

3745-300-11 Remediation.

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules, and federal statutory provisions referenced in this rule, see paragraph (B) of rule 3745-300-01 of the Administrative Code titled "Incorporation by reference."]

(A) Applicability and identification of when remedial activities are required.

- (1) Remedial activities as defined in division (N) of section 3746.01 of the Revised Code and in paragraph (A) of rule 3745-300-01 of the Administrative Code must be conducted to meet applicable standards when a phase II property assessment conducted in accordance with rule 3745-300-07 of the Administrative Code reveals that concentrations of chemical(s) of concern in any environmental media fail to comply with:
 - (a) Applicable standards as determined from the generic numerical standards in accordance with rule 3745-300-08 of the Administrative Code;
 - (b) Applicable standards as determined from a property-specific risk assessment conducted in accordance with rule 3745-300-09 of the Administrative Code;
 - (c) Background levels as determined in accordance with rule 3745-300-07 of the Administrative Code, when background levels are the applicable standards; or
 - (d) Any other applicable standard of this chapter.
- (2) Each complete exposure pathway for environmental media determined in accordance with paragraph (F)(1) of rule 3745-300-07 of the Administrative Code must comply with an applicable standard determined in accordance with this chapter. For the pathways in which the property fails to comply with an applicable standard, the volunteer must implement a remedy in accordance with this rule.
- (3) An institutional control in the form of a use restriction, or activity and use limitation, as applicable, must be established in accordance with this rule to apply applicable standards to a restricted land use, pursuant to paragraph (F)(4) of rule 3745-300-07 of the Administrative Code.
- (4) An operation and maintenance plan, as defined in paragraph (A) of rule 3745-300-01 of the Administrative Code, is required as part of a no further action letter issued under this chapter and Chapter 3746. of the Revised Code for a property for which the no further action letter relies on one or more of the following:
 - (a) Engineering controls that involve operation or maintenance, or both, necessary to maintain applicable standards at the property following issuance of the no further action letter; or
 - (b) A remedial activity not completed prior to issuance of the no further action letter, and in which conditions at the property are protective of public health and safety and the environment in accordance with an operation and maintenance plan.

Remedial activities not completed prior to issuance of the no further action letter must be complete within five years or such other time frame agreed to by the director in accordance with an operation and maintenance agreement. Such a remedy includes but is not limited to any of the following:

- (i) An engineering control, as defined in paragraph (A) of rule 3745-300-01 of the Administrative Code;
 - (ii) Passive remediation, as defined in paragraph (A) of rule 3745-300-01 of the Administrative Code;
 - (iii) Active remediation, as defined in paragraph (A) of rule 3745-300-01 of the Administrative Code; and
 - (iv) An interim measure, as defined in paragraph (A) of rule 3745-300-01 of the Administrative Code.
- (c) The evaluation, response and other activities related to critical resource ground water response requirements that are required by paragraph (E)(2)(a)(ix), (E)(2)(c)(x), (E)(3)(a)(ix), or (E)(3)(c)(x) of rule 3745-300-10 of the Administrative Code, as applicable, that are implemented to maintain compliance with applicable standards; or
- (d) The implementation of a risk mitigation plan as described in paragraph (F) of this rule.
- (B) Compliance with other laws. Remedial activities conducted under this chapter and Chapter 3746. of the Revised Code must be conducted in compliance with all applicable laws, regulations, rules, resolutions and ordinances, including but not limited to the following: Chapter 3734. of the Revised Code; Chapter 6111. of the Revised Code; Chapter 3704. of the Revised Code; the Safe Drinking Water Act, including the requirements applicable to class V underground injection control wells; and compliance with the laws and regulations administered by the occupational safety and health administration.
- (C) Remedial activities. If remedial activities are required to be conducted at a property pursuant to paragraph (A) of this rule, one or more of the following remedial activities must have been conducted and documented in the no further action letter, or unless otherwise provided in this rule, addressed as part of an operation and maintenance plan contained in the no further action letter, prior to issuance of a no further action letter for the property.
- (1) Passive remediation. Passive remediation must be capable of attaining applicable standards. If passive remediation is not complete prior to issuance of the no further action letter for the property, an operation and maintenance plan prepared in accordance with this rule for implementation of the passive remediation must be included with the no further action letter. If the passive remediation is not completed upon issuance of the no further action letter, the no further action letter must demonstrate the passive remediation is capable of attaining the applicable standards,

within five years or other time frame agreed upon by the director in an operation and maintenance agreement, in accordance with this rule.

- (2) Active remediation. Active remediation must be capable of attaining applicable standards. If active remediation is not complete prior to issuance of the no further action letter for the property, an operation and maintenance plan prepared in accordance with this rule for implementation of the active remediation must be included with the no further action letter. If the active remediation is not completed upon issuance of the no further action letter, the no further action letter must demonstrate the active remediation is capable of attaining applicable standards, within five years or other time frame agreed upon by the director in an operation and maintenance agreement, in accordance with this rule;
- (3) Institutional controls. Institutional controls (use restrictions or activity and use limitations), as applicable pursuant to this chapter, must be:
 - (a) Established as restrictions or limitations on use of the property that mitigate or eliminate risk or an exposure pathway to human receptors in order to achieve applicable standards;
 - (b) Transferable with the property and recorded with the county recorder in the same manner as a deed to the property during the period of time relied upon to comply with applicable standards;
 - (c) Consistent with the criteria contained in paragraph (D)(3)(b)(iv)(b) of rule 3745-300-09 of the Administrative Code, as applicable;
 - (d) Recorded with the county recorder in the same manner as a deed to the property, consistent with the requirements for recording contained in rule 3745-300-13 of the Administrative Code, as applicable;
 - (e) Effective at eliminating or mitigating exposures to receptor populations sufficient to meet the risk goals contained in rule 3745-300-08 or 3745-300-09 of the Administrative Code, as applicable;
 - (f) Capable of being monitored, maintained and enforced by the owner or operator of the property during the period of time which the control is used to comply with applicable standards; and
 - (g) In the case of activity and use limitations, established through an environmental covenant pursuant to Chapter 5301. of the Revised Code.
- (4) Engineering controls. Engineering controls must be:
 - (a) Effective and reliable for the climatic conditions and activities at the property to which the control will be applied;
 - (b) Consistent with the criteria contained in paragraph (D)(3)(b)(iv)(b) of rule 3745-300-09 of the Administrative Code, as applicable;

- (c) Effective at eliminating or mitigating exposures to receptor populations sufficient to meet the risk goals of rule 3745-300-08 or 3745-300-09 of the Administrative Code, as applicable;
 - (d) Reliable during the period of time the control is used to achieve or maintain applicable standards; and
 - (e) Capable of being monitored and maintained as required by an operation and maintenance plan developed and implemented in accordance with this rule.
- (5) Critical resource ground water activities. The evaluation, response and other activities required to protect off-property receptors when concentrations of chemicals of concern in critical resource ground water exceed unrestricted potable use standards must be implemented in accordance with rule 3745-300-10 of the Administrative Code. The activities are provided in paragraph (E)(2)(a)(ix), (E)(2)(c)(x), (E)(3)(a)(ix), or (E)(3)(c)(x) of rule 3745-300-10 of the Administrative Code.
- (6) Interim measures. Interim measures, as defined in paragraph (A) of rule 3745-300-01 of the Administrative Code, must be used for a property when a permanent remedy has not been completed prior to issuance of a no further action letter and when it is reasonably anticipated that the temporary use of the property following issuance of the no further action letter will result in the property failing to comply with applicable standards.
- (a) Interim measures must, at a minimum, mitigate the risks associated with complete exposure pathways to human receptor populations until a permanent remedy is established to meet and maintain applicable standards. Interim measures may include, but are not limited to:
 - (i) Temporary fencing or other security measures that restrict access to the property;
 - (ii) Temporary soil cover or existing on-property pavement or other structures at the property that restrict exposure to chemicals of concern; or
 - (iii) Risk mitigation measures, as defined in paragraph (A) of rule 3745-300-01 of the Administrative Code, intended to protect construction or excavation workers.
 - (b) Interim measures are not necessary when current or reasonably anticipated exposure pathways are not complete or applicable standards are not exceeded for exposure to contaminants during the interim time period; that is, the time period until a permanent remedy has been completed.
- (7) Risk mitigation measures. Risk mitigation measures, as defined in paragraph (A) of rule 3745-300-01 of the Administrative Code, must effectively eliminate or reduce the current or reasonably anticipated risk to persons working in areas where concentrations of chemicals of concern in environmental media exceed applicable standards or the risk is uncharacterized.

- (a) Risk mitigation measures shall only be utilized to protect workers during construction or excavation activities.
 - (b) Risk mitigation measures are necessary when excavation or construction activities:
 - (i) Breach the point of compliance for direct contact with soil for properties relying on institutional controls to achieve the applicable standard;
 - (ii) Breach an engineering control, such as pavement or a soil cap, intended to eliminate direct-contact exposure to chemicals of concern in environmental media; or
 - (iii) Result in direct contact with ground water which has not been demonstrated to meet applicable standards for this exposure pathway.
 - (c) If the risk mitigation measures are necessary for the property to meet applicable standards after issuance of the no further action letter for the property, the risk mitigation measures must be implemented through a risk mitigation plan in accordance with paragraph (F) of this rule.
- (D) Verification of completion of remedial activities and determination that the property complies with applicable standards.
- (1) Verification required prior to issuance of the no further action letter. Prior to the issuance of a no further action letter the volunteer must verify that the remedial activities have been implemented in accordance with this rule and have resulted or will result in the property complying with applicable standards. Such verification must describe the remedy or remedial activities implemented at the property which are a part of the voluntary action. Verification must include an identification of the data used to demonstrate that the property complies with the applicable standards contained in this chapter, and must include the following, as applicable:
- (a) A demonstration in accordance with paragraph (I) of rule 3745-300-07 of the Administrative Code that through implementation of the remedial activities, the property complies with applicable standards;
 - (b) A demonstration in accordance with paragraph (I) of rule 3745-300-07 of the Administrative Code that the property meets or will achieve applicable standards consistent with a permanent remedy within five years or other time frame pursuant to an operation and maintenance plan and agreement. For the purposes of this rule, the time frame for implementation of the remedial activities must be detailed in an operation and maintenance plan developed in accordance with this rule. The verification must include a demonstration that interim measures, if necessary, will be implemented in accordance with this rule;
 - (c) In the case of an institutional control, verification must include, at a minimum, a demonstration that each control relied upon in the no further action letter has

been implemented in accordance with rule 3745-300-13 of the Administrative Code and divisions (C)(3)(a) and (C)(3)(b) of section 3746.10 of the Revised Code; or

- (d) Unless remedial activities will be implemented as part of an operation and maintenance plan and agreement intended to meet or establish the direct-contact point of compliance, an elevation survey must be completed for properties relying on institutional controls to achieve applicable standards.
 - (i) The elevation survey must represent the ground surface elevation at the property and the data from the survey must correlate with soil sampling data collected from identified areas where a point of compliance for direct-contact with soil has been established in order to meet applicable standards;
 - (ii) The elevation survey only needs to cover those areas of the property where a point of compliance for direct-contact with soil has been established in order to meet applicable standards. The purpose of the elevation survey will be to help current and future property owners verify and maintain the established point of compliance for direct-contact with soil;
 - (iii) The elevation survey must be conducted by an Ohio registered surveyor or may be accomplished through other methods if such methods are deemed acceptable by the agency; and
 - (iv) The surveyed elevations and the location of the elevation data points must be accurately displayed on a scale map of the property. Topographic contours based on the surveyed elevations and drawn to a two-foot contour interval must also be included on the scale map of the property.
- (2) Verification made after completion of remedial activities implemented through an operation and maintenance plan or agreement; termination of an operation and maintenance plan or agreement.

Upon completion of a remedial activity subject to an operation and maintenance plan or agreement, the volunteer or other person responsible for operation and maintenance plan and agreement implementation must verify completion of the remedial activity in accordance with the operation and maintenance plan and agreement. Upon completion of all remedial activities subject to the operation and maintenance plan or agreement, the volunteer or other person responsible for operation and maintenance plan and agreement implementation must demonstrate that implementation of the operation and maintenance plan or agreement is no longer necessary for the property to remain in compliance with applicable standards. To verify completion and to demonstrate that further implementation of the remedial activity is unnecessary for the property to remain in compliance with applicable standards, the demonstration must include the following:

- (a) A description of the remedial activity, for which further implementation of the operation and maintenance plan or agreement is no longer necessary to maintain

compliance with applicable standards at the property;

- (b) Identification of the information relied upon to demonstrate that the property complies with applicable standards without further implementation of the remedial action;
- (c) Information that supports the verification in accordance with this rule and the termination criteria contained in the operation and maintenance plan or agreement, as applicable;
- (d) An affidavit from the volunteer or other person responsible for operation and maintenance plan and agreement implementation that the verification criteria contained in paragraph (D)(2) of this rule and termination criteria contained in the operation and maintenance plan and agreement, are satisfied; and
- (e) An affidavit from a certified professional that the property complies with applicable standards without further implementation of the remedial activity.

(E) Operation and maintenance plan and agreement.

- (1) Content of operation and maintenance plan. When a remedy is required to have an operation and maintenance plan in accordance with this rule, the volunteer must develop and implement an operation and maintenance plan that includes the following components as applicable, for each of the remedial activities subject to the operation and maintenance plan:
 - (a) A summary of the applicable standards for the property and the purpose of the remedial activities;
 - (b) A plan for implementing the remedial activities, including normal operation and maintenance and a description of tasks that will be done to implement the normal operation and maintenance of the remedial activities, including, but not limited to:
 - (i) A description of the tasks for operation of the remedial activities;
 - (ii) A description of the tasks and procedures for maintaining the remedial activities, including but not limited to a plan for periodic preventive measures;
 - (iii) A description of prescribed treatment or operating conditions for the remedial activities; and
 - (iv) Schedules for implementing remedial activities and for operation and maintenance tasks.
 - (c) A plan for evaluating the effectiveness of the remedial activities. A plan for evaluating the effectiveness of each remedial activity must be included in the operation and maintenance plan. The plan must include, at a minimum, the following:

- (i) The purpose and objective of the activities planned to evaluate the effectiveness of the remedy;
 - (ii) A description of the activities that will be performed to determine the effectiveness of the remedial activities in meeting or maintaining compliance with applicable standards;
 - (iii) An elevation survey for properties having institutional controls on the use of the property. This survey is required when remedial activities are necessary to meet or establish the direct-contact point of compliance and those activities are to be completed after issuance of the no further action letter. The elevation survey must be conducted in accordance with requirements specified in paragraphs (D)(1)(d)(i) to (D)(1)(d)(iv) of this rule. The survey shall be completed and a copy provided to Ohio EPA after the elevation of the ground surface, which complies with the direct-contact point of compliance, has been established;
 - (iv) A description of the activities that will be performed to evaluate or confirm assumptions and predictions of a property-specific risk assessment conducted in accordance with rule 3745-300-09 of the Administrative Code, if a property-specific risk assessment was conducted;
 - (v) A description of the activities that will be conducted, to comply with the response requirements for critical resource ground water in accordance with paragraph (E)(2)(a)(ix), (E)(2)(c)(x), (E)(3)(a)(ix), or (E)(3)(c)(x) of rule 3745-300-10 of the Administrative Code, as applicable;
 - (vi) If data collection, field testing, sampling or data analyses activities are appropriate for the monitoring activities, a summary of these procedures developed in accordance with paragraph (F) of rule 3745-300-07 of the Administrative Code; and
 - (vii) A description of the anticipated length and planned frequency of each monitoring activity that will be performed to evaluate the effectiveness of the remedial activities.
- (d) Equipment requirements. A description of equipment required to operate and maintain the remedial activities, including:
- (i) A description of the monitoring and remedial equipment that has been or will be installed, and the criteria for installation; and
 - (ii) A schedule for the maintenance and replacement of monitoring and remedial equipment, as appropriate for each remedial activity.
- (e) A plan for adjustments to normal operation and maintenance. A description of reasonably anticipated adjustments and criteria establishing when the adjustments will be taken to normal operation and maintenance of the remedial activities so that the remedial activities remain effective;

- (f) A plan for addressing potential problems with the remedial activities, including, but not limited to:
 - (i) A description and analysis of the potential operating and maintenance problems with the remedial activities;
 - (ii) A description of the means for detecting the problems with the remedial activities, including but not limited to, the schedule for periodic inspection of each remedial activity;
 - (iii) A description of reasonably anticipated activities that will be conducted and equipment utilized to correct potential problems with the remedial activities, including but not limited to the reasonably anticipated inspection responses and repair methods, and the criteria for implementing a contingency plan developed in accordance with paragraph (E)(1)(f)(iv) of this rule; and
 - (iv) A contingency plan that details the measures that will be taken to maintain the property's compliance with applicable standards and protection of public health and safety and the environment until normal operation and maintenance of the remedial activities is restored.
- (g) Records and reporting mechanisms. The operation and maintenance plan must contain a description of all records that will be kept for the purpose of documenting the requirements of paragraphs (E)(1) and (E)(2) of this rule are met; and
- (h) A plan for termination of the remedial activities, including, but not limited to:
 - (i) An identification and description of the data and information that will be collected to support the criteria for termination of the remedial activities subject to the operation and maintenance plan to verify completion of the remedial activities in accordance with paragraph (D)(2) of this rule; and
 - (ii) An identification and description of the criteria for termination, as appropriate, of the monitoring activity to verify completion of the remedial activity in accordance with paragraph (D)(2) of this rule.
- (2) Reporting evaluation of the effectiveness of remedial activities subject to an operation and maintenance plan.
 - (a) At least once annually following issuance of a no further action letter, or at such other interval as agreed upon in an operation and maintenance agreement, the volunteer or other person responsible for operation and maintenance plan and agreement implementation, must submit a letter, statement or report to the director, under affidavit, that includes the following:
 - (i) The results from all evaluation activities performed in accordance with paragraph (E)(1)(c) of this rule;
 - (ii) A description of the activities, if any, performed under a contingency plan;

- (iii) A demonstration of the performance of all remedial activities subject to the operation and maintenance plan; and
 - (iv) A demonstration of how compliance with applicable standards will be met or maintained, including the measures used to maintain the remedy's protectiveness of public health and safety and the environment until the property achieves compliance with applicable standards through a permanent remedy within five years, or other time frame as agreed upon by the director in an operation and maintenance agreement.
 - (b) Confirmation made under paragraph (E)(1)(c) of this rule that the engineering control, interim measure, active remediation or passive remediation, as applicable, is necessary for as long as the remedial activity is necessary to achieve or maintain applicable standards at the property. If the remedial activity is complete, or is no longer needed for the property to comply with the applicable standards, verification must be conducted in accordance with paragraph (D)(2) of this rule.
- (3) Submission of an operation and maintenance plan. When an operation and maintenance plan is required in accordance with this rule, the operation and maintenance plan must be prepared and, as appropriate to maintain applicable standards, implemented, prior to issuance of the no further action letter. The no further action letter must include the operation and maintenance plan. If the no further action letter is submitted to the director with an accompanying request for a covenant not to sue in accordance with this chapter and Chapter 3746. of the Revised Code, a copy of the operation and maintenance plan must also be submitted to the director.
- (4) Operation and maintenance agreement. When requesting a covenant not to sue from the director pursuant to this chapter and Chapter 3746. of the Revised Code for a property subject to a remedial activity that requires an operation and maintenance plan pursuant to this rule, the volunteer must enter into an operation and maintenance agreement with the director.
 - (a) At a minimum, the operation and maintenance agreement must include the following:
 - (i) An operation and maintenance plan for the property developed in accordance with paragraphs (E)(1) and (E)(2) of this rule and approved by the director;
 - (ii) A provision that the volunteer agrees to implement the operation and maintenance plan;
 - (iii) A provision requiring periodic reporting to the director of monitoring results and evaluation of the effectiveness of the remedial activities subject to the operation and maintenance plan, in accordance with paragraph (E)(2) of this rule, to the extent the operation and maintenance plan does not provide for such periodic reporting to the director;

- (iv) A provision requiring notification to the director within a specified time of all adjustments made to normal operation and maintenance as specified in the operation and maintenance plan, and of implementation of the contingency plan activities specified in the operation and maintenance plan;
 - (v) A provision requiring that proposed modifications to a remedial activity, other than adjustments or contingency plan activities developed in accordance with paragraphs (E)(1)(e) to (E)(1)(f) of this rule and contained in the operation and maintenance plan, must be submitted to the director for review and approval prior to implementation of the proposed modification;
 - (vi) A provision requiring that prior notification, within a specified reasonable time frame, be provided to the prospective buyers or transferees of the property of the remedy subject to the operation and maintenance plan and agreement;
 - (vii) A provision requiring notice to the director within a specified reasonable time frame of each transfer of the property subject to the operation and maintenance plan and agreement;
 - (viii) A provision requiring notice to the director within a specified reasonable time frame of the transfer of the operation and maintenance plan and agreement, and of the terms and conditions of the transfer;
 - (ix) The establishment and description of financial assurances that the remedy subject to the operation and maintenance plan and agreement will remain operational and functional;
 - (x) A provision for inspection of the property by Ohio EPA or its representatives to determine compliance with the operation and maintenance plan and agreement;
 - (xi) Mechanisms for providing reports to Ohio EPA, including, but not limited to:
 - (a) Daily operating logs;
 - (b) Laboratory analytical data and supporting records;
 - (c) A procedure for reporting emergencies;
 - (d) Maintenance records; and
 - (e) A description of the reports that will be provided to Ohio EPA and the frequency for reporting.
 - (xii) Other provisions necessary to protect public health and safety and the environment or to demonstrate effectiveness of the remedial activities subject to the operation and maintenance plan or agreement.
- (b) The operation and maintenance agreement may specify a reasonable time frame

within which the property must attain applicable standards through the remedial activities specified in the operation and maintenance plan or agreement.

- (c) Operation and maintenance agreements may be transferred by the volunteer to another person by assignment or in conjunction with the acquisition of title to the property that is the subject of the agreement. The volunteer may choose to but is not required to transfer its operation and maintenance agreement to another person (e.g., the subsequent property buyer). The "other person responsible for operation and maintenance plan and agreement implementation" is defined in paragraph (A)(89) of rule 3745-300-01 of the Administrative Code for this purpose.

(F) Risk mitigation plans.

When risk mitigation measures are to be employed after issuance of a no further action letter, a risk mitigation plan must be developed and implemented.

- (1) The risk mitigation plan must contain, at a minimum, the following components:
 - (a) A description of the purpose of the risk mitigation plan;
 - (b) A summary of the potential health risks associated with the chemicals of concern at the property;
 - (c) A description of the specific precautions against exposure to be taken at the property;
 - (d) Directions on how to handle environmental media at the property that may contain chemicals of concern;
 - (e) Provisions for when the risk mitigation plan will be implemented at the property, consistent with the results of a property-specific risk assessment, if applicable, conducted in accordance with rule 3745-300-09 of the Administrative Code;
 - (f) Provisions for the locations at the property where the risk mitigation plan will be implemented, consistent with the results of a property-specific risk assessment in accordance with rule 3745-300-09 of the Administrative Code. If, based on the results of the property-specific risk assessment, the entire property is not subject to the risk mitigation plan, a legal description of that portion of the property subject to the risk mitigation plan must be attached to and incorporated by reference in the risk mitigation plan;
 - (g) A property map showing that portion of the property subject to the risk mitigation plan;
 - (h) Provisions for giving notice of the risk mitigation plan to contractors and subcontractors and their employees, and other persons working in areas where risk mitigation measures are necessary;

- (i) A summary explanation of the precautions that each contractor must require of and communicate to its employees and subcontractors;
 - (j) For property where a covenant not to sue is requested, provisions for annually notifying the director as to whether implementation of the risk mitigation plan occurred; and if implemented, of the events that required implementation of the risk mitigation plan, the exposures to hazardous substances or petroleum that may have occurred, and the risk mitigation measures undertaken in accordance with the risk mitigation plan; and
 - (k) The criteria for termination of the risk mitigation plan, as appropriate.
- (2) When requesting a covenant not to sue from the director pursuant to this chapter and Chapter 3746. of the Revised Code, a risk mitigation plan is developed as a separate plan for implementation as a condition of a covenant not to sue.

Effective: 4/23/2012

R.C. 119.032 review dates: 3/1/2014

CERTIFIED ELECTRONICALLY

Certification

4/2/2012

Date

Promulgated Under: 119.03
Statutory Authority: 3746.04
Rule Amplifies: 3746, 5301
Prior Effective Dates: 12/29/1995, 7/1/2006, 3/1/2009