



**State of Rhode Island  
Department of Environmental Management  
Office of Land Revitalization and Sustainable Materials Management**

**Policy Memo 2024**

**Guidelines for Sites with Naturally Occurring Arsenic**

**I. Purpose**

This policy is designed to further the Rhode Island Department of Environmental Management (the Department) Office of Land Revitalization and Sustainable Materials Management (OLRSMM) goals of protecting the environment and public health while promoting efficiency, and accountability. The purpose of this policy memo is to provide guidance for issuance of a Non-Jurisdictional Determination Letter (NJD) for sites with naturally occurring arsenic as outlined in the 2024 Bill S2544 as recently passed by the Rhode Island General Assembly; and to supplement, not supersede, 250-RICR-140-30-1, §1.13 *Special Requirements for Managing Arsenic in Soil* and the “Historical Agricultural Use Policy.” This bill was signed into law by Governor McKee on June 17, 2024 and took effect on October 1, 2024, as a revision to R.I. Gen. Laws. §23-19.1-6 (a). The requirement of this revised statute states in part that “*The Department of Environmental Management (the Department) Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (250-RICR-140-30-1) shall not include any provision requiring the remediation of arsenic which is **naturally occurring** at levels less than nineteen parts per million (19 ppm).*” The policy aims to provide clear guidelines for Performing Parties and environmental consultants seeking obtain a Non-Jurisdictional Determination (NJD) Letter from the Department, for sites with elevated levels of naturally occurring arsenic, which by definition is “*ambient concentrations of Hazardous Substances present in the environment that have not been influenced by human activities.*” Within this policy in order to get a NJD Letter, criteria that must be met has been established in order to streamline the Department’s review for determining whether arsenic within site soils meets this definition and is therefore subject to the October 1, 2024 revision to R.I. Gen. Laws. §23-19.1-6 (a).

**II. Applicability**

Arsenic can be a naturally occurring element in soil. To address concerns that certain areas of the State may not conform to the statewide distribution identified in the Department’s background assessments and consistent with the aforementioned revised statute, this Policy outlines the protocols to be implemented to expedite the Department’s review for determining whether the observed arsenic concentration at a site represents naturally occurring arsenic or is a result of a release to the environment as defined in 40 C.F.R. § 300.5.

The criteria below shall be employed, as part of the submission and review, to demonstrate that arsenic concentrations in site soils are naturally occurring:

**A. Initial Minimum Site Screening Criteria:**

1. No soil samples may contain arsenic at levels higher than 19 ppm;
2. Arsenic is the only constituent in exceedance of the Department's Method 1 Soil Objectives at the Site. Detections of other constituents must be proven to show that observed concentrations are not a result of a release into the environment;
3. The Site and abutting properties cannot have been used for any agricultural purposes where arsenic pesticides may have been used such as orchards, potato farms, etc., since the advent of arsenic pesticides;
4. The Site cannot have been used for any industrial purposes;
5. There is no historical evidence or knowledge of a release, potential release or use of arsenic or any other contaminants that has occurred at this Site; and
6. No field evidence of a release can be observed at the Site or any sampling point.

Sites not meeting the above criteria for review, should be submitted under the normal notification/SIR process outlined in the Remediation Regulations, as additional investigations and remedial measures will likely be required for approval.

### **III. Reporting Requirements**

Notification, as required in Section 1.6 of the Remediation Regulations, shall be completed. In addition to notifying the Department, personnel shall also submit a written report for review. The report shall include the following information:

#### **Section A: Site History and Land Description**

A detailed discussion of the Site's history, including that of abutting properties is required. Any past or present abutting agricultural properties, landfills, Superfund/CERCLA sites, brownfields, etc., shall be noted. This section should include any known historical incidents or releases and prior remediation. A description of the land topography, geology, and soil classifications shall be examined. Groundwater classification of the Site should also be provided. Historical information such as aerial photographs, Sanborn maps, USGS maps, etc., shall be included.

#### **Section B: Additional Screening Criteria to be Evaluated:**

- Soil sampling should be evenly distributed across the Site, and conducted in a way that accurately characterizes the Site (see Table 1 in Section IV);
- No indication of (an) arsenic hotspot(s) that are indicative of a potential release; and

- An assessment has been conducted to demonstrate that the arsenic present in surficial soils is from a subsurface source such as bedrock.

**Section C: Sampling & Reporting Procedures**

Sampling procedures conducted should be discussed, including a description of the sampling locations and depths. Sampling techniques shall be provided to ensure proper Quality Assurance/Quality Control (QA/QC). Site figures that depict soil sampling locations, depths, and results in both cross-sectional and overhead views must be provided. All soil boring logs shall be provided as an appendix to the report. Chain of Custody (COC) protocols should be discussed in detail and supporting documentation shall be provided in the appendices.

To ensure proposed sampling locations are adequate prior to collecting the data, it is encouraged that a proposed sampling location figure be reviewed by the Department.

**Section D: Laboratory Data**

Laboratory analysis shall be provided. Soil samples must be analyzed for the full suite of regulated constituents (refer to *250-RICR-140-30-1, § 1.9.2(C)(2) Table 1*). Date and time of sample collection and analysis shall be reported. Laboratory method reporting limits shall be set at or below the Department’s Residential Direct Exposure Criteria. The results of the soil sampling analyses should be discussed.

**Section E: Arsenic Analysis**

A statistical evaluation of collected arsenic data is required. A discussion of the total number of samples collected in relation to the Site acreage should be provided. Refer to the table below for the minimum number of samples required per depth interval. The total number of samples analyzed with their respective arsenic concentrations must be clearly identified. In some cases, a statistical analysis may be required such as average, standard deviation, minimum and maximum, kurtosis, tests for normality, outlier assessment, population comparisons, etc., should be performed on both the surface and subsurface arsenic data. A comparison of surface to subsurface arsenic results needs to be presented.

**Table 1: Minimum Sampling Requirements**

<b>Site Size (Acres)</b>	<b>Samples Required per Depth Interval*</b>
1 acre or less	8 locations minimum
1 to 5 acres	8 locations + 2 per additional acre over 1 <sup>st</sup> acre
Greater than 5 acres	16 locations + 1 per additional acre over 5 <sup>th</sup> acre
*Note that at a minimum the surface (0-2 feet below grade) and subsurface (greater than 2 feet below grade) shall be analyzed at all sampling locations.	

## Section F: Conclusion

A comprehensive summary of the report should be written and submitted to the Department electronically. The final conclusion based on all data and analyses shall be discussed with supporting evidence. For determinations that arsenic levels below 19 ppm are naturally occurring at a site, a rationale shall be provided. Multiple lines of evidence should support the conclusion. Please note, it is at the Director's discretion to determine consistency with this policy.

## Appendices:

This section should include any tables, figures, aerial photographs, soil boring logs, and laboratory analytics, properly labeled.

## **IV. Sampling Methods**

Samples shall be collected both at the surface and subsurface to delineate the extent of contamination. All surficial soil samples shall be collected from the 0-2' interval. An adequate number of subsurface samples shall also be collected at multiple depths to show a clear concentration gradient. If concentrations of arsenic in bedrock at the Site is known, it should also be provided. Samples must be distributed around the in a manner that sufficiently delineates the extent of contamination. A Site Investigation Work Plan (SIWP) can be submitted to ensure that samples are adequately distributed around the property.

## **V. Closure**

With the Department review and approval of the submitted evidence supporting the conclusion that the arsenic contained in Site soils is the result of naturally occurring conditions, a Non-Jurisdictional Letter (NJD Letter) shall be issued, and further remediation will not be required at this time.

Be advised that the Department reserves the right to require additional actions under the Remediation Regulations at the subject site should any of the following occur:

- Conditions at the Site previously unknown to the Department are discovered; and/or
- Information previously unknown to the Department becomes available.

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12-24-24  
Effective Date