

11.2.6 Routine Maintenance

A schedule for the routine semi-annual flushing and inspection of the leachate collection and removal system has been established to maintain the operational efficiency of the system. Portions of the older leachate collection system at the landfill do not have a means of access and are not maintained in accordance with this program. The leachate collection and transfer pipes are cleaned a minimum of twice annually. The cleaning will consist of inserting a power washer hose into the pipe with sufficient pressure and volume to remove accumulated sediment and biological growth. Written documentation of the cleaning shall be submitted to the NYSDEC RSME within 30 days of completion of the cleaning. The on-site monitor must be given a minimum of 5 days notice prior to the cleaning.

Routine video inspection will not be required by the NYSDEC, however in the event that a video inspection is deemed necessary, the accessible portions of all the leachate collection and transfer lines will be videoed as requested by the NYSDEC. The requested video inspections shall be recorded and maintained on file at the landfill. A written summary of the inspection shall be submitted to the NYSDEC RSME within 30 days following completion of the video inspection. The on-site monitor must be given a minimum of 5 days notice prior to the performing the video inspection.

Annually, the existing leachate storage tanks, sumps and condensate knockout tank will be emptied for cleaning and maintenance. Notification is to be provided to the NYSDEC on-site monitor a minimum of 5 days before the planned cleaning activities. The cleaning will consist of inserting a power washer hose (utilized for cleaning leachate lines) down the riser and into the leachate tanks or sump. The washer head (when in operation) will be manually moved around in the risers to agitate sediment buildup on the bottom of the tanks or sumps. This operation will be performed for approximately fifteen (15) minutes. Following agitation, the liquid and solids will be pumped or vacuumed into leachate transfer vehicles for transport to a permitted treatment plant. This cycle of washing and vacuuming will continue until all of the sediments have been removed. Written documentation of the tank cleanings shall be submitted to the NYSDEC RSME within 30 days of the completion of the cleanings.

Additionally the leachate loadout pads will be maintained on an annual basis by performing the following. The pad and sumps will be pressure washed and vacuumed, the drain pipes will also be pressure washed to ensure no blockages and the concrete portions of the pad and sump will be sealed to prevent corrosion of the concrete surfaces.

Included in Appendix B3j are typical routine maintenance forms for pipe cleaning and videoing, tank and sump cleaning and loadout pad cleaning.

11.3 Proposed Leachate Collection, Transmission and Storage System

11.3.1 Introduction

The proposed expansion to the Chaffee Landfill leachate collection, transmission and storage system is designed to collect and store leachate generated from the landfill in a manner that limits impacts to public health and the environment. Due to the fact that the operation of the landfill includes limiting the size of the working face, smaller amounts of precipitation are introduced into the waste mass, which limits the generation of leachate. Limiting leachate generation is also a result of applying daily, intermediate and interim cover as required by the regulations and the installation of a NYSDEC approved final cover system at closure.

The proposed leachate collection and storage system will include the construction of several components to collect, transmit and store leachate. Each cell will consist of both a primary and secondary leachate collection system. The transmission system will transmit leachate from each of the primary and secondary leachate collection systems through dual contained piping to the leachate storage tanks. The leachate storage system will consist of a two primary storage tanks placed within a secondary containment tank, also included will be a control vault and leachate loadout building.

As part of the proposed landfill expansion, leachate collection and transmission for existing LST 3/4 and LCS 5 will be modified to allow for continued use. LST 3/4 will be removed and replaced with a dual contained manhole to allow for collection and pumping into the proposed transmission system. LCS 5 will be refitted with a new pump and controls and will also be connected into the proposed transmission system. The procedures described in section 11.2 will be followed until the tanks have been modified to operate as discussed in this section.

The following sections of this Operations and Maintenance manual will discuss the proposed system as follows:

- Leachate Collection,
- Leachate Transmission,
- Leachate Storage,
- Modifications to LST 3/4 and LCS 5, and

- Routine Maintenance.

Leachate is transported off-site by tanker trucks to a permitted wastewater treatment facility. Currently, the landfill maintains agreements with the City of Niagara Falls Wastewater Treatment Facility and the Buffalo Sewer Authority. The landfill will maintain agreements with at least two (2) treatment facilities. Copies of current Discharge Permits are included in Appendix D.

Hauling of leachate is primarily provided by Chaffee Landfill. A contract with a secondary leachate hauler, Tonawanda Tank Transport Service Inc. is maintained by the facility. A copy of the contract is included in Appendix E.

In the event of a power failure, a diesel powered backup generator will be located adjacent to the leachate loadout building. This generator will be installed to automatically start upon a loss of power, it will be sized to handle operating the entire leachate collection system including temporary lights at the tank area, in the control vault and leachate loadout building. If a power failure occurs, an autodialer will be installed as part of the leachate system to transmit a power failure message to a list of site personnel. The receipt of this message will allow site personnel to know that the generator has started and that it must be maintained during its operation.

11.3.2 Leachate Collection System

The proposed expansion to the Chaffee Landfill will include construction of its own leachate collection system as shown on Figure 17. As discussed previously, a primary leachate collection system and secondary leachate collection system will be constructed within each cell. Each of these systems will allow liquid to flow by gravity to a sump in the landfill, and then pumped out of the landfill and into the transmission and storage systems.

The primary leachate collection pumps will consist of an EPG wheeled sump drainer, model WSD12-2 and be installed into an 18-inch HDPE sideslope riser. Associated flow meters and valves will also be installed within each of the sideslope risers. The riser pipe will allow for the pumps to be removed for repair and replacement if necessary. The primary pumps are sized to remove 65 gpm at 36 feet of total head.

The secondary leachate collection pumps will consist of an EPG wheeled sump drainer, model WSD2-2 and be installed into a 12-inch HDPE sideslope riser. Associated flow meters and valves will also be installed within each of the sideslope risers. The riser pipe will allow for the

pumps to be removed for repair and replacement if necessary. The secondary pumps are sized to remove 12 gpm at 26 feet of total head.

Leachate Sump Pumping System Control/Operation

Both the primary and secondary leachate collection pumps will be configured with four level probes (from bottom of sump up); reference probe, pump off probe, pump on probe, and sump high level probe, which are described below;

- Pump-Off: initiated by a low-level conductance probe interlocked to the pump starter to shut down the pump upon reaching a minimum liquid level in the sump. This is activated when either of the sumps has a liquid level of 12-inches.
- Pump-On: initiated by a high-level conductance probe located in the leachate sump and interlocked to the pump starter in the pump control panel. This is activated when the either of the sumps has a liquid level of 24-inches. The exception is that the overliner secondary sumps will be activated at a liquid level of 15-inches.
- High Level Alarm Condition: Initiated by a high-high point level conductance probe interlocked to an audio and visual alarm located in the pump control panel. Depressing the Acknowledge/Silence push button will silence alarm. The visual alarm light will remain energized until the alarm condition has cleared. This alarm is activated when either of the liquid levels in the sumps reaches a level of 30-inches and will deactivate when the liquid level in the sump drops to a level of 29-inches. The exception is that the overliner secondary pumps will be activated when the liquid level is 18-inches and will deactivate when the liquid level in the sump drops to a level of 17-inches.
- Interlock feature to shut down sump pump based on high liquid level condition in the leachate storage tank (i.e., alarm signal relayed from Tank Control Panel).

As stated above a control interlock between the primary storage tanks and all of the primary and secondary leachate sumps will be installed to automatically shut off the sump pumps and / or will not start if a high liquid level condition exists at storage tanks.

An Autodialer will also be installed as part of the storage tank controls and will be formatted to send an alarm in the event that a high liquid level alarm condition in the sump occurs. The specifics of the Autodialer are discussed in the leachate storage tank operation section.

The leachate sump pumps are operated in the following manner;

- For panel and pump to operate, electric disconnect switch mounted behind the control panel and the circuit breaker in the leachate loadout building must be in the "On" position. Note; both disconnect switch and circuit breaker should normally be in the "On" position.
- Sump normally operates with Hand-Off-Auto Switch (H-0-A) switch in "Auto" position. In the "Auto" position, pump will turn on automatically when the leachate level in the sump reaches the "pump on" level probe, and turns off automatically when the leachate level in the sump reaches the "pump off" level probe.
- Typically the sump would only operate with the Hand-Off-Auto Switch (H-0-A) switch in the "Hand" position if there were problems with the sump level probes.
- Alarm horn can be shut off by pressing the "Alarm Silence" button. This does not eliminate the alarm condition.

Leachate Sump Pumping System Inspection

Inspection of the leachate collection sumps consists of daily and monthly activities and are listed in Appendix B3c and B3e. Once a day, the flow meters for each of the primary and secondary sumps will be read and the amount of leachate generated by each system will be recorded on the form in Appendix B3c. Each month, the high level alarm and flow meters for every sump will be checked to ensure proper functioning (form in Appendix B3e).

11.3.3 Leachate Transmission System

The proposed transmission system will be constructed as a dual contained HDPE pipe system, which flows by gravity to the control vault located adjacent to the storage tank and as shown on Engineering Drawings 23 and 24. From the control vault, the leachate can be directed to either of the storage tanks or directly to the loadout pad, the following discusses the operation of the control vault and transmission system. At several locations along the transmission line, both cleanouts and secondary containment monitoring points will be installed to allow for routine inspection and maintenance.

Leachate Transmission System Control/Operation

Control of the leachate transmission system is provided at either the sump pumps or control vault. In the event that the transmission system needs to be repaired or maintained, the following procedure will be followed;

- Each sump pump will be manually turned off;
- The valve in the control vault will be closed to isolate the transmission piping;
- Leachate remaining in the system will be pumped out at an elevation above the highest liquid level in the pipe; and
- The required maintenance (i.e., pipe cleaning) or repair will be completed.

In the event that the leachate transmission pipe needs to be replaced and will remain out of service for more than 24-hours or cause leachate on the primary liner to exceed the 1-foot of head, a temporary leachate transmission system will be installed.

Leachate Transmission System Inspection

Inspection of the leachate transmission system consists of weekly activities that are listed in Appendix B3d. The weekly inspection involves monitoring of the secondary containment ports for any signs of leakage (form in Appendix B3d).

11.3.4 Leachate Storage Tank System

The storage tanks are proposed as two 56-foot diameter by 23-feet high (405,366 gallons each) steel glass lined tanks located within a 154-foot diameter by 7-foot high (975,410 gallons) steel glass lined tank. The outer tank system provides the required secondary containment for both primary tanks in the event a failure occurs.

As stated above, the transmission lines are routed through a control vault located within the secondary containment tank, this vault contains all of the valves required to control leachate flow into or out of the tanks. The vault also contains the transfer pump and motor for the loadout pad and a sump pump to control small spills that occur on the loadout pad or within the secondary containment tank. The transfer pump has been designed as a Cornell 4NNTL 1800 rpm pump

with 8.25-inch 10 degree impeller and 7.5 hp motor. This pump has been designed to remove 290 gpm at 58 feet of total head. The pump controls will be located at the loadout pad, to allow the operator filling the tank trucks to turn off the pump in the event an emergency occurs.

As discussed in Section 6.0, landfill cells will be opened in 3.5-acre areas. The leachate levels in the proposed above ground storage tanks will be maintained at approximately 20 percent of the total volume to contain the 25-year, 24-hour storm during the opening of each 3.5-acre area. When the tank volume reaches 20 percent of the total volume, additional tank trucks will be used until the tank volume returns to 20 percent. During normal operation, where all operating cells are sufficiently covered with waste, additional tank trucks will be used when either of the tanks exceed their designated high level. The additional trucks will be used until the volume can be consistently maintained below the tanks high level. As was shown in Appendix C of the Engineering Report (Part IV of this submittal), the on site tank trucks (one 6000 gallon and one 7000 gallon) can transport approximately 261,000 gallons per week (approximately 20 loads per truck) and if required, the site has discharge permits for 396,000 gallons per week, which would require the use of additional tank trucks.

The secondary containment tank will be constructed with a sloped concrete floor to allow for liquid to flow to the center of the tank, where a sump is located. During normal operations, the piping leading from this sump to the vault sump pump will remain closed, and any collected stormwater will be discharged into the perimeter swale around the tank via a 2" portable construction pump located on the roof of the control vault. The storm water will be removed daily and after all rain events (see form in Appendix B31). As noted on the form, a visual confirmation of the water indicating that it is not contaminated with leachate must be made each time prior to discharging the stormwater. In the case of a small spill or over flow that occurs within the secondary tank, the sump piping will be allowed to discharge the liquid to the vault sump pump, which will then pump the liquid back into the tanks. If either of the primary tanks begins to have severe leakage or a failure occurs, the leachate will be stored in the secondary containment system for subsequent removal. After removing any quantity of leachate from within the secondary containment tank, the entire floor and sump shall be washed and rinsed prior to collecting and discharging the subsequent storm event.

Leachate Tank System Controls

The leachate tanks are configured with five different indicators that either indicate tank or pump operational problems. The following alarms are indicated at the tank and pump control panels located within the leachate loadout building;

- Tank High Level (“High Level” light on control panel), which is initiated when either of the tanks reaches seventy-five percent of its volume.
- Liquid detected in the secondary containment tank (“Leachate Detected” light on the control panel), which is initiated when the secondary containment tanks has over 12-inches of liquid in it.
- Liquid accumulating in control vault which could indicate a leak in one of the pipes going to the tank (“Control Vault Leak” light on the control panel), which is initiated when the sump in the control vault has approximately 18-inches of liquid in it.
- Pump seal is leaking (“Seal Fail” light on the control panel).
- Pump over temperature (“Overtemp” light on the control panel).

The transfer pump will be equipped with a control and status device referred to as “CAS”. The “CAS” is a device that monitors the pump operating temperature for a high temperature condition (“Overtemp” and monitors moisture within the pump casing to determine if the pump seal is leaking (“Seal Fail”). The transfer pumps will automatically shut off in the event an over temperature condition is detected. Once the temperature has decreased, the pump can be restarted after depressing the “CAS Reset” button.

As stated above a control interlock between the primary storage tanks and all of the primary and secondary leachate sumps will be installed to automatically shut off the sump pumps and / or will not start if a high level condition exists at storage tanks.

The storage tank system is also equipped with an autodialer that is programmed to call a list of employee phone numbers in the event a problem is detected with the liquid level inside the storage tanks, secondary containment system, control vault sump, or any of the primary and secondary leachate collection sumps. The following alarm conditions will be transmitted via the autodialer.

- “Alert Condition 1” = Leachate Collection Sump High Level, autodialer will transmit which cell and whether it is the primary or secondary system.

- “Alert Condition 2” = Liquid Detected in the secondary containment tank of the leachate storage system
- “Alert Condition 3” = Leachate Tank High Level
- “Alert Condition 4” = Liquid Detected in Control Vault Sump
- Power Failure

Leachate Tank Pump Operation

The leachate tanks are operated in the following order during routine tanker truck filling;

- For panel and pump to operate, electric disconnect switch mounted behind the control panel and the circuit breaker in the leachate loadout building must be in the “On” position. Note: both disconnect switch and circuit breaker should normally be in the “On” position.
- Pull tanker truck under the loadout arm.
- Open tank truck lid.
- Verify that the control panel “Main Circuit Breaker” switch is in the “On” position.
- Be sure that the inlet and outlet valves for the transfer pump are in the open position.
- Ensure that the tank valves are open or in the correct position to enable the required pumping.
- Record initial leachate level, date and time on form in Appendix B3i.
- Open valve at loadout pad discharge.
- Turn Transfer Pump “On-Off” switch to the “On” position.
- When tank truck is full, turn Transfer Pump “On-Off” switch to the “Off” position. Note: If the pump shuts off automatically due to low level in the tank, turn Transfer Pump “On-Off” switch to the “Off” position and proceed with the steps below. Failure to turn the pump “On-Off” switch to the “Off” position could result in accidental discharge of

leachate since the pump would automatically turn back on when the low tank level condition was eliminated.

- Allow loadout arm to drain.
- Close tank truck lid.
- Close valve at loadout pad discharge.
- Record final leachate level after pumping on form in Appendix B3i.

Leachate Tank Inspections

Inspection of the leachate storage tanks consists of daily, weekly, monthly and annual activities, which are listed in Appendix B3c through B3e and B3g. Daily inspection of the tanks involves checking and recording the current leachate level (form in Appendix B3c) and removing stormwater from within the secondary containment tank. The leachate level within each of the tanks will be based upon a digital readout. The weekly inspection involves monitoring of the dual contained inlet and outlet piping in the control vault for any signs of leakage, monitoring of each of the primary tanks for any signs of leakage and verifying the digital tank level with an actual tank measurement (form in Appendix B3d). Each month, the autodialer, high level, secondary containment and control vault alarms will be checked to ensure proper functioning (form in Appendix B3e). On an annual basis, each of the valves and pipes located within the control vault will be inspected and all of the sensors and alarms will be checked. The control vault concrete will be assessed for cracks and deterioration, the sump will be assessed for cracks and deterioration, the sump pump will be checked and the drain pipes will be assessed for any clogging (form in Appendix B3g).

Leachate Loadout Pad Inspection

Prior to every use, the loadout pad drain valve will be checked to ensure that it is in the closed position, the pad has been designed to contain an entire tanker truck spill. On an annual basis, the leachate loadout pad will be checked to ensure proper functioning, including piping and valves. The concrete will be assessed for cracks and deterioration, the sump will be checked for operational grate, cracks and deterioration and the drain pipe will be checked for any clogging (form in Appendix B3g).

Secondary Tank Floor Inspection

On an annual basis, the secondary containment tank floor will be checked to ensure proper functioning. The concrete will be assessed for cracks and deterioration, the sump will be checked for operational grate, cracks and deterioration and the drain pipe will be checked for any clogging (form in Appendix B3g).

Leachate Tank System Alarm Procedures

In the event that an alarm has been activated, the facility operations manager will initiate a log stating the date, time, which alarm has been activated and the subsequent repair to deactivate the alarm (form in Appendix B3h). In the following section, each alarm that has been provided in any portion of the leachate system will be listed.

1. High Level Sump Alarm (light/horn at any of the primary or secondary sump pump control panels in conjunction with “Alert Condition 1” sent via the Autodialer, which will transmit which cell and whether it is the primary, secondary or groundwater system).
2. Liquid Detected in the Secondary Containment Tank (light on control panel in conjunction with “Alert Condition 2” sent via the Autodialer).
3. High Level Tank Alarm (light on control panel in conjunction with “Alert Condition 3” sent via the Autodialer).
4. Liquid Detected in the Control Vault Sump (light on control panel in conjunction with “Alert Condition 4” sent via the Autodialer).
5. Pump seal is leaking (“Seal Fail” light on the control panel).
6. Pump over temperature (“Overtemp” light on the control panel).

The alarms that are sent via the Autodialer will phone each number programmed, waiting for an acknowledgement. The landfill personnel that acknowledges the alarm will immediately go to the source of the alarm to being trouble shooting the problem and determining what repairs are required.

11.3.5 Modifications to LST 3/4 and LCS 5

Leachate Storage Tank 3/4 (LST3/4)

During construction of Cell 3 of the proposed Western Landfill Expansion, the existing LST 3/4 will be removed and replaced with a dual contained 5-foot diameter HDPE manhole as shown on sheet 26 of the Engineering Drawings. The installation of this manhole will require that the existing dual contained leachate transmission lines J and K be extended to the proposed manhole. This manhole will allow for the leachate to be pumped into the proposed transmission line and storage system, eliminating the need for a tank and loadout pad at this location. The required pump has been designed as an EPG vertical sump drainer, model VSD3-2 capable of pumping 16 gpm at 38 feet of total head.

Manhole Pumping System Control/Operation

The pump located within the manhole will be configured with four level probes (from bottom of manhole up); reference probe, pump off probe, pump on probe, and high level probe, which are described below;

- Pump-Off: initiated by a low-level conductance probe interlocked to the pump starter to shut down the pump upon reaching a minimum liquid level in the manhole. This is activated when the manhole has a liquid level of 18-inches.
- Pump-On: initiated by a high-level conductance probe located in the manhole and interlocked to the pump starter in the pump control panel. This is activated when the manhole has a liquid level of 84-inches.
- High Level Alarm Condition: Initiated by a high-high point level conductance probe interlocked to an audio and visual alarm located in the pump control panel. Depressing the Acknowledge/Silence push button will silence alarm. The visual alarm light will remain energized until the alarm condition has cleared. The alarm is activated when the manhole reaches a liquid level of 96-inches and deactivate when the liquid level drops to a level of 95-inches.
- Interlock feature to shut down pump based on high liquid level condition in the leachate storage tank (i.e., alarm signal relayed from Tank Control Panel).

As stated above a control interlock between the primary storage tanks and the pump will be installed to automatically shut off the pump and / or will not start if a high liquid level condition exists at the storage tanks.

An Autodialer will also be installed as part of the storage tank controls and will be formatted to send an alarm in the event that a high liquid level alarm condition in the manhole occurs. The specifics of the Autodialer are discussed in the leachate storage tank operation section.

The manhole pump is operated in the following manner;

- For panel and pump to operate, electric disconnect switch mounted behind the control panel and the circuit breaker in the leachate loadout building must be in the "On" position. Note; both disconnect switch and circuit breaker should normally be in the "On" position.
- Pump normally operates with Hand-Off-Auto Switch (H-0-A) switch in "Auto" position. In the "Auto" position, pump will turn on automatically when the leachate level in the manhole reaches the "pump on" level probe, and turns off automatically when the leachate level in the manhole reaches the "pump off" level probe.
- Typically the manhole would only operate with the Hand-Off-Auto Switch (H-0-A) switch in the "Hand" position if there were problems with the manhole level probes, for example.
- Alarm horn can be shut off by pressing the "Alarm Silence" button. This does not eliminate the alarm condition.

Manhole Pumping System Inspection

Inspection of the replacement manhole consists of weekly, monthly and semi-annual activities, which are listed in Appendix B3d through B3f. Each week the manhole's interstitial space sensor and the dual contained inlet piping for leachate lines J and K will be monitored for any signs of leakage (form in Appendix B3d). Each month, the high level alarm and flow meter will be checked to ensure proper functioning (form in Appendix B3e). The semi annual inspection will involve testing and monitoring the interstitial space by checking the functionality of the leak detection sensor (form in Appendix B3f). The leak detection sensor will be checked by

removing it from the tank and subjecting it to water, an alarm will be produced from this action if the sensor is in good working condition.

Leachate Collection Sump 5 (LCS 5)

During construction of cell 3 and prior to removal of existing LST 3/4, LCS 5 will be retrofitted with a new sump pump and transmission line to allow for the leachate to be pumped into the proposed transmission line and storage system as shown on sheet 16 of the Engineering Drawings. The required pump has been designed as an EPG vertical sump drainer, model VSD3-7 capable of pumping 20 gpm at 102 feet of total head. Leachate will be transferred from LCS 5 via a 6³/₄" dual contained transmission line into the proposed dual contained transmission line.

Leachate Sump Pumping System Control/Operation

The leachate sump pump will be configured with four level probes (from bottom of sump up); reference probe, pump off probe, pump on probe, and sump high-level probe, which are described below;

- Pump-Off: initiated by a low-level conductance probe interlocked to the pump starter to shut down the pump upon reaching a minimum level in the sump. This is activated when the sump has a liquid level of 18-inches.
- Pump-On: initiated by a high-level conductance probe located in the leachate sump and interlocked to the pump starter in the pump control panel. This is activated when the sump has a liquid level of 27-inches.
- High Level Alarm Condition; Initiated by a high-high point level conductance probe interlocked to an audio and visual alarm located in the pump control panel. Depressing the Acknowledge/Silence push button will silence alarm. The visual alarm light will remain energized until the alarm condition has cleared. The alarm is activated when the sump has a liquid level of 39-inches and will deactivate when the sump drops to a liquid level of 38-inches.
- Interlock feature to shut down pump based on high liquid level condition in the leachate storage tank (i.e., alarm signal relayed from Tank Control Panel).

As stated above a control interlock between the primary storage tanks and the pump will be installed to automatically shut off the pump and / or will not start if a high liquid level condition exists at the storage tanks.

An Autodialer will also be installed as part of the storage tank controls and will be formatted to send an alarm in the event that a high liquid level alarm condition in the sump occurs. The specifics of the Autodialer are discussed in the leachate storage tank operation section.

The sump pump is operated in the following manner;

- For panel and pump to operate, electric disconnect switch mounted behind the control panel and the circuit breaker in the leachate loadout building must be in the "On" position. Note; both disconnect switch and circuit breaker should normally be in the "On" position.
- Pump normally operates with Hand-Off-Auto Switch (H-0-A) switch in "Auto" position. In the "Auto" position, pump will turn on automatically when the leachate level in the manhole reaches the "pump on" level probe, and turns off automatically when the leachate level in the manhole reaches the "pump off" level probe.
- Typically the sump would only operate with the Hand-Off-Auto Switch (H-0-A) switch in the "Hand" position if there were problems with the manhole level probes, for example.
- Alarm horn can be shut off by pressing the "Alarm Silence" button. This does not eliminate the alarm condition.

Leachate Pumping System Inspection

Inspection of the leachate collection sump consists of weekly and monthly activities, which are listed in Appendix B3d and B3e. The weekly inspection involves monitoring of the dual contained outlet piping for any signs of leakage (form in Appendix B3d). Each month, the high level alarm and flow meter will be checked to ensure proper functioning (form in Appendix B3e).

11.3.6 Routine Maintenance

A schedule for the routine semi-annual flushing and inspection of the leachate collection and removal system will be established to maintain the operational efficiency of the proposed system. The leachate collection and transfer pipes will be cleaned a minimum of twice annually. The cleaning will consist of inserting a power washer hose into the pipe with sufficient pressure and volume to remove accumulated sediment and biological growth. Written documentation of the cleaning shall be submitted to the NYSDEC RSME within 30 days of completion of the cleaning. The on-site monitor must be given a minimum of 5 days notice prior to the cleaning.

In addition to the cleaning, routine video inspections of all the leachate collection and transfer lines is required by the NYSDEC, to be performed on a bi-annual basis. The video inspections shall be recorded and maintained on file at the landfill. A written summary of the inspection shall be submitted to the NYSDEC RSME within 30 days following completion of the video inspection. The on-site monitor must be given a minimum of 5 days notice prior to the performing the video inspection.

Annually, the proposed primary leachate collection sumps, leachate storage tanks and manhole will be emptied for cleaning and maintenance. Notification is to be provided to the NYSDEC on-site monitor a minimum of 5 days before the planned cleaning activities. The cleaning will consist of power washing and the interior of both primary tanks and removing any solids that have collected at the bottoms of the tanks. The proposed manhole replacing LST 3/4 will be cleaned by inserting a power washer hose (utilized for cleaning leachate lines) down the riser to the floor of the manhole. The washer head (when in operation) will be manually moved around in the manhole to agitate sediment buildup on the bottom of the manhole. This operation will be performed for approximately fifteen minutes(15) minutes. Following agitation, the liquid and solids will be pumped or vacuumed into leachate transfer vehicles for transport to a permitted treatment plant. This cycle of washing and vacuuming will continue until all of the sediments have been removed. Written documentation of the tank cleanings shall be submitted to the NYSDEC RSME within 30 days of the completion of the cleanings.

Additionally the leachate loadout pad and sump, secondary containment floor and sump and control vault interior and sump will maintained on an annual basis by performing the following. The loadout pad, secondary containment floor, control vault and their respective sumps will be pressure washed and vacuumed, the drain pipes will also be pressure washed to ensure no blockages and the concrete portions of each will be sealed to minimize deterioration of the concrete surfaces.

Included in Appendix B3k are typical routine maintenance forms for pipe cleaning and videoing, tank and sump cleaning and loadout pad cleaning.

12. GAS MONITORING PROGRAM

Landfill Gas Control

Landfill gas is to be extracted from both the existing and proposed Chaffee Landfill by using the existing vertical and horizontal collection systems, the proposed vertical and horizontal collection systems and by the enclosed flare unit. The control of landfill gas is addressed in both the solid waste regulations, 6 NYCRR Part 360 as well as the federal air regulations, 40 CFR Part 60, Subpart WWW, and 40 CFR Part 63, Subpart AAAA. The Part 360 solid waste regulations control the migration of landfill gas off-site through subsoils. The federal regulations regulate the landfill emissions from the surface of the landfill as part of the New Source Performance Standards for MSW landfills.

The Part 360 regulations establish a limit for landfill concentrations not to exceed the lower explosive limit at the property boundary. The methane concentrations at the property boundary are measured through a series of landfill gas probes. The gas probes are similar to the groundwater monitoring well except the gas probe is typically installed across the seasonal low water table. The gas probes are monitored on a quarterly basis.

The 40 CFR Part 60, Subpart WWW NSPS requirements are addressed in the Gas Collection and Control System (GCCS) Plan (EarthTech, November, 2004).

Pursuant to 40 CFR Part 63, Subpart AAAA, MACT standards, WMNY has developed a Startup, Shutdown and Malfunction (SSM) Plan for the Chaffee Landfill EMCON, January, 2004) that describes in detail the procedures for operating and maintaining the landfill gas collection and control system and the continuous monitoring system (CMS) during periods of SSM.

Methane is highly explosive. In an effort to ensure that landfill gas will not create a hazard to health, safety or property, the Chaffee Landfill developed a gas monitoring program.

In accordance with 6 NYCRR Part 360-2.17(f), a monitoring program has been developed to monitor methane and other explosive gases generated by the facility. The concentration of these gases must not exceed;

1. Twenty-five percent of the lower explosive limit for gases in structures on or off-site, excluding gas control or recovery system components; and
2. The lower explosive limit for the gases at or beyond the property boundary.

A combustible gas meter is utilized on-site for the detection of landfill gases in the permanent gas probes at the landfill boundaries and all permanent onsite structures. The meter currently used is a GEM 2000 Combustible Gas Meter. The detection range of the meter is 0-100% LEL and is calibrated on a schedule recommended by the manufacturer. An instruction manual for the operation and maintenance of the GEM 2000 is included in Appendix J.

The proposed gas probes are discussed (i.e. location and construction) in the Environmental Monitoring Plan (Part IX of this submittal). Gas monitoring takes place quarterly at the landfill. More frequent monitoring may be required by the NYSDEC if landfill gas migration is detected.

If gas is detected above the levels stipulated above, Chaffee will immediately notify the NYSDEC and within seven (7) days of detection, will provide a description of the steps to be taken to protect human health. Within forty-five (45) days of detection, Chaffee will submit a plan to implement a remediation plan for the gas releases and schedule for the implementation of this plan within 60 days beyond the date of detection.

Copies of the gas monitoring forms can be found in Appendix B3b.

Landfill Surface Scans

The surface of the landfill is required to be monitored for methane concentrations along the entire perimeter of the collection area, after installation of the collection system. The surface scans are to be performed in accordance with the GCCS Plan.

13. ODOR ABATEMENT/MANAGEMENT PROGRAM

Odor Control

The majority of the waste accepted for disposal at the Chaffee Landfill is mixed municipal solid waste (MSW). Mixed MSW has organic waste component that has the potential of being odorous if the organic component begins to decompose (rot). Loads of MSW that have set in a transfer trailer over the weekend tend to be more odorous than loads that are less than a day old. Chaffee Landfill does occasionally accept stabilized wastewater treatment plant (WWTP) sludge. However, even with stabilization in accordance with the Criteria for Sludge Stabilization for Disposal in New York State, established September 24, 2003 by the NYSDEC (see Section 8.2) the WWTP sludge might have some odor.

The Chaffee Landfill has developed a standard operating policy concerning wastes that have not been previously accepted for management at the landfill that might be odorous. Under the standard operating procedure potentially odorous waste will be taken as a "test load" where a full or partial load of the waste will be brought to the Chaffee Landfill for management. The waste is examined during the "test load" period to determine what if any special procedures will be needed to manage the waste so as to minimize any impacts due to odors. After the "test run" a determination is made as to whether or not the waste is acceptable for management at the facility.

Any potential odorous waste that is accepted for management at the Chaffee Landfill falls under the "3 strike" policy. The "3 strike" policy requires that the generator of the waste be notified whenever a waste stream emanates odors strong enough to potentially result in an odor complaint, even after all odors controls have been implemented. Acceptance of the waste stream at landfill is terminated after the third notification. Odors generated by waste material will be controlled by the application of six inches of daily cover or alternate material.

The Chaffee Facility currently has a number of procedures that are implemented on a daily basis to control odors leaving the facility. The odor control program components consist of activities, which are performed as standard operating procedures, and others, which are implemented on an as needed basis. A summary of the program follows;

- The existing landfill is equipped with a vertical and horizontal gas extraction system, which operates continually during disposal operations to minimize fugitive landfill gas and odor emissions.

- The proposed landfill will be constructed with a vertical and horizontal gas extraction system.
- Waste is covered daily with synthetic materials, soil, or other approved alternate daily cover materials.
- Additional soil cover is placed over waste if odors are not suppressed with the use of typical daily cover techniques.
- Waste materials, such as sludge, which have the potential for being particularly odorous are not accepted past 2:30 p.m. in order to avoid these materials being too close to the surface at the end of the operating day.

The landfill will apply odor control media to waste materials as needed. The odor control media, such as EcoCare Odor Control Solutions or equivalent, will be applied in accordance with the manufacturer's recommendations for odor control. At least one drum of this material will be available at the Chaffee Landfill. A copy of the odor control media product data sheet is on file with the Operations Manager.

Following application, traffic will be minimized over the area of application to limit disruption and the subsequent potential release of odors. If necessary, additional odor control media will be applied to areas that have been disturbed by construction activities.

Report/Complaint Management

An odor complaint program has been established for the Chaffee Facility and includes the following components:

- a. Chaffee Landfill will maintain a 24-hour per day local telephone number for the receipt of landfill odor complaints from residents of the Town of Sardinia. The telephone number has been activated and is (716) 496-5000 x 271.
- b. Chaffee Landfill will notify community and government centers of the availability of the telephone number.

- c. Chaffee Landfill will log all incoming telephone calls and record the identity of the caller, including name, address and phone number and the following information if it is available from the caller; the location, nature and duration of the odor. Chaffee Landfill will record the date and time of the complaint and the meteorological conditions (including, but not limited to, wind direction and temperature).
- d. Upon receipt of the complaint, Chaffee Landfill will investigate the complaint in order to determine the source of the odor. This investigation will be performed within 24 hours of the start of the following operating day from the incoming complaint call. In making the assessment, Chaffee Landfill will consider the nature of the waste being disposed of at the landfill; landfill gas and leachate collection and transfer activities; the daily, intermediate and final cover material being used, and any other activities which may be contributing to potential off-site landfill odors.
- e. If Chaffee Landfill determines the source of the odor, it will take corrective action to mitigate the odor problem. Mitigation may include decreasing the size of the working face of the landfill; increasing the use of flares and landfill gas treatment facilities; modification of leachate collection activities; evaluation and modification, if necessary, of daily and intermediate cover materials; restriction or elimination of waste streams or operational changes associated therewith and other measures which Chaffee Landfill determines will reduce off-site impacts.
- f. The NYSDEC may require the Chaffee Landfill to modify, upgrade or expand gas collection capabilities within the landfill if of-site landfill gas odors are determined to be an offsite nuisance by the NYSDEC.
- g. Chaffee Landfill will provide a report to the NYSDEC of the complaints/reports received, information recorded from the complaint/report and the action taken or proposed. These reports will be submitted as part of the quarterly report submitted to the NYSDEC. The results of odor investigations will also be forwarded to the complainant.

14. WINTER AND INCLEMENT WEATHER OPERATION

Various inclement weather conditions may affect the operation of the landfill. Some of these possible climatic conditions and associated measures that can be taken are described below.

14.1 Freezing Conditions

The landfill has not experienced any problems in obtaining soil cover material due to freezing conditions. Working a wide area and staying ahead of the frost has enabled Equipment Operators to obtain soil cover material year round. Soil cover material for winter months is usually stockpiled. As a precautionary measure, stockpiling of soil cover is accomplished before the onset of the winter months. When "alternative daily cover" is used, soil cover material requirements are greatly reduced.

If icy or freezing conditions create potentially dangerous operating conditions, the Operations Manager will determine if it is necessary to either temporarily stop operations, or modify operations.

14.2 Snowfall

If snowfall occurs overnight, an Equipment Operator is assigned to arrive at the site early and is responsible for snow removal. Snow removal activities will start immediately upon arrival. The available on-site equipment is adequate to remove accumulated snow from access roads and operational areas.

In the event of extremely heavy snow, the Operations Manager will decide if it is necessary to modify or temporarily suspend operations until snow removal on access roads and the disposal areas permit continued operation.

It may be determined that it is necessary to make the following modifications to operations; limiting the size of the working face; moving the working face to a protected area; cessation of non-essential earthwork, etc. If snowfall should become more severe, it may be determined that operations should be temporarily suspended. It is expected that if a snowstorm occurred that was severe enough to suspend operations at the landfill, solid waste collection activities throughout the area would also be temporarily ceased until an improvement in the weather conditions enabled reinstatement of services.

Following cessation of the storm, landfill equipment would be utilized to remove accumulated snow from access roads and operational areas, and snow banks would be arranged in a manner to promote adequate drainage when melting occurs.

14.3 Heavy Rains

Control of surface water drainage by drainage swales, diversion swales, downchutes and sediment ponds, along with the use of gravel for operational haul roads, provides continued access to the site during these weather conditions.

In the case of heavy rains, the Operations Manager may determine that it is necessary to either modify operations or temporarily suspend operations until improved weather conditions allow re-establishment of operations. In the event of heavy rain, modifications to operating procedures may include; minimizing the size of the work face, modification of truck access to the working face, and cessation of non-essential earthwork.

During a heavy rainfall event, landfill personnel will regularly check culverts, and sedimentation basins for debris, which may be blocking water flow. Following a ½" rainfall event as recorded by the on-site gauge, the Operations Manager will inspect the drainage structures, daily, intermediate, interim and final cover areas for erosion. If problems are detected with any of these, a prompt repair will be made to eliminate future problems.

14.4 Electrical Storms

If necessary, landfilling activities will be suspended for the duration of the storm for the safety of field personnel. Refuge should be taken in any landfill building, or in rubber-tired vehicles.

14.5 Windy Conditions

Litter will be contained as close to the working area as possible. Portable fencing is currently used to control papers at the working area and is located downwind. Woven or chain-linked wire and netting are all appropriate for the purpose. Fencing is placed strategically downwind and is moved as necessary. In addition, steps will be taken to clear fences of litter before they become inundated, thus increasing their effectiveness.

Restriction of the active working area to as small an area as possible will assist in the control of litter. Small amounts of cover material can be spread on the solid waste during the on-going operation when wind presents a problem.

Picking of windblown paper and litter from trees, fences, fields, etc., is a routine part of site operations. Additional personnel are called in to manually pick up blowing litter as needed.

The Operations Manager will suspend operations when windblown litter is leaving landfill property, or when winds exceed sixty (60) miles per hour.

15. CONVENIENCE STATION OPERATION

Presently the landfill provides disposal services for municipal solid waste, trash, and recyclables to the Town of Sardinia residents on the last Saturday of each month. Additionally, individuals may dispose of municipal solid waste, trash, and recyclables for a fee, during regular business hours, Monday through Friday at the convenience station located just north of the scale house. At no time are small or private vehicles allowed on the permitted landfill.

The on-site convenience station/drop off area utilized by customers shall be maintained in a clean and litter free condition. As full containers are removed, all spilled debris shall be cleaned up. The area shall be cleaned up at the end of each day. Recycled materials, including appliances, shall be removed periodically. No excessive accumulation will be permitted.

The scale operator is responsible for identifying any unacceptable waste attempted to be brought into the convenience station.

16. ROLL-OFF STORAGE AREA

The roll-off storage area is located north west of the scale house and is indicated on Figure 1. The area consists of a compacted gravel area approximately 60,000 sf in size. This area allows Waste Management owned haulers to deposit their containers at the landfill before, after and during operational hours, so as the Operations manager can efficiently control waste disposal at the working face.

In compliance with 6 NYCRR Part 360 1.7(b)(7), the landfill will operate the roll-off storage area in the following manner for shipments of nonputrescible industrial and commercial waste. A log stating the date and time that the container was delivered to the area followed by the date

and time when the container was taken to the working face to be emptied. The time between delivery and emptying will not exceed five days. The containers will be covered with waterproof tarps and will not be opened during the storage period for any purpose. The containers used for storage will meet the design requirements specified by the USDOT for each type of waste stored. Containers will be stored in a manner which will prevent possible damage or rupture to the storage containers. During the storage period, the Hauling Company Operations Manager will inspect the containers and storage area weekly to insure the area is free of nuisances (i.e. dust, odor, noise and leaks). If spills or leaks are detected, the landfill must immediately notify the NYSDEC and follow the spill procedures as stated in the Facilities Contingency Plan (Part VI of this submittal).

The landfill may temporarily store shipments of putrescible waste in the roll-off storage area. This storage will only be allowed under circumstances when the immediate disposal of the waste could result in significant nuisances or environmental concerns. These include delaying the disposal of a load containing waste susceptible to littering during periods of high wind, delaying the disposal of frozen loads to prevent excessive traffic hold-ups, storing a minimum number of loads that could not be disposed due to the landfill closing down (usually due to weather), etc. This waste shall not be stored for longer than 24-hours, and will be managed in the following manner. A log stating the date and time that the container was delivered to the area followed by the date and time when the container was taken to the working face to be emptied. The containers will be covered with waterproof tarps and will not be opened during the storage period for any purpose. Containers will be stored in a manner which will prevent possible damage or rupture to the storage containers. During the storage period, the Hauling Company Operations Manager will inspect the containers and storage area daily to insure the area is free of nuisances (i.e. dust, odor, noise and leaks). If spills or leaks are detected, the landfill must immediately notify the NYSDEC and follow the spill procedures as stated in the Facilities Contingency Plan (Part VI of this submittal).

17. FIRE PREVENTION PLAN

In order to prevent the occurrence of a fire at the Chaffee Landfill, personnel will be trained to maintain safe operating practices. Smoking and open flames will be restricted to designated areas away from the active landfill face.

A hot-load extinguishing area shall be designated at the landfill by the Operations Manager. The area shall be adjacent to the facility's working face, between the working face and the center of the landfill to mitigate any potential contamination from a hot-load. The scale operator and

equipment operators shall be notified of the area. If the scale operator or equipment operator determines a load to be hot, the scale or equipment operators shall direct the hauler to the area and the Operations Manager will be notified. Landfill personnel will proceed to the area (under direction from Operations Manager) with fire extinguishing equipment (e.g. soil, chemical extinguishers, water, or a combination). The hauler will be directed to dump the load and any potential fires will be extinguished. Landfill personnel will reload the waste and direct the hauler to the working face of the landfill for waste disposal. The fire extinguishing event shall be recorded in the landfill records.

The facility also maintains a supply of fire extinguishers and water trucks that may be used in the event of an emergency incident. These extinguishers are located at the scale house and the maintenance facility for easy accessibility. Fire extinguishers are also located on the landfill vehicles and equipment for use in cases of field emergencies. Extinguishers are maintained in conformance with State and local fire codes and regulations. There is no open burning allowed at the Chaffee Landfill.

Fire response procedures are discussed in the monthly training/safety meetings conducted at the landfill.

Emergency telephone numbers are listed in the Contingency Plan submitted separately. These numbers are conspicuously posted at each generally available telephone at the landfill facility.

18. FACILITY INSPECTIONS

As stated throughout the above sections, landfill personnel will be required to perform several inspections at varying time intervals to ensure that the landfill systems are properly maintained and functioning. The majority of these inspections and maintenance schedules are discussed as part of the groundwater suppression system, leachate collection, transmission and storage systems and waste tracking systems. In addition to the inspections discussed elsewhere in this document, the facility will perform weekly inspections.

These weekly inspections will consist of the following items;

- Inspect all landfill covers, including daily, intermediate, interim final and final,
- Inspect the active areas of the landfill facility for erosion damage, and

- Inspect the perimeter of the landfill facility for litter, odors, leachate seeps and ponding water.

Upon making these inspections, the Operations Manager will complete the form titled Facility Inspection located in Appendix B3a. The Operations Manager will note any issue by describing it on the figure provided. An updated figure will be developed for each phase of the development. Upon completing the inspection, required maintenance or operations modifications shall be made. These resolutions and the date that they were completed shall be indicated on the corresponding inspection form. These forms shall be maintained at the landfill and be made available for NYSDEC review.

19. RECORD KEEPING AND REPORTING

The landfill has established procedures to monitor the operation and maintenance of the landfill, including a program of self-inspection, record keeping, and reporting. Copies of example quarterly and annual reports are found in Appendix F.

19.1 Record Keeping

The landfill maintains records to evaluate the operation, maintenance, and monitoring of the landfill. The information is recorded and maintained in files at the main facility office, several of forms are located within Appendix B. These records and files are then used to prepare the quarterly and annual report submittals to the NYSDEC.

19.2 Reporting

The landfill submits four Quarterly Reports and an Annual Report to the NYSDEC using forms provided by the NYSDEC.

All quarterly and annual reports shall be submitted to the following;

NYSDEC
Division of Solid & Hazardous Materials
Bureau of Solid Waste & Land Management
625 Broadway
Albany, New York 12233-4013

NYSDEC
270 Michigan Avenue
Buffalo, New York 14203-2999
Attn; Regional Solid Materials
Engineer

19.2.1 Quarterly Reports

Each quarterly monitoring report will provide information on activities occurring during the quarter in question (January 1 to March 31, April 1 to June 30, July 1 to September 30, October 1 to December 31) and will be submitted no later than 60 days after the last day of the quarter in question. All quarterly reports will be submitted on the forms provided by the NYSDEC or electronically as specified by the NYSDEC and shall also contain the following;

1. Report on funding levels of closure and post-closure funds and evidence that proper financial assurance mechanisms are in place.
2. Amounts of leachate collected by each primary and secondary leachate collection systems on a daily basis.
3. Amount of leachate removed from the leachate tanks on a daily basis and the disposal location.
4. Amounts and dates of fluid removed from the leak detection monitoring risers (double contained tanks and double contained leachate lines).
5. Amounts of waste (mixed municipal, water and wastewater sludges, industrial waste & sludges, ash, C&D debris, asbestos, compost, yard wastes, contaminated soils) received from each New York State County, from each State and from outside of the Country.
6. Amounts of landfill gas condensate generated at the flare knockout tank, the disposal location, and the number of landfill gas collection wells in operation.
7. Groundwater and surface water quality results.
8. The amount and types of waste utilized as alternate daily cover.
9. The results of the methane gas migration monitoring program required by 6 NYCRR Part 360-2.17(f)(2).
10. The results of the monitoring of the landfill surface in accordance with 6 NYCRR 360-2.21(f)(3). Any remediation or required modifications shall be reported as well.

11. Odor Complaint records as applicable.

19.2.2 Annual Report

The Annual Report will be submitted no later than 60 days after January 1 of each year on forms provided by the NYSDEC or electronically as specified by the NYSDEC and shall also contain the following information;

1. Any changes in water quality, which have occurred throughout the report year and a summary of the water quality information as specified in the Environmental Monitoring Plan.
2. Any changes to the fill progression plan.
3. Updated cost estimates for closure/post-closure activities and financial records of agreed upon payments to closure and post-closure accounts (if applicable).
4. Volume of leachate collected in the primary and secondary leachate collection systems on a monthly basis.
5. Anything that causes the operator to implement the Contingency Plan at the landfill and responses taken by landfill personnel.
6. Any changes from the approved plans, report and specifications or permit along with a justification for the change.
7. A summary and record of unauthorized wastes brought to the facility and their disposition.
8. The top of casing, ground surface, and bottom elevations of all monitoring wells.
9. Proof of two (2) leachate disposal locations and two leachate transporters.
10. An annually updated topographic map.
11. Amount of mine materials utilized for landfill construction and cover. Updated soil balance comparing the required soils for construction, operation and closure of the

landfill to the amount of materials remaining in the permitted mine. Amounts shall be verified based on ground or aerial surveys.

12. Proof of current certification for laboratory conducting sampling and analyses under the facility's Environmental Monitoring Plan and Site Analytical Plan.
13. Odor complaint records as applicable.

19.2.3 Annual Gas Recovery Facility Report

As discussed in Section 12 of this manual, the Chaffee Landfill currently operates a landfill gas collection system, which consists of existing vertical and horizontal wells, headers, condensate knockouts and an enclosed flare unit. The proposed landfill expansion will continue to utilize the current system with the addition of wells, headers and condensate knockouts.

As part of the landfill operations, an Annual Gas Recovery Facility Report will be submitted no later than 60 days after January 1 of each year on forms provided by the NYSDEC or electronically as specified by the NYSDEC and shall also contain the following information;

1. A summary showing monthly estimates of the quantity of landfill gas recovered;
2. A summary showing monthly estimates of the quantity of condensate generated at the knockout tank adjacent to the enclosed flare unit (condensate knockouts at existing LST 1 and LST 2 and any proposed knockouts that directly discharge into the leachate collection system do not have to be tracked);
3. A summary of the annual condensate sampling data, which will consist of an analysis including baseline parameters and any additional parameters specified by the department pending review of the previous sampling results;
4. A summary of the annual hours of operation for the flare and blower; and
5. A list of full and part time employees, relative to the gas recovery system and their titles.