

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
PROVISIONAL SECTION 61 FINDING PURSUANT TO
M.G.L. CHAPTER 30, SECTION 61

PROJECT NAME: Southbridge Environmental Industrial Park
PROJECT LOCATION: Southbridge, MA
PROJECT PROPONENT: Southbridge Recycling & Disposal Park
EEA NUMBER: 10955

These revised Section 61 Findings for Southbridge Environmental Industrial Park in Southbridge, Massachusetts have been prepared to comply with the requirements of Massachusetts General Laws (M.G.L.) Chapter 30, Section 61 and the Secretary's Certificate dated November 15, 2007. State agencies and authorities are required to review, evaluate, and determine the impacts on the natural environment of all works, projects, or activities conducted by them and to undertake all feasible means and measures to minimize and prevent damage to the environment. As part of any determination made, this law requires that state agencies and authorities issue a "finding" describing any impacts of the project and certifying that all feasible measures have been undertaken to either avoid or minimize these impacts.

I. PROJECT DESCRIPTION

Overview

Southbridge Recycling & Disposal Park (SRDP or Proponent), a subsidiary of Casella Waste Services (Casella), proposes changes that involve two elements of the Southbridge Environmental Industrial Park (the Park) project (the Project), described below (hereafter, collectively, the Project Change). The Project as most recently reviewed and certified under Massachusetts Environmental Policy Act (MEPA) is located on the site assigned area of land in Southbridge, Massachusetts. Currently, portions of the property have been or are being developed and include a solid waste processing/recycling facility (the Processing Facility) and a sanitary landfill (the Landfill). The Processing Facility is owned and operated by SRDP. SRDP also operates the Landfill for the Town of Southbridge (the Town), the Landfill owner. The Landfill's current permitted annual tonnage limit is 180,960 tons per year (tpy). The existing Processing Facility, located adjacent to the Landfill, is permitted to receive 234,000 tpy of construction and demolition material. SRDP has received authorization to construct a new Processing Facility in the Park. The new Processing Facility will need to be permitted to accept construction and demolition debris.

In collaboration with the Town, the Proponent proposes the following changes:

- Approved Allocation of Waste Acceptance per the December 9, 2011 MassDEP Permit: Based on six (6) operating days per week, as conditioned in the December 9, 2011 MassDEP Minor Modification Permit (Permit Modification), Transmittal No.X239694

the Facility may accept an average of one thousand (1,000) tons per day (tpd) of waste comprised of any combination of C&D residuals and MSW from residential, commercial and industrial sources without regard to geographic origin. To allow for seasonal and other fluctuations in the waste stream, the Facility may accept up to fifteen hundred (1,500) tons of such waste on any one day during an operational week. The Facility may accept no more than three hundred thousand (300,000) tons per calendar year of such wastes.

- Future waste reallocation: Up to 105,600 tons per year (tpy) of solid waste from the new Processing Facility may be reallocated to the Landfill, thereby increasing the annual amount of material received at the Landfill and decreasing by a corresponding amount the volume to be received at the Processing Facility. The Proponent seeks to limit the disposal rate at the Landfill to a maximum of 405,600 tpy, and a maximum of 492,960 tpy from the Landfill and the Processing Facility, combined. In accordance with the modified approved site assignment (June 9,2008) the Reallocation will take place in two phases with the first phase being a change in waste type at the landfill from C&D to any combination of MSW and C&D without regard for geographic origin of such wastes, Future waste reallocations will require MassDEP permitting.
- The revised annual Landfill limit of 405,600 tpy is proposed to consist of any combination of MSW and residues from the Processing Facility.

MEPA History

An Environmental Notification Form (ENF) for the Project, detailing a proposed landfill expansion and tonnage increase, was previously submitted to the Executive Office of Environmental Affairs (EEA) MEPA Unit for review on October 31, 1996. By correspondence dated December 23, 1996, EEA designated the project "Major and Complicated" and issued a special procedure in recognition of the fact that certain aspects of the project may require more in-depth analysis than others and allowed aspects of the project relating to the solid waste permitting needs of the Town and the former operator of the landfill facility, to move forward prior to completion of the Draft Environmental Impact Report (DEIR). On December 23, 1996 EEA issued a Certificate on the ENF stating the Project required an Environmental Impact Report (EIR) pursuant to the 301 CMR 11.04 and 11.06.

On July 31, 1998, EEA issued a Certificate on the DEIR stating that in accordance with the special procedure issued for the Project, EEA would allow solid waste aspects of the Project to move forward prior to completion of the Final EIR.

The Project aspects permitted to move forward included:

- Assignment of a non-site-assigned area of the existing landfill increasing the assigned area from 39.87 acres to 120.05 acres on the north side of Barefoot Road.
- Increasing the Landfill's permitted capacity from 379 tpd to 580 tpd, consisting of: 500 tpd recycling residuals and 80 tpd of MSW from within the Town.

SRDP submitted a Notice of Project Change for the Project on June 29, 2007. In the Certificate on the Notice of Project Change (the Certificate), dated August 10, 2007, EEA determined that "this project warrants additional environmental review in the form of a Supplemental

Environmental Impact Report (SEIR) because impacts associated with this change were not addressed during previous MEPA review.” EEA found that a SEIR is necessary to address issues related to the status on the overall Project, changes in infrastructure, operations, management and closure plans associated with the reallocation, and environmental impacts and mitigation of the reallocation of solid waste volumes including air quality, traffic, transportation and historic resources. EEA also requested that the Proponent update the Section 61 findings for each state permit and identify the schedule for implementation and associated costs of mitigation measures.

MassDEP has reviewed and commented on the above MEPA submissions and has considered the comments of various parties on the MEPA process in connection with the permit application submitted by the proponent. This Section 61 finding is based upon the information disclosed and discussed in the MEPA review process.

II. PROJECT IMPACTS AND MITIGATION MEASURES

The SEIR described certain potential and expected environmental impacts relating to the Project Change and described efforts to minimize them in accordance with applicable MEPA standards. The following sections describe potential or expected Project Change impacts and the strategies to minimize or mitigate them.

The table below identifies the expected agency actions for the Project Change.

Agency	Action
MassDEP	Solid Waste – Minor Modification of Existing Landfill, Authorization to Construct, and Authorization to Operate
	Air Quality – Comprehensive Plan Approval and Title V Operating Permit

Efforts to identify and mitigate potential impacts to a local environment are intrinsic to a well-designed and operated landfill. The Landfill is one such example of a disposal activity where to identify and mitigate potential impacts are integrated into its design and operation. Its operation constitutes an activity intensely regulated by MassDEP and the Town. The Landfill and its operations are subject to regular inspections by the Proponent and the Town and its representatives. As any potential environmental impacts are identified, systems and operations are reviewed and refined, as necessary. As described above, most of the mitigation measures already are in place; as a result, these Section 61 Findings do not include a schedule for their implementation. Most of the remaining mitigation measures will require approval to implement, and the Proponent will implement those measures in accordance with the milestones prescribed in those approvals.

The following discusses the potential or expected environmental impacts from the Project Change, and the steps the Proponent has taken or plans to take to mitigate them. As these

subjects were covered in the preceding section, that section is relied upon below, and referred to frequently.

Landfill Operations

The Landfill is owned by the Town and operated by SRDP. The Landfill is a waste disposal facility that currently accepts MSW and residuals from recycling operations including bulky waste processed by the Processing Facility, located adjacent to the Landfill. The Landfill is approximately two (2) miles north of Southbridge center, adjacent to the Town of Charlton. The Landfill is bounded to the north and west by Berry Corner Road, to the south by Barefoot Road, and to the east by H Foote Road and residential properties.

The Landfill is located next to the Southbridge Municipal Airport and is part of the Park. The airport is classified by the Federal Aviation Administration as a General Utility airport (i.e., maximum gross takeoff weight of 12,500 lbs or less). The airport has two runways: a primary runway (02/20) that lies in a north/south direction and is 3,500 ft long; and a turf surface runway (10/28) that lies in an east/west direction.

A New Processing Facility is on schedule to be completed in 2012 adjacent to the present facility located across Barefoot Road from the Landfill. Once three phase power is installed to the new Processing Facility, the existing Processing Facility will be decommissioned. At present only kicksorting for waste ban materials (pre-processing) and bulky waste occur at the Processing Facility.

The Landfill has been and will continue to be developed in phases and cells. Initially, a 20.6 acre area was site assigned for waste disposal. In 1999, an additional approximately 32 acres was site assigned for disposal. In 1999, the Phase II expansion added an additional 32.2 acres. Development of Phases I through VII have been approved for construction, with the most recent Permit, No.W148135, issued on 28 September 2007, by MassDEP. Phases I through VI and Cells 7.1A, 7.1B, 7.1B', 7.2A, 7.2B and 7.2B' of Phase VII have been previously constructed; Cells are currently accepting waste. A total of 40.4 acres of base liner has been constructed to date.

The Landfill's current maximum permitted capacity is 580 tpd (average, based on 6 days per week of operation, 725 tpd Max day based on a six day week). The Landfill's current permit, June 1, 2010 Permit (#X006296), authorizes the facility to accept, based on 6 operating days per week, an average of 580 tpd of waste comprised of any combination of C&D residuals and MSW from residential, commercial and industrial sources without regard to geographic origin.

The December 9, 2011 permit (X239694) authorizes the Landfill to accept, based on 6 operating days per week, an average of 1,000 tpd of waste comprised of any combination of C&D residuals and MSW from residential, commercial and industrial sources without regard to geographic origin. To allow for seasonal and other fluctuations in the waste stream, the Landfill may accept up to fifteen hundred (1,500) tons of such waste on any one day during the operational week. The Facility may accept no more than three hundred thousand (300,000) tons per calendar year of such waste.

Incoming waste vehicles to the Landfill are weighed at the scale house prior to being directed to the applicable area for unloading. The Landfill implements an inspection and screening program for hazardous waste in accordance with applicable MassDEP and EPA regulations. In addition, solid waste banned by MassDEP is collected at and separated within the recycling area. Metal items, white goods, tires, lead-acid batteries, and paint collected at the recycling area are removed and recycled on a regular basis. Records are maintained to track the delivery and disposal of waste.

Waste is placed in the active portion of the Landfill. The waste is placed in controlled lifts and compacted by means of repeated passes of a compactor. At the end of each operating day, a minimum 6-in. thick daily cover layer is placed over active areas. Exterior interim side slopes are graded on a 3 horizontal (H):1 vertical (V) slope, capped with interim cover, track-walked and hydro-seeded for stabilization.

The operating Landfill includes the following systems (described below) that monitor, contain, and/or treat any by-products generated by Landfill operations:

- A final cover system that provides a stable environment;
- a groundwater monitoring system that allows groundwater quality sampling to occur as part of the environmental monitoring program;
- a stormwater system that controls stormwater runoff from the Site;
- a leachate management system that collects leachate from the base of waste disposal cells, transfers leachate through a piping system to a storage tank for off-site disposal; and
- a gas management system that extracts landfill gas from the waste to prevent release of odors and potentially hazardous gases to the atmosphere, and combusts extracted gas.

The Landfill has prepared and implements numerous plans and performs regular inspections of Landfill systems and operations to comply with applicable requirements and to protect the local environment.

Plans include the Landfill's Stormwater Pollution Prevention Plan (SWPPP), the Spill Prevention, Control Countermeasures (SPCC) Plan and the Environmental Monitoring System Plan and Bird Control Plan. The key elements of these and several other plans are addressed in the revised Section 61 Findings. The Landfill also has procedures in place to inspect incoming loads for hazardous waste or banned items (see above).

In addition, the Landfill implements operational plans, including a seep monitoring plan, a road maintenance program and a health and safety plan. Seeps are actively managed when observed. Maintenance of the perimeter access road includes routine re-grading and updating perimeter erosion and sedimentation controls. When appropriate, a water truck is used to control dust and a sweeper is utilized to clean paved roads and parking areas. Health and safety meetings are routinely held and appropriate training is performed.

Under the provisions of several permits, the Landfill monitors certain systems (discussed below); it also has monthly inspections conducted, including several performed by a third party. In addition, the Town has a full-time Landfill monitor who independently reviews Landfill operations and conducts regular inspections. The inspections include assessment of the following:

- construction;
- equipment; waste handling activities;
- bird hazards;
- closure system;
- vector, dust and odor control;
- litter control;
- access road;
- posting of the landfill;
- leachate collection and disposal; and
- storm water drainage system.

Bi-monthly inspection reports are generated and submitted to the MassDEP, Southbridge Board of Health, and Southbridge Town Manager.

Cover System Design

As the Landfill final grades are achieved, a final cap is applied to prevent precipitation from infiltrating into the landfilled water. The final cover system is constructed in accordance with MassDEP standards and consists of the following components (from top to bottom):

- 12-inch thick vegetative soil layer which can be considered as six-inches of topsoil and six-inches of vegetative support layer (VSL);
- 12-inch thick protective cover layer which includes the above VSL;
- Geocomposite drainage layer, consisting of 250-mil thick HDPE geonet with a needle-punched, 6 oz/yd² non-woven geotextile heat bonded to each side;
- 40-mil thick textured HDPE geomembrane cap;
- 6-inch thick subgrade soil; and
- Varying thickness of grading and shaping material.
- A total of 17.1 acres of the Landfill has been capped to date.

Current Design Standards and Groundwater Protection and Monitoring Systems

Phase VII of the Landfill currently is the active Landfill phase. Its design reflects current industry and regulatory standards for MSW landfills. The Phase VII design incorporates a double composite liner system and other engineering controls that meet existing regulations. The base lining system consists of the following components (from top to bottom):

- 18-inch thick (minimum) sand drainage/protective cover layer, having a permeability exceeding 1×10^{-3} cm/sec;

- primary geonet composite drainage net, consisting of 250-mil thick high-density polyethylene (HDPE) geonet with a needle-punched, non-woven geotextile heat bonded to each side, hereafter referred to as geonet composite;
- 60-mil thick textured HDPE geomembrane primary liner;
- needle-punched geosynthetic clay liner (GCL);
- secondary geonet composite drainage layer, similar to the primary geonet composite;
- 60-mil thick textured HDPE geomembrane secondary liner;
- six-inch thick compacted low-permeability layer, having a permeability not exceeding 1×10^{-7} cm/sec; and
- an underdrain system (to maintain the required four foot separation between the bottom of the liner and the maximum water table).

Groundwater Monitoring and Protection

The Landfill's water monitoring system consists of four components which, in total, are used to gauge the type and extent of any impacts to local groundwater.

The system consists of fifteen groundwater monitoring wells, four surface water monitoring stations, and an underdrain monitoring point. It also includes groundwater monitoring at residences near the Landfill (discussed below). Monitoring wells are located upgradient of and downgradient from the Landfill. Surface water sampling stations are established downstream and upstream of the Phase VII area and upgradient of the landfill area. The underdrain collects groundwater from beneath Phase VII.

Groundwater elevations beneath the Phase VII area are controlled by an underdrain system constructed below the liner system. The underdrain system consists of 4-inch diameter perforated pipe surrounded by crushed stone and filter fabric. The underdrain has been designed to maintain the required 4-ft separation between the liner system and peak groundwater elevation.

Monitoring

The Southbridge Board of Health requires well monitoring be conducted at residences within ½ mile of the Landfill. This monitoring is performed every year, with one-third of the homes monitored each year during a 3-year cycle (e.g., residences tested in year 1 are retested in year 4). Currently, there are 21 properties that participate in the program. Homeowners are contacted annually to confirm they want to continue participating in the program and to set up a sampling date (for those scheduled for sampling that year). Results are reported annually to MassDEP and to the Southbridge and Charlton Boards of Health. Results also will be reported to each homeowner where such sampling occurs.

To the extent the Landfill is found to impact the local environment, the monitoring data will reflect those impacts, and the Proponent will work with MassDEP to develop strategies to address them.

The water monitoring system (groundwater monitoring wells, surface water stations, and residential wells) are analyzed for the following parameters:

Conductance	Total Dissolved Solids
Nitrate	Alkalinity
Chloride	Sulfate
pH	Temperature
Iron	Manganese
Arsenic	Barium
Cadmium	Chromium
Copper	Cyanide
Lead	Mercury
Selenium	Silver
Zinc	Chemical Oxygen Demand (COD)
Volatile Organic Compounds	Dissolved Oxygen
Acetone	Methyl Isobutyl Ketone
Methyl Ethyl Ketone	1,4 dioxane

Stormwater Protection and Monitoring Systems

Stormwater systems at the Landfill reduce the potential for impacts to the local environment, including wetlands, through the following means:

- runoff from the Landfill is diverted to detention basins, limiting the flow of water into the wetlands after a rainstorm;
- diverting runoff water to basins allows time for particulates to fall out and settle to the bottom of the basin prior to discharge to the wetlands; and
- rock dams and level spreaders are constructed along discharge pipes from the basins to slow the flow of water into the wetlands.

The stormwater basins are sized to remove at least eighty percent (80%) of the average annual load of total suspended solids (TSS) in accordance with the MassDEP's Stormwater Policy Handbook, dated February 2008.

The majority of the basins have a vertical outlet structure (i.e., a vertical pipe that is slotted up to a certain elevation). As the water level rises in the basin, water drains through the outlet structure. Periodic removal of the buildup of particulates at the bottom of the basins is performed to keep the basins in working condition.

The Landfill also implements requirements of its NPDES Stormwater Multi-sector General Permit (NPDES Permit). Among other things, the NPDES Permit requires the Landfill to

implement and update stormwater best management practices, implement the SWPPP, and monitor and sample stormwater quality.

Monitoring

The Landfill uses a permanent weather station to record rainfall and other meteorological data. The data are automatically downloaded to a computer in the compliance office. The Landfill also monitors turbidity at the inlet and outlet; recordable readings of greater than 50 NTU trigger a site review of the temporary stormwater controls. Results of the turbidity monitoring program are reported monthly to MassDEP.

Leachate Collection and Monitoring System

The Landfill has an integrated leachate system, which reflects leading industry standards to collect and control leachate generated at the Landfill. Leachate is collected and stored in an above ground storage tank. Leachate can either be pumped from the storage tank into a tanker truck through a pump house located adjacent to the storage tank or through a load-out stand pipe. Leachate is currently hauled off-site to a licensed publicly owned treatment works (POTW).

Phase VII has a double composite liner that includes both a Leachate Collection System (LCS) and a leachate detection system (LDS). Above the primary liner, the LCS consists of a header pipe typically laid on a 3 percent slope in a west-east direction. The header consists of 10-in and 8-in. diameter pipe for Cells 7.1 and 7.2, respectively. Within each cell, 6-in dia. laterals are laid on a one percent slope on 50-ft centers that run in a north-south direction and connect to the header. Beneath the primary liner, the LDS consists of four 6-in dia. pipes (one for each of the planned Phases).

The pipes are typically laid on a 3 percent slope and run beneath the LCS header. The two future connections for Cells 7.3 and 7.4 terminate on the northeast side of Cell 7.1. A sump with associated sideslope risers and pump station is located on the west side of Cell 7.1 where leachate is collected and pumped into the above ground storage tank.

Leachate is pumped out of Phase VII via two primary pumps located in the sideslope risers which access a sump area. The two primary pumps operate in duplex mode, and are activated when the level in the sump reaches 2 ft, pumping leachate to the storage tank.

The majority of Phases I-VI has a soil liner. Leachate flows into collector/transmission pipes and via gravity is conveyed to a Leachate Collection Manhole (LCMH) on the west side of Phase IIIA which is buried below the final cap. From this manhole, leachate flows via gravity to LCMH-3 located at the southwest corner of Phase I. Two pumps within LCMH-3 operate on an alternating basis to transfer leachate via forcemain northward to the storage tank adjacent to the Phase VII leachate vault.

The volume of leachate pumped is monitored using flow meters. The amount of leachate generated is tracked based on meter readings and the number of trucks used to haul the leachate. Leachate quality is also evaluated annually. An annual report summarizing leachate generation and quality is distributed to MassDEP and the Town of Southbridge.

Leachate is stored in an above ground storage tank having the following properties:

- steel construction;
- glass-lined;
- 31-ft diameter;
- 15-ft sidewall height; and
- 79,000 gallon capacity (rated capacity with 1-ft freeboard).

Leachate can either be pumped from the storage tank into a tanker truck through a pump house located adjacent to the storage tank or through a load-out stand pipe, located adjacent to the landfill gas (LFG) flare. Leachate is currently hauled off-site to a licensed publicly owned treatment works (POTW).

A second leachate storage tank will be installed to provide additional storage to accommodate leachate from Phases 7.3 and 7.4. The tank location and capacity has not yet been finalized.

Monitoring

The Landfill analyzes leachate quality annually for the same parameters as groundwater. Results are provided to MassDEP.

Landfill Gas Collection and Control System and Air Emissions

Landfill Gas Collection and Control System

The existing landfill gas (LFG) collection system collects and treats LFG generated at the Landfill. Its operation reduces potential nuisance conditions at and around the Landfill. Local air quality impacts will continue to be minimized by the existing LFG collection system. The LFG system collects methane generated at the Landfill to reduce potential odor nuisance conditions around the Landfill.

Vertical LFG wells are typically constructed from 6-in. diameter high density polyethylene (HDPE) pipe (a portion of the original gas system consists of polyvinyl chloride (PVC) piping). The wells are installed at least 10 feet off the base lining system. Each well is backfilled with coarse gravel and a bentonite seal isolates the gravel from the ground surface in order to prevent air and surface water intrusion.

Interim horizontal collectors have been used when emissions monitoring indicated elevated vapors or odors. These collectors are typically installed in the upper half of the vertical face. The laterals are temporarily piped into a header pipe until permanent vertical wells can be installed.

Additional interim measures include, as necessary, LCMHs converted to gas collection wells. These manholes also serve as regular vertical gas wells.

The LFG piping consists of a header pipe, designed as a multi-loop system around the top of the Landfill, and lateral pipe that connects the wells to the header. The wells are attached to the lateral collection pipe via flexible hose to allow different rates of settlement between the well and the lateral pipe. Accessible wellheads are equipped with a manufactured wellhead so that

gas composition, temperature, and pressure can be measured and adjusted accordingly. In some instances, wells are hard piped directly to the header pipe prior to being buried by waste.

The lateral connections to the header are typically 4-in diameter HDPE pipe. The header piping has a diameter of 6-in to 10-in. The header pipe is laid out in the form of a multiple loop to allow versatility in system control. The design allows multiple potential flow paths for gas to pass to the flare. A flow control gate valve is utilized to regulate the flow of gas from the collection system.

The LFG system provides for condensate management. LFG condensate flows in the slope gradient of the LFG pipeline. Condensate is removed from the pipeline at low elevations utilizing J-traps throughout the gas collection system to catch and dispose of the collected condensate. A knock-out pot is installed adjacent to the gas flare and traps condensate upstream of the flare. The pot drains automatically into a leachate gravity line.

A gas flare is located adjacent to the Landfill's maintenance shed and is mounted on a skid along with a pre-treatment system and a backup flare. A supplemental fuel source is provided in the event that insufficient concentrations of methane exist. The main utility flare has a flow capacity ranging from 135 to 1300 standard cubic feet per minute (scfm) of LFG at 30 percent to 50 percent methane content with a stack temperature of approximately 1,300° F. The backup flare has a flow capacity of 500 scfm and is available for use if the primary flare undergoes an extended period of downtime.

The flare blower is a multistage centrifugal landfill gas blower with 40 HP, 460 VAC, three phase motor rated for 350 to 1300 SCFM @ 50-in w.c. inlet vacuum and 15-in w.c. discharge pressure. Power is currently supplied to the flare via a 40 kW diesel generator.

The planned expansion of the LFG system includes constructing additional vertical wells at approximately one per acre. These will be installed within 12 months of reaching final grades. As construction of Phase VII progresses laterally over approximately 30 acres, 17 additional vertical gas wells are currently planned (ultimately, up to 52 vertical gas wells will be installed). As the waste is placed and the LFG system is constructed, it may be necessary to replace wells, header pipes, or lateral collection pipes to improve gas collection. Stub outs with blind flanges will be installed to allow for future gas expansions, as necessary.

In addition to the vertical wells, the planned expansion of the LFG system will include an internal combustion electric generator set (i.e., waste to energy facility) to replace the flare which will then act as a backup LFG management system. A Non-Major Comprehensive Plan Approval (NMCPA) for the landfill gas flare and electric generator set with two engines was approved by MassDEP on 6 February 2006. This approval was amended on December 3, 2010 to permit the replacement of the two engines (CAT 3516) and replace with one engine (CAT 3520). SDRP is committed to install this system by 2011 provided the electrical infrastructure to the site has been completed by National Grid. Presently, the waste to energy facility is supplying power to the flare and engine blower and lights in the maintenance garage.

Air Emissions

The existing LFG control system is large enough to handle the flow rate of LFG currently being generated. As the LFG flow rate increases, the Facility plans to install additional LFG-to energy capacity in the future. Comprehensive plan approval application(s) will be required prior to these installations, and the applications will be required to propose Best Available Control Technology (BACT).

The existing LFG control system utilizes combustion to oxidize air contaminants, and such combustion creates criteria pollutant by-products. Assuming that combustion is still the preferred control technology after the new BACT analysis is submitted, potential emissions of CO and NOx could increase substantially. Since both CO and NOx are by-products of combustion and not direct emissions from the Landfill, the rate and amount at which they are created may be adjusted by using different control technologies.

No significant increases in the criteria pollutants lead, sulfur dioxide (SO₂), or particulate matter (PM) are expected as a result of the Project Change. Lead emissions are, and are expected to continue to be, insignificant. SO₂ emissions are directly related to the presence of C&D in the Landfill and with an increase in MSW in lieu of C&D, SO₂ emissions are expected to diminish as a result of this Project Change. PM emissions are expected to increase because of the increase in total LFG through put during the maximum year.

Some form of LFG collection and control is required for this Landfill to prevent odor impacts, to comply with 40 CFR Part 60 Subpart WWW depending on uncontrolled gas generation rate, and to address safety concerns which may exist if no such control existed. As described above, a viable collection and control system already exists. An air pollution control plan application Transmittal #X236417 was submitted in January 2011. This application included a current BACT analysis for emission control from the collected LFG and is currently under review by MassDEP.

40 CFR Part 60, Subpart WWW provides that landfills over the capacity of 2.5 million megagrams shall file applications for Title V Operating Permits. Because the Facility's capacity is over 2.5 million megagrams, MassDEP is requiring the Facility to submit a Title V Operating Permit application by March 9, 2012. The Operating Permit, when issued, will contain all of the Facility's Federal and State air quality requirements.

There is a potential for an increase in nuisance conditions (noise, dust, odor) at the Landfill due to the increase in the daily MSW tonnage being proposed by the Project Change. The following is a summary of nuisance conditions at the landfill:

- Dust - Roadway dust will continue to be minimized by applying water to the Landfill roadways and stockpiled soils. Regular street sweeping of adjacent roadways will be performed. Other mitigation measures will include properly securing covers on piles of excavated material and on truck cargos, as well as minimizing the free drop height of excavated or aggregate materials during earthwork operations.
- Odor - Increases in hydrogen sulfide emissions were observed at landfill facilities that had accepted wallboard or C&D fines in many locations across the state. The potential for odor complaints from hydrogen sulfide emissions is expected to be reduced as the

Landfill shifts from predominately C&D to MSW. Given that the Landfill has installed a LFG collection system with state-of-the-art vertical and horizontal wells that meet industry standards for gas capture and odor control, the Landfill is expected to reduce its potential to create odor impacts in the future. The Landfill will submit an updated odor response action plan to MassDEP pursuant to the recent Landfill Odor Guidelines to address additional steps it may take to mitigate potential odor concerns.

- Noise - Noise generation or intensity is not expected to increase with a change from C&D to MSW. Any construction activities that produce significant noise will be limited to daytime activities. All exhaust mufflers will be in good working order, and portable noise barriers will be used with jackhammers, pavement breakers, pile drivers and rock drills as needed to shield nearby areas.

Monitoring

LFG is monitored across the Landfill in accordance with the following, as described in the LFG Monitoring Plan.

- The monitoring of the gas system is performed monthly. At the accessible wellheads, a LandTEC GEM-2000 gas analyzer and extraction monitor is used to monitor the LFG composition, flow rate, and temperature.
- Five gas probes are used to detect the presence of gases surrounding the Landfill. They are located on the Landfill perimeter and are used to monitor potential gas migration. During the gas sampling rounds, methane, oxygen, carbon dioxide, and balance gases are measured.
- For closed portions of the Landfill, surface gas is monitored quarterly around the perimeter using a 'serpentine' survey (i.e., a pattern that traverses the Landfill on approximate 100 ft intervals) using a calibrated Photovac Flame Ionization Detector (FID). Calibration records and any individual monitoring exceedance of 500 ppm above background are recorded. Results are reported quarterly to MassDEP as part of the quarterly gas submittal. This report includes the flare inspections, flare down time logs, landfill gas recovery, and the quarterly surface gas and soil gas monitoring.
- The Landfill employs a wireless monitoring system that monitors gas concentration levels at various locations across the Site. Inside the leachate control house a combustible gas diffusion transmitter and gas monitor monitors methane levels. To monitor gas concentrations at wellheads a hand pump and a GEM2000 gas analyzer and extraction monitor are used.

Traffic

The Permit Modification evaluated the potential traffic impacts of the future waste reallocation volumes and it was determined that no impacts would occur once the new access road from Route 169 was used. That road is now complete and all trucks follow a designated haul route to the Landfill which is Route 169 to Commercial Drive (the new access road) onto Barefoot Drive. SRDP will designate the same truck route and restrict all but vehicles making collection stops from traveling on non-designated truck routes. SRDP will implement a strict policy of excluding trucks that repeatedly violate prescribed truck routes. SRDP will implement this policy in

connection with local authorities to keep unauthorized vehicles from traveling on non designated truck routes in all neighborhoods surrounding the site.

Truck traffic will continue to be required to use this route as designated by the 2008 Southbridge Board of Health Site Assignment Modification Decision. The Proponent will continue to monitor local streets adjacent to the Landfill to prevent use of local streets for access. Truckers who do not regularly use the designated truck route will be denied access to the Landfill.

Wetlands

The Town contracted with EarthTech of Concord, Massachusetts to delineate wetlands in the Project area in 1997 and 1998, according to the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00) and DEP Policy 95-1, which specifically outlines the current MassDEP criteria and methodology for delineating Bordering Vegetated Wetland (BVW) in Massachusetts. Wetland boundaries are based on the three parameters of dominant hydrophytic vegetation, hydric soils, and evidence of wetland hydrology. Wetland boundaries were field surveyed and as previously indicated has alphabetical designations.

As the Project Change will not alter the existing Landfill footprint, no wetland impacts are expected.

The access road crosses several wetlands. Therefore replication of impacted wetlands was proposed as part of the Project's DEIR and required under wetland approvals issued by the Department. These replication plans are to be implemented in accordance with the requirements in the Superseding Order of Conditions, and which was adopted as a Final Decision of the Department on October 14, 2009 (File #291-413).

Litter, Vectors and Bird Management

The Landfill has extensive procedures to control nuisance conditions relating to litter, vectors and birds. It will continue to implement those procedures, and revise them as needed to mitigate impacts from such conditions.

Wind-blown Litter

Landfill employees regularly collect windblown litter. Litter fencing is also used to contain litter. The application of daily cover minimizes litter and prevents the attraction of vectors and controls odors.

Vectors

To reduce the likelihood of vermin being attracted to the Landfill, the active Landfill face will be maintained as small as practical. At the end of each operating day, a minimum of six inches of daily cover material will be placed over the compacted waste. Inactive areas of the Landfill will be covered with intermediate cover material in accordance with the requirements of 310 CMR 19.00. The application of daily and intermediate cover will prevent the attraction of vectors to

the site and control odors, if any, from the active fill material. In the event that vermin are detected, Landfill appropriate control measures will be implemented.

Bird Control Measures

Due to the proximity of the Landfill to the airport, bird control measures are implemented in accordance with 310 CMR 19.038(2) and 40 CFR Parts 257 and 258. The bird management plan consists of a habitat management plan and an active dispersal program. The intent of the habitat management plan is to maintain the Site in such a manner that it becomes less attractive to birds. Pyrotechnic devices and human patrols are used as needed to disturb and/or frighten birds so to condition them not to use the Landfill. On May 26, 2010 SRDP provided MassDEP with letters from the Southbridge Board of Health, Airport Commission, and Airport Manager approving a revised Bird Management Plan as required by the 2008 Southbridge Board of Health Site Assignment Modification Decision. A depredation permit has also been obtained for the Landfill.

III. FINDINGS

MassDEP hereby finds that, with the implementation of the mitigation measures described above, all practicable means and measures will be taken to avoid minimize adverse impacts in the areas noted above to the proposed project. It does not relieve the proponent from complying with additional MEPA requirements when applying for permits from other applicable Departments or Agencies.


Martin Stüberg
Regional Director
MassDEP – Central Region

12/9/11
Date

