Ohio Environmental Protection Agency
John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

March 16, 2011

Dear Interested Party,

Over the last several years, Ohio has increased recycling, composting and alternative waste management practices. Unfortunately, material that has potential economic value continues to be landfilled. In some cases, we can better utilize these materials, saving generators money, conserving landfill space and protecting public health and the environment. Toward these ends, Ohio EPA is evaluating alternative management options for street sweepings, and we would like your comments on the following proposal. We will also consider other approaches and beneficial uses.

Background

Collection and proper disposal of street sweepings improves the aesthetics and safety of roadways and prevents pollution of surface and ground waters. In particular, removing the finer particles of street sweepings from roadways reduces sedimentation and pollution caused by contaminants in the material.

Street sweepings are regulated as municipal solid waste in Ohio and many other states. Besides litter and trash, street sweepings also contain sediments such as clay, silt and sand, as well as coarse and fine plant material. Preliminary studies indicate that heavy metals, polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH) and organochlorine pesticides may be present in street sweepings. Excess nutrients may also be present, which can degrade water quality and cause fish kills and algae blooms.

A number of potential alternatives to landfilling may exist, but Ohio EPA wants to ensure that beneficial uses do not negatively impact existing pollution abatement activities or threaten public health or the environment. Therefore, it is important to understand the chemical makeup of street sweepings and establish limits for chemicals of concern prior to beneficial use.

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Beneficial Use Proposal

Street sweepings that are screened and tested and meet the criteria of the Director's written authorization may be managed and used in accordance with that authorization with no further approval from Ohio EPA. The beneficial uses under consideration include fill, aggregate, winter traction abrasive and alternate daily cover in a licensed municipal solid or industrial waste landfill.

Potential Beneficial Uses

The following potential beneficial uses of street sweepings are under consideration:

- As the sub-grade beneath paved municipal roads or parking lots, or for filling potholes, provided the street sweepings are covered with asphalt or impermeable concrete;
- As fill in the median strip of a divided highway, or as fill along road shoulders within the municipally owned public right-of-way, provided that the completed fill is covered with asphalt or impermeable concrete, or, if unpaved, with a minimum of one foot of uncontaminated soil;
- Incorporated and permanently entrained as aggregate in asphalt or concrete used for paving or in impermeable concrete products such as vehicle barriers, retaining walls, abutments, noise abatement walls and municipal garage floor panels to be used on municipal property;
- Blended with new salt or grit to apply as winter traction abrasive to roads, parking lots or sidewalks; and/or
- As alternate daily cover in a licensed municipal solid or industrial waste landfill. Approval for alternate daily cover may be granted to the owner or operator of a licensed facility. Comments are also sought on this potential beneficial use of street sweepings.

Director's Authorization for Beneficial Use

Ohio EPA would develop a Director's Authorization, which would establish requirements through standard terms and conditions applicable statewide. An entity wanting to beneficially use street sweepings would apply for an Authorization, and when approved,

would follow the requirements established in the standard terms and conditions. Ohio EPA proposes the following requirements for beneficial use of street sweepings.

1) **Screen all street sweepings.**

   a) To use street sweepings as fill, aggregate or alternate daily cover, screen the street sweepings through a ¾ inch opening to remove litter and other debris.

   b) To use street sweepings as winter traction abrasive, screen the street sweepings first through a ¾ inch opening and then with an additional 50 mesh (300 microns) screen to remove fine particles.

   Note: Litter and debris larger than ¾ inch and fine particles less than 300 microns separated in the screening process must be managed as solid waste.

2) **Test street sweepings for contaminants; beneficial uses are limited accordingly. (Screened street sweepings to be used as approved alternate daily cover do not need to be tested for contaminants.)**

   a) One composite sample, comprised of five grab samples taken at random from the pile, is to be taken for each 300 cubic yards of screened street sweepings.

   b) Samples are to be analyzed for contaminants, including selected metals, PAHs, TPH, organochlorine pesticides and nutrients. See attached Table 1 for a complete list of required analytes.

   c) Beneficial uses correspond to maximum limits for chemicals of concern: concentrations of all analytes need to fall below the maximum limits corresponding to the intended beneficial use. See attached Table 2.

   Screened street sweepings that do not exceed maximum limits in one or more analytes corresponding to the intended beneficial use may be used without further approval from Ohio EPA.

   Screened street sweepings that exceed maximum limits for fill or aggregate in one or more analytes must be disposed of in a licensed municipal or industrial solid waste

landfill, unless approved for alternate daily cover or authorized for other beneficial use by the Director.

3) **Submit analytical results to Ohio EPA.** As part of an ongoing research project, Ohio EPA intends to evaluate the frequencies of occurrence and concentrations of chemicals of concern and may adjust sampling requirements as appropriate. If contaminants in screened street sweepings from around the state consistently do not exceed maximum limits for chemicals of concern corresponding to specific beneficial uses, Ohio EPA may reduce, waive or suspend further analytical testing for those beneficial uses.

4) **Locate all beneficial uses of street sweepings as fill at least 300 feet from any private or public potable water supply well.**

Your Comments Are Needed

Ohio EPA would like your comments on the proposed beneficial uses and guidelines described above, as well as others you may suggest. Please submit your written comments by **April 1, 2011** to:

Pamela Allen
Ohio EPA, DSIWM
PO Box 1049
Columbus, OH 43216-1049
Email: pam.allen@epa.state.oh.us

Thank you for your interest. We look forward to hearing from you.

Disclaimer: This document does not provide authorization for beneficial use of street sweepings.

Table 1. Analytes for testing street sweepings for beneficial use and U.S. EPA Methods. One composite sample, comprised of five grab samples taken at random from the pile, is to be taken for each 300 yards^3 of screened street sweepings.

	U.S. EPA Method*
Metals	
Antimony	6010B
Arsenic	6010B
Barium	6010B
Cadmium	6010B
Chromium	6010B
Cobalt	6010B
Copper	6010B
Lead	6010B
Manganese	6010B
Mercury	7471A
Nickel	6010B
Selenium	6010B
Silver	6010B
Thallium	6020
Vanadium	6020
Zinc	6010B
SVOCs	8270, 8310
1,1'-Biphenyl	
1,2,4,5-Tetrachlorobenzene	
2,2'-Oxybis(1-choloropropane)	
2,3,4,6-Tetrachlorophenol	
2,4,5-Trichlorophenol	
2,4,6-Trichlorophenol	
2,4-Dichlorophenol	
2,4-Dimethylphenol	
2,4-Dinitrophenol	
2,4-Dinitrotoluene	
2,6-Dinitrotoluene	
2-Chloronaphthalene	
2-Chlorophenol	
2-Methylnaphthalene	
2-Methylphenol	
2-Nitroaniline	
2-Nitrophenol	
3,3'-dicholorobenzidine	

3-Nitroaniline
4,6-Dinitro-2-methylphenol
4-Bromophenyl-phenylether
4-Chloro-3-methylphenol
4-Chloroaniline
4-Chlorophenyl-phenyl ether
4-Methylphenol
4-Nitroaniline
4-Nitrophenol
Acenaphthene
Acenaphthylene
Acetophenone
Anthracene
Atrazine
Benzaldehyde
Benzo(a) pyrene
Benzo(a)anthracene
Benzo(b) fluoranthene
Benzo(g,h,i) perylene
Benzo(k) fluoranthene
Bis(2-chloroethoxy) methane
Bis(2-chloroethyl) ether
Bis(2-ethylhexyl) phthalate
Butylbenzylphthalate
Caprolactam
Carbazole
Chrysene
Dibenzo(a,h) anthracene
Dibenzofuran
Diethylphthalate
Dimethylphthalate
Di-n-butylphthalate
Di-n-octylphthalate
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno(1,2,3,-cd) pyrene
Isophorone
Naphthalene
Nitrobenzene
N-Nitroso-di-n propylamine

N-Nitrosodiphenylamine	
Pentachlorophenol	
Phenanthrene	
Phenol	
Pyrene	
TPH:	8015
GRO (C6-C12)	
DRO (C10-20)	
ORO (C20-C34)	
Organochlorine Pesticides	8081
alpha-BHC	
beta-BHC	
delta-BHC	
gamma-BHC (Lindane)	
Heptachlor	
Aldrin	
Heptachlor epoxide	
Endosulfan I	
Dieldrin	
4,4'-DDE	
Endrin	
Endosulfan II	
4,4'-DDD	
Endosulfan sulfate	
4,4'-DDT	
Methoxychlor	
Endrin ketone	
Endrin aldehyde	
alpha-Chlordane	
gamma-Chlordane	
Toxaphene	
Nutrients	
ammonia nitrogen	350.1
orthophosphate	365.3M / 9056
total phosphorus	365.3M
nitrate	353.2M
nitrite	353.2M
total nitrogen	351.4M

***Report Lowest Limit of Detection (LoD).**

Table 2. Maximum limits for chemicals of concern corresponding to intended beneficial uses.

Chemicals of Concern

INTENDED BENEFICIAL USES & MAXIMUM LIMITS*

Metals	Winter traction abrasive, fill, or aggregate[1]
Arsenic	41
Cadmium	35
Copper	1500
Lead	300
Mercury	7.8
Nickel	420
Selenium	100
Zinc	2800

PAHs	Winter traction abrasive[2]	Fill or aggregate[3]
Benzo(a)anthracene	2.2	63
Benzo(b)fluoranthene	5.53	63
Benzo(k)fluoranthene	1.97	630
Benzo(a)pyrene	1.1	6.3
Chrysene	1.27	6,700
Dibenz(a,h)anthracene	0.94	6.7
Indeno(1,2,3-cd)pyrene	0.15	67
Naphthalene	3.98	530

TPH	Winter traction abrasive, fill, or aggregate[2]
Gasoline Range Organics (C6-C12)	1000
Diesel Range Organics (C10-20)	2000
Oil Range Organics (C20-C34)	5000

***All units are mg/Kg.**

Sources of standards:

[1] Ohio Administrative Code (OAC) 3745-27-46

[2] OAC 1301:7-9-16(D)(1)

[3] OAC 1301:7-9-13(J)(3)(d) Direct Contact Non-Residential