

**FINAL-FORM RULEMAKING
ENVIRONMENTAL QUALITY BOARD
[25 PA. CODE CH. 250]**

Administration of the Land Recycling Program Vanadium MSC Rule

The Environmental Quality Board (Board) amends Chapter 250 (relating to administration of land recycling program). This rulemaking is proposed under § 250.11 (relating to periodic review of MSCs), which requires the Department of Environmental Protection (Department) to review new scientific information related to Statewide health standard medium-specific concentrations (MSC) at least 36 months after the effective date of the most recently promulgated MSCs and to propose to the Board any changes to the MSCs as necessary. This final-form rulemaking uses contemporary scientific information to update the toxicity value for vanadium, resulting in updates to the vanadium MSCs.

This final-form rulemaking was adopted by the Board at its meeting of **DATE**, 2023.

A. Effective Date

This final-form rulemaking will be effective upon publication in the *Pennsylvania Bulletin*.

B. Contact Persons

For further information contact Michael Maddigan, Program Manager, Land Recycling Program, P.O. Box 8471, Rachel Carson State Office Building, Harrisburg, PA 17105-8471, (717) 772-3609, or Nicholas Pistory, Assistant Counsel, Bureau of Regulatory Counsel, P.O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-9372. Persons with a disability may use the Pennsylvania Hamilton Relay Service, (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This final-form rulemaking is available on the Department's web site at www.dep.pa.gov (select "Public Participation," then "Environmental Quality Board" and then navigate to the Board meeting of **DATE**, 2023).

C. Statutory Authority

This final-form rulemaking is authorized under: sections 104(a) and 303(a) of the Land Recycling and Environmental Remediation Standards Act (Act 2) (35 P.S. §§ 6026.104(a) and 6026.303(a)), which direct the Board to adopt and amend periodically by regulation Statewide health standards for regulated substances for each environmental medium, including any health-based standards adopted by the Federal government by regulation or statute, and health advisory levels, and which direct the Board to promulgate appropriate mathematically valid statistical tests to define compliance with Act 2, and other regulations as necessary to implement the provisions of Act 2; and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20), which authorizes the Board to formulate, adopt and promulgate rules and regulations that are necessary for the proper work of the Department.

D. Background and Purpose

The Commonwealth's Land Recycling Program, established by Act 2 (35 P.S. §§ 6026.101—6026.908), encourages the voluntary cleanup and reuse of contaminated commercial and industrial sites. Under Act 2 and the implementing Chapter 250 regulations, the Commonwealth's Land Recycling Program sets standards that are protective of human health and the environment and which consider future use. As authorized by Act 2 and its implementing regulations, the Commonwealth's Land Recycling Program provides potential land developers with clear cleanup standards based on risk and provides an end to liability when that cleanup standard is achieved.

Act 2 and Chapter 250 do not create permitting or corrective action obligations; rather, they provide remediators with options to address contamination and any associated liability that arises under other statutes. To take advantage of the liability protection provided in Act 2, a person must remediate their site by selecting and attaining compliance with one or any combination of the following three environmental standards: background standard, Statewide health standard or site-specific standard. Chapter 250 contains tables of numeric values for contaminants in each environmental medium, including soil and groundwater. These numeric values are used by remediators to determine the MSCs at their sites and account for used and unused groundwater, as well as residential and nonresidential exposure factors. If the Statewide health standard is selected to attain compliance, the remediator must use the applicable MSCs to demonstrate attainment of the standard at the point of compliance.

Section 250.11 requires the Department to review new scientific information used to calculate MSCs under the Statewide health standard and propose appropriate changes at least every 36 months following the effective date of the most recently promulgated MSCs. The Board most recently promulgated MSCs that became effective upon publication of the final-form rulemaking at 51 Pa.B. 7173 (November 20, 2021). Based on new scientific information, this final-form rulemaking updates the vanadium toxicity value and the resulting Statewide health standard MSCs for vanadium.

This final-form rulemaking impacts any person addressing a release of vanadium at a property, whether voluntarily or by order of the Department. This final-form rulemaking does not add or create new regulatory obligations for any particular category of person. Under section 301(a) of Act 2 (35 P.S. § 6026.301(a)), a remediator has the authority to select a remediation standard of choice. To receive cleanup liability protection, remediators must comply with all of the applicable technical and administrative requirements of the selected remediation standard in accordance with section 501(a) of Act 2 (35 P.S. § 6026.501(a)).

As noted previously, this final-form rulemaking does not singularly affect one specific industry or person—it impacts the owners and operators of properties throughout this Commonwealth where vanadium has been released. Some of these properties may be owned or operated, or both, by small businesses. Because of the application of this final-form rulemaking, it is not possible to identify specifics on the types and numbers of small businesses that could potentially be affected by vanadium contamination. In addition, Act 2 and Chapter 250 are unique from other statutes and regulations because they do not create permitting or corrective action obligations. Rather, Act 2 and Chapter 250 provide remediators with options to address

contamination and any associated liability that arises under other statutes. Making changes to the MSCs in the Chapter 250 Appendix A does not create liability or obligations related to vanadium. Instead, a person's liability arises under other statutes, while Act 2 and Chapter 250 provide that person the means to resolve their liability imposed by those statutes and to address the contamination.

The current vanadium oral reference dose provided in Chapter 250's Table 5B comes from the United States Environmental Protection Agency's (EPA) Provisional Peer-Reviewed Toxicity Value (PPRTV) database which is considered a "Tier 2 Source" in § 250.605(a) (relating to sources of toxicity information). The PPRTV value for vanadium is based on a sodium metavanadate study and has generated a residential direct contact value that is near the lower end of the naturally occurring concentration range of vanadium in soil. A cleanup value this low makes it difficult for remediators to determine if vanadium soil concentrations are naturally occurring or are related to a vanadium release at their site. Use of the PPRTV value has also impeded utilization of the Department's policy, titled "Management of Fill Policy," Document No. 258-2182-773.

These numeric value increases reflect updated scientific information related to the toxicity of vanadium and accurately align with the risk from exposure. The EPA has determined that there is a high level of uncertainty associated with the development of the PPRTV toxicity value, which causes the value to be low. The alternative to using the PPRTV toxicity value for vanadium is to use the EPA's Integrated Risk Information System (IRIS) vanadium pentoxide value and apply a molecular weight conversion. The PPRTV value is based on a sodium metavanadate study, and it can only be used as an elemental vanadium value because of the molecular weight conversion done in the study. The IRIS vanadium pentoxide value is a vanadium compound value that, by using the same molecular weight conversion, can also be used as an elemental vanadium value. The only difference is that the Department has performed the molecular weight conversion for the IRIS vanadium pentoxide value whereas the molecular weight conversion for the PPRTV value was performed in the sodium metavanadate study. The IRIS value is preferred over the PPRTV value because it has less uncertainty associated with it, and it is a "Tier 1 Source" for toxicity values according to § 250.605(a), which means it has gone through a more rigorous peer review process. The EPA has endorsed the use of the IRIS vanadium pentoxide value in conjunction with a molecular weight conversion by using it to develop their Regional Screening Level for vanadium.

The Department consulted with the Cleanup Standards Scientific Advisory Board (CSSAB) during the development of this final-form rulemaking. The CSSAB, which was established by section 105 of Act 2 (35 P.S. § 6026.105), consists of persons representing a cross-section of experience, including engineering, biology, hydrogeology, statistics, medicine, chemistry, toxicology and other related fields. The purpose of the CSSAB is to assist the Department and the Board in developing Statewide health standards, determining the appropriate statistically and scientifically valid procedures and risk factors to be used, and providing other technical advice as needed to implement Act 2. The Department presented the proposed rulemaking to the CSSAB for its review at a meeting held on October 4, 2021. The Department received a unanimous letter of support for this proposed rulemaking from the CSSAB on October 12, 2021. This final-form rulemaking was presented to the CSSAB at the March 15, 2023 meeting, and the CSSAB

members voted unanimously to support advancing the final-form rulemaking to the Board for adoption.

E. Summary of Final-Form Rulemaking and Changes from Proposed to Final-Form Rulemaking

Chapter 250 Appendix A, Tables 2, 4A, 4B and 5B

Amendments to the "Medium-Specific Concentrations" tables include updates to the groundwater (Table 2), soil direct contact (Table 4A) and soil-to-groundwater (Table 4B) vanadium numeric values. Amendments to the Physical and Toxicological Properties for Inorganic Regulated Substances table (Table 5B) include an updated toxicity value for vanadium. Additionally, a footnote is added to Table 5B explaining that the updated vanadium toxicity value is derived from the oral reference dose for vanadium pentoxide from the EPA's IRIS database with the application of a molecular weight conversion.

There is no change made to this section from the proposed rulemaking to this final-form rulemaking.

F. Summary of Comments and Responses on the Proposed Rulemaking

The proposed rulemaking was published in the *Pennsylvania Bulletin* at 52 Pa.B. 4235 (July 30, 2022), opening a 30-day public comment period that closed on August 29, 2022. The Board received one public comment asking if the new MSCs will supersede the Department's interim technical guidance document, titled "Utilizing Published Data in Performing a Background Demonstration and Equivalent Site Evaluation for Naturally Occurring Vanadium," Document No. 258-2182-774.

In response, the interim technical guidance document, titled "Utilizing Published Data in Performing a Background Demonstration and Equivalent Site Evaluation for Naturally Occurring Vanadium," Document No. 258-2182-774, will be rescinded when this final-form rulemaking is published in the *Pennsylvania Bulletin* because it will no longer be necessary. The interim technical guidance document provides procedures for utilizing a published data set to statistically determine statewide representative background concentrations as an alternative to collecting background samples representative of the donor site (for a Background Demonstration) and/or the receiving site (for an Equivalent Site Evaluation), as described in Section G of Appendix A of the Department's "Management of Fill Policy." Because the soil MSCs for vanadium in the Chapter 250 regulations will no longer be near the lower end of the range of the naturally occurring levels in this Commonwealth, this technical guidance document is no longer necessary.

G. Benefits, Costs and Compliance

Benefits

When the General Assembly enacted Act 2, it found and declared among its policy goals in section 102 of Act 2 (35 P.S. § 6026.102) that "[p]ublic health and environmental hazards cannot be eliminated without clear, predictable environmental remediation standards and a process for developing those standards," that "[a]ny remediation standards adopted by this Commonwealth must provide for the protection of public health and the environment," and that,

"[c]leanup plans should be based on actual risk that contamination on the site may pose to public health and the environment, taking into account its current and future use and the degree to which contamination can spread offsite and expose the public or the environment to risk[.]"

To implement these policy goals, the General Assembly granted the Board the rulemaking authority in sections 104 and 303 to develop Statewide health standards and the methods to calculate those standards. Chapter 250 implements Act 2 consistent with the General Assembly's declaration of policy outlined in section 102 of Act 2.

The amendments to the MSCs in this final-form rulemaking serve both the public and the regulated community because they provide MSCs based on the most up-to-date health and scientific information for vanadium. Section 104(a) directed the Board to adopt regulations needed to implement Act 2 and granted the Board the rulemaking authority to amend those standards periodically as better science becomes available and as the need for clarification or enhancement of the program becomes apparent. Accordingly, when the Board first promulgated Chapter 250 at 27 Pa.B. 4181 (August 16, 1997), the intent of the General Assembly was for the Board to update and amend those standards as necessary.

Potential contamination of soil and groundwater from accidental spills and unlawful disposal may impact residents of this Commonwealth. Vanadium is a systemic toxicant (non-carcinogen) as defined under Act 2, and its release not only poses a threat to the environment but also may affect public health. Research on vanadium evolves over time and provides the basis for the protection of Commonwealth residents through site cleanup requirements.

The update to the vanadium toxicity value results in increases to the vanadium MSC numeric values. Value increases reflect updated scientific information related to the toxicity of vanadium and recognize that the updated values accurately align with the risk from exposure. Value increases can also prevent impracticable remediation requirements for sites where existing vanadium standards are lower than naturally occurring concentrations.

The benefits of this final-form rulemaking are difficult to quantify because, unlike other statutory or permitting structures, Act 2 does not prevent contamination but instead provides remediators with a variety of options to address sites with existing contamination. In that sense, this final-form rulemaking, consistent with Act 2, benefits the public because it may reduce harmful exposure and result in efficient and expedient remediation and reuse of contaminated sites.

Compliance costs

The Department believes this final-form rulemaking will result in positive economic impacts because the MSCs more accurately align with exposure risk and prevent impracticable remediation requirements for a site where existing vanadium standards are lower than naturally occurring concentrations. The number of completed remediations varies each year but, on average, remediators apply the Act 2 remediation standards to approximately 800 contaminated properties across this Commonwealth per year. The Department does not expect that the amendments will impact the number of remediations voluntarily completed or the number that must be completed as a result of Department enforcement actions.

The updates to the vanadium Statewide health standard MSCs do not affect the cleanup options available to remediators under other cleanup standards. Persons conducting remediation under Act 2 may choose from three different cleanup standards: background, Statewide health or site-specific.

Compliance assistance plan

The Land Recycling Program disseminates information related to these updates using the Department web site and e-mails to environmental consultants and stakeholders involved in the program.

Paperwork requirements

This final-form rulemaking does not result in any additional forms or reports, beyond those already required by Act 2 and Chapter 250.

H. Pollution Prevention

The Federal Pollution Prevention Act of 1990 established a National policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. The Department encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally friendly materials, more efficient use of raw materials, or the incorporation of energy efficiency strategies. Pollution prevention practices can provide greater environmental protection with greater efficiency because they can result in significant cost savings to facilities that permanently achieve or move beyond compliance.

Act 2 encourages cleanup plans with remedy goals which treat, destroy or remove regulated substances whenever technically and economically feasible. This final-form rulemaking provides the necessary Statewide health standard MSCs for remediators to remove contamination or eliminate exposure, where appropriate. This final-form rulemaking reflects the most up-to-date science, especially as it relates to the characterization and removal of contamination that exceeds Act 2 MSCs. During the remediation of a contaminated site, potential sources of pollution are often removed to attain the Act 2 standards, thus eliminating or minimizing the potential for continued migration of the sources of pollution to other areas.

I. Sunset Review

The Board is not establishing a sunset date for this final-form rulemaking, because it is needed for the Department to carry out its statutory authority. The Department will continue to closely monitor these regulations for their effectiveness and recommend updates to the Board as necessary.

J. Regulatory Review

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on July 12, 2022, the Department submitted a copy of the notice of proposed rulemaking, published at 52 Pa.B. 4235 (July 30, 2022), and a copy of a Regulatory Analysis Form to the Independent Regulatory

Review Commission (IRRC) and the Chairpersons of the House and Senate Environmental Resources and Energy Committees for review and comment.

Under section 5(c) of the Regulatory Review Act, IRRC and the Committees were provided with copies of the comments received during the public comment period, as well as other documents when requested. In preparing this final-form rulemaking, the Department has considered all comments from IRRC, the House and Senate Committees and the public.

Under section 5.1(j.2) of the Regulatory Review Act, on (DATE) , this final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on (DATE) and approved this final-form rulemaking.

K. Findings of the Board

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202), referred to as the Commonwealth Documents Law, and regulations promulgated thereunder at 1 Pa. Code §§ 7.1 and 7.2 (relating to notice of proposed rulemaking required; and adoption of regulations).

(2) A public comment period was provided as required by law, and all comments were considered.

(3) This final-form rulemaking does not enlarge the purpose of the proposed rulemaking published at 52 Pa.B. 4235.

(4) These regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in section C of this order.

L. Order of the Board

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department, 25 Pa. Code Chapter 250, are amended by amending Appendix A, Tables 2, 4A, 4B and 5B as set forth in Annex A.

(b) The Chairperson of the Board shall submit this final-form rulemaking to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form, as required by law.

(c) The Chairperson of the Board shall submit this final-form rulemaking to IRRC and the Senate and House Environmental Resources and Energy Committees as required by the Regulatory Review Act (71 P.S. §§ 745.1—745.14).

(d) The Chairperson of the Board shall certify this final-form rulemaking and deposit it with the Legislative Reference Bureau, as required by law.

(e) This final-form rulemaking shall take effect immediately upon publication in the *Pennsylvania Bulletin*.

RICHARD NEGRIN,
Chairperson