County Landfill Committee and maintained annually. Lethal methods shall only be used as a last resort, and shall conform to all permit requirements.

**Bird Control Recordkeeping**

A recordkeeping log will be maintained at the site to summarize bird control activities. The log shall contain information on the time and location that birds are observed, bird control measures implemented, and the results of the implementation. A sample Bird Control Record Log is included in Attachment 2.
Plan Effectiveness Evaluation Criteria

The success of the program will be monitored monthly and adjustments will be made as needed. The following information will be used to evaluate Bird Control Personnel and the Program:

1. Observations of bird occurrence at or near the landfill.
2. Seasonal patterns of bird occurrence and control efforts as documented on data sheets.
3. Comparison of monthly rates of pyrotechnic use.
4. Observations of bird populations in the general area for comparative purposes.
5. Observations of the bird control effort during the site visit.

Monthly Bird Control Effectiveness Report

On a monthly basis, the Bird Controller shall submit a report to the Operations Manager outlining the short-term and long-term effectiveness of bird control measures on bird populations. Suggested revisions to the bird control techniques and/or facility operations to improve bird control, including vector and prey species control, will be made, as appropriate.

Annual Bird Control Plan Review

The Bird Controller and landfill Operations Manager shall review the Bird Control Plan annually to discuss the bird control methods employed at the landfill and their effectiveness. Supplemental controls to be considered or implemented will be discussed, as well as the required training and equipment necessary to successfully implement the supplemental controls.
ATTACHMENT 1
PRODUCT LITERATURE
15MM SINGLE SHOT LAUNCHER - OPERATING INSTRUCTIONS

Single Shot Launcher should be used only with 15MM Screamer Siren or Bird Banger cartridges.

WARNING – DANGER: For outdoor use only. Do not fire from vehicles.

TO LOAD THE LAUNCHER

1. Move the firing hammer to the cocked position.

2. For 15MM Bird Banger cartridges, insert cartridge, FUSE END FIRST (the end with a block dot), in the muzzle. Do not rely on cartridge markings. Always visibly identify that the fuse end is placed in the muzzle.

   For 15MM Screamer Siren cartridges, insert cartridge, HOLLOW END FIRST, in the muzzle.

TO FIRE THE LAUNCHER

3. Place a 6MM blank round in the angled chamber. Raise and lower the round, securing the clip so that the round is secured in the chamber.

4. WARNING - DANGER. After 15MM cartridges are loaded in launcher, KEEP HANDS AWAY FROM CARTRIDGES KEEP LAUNCHER POINTED DOWN RANGE. WARNING - DANGER.

5. Hold the launcher, with the arm fully extended and up, at least a 45 degree angle, pointed towards the area to be protected, and fire.

   The empty 6MM blank shell will be ejected.

SUGGESTIONS

a. Launchers should be cleaned to prevent carbon build up in angles, chambers and barrels.

b. To facilitate handling, place 6mm Blank Cartridges in larger container such as a Tupperware bowl.

CAUTION WARNING - DANGER

Ear and eye protection is recommended when firing launcher.
For bird and wildlife control only.
Do not fire near humans, livestock, buildings, or dry fields, or other flammable materials or liquids.
May cause fire or injuries.
Local laws may require that you obtain a permit from your Fire Department.
Keep the launcher and cartridges out of reach of children.
Launchers, cartridges and blanks should be handled with extreme care.
15MM SINGLE SHOT LAUNCHER - OPERATING INSTRUCTIONS
SPECIAL INSTRUCTIONS FOR LOADING BIRD BANGER CARTRIDGES

Always load the Bird Banger cartridge with the fuse end (the end with a black dot) in muzzle.

Do not rely on cartridge markings.

Always visibly identify and confirm that fuse end (black dot) is placed in muzzle.

CAUTION WARNING – DANGER
CARTRIDGE MAY EXPLODE IN THE MUZZLE, IF INSERTED BACKWARDS.
ATTACHMENT 2
BIRD CONTROL RECORD LOG
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Personnel</th>
<th>Bird Location</th>
<th>Bird Type/Species</th>
<th>Number of Birds (Approx)</th>
<th>Preventative Measure Used</th>
<th>Results/Notes</th>
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</thead>
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</tbody>
</table>
## FACILITY INSPECTION AND MAINTENANCE PLAN

PEORIA CITY/COUNTY LANDFILL, INC.

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>INSPECTION FREQUENCY</th>
<th>ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access Roads</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrance gate security</td>
<td>Each operating day</td>
<td>Repair gate as necessary to maintain security</td>
</tr>
<tr>
<td>Dust control</td>
<td>Continuously each operating day</td>
<td>Add water or dust suppressant as necessary</td>
</tr>
<tr>
<td>Mud tracking at the entrance</td>
<td>Each operating day</td>
<td>Sweep / clean paved entrance road</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clean tracked mud, identify source and remedy as appropriate</td>
</tr>
<tr>
<td><strong>Storm Water Management System</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perimeter ditches and diversion berms</td>
<td>Quarterly and after 2-inch rains</td>
<td>Repair erosion and vegetation Remove accumulated silt</td>
</tr>
<tr>
<td>Letdown pipes and culverts</td>
<td>Quarterly and after 2-inch rains</td>
<td>Clear entrance of obstructions Check energy dissipaters</td>
</tr>
<tr>
<td>Evidence of leachate contamination</td>
<td>Continuously each operating day</td>
<td>Manage as leachate, remedy source</td>
</tr>
<tr>
<td>Sediment basin berms</td>
<td>Quarterly and after 2-inch rains</td>
<td>Repair erosion and vegetation Eliminate burrowing animals</td>
</tr>
<tr>
<td>Sediment basin siltation</td>
<td>Quarterly</td>
<td>Remove silt before reaching the intermediate berm crest</td>
</tr>
<tr>
<td>Sediment basin low level discharge</td>
<td>Monthly and after 2-inch rains</td>
<td>Replace filter as needed</td>
</tr>
<tr>
<td><strong>Landfill Cover</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erosion, rills and gullies</td>
<td>Monthly and after 2-inch rains</td>
<td>Repair erosion extending 4-inches deep</td>
</tr>
<tr>
<td>Leachate seeps</td>
<td>Each operating day</td>
<td>Repair as required</td>
</tr>
<tr>
<td>FEATURE</td>
<td>INSPECTION FREQUENCY</td>
<td>ACTIONS</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
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<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Vegetation (final cover)</td>
<td>Monthly and after 2-inch rains</td>
<td>Repair in accordance with Post-Closure Care Plan</td>
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<tr>
<td><strong>Liner Protective Cover</strong></td>
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<tr>
<td>Minimum 18 inches on sidewall liner prior to waste placement</td>
<td>Prior to waste placement</td>
<td>Add protective soil as required</td>
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<tr>
<td>Proper freeze protection:</td>
<td>Prior to placing first lift of waste over liner system during freezing weather</td>
<td>Add protective cover as required</td>
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<tr>
<td><strong>Leachate/Condensate Management Systems</strong></td>
<td></td>
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</tr>
<tr>
<td>Leachate extraction pumps</td>
<td>Quarterly</td>
<td>Check proper operation, repair and/or replace as needed to achieve desired performance</td>
</tr>
<tr>
<td>Leachate collection piping system</td>
<td>As necessary</td>
<td>Clean using high-pressure water jets</td>
</tr>
<tr>
<td>Manual leachate recirculation system</td>
<td>End of each day</td>
<td>Monitoring and recirculation pipes are capped</td>
</tr>
<tr>
<td>Automatic / manual leachate recirculation systems</td>
<td>Each operating day</td>
<td>Cease recirculation in area if excess leachate is indicated</td>
</tr>
<tr>
<td>Leachate tank, and leachate/condensate leak detection sumps</td>
<td>Weekly</td>
<td>Inspect for leaks</td>
</tr>
<tr>
<td>Leachate / condensate level in tank</td>
<td>Each operating day</td>
<td>Empty as required</td>
</tr>
<tr>
<td>Leachate / condensate spills on truck loading splash pad</td>
<td>After each use</td>
<td>Clean pad of spills and drain to tank</td>
</tr>
<tr>
<td>FEATURE</td>
<td>INSPECTION FREQUENCY</td>
<td>ACTIONS</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
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<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Automatic leak detection systems</td>
<td>Annually</td>
<td>Check for proper operation</td>
</tr>
<tr>
<td><strong>Groundwater Monitoring Wells</strong></td>
<td></td>
<td></td>
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<tr>
<td>Check security</td>
<td>Quarterly</td>
<td>Repair as required</td>
</tr>
<tr>
<td>Check surface seal</td>
<td>Quarterly</td>
<td>Repair as required</td>
</tr>
<tr>
<td><strong>Landfill Gas Management System</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flare station</td>
<td>Each operating day</td>
<td>Restart if not operating</td>
</tr>
<tr>
<td>Gas extraction wells</td>
<td>Quarterly</td>
<td>Settlement - position of pipe boot / HDPE sleeve</td>
</tr>
<tr>
<td>Continuous gas monitors</td>
<td>Quarterly</td>
<td>Check for proper function</td>
</tr>
<tr>
<td>Perimeter gas probes</td>
<td>Quarterly</td>
<td>Check for proper security and surface seal</td>
</tr>
<tr>
<td><strong>Waste Solidification Area</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damaged / leaking containers</td>
<td>Each operating day</td>
<td>Repair or replace as necessary</td>
</tr>
<tr>
<td>Spilled waste</td>
<td>Each operating day</td>
<td>Remove and dispose in active face</td>
</tr>
<tr>
<td>Run-off control berms</td>
<td>Each operating day</td>
<td>Repair as required</td>
</tr>
<tr>
<td><strong>Survey Monuments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check integrity</td>
<td>Annually</td>
<td>Replace as necessary</td>
</tr>
<tr>
<td>Resurvey by Licensed Surveyor</td>
<td>Every 5 years</td>
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</tbody>
</table>
1.0 Scope

This Subsidence Plan has been developed to define the procedure for the observations, monitoring, and reporting that will be conducted at the Peoria City/County Landfill No. 3 related to on-site mine subsidence.

Although the expanded waste boundary has been positioned outside of a conservative 45 degree angle of draw from the identified on-site subsurface mines (refer to Figure 1), some of the associated ancillary structures have been located inside of the angle of draw or directly over mined areas. These structures include the Northeast and Southeast Stormwater Basins, the Scale House, and the Citizens' Convenience Center. Although the landfill gas and leachate management areas are not directly over underground mines, they are included in this plan to ensure their safety.

Figure 1
Angle of Draw Illustration

Because supplemental/ancillary design components will exist in areas of the site that could be affected by mine subsidence, monitoring of these structures for subsidence impacts is the focus of this Subsidence Plan.

2.0 Objectives

The primary objective of this Subsidence Plan is to allow for appropriate monitoring and prompt repair as necessary, in the event that subsidence impacts a component of the facility design. This Subsidence Plan will identify the roles and responsibilities of on-site personnel as well as detail the monitoring protocols, schedules, and standards. Additionally, this Subsidence Plan details the reporting protocols and provides a system for update and modification of the Plan.
3.0 Locations of Subsurface Coal Mines

Subsurface coal mines that have been identified to be located within the facility are described as follows:

- The Banner Block Mine (3062) is situated in the east half of the northwest quarter and in the west half of the northeast quarter of Section 26, Township 9 North, Range 6 East. The closest portion of this mine is situated approximately 300 feet outside of the southeast corner of the Landfill No. 3 waste boundary.

- The Black Jewel Mine is situated in the west half of the southeast quarter and in the east half of the southwest quarter of Section 23, Township 9 North, Range 6. The mine is situated approximately 225 feet east of the Landfill No. 3 waste boundary.

- The Pete Hoffman Mine (3058) is situated approximately 280 feet east of the southeast corner of the Landfill No. 3 waste boundary and approximately 500 feet south and east of the Black Jewel Mine principally in the west half of the southeast quarter and the south half of the southeast quarter of the southwest quarter of Section 23. Once geo-referenced, it was determined that this mine may have joined, or have been part of, the Banner Block mine at one time.

- The Hoffman Mine (3060) is situated approximately 100 feet north of the Landfill No. 3 waste boundary. It is located principally in the southwest quarter of the northeast quarter and in the northeast quarter of the southwest quarter of Section 23, and the northeast quarter of Section 22, Township 9 North, Range 6 East.

Figure 2 illustrates the approximate location of these mines in relation to site design features.

4.0 Roles and Responsibilities of Associated Entities

Landfill Director

The Landfill Director is responsible for implementing this Subsidence Plan and for ensuring that sufficient resources are available to implement the requirements of the Plan.

Peoria City/County Landfill Committee

The Peoria City/County Landfill Committee will be responsible for approving this Subsidence Plan and any subsequent modifications prior to implementation. As described in greater detail in a subsequent section of this Plan, the Landfill Committee will be promptly informed of any confirmed subsidence at the site and corrective actions that were performed, or are planned to alleviate the subsidence, as required.
1.0 Scope

This Subsidence Plan has been developed to define the procedure for the observations, monitoring, and reporting that will be conducted at the Peoria City/County Landfill No. 3 related to on-site mine subsidence.

Although the expanded waste boundary has been positioned outside of a conservative 45 degree angle of draw from the identified on-site subsurface mines (refer to Figure 1), some of the associated ancillary structures have been located inside of the angle of draw or directly over mined areas. These structures include the Northeast and Southeast Stormwater Basins, the Scale House, and the Citizens' Convenience Center. Although the landfill gas and leachate management areas are not directly over underground mines, they are included in this plan to ensure their safety.

![Figure 1: Angle of Draw Illustration](image)

Because supplemental/ancillary design components will exist in areas of the site that could be affected by mine subsidence, monitoring of these structures for subsidence impacts is the focus of this Subsidence Plan.

2.0 Objectives

The primary objective of this Subsidence Plan is to allow for appropriate monitoring and prompt repair as necessary, in the event that subsidence impacts a component of the facility design. This Subsidence Plan will identify the roles and responsibilities of on-site personnel as well as detail the monitoring protocols, schedules, and standards. Additionally, this Subsidence Plan details the reporting protocols and provides a system for update and modification of the Plan.
3.0 Locations of Subsurface Coal Mines

Subsurface coal mines that have been identified to be located within the facility are described as follows:

- The Banner Block Mine (3062) is situated in the east half of the northwest quarter and in the west half of the northeast quarter of Section 26, Township 9 North, Range 6 East. The closest portion of this mine is situated approximately 300 feet outside of the southeast corner of the Landfill No. 3 waste boundary.

- The Black Jewel Mine is situated in the west half of the southeast quarter and in the east half of the southwest quarter of Section 23, Township 9 North, Range 6. The mine is situated approximately 225 feet east of the Landfill No. 3 waste boundary.

- The Pete Hoffman Mine (3058) is situated approximately 280 feet east of the southeast corner of the Landfill No. 3 waste boundary and approximately 500 feet south and east of the Black Jewel Mine principally in the west half of the southeast quarter and the south half of the southeast quarter of the southwest quarter of Section 23. Once geo-referenced, it was determined that this mine may have joined, or have been part of, the Banner Block mine at one time.

- The Hoffman Mine (3060) is situated approximately 100 feet north of the Landfill No. 3 waste boundary. It is located principally in the southwest quarter of the northeast quarter and in the northeast quarter of the southwest quarter of Section 23, and the northeast quarter of Section 22, Township 9 North, Range 6 East.

Figure 2 illustrates the approximate location of these mines in relation to site design features.

4.0 Roles and Responsibilities of Associated Entities

Landfill Director

The Landfill Director is responsible for implementing this Subsidence Plan and for ensuring that sufficient resources are available to implement the requirements of the Plan.

Peoria City/County Landfill Committee

The Peoria City/County Landfill Committee will be responsible for approving this Subsidence Plan and any subsequent modifications prior to implementation. As described in greater detail in a subsequent section of this Plan, the Landfill Committee will be promptly informed of any confirmed subsidence at the site and corrective actions that were performed, or are planned to alleviate the subsidence, as required.
Regulatory Agency

In the event that subsidence has severely damaged an ancillary structure, the Illinois Environmental Protection Agency (IEPA) will be promptly notified. Any modifications to the facility permit that are necessary to repair any affected ancillary structures will be obtained from the IEPA.

5.0 Subsidence Monitoring

This Subsidence Plan incorporates the following three types of monitoring:

1. Informal Visual Site Observations
2. Routine Subsidence Inspections
3. Land Survey

These plan components are described in detail within the following paragraphs.

Visual Site Observations

In order to assure safe and efficient operations at the site, visual inspection of all design features and operating conditions are performed by the Facility Manager (or designee) each operating day. This is done informally while the Facility Manager is performing his/her daily duties to make sure all refuse is secure and the landfill is in compliance with the site Operating Plan and applicable regulations.

The Facility Manager shall immediately notify the Landfill Director if evidence of a possible subsurface mine subsidence is visually observed. Depending upon the certainty or severity of the possible mine subsidence, the Landfill Director will either conduct additional activities (e.g. subsidence inspections, land survey, etc.) to confirm whether or not subsidence has occurred or implement corrective actions.

Subsidence Inspections

On a quarterly basis, or as deemed required based on previous visual site observations, the Facility Manager (or designee) will conduct a formal subsidence inspection. This inspection will require the Facility Manager to inspect the facility with a specific focus on subsidence. This inspection will be important in that it will allow a closer observation of the ancillary structures in the event that informal daily site observations do not identify a potential subsidence.

This inspection will include the following:

- Tension Cracks;
- Compression Ridges;
- Settlement (Pits, Sags, or Troughs);
- Damage to Structures, Utilities, or Foundations and;
- Changes in Drainage.
A checklist shall be created as the ancillary features are constructed. This checklist should then be updated as necessary in order to add new or modified ancillary features, or to accommodate changes in field conditions.

During the subsidence inspection events, photographs should be used, as appropriate or deemed necessary, in order to document observed features. The inspection checklists, photographs, and a record of any identified issues and maintenance performed will be kept at the site.

The Facility Manager shall immediately notify the Landfill Director if evidence of a possible subsurface mine subsidence is observed during a subsidence inspection event. Depending upon the certainty or severity of the possible mine subsidence, the Landfill Director will either conduct additional activities (e.g. land survey) to confirm whether or not subsidence has occurred, or implement corrective actions.

*Land Survey*

As the ancillary design features are constructed, baseline locations (including elevations) will be recorded at key points on each feature. These baseline locations will include, at a minimum, every 50 feet along the crest of the stormwater retention dikes of the Northwest and Southeast stormwater basins. They will also include the corners of the on-site scale-house, Citizens’ Convenience Center, and any tanks, concrete pad(s), or building(s) constructed in the landfill gas and leachate management areas. At the time of baseline measurement, a marker will be placed in the field at each measurement point to assure that consistent measuring points are used over time.

On a semi-annual basis, these points will be surveyed in order to compare the surveyed locations to the baseline measurements.

It should be noted that all surveying will be performed using conventional surveying procedures under the direction of a Professional Land Surveyor or Professional Engineer. The locations will be recorded relative to a site grid which was established for the existing landfill facility. All elevations are referenced to Mean Sea Level (MSL). Survey accuracy will be in accordance with national map accuracy standards.

Corrective actions, as described in the subsequent section, will immediately be implemented if evidence of a possible subsurface mine subsidence is identified.

6.0 Corrective Actions

In the event evidence of subsidence is confirmed, PCCLI notify the Landfill Committee’s designated representative (e.g. engineer) and retain a licensed Professional Engineer to devise and assist in implementing corrective actions to alleviate any negative effects that could result. The specific corrective action selected by the licensed Professional Engineer will depend upon the ancillary structure that is impacted, the degree of impact, and the potential for additional subsidence. Examples follow:

- Enhanced, more frequent monitoring may be appropriate for minor subsidence which does not threaten the safe use of the affected facility.

- Earthwork to reestablish site grades and drainage patterns may be appropriate to ensure proper storm water management and detention.
- Structural and/or cosmetic repairs to structures as needed.

- Reconstruction and/or relocation of structures which are severely impacted by subsidence. Use of temporary facilities, such as trailers, portable above-ground tanks, etc. may be appropriate to allow continued use of the facility.

- Implementation of underground mine stabilization techniques as deemed appropriate.

Permits will be obtained from the Illinois Environmental Protection Agency as required to implement corrective actions.

7.0 Plan Approval, Update and Modification

This Subsidence Plan will be presented to the Peoria City/County Landfill Committee for approval prior to implementation. Additionally, the Landfill Committee will be presented with any subsequent modifications for approval prior to their incorporation into the Plan.
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Integrates High Molecular Weight Polyethylene (HMWPE) netting fiber to form a 2 1/2 mile long barrier protecting sensitive fish species in Lake Michigan.

~ LANDFILL BARRIER NET SYSTEMS ~(Custom designed net panels constructed to contain paper and debris to the desired landfill cell in demanding load conditions.

~ Configured to keep debris contained near the bottom of the netting barrier.

~ UPPER COLORADO RIVER ~
ENDANGERED FISH RECOVERY PROGRAM

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- Custom netting to fit existing stadium structures utilizing conventional cordage fibers.

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INTERNET WEB ADDRESS: www.reddennets.com • E-MAIL ADDRESS: reddennets@worldnet.att.net
-WARRANTY AND TESTING -

-Redden's #970 Polyester Netting offers a 6-year NON prorated insured warranty.

-Redden's #930 Polyester Netting offers a 7-year prorated warranty.

-All documented breaking strengths have been conducted by an independent testing laboratory per I.S.O. 1806.

-POLYESTER NETTING -

-Redden's #970 and #930 Polyester Netting provides the best resistance to ultra violet degradation in today's market place.

-The low percentage of elongation ensures a tight fit long after initial installation.

-Redden's Polyester Netting has an excellent breaking strength wet or dry and has less than 1% water absorption.

-CUSTOM FABRICATION -

-Redden fabricates your net panels to the specific height, length, and configuration your project requires.

-Net panels are customized with rope borders which extend around the full perimeter.

-Vertical riblines/support ropes are constructed into the net panel at each pole location.

-Horizontal riblines/windlines can be integrated into the net panel for additional durability and performance.

-The fabrication process takes place at Redden's central facility, assuring you of quality, accuracy and satisfaction.
Redden Nets #970 Polyester
Litter Fence Netting System

- Component Specification / Tolerance

Netting Component:
- Redden Nets #970 polyester netting; 1" mesh size
- Long stitch knotless join
- Resin dye and bonding treatment
- 168.4 lb. Average single mesh break strength. ¹

Attachment Twine / Hanging Twine:
- #48 Braided polyester twine
- 375 lb. Tensile strength
- Dye treated

Perimeter Border Rope & Ribline / Verticals:
- Braided synthetic cover
- Parallel synthetic core
- 3,500 lb. Tensile Strength

¹. Mesh strength based upon most recent independent lab testing reports. Report copies are available upon request. Testing conducted per ISO 1806 methodology.
Redden #970

Litter Fence Netting System Specifications

Netting: Redden #970 polyester litter fence netting with average 168.4 lb. mesh breaking strength, 2 ½” stretched mesh; 1” single bar measure, four needle raschel knotless construction, treated with black resin bonding. Mesh break strength determined per ISO 1806.

All sections of netting component to be constructed to a 3/8” braided black perimeter rope, minimum 3,500 lb. breaking strength. Additionally, net panels shall have internally constructed vertical and horizontal ropes of the same material. All rope locations on the net panels shall correspond to the as built net panel suspension and support cables constructed to pole structures. All net panels shall be custom fabricated to as built measurements of the pole/cable structure to provide a taut panel upon completion.

Attachment of net and rope components shall be made with #48 braided polyester twine, minimum 375 lb. tensile strength, treated black. The attachment twine shall continually encompass the netting component and be tied to the rope component via a clove and one half hitch knot +/- 6 inches on center, never to exceed 8 inches on center.

Finished net panels shall be suspended to cables by the rope component via a 9/32” or ½” cadmium plated steel carabiner attachment snap, minimum 1,140 lb. or 560 lb. breaking strength. The interior of the snap shall encompass only the rope and cable components when suspension is completed. The interval between snap to cable attachment points shall not exceed 3 feet on center (snap size may vary to fit cable size(s) specified).

Netting system is available from Redden Marine Supply, Inc., Bellingham, WA, 1-800-426-9284, or engineers approved equal.
Redden Nets #930 Polyester
Litter Fence Netting System

Component Specification / Tolerance

Netting Component:
- Redden Nets #930 polyester netting; 1" mesh size
- Long stitch knotless join
- Resin dye and bonding treatment
- 104.5 lb. Average single mesh break strength. ¹

Attachment Twine / Hanging Twine:
- #48 Braided polyester twine
- 375 lb. Tensile strength
- Dye treated

Perimeter Border Rope & Ribline / Verticals:
- Braided synthetic cover
- Parallel synthetic core
- 3,500 lb. Tensile Strength

¹) Mesh strength based upon most recent independent lab testing reports. Report copies are available upon request. Testing conducted per ISO 1806 methodology.
Redden #930
Litter Fence Netting System Specifications

Netting: Redden #930 polyester litter fence netting with average 104.5 lb. mesh breaking strength, 2 ½” stretched mesh; 1” single bar measure, four needle raschel knotless construction, treated with black resin bonding. Mesh break strength determined per ISO 1806.

All sections of netting component to be constructed to a 3/8” braided black perimeter rope, minimum 3,500 lb. breaking strength. Additionally, net panels shall have internally constructed vertical and horizontal ropes of the same material. All rope locations on the net panels shall correspond to the as built net panel suspension and support cables constructed to pole structures. All net panels shall be custom fabricated to as built measurements of the pole/cable structure to provide a taut panel upon completion.

Attachment of net and rope components shall be made with #48 braided polyester twine, minimum 375 lb. tensile strength, treated black. The attachment twine shall continually encompass the netting component and be tied to the rope component via a clove and one half hitch knot +/- 6 inches on center, never to exceed 8 inches on center.

Finished net panels shall be suspended to cables by the rope component via a 9/32” or ¼” cadmium plated steel carabiner attachment snap, minimum 1,140 lb. or 560 lb. breaking strength. The interior of the snap shall encompass only the rope and cable components when suspension is completed. The interval between snap to cable attachment points shall not exceed 3 feet on center (snap size may vary to fit cable size(s) specified).

Netting system is available from Redden Marine Supply, Inc., Bellingham, WA, 1-800-426-9284, or engineers approved equal.
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9½' DEEP
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B) 3/8" LOCK WASHER
C) 2" SQ WASHER
D) 3 BOLT
E) EQUAL EYE NUT
F) 7/8" THREADED ROD
G) 1/4" GUY GRIP
H) 1/4" 7 STRAND CABLE
Per Pole

Eye Nuts 2
3-Bolts 4
1-Bolt 1
Sheave 1
Square Wash. 6
Link Wash. 7
Square Nuts 7
T-Rod 1

1 Bolt
3 Bolt
Wash Sq.
Wash Lk.
Nuts

2) Wash Lk.
2) Nuts

Sheave
3 Bolt
Wash Sq.

2) Wash Sq.
2) Nuts
Our installation sheets are suggestions only based on our experience. Since we have no control over the actual installation, we take no responsibility for the results or what may occur as a result of unusual weather factors. If you have any questions, please do not hesitate to call.

TYPICAL INSTALLATION FOR ROPE BORDERED POLYESTER NETTING

NOTE: Above details will be provided upon purchase of net.
Portable Litter Containment System

Will not tip over and release trash during high wind conditions. Units are easy to relocate by attaching single or multiple units to landfill equipment.

Portable Units available:
- 12 Ft. high in 20, 30, 40 and 50 Ft. lengths.
- 16 Ft. high in 20, 30, 40 and 50 Ft. lengths.

Easily relocated with landfill equipment.

Up to eight units can be towed at one time.

Each Portable Unit comes with a tow cable.

Designed for 100% loading at 70 MPH wind and continues to force trash toward the bottom of the unit.
Dust/Visual Control

Fabric available in all % solids.
Will provide 97% dust stoppage.
Complete visual blockage.
Engineered for heights up to 50 feet.

Special fabric around the perimeter of the facility provides dust control, visual screen and wind blockage while preserving air flow in and out of facility.

Horizontal roof net provides 100% trash containment while also allowing natural sunlight to illuminate the facility.

Transfer Station/Recycling Facility

Waste Transfer Stations & Recycling Facilities are good for the environment. They increase the efficiency of solid waste collection while reducing overall transportation costs, air emissions and truck traffic. Coastal Netting Systems can design a litter containment system that is cost effective and compatible with the surrounding area.
Netting Systems

Specifically designed to go around the perimeter of solid waste landfills, and solve any litter containment issue.

Significantly reduces your current litter retrieving labor.

Outriggers insure that waste will not go over top of fence.

Designed to force trash toward bottom of the barrier under high wind conditions.

Netting is completely removable from the cable system and poles can be installed for relocation.

Netting is of superior quality and durability and carries an unconditional six year warranty.
APPENDIX R.6

CONSTRUCTION PHASING PLAN
## ESTIMATED CONSTRUCTION PHASING PLAN

### Peoria City/County Landfill No. 3

<table>
<thead>
<tr>
<th>Year</th>
<th>Calendar</th>
<th>Construction Activity</th>
</tr>
</thead>
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<tr>
<td>0</td>
<td>2018</td>
<td>Southeast Detention Basin, access road, leachate load out pad, buildings, and ancillary structures; Phase A Development features shown on Drawing No. D28</td>
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<tr>
<td>0</td>
<td>2020</td>
<td>Landfill opens</td>
</tr>
<tr>
<td>1</td>
<td>2021</td>
<td>Phase B Development — features shown on Drawing No. D29</td>
</tr>
<tr>
<td>4</td>
<td>2024</td>
<td>Phase C Development — Northeast Detention Basin; closure of constructed outer slopes (generally of Cells 1 &amp; 2); features shown on Drawing No. D30</td>
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<tr>
<td>7</td>
<td>2027</td>
<td>Phase D Development — features shown on Drawing No. D31</td>
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<tr>
<td>13</td>
<td>2033</td>
<td>Phase E Development — closure of constructed outer slopes (generally of Cells 3 &amp; 4); features shown on Drawing No. D32</td>
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<tr>
<td>18</td>
<td>2038</td>
<td>Phase F Development — features shown on Drawing No. D33</td>
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<tr>
<td>22</td>
<td>2042</td>
<td>Phase G Development — closure of constructed slopes of (generally of Cells 5 &amp; 6); features shown on Drawing No. D34</td>
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<td>26</td>
<td>2046</td>
<td>Phase H Development — closure of constructed slopes of cell 7; features shown on Drawing No. D35</td>
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<tr>
<td>31</td>
<td>2051</td>
<td>Final Closure</td>
</tr>
</tbody>
</table>

### Notes:

1. Perimeter Stormwater Controls and Environmental Monitoring Points will be constructed as cell development progresses.
2. Closure areas are generally described and will include areas that have achieved top of waste grades and are of practical size to facilitate closure.
3. Construction activities and dates are approximate and subject to change.