Guidelines for the Siting and Operation of Waste Transfer Stations

NOVA SCOTIA
Environment and Labour

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Approved By: William Lahey

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1.0 GENERAL

1.1 Purpose

(a) The purpose of these guidelines is to provide guidance for the proper siting and operation of a waste transfer station, herein referred to as a facility, while protecting the health of the public and the quality of the environment.

(b) A facility shall be designed, constructed and operated such that it prevents the release of a substance that causes or may cause an adverse effect.

(c) These guidelines provide minimum guidance as to the requirements to obtain an approval to construct and operate a facility for the transfer of municipal solid waste and organic materials.

(d) Final assessment of applications for construction and operation of a facility will be on a case by case basis. For further information respecting these guidelines, contact the regional/district office of Nova Scotia Environment and Labour nearest to the proposed facility.

(e) Refer to Appendix A for the definition of terms used in these guidelines.

1.2 Applicable Legislation

Applicable documentation to which these guidelines apply include, but is not limited to, the following:

(a) Section 50(2) of the *Environment Act*

(b) Section 3(1) of the *Activities Designation Regulations*

(c) Section 8(1)(c)(iii) of the *Activities Designation Regulations*

(d) Section 8(2) of the *Activities Designation Regulations*

(e) Section 5(1) of the *Approvals Procedure Regulations*

2.0 APPLICATION FOR APPROVALS

2.1 Application

(a) Prior to construction and/or operation of a facility, an approval must be granted by the department pursuant to Section 3 of these guidelines.

(b) Unless specifically exempted by the Administrator, the applicant is to provide all information necessary to satisfy the requirements of Section 3 of these guidelines.

(c) Applications for approval to construct and/or operate a facility must be accompanied by a letter from the municipal unit where the facility is to be located stating that the facility meets zoning, planning restrictions and any other municipal provision(s).

(d) An application for construction and operation of a facility shall be processed following the *Approvals Procedure Regulations* and these guidelines. In addition to the applicable information outlined in Section 5(1) of the *Approvals Procedure Regulations*, the following additional information shall also accompany an application submitted to the department for approval:

1 proposed leachate disposal method and supporting design information shall be included;
2 all setback distances noted in Section 3 of these guidelines shall be included and shown on the surveyed drawing of the facility;
3 a detailed description of the facility design criteria shall be included;
4 the volumes of municipal solid waste expected and design capacity, volumes of organics, recyclables or other materials expected, and design capacity shall be included in the application for approval;
5 a standard procedure to address and record all complaints shall be described in detail; and
6 the department will require that a groundwater and surface water monitoring program be designed for the facility to be included in the facility's approval. This will be based on previous facility activities and whether monitoring exists on the facility. The groundwater and surface monitoring program shall be in accordance with Appendix B.

(e) The department may require that the proponent undertake a public notification plan or consultation process and submit results of that plan or process with the application.

(f) The department may require, as part of the application process, that financial security be posted with the department as indicated in the *Approvals Procedure Regulations*.

3.0 FACILITY SITE DESIGN AND OPERATION

3.1 Minimum Standards

(a) The following sections outline the minimum standards that should be incorporated into the design and construction of the facility. All the components of the facility should be designed to function over the lifespan of the facility.

(b) In the event that a proponent advocates an alternative design to the minimum standard, it is the responsibility of the proponent to demonstrate to the satisfaction of the department that an alternative design is capable of achieving an equivalent or higher level of protection than the minimum standards. Any proposal for an alternative design will be assessed on the technical merits of the design and will be evaluated on a case by case basis.

3.2 Design Requirements

(a) A facility site shall incorporate the following features:

1 controlled site exit and entry;
2 appropriately designed road surfaces;
3 signs which indicate the name of the facility, emergency contacts and a list of materials accepted and unaccepted for transfer;
4 facilities shall not be located within the 100 year flood plain or in an area which has greater than 1% chance of flooding in any year
5 facilities shall not be located within watershed designated as a protected water supply by the department or a municipal unit;
6 there shall be a separation distance of 30m from the active transfer area to the nearest property boundary;
7 there shall be a separation distance of 30m from the active transfer area to the nearest bank top or high water mark of any water course or water resource, including salt water, or to any off-site well used as a water supply;
8 there shall be a separation distance of 90m from the active transfer area to the foundation or pad of the nearest off-site building or

structure;

9 an operation and maintenance manual is required to be prepared for each facility to outline how it is to be run;

10 a surface water management and control plan must be supplied; and

11 the facility must include features to minimize the generation of leachate and odours. These features shall require the enclosure of the tipping floor or container to minimize the infiltration of precipitation and the release of odours.

(b) The department may require additional design features including, but not limited to, liner systems, and other control infrastructure. These additional requirements may be based on the volume of material to be deposited at the facility, the environmental sensitivity of the area or the nature of the materials to be accepted at the facility. The receiving floor for the tipping of municipal solid waste shall be impermeable.

3.3 Operational Requirements

A facility shall incorporate, as a minimum, the following operational requirements:

(a) Particulate emissions (dust), sound levels, liquid effluent (leachate), vector/litter control and spills/releases must follow the specifications described in Appendix C;

(b) a maintenance program shall be initiated to ensure that the site condition remains as designed;

(c) procedures shall be in place to manage unacceptable materials that are received;

(d) the facility shall have measures in place to prevent illegal dumping and vandalism;

(e) the approval holder shall be responsible to ensure there is direct supervision of the facility during the hours that the facility is accepting material;

(f) procedures shall be in place to ensure that odours from any material are minimized;

(g) the approval holder shall have standard procedures to address any complaints associated with the facility which would include:

1 immediately investigate the cause of the complaint and undertake immediate and appropriate action, to correct the problem;
2 the approval holder shall record all complaints and document the date, time, name, address and telephone number of the individual lodging the complaint. The record shall also state any cause of the complaint and the action taken;
3 the observed wind direction, temperature and other atmospheric conditions at the time of the occurrence which resulted in a complaint;
4 records referenced in this section shall be made available to the department upon request.

(h) the approval holder, at the direction of the department, shall be required to reduce or cease operation if odour generation is deemed excessive by the department and, in the opinion of the department, cannot be controlled by the odour control mechanisms;

(i) no other materials shall be accepted at the facility unless otherwise approved by the Administrator;

(j) no liquid wastes are to be accepted at the facility unless approved by the Administrator;

(k) detailed records must be kept which include the carrier name and the quantity and types of the materials received at the facility. Records shall be maintained at the facility, or an approved location, for a minimum of two years and be available to the department upon request;

(l) the approval holder shall identify how and where any waste or other materials are sorted;

(m) the approval holder shall describe any stockpiled materials. This description shall include locations of stockpiles, types of materials to be stockpiled, maximum amounts to be stockpiled, and contingency plans to manage leachate, fire, odours, or any other issue associated with stockpiles;

(n) the approval holder must submit to the Administrator, on an annual basis, the quantities and types of material handled at the facility.

3.4 Operation and Maintenance Manual

(a) An Operation and Maintenance Manual shall be prepared for each facility which shall include, as a minimum, the following:

1 survey and engineered drawings and specifications of the facility site;
2 complete description of the operational procedures;
3 contingency plans to deal with wastes that are not accepted at the facility;
4 contingency plans to deal with issues including but not limited to fire, explosions and spills; and,
5 information required under Section 3.3 of these guidelines.

(b) When an approval is given, a copy of the approval, including all terms and conditions of the approval shall be included in the Operation and Maintenance Manual. The Operation and Maintenance Manual shall be kept on-site at all times and shall be available for inspection.

Dated: October 5, 2006

Original Signed by
William Lahey
Deputy Minister

Appendix A - Definitions

Definitions:

(a) "Act" means the *Environment Act*.

(b) "Active transfer area" means the areas used for stockpiles, storage, separation, processing, and loading.

(c) "Administrator" means a person pursuant to section 21 of the Act.

(d) "Approval" means an approval issued pursuant to Section 8(1)c(iii) of the Activities Designation Regulations.

(e) "Department" means Nova Scotia Environment and Labour.

(f) "Facility" for the purpose of these Guidelines means Waste Transfer Station for the purpose of the handling/transfer of municipal solid waste and organic materials from a collection vehicle to another vehicle, container or floor for eventual transfer to another location.

(g) "Industrial waste" means a waste specified under an Approval issued to an industrial activity.

(h) "Municipal solid waste" means garbage, refuse, sludge, rubbish, tailings, debris, litter and other discarded materials resulting from residential, commercial, institutional and industrial activities which are commonly accepted at a municipal solid waste management facility, but excludes waste from industrial activities regulated by an approval issued under the Act.

(i) "Organics" means compostable organic material such as vegetative matter, food processing waste, landscaping, garden and horticultural wastes, kitchen scraps, feed processing wastes, and other organic wastes that can be readily composted in composting facilities.

(j) "Recyclables" means those products or materials that can be separated and processed to be used as raw materials in the manufacture of new products. Currently these include glass, metals, paper, cardboard and some plastics.

(k) "substance" means
- (i) matter that is capable of becoming dispersed in the environment,
- (ii) that is capable of being transformed in the environment into matter referred to in subclause (i),
- (iii) sound, vibration, heat, radiation, or other form of energy, or
- (iv) any combination of things referred to in subclauses (i) to (iii).

APPENDIX B - Groundwater and Surface Water Monitoring Program

Groundwater Monitoring

A program for monitoring groundwater quality, shall include, at a minimum, the following:

1 Each facility must have a minimum of one groundwater monitoring well installed hydraulically down gradient from the site. Representative samples of groundwater from the site shall be obtained semi-annually during high/low flow periods from the groundwater monitoring facilities and be analyzed for the parameters listed in column 1 of Schedule 1. A background monitor station shall be established to address the concerns of groundwater contamination from external activities.

2 An annual report shall be submitted to the department, which details the results and analysis of the groundwater monitoring program. Within 60 days of sample collection and within 5 days of sample analysis, any analysis wherein a significant increase in the parameters listed in column 1 of Schedule 1 over seasonal variations is noted shall be reported to the department.

3 The parameter to be monitored may be amended where the owner prepares a report showing alternative parameters could be monitored, based on the type of waste to be handled at the site.

Surface water monitoring

A program for monitoring surface water quality, shall include, at a minimum, the following:

1 Representative samples of surface water being discharged from the facility and of any watercourse, including upstream control locations, which may be affected by stormwater run-off or sediment from the facility, shall be obtained semi-annually during high/low flow periods, and be analyzed for the parameters listed in column 3 of Schedule 1.

2 An annual report shall be submitted to the department, which details the results and analysis of the surface water monitoring program. Within 60 days of sample collection and within 5 days of sample analysis, any analysis wherein a significant increase in the parameters listed in column 3 of Schedule 1 over seasonal variation is noted shall be reported to the department.

3 The parameter to be monitored may be amended where the owner prepares a report showing alternative parameters could be monitored, based on the type of waste to be deposited at the site.

Schedule 1
Groundwater, Leachate and Surface Water Monitoring Parameters

Parameter				
Parameter Group	**Column 1**	**Column 2**	**Column 3**	**Column 4**
	Comprehensive list for Groundwater and leachate	Indicator List for Groundwater Water	Comprehensive List for Surface Water	Indicator List for Surface Water
Inorganics				
	Alkalinity	Alkalinity	Alkalinity	Alkalinity
	Ammonia		Ammonia	Ammonia
	Arsenic		Arsenic	
	Barium		Barium	
	Boron		Boron	
	Cadmium	Cadmium	Cadmium	
	Calcium	Calcium		
	Chloride	Chloride	Chloride	Chloride
	Chromium		Chromium	
	Conductivity	Conductivity	Conductivity	Conductivity
	Copper		Copper	
	Iron	Iron	Iron	
	Lead	Lead	Lead	
	Magnesium	Magnesium		
	Manganese			
	Mercury		Mercury	
	Nitrate	Nitrate	Nitrate	Nitrate
	Nitrite		Nitrite	Nitrite
	Total Kjeldahl Nitrogen		Total Kjeldahl Nitrogen	Total Kjeldahl Nitrogen
	pH	pH	pH	pH
	Total Phosphorous		Total Phosphorous	Total Phosphorous
	Potassium	Potassium		

Parameter				
Parameter Group	**Column 1**	**Column 2**	**Column 3**	**Column 4**
	Comprehensive list for Groundwater and leachate	Indicator List for Groundwater Water	Comprehensive List for Surface Water	Indicator List for Surface Water
	Sodium	Sodium		
Inorganics (con't)				
	Suspended Solids	Suspended Solids	Suspended Solids	Suspended Solids
	Total Dissolved Solids	Total Dissolved Solids	Total Dissolved Solids	Total Dissolved Solids
	Sulphate	Sulphate	Sulphate	Sulphate
	Zinc		Zinc	
Volatile Organics				
	Benzene			
	1,4 Dichlorobenzene			
	Dichloromethane		Dichloromethane	
	Toluene		Toluene	
	Vinyl Chloride			
Other Organics				
			Biochemical Oxygen Demand (BOD_5)	Biochemical Oxygen Demand (BOD_5)
	Chemical Oxygen Demand	Chemical Oxygen Demand	Chemical Oxygen Demand	Chemical Oxygen Demand
	Dissolved Organic Carbon	Dissolved Organic Carbon	Total Organic Carbon	
	Phenol		Phenol	Phenol
Field Parameters				
			Temperature	Temperature
	pH	pH	pH	pH
	Conductivity	Conductivity	Conductivity	Conductivity
			Dissolved Oxygen	Dissolved Oxygen
			Flow	Flow

Appendix C - Specifications

Particulate Emissions (Dust)

a) Particulate emissions shall not exceed the following limits at or beyond the facility property boundaries:

(I) Annual Geometric Mean 70 µg/m^3
(II) Daily Average (24 hr.) 120 µg/m^3

b) The generation of dust from the facility will be suppressed by the application of water, or the application of other suitable dust suppressants approved by the department.

c) Facility access road(s) shall be maintained to minimize dust generation. The use of used oil is not permitted.

d) Monitoring of particulate emissions shall be conducted at the direction of the department. Monitoring stations and procedures, including methods of sampling, shall be approved by the department and may include location(s) beyond the property boundary of the facility.

Sound Levels

a) Sound levels measured at the property boundaries shall not exceed the following equivalent sound levels (Leq):

Leq 65 dBA 0700-1900 hours (Days)
60 dBA 1900-2300 hours (Evenings)
55 dBA 2300-0700 hours (Nights, Sundays and Statutory Holidays)

b) Monitoring of sound levels shall be conducted at the direction of the department. Monitoring stations and procedures, including methods of sampling, shall be approved by the department and may include locations beyond the property boundary of the facility.

Liquid Effluent (Leachate)

(a) All leachate shall be collected for on site treatment or removal from the facility, as approved by the department.

(b) A leachate management system shall be constructed and will consist of infrastructure and monitoring systems designed to collect, monitor, control, and treat leachate prior to being discharged into the environment. The system shall:

(i) have a leachate collection and removal network in the active transfer area
(ii) function year round
(iii) have a means of monitoring all treated leachate discharges.

(c) The discharge standards for all liquid effluent shall be based on the background water quality, identified current and projected uses of the receiving water and the *Canadian Water Quality Guidelines*. Additionally, liquid effluent shall not be acutely lethal as determined by the suite of Biological Test Methods approved by Environment Canada for this purpose.

Vector/Litter Control

a) The approval holder shall provide effective means of vector control (birds, insects, rodents, etc.). If the vector control measures employed by the approval holder are deemed to be inadequate by the department, additional control measures or changes to the operation of the facility may be requested for implementation.

b) The approval holder shall inspect the facility as part of the daily operating sequence, maintain good housekeeping practice and take appropriate action to reduce vector and litter problems.

c) The use of pesticides must comply with federal, provincial, and municipal regulations.

Spills or Releases

a) All spills or releases of a substance shall be reported to the department in accordance with the Act (Part VI) and the *Emergency Spill Regulations.*

b) Spills or releases shall be cleaned up immediately according to the industry standard practices.

c) Spill/release response material shall be maintained on facility at all times.