Ohio Administrative Code

Rule 1501:14-6-01 Permit application requirements for the beneficial use of lime mining wastes (LMW) within an industrial minerals permit.

Effective: June 27, 2024

(A) General requirements.

(1) This rule applies only to industrial mineral mining operations where calcined lime mining wastes (LMW) will be incorporated in final reclamation as a beneficial use and are in addition to requirements of sections 1514.02 and 1514.021 of the Revised Code.

(2) An application for a surface mining permit which will utilize LMW is deemed complete when it is received by the chief, unless the application fails to contain all substantial information required by Chapter 1514. of the Revised Code and the rules adopted pursuant thereto.

(3) Each applicationis to describe and identify the lands subject to industrial mineral mining, the estimated life of those operations, and the size, sequence, and timing of the mining and reclamation and also contain the total acreage in which LMW will be utilized and a narrative with scientific support of that beneficial use.

(4) This rule does not authorize the use of LMW to create a new structure that rises above the approximate original elevation of the existing permit or amended area. New LMW placements are to be within a quarry excavation, unless approved as a soil amendment. The chief may grant a variance to this provision for new lime facilities for discreet and temporary beneficial applications such as visual barriers, berms or other uses. Temporary beneficial applications will be for no more than five years unless extended by the chief based upon a demonstration by the permittee that more time is justified. When the chief terminates the temporary designation, the temporary storage sites are to be removed and used for the approved permanent beneficial use within one year. A longer time may be approved by the chief based upon a demonstration by the permittee. The affected acreage is to be permitted and bonded.

(5) New beneficial uses of LMW that began after October 8, 2001will be characterized as a significant permit or a significant amendment to a permit and shall follow the requirements of this

rule.

(B) Description and characterization of LMW proposed for beneficial use. For all proposed beneficial uses of LMW, the applicant is to identify and describe the LMW according to paragraph (B)(1) of this rule and characterize the LMW using the parameters in paragraph (B)(2) of this rule.

(1) Identification and description. The applicant is to provide the following to identify and describe the LMW:

(a) Generating process and facility site location;

(b) Types of LMW;

(c) Combustion process and fuel used;

(d) Amount of LMW to be used annually; and

(e) Mixing of types of LMW including weighted averages.

(2) Characterization.

(a) Characterization data for a proposed new LMW processing facility. The applicant is to provide representative waste characterization data for the parameters listed in paragraph (B)(3) of this rule from a similar processing facility that uses similar raw materials, combustion processes and fuel, and analyze the LMW to confirm or revise the waste characterization data within six months of start-up of the facility.

(b) Characterization for all proposed beneficial uses of LMW. The applicant is to analyze and characterize the LMW by conducting leachate analysis for the parameters listed in paragraph (B)(3) of this rule utilizing the USEPA method 1311, USEPA method 1312 or ASTM D3987-12 method. The ASTM international method is to be used for analysis of fluoride, chloride, sulfate, total dissolved solids, acidity, alkalinity, and pH. The website for ASTM international is http://www.astm.org. USEPA methods 1311 and 1312 can be found in the U.S. environmental

protection agency's publication SW-846, entitled "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," which is available at the website https://www.epa.gov/hw-sw846/sw-846-compendium. As an alternative, the applicant may collect and characterize representative in-situ leachate samples from the LMW and analyze the samples for the parameters listed in paragraph (B)(3) of this rule. Additional parameters or an alternate parameter list may be necessary to be analyzed at the discretion of the chief. The initial method chosen for each parameter is to be used in all subsequent sample analysis unless the chief approves an alternative method. The chief may approve another applicable EPA or approved test method provided the applicant requests, in writing, the use of such test method prior to submittal of the analysis.

(c) Annual characterization data for all permitted beneficial uses of LMW. The permittee is to submit to the chief annual representative waste data. All annual waste characterization samples are to be analyzed for the parameters listed in paragraph (B)(3) of this rule or an alternate parameter list approved by the chief. For a lime processing facility, the applicant is to analyze the LMW on an annual basis and whenever there are significant changes in the raw materials or combustion processes that are likely to impact characterization as determined by the chief.

(3) The following parameters are to be analyzed in accordance with the procedures described in paragraph (B)(2) of this rule:

(a) Acidity;

(b) Alkalinity;

(c) Arsenic;

(d) Barium;

(e) Cadmium;

(f) Chloride;

(g) Chromium;

(h) Copper;

(i) Fluoride;

(j) Iron;

(k) Lead;

(l) Manganese;

(m) Mercury;

(n) pH;

(o) Selenium;

(p) Sulfates;

(q) Total dissolved solids;

(r) Zinc;

(s) Beryllium (analysis necessary only if plant's fuel includes shredded tires);

(t) Total organic carbon (analysis necessary only if plant's fuel includes shredded tires);

(u) Silver; and

(v) Additional parameters that may be directed to be analyzed at the discretion of the chief.

(4) Additional direction for agronomic use. For LMW proposed for agronomic use within the permit area, the applicant is to analyze and characterize the LMW by conducting analysis pursuant to

paragraph (B)(2) of this rule for the parameters of paragraph (B)(3) of this rule and for the following additional parameters:

(a) pH;

(b) Soluble salts;

(c) Phosphorus;

(d) Potassium;

(e) Calcium;

(f) CEC (cation exchange capacity); and

(g) Boron.

(5) Additional direction for use as a low permeability material. For LMW proposed to be used as a low permeability material, the applicant is to analyze and characterize the LMW by conducting analysis pursuant to paragraph (B)(2) of this rule for the parameters of paragraph (B)(3) of this rule and also:

(a) Indicate the hydraulic conductivity in centimeters per second or feet per day. Indicate the method used to obtain the conductivity, and attach the appropriate laboratory reports;

(b) Describe the necessary volume, thickness (if layered), and areal extent of the LMW material;

(c) Submit or reference appropriately engineered designs and plans for the low-permeability project; and

(d) Submit a grain size distribution analysis for the LMW material.

(C) Description of hydrology and geology; general requirements.

Each application that will include LMW as a beneficial use as part of the reclamation is to contain a description of surface and ground water within the general area, and any water that will flow into or receive discharges of water from the permit area and any LMW beneficial use area proposed to be amended to the permit. The descriptionis to be prepared in the manner set forth in paragraphs (D) to (G) of this rule, and conform to the following:

(1) Provided to the chief information on hydrology, water quality and quantity, and geology related to hydrology of areas outside the proposed LMW beneficial use area and within the general area. The permit will not be approved by the chief until this information is made available in the application and deemed acceptable; and

(2) As a substitute for the background data set forth in paragraphs (D) to (F) of this rule, each application for a LMW beneficial use site on an existing operation already under permit under Chapter 1514. of the Revised Code on October 8, 2001, is to propose a plan for the collection of background data and information that is representative of the site's hydrological and geological characteristics prior to mining. The permit will not be approved by the chief until this information is made available in the application and deemed acceptable.

(D) Geology description.

(1) Each application is to include geologic information in sufficient detail to assist in determining the probable impact of the operation upon the quality and quantity of surface and ground water in the permit and surrounding areas, including the extent to which surface and ground water monitoring is necessary; and whether the utilization of LMW as a component of the proposed reclamation has been designed to protect human health and the environment.

(2) The description is to include a general statement of the geology within the proposed permit area and surrounding areas down to and including an identification of the deepest aquifer below the lowest elevation of the industrial mineral to be mined. Also, in the description, include how the areal and structural geology may affect the occurrence, availability, movement, quantity, and quality of potentially affected surface and ground waters. It shall be based on:

(a) The cross sections, maps and plans set forth in paragraph (K) of this rule;

(b) The information obtained from test borings under paragraph (D)(3) of this rule; and

(c) Other sources approved by the chief based upon site-specific conditions.

(3) Each application for a permit is to contain the results of test borings conducted on the area of land to be mined, when requested. Test borings or core samples for the proposed LMW beneficial use area are to be collected and analyzed down to and including the stratum below the elevation of the industrial mineral to be mined. Individual drilling reports are to be furnished for each test boring or core sampling and shall contain the location of subsurface water if encountered.

(E) Ground water information.

(1) The application is to contain a description of the ground water hydrology for the proposed permit and surrounding areas and the proposed LMW beneficial use area, including, at a minimum:

(a) The depth below the surface and the horizontal extent of the confined and unconfined aquifers;

(b) The lithology and thickness of the aquifers;

(c) Known uses of the water and locations of existing water supply wells within one thousand feet of the proposed beneficial use area;

(d) The quality of subsurface water, if encountered;

(e) The depth to the water in the mineral deposit if the deposit is a water-bearing stratum, and each water-bearing stratum above and below the potentially affected water-bearing stratum;

(f) The approximate rate of discharge or usage of the water and the existing groundwater flow conditions in the water bearing unit(s) in the area of the surface mining operation. For a new LMW beneficial use involving surface mining operations for which a cone of depression was established as directed by division (A) of section 1514.13 of the Revised Code, the applicant is to include a

description of the cone of depression that was generated; and

(g) The approximate regional potentiometric surface and regional flow paths of water bearing unit(s) in the area prior to the start of the surface mining operations.

(2) The application is to contain a water supply inventory to include, at a minimum:

(a) A list of existing water wells and public water supply wells on the proposed permit and surrounding areas within one thousand feet of the proposed LMW beneficial use area to describe the quality and quantity of the ground water. The chief may specify a greater distance based upon site-specific characteristics. Information is to include:

(i) Identification number of the well;

(ii) Surface elevation of the well in feet above mean sea level;

(iii) Depth of the well in feet below the land surface;

(iv) Static water level of the well in feet below the land surface;

(v) The lithology of the aquifer in which each well is developed; and

(vi) Name of the owner of the well.

(3) If any of the information set forth in the water supply inventory of paragraph (E)(2)(a) of this rule is unobtainable, the applicant is to submit a statement to that effect , giving the reasons therefor.

(4) The application is to contain the results of background water quality analyses and measurements of static water level or discharge of a representative number of monitoring points on the permit and surrounding areas.

(a) Wells chosen for analysis and measurement are to, as a group, represent all known aquifers present in the permit and surrounding areas and shall, wherever possible, be those nearest to or on

the proposed beneficial use area.

(b) Sampling for water quality analysis is to be conducted at a minimum one time prior to submission of an application for a permit or modification of a permit that utilizes LMW. For the purpose of ground water monitoring, at least six months of background water quality data is to be collected prior to implementation of the post-reclamation ground water monitoring plan. This background ground water quality data is to be established in accordance with procedures contained in the post-reclamation ground water monitoring plan set forth under paragraph (G)(2) of this rule.

(c) The measurement of static water level or discharge is to be conducted for each well identified in paragraph (E)(4)(a) of this rule at a minimum one time prior to submission of an application for a permit or modification of a permit.

(d) Water samples collected at the sites prescribed in this rule are to be analyzed for the following parameters according to the methodology specified in 40 C.F.R. part 136:

(i) Acidity;

(ii) Alkalinity;

(iii) Arsenic;

(iv) Barium;

(v) Cadmium;

(vi) Chloride;

(vii) Chromium;

(viii) Copper;

(ix) Fluoride;

(x) Iron;

(xi) Lead;

(xii) Manganese;

(xiii) Mercury;

(xiv) PH;

(xv) Selenium;

(xvi) Silver;

(xvii) Sulfates;

(xviii) Total dissolved solids;

(xix) Zinc;

(xx) Beryllium (analysis necessary only if plant's fuel includes shredded tires);

(xxi) Total organic carbon (analysis necessary only if plant's fuel includes shredded tires); and

(xxii) Additional parameters that may be necessary to be analyzed at the discretion of the chief.

(5) Water quality and quantity data sufficient to identify seasonal variationsare to be submitted with an application for a permit.

(6) The chief will provide a form on which results of water quality analyses and measurements prescribed in this rule are to be reported.

(F) Surface water information.

(1) In and within one thousand feet of the existing or proposed permit area, including the proposed LMW beneficial use area and surrounding areas, all surface water bodies are to be described. Surface water bodies that will receive discharges from the operation or whose water will come in contact with water from the operation are to be sampled. The surface water to be sampled are to include the receiving stream, waterway, or water body if such surface water is present. The description is to include the name of any watershed that will receive water discharges, the name, ownership and location of all surface-water bodies and the known uses of the water in these water bodies.

(2) Water samples collected under this rule are to be analyzed according to the methodology specified in 40 C.F.R. part 136.

(a) Surface water information includes the following water quality data in order to identify the characteristics of surface waters within the existing or proposed permit area, including the proposed LMW beneficial use area and surrounding areas:

(i) Acidity;

(ii) Alkalinity;

(iii) Arsenic;

(iv) Barium;

(v) Cadmium;

(vi) Chromium;

(vii) Cooper;

(viii) Fluoride;

(ix) Iron;

(x) Lead;

(xi) Manganese;

(xii) Mercury;

(xiii) PH;

(xiv) Selenium;

(xv) Silver;

(xvi) Sulfates;

(xvii) Total dissolved solids;

(xviii) Zinc;

(xix) Beryllium (analysis necessary only if plant's fuel includes shredded tires);

(xx) Total organic carbon (analysis necessary only if plant's fuel includes shredded tires); and

(xxi) Additional parameters that may be necessary to be analyzed at the discretion of the chief.

(3) Water quality and quantity data sufficient to identify seasonal variations is to be submitted with an application for a permit.

(4) The chief will provide a form on which results of water quality analyses and measurements prescribed in this rule are to be reported.

(G) Ground water and surface water monitoring plans.

The applicant is to prepare and submit ground water and surface water monitoring plans as described in this paragraph. Specifically, during the active operational monitoring period, the ground water and surface water monitoring plans as described in paragraphs (G)(1) and (G)(3) of this rule will be implemented. During the five-year post-reclamation monitoring period, the ground water and surface water monitoring plans as described in paragraphs (G)(2) and (G)(4) of this rule will be implemented.

(1) Ground water monitoring plan during active operation.

If the ground water flow conditions, as set forth in paragraph (E)(1)(f) of this rule, demonstrate that the existing or proposed LMW beneficial use area lies or will lie within the surface mine's cone of depression, the applicant is to submit a ground water monitoring plan that is capable of demonstrating the impact of the LMW on water within the cone of depression during the active operational period. Additional monitoring may be necessary if determined to be warranted by the chief. The plan , at a minimum, is to include:

(a) A sufficient number of observation points to demonstrate that ground water beneath and within the immediate vicinity of the LMW beneficial use area is being captured by the dewatering system for the surface mine;

(b) The collection of water level measurements on a quarterly basis, or an alternate schedule that is approved by the chief based upon a suitable justification by the applicant; and

(c) The ground water level information is to be submitted to the chief, in a manner prescribed by the chief, within fifteen days following the end of the quarter in which the ground water levels were measured.

(2) Ground water monitoring plan during the post-reclamation period.

The application is to include a post-reclamation ground water monitoring plan that is based upon the information as set forth under paragraph (E) of this rule and upon the analysis of all baseline hydrologic, geological and other information in the permit application. The plan shall provide for the

monitoring of parameters that relate to the suitability of the ground water for current and approved post-mined land uses and for protection of human health and the environment as set forth in this rule. The ground water quality monitoring plan is to be maintained a minimum of five years after reclamation.

(a) At a minimum, the monitoring parameters are to include:

(i) Alkalinity;

(ii) Chloride;

(iii) Lead;

(iv) Sulfate;

(v) Total dissolved solids; and

(vi) Additional parameters that the chief may direct to be monitored based upon the waste characterization or leachate analysis and the background sampling of ground water. A comparison of leachate and background results to thirty times primary or secondary maximum contaminant level standards, and other geologic and hydrologic information will determine the specific ground water quality indicator parameters to be included in the ground water monitoring plan during the post-reclamation period.

(b) Ground water sampling frequency is to occur quarterly. The chief may direct more frequent sampling based on site-specific conditions. The chief may approve less frequent sampling based upon a suitable justification by the applicant.

(c) Also included in the post-reclamation ground water monitoring plan shall also include:

(i) A description of and rationale for the monitoring points;

(ii) The procedures for collecting representative ground water samples;

(iii) The procedures used for the collection of the background water quality data;

(iv) A description of how the representative ground water quality will be evaluated to determine the LMW is not causing impacts to human health and the environment; and

(v) The quality assurance/quality control procedures to be used to verify that the results are representative of the ground water quality.

(d) The data resulting from post-reclamation ground water monitoring is to be submitted to the chief, in a manner prescribed by the chief, within fifteen days following the end of the quarter in which the sample was collected and analyzed.

(e) The five-year post-reclamation monitoring period is to be initiated after the ground water levels have stabilized following the cessation of dewatering activities. The stabilization of ground water levels are to be determined by collection of water level measurements from the monitoring points used in the operational ground water monitoring plan. The operator is to notify the chief, in writing, that the ground water levels have stabilized thirty days prior to implementing the five-year post-reclamation monitoring plan for ground water. The bond for the LMW beneficial use area will be held until the five-year post-reclamation monitoring period has been completed, and the applicant demonstrates water quality will protect human health and the environment.

(3) Surface water monitoring plan during active operation.

(a) The application is to include a surface water monitoring plan based upon the analysis of the hydrologic, geologic and other information in the permit application. The plan is to, in accordance with a schedule approved by the chief, provide for the monitoring of parameters that relate to the suitability of the surface water for current and approved post-mined land uses and for protection of human health and the environment as well as the effluent limitations set forth in 40 C.F.R.

(b) The plan is to identify the surface water quantity and quality parameters to be monitored, sampling frequency and site locations. During the period of active operation, samples are to be collected from the sump or the outfall on a quarterly basis. The chief may direct more frequent

sampling based on site-specific conditions. The chief may approve less frequent sampling based upon a suitable justification by the applicant. The active operational surface water monitoring plan is to describe how the data may be used to determine the impacts upon the hydrologic systems during the active operational monitoring period and the five-year post-reclamation monitoring period. The surface water monitoring plan is to include:

(i) A description of and rationale for monitoring locations for the active operational monitoring period;

(ii) A list of parameters to be monitored during the active operational monitoring periodincluding, at a minimum:

(A) Alkalinity;

(B) Chloride;

(C) Lead;

(D) Sulfate; and

(E) Total dissolved solids;

(iii) During active operation, the point source discharge(s) are to be monitored in accordance with 40 C.F.R. parts 122 and 123, and in accordance with the "National Pollutant Discharge Elimination System" permitting authority;

(iv) If the chief determines it is necessary, additional surface water parameters will be monitored based on a comparison of waste characterization or leachate results to background sampling results, surface water quality standards, and other geologic and hydrologic information to determine the specific water quality parameters to be included in the surface water monitoring plan implemented during the active operational monitoring period and during the five-year post-reclamation monitoring period. If prescribed by the chief, additional monitoring parameters beyond those set forth in paragraph (G)(3)(b)(ii) of this rule will be analyzed on a quarterly basis;

(v) A description of how the representative surface water quality data will be evaluated to determine the LMW is not causing impacts to human health and the environment; and

(vi) A schedule providing for the data resulting from this monitoring to be submitted to the chief, in a manner prescribed by the chief, within fifteen days following the end of the quarter in which the sample was collected and analyzed.

(4) Surface water monitoring plan during the post-reclamation monitoring period.

(a) The application is to include a post-reclamation monitoring plan based upon the analysis of the hydrologic, geologic, and other information in the permit application,providing for the monitoring of parameters that relate to the suitability of the surface water for current and approved post-mined land uses and for protection of human health and the environment.

(b) The plan is to, on a quarterly basis, identify the surface water quality parameters to be monitored, sampling locations and frequencyunless the chief increases the frequency based upon site-specific conditions or decreases the frequency based upon a suitable justification by the applicant. The collected data and the surface water monitoring plan are to address potential impacts upon the hydrologic systems during the active operational monitoring period and the five-year post-reclamation monitoring period. The surface water monitoring plan is to include:

(i) A description of and rationale for monitoring locations for the post-reclamation monitoring period;

(ii) A list of parameters to be monitored during the five-year post-reclamation monitoring periodincluding, at a minimum:

(A) Alkalinity;

(B) Chloride;

(C) Lead;

(D) Sulfate; and

(E) Total dissolved solids;

(iii) If the chief determines it is necessary, additional surface water parameters will be monitored based on a comparison of waste characterization or leachate results to background sampling results, surface water quality standards, and other geologic and hydrologic information to determine the specific water quality parameters to be included in the surface water monitoring plan implemented during the active operational monitoring period and the five-year post-reclamation monitoring period. If prescribed by the chief, additional monitoring parameters beyond thoseset forth in paragraph (G)(4)(b)(ii) of this rule will be analyzed on a quarterly basis;

(iv) For the surface water monitoring plan, the five-year post-reclamation monitoring period will be initiated after the dewatering activities have ceased and after surface water is in contact with the beneficially used LMW. During this monitoring period, the list of additional parameters, if prescribed by the chief, will be used to evaluate surface water quality;

(v) A description of how the representative surface water quality data will be evaluated to determine the LMW are not causing impacts to human health and the environment; and

(vi) The data resulting from this monitoring is to be submitted to the chief, in a manner prescribed by the chief, within fifteen days following the end of the quarter in which the sample was collected and analyzed.

(H) Alternative water supply information and corrective action plan.

The application is to identify the extent to which the proposed LMW beneficial use may result in contamination of a source of water that is used for domestic or other legitimate use. If contamination may result, the description is to contain information on corrective action to be taken, including the suitability of alternative water sources.

(I) Supplemental information.

If the determination of the probable hydrologic impacts indicates that adverse impacts on or off the proposed permit area may occur to the human health or the environment, information supplemental to that as set forth in paragraphs (D) to (F) of this rule is to be provided to evaluate such probable hydrologic impacts and to plan remedial and reclamation activities. Such supplemental information may be based upon drilling, aquifer tests, hydro- geologic analysis of the water-bearing strata, flood flows, or analyses of other water quality or quantity characteristics.

(J) Land-use information.

The LMW beneficial use application is to contain a plan of mining and reclamation which describes the proposed land uses within the permit and any LMW beneficial use area proposed to be amended to the permit, including plans for covering and capping the LMW.

(K) Maps: general requirements.

The permit application or amendment application is to include an application map or amendment map prepared by or under the direction of and certified by an engineer or a surveyor or jointly by an engineer and a surveyor, to the extent such joint certification is necessary under state law. The map(s) are to comply with the standards set forth in Chapter 1514. of Revised Code and division 1501:14 of the Administrative Code and in addition shall contain:

(1) The locations of water supply intakes for current users of surface water flowing into, out of, and within one thousand feet beyond the LMW beneficial use permit area, those surface waters which will receive discharges from affected areas in the proposed permit area or amended area, and the locations of any discharges to any surface body of water on or adjacent to the land to be affected. A greater distance may be directed by the chief based upon site-specific factors which result in a determination by the chief that impacts beyond one thousand feet may occur;

(2) Any land within the proposed permit area or amended area which is within the boundaries of any units of the national system of trails or the wild and scenic rivers system, including study rivers designated under Section 5(a) of the Wild and Scenic Rivers Act or study rivers or study river corridors as established in any guidelines pursuant to that act;

(3) The names, locations, and directions of flow of all perennial and intermittent streams within the permit area or amended area and within five hundred feet of the permit area or amended area;

(4) The name of the drainage basin in which the permit area or amended area is located as listed in the "Gazetteer of Ohio Streams," published by the Ohio department of natural resources;

(5) The drainage control system to include the location of:

(a) Each sediment control structure, discharge point and, if applicable, the OEPA pond identification number;

(b) Any diversions; and

(c) Any treatment facilities;

(6) The location or proposed location of LMW incorporated in final reclamation;

(7) Elevations and locations of test borings and core samplings;

(8) Location and extent of subsurface water, if encountered, within the proposed permit area or amended area;

(9) Location of surface water bodies such as streams, lakes, ponds, springs, constructed or natural drains, and irrigation ditches within the proposed permit area or amended area;

(10) Location and extent of existing areas of spoil piles, LMW, dams, embankments, other impoundments, and water treatment and air pollution control facilities within the proposed permit area or amended area;

(11) The location and start and end points of all submitted cross-sections. The applicant is to provide at least one transverse cross section and one longitudinal cross section showing elevation, final profile, saturated zone, drainage away from and reclaimed surface profiles of the LMW beneficial

use area; and

(12) Sufficient slope measurements, in degrees, to adequately represent the existing land surface configuration and final land configuration of the proposed permit area or amended area.

(L) LMW beneficial use operations and reclamation plans.

The applicant is to provide maps, plans, cross-sections and a beneficial use narrative. The documents will explain how the LMW will be stored, transported, placed, compacted, sloped, capped, resoiled and planted with a diverse vegetative cover. The documents will also include the final location within the proposed permit area and amended area.

(M) For dates of federal rules and federal laws referenced in this rule, see rule 1501:14-1-16 of the Administrative Code.