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Waste Management Division

APPLICATION TO CERTIFY A WASTE DERIVED PRODUCT FOR DISTRIBUTION & USE

pursuant to
 the provisions of Chapter Env-Sw 1500 of the New Hampshire Solid Waste Rules

APPLICATION FILING AND PROCESSING INSTRUCTIONS

- (1) Complete this form by providing all of the information requested. If you need more space than provided on the form to answer a particular question and you are using a paper copy of this form, attach additional pages as necessary; mark each page clearly to show both the applicant name and the question being answered; and indicate on the form that the additional pages are attached.
- (2) Submit **THREE** copies of the completed application form, **EACH bearing ORIGINAL signatures**, to the following address:

**New Hampshire Department of Environmental Services (DES)
 Waste Management Division (WMD)
 Permitting & Design Review Section (P&DRS)
 29 Hazen Drive, PO Box 95
 Concord, NH 03302-0095**
- (3) All references on this form beginning with "Env-Sw" are citations from the New Hampshire Solid Waste Rules. You may obtain a copy of the Rules from the DES Public Information and Permitting Office at (603) 271-2975. The Rules are also available on the Internet at www.des.nh.gov.
- (4) DES will process your application in conformance with Env-Sw 1507.
- (5) For further assistance with completing this form, or to obtain a disk copy of this form, contact the DES Permitting & Design Review Section (P&DRS) at (603) 271-2925 or at the above noted mailing address.
- (6) You may also contact DES at TDD Access: Relay NH 1 (800) 735-2964.

SECTION I. APPLICANT IDENTIFICATION

Provide the following information to identify the applicant. Note: If the product being certified is a proprietary product, the applicant must be the proprietor.

(1)	Applicant name: Brighter Horizons Environmental, Inc.		
(2)	Mailing address: PO Box 219, Chelmsford, MA 01824		
(3)	Telephone number: 978-970-0500	Email:	
(4)	If different than above, identify the individual associated with and designated by the applicant to be the contact individual for matters concerning this application:		
	(a) Name: Rich Niles	(b) Title: Project Manager, AMEC E&I	
	(c) Mailing address: 2 Robbins Road, Westford, MA 01886		
	(d) Telephone number: 978-392-5355	Email:	rich.niles@amec.com
(5)	If the applicant is an individual, provide date of birth and go to question (7) below:		
(6)	If the applicant is a corporation, partnership or other association, provide the following information as specified:		
	(a) The facility is owned by a: <input checked="" type="checkbox"/> corporation <input type="checkbox"/> partnership <input type="checkbox"/> other association		
	(b) State of incorporation/formation: MA		
	(c) Principal business address: 4 Courthouse Lane, Chelmsford, MA 01824		
	(d) Provide on separate paper and attach/mark as "Attachment I(6)(d)," the names and addresses of all directors, officers and shareholders (*), if for a corporation; all partners (whether general or limited), if for a partnership; or all principals, members or participants, if for another type of association.		
	(*) For a privately held corporation, identify all shareholders. For a publicly traded corporation, identify all shareholders owning 10% or more of the corporation's equity or debt.		

(7)	Identify the applicant's interest in having the waste-derived product certified. Check all of the following which apply:
<input type="checkbox"/>	The applicant produces or intends to produce the waste-derived product.
<input type="checkbox"/>	The applicant distributes or intends to distribute the waste-derived product to users or other distributors.
<input type="checkbox"/>	The applicant generates or intends to generate the waste used to produce the waste-derived product.
<input checked="" type="checkbox"/>	The applicant collects or intends to collect from generators or others, the waste used to produce the waste-derived product.
<input checked="" type="checkbox"/>	The applicant uses or intends to use the waste-derived product.
<input type="checkbox"/>	Other (specify):

SECTION II. PRODUCT IDENTIFICATION AND GENERAL DESCRIPTION

Provide the following information to identify and describe in general terms the subject waste-derived product:

(1)	Product common name (name which denotes the general purpose of the product, such as "aggregate," "driveway sealer," "glue," or "absorbent"). Virgin Soils, Fill & Street Sweepings
(2)	Product trade name, if any: Virgin Soils, Fill & Street Sweepings
(3)	General purpose(s) for which the product will be used (more detail regarding the same is requested in Section V(1) of this form). Soils that meet residential standards for gravel pit reclamation at 17 Twin Bridge Rd., Merrimack, NH.
(4)	Briefly describe the physical appearance of the product and any distinguishing characteristics. Also identify the waste and other material content of the product, by type and relative quantity. Variety of excess soils from construction projects and public operations. See Section 5.0 of the Gravel Pit Partial Reclamation Operations Plan dated September 27, 2013 and the attachment for Section II Product Identification and General Description.
(5)	Identify a comparable existing non-waste-derived product(s), if any, by common name and trade name if applicable. Manufactured gravel, sand and gravel, bank-run gravel, common burrow, unconsolidated fill, general fill, virgin soil.
(6)	Have you verified with the Department that this waste-derived product is not already certified for distribution and use? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO (If NO, you should do so)

SECTION III. PRODUCT MANUFACTURER IDENTIFICATION

Provide the following information to identify the manufacturer(s) of the waste-derived product:

(1)	Is the waste-derived product a proprietary product? <input type="checkbox"/> YES (If YES, the proprietor must be the applicant as identified in Section I of this form.) <input checked="" type="checkbox"/> NO						
(2)	If the waste-derived product is non-proprietary, provide the name(s) and location(s) of all existing manufacturers and potential manufacturers known to the applicant, including the applicant if applicable.						
	<table border="1"> <thead> <tr> <th>Manufacturer Name</th> <th>Principal Business Location/Address</th> </tr> </thead> <tbody> <tr> <td>Generators from various off-site construction projects.</td> <td>Generally within a 50 mile radius of the site.</td> </tr> <tr> <td>Municipal highway departments and transportation agencies.</td> <td>Generally within a 50 mile radius of the site.</td> </tr> </tbody> </table>	Manufacturer Name	Principal Business Location/Address	Generators from various off-site construction projects.	Generally within a 50 mile radius of the site.	Municipal highway departments and transportation agencies.	Generally within a 50 mile radius of the site.
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Generators from various off-site construction projects.	Generally within a 50 mile radius of the site.						
Municipal highway departments and transportation agencies.	Generally within a 50 mile radius of the site.						

SECTION IV. PRODUCTION

Provide the following information to describe how the waste-derived product is/will be produced:

(1)	Identify and characterize the WASTE INGREDIENT(S) used to produce the waste-derived product, as follows:
(a)	Identify and characterize the type of waste used to make this product (i.e., the "waste ingredients"). Include a description of the <u>physical appearance</u> and <u>physical state</u> of the waste ingredient(s), including whether the waste ingredient is a solid, liquid or gas: See the attachment for Section IV. Production.
(b)	Describe other distinguishing characteristics of the waste ingredient(s), including any characteristics which have the potential to create a nuisance and/or adversely effect the environment, public health and safety, such as odor, dust, fire or explosion; any potential respiratory hazards including the potential for dust or fumes; and any potential dermal contact hazards, for instance chemical burns to skin: See the attachment for Section IV. Production.
(c)	Provide documentation and materials detailing the general quality of the waste ingredient(s), including: <ul style="list-style-type: none"> ☛ Physical, chemical and, where appropriate, biological characteristics of the waste ingredient(s) based on current and representative sampling or equivalent documentation and including analytical test results for those constituents that are reasonably thought to be present in the waste and which are known or suspected, by way of published scientific documentation, to pose a potential risk to human health or the environment; and ☛ Material safety data sheets for the waste ingredients and constituents of the waste ingredients, if published pursuant to OSHA regulations. Mark any attached information as "Attachment IV(c)" and list the attachments below. See the attachment for Section IV. Production.

(d)	Describe the process by which each waste ingredient is generated: See the attachment for Section IV. Production.				
(e)	Identify all known generators of the waste ingredient(s), including name(s) and location(s):				
	<table border="1"> <thead> <tr> <th>Generator Name</th> <th>Location/Address</th> </tr> </thead> <tbody> <tr> <td>Generators from various off-site projects.</td> <td>Generally within a 50 mile radius of the site.</td> </tr> </tbody> </table>	Generator Name	Location/Address	Generators from various off-site projects.	Generally within a 50 mile radius of the site.
Generator Name	Location/Address				
Generators from various off-site projects.	Generally within a 50 mile radius of the site.				
(f)	Estimated quantity of waste generated annually in New Hampshire: See the attachment for Section IV. Production.				
(2)	Describe the process by which the WASTE-DERIVED PRODUCT is or will be produced, as follows:				
(a)	<p>Provide product specifications, which establish:</p> <ul style="list-style-type: none"> ☛ Material and waste content; ☛ Acceptance limits for material and waste ingredients, using physical, chemical and biological parameters as appropriate to the type(s) of material(s) and type(s) of waste being used to produce the waste-derived product; and ☛ Other factors, as necessary to identify the minimum standards the waste-derived product shall meet prior to being released by the manufacturer for distribution and use. <p>Mark any attached information as "Attachment IV(2)(a)" and list the attachments below:</p> <p>See the attachment for Section IV. Production.</p>				
(b)	<p>Describe the process, from beginning to end, including a description of:</p> <ul style="list-style-type: none"> ☛ Any processing or treatment applied to the waste ingredient(s) prior to producing the waste-derived product; ☛ The specific industrial or manufacturing practices and/or technologies used to produce the waste-derived product; and ☛ Residual and bypass waste management practices. <p>See the attachment for Section IV. Production.</p>				
(c)	Submit process flow diagrams and/or schematic diagrams as appropriate, depicting the process described pursuant to (b) above. Mark as "Attachment IV(2)(c)".				
(d)	Submit the product quality assurance/quality control procedures that will be used to affirm the waste-derived product meets the standards specified pursuant to (a) above. Mark as "Attachment IV(2)(d)".				

SECTION V. USE, DISTRIBUTION AND MARKETS

Provide the following information to describe how the waste-derived product will be distributed and used, and to identify markets.

(1)	Describe, in detail, all intended uses of the product: See the attachment for Section V. Use Distribution and Markets.
(2)	Identify potential hazards to the environment, public health and safety which may result from using the product as intended: See the attachment for Section V. Use Distribution and Markets.
(3)	Describe all product use and disposal restrictions which are necessary to assure that use and disposal of the product will not pose an increased risk to the environment, public health and safety: See the attachment for Section V. Use Distribution and Markets.
(4)	<p>Demonstrate the existence, or reasonable expectation of the existence, of a market for the waste-derived product, based on the following:</p> <ul style="list-style-type: none"> ☛ A comparison of the characteristics and specifications of the waste-derived product or material and the required market characteristics and specifications of the product or material. ☛ The benefit that will be achieved by use of the waste-derived product. ☛ Information to document existing use of the same or similar waste-derived product and/or a contract to purchase the waste-derived product. <p>See the attachment for Section V. Use Distribution and Markets.</p>
(5)	Estimated market value of the waste-derived product, in dollars per appropriate unit of measurement: \$5/ton – market value fluctuates based on generator, volume, quality and location of generator site.
(6)	Describe how the waste-derived product will be distributed for use: See the attachment for Section V. Use Distribution and Markets.

SECTION VI. DEMONSTRATION OF CRITERIA

Using the information you have provided in Sections IV and V above, provide a written assessment demonstrating how each of the following criteria for certification shall be met by the production, distribution and use of the waste-derived product.

Env-Sw 1504.04 Need. The applicant shall demonstrate a need for the waste-derived product based on the following criteria:

- (a) The waste-derived product shall either:
 - (1) Be comparable in form and function to an existing product in the market place which is not derived from waste, and shall perform as effectively or more effectively than the existing product; or
 - (2) Satisfy an identifiable and unfulfilled need in society without violating the universal environmental performance standards in Env-Sw 1002.
- (b) There shall be an identifiable user or buyer for the waste-derived product
- (c) Waste derived products used for agronomic purposes shall provide an identifiable benefit(s) to the sites to which it is land applied

Env-Sw 1504.05 Product Quality and Quality Control. The applicant shall demonstrate that the production process meets the following requirements:

- (a) Production of the waste-derived product shall neither:
 - (1) Cause a violation of any requirement in Env-Sw 1000; nor
 - (2) Pose a greater risk to the environment, public health and safety than does the production of an existing comparable non-waste-derived product or, if no comparable non-waste-derived product exists, by directly disposing of the waste in accordance with the New Hampshire Solid Waste Rules;
- (b) The physical and analytical characteristics of the waste used to produce the product shall be defined in a written specification
- (c) The physical and analytical characteristics of the waste-derived product shall be defined in a written specification
- (d) The production process shall include quality assurance/quality control procedures to assure the defined specifications shall be met through the production process

Env-Sw 1504.06 Impact on Society. The applicant shall demonstrate that use of the waste-derived product in society shall have a minimal net impact based on the following requirements:

- (a) Use of the waste-derived product as intended shall neither:
 - (1) Cause a violation of any requirement in Env-Sw 1000; nor
 - (2) Pose a greater risk to the environment, public health and safety than does the use of an existing comparable non-waste-derived product or, if no comparable non-waste-derived product exists, by disposing of the waste in accordance with the New Hampshire Solid Waste Rules
- (b) Disposal of the waste-derived product shall not pose a greater risk to the environment, public health and safety than would be posed by directly disposing of the waste from which the product is produced

SECTION VII. SIGNATURE AND CERTIFICATION OF APPLICATION INFORMATION

The applicant must sign the following statement prior to submitting this application. All copies of the application filed with DES must bear the applicant's ORIGINAL signature. If the applicant is not an individual, an individual duly authorized by the applicant shall sign the application.

To the best of my knowledge and belief, the information and material submitted herewith is correct and complete. I understand that any approval granted by DES based on false and/or incomplete information shall be subject to revocation or suspension, and that administrative, civil or criminal penalties may also apply. I certify that this application is on a complete and accurate form, as provided by DES, without alteration of text.

Jason Squeglia
Applicant Name (Print Clearly or Type)


Applicant Signature

9-27-13
Date

SECTION I. APPLICANT IDENTIFICATION

Section I(6)(d): Provide on separate paper and attach/mark as "Attachment I(6)(d)," the names and addresses of all directors, officers and shareholders (*), if for a corporation; all partners (whether general or limited), if for a partnership; or all principals, members or participants, if for another type of association.

(*) For a privately held corporation, identify all shareholders. For a publicly traded corporation, identify all shareholders owning 10% or more of the corporation's equity or debt.

Brighter Horizons Environmental, Inc. (BHE) is a privately held corporation with two owners, as outlined below with their corporate designations.

Jason J. Squeglia
President and Director

Shane A. Duval
Secretary, Treasurer and Director

Additional information can be provided upon request by contacting the BHE office identified in Section I of this application.

SECTION II. PRODUCT IDENTIFICATION AND GENERAL DESCRIPTION

Section II (4): Briefly describe the physical appearance of the product and any distinguishing characteristics. Also identify the waste and other material content of the product, by type and relative quantity.

In general, the product to be reused at the site consists of excess soils from construction projects and public operations. The soil type and a description of the product are provided below and in Section 5.0 of the Gravel Pit Partial Reclamation Operations Plan dated September 27, 2013. These products will be used within the Proposed Reclamation Area, as shown on the Site Plans dated May 2013 in Appendix B of the Gravel Pit Partial Reclamation Operations Plan.

General Description of the Product

Soil Type or Source	Description & Origin	Waste or Other Material Content
Clean Soil	Soil from non-urban or undisturbed (virgin) and non-regulated sites with no identified environmental conditions. Generator must provide a detailed environmental history and/or investigation report to support classification.	No known waste or other materials are present. Clean soils may contain large rocks or organic matter that needs to be removed to be suitable for on-site reuse.
Urban Fill	Soil from urban or developed sites that has the potential to contain residual levels of contaminants. Soil may be from regulated and unregulated sites.	Soils may contain residual levels of heavy metals and petroleum products from anthropogenic sources. Soils accepted at the site cannot contain any refuse, construction and demolition (C&D) debris, or solid waste. The soil may contain incidental non-coated or non-painted brick or concrete pieces that are less than 6 inches in diameter. Any brick/concrete material must be less than 5% of the total soil volume.
Street Sweepings & Catch Basin Cleanings	Street sweepings, roadside ditch soils and catch basin cleanings that are not obviously contaminated with wastewater, animal wastes, oil, gasoline or other petroleum products.	Street sweepings, ditch cleanings and catch basin cleanings accepted at the site cannot contain any significant litter (<5% by volume). Sweepings may contain residual levels of heavy metals and petroleum products from roadways.
Other Impacted Soil	Dredged spoils or soil from known impacted sites with residual levels of contaminants that are acceptable for reuse at the Site. This includes street sweepings or catch basin cleanings that have obvious or known contamination.	Soils must not exhibit staining, odors or other discoloration that may be attributed to a release of oil or hazardous material (OHM). Dredge spoils may be accepted and used as fill providing that the sediments received at the Reclamation Area have no free draining liquids.

SECTION IV. PRODUCTION

Section IV (1): Identify and characterize the WASTE INGREDIENT(S) used to produce the waste-derived product, as follows:

(a) Identify and characterize the type of waste used to make this product (i.e., the “waste ingredients”). Include a description of the physical appearance and physical state of the waste ingredient(s), including whether the waste ingredient is a solid, liquid or gas:

The type of material used to make the product is natural and/or reused soil from various off-site locations. The soil may have varying composition and include: sand, gravel, silt, clay and stone. The “waste ingredients” are solids, represented by a concentration of chemical compounds associated with soils on a weight basis (mg/Kg). Although the number of constituents detected through laboratory analysis will vary, the waste ingredients are anticipated to predominantly include heavy metals and petroleum compounds associated with anthropogenic sources. Based on the nature of the soils described in Section II, the following analytical methods are proposed to screen the product for potential wastes or contaminants.

Testing to Screen for Potential “Waste Ingredients”

Analytical Parameter	Testing Protocol
Total Petroleum Hydrocarbons (TPH) (GC-FID)	EPA Method 8015C
Volatile Organic Compounds (VOCs)	EPA Method 8260B
Semi Volatile Organic Compounds (SVOCs)	EPA Method 8270D
Polychlorinated Biphenyls (PCBs)	EPA Method 8082A
RCRA 8 Metals	EPA Method 6010C/7471B
Ignitability/Flashpoint	EPA Method 1030
Reactivity (cyanide & sulfide)	EPA Method 9012B/9030B
Corrosivity/pH	EPA Method 9045D
Conductivity*	EPA Method 9050A

Only those soils that meet the acceptance criteria for the chemical and physical constituents outlined in this application will be deemed “products” for reuse at the site.

(b) Describe other distinguishing characteristics of the waste ingredient(s), including any characteristics which have the potential to create a nuisance and/or adversely affect the environment, public health and safety, such as odor, dust, fire or explosion; any potential respiratory hazards including the potential for dust or fumes; and any potential dermal contact hazards, for instance chemical burns to skin:

Materials that do not meet the criteria outlined in the Gravel Pit Partial Reclamation Operations Plan prior to arrival at the site will be rejected and returned to the generator for appropriate management. See section 5.0 and 6.0 of the Operations Plan for a description of the process for testing and acceptance prior to placement of materials within the Proposed Reclamation Area.

The management of the product has the potential to create dust at the Proposed Reclamation Area and improper management of site grading and stormwater has the potential to create erosion. However, the activities proposed in Section 6.3 of the Operations Plan are intended to address these potential concerns. Additionally, the permitting requirements outlined in Section 7.0 of the Operations Plan will address dust, erosion and sediment control. No other

characteristics of the waste have the potential to create a nuisance and/or adversely affect the environment or public health and safety.

(c) Provide documentation and materials detailing the general quality of the waste ingredient(s), including:

- **Physical, chemical and, where appropriate, biological characteristics of the waste ingredient(s) based on current and representative sampling or equivalent documentation and including analytical test results for those constituents that are reasonably thought to be present in the waste and which are known or suspected, by way of published scientific documentation, to pose a potential risk to human health or the environment; and**
- **Material safety data sheets for the waste ingredients and constituents of the waste ingredients, if published pursuant to OSHA regulations.**

Mark any attached information as "Attachment IV(c)" and list the attachments below.

As described above in Section IV(1)(a), the product has the potential to contain waste ingredients that are normally present in soils impacted from anthropogenic sources. The above list of analytical parameters is appropriate to detect the full suite of chemical compounds that may be present in the product. These parameters are based on published methods and screening/acceptance criteria outlined in Env-Or 600, Env-Sw 900 and the NH DES Fact Sheet WMD-SW-32 Management of Street Wastes.

The following tables provided at the end of this attachment represent the potential list of waste ingredients that may be present in the product:

- Table 1 – Comparison of Soil Standards: this table compares the concentrations of chemical compounds in soils from NH DES published sources. The standards contained in this table are designed to be protective of human health risk and represent a level of no significant risk of exposure based on the regulatory jurisdiction for specific sites.
- Table 2 – Comparison of Soil Standards by Chemical Category: this table is the same as Table 1, but organized by category of chemical compound.
- Table 3 – Soil Acceptance Standards: this table is a summary of all chemical compounds from Table 600-2 in Env-Or 600 and the most restrictive concentration of chemical compounds from Table 600-2, Table 900-1 in Env-SW 900 and the NH DES Fact Sheet WMD-SW-32 Management of Street Wastes. These are the proposed soil acceptance standards for the product to be placed at the Proposed Reclamation Area at 17 Twin Bridge Road. The concentration of these waste ingredients will not exceed the standards in Table 3.

Table 3 provides the Chemical Abstracts Service (CAS) number that can be used to provide material safety data sheets for the waste ingredients. This information is not provided in this permit application due to the number of potential waste ingredients, but can be provided separately to NH DES upon request or as a condition of permit approval.

(d) Describe the process by which each waste ingredient is generated:

The waste ingredients in the product will vary based on the source and/or site location, but will generally be impacted from the following:

- Clean Soil – excess soil that cannot be used at a construction site and need to be relocated. Waste ingredients are expected to be consistent with background concentrations for natural soils at the generator site.
- Urban Fill – excess soil that has been trafficked by vehicles and equipment or where historical site uses and uncontrolled activities introduced waste ingredients. Urban fill soils often contain coal and coal ash or wood ash from anthropogenic sources, resulting

in the presence of petroleum compounds (i.e., PAHs) and heavy metals above natural background concentrations.

- Street Sweepings & Catch Basin Cleanings – soils that have been removed from roadways or within the road right-of-way. Vehicles deposit petroleum products and metals onto roadways that adhere to soil particles that are swept off the surface or deposited into the drainage system.
- Other Impacted Soil – soil that may be dredged or soil from known impacted sites that meet reuse standards. Waste ingredients can be introduced through contaminated stormwater runoff and sediment deposits, water-related industrial activities (i.e., dredged spoils) or a specific release of waste ingredients (e.g., petroleum tank) that impacts soils.

(e) Identify all known generators of the waste ingredient(s), including name(s) and location(s):

Generators will vary based on market conditions and availability, but will generally be located within a 50 mile radius of the site. The waste ingredients are not specific to the generator and will vary based on the type of activity generating the product (e.g., catch basin cleanings versus urban fill). Generators and the products sent to the proposed Reclamation Area at 17 Twin Bridge Road will be identified and tracked in accordance with the Operations Plan (see Section 6.0 and Appendix D).

(f) Estimated quantity of waste generated annually in New Hampshire:

Since materials will be delivered to the site by truck, it has been assumed that generators will be located within a 50 mile radius of the site. Data is not available to estimate the total quantity of each waste type generated annually in New Hampshire.

Since the Waste-Derived Product is specified for use only at 17 Twin Bridge Road, Merrimack, NH, the estimated quantity to fill the proposed 11-acre Reclamation Area is approximately 500,000 cubic yards. All Waste-Derived Products used to fill the Reclamation Area will be tracked.

2. Describe the process by which the WASTE-DERIVED PRODUCT is or will be produced, as follows:

(a) Provide product specifications, which establish:

- **Material and waste content;**
- **Acceptance limits for material and waste ingredients, using physical, chemical and biological parameters as appropriate to the type(s) of material(s) and type(s) of waste being used to produce the waste-derived product; and**
- **Other factors, as necessary to identify the minimum standards the waste-derived product shall meet prior to being released by the manufacturer for distribution and use.**

Mark any attached information as "Attachment IV(2)(a)" and list the attachments below:

The Waste-Derived Product will be produced through a variety of means, as described in Section IV(1)(d) above. The material and waste content will vary, but the acceptance limits for the physical and chemical parameters are outlined in Section 5.0 of the Longa Gravel Pit Partial Reclamation Operations Plan dated September 27, 2013. Biological waste ingredients are not expected to be present.

(b) Describe the process, from beginning to end, including a description of:

- **Any processing or treatment applied to the waste ingredient(s) prior to producing the waste-derived product;**
- **The specific industrial or manufacturing practices and/or technologies used to produce the waste-derived product; and**

- **Residual and bypass waste management practices.**

The process for producing the Waste-Derived Product is described in this section and Section 6.0 of the Longa Gravel Pit Partial Reclamation Operations Plan dated September 27, 2013. In general, the Waste-Derived Product is already created at the generator site and the material will be screened for waste ingredients to determine if it meets the acceptance criteria (see Section 5.0 of the Operations Plan) for the proposed Reclamation Area at 17 Twin Bridge Road. Sections 5.0 and 6.0 contain provisions for the management of Waste-Derived Products that do not meet these requirements, which may include returning the materials to the generator site.

(c) Submit process flow diagrams and/or schematic diagrams as appropriate, depicting the process described pursuant to (b) above. Mark as “Attachment IV(2)(c)”.

The process does not include a specific source related to waste ingredients. The Waste-Derived Product is generated as a result of soil excavation projects and/or the collection of soils from within the public right-of-way (i.e., roads). The process for acceptance of the Waste-Derived Product is described in Sections 5.0 and 6.0 of the Longa Gravel Pit Partial Reclamation Operations Plan dated September 27, 2013. The process for reuse at the Proposed Reclamation Area at 17 Twin Bridge Road is described in Section 6.3 and illustrated on the engineered site plans in Appendix B of the Operations Plan. A general process flow diagram is provided below to summarize this information.



(d) Submit the product quality assurance/quality control procedures that will be used to affirm the waste-derived product meets the standards specified pursuant to (a) above. Mark as “Attachment IV(2)(d)”.

The Gravel Pit Partial Reclamation Operations Plan for the Longa Sand and Gravel Pit at 17 Twin Bridge Road, Merrimack, NH dated September 27, 2013 includes quality assurance/quality control procedures that will be used to affirm the waste-derived product meets the standards (see Sections 5.0 and 6.0). This Operations Plan will be updated and amended as required to meet permit requirements.

Table 1
COMPARISON OF SOIL STANDARDS

	NH Table 600-2 ¹	NH Table 900-1 ²	NH Catch Basin Cleanings Reuse Standard S-1
Chemical Name	Concentration (mg/kg)		
Acenaphthene	340	1,000	-
Acenaphthylene	490	1,000	-
Alkylbenzenes ⁺	-	61 (Total)	59 (Total)
Anthracene	1,000	1,000	-
Arsenic	11	-	11
Barium	1,000	-	750
Benzene	0.3	0.3	0.3
Benzo(a)anthracene	1	0.7	0.7
Benzo(a)pyrene	0.7	0.7	0.7
Benzo(b)fluoranthene	1	7	7
Benzo(k)fluoranthene	12	7	7
Cadmium	33	32	32
Chromium (III)	1,000	1,000	1,000
Chromium (VI)	130	170	-
Chrysene	120	70	70
Dibenzo(a,h)anthracene	0.7	0.7	0.7
Dichloroethane, 1,2-	0.1	0.09	0.1
Ethylbenzene	140	90	-
Fluoranthene	960	810	810
Fluorene	77	510	510
Indeno(1,2,3-cd)pyrene	1	0.7	0.7
Isopropyl benzene	330	23	123
Lead	400	400	400
Mercury (inorganic)	6	4	13
Methyl tert butyl ether (MTBE)	0.2	3	0.13
Methylnaphthalene, 2-	96	150	150
Naphthalene	5	3	5
Nickel	400	1,000	-
Non-Carcinogenic PAH Group ⁺⁺	-	610 (Total)	480 (Total)
Selenium	180	270	260
Silver	89	170	45
Toluene	100	100	100
Total Petroleum Hydrocarbons	10,000	10,000	-
Xylenes (mixed isomers)	500	810	500
Zinc	1,000	1,000	-

¹Table 600-2: NH Soil Remediation Standards

²Table 900-1: NH Contaminated Soils and Media Reuse Requirements and Limitations

Alkylbenzenes: n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, 4-Isopropyl toluene, n-Propylbenzene, 1,2,4-

Non-Carcinogenic PAH Group: Pyrene, Benzo(g,h,i) Perylene and Phenanthrene

MOST RESTRICTIVE STANDARD

Table 2
COMPARISON OF SOIL STANDARDS BY CHEMICAL CATEGORY

	NH Table 600-2 ¹	NH Table 900-1 ²	NH Catch Basin Cleanings Reuse Standard S-1
Chemical Category & Name	Concentration (mg/kg)		
Metals			
Arsenic	11	-	11
Barium	1,000	-	750
Cadmium	33	32	32
Chromium (III)	1,000	1,000	1,000
Chromium (IV)	130	170	-
Lead	400	400	400
Mercury (inorganic)	6	4	13
Nickel	400	1,000	-
Selenium	180	270	260
Silver	89	170	45
Zinc	1,000	1,000	-
VOCs			
Benzene	0.3	0.3	0.3
Dichloroethane, 1,2-	0.1	0.09	0.1
Ethylbenzene	140	90	-
Isopropyl benzene	330	23	123
Methyl-t-butyl ether	0.2	3	0.1
Toluene	100	100	100
Xylene (mixed isomers)	500	810	500
Alkylbenzenes ⁺	-	61 (Total)	59 (Total)
Total Petroleum Hydrocarbons	10,000	10,000	-
PAHs – Carcinogenic			
Benzo(a)anthracene	1	0.7	0.7
Benzo(a)pyrene	0.7	0.7	0.7
Benzo(b)fluoranthene	1	7	7
Benzo(k)fluoranthene	12	7	7
Chrysene	120	70	70
Dibenzo(a,h)anthracene	0.7	0.7	0.7
Indeno(1,2,3-cd)pyrene	1	0.7	0.7
PAHs – Noncarcinogenic			
Acenaphthene	340	1,000	-
Acenaphthylene	490	1,000	-
Anthracene	1,000	1,000	-
Fluoranthene	960	810	810
Fluorene	77	510	510
Methylnaphthalene, 2-	96	150	150
Napthalene	5	3	5
Non-Carcinogenic PAH Group ⁺⁺	-	610 (Total)	480 (Total)

¹Table 600-2: NH Soil Remediation Standards

²Table 900-1: NH Contaminated Soils and Media Reuse Requirements and Limitations

Alkylbenzenes: n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, 4-Isopropyl toluene, n-Propylbenzene,

Non-Carcinogenic PAH Group: Pyrene, Benzo(g,h,i) Perylene and Phenanthrene

MOST RESTRICTIVE STANDARD

Table 3
SOIL ACCEPTANCE STANDARDS

Chemical Name	CAS No.	Concentration (mg/kg)
Acenaphthene	83-32-9	340
Acenaphthylene	208-96-8	490
Acetone	67-64-1	75
Acrylonitrile	107-13-1	0.5
Alachor	15972-60-8	0.2
Aldicarb	116-06-3	0.1
Aldicarb sulfone	1646-88-4	0.1
Aldicarb sulfoxide	1646-87-3	0.2
Aldrin	309-00-2	0.09
Alkylbenzenes ⁺	N/A	59 (total)*
Allyl chloride	107-05-1	1
Anthracene	120-12-7	1,000
Antimony	7440-36-0	9
Arsenic	7440-38-2	11
Atrazine	1912-24-9	0.09
Barium	7440-39-3	750*
Benzene	71-43-2	0.3
Benzidine	92-87-5	0.004
Benzo(a)anthracene	56-55-3	0.7*
Benzo(a)pyrene	50-32-8	0.7
Benzo(b)fluoranthene	205-99-2	1
Benzo(g,h,i)perylene	191-24-2	480*
Benzoic acid	65-85-0	350
Benzo(k)fluoranthene	207-08-9	7*
Beryllium	7440-41-7	1
Biphenyl, 1,1-	92-52-4	174
Bis (2Chloroisopropyl) ether	108-60-1	5
Bis (Chloroethyl) ether	111-44-4	0.7
Bisphenol A	80-05-7	1,300
Boron	7440-42-8	1,000
Bromodichloromethane	75-27-4	0.1
Bromoform	75-25-2	0.1
Bromomethane	74-83-9	0.3
Butylbenzene, n-	104-51-8	59*
Butylbenzene, sec-	135-98-8	59*
Butylbenzene, tert-	98-06-6	59*
Cadmium	7440-43-9	32*
Camphor	76-22-2	760
Carbofuran	1563-66-2	0.6
Carbon disulfide	75-15-0	460
Carbon tetrachloride	56-23-5	12
Chlordane	57-74-9	4
Chloroaniline, p-	106-47-8	1.3
Chloromethane	74-87-3	3
Chlorophenol, 2-	95-57-8	2
Chlorotoluene, 2 (o)	95-49-8	15
Chlorotoluene, 4 (p)	106-43-4	2,400
Chromium (III)	16065-83-1	1,000
Chromium (VI)	18540-29-9	130

Table 3
SOIL ACCEPTANCE STANDARDS

Chemical Name	CAS No.	Concentration (mg/kg)
Chrysene	218-01-9	70*
Clopyralid	1702-17-6	13,000
Cyanazine	21725-46-2	0.03
Cyanide	57-12-5	100
2,4-D (Dichlorophenoxy acetic acid, 2,4-)	94-75-7	300
Dalapon	75-99-0	3
DDD (Dichlorodiphenyl dichloroethane, p,p')	72-54-8	6
DDE (Dichlorodiphenyl dichloroethylene, p,p')	72-55-9	4
DDT (Dichlorodiphenyl trichloroethane, p,p')	50-29-3	4
Dibenzo(a,h)anthracene	53-70-3	0.7
Dibromochloromethane	124-48-1	1
Dibromochloropropane	96-12-8	0.1
Dibutylphthalate	84-74-2	2,600
Dichlorobenzene, 1,2- (o-DCB)	95-50-1	88
Dichlorobenzene, 1,3- (m-DCB)	541-73-1	150
Dichlorobenzene, 1,4- (p-DCB)	106-46-7	7
Dichlorobenzidine, 3,3'-	91-94-1	0.7
Dichlorodifluoromethane	75-71-8	1,000
Dichloroethane, 1,1-	75-34-3	3
Dichloroethane, 1,2-	107-06-2	0.09*
Dichloroethylene, 1,1-	75-35-4	2
Dichloroethylene, cis-1,2-	156-59-2	2
Dichloroethylene, trans-1,2-	156-60-5	9
Dichloromethane (Methylene chloride)	75-09-2	0.1
Dichlorophenol, 2,4-	120-83-2	0.7
Dichloropropane, 1,2-	78-87-5	0.1
Dichloropropene, 1,3-	542-75-6	0.1
Dieldrin	60-57-1	0.06
Diethyl ether	60-29-7	3900
Diethyl phthalate	84-66-2	1,000
Di-(2-ethylhexyl)phthalate (DEHP)	117-81-7	72
Diisopropyl ether (DIPE)	108-20-3	10
Dimethyl phthalate	131-11-3	700
Dimethylphenol, 2,4-	105-67-9	4
Dinitrophenol, 2,4-	51-28-5	0.7
Dinitrotoluene, 2,4-	121-14-2	0.7
Dinoseb	88-85-7	1
Dioxane, 1,4-	123-91-1	5
Diphenylhydrazine, 1,2-	122-66-7	1
Diquat (dibromide)	85-00-7	0.3
Endosulfan	115-29-7	45
Endothall	145-73-3	1
Endrin	72-20-8	8
Ethyl tert butyl ether (ETBE)	637-92-3	0.7
Ethylbenzene	100-41-4	90*
Ethylene dibromide	106-93-4	0.1
Ethylene glycol	107-21-1	91
Fluoranthene	206-44-0	810*
Fluorene	86-73-7	77

Table 3
SOIL ACCEPTANCE STANDARDS

Chemical Name	CAS No.	Concentration (mg/kg)
Fluoride	7782-41-4	2,200
Formaldehyde	50-00-0	1
Heptachlor	76-44-8	0.2
Heptachlor epoxide	1024-57-3	0.1
Hexachlorobenzene	118-74-1	0.8
Hexachlorobutadiene	87-68-3	7
Hexachlorocyclohexane, alpha	319-84-6	0.06
Hexachlorocyclohexane, beta	319-85-7	0.06
Hexachlorocyclohexane, gamma	58-89-9	0.09
Hexachlorocyclopentadiene	77-47-4	200
Hexachlorodibenzodioxin, 2,3,7,8-	34465-46-8	0.0007
Hexachloroethane	67-72-1	0.7
Indeno(1,2,3-cd)pyrene	193-39-5	0.7*
Isophorone	78-59-1	1
Isopropyl benzene	98-82-8	23*
Isopropyl toluene, p-	99-87-6	59*
Lead	7439-92-1	400
Manganese	7439-96-5	5,200
MCPA (2-Methyl-4-chlorophenoxyacetic acid)	94-74-6	13
MCPP (2-(2- Methyl-4-chlorophenoxy) propionic acid)	93-65-2	26
Mercury (inorganic)	7439-97-6	4*
Methanol	67-56-1	50
Methoxychlor	72-43-5	130
Methyl ethyl ketone (MEK)	78-93-3	51
Methyl isobutyl ketone (MIBK)	108-10-1	29
Methyl mercury	22967-92-6	3
Methylnaphthalene, 2-	91-57-6	96
Methyl phenol, 2-	95-48-7	0.9
Methyl phenol, 4-	106-44-5	0.7
Methyl tert butyl ether (MTBE)	1634-04-4	0.13*
Metolachlor	51218-45-2	3
Metribuzin	21087-64-9	5
Monochlorobenzene	108-90-7	6
Naphthalene	91-20-3	3*
Non-Carcinogenic PAH Group ⁺⁺	N/A	480 (total)*
Nickel	7440-02-0	400
Oxamyl	23135-22-0	2
Pentachlorophenol	87-86-5	3
Phenanthrene	85-01-8	480*
Phenol	108-95-2	56
Picloram	1918-02-1	6
Polychlorinated Biphenyls (PCBs)	1336-36-3	1
Propyl benzene, n-	103-65-1	59*
Pyrene	129-00-0	480*
Selenium	7782-49-2	180
Silver	7440-22-4	45*
Simazine	122-34-9	0.4
Styrene	100-42-5	17
TCDD,2,3,7,8-(Dioxin)	1746-01-6	0.001

Table 3
SOIL ACCEPTANCE STANDARDS

Chemical Name	CAS No.	Concentration (mg/kg)
Tertiary amyl methyl ether (TAME)	994-05-8	3
Tertiary butyl alcohol (TBA)	75-65-0	2
Tetrachloroethane, 1,1,1,2-	630-20-6	0.8
Tetrachloroethane, 1,1,2,2,-	79-34-5	4
Tetrachloroethylene (PCE)	127-18-4	2
Tetrachlorophenol 2,3,4,6	58-90-2	130
Tetrahydrofuran	109-99-9	200
Thallium	7440-28-0	10
Toluene	108-88-3	100
Total Petroleum Hydrocarbons	N/A	10,000
Toxaphene	8001-35-2	1
2,4,5-TP (Silvex)	93-72-1	60
Trichlorobenzene, 1,2,4-	120-82-1	19
Trichlorobenzene, 1,3,5-	108-70-3	340
Trichloroethane, 1,1,1-	71-55-6	78
Trichloroethane, 1,1,2-	79-00-5	0.1
Trichloroethylene (TCE)	79-01-6	0.8
Trichlorofluoromethane	75-69-4	1,000
Trichloromethane (Chloroform)	67-66-3	3
Trichlorophenol, 2,4,5-	95-95-4	24
Trichlorophenol, 2,4,6-	88-06-2	0.7
Trichloropropane, 1,2,3-	96-18-4	0.2
Trimethylbenzene, 1,2,4	95-63-6	59*
Trimethylbenzene, 1,3,5	108-67-8	59*
Vinyl chloride	75-01-4	1
Xylenes (mixed isomers)	1330-20-7	500
Zinc	7440-66-6	1,000

Notes: *varies from the standard provided in Table 600-2, Chapter Env-Or 600.

Alkylbenzenes: n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, 4-Isopropyl toluene, n-Propylbenzene, 1,2,4- Trimethylbenzene, 1,3,5-Trimethylbenzene

Non-Carcinogenic PAH Group: Pyrene, Benzo(g,h,i) Perylene and Phenanthrene

SECTION V. USE, DISTRIBUTION AND MARKETS

(1): Describe, in detail, all intended uses of the product:

The Waste-Derived Product is intended for use only at the proposed Reclamation Area at 17 Twin Bridge Road, Merrimack, NH. The Reclamation Area is illustrated on the engineered site plans in Appendix B of the Longa Gravel Pit Partial Reclamation Operations Plan Dated September 27, 2013. As described in Sections 2.0 and 4.0 of the Operations Plan, the site owner is required to reclaim the former gravel pit mining areas at the property and the Waste-Derived Product will be used to fill the site to a suitable grade for future potential use in accordance with zoning and environmental restrictions.

(2): Identify potential hazards to the environment, public health and safety which may result from using the product as intended:

The use of the Waste-Derived Product will be limited to the Reclamation Area at 17 Twin Bridge Road. The Waste-Derived Product accepted for use at the Reclamation Area will meet standards for chemical waste ingredients that are protective of human health and the environment. The standards presented in Table 3 (see Section IV attachments) are derived from the NH DES standards that are based on direct-contact exposure for unrestricted use and those that are protective of groundwater resources. This information is discussed further in Section VI.

As discussed in the attachment for Section IV(1)(b), materials that do not meet the criteria outlined in the Gravel Pit Partial Reclamation Operations Plan prior to arrival at the site will be rejected and returned to the generator for appropriate management. The management of the product has the potential to create dust at the Proposed Reclamation Area and improper management of site grading and stormwater has the potential to create erosion. However, the activities proposed in Section 6.3 of the Operations Plan are intended to address these potential concerns. Additionally, the permitting requirements outlined in Section 7.0 of the Operations Plan will address dust, erosion and sediment control.

Based on the controls proposed in the Operations Plan for acceptance and management of the Waste-Derived Product at 17 Twin Bridge Road, there are no potential hazards to the environment, public health and safety which may result from using the product as intended.

(3): Describe all product use and disposal restrictions which are necessary to assure that use and disposal of the product will not pose an increased risk to the environment, public health and safety:

The Waste-Derived Product will be used only at the Reclamation Area at 17 Twin Bridge Road, Merrimack, NH. The use and restrictions outlined in the Gravel Pit Partial Reclamation Operations Plan dated September 27, 2013 will assure that use and disposal of the product will not pose an increased risk to the environment, public health and safety. It is important to note that the use of the Waste-Derived Product will improve site conditions and begin to restore the site to a condition that is suitable for future uses. The Reclamation Area is adjacent to public utilities that are a concern to the Merrimack Sewer Department and the Town wishes to have this area restored to stabilize the steep slopes. This information is discussed in Section 6.4 of the Operations Plan.

(4): Demonstrate the existence, or reasonable expectation of the existence, of a market for the waste-derived product, based on the following:

- ***A comparison of the characteristics and specifications of the waste-derived product or material and the required market characteristics and specifications of the product or material.***

The Waste-Derived Product currently exists in the market and it is typically sent to sites that are either regulated or non-regulated in New England states. Policies for the handling of each type of the Waste-Derived Product vary by state, but generators of the product often have to send the material to a landfill or other regulated facility. In general, the Waste-Derived Product is not a highly desirable structural fill material, therefore its use can be limited. In some site development circumstances, the Waste-Derived Product can represent excess fill material that cannot be reused on site and needs to be exported. The characteristics and specifications of the Waste-Derived Product will vary but are anticipated to be similar to general fill materials. As discussed in Section 6.3 of the Operations Plan, if unacceptable soil materials (e.g., clays, silts and soils with a low bearing pressure) are imported to the Reclamation Area, the transporter will be directed to a designated soil mixing area within the Reclamation Area to allow for blending with other soils of higher structural quality.

- ***The benefit that will be achieved by use of the waste-derived product.***

The use of the Waste-Derived Product at the Reclamation Area at 17 Twin Bridge Road, Merrimack, NH is a beneficial use of an otherwise undesirable product. Fill material is needed to restore the former gravel pit mining area to an elevation that is suitable for future uses. As discussed above, the Reclamation Area is adjacent to public utilities that are a concern to the Merrimack Sewer Department and the Town wishes to have this area restored to stabilize the steep slopes. Portions of the Reclamation Area are within the Shoreland Protection Area for the Merrimack and Souhegan Rivers and restoration of these areas is supported by the Town of Merrimack Conservation Commission and the Lower Merrimack River Local Advisory Committee.

As indicated in the June 21, 2013 letter from the Town of Merrimack Planning & Zoning Administrator, the proposed reclamation of the former gravel pit is a desirable and acceptable project to the Town. A copy of the Merrimack Planning Board Review for Acceptance & Consideration of Final Approval for a Waiver of Full Site Plan Review, dated June 21, 2013 is provided in Appendix G of the Operations Plan dated September 27, 2013.

- ***Information to document existing use of the same or similar waste-derived product and/or a contract to purchase the waste-derived product.***

Similar uses of the Waste-Derived Product currently exist at landfills and other regulated and non-regulated sites in NH and other New England states. Examples include the following:

- Nashua, NH Four Hills Landfill: Certified Waste-Derived Product No. 24, non-hazardous, low level contaminated soil.
- Millis, MA Island Road BUD Site: Beneficial Use Determination (BUD) Permit No. BWP SW13 (transmittal no. W030840) for reuse of catch basin cleanings, street sweepings and excess fill materials from road right-of-ways to reclaim an old gravel pit.
- Middleborough, MA Stone Street Gravel Pit Restoration Site: filling with urban fill and natural soils less than reporting thresholds (<RCS-1, as outlined in the Massachusetts Contingency Plan at 310 CMR 40.00).

The Waste-Derived Product is often sent to designated locations at a cost of \$5-\$25/ton to the generator. Transportation costs often limit the number of cost-effective locations. The applicant has an agreement in place with the property owner to manage the Waste-Derived Product for an initial period of two years.

It is important to note that some of the types of the proposed Waste-Derived Product (street sweepings, ditch cleanings and catch basin cleanings) are currently regulated in New Hampshire, as outlined in the *Fact Sheet WMD-SW-32 Management of Street Wastes*. As outlined in this fact sheet, street sweepings and roadside ditch cleanup soils may be reused without restriction. There are no testing requirements or criteria to be met for the use of these materials. Catch

Brighter Horizons Environmental, Inc.

Application to: Certify a Waste Derived Product for Distribution and Use (Chapter Env-Sw 1500)

basin cleanings can be used without restriction if test results meet the S-1 soil standards outlined in Fact Sheet WMD-SW-32. The proposed use of the Waste-Derived Product is consistent with this policy and the testing requirements outlined in the Operations Plan dated September 27, 2013 are more restrictive than Fact Sheet WMD-SW-32 since all materials (street sweepings, roadside ditch cleanup soils and catch basin cleanings) will be tested. Additionally, Fact Sheet WMD-SW-32 does not specify a frequency for testing materials.

(6): Describe how the waste-derived product will be distributed for use:

The Waste-Derived Product will be transported to the proposed Reclamation Area at 17 Twin Bridge Road. There is no other proposed distribution or use of the Waste-Derived Product.

SECTION VI. DEMONSTRATION OF CRITERIA

Env-Sw 1504.04 Need. The applicant shall demonstrate a need for the waste-derived product based on the following criteria:

(a) The waste-derived product shall either:

(1) Be comparable in form and function to an existing product in the market place which is not derived from waste, and shall perform as effectively or more effectively than the existing product; or

As discussed in the attachment for Section V(4), the Waste-Derived Product is generally not a highly desirable structural fill material, therefore its use can be limited. In some site development circumstances, the Waste-Derived Product can represent excess fill material that cannot be reused on site and needs to be exported. The characteristics and specifications of the Waste-Derived Product will vary but are anticipated to be similar to general fill materials. As discussed in Section 6.3 of the Longa Gravel Pit Partial Reclamation Operations Plan Dated September 27, 2013, if unacceptable soil materials (e.g., clays, silts and soils with a low bearing pressure) are imported to the Reclamation Area, the transporter will be directed to a designated soil mixing area within the Reclamation Area to allow for blending with other soils of higher structural quality.

The Waste-Derived Product is comparable in form and function to a general fill material that is needed at the Reclamation Area to fill the former gravel pit area. Following the provisions outlined in Sections 5.0 and 6.0 of the Operations Plan, it is anticipated that the Waste-Derived Product will perform as effectively as a general fill material that is not derived from waste. In some cases, the Waste-Derived Product will consist of clean fill material that is excess from a construction site and may consist of virgin soils. These types of the Waste-Derived Product are considered by engineers and contractors to represent general fill materials.

(2) Satisfy an identifiable and unfulfilled need in society without violating the universal environmental performance standards in Env-Sw 1002.

The Waste-Derived Product will not violate the universal environmental performance standards in Env-Sw 1002. Reclamation of the gravel pit using this Waste-Derived Product is the only economically feasible option for the property owner. The Town of Merrimack and local organizations are supportive of the project and the reuse of the Waste-Derived Product (subject to NH DES approval) to restore the site to a condition that is more suitable for future uses and to protect adjacent infrastructure.

As discussed in the attachment for Section V(4), the Reclamation Area for the Waste-Derived Product is adjacent to public utilities that are a concern to the Merrimack Sewer Department and the Town wishes to have this area restored to stabilize the steep slopes. Portions of the Reclamation Area are within the Shoreland Protection Area for the Merrimack and Souhegan Rivers and restoration of these areas is supported by the Town of Merrimack Conservation Commission and the Lower Merrimack River Local Advisory Committee.

As indicated in the June 21, 2013 letter from the Town of Merrimack Planning & Zoning Administrator, the proposed reclamation of the former gravel pit is a desirable and acceptable project to the Town. A copy of the Merrimack Planning Board Review for Acceptance & Consideration of Final Approval for a Waiver of Full Site Plan Review, dated June 21, 2013 is provided in Appendix G of the Operations Plan dated September 27, 2013.

(b) There shall be an identifiable user or buyer for the waste-derived product

The user for the Waste-Derived Product is restricted to the property owners (James Longa & Son, Inc. and James E. Longa Revocable Trust) and limited to the Reclamation Area to be managed by Brighter Horizons Environmental, Inc. The Reclamation Area is shown on the engineered site plans dated May 2013 in Appendix B of the Operations Plan dated September 27, 2013. Generators of the Waste-Derived Product will pay a fee for Brighter Horizons Environmental, Inc. to manage the materials at the Reclamation Area. The roles and responsibilities associated with the Waste-Derived Product are outlined in Section 3.2 of the Operations Plan dated September 27, 2013.

(c) Waste derived products used for agronomic purposes shall provide an identifiable benefit(s) to the sites to which it is land applied

The Waste-Derived Product will not be used for agronomic purposes. As discussed in Section 6.3 of the Operations Plan dated September 27, 2013, the Waste-Derived Product will be covered with 6 inches of a vegetative support soil and native grass species (e.g., conservation seed mix).

Env-Sw 1504.05 Product Quality and Quality Control. The applicant shall demonstrate that the production process meets the following requirements:

(a) Production of the waste-derived product shall neither:

(1) Cause a violation of any requirement in Env-Sw 1000; nor

Brighter Horizons Environmental, Inc. has developed an Operations Plan for the Longa Gravel Pit Partial Reclamation to ensure that the Waste-Derived Product is managed properly and meets the criteria established for the proposed Reclamation Area. The Operations Plan dated September 27, 2013 contains sufficient controls to ensure that the use of the Waste-Derived Product does not cause a violation of any requirement in Env-Sw 1000.

(2) Pose a greater risk to the environment, public health and safety than does the production of an existing comparable non waste-derived product or, if no comparable non-waste-derived product exists, by directly disposing of the waste in accordance with the New Hampshire Solid Waste Rules;

The use of the Waste-Derived Product does not pose a greater risk to the environment, public health and safety than the production of an existing non waste-derived product or by directly disposing of the waste in accordance with the New Hampshire Solid Waste Rules. This is based on the following information:

- Use of the Waste-Derived Product is limited to the Reclamation Area at 17 Twin Bridge Road. In addition to the provisions of the NH DES Permit for the Waste-Derived Product, the use of the product will be regulated by the Town of Merrimack Planning Board and other local, state and federal entities, as described in Section 7.0 of the Operations Plan dated September 27, 2013.
- The Waste-Derived Product accepted for use at the Reclamation Area will meet standards for chemical waste ingredients that are protective of human health and the environment. The standards presented in Table 3 (see Section IV attachments) are derived from the NH DES standards that are based on direct-contact exposure for unrestricted use and those that are protective of groundwater resources.
- Some of the types of the proposed Waste-Derived Product (street sweepings, ditch cleanings and catch basin cleanings) are currently regulated in New Hampshire, as outlined in the *Fact Sheet WMD-SW-32 Management of Street Wastes*. As outlined in this fact sheet, street sweepings and roadside ditch cleanup soils may be reused without restriction. There are no testing requirements or criteria to be met for the use of these materials. Catch basin cleanings can be used without restriction if test results meet the S-1 soil standards outlined in Fact Sheet WMD-SW-32. The proposed use of the Waste-

Derived Product is consistent with this policy and the testing requirements outlined in the Operations Plan dated September 27, 2013 are more restrictive than Fact Sheet WMD-SW-32 since all materials (street sweepings, roadside ditch cleanup soils and catch basin cleanings) will be tested. Additionally, Fact Sheet WMD-SW-32 does not specify a frequency for testing materials.

- The Waste-Derived Product is comparable in form and function to a general fill material that is needed at the Reclamation Area to fill the former gravel pit area. Following the provisions outlined in Sections 5.0 and 6.0 of the Operations Plan, it is anticipated that the Waste-Derived Product will perform as effectively as a general fill material that is not derived from waste. In some cases, the Waste-Derived Product will consist of clean fill material that is excess from a construction site and may consist of virgin soils. These types of the Waste-Derived Product are considered by engineers and contractors to represent general fill materials.
- The Reclamation Area consists of a former gravel pit that is adjacent to the following historical activities/features with fill materials that have the potential to exhibit similar physical and chemical characteristics to that of the Waste-Derived Product:
 - Boston & Maine Railroad active tracks to the east;
 - Abandoned spur track to the Boston & Maine Railroad to the south that served a former chemical manufacturing site (Harcros Chemical Corp.) adjacent to the Souhegan River and D.W. Highway; and
 - An on-site disposal area to the north that contains stumps, demolition debris and other wastes from its use as the former Town Dump with open burning (Town of Merrimack, ~1946-1970). The disposal area is a closed site (File No. 198403080, NH DES Project #0000428) and subsequent site investigations under File No. 198403080, NH DES Project #0015088 determined that the on-site disposal area does not pose a significant risk to the environment.

None of the above historical activities/features represent a significant risk to the environment, public health and safety. The use of the Waste-Derived Product will be an improvement to the property.

(b) The physical and analytical characteristics of the waste used to produce the product shall be defined in a written specification

The physical and analytical characteristics of the waste used to produce the product will vary by the type of waste, but limits for the wastes are defined in Section 5.0 of the Longa Gravel Pit Partial Reclamation Operations Plan Dated September 27, 2013.

(c) The physical and analytical characteristics of the waste-derived product shall be defined in a written specification

The physical and analytical characteristics of the Waste-Derived Product are defined in Section 5.0 of the Longa Gravel Pit Partial Reclamation Operations Plan Dated September 27, 2013.

(d) The production process shall include quality assurance/quality control procedures to assure the defined specifications shall be met through the production process

Sections 5.0 and 6.0 of the Longa Gravel Pit Partial Reclamation Operations Plan Dated September 27, 2013 include quality assurance/quality control procedures to assure the defined specifications are met through the production process.

Env-Sw 1504.06 Impact on Society. The applicant shall demonstrate that use of the waste-derived product in society shall have a minimal net impact based on the following requirements:

(a) Use of the waste-derived product as intended shall neither:

- (1) Cause a violation of any requirement in Env-Sw 1000; nor***

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See the description above provided in response to Env-Sw 1504.05 Section a(1).

(2) Pose a greater risk to the environment, public health and safety than does the use of an existing comparable non-waste derived product or, if no comparable non-waste-derived product exists, by disposing of the waste in accordance with the New Hampshire Solid Waste Rules

See the description above provided in response to Env-Sw 1504.05 Section a(2).

(b) Disposal of the waste-derived product shall not pose a greater risk to the environment, public health and safety than would be posed by directly disposing of the waste from which the product is produced

As discussed above, specific criteria have been established for use of the Waste-Derived Product at the Reclamation Area at 17 Twin Bridge Road, Merrimack, NH. These criteria were developed to be consistent with other regulations and guidelines that are protective of the environment, public health and safety. The use of the Waste-Derived Product does not pose a greater risk than would be posed by directly disposing of the waste from which the product is produced.