

# PA Dirt, Gravel, & Low-Volume Road Maintenance Program Product Approval Instructions

Created by the PA State Conservation Commission and the PSU Center for Dirt and Gravel Road Studies



Developed by the Dirt, Gravel, & Low Volume Road Maintenance Program's

**Product and Process Advisory Workgroup**

and

**The Center for Dirt & Gravel Road Studies**

at

The Pennsylvania State University

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## OVERVIEW

The Center for Dirt and Gravel Road Studies [Center] was established at Pennsylvania State University by the Commonwealth of Pennsylvania in 2000 to assist the State Conservation Commission, counties and Conservation Districts of Pennsylvania in compliance with § 9106 of the Pennsylvania Vehicle Code which created the Dirt and Gravel Road Maintenance Program in 1997. The Program has strict standards that prohibit the use of environmentally harmful materials or practices. The purpose of this document is to serve as a guide to companies wishing to have products such as dust palliatives and soil stabilizers that are applied to the wearing course or incorporated into the wearing course or the road base, included in the current Dirt, Gravel and Low Volume Road Maintenance Program's "approved products" list for purchase with Program funds. The testing procedures outlined in this document are applicable to liquid or granular products which are soluble in water or can be solubilized with a solvent. For non-soluble products please contact the Center for guidance. More information about the Dirt, Gravel and Low Volume Road Maintenance Program and the Center for Dirt and Gravel Road Studies can be found at [www.dirtandgravelroads.org](http://www.dirtandgravelroads.org).

### Procedure for Submitting a New Product for Evaluation

- 1) Prior to submission the applicant must notify the Center of their intent to submit a product for review.
- 2) Each application shall represent only one product.
- 3) Each new product application shall be accompanied by:
  - a) a complete set of analyses of the product tested at the concentrations specified in this document;  
  
*Note: If the product exceeds any of the PCB or SPLP limits outlined in Section IV the product will be rejected, therefore it is highly recommended that the applicant complete the PCB and SPLP testing requirements prior to conducting the aquatic toxicity testing.*
  - b) a performance statement and supporting test data;
  - c) "point of use" instructions, including the maximum application rate;
  - d) a current OSHA format Safety Data Sheet (SDS) ;
  - e) four [4] hard copies of all submittal materials and one electronic copy.
- 4) Each request shall be accompanied with a completed "Contact Submittal Form" and a completed and signed "Summary Data Sheet".

# Contact Submittal Form

Company Name: _____
Person Responsible for the Application: _____
Physical Address [Not P.O. Box]: _____
_____
_____
E-mail Address: _____
Phone Number: _____
Name of Product: _____
Classification of Product Type: _____
Intended Use of Product: _____
Minimum Dilution Ratio (if applicable): _____
Maximum Application Rate (gal/yd <sup>2</sup> ): _____
Date of Submission: _____

Submitted as: *[circle one]*

- a) Full review
- b) Reregistration
- c) Product has been modified since first approval by the Dirt, Gravel and Low Volume Road Program (requires name of previously approved product)

PennDOT has agreed to include any Dust Palliative that is reviewed through this program directly into Pub 447 which would allow liquid fuels moneys to be spent to purchase the palliative.

please check here if you do **NOT** wish to have your product automatically registered with PennDOT into Pub 447.

## **PART I: PROGRAM OBJECTIVES AND DEFINITIONS**

### **Program Objectives**

The objectives of the Dirt, Gravel, & Low Volume Road (DGLVR) Maintenance Program product approval process are consistent with the directive in § 9106 of the Pennsylvania Vehicle Code. The product approval process seeks to:

- 1) prohibit the use of materials or practices within DGLVR Maintenance Program projects which have the potential to cause adverse environmental or human health effects;
- 2) employ a product approval system which utilizes the requisite professional expertise to review applications for new road maintenance products; and
- 3) provide Conservation Districts with a state-wide information exchange system which will allow them to determine eligibility of products for the Program.

### **Definitions**

<b>Applicant</b>	<i>any legal entity or person seeking to obtain approval for a road maintenance or road construction product to be used in the Program. An Applicant may be a manufacturer, a formulator, a distributor, a vendor, or and an individual</i>
<b>Center</b>	<i>The Center for Dirt &amp; Gravel Road Studies at The Pennsylvania State University</i>
<b>District</b>	<i>a Conservation District of the Commonwealth of Pennsylvania</i>
<b>Granular Product</b>	<i>any material which is a solid at ambient temperature and is applied to a road as a solid. NOTE: Salts spread as crystals are solid products until that point when the law lists them as “aqueous solutions.” Brines and “salt solutions” are aqueous</i>
<b>Liquid Product</b>	<i>any product which is a liquid at ambient temperature or any solid or liquid product applied using a liquid carrier. Example [liquid product]: a salt solution where the active ingredient, solid salt crystals, is chemically dissolved in the carrier.</i>
<b>Participant</b>	<i>a legal entity or person accepting Dirt, Gravel and Low Volume Road Program support</i>
<b>Practically nontoxic</b>	<i>a material or product is considered to be practically nontoxic as defined by the Environmental Protection Agency (EPA) if, through acute aquatic testing of the fish and daphnid species required by the Program, it is shown to have an LC50 of greater than 100 parts per million [PPM; milligrams/liter].</i>

<b>Program</b>	<i>The Dirt, Gravel and Low Volume Road Maintenance Program as established by the Commonwealth of Pennsylvania in Section § 9106 of the Vehicle Code</i>
<b>QAB</b>	<i>Quality Assurance Board, a county-specific entity</i>
<b>SCC</b>	<i>State Conservation Commission</i>
<b>Statement of Policy</b>	<i>“Dirt, Gravel and Low Volume Road Maintenance Program – Statement of Policy” as established by the State Conservation Commission in 25 PA Code 83.601-83.614.</i>
<b>User</b>	<i>a legal entity or person conducting a Program project</i>

## **PART II: PROGRAM REQUIREMENTS**

Vehicle Code § 9106 requires Quality Assurance Boards (QAB's) to adopt standards that prohibit the use of environmentally harmful materials or practices. Section 83.608 of the program's Statement of Policy requires QAB's to do the same. Section 83.613 (a)(b) of the Statement of Policy formalizes that requirement.

### **Responsibilities of the Program to Applicants and for Products Used in the Program**

The Program shall establish, publish, and from time to time revise, a set of policies and procedures which ensure that before any product can qualify for use within the Program, the product will be tested in a manner which can support a conclusion that use of the product is reasonably certain to cause no harm to the environment.

The Program shall make its policies and procedures available to all potential Applicants and QAB's. An electronic version of this manual can be found on the Center's website

<http://www.dirtandgravel.psu.edu/>

The Program will assemble requisite professional expertise to support compliance review of all applications for new products or materials. The results of tests and other relevant information will be used by the reviewers to determine if the product meets the acceptance criteria for the Program. The Program will provide a written record of the results of the Program review to an individual designated by the Applicant.

The Program will prepare and provide to the Applicant a certification that a product(s) approved by the Program can be purchased for use within the program.

### **Responsibilities of Applicants for Products Used in the Program**

An Applicant seeking approval for a product may include any of the following: a manufacturer, a formulator, a distributor, a vendor, or an individual.

Each Applicant shall ensure, to the satisfaction of the Program, that any product to be offered or purchased for use within the Program will be tested in accordance with the requirements set forth by the Program. The results of those tests and other relevant information will be used to determine if the product meets the acceptance criteria for the Program and is reasonably certain to cause no harm to the environment or threat to human health. The Applicant must notify the Center ([dirtandgravel@psu.edu](mailto:dirtandgravel@psu.edu)) of their intent to submit a product for approval and is encouraged to seek Center guidance before any testing is initiated to avoid unnecessary delays or rejection of submitted results.

The Applicant is responsible to ensure all laboratory tests required by the Program are conducted for each of its products and that the tests are conducted in accordance with the test standards of the Program. The Applicant shall certify that the product it submits for laboratory testing is representative of the product sold for use in the Program. ASTM analytical methods are required, and for toxicology studies Laboratories employing Good Laboratory Practice (GLP) standards or the equivalent are preferred, but other laboratories, e.g. those certified for testing of drinking water, surface water, or ground water may be utilized for some required testing.

For US EPA GLPs see the following:

<http://www.epa.gov/compliance/good-laboratory-practices-standards-compliance-monitoring-program>

Special testing conditions to address non-soluble products or other unique circumstances must be reviewed with the Program prior to initiation of testing (for additional guidance see page 16). Failure to do so may result in a delay in the product approval; require retesting or additional testing of the product, or, in some cases, rejection of the application for the product.

The Applicant shall affirm in the application that all performance tests of the product were conducted under conditions which reflect the range of conditions expected in normal use.

The Applicant and the Vendor shall ensure that the Safety Data Sheet [SDS] and use instructions accompany the product when sold into the Program and be readily available during all applications of the product.

### **PART III: TESTING APPLICABILITY**

The product testing procedure outlined in this document is intended to test liquid or granular products, such as dust palliatives and soil stabilizers, which are applied to the wearing course or incorporated into the wearing course or the road base. Materials commonly used in the process of road building and road drainage are not subject to the testing procedure, including natural materials used as road fill.

#### **Wearing Course Materials Approved for Use in the Program –**

**Driving Surface Aggregate** is the only aggregate approved for the use of Dirt, Gravel and Low Volume Roads Program funding and must conform to SCC specifications.

**Asphalt and Chipseal** are the only paving or sealing materials approved for the use of Low Volume Road Program funding and must conform to PennDOT Pub 408 or Pub 447.

#### **Fill Materials –**

This guidance is applicable to materials used in the program as road fill. The following materials may be used in the program if it is deemed “free” of pollutants **AND** will have a driving surface applied:

- Fill materials such as dredged material, used asphalt, brick, block or concrete from construction and demolition activities that show evidence of potential contamination with pollutants must be tested and certified as clean fill under 25 Pa. Code Chapters 271 to 285 (municipal waste regulations). If due diligence shows no evidence of potential contamination, then the fill material may be used as clean fill.
- Industrial byproducts used as road fill such as slag, bottle glass, foundry sand must be tested and determined to be free of pollutants under the applicable section(s) 25 Pa. Code Chapters 271 to 287.
- Coal combustion products that possess a current DEP certification may be used as road fill. ('Red Dog' is not permitted for use anywhere in the program)

#### **Other Products/Materials -**

If a material or product is identified that falls into one of the above classes of products but is not specifically covered in this guidance, a petition that is accompanied by a detailed justification for its inclusion in the above list can be submitted to the Center for review and consideration for approval by the State Conservation Commission.

## **PART IV: ENVIRONMENTAL TESTING PROTOCOLS**

All dust palliative, soil stabilizer and other liquid or granular products incorporated into the wearing course or the road base must be tested in accordance with the requirements set forth in this section. The results of those tests and other relevant information will be used to determine if the product meets the acceptance criteria for the Program and is reasonably certain to cause no harm to the environment.

The Applicant is responsible to ensure all laboratory tests required by the Program are conducted in accordance with the testing protocols of the Program. If an applicant has previously tested their product and the testing protocols used conform to the Program protocols listed below, then the results may be submitted without retesting the materials.

**Note:** If the product exceeds any of the Polychlorinated Biphenyl (PCB) or Synthetic Precipitation Leaching Procedure (SPLP) limits outlined below the product will be rejected, therefore it is recommended that the applicant complete the PCB and SPLP testing requirements prior to conducting the aquatic toxicity testing.

### **Bulk Analysis**

**Purpose:** The bulk analysis provides the inorganic composition of the undiluted product. The concentration of potentially hazardous substances in the tested product must be listed in Table 1. With the exception of PCB testing (see requirements below), the test results are used as information for the reviewers and can help explain why a particular chemical is or is not present in the SPLP leachate and any exceedances in the SPLP and/or aquatic testing. A reported concentration higher than the comparison value is NOT used to determine acceptability of the product into the Program.

**Test Concentration:** Undiluted product.

**Requirements:** The bulk analysis must include all constituents listed in Table 1. Comparison values for the bulk analysis are based on the Pennsylvania Municipal Waste Regulations 25 Pa. Code §§ 271 to 285. PCB test results are used to determine if the product is deemed to have **passed** the testing requirements. Please review the section below for further information on PCB testing and product acceptance.

**Testing Methods:** Use any of the methods listed in EPA SW-846 to fulfill the requirement in this section.

**Results:** Report results in Table 1 below and in the Summary Data Sheet on page 18.

Constituent	Comparison Values (mg/kg)	Reported Concentration (mg/kg)
Antimony (Sb)	27	
Arsenic (As)	12	
Beryllium (Be)	320	
Cadmium (Cd)	38	
Cobalt (Co)	8	
Copper (Cu)	8,200	
Mercury (Hg)	10	
Nickel (Ni)	650	
Lead (Pb)	450	
Selenium (Se)	26	
Thallium (Tl)	14	
Zinc (Zn)	12,000	
PCBs*	4	
Adjusted gross $\alpha$	<15 pCi/L	

Table 1: Bulk Analysis reported concentration. \*For PCB guidance see section below

**Radionuclide exemption:** If there is “no reasonable expectation” that the product contains radionuclides, or that they could be present in a product, the claim can be justified in writing and the constituent omitted from the analyses on Table 1 and in the summary data sheet. The justification, signed by counsel or other corporate officer of the company, shall be attached to the relevant analytical report and must contain information on the facts pertaining to the origin and/or composition of the product to support the claim of “no reasonable expectation”.

**Organic Compound Disclosure:** In Table 2 below and in the summary data sheet provide a disclosure of all organic compounds contained in a product at concentrations greater than 0.1%. If this disclosure contains Confidential Business Information [CBI], as defined by the US EPA, the claim shall be justified in writing. In addition, the information shall be clearly designated as CBI in the application and submitted separately so the Program can accommodate its protection.

Compound Name [IUPAC] and CAS# if available	Concentration (mg/kg)

Table 2. Organic Compounds Present at Greater than 0.1%

#### Test references:

- a) Maximum Concentration Limits are based Clean Fill Concentrations found in Table FP-1b, *Pennsylvania Municipal Waste Regulations 25 Pa. Code §§ 271 to 285*  
<http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-48933/258-2182-773b.pdf>
- b) EPA SW-846 Testing Methods 6000/7000 <http://www.epa.gov/wastes/hazard/testmethods/sw846/pdfs/chap3.pdf>
- c) EPA SW-846 Testing Method 8082A <http://www.epa.gov/sites/production/files/2015-12/documents/8082a.pdf>

### **Polychlorinated Biphenyl Analysis**

Purpose: The PCB analysis provides a direct measurement of the concentration of PCBs present in the product. The results of the PCB testing is used to determine acceptability of the product into the Program.

Test Concentration: Undiluted product.

Requirements: PCB testing using EPA SW-846 Testing Method 8082A is required for product approval. The maximum concentration limit (MCL) allowed is 4 mg/kg (*Pennsylvania Municipal Waste Regulations 25 Pa. Code §§ 271 to 285*). *If the product does not exceed the MCL, then it is deemed to have **passed** the testing requirements. If the MCL is exceeded, a second sample of the material shall be tested, and chemical analyses attached. If upon retesting the MCL for PCBs is again exceeded, then the product will be **rejected** for use in the Program. Report results in Table 1 and in the Summary Data Sheet*

### **Synthetic Precipitation Leaching Procedure (SPLP) Analysis**

Purpose: The SPLP analysis is designed to simulate leaching of contaminants from a product applied to soils. The concentration of potentially hazardous substances in the tested leachate must be less than the Pennsylvania medium specific concentration limits (MSC) outlined below in Tables 3 and 4.

Test Concentration: Undiluted Product.

Requirements: The SPLP analysis must include all constituents listed in Table 3 and Table 4 for inorganic and organic leachate analysis. MSCs for the SPLP analysis are primarily based on *PA DEP Land Recycling and Environmental Remediation Standards Act 25 Pa. Code 250.308* (Rev. 1/2011 or subsequent revisions) or as noted below. If the product does not exceed any of the MSC limits of the SPLP test listed in the tables, then the product is deemed to have **passed** the SPLP testing requirements and the applicant should proceed with aquatic testing. If any MSC is exceeded, a second sample of the material shall be tested, and chemical analyses attached. If upon retesting the MSC limit is again exceeded the product will be **rejected** for use in the Program.

Testing Methods: All products shall have their leachate characterized based upon EPA SW-846 Method 1312.

Results: Report results in Tables 3 and 4 below and the in the Summary Data Sheet on pages 18 and 19.

Constituent	Medium Specific Concentration Limit (MSC) (mg/L)	Reported Concentration (mg/L)
Ammonia	360	
Antimony	0.6	
Arsenic (As)	1	
Barium (Ba)	200	
Beryllium	0.4	
Boron (B)	600	
Cadmium (Cd)	0.5	
Chromium (Cr) total	20	
Cobalt	1.1	
Copper (Cu)	100	
Cyanide (CN)	5	
Fluoride	44	
Mercury (Hg)	0.2	
Manganese (Mn)	30	
Molybdenum (Mo)	4	
Nickel (Ni)	10	
Lead (Pb)	0.5	
Selenium (Se)	5	
Silver	10	
Thallium	0.2	
Vanadium	26	
Zinc (Zn)	200	
Aluminum (Al)*	5.0	
Chloride (Cl)**	250	
Nitrate (NO <sub>3</sub> )***	10	
Nitrite (NO <sub>2</sub> )***	1	
Sulfate (SO <sub>4</sub> )**	250	

Table 3: SPLP Inorganic Leachate Analysis.

\*DEP Leaching Limit \*\* Secondary MCL \*\*\*Regulated substance in Groundwater

Constituent	Maximum Concentration Limit (MCL) (mg/L)	Reported Concentration (mg/L)
Benzene	0.5	
Carbon tetrachloride	0.5	
Chlorobenzene	10	
Chloroform	8	
1,4-Dichlorobenzene	7.5	
1,2-Dichloroethane	0.5	
1,1-Dichloroethene	3.1	
Methyl ethyl ketone	400	
Tetrachloroethene	0.5	
Trichloroethylene	0.5	
Vinyl chloride	0.2	
o-Cresol (2-Methylphenol)	180	
m-Cresol (3-Methylphenol)	180	
p-Cresol (4-Methylphenol)	18	
2,4-Dinitrotoluene	0.21	
Hexachlorobenzene	0.1	
Hexachloro-1,3-butadiene	0.9	
Hexachloroethane	0.1	
Nitrobenzene	7.3	
Pentachlorophenol	0.1	
Pyridine	3.7	
2,4,5-Trichlorophenol	370	
2,4,6-Trichlorophenol	3.7	

Table 4: SPLP Organic Leachate Analysis

Test references:

- a) Medium Specific Concentration Limits from *PA DEP Land Recycling and Environmental Remediation Standards Act 25 Pa. Code 250.308* Rev. 1/2011 <http://www.dep.pa.gov/Business/Land/LandRecycling/Standards-Guidance-Procedures/Pages/Statewide-Health-Standards.aspx#VmiOl7grLaQ>
- b) EPA SW-846 Testing Method 1312 <http://www3.epa.gov/epawaste/hazard/testmethods/sw846/pdfs/1312.pdf>
- c) EPA SW-846 Testing Methods 6000/7000 and 8260/8270 <http://www3.epa.gov/epawaste/hazard/testmethods/sw846/pdfs/chap2.pdf>

## **Aquatic Toxicity Testing**

**Purpose:** Aquatic toxicity testing provides a measure of the toxicity of a liquid product introduced directly into an aquatic environment. These data are critical to determining the acceptability of a product for use in the program. To **pass** the aquatic toxicity testing the product must not exceed the aquatic toxicity limits outlined below in the approval guidance section.

**Test Concentration:** All aquatic testing should be done using the undiluted product. The testing should include multiple concentrations consisting of a control and a minimum of five different test concentrations.

**Requirements:** The liquid product shall be introduced directly into each test chamber to create the different test concentrations. All aquatic testing must include at least one control chamber. If the product fails the direct exposure tests to either the trout or daphnids, then the product will be **rejected** for use in the Program. See approval guidance below for more details.

**Testing Methods:** 96-hour rainbow trout fingerling (*Oncorhynchus mykiss*) survival test AND a 48-hour and 7-day daphnia survival and reproduction test. Guidelines for the tests and daphnia species selection shall use US EPA protocols [see EPA references below for Acute and Chronic testing].

**Results:** Report results in Tables 5 and 6 below and in the Summary Data Sheet on page 19.

**Approval Guidance:** Each product tested shall report the No Observable Effect Concentration [NOEC], Lowest Observable Effect Concentration [LOEC] and Mean Lethal Concentration [LC50] for both the trout and daphnids. For the daphnia reproduction test, each product tested shall report the No Observable Effect Concentration [NOEC], Lowest Observable Effect Concentration [LOEC], and Mean Inhibition to reproduction Concentration [IC50].

If the median lethal concentration (LC<sub>50</sub>) for the product is greater than 100 parts per million (mg/L) for the 96-hour Rainbow Trout and 48-hour Daphnia survival test **AND** the NOEC of the product is greater than 1.0 parts per million (mg/L) for the 7-day Daphnia reproduction test, then the product is determined to be practically nontoxic to aquatic life according to the EPA and the United Nations Globally Harmonized System and is deemed to have **passed** the test and is acceptable to the Program. If the product fails any of the direct exposure tests to the trout or daphnids, then the product will be **rejected** for use in the Program.

### EPA Categories of Acute Toxicity for Aquatic Organisms

<b>LC50 (ppm)</b>	<b>Toxicity Category</b>
< 0.1	Very highly toxic
> 0.1 - 1	Highly toxic
> 1 - 10	Moderately toxic
> 10 - 100	Slightly toxic
> 100	Practically nontoxic

<u>96-hour Survival</u>	<u>Pass Criteria</u>
NOEC:	NA
LOEC:	NA
LC <sub>50</sub> :	>100 mg/L (ppm)

Table 5. Rainbow Trout Test

<u>48-hour Survival</u>	<u>Pass Criteria</u>
NOEC:	NA
LOEC:	NA
LC <sub>50</sub> :	>100 mg/L (ppm)
<u>7- Day Reproduction</u>	
NOEC:	>1.0 mg/L (ppm)
LOEC:	NA
IC <sub>50</sub> :	NA

Table 6. Daphnids Test

### **Non-soluble Products**

Aquatic testing for non-water soluble products should be done according to US EPA protocols for fish and daphnids [see EPA references below for Acute and Chronic testing references]. These methods allow for the use of a solvent as a carrier or dispersant to dissolve or suspend the product in the test dilution.

If the product to be test cannot be solubilized with the use of solvents, then please contact the Center for guidance on appropriate testing methodologies (e.g. water accommodated fraction for aquatic toxicity testing).

### **Test references:**

- a) EPA Series 850 - Ecological Effects Test Guidelines OPPTS 850.1010 Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids.
- b) EPA Series 850 - Ecological Effects Test Guidelines OPPTS 850.1075 Fish Acute Toxicity Test, Freshwater and Marine.
- c) EPA-821-R-02-013 - Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms
- d) United Nations – Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

## **PART V: PERFORMANCE REQUIREMENTS**

In the application, provide a statement of the intended use parameters of the product and the expected efficacy in as much detail as is necessary and feasible to characterize the spectrum of use. All “point of use” instructions, including the maximum application rate if applicable, for the product shall be included. The Program recognizes the requirements for approval within the program apply to a wide range of products. It is expected that an appropriate and informative narrative for each product be provided in the application. Use of the product not specified in this narrative will not be eligible for funding by the Program and may not be included on the Use Instructions provided to the participants of the Program.

It is incumbent upon the Applicant requesting inclusion of their product into the Program to make a *‘clear statement of the intended function of their product’* and to supply sufficient data in the application to support their statement [e.g. product XYZ will suppress *all* dust during spring and summers in Pennsylvania with one application of 1 gallon per square yard]. The manufacturer shall provide documented, quantitative evidence, using statistically validated methodologies. Anecdotal data or product testimonials are not sufficient documentation, e.g. statements such as *‘we’ve used it and it works’*, to support the performance claims set forth in the application for the product. It is preferred that the applicant seek independent verification of the performance claim, but internal company testing may be utilized with proper documentation as outlined above. The reviewers reserve the right to request clarifications to the statement and/or the supporting data supplied by the applicant.

# Summary Data Sheet

**Table 1. Bulk Analysis**

Constituent	Maximum Concentration Limit (MCL)(mg/kg)	Reported Concentration (mg/kg)
Antimony (Sb)	27	
Arsenic (As)	12	
Beryllium (Be)	320	
Cadmium (Cd)	38	
Cobalt (Co)	8	
Copper (Cu)	8,200	
Mercury (Hg)	10	
Nickel (Ni)	650	
Lead (Pb)	450	
Selenium (Se)	26	
Thallium (Tl)	14	
Zinc (Zn)	12,000	
Polychlorinated Biphenyl (PCB)	4	
Adjusted gross $\alpha$	<15 pCi/L	

**Table 2. Organic Compounds Present at Greater than 0.1%**

Compound Name [IUPAC] and CAS# if available	Concentration (mg/kg)

**Table 3. SPLP Inorganic Leachate Analysis**

Constituent	Medium Specific Concentration Limit (MSC)(mg/L)	Concentration (mg/L)
Aluminum (Al)*	5.0	
Antimony (Sb)	0.6	
Arsenic (As)	1.0	
Barium (Ba)	200	
Beryllium (Be)	0.4	
Boron (B)	600	
Cadmium (Cd)	0.5	
Chromium (Cr) total	20	
Cobalt (Co)	1.1	
Copper (Cu)	100	
Mercury (Hg)	0.2	
Manganese (Mn)	30	
Molybdenum (Mo)	4	
Nickel (Ni)	10	
Lead (Pb)	0.5	
Selenium (Se)	5	
Silver (Ag)	10	
Thallium (Tl)	0.2	
Vanadium (V)	26	
Zinc (Zn)	200	
Chloride (Cl)**	250	
Fluoride (F-)	44	
Nitrate (NO <sub>3</sub> )***	10	
Nitrite (NO <sub>2</sub> )***	1	
Ammonia (NH <sub>3</sub> )	360	
Sulfate (SO <sub>4</sub> )**	250	
Cyanide (CN)	5	

\*DEP Leaching Limit \*\* Secondary MCL \*\*\*Regulated substance in Groundwater

**Table 4. SPLP Organic Leachate Analysis**

Constituent	Maximum Concentration Limit (MCL) (mg/L)	Reported Concentration (mg/L)
Benzene	0.5	
Carbon tetrachloride	0.5	
Chlorobenzene	10	
Chloroform	8	
1,4-Dichlorobenzene	7.5	
1,2-Dichloroethane	0.5	
1,1-Dichloroethene	3.1	
Methyl ethyl ketone	400	
Tetrachloroethene	0.5	
Trichloroethylene	0.5	
Vinyl chloride	0.2	
o-Cresol (2-Methylphenol)	180	
m-Cresol (3-Methylphenol)	180	
p-Cresol (4-Methylphenol)	18	
2,4-Dinitrotoluene	0.21	
Hexachlorobenzene	0.1	
Hexachloro-1,3-butadiene	0.9	
Hexachloroethane	0.1	
Nitrobenzene	7.3	
Pentachlorophenol	0.1	
Pyridine	3.7	
2,4,5-Trichlorophenol	370	
2,4,6-Trichlorophenol	3.7	

**Table 5. Rainbow Trout Test**

<u>96-hour Survival</u>	<u>Pass Criteria</u>
NOEC:	NA
LOEC:	NA
LC <sub>50</sub> :	>100 mg/L (ppm)

**Table 6. Daphnids Test**

<u>48-hour Survival</u>	<u>Pass Criteria</u>
NOEC:	NA
LOEC:	NA
LC <sub>50</sub> :	>100 mg/L (ppm)
<u>7-day Reproduction</u>	
NOEC:	>1.0 mg/L (ppm)
LOEC:	NA
IC <sub>50</sub> :	NA

**I certify:** (a) the test results indicated herein fully and accurately represent the commercial product which is the subject of this application, (b) the established limits noted above for all constituents were not exceeded, (c) any other properties of this product have met the established acceptance criteria specifications, (d) samples submitted for the reported analyses were representative of all material to be sold under this product name, and (e) any results reported apply to all product for which the sample(s) was representative.

*Attach additional sheets as needed.*

_____	_____	_____	_____
Name and Signature	Address	State/Zip	
_____	_____	_____	_____
Company	Phone	Position/License	Date

# Appendix A

## Product Recertification Requirements

## Product Recertification Requirements

The State Conservation Commission (SCC) has approved the following recertification guidance to provide a mechanism for previously approved products to be reviewed and come into compliance with the current approval process. This guidance is based on recommendations from the Dirt, Gravel, & Low Volume Road (DGLVR) Maintenance Program's Product and process Advisory Workgroup. All currently approved products are subject to recertification if they wish to continue to be eligible for DGLVR funds and be listed in PennDOT Pub 447.

Products previously reviewed and accepted into the program are now subject to a 5 year recertification cycle. For products that were reviewed prior to 2012 the recertification must be completed by December 31, 2017 to be recertified for another 5 years. For products approved in or after 2012 the recertification deadline is the date the product was accepted into the program plus 5 years.

The first step in recertification is an assessment of the previously approved product to determine if the testing originally submitted to the Program and the underlying supporting documentation meets the current requirements of the Program. The assessment is the responsibility of the product owner; however, the Center is available to assist with assessment guidance upon request. Any change in product formulation since the initial approval automatically triggers retesting under the most current requirements of the Program.

If, through the assessment, it is determined that the original product testing does not meet the current testing requirements, then testing of the product under the current requirements will be required to bring it into compliance. If new testing is not submitted in a timely manner the product approval will be withdrawn. For products that must be tested under the current requirements it is required that the applicant notify the Center prior to beginning testing.

To be recertified for use in the Program, the product must meet all current requirements outlined in the PA Dirt, Gravel, & Low-Volume Road Maintenance Program Product Approval Instructions. Failure to comply with these recertification requirements will result in the SCC sending the product owner a Notice of Intent to suspend the product from the DGLVR Maintenance Program's approved products list. Other agencies that refer to the approved products list may still allow the product to be used under their program guidelines at their discretion.

For full information regarding the current product approval process requirements see: ***"PA Dirt, Gravel, & Low-Volume Road Maintenance Program Product Approval Instructions"***

[http://www.dirtandgravel.psu.edu/PA\\_Program/Products/products.html](http://www.dirtandgravel.psu.edu/PA_Program/Products/products.html)