Wheelabrator Concord Company

Env-Sw 1105.11 Facility Operations Manual

Contents

Section 1 Facility Identification

Facility Name:	Wheelabrator Concord Company LP
Mailing Address:	11 Whitney Road, Penacook, NH 03303
Telephone Number:	603-753-8411
Permit Number:	DES-SW-SP-03-001
Permittee Property Owner:	Wheelabrator Concord Company LP
Mailing Address:	11 Whitney Road, Penacook, NH 03303
Telephone Number:	603-753-8411
Operator:	Wheelabrator Concord Company LP
Mailing Address:	11 Whitney Road, Penacook, NH 03303
Telephone Number:	603-753-8411
The type of the facility:	Incineration Facility
The capacity of the facility	The facility's rated through-put capacity, as defined by Env-Sw 102.09(a), shall not exceed 575 tons per day.
The facility service type:	Commercial
The facility service area;	This facility is a commercial facility, as defined by Env-Sw 102.37, and shall thereby provide capacity for New Hampshire generators pursuant to the requirements of condition (12) of this permit.

Section 2 Authorized and Prohibited Waste

Authorized Wastes: This facility is authorized to accept waste consisting of residential, commercial; nonhazardous industrial and other pre-approved special wastes.

Prohibited Wastes: This facility is not permitted to accept:
(a) Hazardous waste;
(b) Wet cell batteries;
(c) Untreated infectious waste;
(d) Radioactive materials;
(e) Wastewater treatment sludge;
(I) Asbestos;
(g) Leaf and yard wastes

Section 3 Routine Operations Plan

3.1. Hours of operations

The facility operates 24 hours per day, 365 days per year. Refuse is received 12 hours per day Monday through Friday and 11 hours on Saturday. The facility does not accept waste on Sunday, Thanksgiving, Christmas or New Year's Day in addition to Sundays.

3.2. Facility access control and on-site traffic patterns

Access to the facility is controlled by site monitoring. The entrance/exit road to the facility is monitored by video surveillance cameras, these are monitored from the Control Room on a continuous basis.

Traffic patterns are controlled through signage that directs waste delivery vehicles to the scale and Tipping Floor. Ash and metal transportation vehicles are directed to the container storage area by facility staff if needed, or the route is known by the driver based on previous visits to the facility. All waste and residue hauling vehicles are weighed in order to track incoming and outgoing materials. These records are maintained in the facility scale system.

3.3. Waste acceptance and rejection procedures, including unloading, sorting and inspection procedures

Waste is received on the tipping floor. The tipping floor provides ample space for refuse trucks to unload refuse, pull out and exit the receiving building. The tipping floor also provides an area to unload refuse for spot checking of truck loads. The front end loader operator (tipping floor attendant) manages the tipping floor for truck unloading and minimum truck turnaround time. They, along with the crane operators, observe the refuse as it is unloaded into the refuse pit. Occasionally, a truck is requested to unload to the tipping floor for spot checking of refuse. This procedure reduces the receipt of unacceptable or unprocessable wastes. After a truck has completed its unloading, it exits the tipping floor and is reweighed. The front end loader is used to clean the tipping floor of trash and to push the spot checked material into the pit.

A random load inspection is performed at least six times/week to screen loads delivered to the Tipping Floor for unacceptable materials. Load inspections are performed by the loader operator, following a written procedure. All records of load inspection documentation shall be kept on file in the electronic records storage system. All records of load inspections are maintained by the Environmental Manager for a minimum of 3 years at which time the department allows the information to be disposed of.

In the storage pit and on the tipping floor, large noncombustible objects are removed from the refuse before it is sent to the charging hopper. These objects will not burn and could possibly damage the boiler furnace and grates and are therefore removed from the mass refuse piles. These items are either reloaded on the vehicle that delivered the item, or these are sent for proper offsite disposal at a landfill or other suitable facility. For unacceptable wastes that require special handling such as hazardous waste or untreated medical waste, these wastes are isolated on the tipping floor while proper offsite disposal can be arranged. A location on the tipping floor has also been established to securely store CRTs or Freon containing appliances. Proper offsite disposal is then arranged for CRTs. In both instances, Wheelabrator Concord Management will notify the respective haulers stating unacceptable waste was

identified while unloading. The hauler is then responsible for removing the unacceptable items from the site.

3.4. The procedure by which the quantity and source(s) of all wastes received by the facility shall be determined and recorded;

The facility employs platform truck scales that provide the gross weight, net weight, or tare weight of a truck. The net weight of trash dumped at the plant site is required for billing purposes. There are two platform truck scales, one for incoming trucks and one for exiting trucks. The scales are located to the northwest of the plant on the entrance road. Scale instrumentation is located in the scale house between the two scales. The scale is automatically operated with two remote stations located in the plant. A radiation meter is installed at the scale house to detect radiation sources in the incoming refuse. An alarm will sound in the plant control room on detection of radiation. The truck will be detained and the appropriate state agency notified. After being weighed, the refuse truck leaves the incoming scale and proceeds to the entrance ramp and up onto the tipping floor from the north side.

3.5. The procedure by which the quantity and destination of all outgoing waste and certified waste-derived products shall be determined and recorded;

Outgoing wastes are tracked through the facility scale system, the facility maintains these records through the scale system. The majority of the outgoing materials are ash, ferrous and non-ferrous metals. Each of these are hauled by different haulers using trucks dedicated for this purpose. This ensures that the different materials being shipped only go to their pre-assigned destination.

Other wastes that are managed as hazardous waste are shipped for offsite treatment and disposal using a suitable transporter. These wastes are tracked separately using other means such as a spreadsheet waste generation log. Manifest records are also maintained and include copies from the destination facility that are provided to Wheelabrator Concord once the load has reached the destination facility.

3.6. The storage time and capacity limits for all wastes received by the facility and the procedures by which the limits shall be monitored to assure compliance therewith;

The facility has no storage time limits for wastes received by the facility. The facility's refuse storage pit can accommodate approximately 3,500 tons of refuse, or about four to six days of boiler processing capacity. The facility can also store waste on the Tipping Floor adjacent to the pit during periods of high inventory.

3.7. All collection, storage, transfer, processing, treatment and disposal methods and procedures employed by the facility for managing waste following receipt;

Refuse/Waste Processing

The overhead refuse cranes provide a means of transporting the refuse from the refuse pit to the boiler charging hoppers. The refuse cranes also sorts and removes any oversize bulky waste from the pit, and mix and stack refuse in the pit. All refuse must be properly mixed (wet with dry, commercial with

residential, high Btu with lower Btu) and “fluffed” prior to feeding the refuse hopper. This assures better combustion control when MSW enters the furnace.

The boiler charging hoppers store and guide an adequate supply of refuse into the furnace for combustion. There are two charging hoppers, one for each boiler. Each of the hoppers is supplied with refuse from either of the two overhead cranes. All refuse must be properly mixed (wet with dry, commercial with residential, high Btu with lower Btu) and “fluffed” prior to feeding the refuse hopper. This assures better combustion control when MSW enters the furnace. The charging hoppers are sized to supply approximately 20 minutes of refuse for the furnace.

To maintain proper levels in the hoppers, crane operators observe the video screen which shows the hopper level. Usually, the hopper level is maintained at a low level to minimize the risk of plugging. The amount of refuse fed to the hopper should be based on a desired hopper level. Exceeding this level may cause bridging and plugging within the hopper throat and could cause uneven refuse flow to the furnace.

The hydraulic arch breaker dislodges or compresses any objects that may interrupt the refuse flow to the furnace. The arch breaker may also be used as a cutoff gate to prevent any refuse from entering the furnace, and to provide an air seal during start-up and shutdown. Each of the refuse feed hoppers is provided with two hydraulic flap valve/arch breakers. The arch breaker door is pushed through the hopper throat using a hydraulic cylinder actuated by a hydraulic power unit. The door and hydraulic power unit are sized to supply 2000 psig to crush any objects that could be obstructing the refuse path.

The control panel, mounted next to the arch breaker, supplies necessary controls for arch breaker unit operation. The arch breaker control system controls movement of the flap gate door using either the CLOSE, OPEN or ARCH BREAK cycle program located at the SCP (system control panel) for each boiler. The crane operators, while keeping the charging hoppers filled with trash, should also be aware when a "bridge" or "arch" in the hopper is preventing the trash from feeding evenly into the furnace. The arch breaker may then be utilized to compact the trash and cause it to fall into the charging chute. Smoke or **fire** in the hopper may be an indication of a "bridged" situation. The crane operators also have responsibility to monitor the tipping floor.

Proper boiler operation requires a control system that can coordinate steam production (temperature, pressure and flow) with fuel combustion (air-fuel mixtures and gas temperatures). Maintaining the proper balance between these processes requires accurate measurement and a control system that can compensate for variations in the combustion process. Refuse fired boilers have an additional difficulty in combustion control because of the wide variation in both fuel size and composition.

Boiler control in this refuse fired plant is accomplished through the VONROLL combustion controller. The combustion controller computer unit contains the control logic which utilizes the measurement of process variables to provide output signals for the control elements of the boiler.

The Bailey Flowmaster (combustion control) system allows operator monitoring and control of the boiler. The interaction of the boiler variables is so complex that it would be difficult for an operator to maintain the proper relationship. However, the controller allows for certain variables to be altered

automatically within the limits of the control system. The crane operator should become familiar with the plant combustion control logic diagrams as a means of more completely understanding the combustion control process.

Each of the boilers is controlled independently by a Bailey (distributive control system, or DCS) Flowmaster. The controller operates the refuse boiler based on the output steam flow. The bailey Flowmaster compares the actual steam flow with the setpoint. When the actual steam flow is lower than the setpoint it increases the output signal. A higher output signal makes the ram feeder move forward faster and the grates move more often, besides that it forces the combustion air (underfire and overfire) flow to increase. If the actual steam flow is higher than the setpoint the output signal is decreased, that means the opposite of what is described above will take place. If you increase or decrease the bailey Flowmaster output signal, the proportion of the ram feeder to the grate is still the same. The total steam flow signal is also sent to the boiler drum level control circuit in a feed forward control arrangement.

Video cameras provide the crane and control room operators with a means to monitor areas of the plant not directly in their eyesight. The crane operator has video cameras that monitor the level within the boiler charging hoppers for feeding purposes and allow constant monitoring of the tipping floor. The control room operator has views of the two charging hoppers, as well as the plant entrance and truck ramp.

Cameras located at the entrance and exit of the plant are used to pan the entire area. Cameras over the charging hoppers show the level of the charging hopper. The crane operators can set the television controller to switch from camera to camera or to lock on one camera, depending on the need.

Fire hose stations are provided on the tipping floor for extinguishing fires if they occur in the refuse pit or on the floor. In addition, two water cannons are available and which can be deployed remotely from the crane pulpit. The tipping floor is covered by a dry pipe sprinkler system. The refuse pit is protected by a pre-action sprinkler system. During emergency use only the exhaust fans located on the south wall can be put in-service.

Ash Handling System

The ash handling system handles the residue from the combustion process. This system serves the following functions.

- Collect, cool, and transport bottom ash
- Provide, at the discharge of each boiler, a water seal that eliminates air infiltration into the furnace from the bottom ash system.
- To collect, condition, and transfer the flyash from the two boilers to the combined ash conveying system.
- To provide discharge points for loading the combined ash and recovered metals.

For discussion purposes, the ash handling system is divided into the following subsystems:

- Bottom Ash System
- Flyash System
- Post-Combustion Metal Recovery
- Metal Handling and Fate After Recovery at Wheelabrator
- Ash Sampling

Bottom Ash System
Three separate ash substreams collectively comprise the facility's bottom ash.
Grate ash is the residue that falls off the end of the boiler grates following waste combustion
Boiler heat recovery section ash is the particulate entrained in the boiler combustion air that drops out in the boiler's superheater, generator or economizer sections. This ash also adheres to the heat transfer tubes in the heat recovery sections, and it is periodically removed using mechanical rappers, rotary, and retractable soot blowers. Ash from all three heat recovery sections falls to a common hopper located beneath the boiler economizer section, and this collective ash is often referred to as "economizer ash."
Grate siftings (also called riddlings) is non-combustible material (metal and glass) that falls through small openings between the boiler grates or falls through combustion air holes in the grates.

The bottom ash system consists two separate handling trains (one is redundant). Only one of these trains operates at a time. Bottom ash from both boilers is directed into the operating train. Having a redundant train allows for continued boiler operation in the event that the primary bottom ash train malfunctions. The primary train is called "bottom ash handling system No. 2," and the backup train is called "bottom ash handling system No. 1."

Bottom ash handling system No. 2 incorporates equipment for separately recovering ferrous and non-ferrous metals. Bottom ash handling system No. 1 does not include metal recovery equipment. Recovering metals has several advantages including: the metals are sold for a profit and, the costs of landfilling the metals are avoided. Therefore, the facility strives to maximize operation of system No. 2.

Bottom ash handling systems No. 1 and No. 2 are identical, except that No. 2 includes metal recovery equipment. Therefore, a single description of the both handling both systems is provided below. The additional equipment associated with metal recovery for system No. 2 is then separately discussed in the Post-Combustion Metal Recovery section found later in this section.

Most of the bottom ash consists of grate ash, with boiler heat recovery ash and riddlings as minor substreams. After the waste is fully combusted the grate ash falls off the last boiler grate through the clinker chute. Each clinker chute is bifurcated ("pant legs") and has a flop gate. The flop gate allows the ash from either boiler to be directed to either the No. 1 or No. 2 bottom ash drag chain conveyor. These two drag-chain conveyors are filled with water and they span the entire length of the boiler house. These conveyors serve three functions.

First, the ash falls into a horizontal water-filled section of the conveyor where the ash is quenched and cooled. The water in this conveyor section also forms a seal that prevents tramp air from entering the

boiler. Loss of the water seal at this location can cause combustion upset and associated air emissions problems.

Second, the ash travels up a dry inclined conveyor section where the ash is dewatered by gravity. The water released from the ash flows back down the conveyor and returns to the horizontal quench section.

Third, the conveyors transport the ash to the ash handling building.

Each bottom ash handling system also includes a boiler heat recovery ash subsystem. This consists of a 12" economizer boiler hopper ash chute equipped with a double flapper valve. The hopper chute directs the boiler heat recovery ash to an opening in the boiler roof above the last boiler grate. The heat recovery ash falls from the economizer chute, through the boiler and clinker chute, and into the water-filled section of operating the bottom ash conveyor.

Each bottom ash handling system also includes a riddlings collection system. Both boilers are equipped with ten riddlings hoppers, each controlled with single flapper valves. Both boilers are also provided with a two dedicated wet quench riddlings drag chain conveyors. Riddlings collect in the hoppers and then fall through chutes into the riddlings conveyors. The riddlings from the drag chain conveyors can be directed into the water-filled section of either the boiler No. 1 or No. 2 bottom ash conveyors.

When bottom ash conveyor No. 1 is operating (no metal recovery), conditioned flyash is directed to the dry inclined section of the bottom ash conveyor through a chute. At this point the material on the conveyor is called "combined ash." The combined ash from this conveyor then drops into the combined ash roll-off box or dump trailer. These containers are then either sent direct to the landfill, or staged in the adjacent ash storage building, or covered with tarps on impervious pavement outside awaiting transport. Occasionally an ash container could be inadvertently overloaded and not be legal for over the road transport. In these cases, some amount of ash needs to be removed from the container. A secure location on the tipping floor would be used to store the ash until it can be reloaded.

The bottom ash systems connect with or supply the facility's process water system. The process water system is also called the "wastewater system," although this term is technically incorrect because all these waters are ultimately consumed in facility processes and no wastewater is discharged from the facility. The bottom ash system also receives grit produced by the lime slurry slaking process. The grit contains beneficial alkalinity that is used to ensure ash stability. This is accomplished by the installation of 2" hard pipe and flexible hose where appropriate and use of a pump. Heat tracing would also be installed to prevent the 2" hard pipe from freezing in the winter. The hard piping would also be sloped on long runs to facilitate movement of the grit and for line drainage to the ash conveyor between grit pumping activities. To move the lime grit from the grit bin located at the base of the lime slaker to the bottom ash conveyor, an air operated pump supplied with a nominal amount of air pressure would be utilized. The process for moving the grit from the grit bin to the bottom ash conveyor would be manually conducted periodically by an operator. All pumping and pipe runs would be within enclosed buildings or contained areas.

Process water is primarily supplied by cooling water blowdown, boiler blowdown, and ash-contact waters. Ash contact waters result from cleaning of building floors and equipment and from conveyor overflow. All facility floor drains and associated sumps route only to the process water system. Ash contact water is stored in the contact water sump and the process water storage tank (a/k/a "wastewater" storage tank). Process waters are drawn from the contact sump and storage tank to supply the bottom ash conveyors and clinker conveyors as needed.

Both of the two bottom ash conveyors are designed to permit drainage for access and maintenance to inside of conveyors. Drain valves low on the conveyors allow the water to drain to a recessed trough in the floor which in turn drains to the nearby contact water sump.

The bottom ash conveyors lose water through evaporation and because water is trapped in the small spaces between the quenched ash particles. Water from the ash-contact water sump is routinely pumped to the conveyors to replace these water losses, so that the bottom ash conveyors operate at a full water level. This practice causes design overflows from the conveyor back to the ash-contact water sump. Also, typically once per week the bottom ash conveyors are drained to the facility's ash contact-water sump. This serves to dewater the ash fines that have accumulated in the conveyor bottom and allows the conveyor to more easily move the fines through the ash system. The water that overflows or is drained from the conveyors carries suspended ash particles, and this material settles to the bottom of the ash-contact water sump as sediment. Equipment and floor wash waters also drain to the ash contact-water sump, and the ash associated with these flows similarly accumulates on the sump bottom. The ash sediments from these various sources are called "ash mud."

The ash contact water sump is sparged with air lances to keep the sediments ("ash mud") in suspension. This practice minimizes sediment accumulation in the ash contact water sump. These suspended ash sediments are transferred back to the bottom ash conveyors with the quench water. So the sediments are re-circulated between the contact water sump and the bottom ash conveyor until they eventually agglomerate and are dragged out with the bottom ash in the conveyor.

Flyash System

"Flyash" consists of two primary components. Ash particulate entrained in the combustion air is carried through the boiler to the air pollution control system. This is true flyash. The facility also injects lime slurry into the air pollution control (APC) system. This lime reacts with acid-gasses present in the boiler flue gas to form neutral calcium salts. Because the chemical reactions between the acid-gasses and lime occur under imperfect conditions, the facility must inject extra lime to ensure adequate acid gas removal. This mixture of calcium salts and unreacted lime is called "scrubber residue." So the material captured by the facility's APC systems is a mixture of true flyash and scrubber residue. By convention, this mixture is simply called "flyash."

The flyash system begins with facility's APC system specifically, the SDAs and the fabric filters. Flyash falls from the fabric filter hoppers (four per fabric filter) and from the SDA hoppers to the collecting drag conveyors through 12" double flapper valves. The flyash from the fabric filters and SDA is then normally discharged to a flyash transfer conveyor through a slide gate valve at the conveyor junction point. Two flyash transfer drag conveyors, in series, transfer the ash to the surge bins and flyash conditioners within the ash house. Closing of the slide gate valve at the discharge to the transfer conveyor provides an

alternate (conditioner bypass) routing of the flyash to the horizontal water-filled section of either one of the bottom ash conveyors.

The flyash system consists of flyash collection systems (described above), flyash transfer systems, and two flyash conditioning systems. Each of the flyash conditioning systems is 100% capacity (i.e. only one conditioning system is run at a time).

The flyash collection system consists of double slide gate valves installed on the bottom discharge outlets of the two spray dryer absorbers (SDAs); four 12" double flapper valves installed on the bottom discharge outlets of each fabric filter (one fabric filter is installed for each boiler); and fabric filter and SDA flyash collecting drag conveyors 1 and 2.

The flyash conveyors beneath the boiler 1 APC train is called flyash conveyor 1 and the conveyor beneath the boiler 2 APC train is called flyash conveyor 2. The No. 1 and No. 2 flyash collection conveyors normally discharge into the No. 3 transfer conveyor and then to No. 4 conveyor into the ash house. However, the No .1 and No. 2 conveyors can also discharge directly to either bottom ash quench conveyor, thus providing a backup to the flyash conditioners.

The flyash system is completely enclosed and sealed to the atmosphere until the flyash is moistened in the flyash conditioners. The flyash conditioning devices are dual-paddle mixers, also known as pug mills. After conditioning with water, the flyash is fed to the covered bottom ash conveyor within the ash house. Note: when the metal recovery system is operating, the flyash follows a different path within the ash house. This alternate flow path is discussed in the Post-Combustion Metal Recovery section found later in this section.

A wet-scrubber dust collection system located in the enclosed ash house collects any fugitive dust that might arise from conditioning area and the truck load out points. The system is being upgraded to be comprised of the following components.

Wet Scrubber System
The existing 7,500 CFM wet scrubber is being replaced with a 12,000 CFM unit due to:

- The 7,500 CFM scrubber is undersized for the additional pickup points from the new Metals Recovery System.
- The 7,500 CFM scrubber has been in service for over 15 years and the metal materials of construction has shown signs of extensive corrosion. The new 12,000 CFM wet scrubber is constructed of corrosion resistant materials.
- The location of the 7,500 CFM scrubber exhaust discharge caused noise issues with a local resident which has led to limited scrubber operating hours. The new 12,000 CFM wet scrubber's exhaust discharge location will address the noise issue and allow unrestricted operation.

The existing ductwork will be utilized and connected to the new 12,000 CFM wet scrubber. The 7,500 CFM wet scrubber will be left in place (isolated by a damper) as a backup. New ductwork will be added to segregate the Metal Recovery System pickup points and larger ductwork used to collect dust from the combined ash conveyor discharge point.

The new 12,000 CFM wet scrubber will operate in the same manner as the 7,500 CFM wet scrubber. Improvements include unrestricted operation, additional valves to better balance ductwork air flow, and common unit trouble alarm annunciated in the control room. The 12,000 CFM wet scrubber will periodically blow down contents of the main tank to the No. 1 drag conveyor.

Building Ventilation

The ash building ventilation is being re-established similar to the building's original ventilation design to address the excessive temperatures experienced during the summer months. Building ventilation will improve working conditions for maintenance and operations personnel by exhausting the heated moist air and replacing with fresh air from outside the building. The ventilation system is intended to be used primarily during the summer months. Heated air will continue to be supplied to the Ash House from the Boiler House penthouse during the winter months to provide more comfortable working conditions, including controlling moisture.

Two (2) 15,000 CFM exhaust fans will be mounted at the upper elevation of the Ash House west wall. The fans are located on the west side to eliminate the potential for noise issues with the local resident. The fans have stainless steel mesh air filters with a MERV 6 rating at the fan inlet to inhibit discharging visible dust. The air filters are washable and will be re-used. The fans will have gravity dampers and exterior hoods to prevent wind and weather from entering the building when the fans are not in operation. The fans will operate manually from locally mounted switches in the Ash House.
Four (4) 7,500 CFM intake louvers will be mounted at the Ash House east wall to allow fresh air to enter the Ash House when the exhaust fans are in operation. Automatic dampers mounted to the louvers inside the Ash House will open when the exhaust fans are turned on and close when the exhaust fans are turned off. Two (2) louvers/dampers will be tied to the operation of one (1) exhaust fan.
The flyash system connects with or supplies the following secondary flow paths:

Dust collection system
Plant air system
Potable and process water system.

The dust collection system removes airborne dust produced during the conditioning process and the loadout of trucks. The dust collection system draws airborne flyash through a connection in the conditioner room and hoods at the truck loading stations. The airborne dust is drawn into the dust collector by an exhaust fan through a wet scrubber. The dust is collected in the hopper and discharges to the bottom ash conveyor. The dust collector system is dumped manually when system differential pressure rises above 6" H_2O.

The plant air system provides pressurized air to the flyash double flapper valves below the fabric filter hoppers, the double slide gate valves below the SDAs, the slide gates at conveyor transfer points, and the slide gates below the flyash surge bins. The compressed air flows to the air cylinder operators through a strainer, moisture trap, a pressure reducing valve, and a lubricator. The pressure reducing valve reduces the air pressure from 100 psi to 80 psi. The lubricator adds a small amount of oil to the compressed air to lubricate the internal moving parts of the air cylinders.

The process water system provides the process water to be used for ash conditioning. Process water flows through a pressure reducing valve and solenoid control valves before being discharged through the various spray nozzles. The filter removes debris that could be present in the process water. The pressure reducing valve reduces the pressure of the process water to 30 psi.

Post-combustion Metal Recovery System

When the facility operates Bottom Ash System No. 2, the bottom ash will be directed through a metal recovery system. All metal recovery occurs within the facility's enclosed ash house. In summary, the metal recovery system consists of the following processes. A vibrating finger deck will separate the bottom ash 6" minus fraction from the 6" plus fraction. The plus fraction is comprised primarily of ferrous metals and will be routed to the ferrous recovery roll-off. The minus fraction will be subjected to further processing. A drum magnet will be used to recover additional ferrous metals from the 6" minus bottom ash fraction. The ferrous metals reclaimed by the magnet are directed to the same ferrous recovery roll-off box that receives the 6" plus ash fraction removed by the finger deck. The 6" minus bottom ash continues through the system for additional processing The 6" minus fraction is then processed through a 3/8" screen. The 3/8" minus bottom ash is deposited onto a final combined ash conveyor where it mixes with conditioned flyash and routes to a roll-off box for offsite disposal. The 3/8" plus material is routed to an eddy current separator to recover non-ferrous metals.

The 3/8" plus bottom ash is processed through the eddy current separator. This machine induces a magnetic field into metals that are ordinarily non-magnetic (e.g., copper, aluminum). This induced magnetic field allows for magnetic separation of non-ferrous metals. The separated non-ferrous metals drop to the non-ferrous roll-off for delivery to an offsite metals recycler. The remaining 3/8" plus bottom ash drops to the common combined ash conveyor where it mixes with the 3/8" minus bottom ash and the conditioned flyash.

The bottom ash will fall from the bottom ash system No. 2 head pulley directly onto the vibrating finger deck. 6" plus "bottom ash" is primarily ferrous metals. This 6" plus fraction vibrates across the finger deck and falls directly into the ferrous recovery roll-off. The bottom ash 6" minus fraction passes through the finger deck and onto the lower pan of the machine. A Walker Magnetics rotating drum magnet is located above the discharge end of the vibrating finger deck lower pan, where the bottom ash transfers onto the 3/8" screen. This device recovers the ferrous metals present in the 6" minus bottom ash fraction and deposits it into a vibrating pan conveyor and into the common ferrous recovery roll-off. This recovered material is shipped offsite to a ferrous metals recycler.

The remaining 6" minus bottom ash fraction transfers from the lower pan of the vibrating finger deck onto a 3/8" screen. The 3/8" minus material passes through the screen and falls directly to the combined ash belt conveyor. This combined ash conveyor ultimately accepts all the facility's ash substreams (i.e., 3/8" minus bottom ash, processed 3/8" plus bottom ash and conditioned flyash). The 3/8" plus bottom ash fraction is then processed through a IMRO RecycleCraft eddy current separator. The recovered non-ferrous metal is directed to a vibrating pan conveyor and into the non-ferrous roll-off box. When the non-ferrous box is filled it is hauled offsite to a metals recycler.

When the metals recovery system is operating (i.e., bottom ash system 2 is operating), a slide gate in flyash conveyor No. 4 will be closed. When the gate is closed, the flyash will not fall to the No. 1 flyash conditioner. Instead the flyash continues traveling on the No. 4 flyash conveyor to the No. 5 flyash drag

conveyor. An enclosed chute in the No. 5 flyash conveyor deposits the ash into the No. 2 flyash hopper. A rotary valve at the bottom of the No. 2 flyash hopper meters flyash into the No. 2 flyash conditioner. The wetted flyash exits the No. 2 conditioner and is directed to the common combined ash belt conveyor. The combined ash from this conveyor then drops into the combined ash roll-off box or dump trailer. These containers are then either sent direct to the landfill, or staged in the adjacent ash storage building, or covered with tarps on impervious pavement outside awaiting transport. Occasionally an ash container could be inadvertently overloaded and not be legal for over the road transport. In these cases, some amount of ash needs to be removed from the container. A secure location on the tipping floor would be used to store the ash until it can be reloaded.

The facility also culls metal objects from the incoming municipal waste on the tipping floor. Culled metal includes such things as bicycles or steel pipe that have the potential to plug the boiler's refuse feed chute. Metal culled on the tipping floor is periodically brought to the facility's post-combustion metal storage areas and is co-mingled with the post-combustion metal. The facility does not accept CFC-containing articles for disposal. If CFC-containing articles (e.g., air conditioners) are discovered on the tipping floor, they shall be re-loaded onto the delivery vehicle. If the delivery vehicle cannot be identified, then the facility will assume responsibility for CFC-evacuation by a certified technician, in accordance with procedures described in the facility's Waste Control Plan. The facility will manage damaged CFC-appliances as if they still contain CFCs, until a certified technician deems otherwise. Under no condition shall CFC-containing appliances be co-mingled with the post-combustion scrap metal.

Post-Combustion Metal Load Out

The 30 or 40-yard boxes receiving the post-combustion ferrous metal in the combustion building are either moved to the ash storage building when filled, or dumped within the ferrous metal bunker. Ferrous metals dumped in the ferrous metal bunker are then later transferred via a front-end loader to a 70 to 90 cubic yard truck-mounted dump trailer. After the trailer is filled, it is hauled to an offsite metal recycler. Ferrous metals remaining in the 30 or 40 yard boxes could also be direct hauled by the offsite metal recycler.

The post-combustion metals deposited in the ferrous metal bunker contain no free water, but are moist. Therefore, the fresh metal does not pose any dust potential. Wheelabrator anticipates moving the ferrous metal offsite typically every day and at least twice/week. The actual frequency will depend on metal removal rates. However, the transfer frequency provides assurances that the metal will not dry and become dusty. But, dusting is possible during hot weather if the metal is not moved offsite within a few days. If dusty conditions are observed or are anticipated during loading, the facility will wet the metal within the ash building. The building is equipped with a floor drain system, and this captured water routes to the facility's process water system where it is reused. All wetting must occur within the building.

Loading the ferrous trailers outdoors increases the potential for metals to fall onto outdoor paved surfaces during loading operations. Also, potential for trackout exists when the loader is moving back and forth from the storage building to the parked trailer. To address these concerns the outdoor loading area must be inspected immediately after each trailer is loaded. Metals that fell to the ground during loading must be collected and returned to the metals pile or to the trailer. The loadout area must be

inspected and any non-metal residues on the outdoor pavement must be carefully swept up. These collected residues will be stored in a covered pail or drum with an accumulation start date and labeled "Solid Waste Ash Residues, TCLP Analysis Pending". Based on TCLP testing done on the raw post-combustion ferrous metal and the return residues from ferrous recycling—the facility is using generator knowledge to deem the swept-up residues a "non-hazardous waste" (pending analysis). The site's Environmental Manager will determine when a sufficient residue mass has accumulated in the container to allow for collection of representative samples. Since the objective is to avoid spilling onto the ground, several weeks or months may pass before enough residues have accumulated for testing, although we anticipate that samples will be sent for analysis within 60 days of push-wall operation. Once sufficient sample volumes are available, the site's environmental manager (or designee) will collect one or more representative samples from the container and direct these to a contract lab for TCLP testing. Thereafter, the swept-up residues will be managed and disposed of in accordance with these TCLP results. If changes occur such that the applicability of this initial TCLP testing is in doubt, then the site's environmental manager will direct a re-characterization of the metal loading residues. Examples of such changes include a change in the facility's metal recovery equipment or practices, or a change in outdoor metal loading procedures.

Due to space constraints at the facility, outdoor metal loading operations are conducted on a paved area near the tipping floor access road. The front-end loader that transfers metal from the ash building to the trailer crosses the road used by trash trucks departing from the tipping floor. This situation increases the potential for vehicle accidents involving the departing trash trucks. To the extent practical, metal transfer operations are scheduled during periods when the tipping floor is closed or when the trash truck counts are low. During active metal loading periods, departing trash truck drivers must be notified that loading is occurring. These notices are made through the use of portable signs, traffic cones, and other signaling devices, as appropriate. The facility may use a "spotter" to direct traffic when metal loading operations are ongoing, particularly if loading occurs during high-traffic periods, during inclement weather, or after dark.

The 70 to 90 cubic yard truck trailers are typically filled promptly when the truck arrives onsite, and the truck leaves immediately after the box is filled. However, unanticipated events such as truck breakdown might occur necessitating temporary storage of a full or partially full trailers at the facility. When this situation arises, the facility assures that the trailer is covered with a weather-proof tarp.

Non-ferrous metals fall into a dumpster container and are weighed and emptied inside the non-ferrous metals bunker on a daily basis. The contents of the bunker are offloaded live onto a trailer using a front end bucket loader. Any outdoor loading of non-ferrous metals will follow all protocols described above for loadout of ferrous metals, including the TCLP characterization protocols described above.

Metal Handling and Fate After Recovery

All ash and post-combustion metal containers must be securely tarped before transport.

The offsite ferrous metals recycler shreds Wheelabrator's ferrous scrap and magnetically recovers the ferrous fraction. The "reject" fraction associated with the recovered ferrous metal is mostly ash. However, a significant fraction of this "reject material" is comprised of other materials, such as; 6" plus material screened out during Wheelabrator's recovery process (e.g., stones, unburned wood, non-ferrous metal, etc.). The reject fraction associated with the recovered ferrous metal also includes some

quantity of 6" minus debris such as bits of unburned paper or plastics. Typically the reject fraction, as determined by the offsite metals recycler, is about 30% of the weight of the ferrous metal shipped by Wheelabrator. However, this percentage is variable depending upon such factors as the capture efficiency of metal recovery operations at the scrap metal site. In some cases the scrap metal yard will further process the ferrous "reject" material to capture additional ferrous and non-ferrous metals in the reject stream. Wheelabrator strives to produce as clean a recovered metal as possible, since this is an important determinant in the price Wheelabrator receives for the recovered metal. Non-ferrous metals recovered by Wheelabrator typically have a smaller (< 25%) reject fraction, in part because the ash has been screened before introduction into the eddy current separator. Further, contamination associated with the non-ferrous fraction is much more difficult to remove by simple shredding and further eddy current processing at the offsite recycling operation. A significant proportion of the reject material associated with the non-ferrous stream may not be removed until the non-ferrous is re-smelted by the end users.

Wheelabrator Concord's roll-off boxes of non-ferrous metal are directed to an offsite metals recycler (scrap yard) where the metal is further sorted to increase its value. From there the recovered non-ferrous metal is reloaded onto tractor trailers for further transport to an end user (e.g., a foreign or domestic smelter) or to a metals broker.

Wheelabrator's recovered ferrous metals are currently processed at a Massachusetts scrap yard to remove reject materials and to densify the scrap. Processing may include running the ferrous through a shredder and/or use of a crane magnet. Offsite processing generates a reject stream that is primarily comprised of unburned materials (e.g., paper and wood) and > 6" bottom ash clinkers. The reject stream has been characterized via TCLP testing as a non-hazardous waste, and it is disposed of in Massachusetts.

3.8. For facilities that process or treat waste, the methods or procedures for managing bypass waste and the quality assurance/quality control procedures relating to the management of processed or treated waste;

Bypass Waste
The facility does not routinely ship out bypass MSW received on the tipping floor. Incoming waste delivery volumes are managed according to waste inventory levels, boiler outages and seasonal variations. If a situation arises where MSW has to be bypassed out to another disposal facility, it will be bypassed to another facility that is permitted to accept MSW.

Ash Sampling
The New Hampshire Department of Environmental Services (NHDES) has established comprehensive procedures which address the sampling of ash residue from solid waste combustors. The facility's Ash QAQC plan requires quarterly sampling of combined bottom ash and flyash for the following eight TCLP Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver.

The results of the quarterly sampling and analysis are submitted to the NHDES once the final lab reports are received and the data packaged for submission.

Section 4 Residual Waste Management Plan

The facility generates the following types and estimated quantity of residual wastes. The residual wastes described below are the solid waste remaining after processing, treatment or disposal of solid waste or as a by-product of processing or treatment or disposal of solid waste at the facility. Management of other non-residual wastes is discussed later in this section.

Ash
Typical annual combined ash generation: 55,000 tons

Ferrous Metal
Typical annual ferrous metal recovery: 3,700 tons

Non-Ferrous Metal
Typical annual non-ferrous metal recovery: 200 tons

For a detailed description of how residual wastes outlined above are managed at the facility, please see Section 3.7 of this manual.

The following is a description of how the facility demonstrates that the provisions of Env-Sw 1105.10 are being met

Env-Sw 1105.10 Management of Residual Waste.
(a) Facility operations shall include provisions to properly manage residual waste. These provisions are discussed in Section 3.7 of this manual.

(b) A facility shall obtain and maintain access to at least 2 authorized locations where adequate capacity exists to handle the type and quantity of all residual waste, excluding landfill decomposition gas. The following describes the authorized locations where capacity exists to handle the type and quantity of all residual waste that the facility shall regularly generate during its operating and post-closure periods.

Ash	Franklin Municipal Landfill, Franklin, NH Wheelabrator Shrewsbury Landfill-Shrewsbury, MA WM-TREE Landfill, Rochester, NH
Ferrous Metal	Turner Metal, Lynn, MA American Steel, Auburn, NY Southern Recycling, Nashville, TN
Non-Ferrous Metal	wTe, Greenfield, MA American Steel, Auburn, NY

During post closure periods the facility would not expect to generate the residual wastes outlined above.

(c) A residual waste shall not be distributed for use unless certified for distribution and use in accordance with Env-Sw 1500. The facility does not distribute residual waste.

The facility employs a Generated Waste Procedure that describes how waste is characterized for proper disposal. The procedure also describes what data is needed to determine the reportable quantity of a waste, if that waste should be spilled. Federal and State regulations require waste generators to determine if any of the wastes they generate are "hazardous wastes." We must also characterize our wastes so that we dispose of them properly, and so that we know reporting thresholds should any wastes be spilled.

A waste characterization is conducted for each potentially hazardous waste generated at the facility. This procedure lists several wastes that are commonly generated at the facility and that have some potential to be hazardous waste. This list is not all-inclusive. The waste generator is responsible for characterizing all wastes that have a reasonable potential to be hazardous waste. This procedure assumes that a waste undergoing evaluation is only potentially hazardous because it exhibits a waste hazard characteristic of toxicity, corrosivity or ignitability.

This procedure is adequate to allow for hazard determinations of the following wastes:

- Waste-to-energy ashes
- Facility process waters and wastewaters
- Acid or caustic wastes
- Other facility maintenance wastes or articles and cleanup debris contaminated with any of the above materials.

The facility also has a Waste Control Plan that describes the proper handling, storage and disposal of other non-residual wastes generated by the facility. All operations and maintenance personnel participate in an annual training on the Waste Control Plan. The plan is incorporated by reference into this manual.

Section 5 Facility Maintenance, Inspection and Monitoring Plan

This section identifies routine maintenance, inspection and monitoring requirements necessary to assure the integrity of facility operations. This includes a description of the measures to be undertaken to monitor and inhibit the following:

a. Spontaneous combustion;

Typically the only area where spontaneous combustion is a concern is in the Tipping Building and waste storage pit. This area is continuously monitored by the Refuse Crane Operator, the location of the crane pulpit give the operator a complete view of this area. The Loader Operator also monitors this area during waste receiving hours. The Tipping Building is equipped with a fire protection system that consists of water cannons and fire extinguishers. These systems are regularly tested, inspected and maintained by facility personnel.

b. Other fire hazards;

Other fire hazards at the facility can include hazards associated with Hot Work, this is work performed during facility maintenance activities that involve cutting or welding work. The facility has areas designated as Hot Work Areas that are a fixed non-combustible location that is arranged and isolated to remain fire safe. A Designated Hot Work Area shall be maintained free of combustible materials and isolated from surrounding combustibles with physical non-combustible enclosures (minimum 1-hr fire rated non-combustible barriers over any combustible floors, walls and ceilings) or an open space of at least 35 ft. Manual fire extinguishers are available throughout the designated hot work area. Ventilation or respiratory protection are used to avoid hot work smoke and fume exposures and welding screens erected to protect others in the area from welding flash, slag or sparks.

The facility also has areas designated as High Challenge Areas from a Hot Work perspective. These areas are required to maintain a fire watch during any cutting or welding work, and require that this watch is maintained 1 hour after any Hot Work has been completed.

The facility has a Hot Work Management procedure (WOHS-1910.252) that ensures fire-safe conditions when conducting hot work activities. This procedure sets the minimum standards for all employees when conducting hot work activities and issuing Hot Work Permits.

c. Vector production;

Vector control methods include the following. Ensuring any litter or debris found outside the Tipping Building are promptly cleaned up by facility staff. Other methods include maintaining the integrity of building siding to prevent vector access to the Tipping Building, as well as bait traps for any vectors that may be onsite. The bait traps are managed by a 3rd party vendor and are regularly inspected and maintained by this vendor.

d. Generation of methane, hazardous, or explosive gases;

The waste storage area in the Tipping Building is maintained under negative pressure. Combustion air for the boilers is drawn from this area and is sufficient to draw in outside air such that the buildup of methane, hazardous or explosive gases within the waste storage is not

an issue. The facility ensures that waste is processed in a manner that ensures all waste is processed before any gas generation associated with the waste breaking down takes place.

e. Odors;

The waste storage area in the Tipping Building is maintained under negative pressure. Combustion air for the boilers is drawn from this area and is sufficient to maintain negative pressure that prevents the release of odors from the Tipping Building. Any odor compounds are destroyed during the combustion process in the boilers.

f. Dust;

Roadways around the facility are paved to prevent the dispersion of dust associated with vehicle traffic. The facility also regularly inspects and maintains the paved surfaces with the use of a street sweeper. The street sweeper collects any accumulation of dirt or debris that could create dust.

g. Windblown litter;

Vehicles delivering waste to the facility are enclosed or are fitted with covers to prevent dispersion of litter at the site. All waste unloading is done within the enclosed Tipping Building, this ensures that all waste stays contained within the building. Prior to vehicles exiting the Tipping Building, any loose litter or debris is removed to prevent dispersion of litter when these vehicles exit the Tipping Building, During routine operations and inspections, facility staff look for windblown litter, when any is observed it is promptly picked up.

h. Leachate;

Leachate associated with the management of solid waste is not an issue requiring specific procedures or programs to manage at the facility. Any liquid associated with waste is contained within the waste storage pit and eventually absorbed by newer waste and processed in the boilers.

i. Spills;

The facility's Spill Plan address SPCC Plan requirements described in federal regulation 40 CFR 112. The Spill Plan includes a site plan that locates all oils, hazardous substances, ash, process and contact waters that could trigger an agency reportable quantity. The purpose of the Spill Plan is to have all the oils, applicable hazardous substances, ash, process and contact waters locations identified, safety precautions outlined, and spill reporting requirements identified in advance so the information can be easily located and referenced during an emergency. The facility's Spill Plan includes the following information for each oil, fuel and applicable hazardous substance onsite:

- Common name
- Chemical name
- Storage location
- Physical state
- Maximum daily quantity stored
- Description of the substance's use at the facility
- List of applicable Reportable Quantity (RQ) agency reporting thresholds that apply to the substance

- Spill prevention measures (oils oily)
- A discussion of the hazards that the substance might pose during a clean-up action
- Spill response and clean-up procedures
- How contaminated spill residues will be disposed of

The Spill Plan contains procedures for conducting all required inspection and testing on containers, tanks, piping, valves and secondary containment systems. The Spill Plan includes an inspection schedule and evaluation criteria for conducting integrity testing and visual inspections of above ground tanks and containers and piping.

The Spill Plan contains procedures for internal and external spill reporting, include the use of the Wheelabrator Spill Reporting Form to record all information pertinent to spills. See Section 6 of this manual for additional details on facility procedures related to spills.

Maintenance Management Program

To ensure timely completion of inspections and facility maintenance, the facility uses a web based software program called Tabware. The following generally describes how Tabware is used at the facility.

Work Orders are initiated or generated for the repairs, inspections, etc. to plant equipment including contract services related to repair and maintenance.

Work Order Approval

Routine Work Orders ("RT" series) are approved by the Maintenance Manager, the Operations Manager, or the Maintenance Manager Designee before work is started or planning activities begin.

Work Order Planning

All Routine and Preventative Maintenance work orders should go through a planning process prior to assignment. The planning process consists of the following steps.

Work Order Selection - The mitigation of hazards identified on safety and environmental work orders takes priority over Routine and PM work orders. Otherwise, work orders selected for planning should be determined by the PM schedule or by the work order priority and the equipment criticality as identified on the work order, unless directed otherwise by supervision.

Schedule for efficiency – Once the equipment has been identified upon which repairs will be completed, all open work orders for this equipment should be planned and scheduled for completion at the same time to avoid multiple shutdowns of the equipment for repairs.

Determine Job Requirements – Review the work order descriptions and inspect the worksite as required, to determine what is needed to complete the work requested. The intent is to identify to the extent practical all job requirements, so once the work is started it can proceed with no or minimal disruption.

Safety and/or environmental precautions, if any
LOTO requirements
Craft skill(s) required to perform the work

Estimated time to complete the requested work
Spare parts or materials required
Tools or rigging required
Special instructions, if any
Technical information such as: set points, tolerances, torque values, etc.
Relevant safe job procedures, if any

When all known requirements of the job have been identified and the parts and materials are confirmed to be on-hand, coordinate with the Lead Maintenance Technicians to assign WTI maintenance personnel or Contract Labor resources then schedule the work order for completion.

Work Order Status Change
A Work Order's Status should be changed appropriately as it progresses through the cycle between entry and completion.

Work Order Completion in TabWare
When a Work Order is completed, the Requestor of that Work Order will be notified via TabWare Messaging of the completion. The Requestor should review the work at the earliest convenience to make sure that everything was done to satisfaction. If the work was not completed to satisfaction, the Requestor has the option to re-open the Work Order. If additional problems are found, a new Work Order should be generated.

Canceling Work Orders
When a Work Order Reviewer cancels or rejects a Corrective Work Order, the Requestor is notified via TabWare Messaging of the action. The Reviewer must add comments to the Work Order explaining why it was canceled or rejected.

Safety or Environmental Work Orders
A Work Order is considered a Safety or Environmental Work Order when the appropriate box is checked on the first tab of the Work Order notebook. A Safety or Environmental Work Orders should only be used for situations that present a true safety risk or environmental compliance issue if not addressed in a timely manner.

Preventive Maintenance Master Plans
Preventive Maintenance Master Plans are actually Work Order templates that are created and modified in the Work Order Module, just like any other Work Order. However, Master Plans cannot be completed, or have work hours or costs charged against them.

Master Plans should be written for specific groups of like equipment, not individual pieces of equipment. When developing PM Master Plans, consideration should be given to the OEM recommendations. However, the final determination of required PM tasks and their frequency of occurrence should be based upon actual operating and maintenance experiences.

Master Plan Planning

Master Plan Work Order should be planned as much in advance as possible. All information entered on the Planning Tab will be transferred to any subsequent PM Work Order. Refer to the section on Work Order Planning of this document for more details on the planning requirements for PM work orders.

Scheduling

When scheduling PM work orders consideration should be given to the frequencies recommended by the original equipment manufacturer. However, the PM frequencies should be determined and adjusted as required in response to actual operating and maintenance experiences. The steps to schedule PM work orders are as follows:

Section 6 Contingency Plan

The facility maintains an integrated Spill Prevention, Countermeasure and Control Plan and Hazardous Waste Contingency Plan document. The following information was taken from this plan, additional detail on hazardous materials at the facility is provided in the plan, and is incorporated by reference.

FACILITY IDENTIFICATION AND GENERAL INFORMATION
Wheelabrator Concord Company NHD500003660
11 Whitney Road, Penacook, NH, 03303
Facility operates 24/7, office hours are Monday-Friday 8:00-5:00. Phone number: 603-753-8411
Facility periodically generates D006, D007 and D008 wastes.

EMERGENCY COORDINATOR(S)
Primary Coordinators
Eric Capron
11 Whitney Road, Penacook, NH, 03303 (Office)
16 Vine Street, South Berwick, ME 03908 (Home)
603-753-8411 (Office)
603-918-6657 (Cell)

The Shift Supervisor on shift can also serve as the Primary Coordinator. Shift Supervisor on duty varies.
11 Whitney Road, Penacook, NH (Office)
603-753-8411 (Office)

Coordinator's Responsibilities During an Emergency
The Emergency Coordinator shall be responsible for the safety of all employees, all facility equipment, and the cleanup with the assistance of the EH&S Manager and local and state authorities, if necessary. The Emergency Coordinator has complete authority to commit necessary resources of the Company in the event of an emergency.

Alternate Coordinators
John LaRiviere
11 Whitney Road, Penacook, NH, 03303 (Office)
4 Hemlock Road, Bow NH. 03304 (Home)
603-753-8411 (Office)
603-558-1181 (Cell)

Coordinator's Responsibilities During an Emergency
The Emergency Coordinator shall be responsible for the safety of all employees, all facility equipment, and the cleanup with the assistance of the EH&S Manager and local and state authorities, if necessary. The Emergency Coordinator has complete authority to commit necessary resources of the Company in the event of an emergency.

EMERGENCY EQUIPMENT

Table 1 Emergency Equipment

Personal Protective Equipment	Use	Capabilities	Location
Gloves	Chemical resistant gloves to protect hand and arm. (e.g. black butyl rubber, polyethylene or Teflon for sulfuric acid; nitrile can be used for other chemicals) Chemical resistant boots to protect feet from contact with chemicals.	Effectiveness varies with chemical; refer to Table 4 and information below table. Effectiveness varies with chemical; refer to Table 4. Leather gloves provide general protection and no chemical resistance. Thin nitrile (<0.3 mm) have limited chemical protection.	Chemical resistant gloves at yellow drum lab spill kit and Fire Water spill Kit (neoprene chemical resistant gloves) Disposable Nitrile typically in lab. Leather gloves available at warehouse for general protection.
Boots "Black" Chem. Resist boots (ANSI Z41-1991)	Chemical resistant boots to protect feet from contact with chemicals.	Effectiveness varies with chemical; refer to following Table 4.	Foot protection provided by Chem Max 1 suits.
Face shield and Goggles	Eye protection Face Shield protects against chemical splashes.	Face shields must be suitably supported. Provides limited eye protection. Does not protect adequately against projectiles. Indirect vented or non-vented splash. Goggles protects against vaporized chemicals, splashes, and projectiles. Face shield provide limited/basic face protection from chemical splashes.	Goggles(2)(splash type) and face shields(2) in lab spill kit and Fire Water spill kit.
Chemical Suits (e.g. Tychem SL (Saranax w/ foot covers) and Tyvek QC w/foot covers, chemical resistant boots)& Duct tape	Protects against some chemical splashes onto the body but not against vapors. Use only if allowed by chemical. See appendices for chemical on-site; otherwise, use MSDS/Chemical clothing guide; e.g., Dupont Permeation Guide.	Provides limited chemical protection against concentrated acid and alkalis and many hydrocarbons, but is useful if the risk of splashing is low. May use duct tape to connect overalls to boots and gloves. Duct tape can be used on chemical suit to aide in sealing between gloves, boots, respirator or other gaps.	Yellow Chemical Resistant Suits (2) (Chem Max1) at Lab spill kit and Fire Water spill kit. Duct tape available in warehouse and throughout plant.

Personal Protective Equipment	Use	Capabilities	Location
Firefighters Protective Clothing	Gloves, helmet, coat, pant, boots.	For trained firefighting personnel at facilities having a fire brigade. Meet NFPA standards. Protects against heat, hot water and some particles. Does not protect against gases, vapors, or chemical permeation.	None on-site. Use Concord Fire Department.
SCBA (Self-contained breathing apparatus)	Supplies clean air to the wearer from a source carried by the wearer. Recommended when entering an atmosphere that is immediately dangerous to life and health (IDLH), entering into an unknown situation and permit required confined space rescue.	Offers highest level of protection against most types and levels of airborne contaminants. SCBAs have short operating times and are bulky and heavy, adding to heat stress.	Scott Air-Packs are located in elevation 134 in the Control Room. To be used for IDLH atmospheres for PRCS rescue.
Air Purifying Respirators (APR) with cartridge	Supplies purified air, only to be used if: • Identify and concentration of contaminants are known and the correct cartridge has been selected. • O_2 content is at least 19.5% • there is periodic air monitoring of the work area • the respirator assembly is appropriate for protection against the specific contaminants and concentration levels • respirator has been fit tested on the wearer	Full face respirator provides better chemical splash protection than face shield Can only be used for protection against gases and vapors with adequate warning or for specific gases, provided the service life is known and the safety factor is applied.	3M & North cartridges available for particulate protection. P100. North organic vapor, acid gas, particulate are also available for use with full face respirators. External contactors will be used for major releases.
Decontamination Equipment	Clean PPE and response equipment in accordance with manufacturer's instructions. When decontaminated, store equipment in clean, dry areas to protect from further contamination.	Should be used as needed to re-use equipment and supplies.	Eye wash and showers can be used. Use plastic sheets when necessary to contain liquids. In general, use contractor equipment.

Table 2: Hazard Mitigation Equipment			
Hazard Mitigation	**Use**	**Capabilities**	**Location**
Speedi-Dry	For the containment and/or absorption of spill of oils, alkaline materials, and most non-acidic aqueous materials.	Do not use on acids unless first neutralized with lime at direction of Environmental Manager.	Speedi-dry is at Fire Water spill kit, Lab spill kit and behind universal waste shed.
Drums/Containers	Contain spills, etc.	Drums and containers must be compatible with contents.	A drum is at the lab spill kit (white drum and yellow drum). Cubic Yard boxes are obtained from contractor for hazardous waste.
Absorbent pads, socks and drain blockers.	Used to contain spilled material.	Use absorbents rated for spill type. Universal (acid/caustic/solvent) and Oil (oil/coolant/solvent) types available.	A variety of socks, dikes, pillows, booms, mats are available at the Lab & Fire Water Tower spill kits. Lab kits – both types. Fire Water Kit – Oil type and has Storm drain mat.
Plastic shovels/brooms	For cleanup of materials.	Use only plastic (i.e., non-sparking shovels).	Fire tower spill kit has broom and shovel. A spark free shovel is at lab spill kit.
Acid / Caustic Neutralizers	Neutralize acid and caustic spills.	Use caustic neutralizers (lime) with acids. Use acid neutralizers (acetic acid) only with caustics	Lime available at lime silo for minor releases of caustic. Sodium bicarbonate will be used for small acid spills. Contract services for major releases.
Colorimetric Indicator Tubes and Pump	To quickly estimate the concentration of a contaminant in air for specific gases in an emergency situation.	"True" concentrations versus "measured" vary. Tubes should be refrigerated to improve performance. Experienced users should be responsible for reading tube results.	None on-site. Can be utilized by emergency response contractors as needed.

Table 2: Hazard Mitigation Equipment			
Hazard Mitigation	**Use**	**Capabilities**	**Location**
1.5 inch hose lines, Masterstream Devices (water cannons), Fire Extinguishers, Fire Stations, Sprinklers.	Firefighting material supply	Fire Extinguishers for incipient stage fires. Hoses and sprinklers as needed for larger fires. Limited to trained and authorized personnel or external firefighting department. Type ABC are capable of extinguishing all types of fires including flammable liquids.	Hoses: Stations throughout facility. Fire extinguishers throughout facility including near hazardous waste storage area. (directly across) Sprinklers and fire hose located on tipping floor. Masterstream devices(2) located on charging deck. Ele. 163
Emergency Lights Pull Stations CO2 System	Lighting Alarms Fire suppression	Fire and emergency response. (Alarm, lighting, emergency signal, CO2 removes oxygen from atmosphere and are used for specific types of fires (e.g. electrical, etc.). Pull stations provide internal communication on fire alarms.	Emergency Lights & pull stations throughout facility
Plant paging system, telephones and/or 2-way radio	Communication	Internal communication to summon emergency response. External communication to summon response contractors, emergency personnel, etc.	Phones/paging throughout facility. Two-way radios are assigned to designated plant personnel.
Plug-n-seal	Plug leaks	Temporary patch.	A culvert plug for retention pond and storm drain mat is at the Fire Water Tower spill kit. Use emergency contractor as needed.
Yellow Caution Tape and Red Danger Tape	Provide warning barrier	Communication barrier. Not a physical barrier.	Safety equipment supply closet in control room & warehouse.

Table 3: Medical/First Aid Equipment			
Medical/First Aid	**Use**	**Capabilities**	**Location**
Stretchers	Remove victim from emergency location.	Movement of victim at discretion of medical response personnel. Immediate removal in life or death situations. **May only be available from professional emergency medical response personnel.**	Tool crib closet adjacent to control room. Otherwise, utilize emergency services.
Eyewash stations	Flush any possible substances from eyes	Continue flushing with fresh water for a full 15 minutes. The time water is needed to flush the eyes is critical to preventing injury.	Marked locations throughout facility.
First aid stations	Provide first aid to victim.	***Trained First Aid Personnel shall determine usage.***	First Aid Kits are in admin offices, maintenance shop and control room.

EVACUATION PLAN

Evacuation route maps have been developed and posted in numerous locations in the facility. The need to evacuate the facility will be determined by the Emergency Coordinator or other First Responders, if necessary. The primary muster area is located at the scale house. The secondary muster area is the contractor parking lot.

COORDINATION AGREEMENTS

The facility has discussed response agreements with the local Police and Fire Departments. No written agreement exists, but it is fully expected based on verbal discussions that both Police and Fire will respond to the facility if called.

The facility does maintain a service agreement with Clean Harbors Environmental Services for emergency response services.

Copies of the integrated Spill Prevention, Countermeasure and Control Plan and Hazardous Waste Contingency Plan were distributed on April 26,2013 to NHDES-Waste Management Division, Concord Fire Department, Concord Hospital, NH Department of Homeland Security and Emergency Management, and the Regional Emergency Planning Committee

IMPLEMENTATION OF THE CONTINGENCY PLAN

Oil Spill Reporting

State of New Hampshire Regulations (Env-Or 604.06) require that the responsible party or other person who becomes aware on an oil discharge (such as Wheelabrator, if a customer truck releases oil) shall notify NHDES immediately after obtaining knowledge that a discharge meeting one or more of the criteria listed has occurred. Any spill that meets one or more of the criteria listed below must be reported to NHDES.

1. A discharge of any oil into surface water (i.e., Burnham Brook) or groundwater of the state;
2. A discharge of 25 gallons or more of oil to land;
3. A discharge of less than 25 gallons to land, unless the discharge is cleaned up immediately and properly disposed of;
4. A discharge of oil that results in the presence of vapors that pose an imminent threat to human health (such as gasoline spilled where vapors enter a building);
5. A discharge of oil resulting in a violation of the groundwater quality criteria in a sample collected in a water supply well; or
6. A discharge of oil resulting in the detection of Non Aqueous Phase Liquid (NAPL)(includes a layer of oil floating on water surface or more dense liquids accumulating at the bottom of a pond or waterway for example).

Hazardous Material Spill Reporting Regulations

The State of New Hampshire Hazardous Waste regulations (Env-Wm 513.01) require reporting within 1 hour upon discovery of any discharge of hazardous waste or any discharge of a material which when discharged becomes a hazardous waste that poses a threat to human health or the environment, for example, into storm or sanitary sewers, onto the land or into the air, groundwater or surface waters. Wheelabrator Concord does not routinely have any materials on site that when spilled would be reportable since the materials, when waste are not listed hazardous waste. When non-routine materials are brought on site, the regulatory list in Env-Hw 402 is reviewed to determine if the material would be reportable to the NHDES if spilled.

The definition of Hazardous waste in NH includes Env-Hw 404.02 Spills Residues and Contaminated Soil, Water and Debris. Any residue or contaminated soil, water or other debris resulting from the spill or cleanup of a spill into or on any land or water of any hazardous waste or any material listed in Env-Hw 402 shall be regulated as a hazardous waste mixture in accordance with Env-Hw 404.01.

Hazardous Waste Contingency Plan Required Reporting

In addition to the reporting requirements of 40 CFR Part 265 Subpart D / Env – HW 509.02 the Emergency Coordinator must immediately (within 1 hour) notify the NHDES using the 24-hour spill response number or the National Response Center (1-800-424-8802) immediately (within 15 minutes), and provide the following information:

Name, address and telephone number of the reporter,
Name and address of the facility,
Date, time and type of incident (e.g. fire, explosion);
Name and quantity of material(s) involved, to the extent known;
The extent of injuries, if any; and

An assessment of actual or potential hazards to human health and the environment outside of the facility.

Following contingency plan implementation, the Emergency Coordinator will notify NHDES and local authorities that the facility is in compliance with the following requirements.

(1) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

(2) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

Local Reporting Requirements

Any oil or chemical discharges to the municipal sewer system must be reported to the Concord Sewer Department. The facility is not subject to any other local release reporting requirements.

Wheelabrator Concord is a permitted Solid Waste Facility. As such, NH State Solid Waste Rules require facility management to keep the NHDES informed about any "environmental incidents" that threaten human health or the environment. Spills or releases significant enough to require reporting to any other agency qualify as an "environmental incident" and these must be reported to the NHDES. Wheelabrator Concord occasionally generates small quantities of hazardous waste. If hazardous waste is ever released at the site, then the spill must be reported to the NHDES in accordance with NH Hazardous Waste Rules.

The Concord Fire Department is the point of contact for the Local Emergency Planning Committee (LEPC). The Wheelabrator facility discharges sanitary wastes to the City of Concord sewer system and these discharges are regulated under the City's sewer ordinance. Environmental releases at the Wheelabrator Concord site are not regulated by any other city or county regulations or ordinances.

EMERGENCY RESPONSE PROCEDURES

a) Immediate Notification - Include Phone Numbers of Local and State Agencies
b) Control and Containment
c) Follow-up
d) Notification of Compliance Before Resuming Operation

REQUIRED REPORTS TO THE WASTE MANAGEMENT DIVISION

Within 15 days of an emergency requiring contingency plan implementation, the response coordinator will file a written report with NHDES. This report will include the following information:

Name, address and telephone number of the reporter,
Name and address of the facility,
Date, time and type of incident (e.g. fire, explosion);
Name and quantity of material(s) involved, to the extent known;
The extent of injuries, if any; and
An assessment of actual or potential hazards to human health and the environment outside of the facility.
Estimated quantity and disposition of recovered material that resulted from the incident.

Radioactive Load Procedure

The facility is equipped with a radiation detector at the scale house to insure radioactive wastes are not accepted for disposal. If a truck triggers the radiation alarm, then the audible alarm located in the Control Room will sound. The truck will not be able to weigh in or be permitted to proceed past the scale. The Control Room Operator will then instruct the driver to back off the scale and onto the side of the road outside the fenced area and wait until the Shift Supervisor, Operations Manager or the Environmental Manager arrives. The radiation detector alarm will be reset and the truck will approach the scale for the second time to ensure that the initial alarm was not a false alarm. Once it has been determined that the truck/load is the source of the radiation alarm, the following will take place:

Inform the driver that the load is "hot" and therefore cannot be accepted at the plant.
Inform the driver that the truck must be parked outside the facility gate.
Ask the driver to stand away from the truck. Ask the driver if he/she has had any recent medical treatment to verify that this is not the source.

The Shift Supervisor, Operations Manager, or Environmental Manager will inform the driver that the load will be inspected by the State Dept. of Public Health. The state inspectors will decide on the fate of the hot load.

A Radiation Detection Report will be completed to record the following, an example form can be found on Page 36. This report will include, but not be limited to:

The driver's name
The trucking company name (or community)
The truck's license plate number
The truck number in the facility system
Time and date the load arrived at the facility
Origin of the load
Radiation detector reading(s)

Electronic copies of completed reports will be stored in the facility records storage system.

Wheelabrator Technologies Inc.
A Waste Management Company

Concord Radiation Detection Report

Date: _____

Time the Load Arrived: _____ Load Departure Time: _____

Shift Supervisor: _____

EHS Manager: _____

Vehicle Identification:

Truck License Plate Number:_____

DOT License Plate Number:_____

Truck # (Concord Decal):_____

Driver's Name:_____

Hauler's Company:_____

Hauler's Address:_____

_____

Hauler's Telephone:_____

Hauler's Fax:_____

Source of Origin (if known):_____

Radiation Meter Readings:

Scalehouse: Ludlum Model 177

First Reading:_____ counts/min.

Second Reading:_____ counts/min.

Ludlum Model 3 Reading:_____ mRad./hr.

Contacts Made:	Time:
NH Bureau of Radiological Health	_____
EHS Manager	_____
General Manager	_____

Shift Supervisor: _____
(Signature)

EHS Manager: _____
(Signature)

VERIFY REVISION IN O-BOX BEFORE USE

Form #:
FM-OHS-CON-410-1

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EMERGENCY SERVICES CONTACT NUMBERS	
Concord Fire Department 911 Non-Emergency 603-228-2702	**PUBLIC WORK / UTILITIES**
Concord Police Department 911 Non-Emergency 603-225-8600	Sewage Treatment 603-225-8696
NH State Police 603-271-4981	Water 603-225-8696
EMEGENCY SPILL RESPONSE	PSNH 603-225-8699
NH Department of Safety(24hr) 603-271-4381	Unitil 603-224-1631
NHDES(Mon-Fr- 8am-4pm) 603-271-3899	**MISCELLANEOUS**
EPA National Response Center (24hr) 800-424-8802	NHDOT 603-271-3734
Local Emergency Planning Commission 603-225-8650	OSHA 603-225-1629
State Emergency Response Commission 603-271-2231	NH Fish and Game 603-271-3211
Clean Harbors(Bow) 603-224-6626	EPA Region 1 Boston 888-372-7341
	Hampton Corporate 603-929-3000
HEALTH DEPARTMENT	**MEDICAL**
NH Radiological Health 603-271-4588	Concord Hospital 603-225-2711
State Department of Health 603-271-4501	Poison Control Center 800-222-1222
Center for Disease Control 800-232-4636	CHEMTREC 800-424-9300

Section 7 Employee Training Program

Procedures are in place to ensure that all personnel working at the facility understand the basic safety and environmental regulatory requirements, and the potential impacts associated with the performance of their job using appropriate education, training or experience. This procedure applies to all Wheelabrator personnel and contract employees who manage, or perform work at Wheelabrator facilities, to the extent applicable.

The facility maintains an annual training plan that identifies the employees in need of training, and at what frequency. The Training Attendance Form is used to identify all individuals participating in training that does not specifically require certification of competency by the trainer and the participant. Training Certification Form shall be used to identify individuals that have demonstrated competency in training that specifically requires certification of competency by the trainer.

Specific training requirements are outlined in more detail in WOHS-4.4.2 Health and Safety Procedure and WEMS-4.4.2 Environmental Training Plan. These are incorporated here by reference.

The facility is also required to meet the requirements of Env-Sw 1600 Solid Waste Facility Operator Training and Certification. Unless exempted under Env-Sw 1602.02, this applies to any individual at the Wheelabrator Concord facility who:

(a) Directly operates a solid waste facility;
(b) Directly handles or otherwise manages solid waste at a solid waste facility; or
(c) Directly supervises any individual describe in (a) or (b) above.

Section 8 Recordkeeping and Reporting

The facility uses a plan that defines the controls needed for the identification, storage, protection, retrieval, retention, and disposition of records required to ensure conformity with applicable regulatory recordkeeping requirements, and the effective operation of Wheelabrator Technologies Inc.'s Integrated Management Systems.

Records are to be legible and readily identifiable. Information on records or logs are to be documented in a manner or medium that if altered it would be obvious that changes have been made. Records shall be electronically stored, or if needed, a hardcopy placed in suitable containers or cabinets for storage and protected from loss, deterioration, and damage. Electronic workbooks, data, or spreadsheets maintained as a record are saved into a read only file folder or exported as a PDF at the applicable frequency to ensure the integrity of the electronic data.

Recurring regulatory reporting requirements are maintain in the facility task management system. This system is populated with applicable permit, plan or regulatory based compliance tasks. Tasks are assigned to an individual for completion and a review is done periodically to ensure all assigned tasks are completed within the required time frame.

When a new permit is received, a plan is changed, or new or revised regulations are issued, then the system is reviewed to determine if any new tasks need to be created, or existing tasks revised.

The facility also complies with the recordkeeping and reporting requirements found in Env-Sw 1105.06 and .07

Section 9 Revision Log

Revisions to this manual are to be tracked in the log below. Provide details on the following.

Revision Date and Number	Author	Revision Description
Revision 0 8-10-14	Wheelabrator Concord Company	Initial manual version
Revision 1 10/7/14	M. Hughes	Clarified the use of roll off boxes or dump trailers for ash transport
Revision 2 10/20/14	M. Hughes	Revise Page 4 to change references to Env-Wm to Env-Sw Removed the references in Section 3.7 to a Section 9.3 Revise Section 3.7, on page 11 to include additional information on the lime grit pumping system installation. Revise section 3.7, starting on page 13 to include additional detail on the ash building scrubber and ventilation system upgrades. Revise Section 6, page 22 to include an update to the backup Emergency Coordinator listing. Add an expanded table of emergency contacts in Section 6. Revise Section 7, page 31 to include reference to the training and certification requirements found at Env-Sw 1600. Revise Section 8 to include reference to the recordkeeping and reporting requirements found in Env-Sw-1105.
Revision 3 10/31/14	Matt Hughes	Correct the Solid Waste Permit number listed on page 4 and in

		the document footer. Add additional information related to residual waste management to Section 4 Add additional information related to facility routine maintenance, inspection and monitoring requirements necessary to assure the integrity of facility operation to Section 5 Add a description of the radioactive load procedure to Section 6. Attached example form on Page 36.