Ohio EPA
40 years and moving forward

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

CERTIFIED

October 24, 2013

Mr. Joe Flahiff
Aqua Ohio Water Company Inc.
Ashtabula Water Plant
1330 West First St.
Ashtabula, Ohio 44004

Re: Statewide Land Application Management Plan Permit Approval for Reuse of Alum Residuals from the Aqua Ohio Ashtabula Water Plant

Application Received July 3, 2013

Effective Date: October 24, 2013

Expiration Date: October 23, 2018

PERMITTEE: Aqua Ohio Water Company, Inc.

Dear Mr. Flahiff,

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the land application management plan (LAMP) permit application submitted on July 3, 2013 by the Aqua Ohio Water Company, Inc. (Aqua Ohio) pursuant to Chapters 6111 and 3734 of the Ohio Revised Code (ORC) for the proposed beneficial use of alum residuals generated by the Ashtabula Water Plant in Ashtabula, Ohio. The submitted LAMP permit application proposes to beneficially use Conditioned Alum Residuals (CAR), which consists of alum residuals from drinking water treatment, for soil blending. Once conditioned, the CAR will be incorporated into soil blends and sold as a commercial landscaping material by local commercial topsoil blenders. Emerald Environmental Services, Inc. (Emerald) will process the alum residuals at the Ashtabula Water Plant, located at 1330 West First Street in Ashtabula for conditioning and use in soil blending. Pursuant to the authority of the Director of Ohio EPA (Director) under ORC Chapters 6111 and 3734, this LAMP permit for the Ashtabula Water Plant is approved subject to compliance with all conditions below.

Further, the Director has determined that granting an exemption from the applicable solid waste provisions of ORC Chapter 3734 to use CAR in quantities and under the circumstances specifically authorized in this LAMP permit is unlikely to adversely affect the public health or safety or the environment. Therefore, pursuant to ORC Section 3734.02(G), the Director hereby exempts Aqua Ohio and any recipient of alum residuals from the Ashtabula Water Plant, as conditioned by Emerald's patented CAR process, from the applicable solid waste provisions of ORC Chapter 3734 and rules adopted thereunder specific to the land application of CAR as authorized in this permit approval.

This permit authorizes Aqua Ohio to beneficially use alum residuals from the Ashtabula Water Plant, as conditioned by Emerald for soil blending, in accordance with the LAMP permit application submitted on July 3, 2013 which is attached and incorporated herein. The CAR may be mixed with soil and shall comprise no more than thirty percent of the soil blend. All other beneficial uses must be separately approved by Ohio EPA. Only alum residuals from the Ashtabula Water Plant as identified in the attached LAMP application are eligible for beneficial use under this permit. Aqua Ohio shall remove all dewatered alum sludge from the facility on an annual basis or sooner.

The Director, or his authorized representative(s), may enter upon the premises of the Ashtabula Water Plant or any site where CAR/soil amending takes place, at any reasonable time, for the purpose of conducting inspections, collecting samples of CAR and soil blends mixed with CAR, conducting tests, or examining records or reports pertaining to the soil blending process of the alum residuals from the Ashtabula Water Plant.

Issuance of this permit does not relieve Aqua Ohio or Emerald of the duty to comply with all applicable federal, state, and local laws, ordinances, and regulations, except as exempted herein.

Aqua Ohio shall notify Ohio EPA if it anticipates a change in, or does change, the generating process or if the raw materials used in the generating process of the alum residuals change. Additionally, Aqua Ohio shall notify Ohio EPA if Emerald changes the process to create the CAR. Under such circumstances, the Director may request that Aqua Ohio submit a revised LAMP application for approval.

The following records shall be maintained by Aqua Ohio for a minimum of 5 years and be made available to Ohio EPA upon request:

1) The name, address, and telephone number of all companies receiving CAR from the Ashtabula Water Plant for soils blending.
2) A description of the process, including raw materials, used to generate the CAR and soils amended with CAR.
3) Records of the annual volume of CAR and CAR-amended soil that is designated for beneficial use under this approval.

4) A sampling plan detailing where samples of CAR and/or CAR-amended soil are to be collected, how frequently those samples are to be collected, and a list of parameters and test methods that are used to characterize the samples.
5) All laboratory reports of all characterizations of the CAR from the Ashtabula Water Plant.
6) A statement authorizing Ohio EPA staff to conduct inspections, collect samples, conduct tests, or examine records pertaining to the generation of CAR or CAR-amended soil.

Concentrations of any constituents in the CAR cannot exceed the limits for the specified constituents listed in Table I.

Table I

Constituents	Total (mg/kg)*
Arsenic (As)	41
Cadmium (Cd)	39
Copper (Cu)	1500
Lead (Pb)	300
Mercury (Hg)	17
Nickel (Ni)	420
Selenium (Se)	100
Zinc (Zn)	2800

* - dry weight basis

The permittee shall provide an analysis of the constituents in Table I upon the request of the Director.

Storage and blending of the CAR shall not create a nuisance and shall not adversely affect public safety or health or the environment. Should a nuisance condition develop, or a determination be made by Ohio EPA that storage or blending of CAR is a threat to human health or the environment, then permission to use this material may be revoked upon written notification from the Director. Immediately upon the effective date of any such revocation, Aqua Ohio shall cease blending of the CAR from the Ashtabula Water Plant.

Aqua Ohio shall not cause pollution or cause any CAR to cause pollution to any waters of the state and shall only discharge to waters of the state in accordance with an effective national pollutant discharge elimination system (NPDES) permit. Any unauthorized discharges to waters of the state must be reported to Ohio EPA (call 1-800-282-9378) within 2 hours of discovery.

The Director shall be notified in writing within seven days if Aqua Ohio discovers noncompliance with this LAMP permit. The Director may add, delete, or change any conditions to this LAMP permit to protect human health or the environment.

This permit to beneficially use CAR from the Ashtabula Water Plant shall expire at midnight on the expiration date shown above. In order to receive authorization to beneficially use CAR beyond the above date of expiration, Aqua Ohio shall submit such information and forms as are required by Ohio EPA no later than 180 days prior to the above date of expiration.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to ORC Section 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00 which the Commission, in its discretion, may reduce if by affidavit it is demonstrated that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, Ohio 43215

Sincerely,

Scott J. Nally
Director

SJN/DH/ljm

Attachment: LAMP

cc: Scott Hershberger, Emerald Environmental Services, Inc.
Bill Fischbein, Legal, CO
Virginia Wilson, DSW, NEDO
Natalie Oryshkewych, DMWM, NEDO

Plan Approval - Management Plan For Sludge or Industrial Byproducts other than Treated Sewage

Note: This form, with the attachments indicated, is intended to serve as the main substance of the management plan. If you prefer to submit a separate and complete document to serve as your management plan, then to respond to a question where a description or calculation is requested (such as Items C.1 through C.4), simply enter the page numbers of the submitted plan where the information requested can be found. Please respond on this form when just a check mark or brief statement is requested.

FOR AGENCY USE ONLY	
Application Number:	Date Received: / /

Applicant:	Aqua Ohio Ashtabula
Facility Owner:	Aqua Ohio, Inc.
Application/Plans Prepared by:	Emerald Environmental
Project Name:	Water Treatment Residuals Reuse

APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
OCT 24 2013
AS EVIDENCED BY COPY OF LETTER OF APPROVAL HERETO ATTACHED

A. Background Information

a. Briefly describe type and source of material to be land applied: Conditioned Alum Residuals

b. Briefly describe proposed uses of materials (agronomic uses, soil blends, structural fill, etc.): Soil Blends

c. Existing Plan Approval number: _____ ☒ N/A

B. Generating Facility ☐ N/A

a. Amount of sludge/byproduct generated	up to 5,000	dry tons/year
b. Amount proposed for beneficial use	up to 5,000	dry tons/year
c. Disposal method for amount not used	N/A	
d. Storage capacity at facility:	in excess of 730	days

C. Land Application *(If N/A, Skip to D)* ☐ N/A

a. Use category of land application area (check all that apply): ☒ Unrestricted Access site ☐ Restricted Access site

b. Quantity of material to be land applied:

_____ Inches/acre/year (annual average-liquid) _____ Dry tons/acre/year (annual average-sludge)

c. Does the land application area have subsurface drains/tiles located less than 24 inches below natural grade?
☐ Yes ☒ No ☐ Unknown at this time

d. Amount of land area available for land application if known (do not include buffer zones in the figure) N/A acres

e. Maximum slope of land to be used for land application = _____ %

f. Type(s) of crops or vegetation to be grown on land application area: **Landscaping or other vegetative cover**

C.1 Describe the method or methods used for the storage and land application of sludge/other byproducts (including detailed information about the distribution system):

Conditioned Alum Residual (CAR) is a dewatered Water Treament Residual (WTR) that contains in excess of 55% solids and posesses moisture retention and physical soil structure benefits. Dewatered WTR is currently stored at the Aqua Ohio Plant located at 1330 W. First Street, Ashtabula, OH 44004. Once conditioned, this loose, dry material will be incorporated into soil blends and sold as a commercial landscaping material by local commercial topsoil blenders that have contracted with Emerald Environmental to participate in this program. This request is to allow the Aqua Ohio's Ashtabula facility to incorporate their alum containing residuals into Emerald Environemntal's soil blending and reuse process.

The contact for Aqua Ohio Mentor is: Joseph Flahiff 1330 W. First Street, Ashtabula, OH 44004

.2 State what the maximum land application rate(s) are proposed to be and the total acres required and available for nd application. Attach calculations and references showing how the application rates and acreage needs were etermined.

Commercial topsoil with CAR utilize blends of up to 30% CAR.

.3 Describe the monitoring of the material to be land applied and the soils in the land application area(s), including requency, methods and parameters that will be measured in each:

The dewatered Water Treatment Residual (WTR) material currenty stockpiled at the Site was sampled and analyzed in May 2013 for the following: aluminum, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, selenium, zinc, percent solids and pH. Agronomic analysis testing included the following: organic matter, available phosphorous, exchangeable potassium, mangnesium, calcium, soil pH, buffer pH, cation exchange capacity and percent base saturation of cation elements. Sixteen individual samples were collected by dividing the stockpile into grid sections and using a random number generator to select the 16 grids. The sixteen samples were combined to create one composite sample. The composite sample was then split with half going for analytical testing and half going for agronomic testing. In addition, the 16 individual samples were screened used an X-Ray Fluorescence (XRF) instrument for the metals listed above. This sampling and analysis process will be repeated for each 10,000 tons of WTR removed from the site.

.4 Describe the appropriate weather conditions required for the land application of sludge/other byproducts nd how they will be determined and documented:

N/A - material will be blended as weather conditions allow. Materials must be loose and dry for blending to be done efficiently.

.5 Check which land application activities listed below are proposed. If yes, please explain how runoff, ponding or ischarges to waters of the state will be prevented (attach separate pages as needed).

Do you propose to land apply during precipitation events? If **yes**, please explain:	☐ Yes	☒ No
Do you propose to spray irrigate when instantaneous wind speeds exceed 20 miles per hour? If **yes**, please explain: Material will not be spray irrigated	☐ Yes	☒ No
Do you propose to land apply within 10-year floodplain? If **yes**, please explain: Not Applicable	☐ Yes	☐ No
Do you propose to land apply in wetlands? If **yes**, please explain:	☐ Yes	☒ No
Do you propose to land apply where the land application contract is expired or void? If **yes**, please explain: Not Applicable	☐ Yes	☐ No

Do you propose to land apply when the ground is saturated at or near the surface? If **yes**, please explain:	☐ Yes	☒ No
Do you propose to land apply where there is at less than 12 inches between final grade and bedrock, sand or gravel lenses, compacted glacial till, and/or normal ground water elevation? If **yes**, please explain: Not Applicable	☐ Yes	☐ No

.6 List setback distances that will be observed for all of the following:

Ditches/Streams/Waterways:		feet	Private Water Supply Well:		feet
Residences/Business:		feet	Public Water Supply Well:		feet
Sinkholes:		feet	Public Surface Drinking Water Intake:		feet
Pond or Lake:		feet	Other: Setbacks not applicable to blended soil application use.		feet

Attach additional pages if different setbacks are proposed for different methods of application (e.g. greater setbacks should be observed for surface application than injection).

.7 Land application on frozen/snow-covered ground is not recommended. If land application on frozen/snow-covered ground is proposed, please indicate which of the following practices will be used to minimize pollutant discharges or nuisances:

- ☐ Application rate is limited to 10 wet tons/acre for solid materials (50% moisture or more) and 5 wet tons/acre for material less than 50% moisture. For liquids the application rate is limited to 5,000 gallons/acre.
- ☐ Applications will be made on land with at least 90% surface residue cover.
- ☐ Material shall not be land applied on more than 20 contiguous acres, separated by breaks of at least 200 feet.
- ☐ Application setbacks shall be increased to at least 200 feet from all grassed waterways, drainage ditches, streams, surface inlets, and water bodies.
- ☐ The rate of application will not exceed: _____lbs Nitrogen/acre or _____ lbs Phosphorus/acre
- ☐ Application will not take place on slopes greater than 6% unless material is applied in alternating strips less than 200' wide generally on the contour, or in the case of contour strips, on alternating strips.

If any of these practices are not proposed to be followed, please attach a description of how pollutant discharges will be minimized during application on frozen/snow covered ground.

.8 Describe or list any other practices that will be used to minimize pollutant discharges or nuisances:

There are no specific pollutant discharges or nuisances associated with the blended soil materials different than application of virgin topsoil.

.9 Land Application Records

How will land application information be recorded? : Records are kept for shipments from dewatering/conditioning facility to soil blending facilities.

☐ Ohio EPA's Land Application Record Form ☐ Our Own Land Application Record Form (attached)

Where will the records be kept? : Emerald Environmental

.10 Application Site Map *(If known)*

a. A map locating each land application site shall be attached. Each site shall be labeled "Restricted access site" or "Unrestricted access site". The map(s) should show the following items and are considered part of this plan:

- ☐ All present and known proposed occupied buildings within 300 feet of the land application area.
- ☐ All present and known proposed non occupied buildings within 300 feet of the land application area.
- ☐ All present and known proposed public and private water supply wells within 1,000 feet of the land application area.
- ☐ All sinkholes and waters of the state (including ditches, grass waterways, streams and rivers) within 200 feet of the land application area.
- ☐ All public surface drinking water supply intakes within 1500' of the land application area.
- ☐ All present and known proposed developments and public access areas within 300 feet of the land application area.

b. If the land application site(s) are not known, will site maps be submitted before land application starts? ☐ Yes ☒ No

. Other Beneficial Uses

1. Is this material one of the following:
   - ☐ Spent Foundry Sand
   - ☐ Bottom Ash From Coal Combustion
   - ☐ Fly Ash
   - ☐ Steel Slag
   - ☐ Sludge
   - ☒ Other:
2. If the material is "Other", have you contacted Ohio EPA to discuss the applicable regulations? ☒ Yes ☐ No
3. Is a comprehensive management plan attached for uses other than land application? ☐ Yes ☒ No

Miscellaneous Information:

The following items shall be included with this land application management plan:

- ☐ Two copies of the Permit-to-Install/Plan Approval Application Form A or the NPDES Permit Application.
- ☐ If applicable, two copies of the site and soil evaluation(s) (For renewal applications, this is only needed if additional or different areas)
- ☒ One copy of the sampling results for the material to be beneficially used (the most recent, but no older than one year).
- ☐ Four copies of this management plan and any attachments or ☐ Four copies of a separate/complete management plan.
- ☒ Fee check payable to "Treasurer, State of Ohio."

The following additional information is included with this form: None

. The foregoing data is a true statement of facts pertaining to this proposed management plan.

Printed (Person Preparing Plan): Scott Hershberger Title: Project Mgr.

Signed: for EES Date: 6/24/13

APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
OCT 24 2013
AS EVIDENCED BY COPY OF LETTER OF APPROVAL HERETO ATTACHED