



Division of Spill Prevention and Response

Policy Memorandum

Contaminated Sites Program

July 19, 2024

Site Closure Policy

Summary

In accordance with 18 Alaska Administrative Code (AAC) 75.380(d) and 18 AAC 78.276(f), if the Alaska Department of Environmental Conservation (DEC) determines that a site has achieved the applicable requirements, it will issue a determination that the cleanup or corrective action is complete (i.e., site closure). This policy establishes the process used by the Contaminated Sites Program (CSP) to make and document that determination.

Purpose

The purpose of this memorandum is to describe how the CSP will make closure determinations for sites regulated under Underground Storage Tank (UST) regulations of 18 AAC 78, Articles 2 and 6, and the Oil and Hazardous Substance Site Cleanup Rules of 18 AAC 75.325 – 75.390.

This document is intended to help ensure consistency in making closure decisions under the Site Cleanup Rules and the UST regulations. It does not create any requirements, obligations, or rights. CSP reserves the right to use discretion in making site-specific decisions that may differ from this memorandum.

Responsible Persons (RPs) are encouraged to read and understand this memo early in the site characterization and cleanup process to optimize site characterization efforts and move sites through the regulatory process in an efficient manner.

Background

“Site Closure” is a general term used by CSP to apply to the process of ensuring that a site has achieved the regulatory criteria of either “Cleanup Complete” under 18 AAC 75.380 or “Corrective Action Complete” under 18 AAC 78.276. For simplicity in this policy, the generic term “Cleanup Complete” will be applied to both non-Leaking Underground Storage Tank (LUST) and LUST contaminated sites rather than using two different designations. CSP will consider available site-specific information, conditions, and factors when reviewing a site for closure.

Upon the submittal of a final report, or if a site is otherwise found to meet the criteria in 18 AAC 75.380, CSP will make a determination that the site meets the cleanup complete regulatory criteria. If a site meets these criteria, the CSP will make a written determination summarizing the characterization and cleanup actions and documenting that the cleanup was protective of human health, safety, or welfare, or of the environment. At sites where residual hazardous substances do not currently pose an unacceptable risk to human health, safety, welfare or to the environment, and allow for some, but not all, uses of the land institutional controls (ICs) will be required [18 AAC 75.375(a) and 18 AAC 78.625(a)] and memorialized in an Environmental Covenant (EC) or Notice of Activity and Use Limitations (NAUL), in accordance with the Uniform Environmental Covenant Act (UECA) in Alaska Statute (AS) 46.04.300 – 46.04.390. If a site does not meet the cleanup complete criteria and the cleanup and ICs are not protective, or if the affected landowners do not agree to an EC or NAUL, CSP will work with the RP to conduct additional actions to achieve closure.

Action

CSP will assign the following site closure designations based on the requirements needed to ensure that the cleanup is protective.

Cleanup Complete: Sites in this category meet approved cleanup levels that are protective of unrestricted residential land use and groundwater to be used as drinking water, and do not need ICs to prevent current or potential future exposure that would lead to unacceptable risk to human health, safety, or welfare, or to the environment.

Cleanup Complete with Institutional Controls: Sites in this category require ICs that limit some activity and use of the site to prevent current or potential future exposure to contaminated media (soil, groundwater, sediment, surface water and/or air) that could pose an unacceptable risk to human health, safety, or welfare, or to the environment. This determination includes, but is not limited to:

- sites where contamination remains in place above applicable cleanup levels in soil and/or groundwater;
- sites with approved alternative cleanup levels developed under Methods 3 or 4 that are based on assumed limitations on future land or groundwater use;
- sites where vapor intrusion could pose a future risk if not controlled;
- sites where groundwater is determined not to be a current or reasonably expected future drinking water source (18 AAC 75.350); or
- sites where maintenance of engineering controls such as a cap over contaminated soil, signs or fencing is necessary.

If ICs are required, they must be established in an EC or NAUL, in accordance UECA, and the CSP must validate their effectiveness through periodic reporting by the RP or landowner.

Site Closure Procedures and Criteria

Project managers use the following procedures when closing a site: a) review the site for closure per 18 AAC 75.380 or 18 AAC 78.276 to ensure that regulatory requirements have been met; and b) conduct a final Exposure Tracking Model (ETM) evaluation. All potential human health exposure pathways should be in the ETM categories of “exposure controlled,” “pathway incomplete,” or “de-minimis exposure”, and the ecological exposure pathway should be in “low potential exposure”, “exposure controlled,” “pathway incomplete,” or “de-minimis exposure”. Project managers will prepare a written determination documenting the rationale for closure and include all appropriate information on the Contaminated Sites Database.

Site Closure Criteria

Sites must meet certain criteria for a Cleanup Complete or Cleanup Complete with ICs determination to be made. In accordance with 18 AAC 75.380(c), compliance with the soil cleanup levels is evaluated using the maximum concentrations measured in samples representative of soil remaining at a site unless the CSP approves use of a mean soil concentration at the 95th percent upper confidence level. Compliance with groundwater cleanup levels is evaluated using the maximum concentrations detected in final confirmation samples, groundwater cleanup levels must be attained throughout all the groundwater unless alternative points of compliance are approved under 18 AAC 75.345(f). If an alternative point of compliance is approved, the cleanup levels must be achieved at the alternative points of compliance and ICs applied where necessary. All sites must meet the following criteria:

1. The extent of hazardous substance contamination has been properly characterized (18 AAC 75.335) and/or adequate characterization of the horizontal and vertical extent of petroleum contamination in soil, groundwater, and surface water (18 AAC 78.235) has been achieved;
2. Free product has been recovered to the maximum extent practicable (18 AAC 75.325(f)(1)(B) and 18 AAC 78.240(b));
3. Surface soil staining has been evaluated and cleaned up to the maximum extent practicable (18 AAC 75.325(f)(1)(E));
4. The Table B2 maximum allowable concentrations for the petroleum hydrocarbon ranges in soil have been achieved unless the RP has demonstrated the contaminants will not migrate and will not pose an unacceptable risk to human health or the environment (18 AAC 75.341, Notes to Tables B1 and B2, Note 17);
5. There are no unacceptable current vapor intrusion risks;
6. There are no unacceptable risks to sensitive subpopulations, if present;
7. There are no unacceptable ecological risks; and
8. There is no potential for contaminant migration from soil or groundwater to surface water that could result in a violation of the water quality standards (18 AAC 70).

Cleanup Complete is appropriate when the criteria below have been met.

1. Hazardous Substance Concentrations in Soil

Remaining contaminant concentrations in soil must meet one of the following scenarios:

- A. Method 2 most stringent exposure pathway cleanup levels have been achieved;
- B. Method 3 alternative migration to groundwater exposure pathway cleanup levels have been achieved and residual contamination is below the Method 2 Table B1 human health and Table B2 ingestion and inhalation exposure pathway cleanup levels;
- C. Method 3 or 4 site-specific residential land use cleanup levels protective of all exposure pathways have been achieved;
- D. Method 2 Table B1 human health and Table B2 ingestion and inhalation exposure pathway cleanup levels have been achieved to a depth of 15 feet, and CSP has determined the migration to groundwater exposure pathway to be incomplete because:
 - the site is in the Arctic climate zone;
 - a substantial thickness of continuous permafrost overlies groundwater beneath the site;
 - the site is underlain by a confining geological layer such as competent bedrock and there is not a contaminant migration pathway to groundwater; or
 - contaminants in soil have achieved steady-state equilibrium, will not migrate to groundwater, and do not pose an unacceptable risk for migration to groundwater.

2. Hazardous Substance Concentrations in Groundwater

Remaining contaminant concentrations in groundwater must meet Table C cleanup levels, background cleanup levels, or site-specific calculated cleanup levels for contaminants not listed in Table C, have been achieved throughout the groundwater beneath the site.

3. Cumulative Risk Standards

Cumulative risk standards defined in 18 AAC 75.325(g) and 18 AAC 78.600(d) have been met for an unrestricted residential land use scenario.

Cleanup Complete with ICs is appropriate when the criteria below have been met.

1. Hazardous Substances in Soil

Remaining contaminant concentrations in soil must meet one of the following scenarios:

- A. Method 2 Table B1 human health and Table B2 ingestion and inhalation exposure pathway cleanup levels have not been achieved to a depth of 15 feet and exposure is controlled through an IC;
- B. Method 3 or 4 alternative cleanup levels for the Table B1 human health exposure pathway and/or the Table B2 ingestion or inhalation exposure pathways based on a commercial/industrial or other non-residential land use scenario have been achieved to a depth of 15 feet and residential use of the site is prevented through ICs; or
- C. Risk-based cleanup levels for the Table B1 human health exposure pathway or the Table B2 ingestion and inhalation exposure pathway, or the Table B2 maximum allowable concentrations have not been achieved to a depth of 15 feet, and CSP has determined the cleanup has been conducted to the maximum extent practicable or necessary and that potential exposure to, or relocation of, the remaining subsurface contamination is prevented through ICs.

2. Hazardous Substances in Groundwater

Remaining contaminant concentrations in groundwater must meet one of the following scenarios:

- A. Table C cleanup levels, background cleanup levels, or site-specific calculated cleanup levels for contaminants not listed in Table C, are met at alternative points of compliance approved by CSP in accordance with 18 AAC 75.345(f) and ICs prevent groundwater use as drinking water within the upgradient, impacted area;
- B. Table C cleanup levels or site-specific calculated cleanup levels for contaminants not listed in Table C, are not met, and the groundwater contaminant plume is shown to be steady-state or shrinking, concentrations are decreasing, and groundwater use is prevented with an IC; or
- C. Groundwater beneath the site is not a current, nor a reasonably expected potential future, source of drinking water (18 AAC 75.350) and ICs prevent such use.

3. Cumulative Risk Standards

Cumulative risk standards in 18 AAC 75.325(g) or 18 AAC 78.600(d) have been achieved for the current and intended future land use scenarios, and ICs are in place to prevent exposure to contaminants that pose potential risk above the standards.

4. Institutional Controls

The RP has successfully put all ICs in effect, including providing notification that the signed EC or NAUL has been recorded at the DNR Recorder's Office.

Institutional Control Provisions

In accordance with AS 46.04.300 – 46.04.390, ECs and NAULs are needed to meet regulatory requirements and ensure compliance with an applicable cleanup level, protection of human health, safety, or welfare, or the environment, or continued integrity of site cleanup activities or improvements. RPs should read and understand these requirements prior to conducting the cleanup action.

ECs and NAULs are legally binding agreements that will be recorded at the DNR Recorder's Office and will remain in place regardless of any transfer of land ownership. CSP has created EC and NAUL templates with instructions for formatting requirements and the submittal process. The CSP project manager will work with the RP to draft the EC or NAUL. After the landowner has signed the EC or NAUL, the project manager routes it to the DEC Commissioner's Office for signature. The RP is responsible for ensuring that the document is recorded at the DNR Recorder's Office and providing a copy of the recorded document to the project manager.

Removal of Institutional Controls

The process for amending, modifying, or terminating ICs shall be described in the individual EC or NAUL. If the concentrations of all residual contaminants remaining at the site after closure are subsequently determined to be below the levels that allow for unrestricted use and the site is found to pose no unacceptable risk to human health, safety or welfare, or to the environment, the CSP will approve the elimination of the ICs at the request of the RP or landowner.

Delegated Authorities for Closure Decisions

The CSP Program Manager has delegated approval authority for various types of closures to different Environmental Program Managers (EPM). The following table has been adapted from Table 6 in the *Delegated Program Management Authorities Policy Memorandum*, dated November 7, 2023.

Action	EPM 3	EPM 2	EPM 1	EPS 4
Soil: At or below Method 1 or Method 2 (most stringent) GW: At or below Table C <i>No EC or NAUL Required</i>			A	
Soil: At or below Method 3 migration to groundwater GW: At or below Table C <i>No EC or NAUL Required</i>			A	
Soil: Method 3 migration to groundwater fate & transport model proposed for compliance with soil requirements GW: At or below Table C <i>No EC or NAUL Required</i>		A		
Soil: Migration to groundwater pathway incomplete or soil contaminants do not pose a migration to groundwater risk <i>No EC or NAUL Required</i>		A		
Soil: At or below Method 3 Commercial/Industrial GW: At or below Table C <i>EC or NAUL Required</i>		A		
Soil: Exceeds Maximum Allowable Concentrations GW: At or below Table C <i>EC or NAUL Required</i>	A			
Soil: Method 4 Alternative Cleanup Levels used to comply with closure requirements <i>EC or NAUL May Be Required</i>		A		T: Risk Assessor
Soil: Exceeds Human Health pathways in top 15 feet <i>EC or NAUL Required</i>	A			

Action	EPM 3	EPM 2	EPM 1	EPS 4
GW: Exceeds Table C, steady state/decreasing trend <i>EC or NAUL Required</i>		A		
GW: Alternative Cleanup Levels <i>EC or NAUL May Be Required</i>	A			
GW: On-site alternative point of compliance used as GW exceeds Table C <i>EC or NAUL Required</i>			A	
GW: Off-site alternative point of compliance used as GW exceeds Table C <i>EC or NAUL Required</i>		A		

Notes:

1. “A” means that that position (or a higher position) has authority to approve the action.
2. “T” means that the approval of the action should be coordinated with a member of the technical team (i.e., Risk Assessor).

Applicable Regulations Following Site Closure

Following a Cleanup Complete or Cleanup Complete with ICs determination, CSP approval is required for movement and disposal of soil and or groundwater in accordance with 18 AAC 75.325(i) or 18 AAC 78.600(h). If the residual contaminant concentrations met the Tables B1 and B2 most stringent exposure pathway cleanup levels and the Table C cleanup levels, the Cleanup Complete letter will serve as the approval for future movement and disposal of soil. If the residual contaminant concentrations exceeded the Tables B1 and B2 most stringent exposure pathway cleanup levels, the RP or landowner will need to contact CSP prior to moving any soil.

Movement or use of contaminated material in an ecologically sensitive area or in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited. Groundwater throughout Alaska is protected for use as a water supply for drinking, culinary, and food processing; agriculture, including irrigation and stock watering; aquaculture and industrial uses, unless it has been reclassified in a specific area (18 AAC 70.050). Contaminated site cleanup determinations are based on groundwater being considered a potential drinking water source. If groundwater is to be used for other purposes in the future, for example aquaculture, additional testing and cleanup may be required to ensure the water is suitable for its intended use.

Site Reopener Provision

Any determination that a cleanup is complete may be subject to a future determination that the cleanup or applicable ICs are not protective of human health, safety, or welfare, or of the environment, per 18 AAC 75.380(d)(2) and/or 18 AAC 78.276(f)(2). If the CSP makes a determination that conditions at a site are no longer protective, the RP will be notified in writing; the site will be reopened and additional action will be necessary to meet the requirements of Site Cleanup Rules or the UST regulations. Examples of conditions under which the CSP may reopen a site include, but are not limited to, the following:

- Information becomes available that demonstrates that previous characterization or cleanup was incomplete;
- The RP or landowner fails to maintain or comply with ICs restricting land use or requiring action by the current and future occupants of the site;
- The RP or landowner fails to meet standard conditions required for a Cleanup Complete determination (18 AAC 75.325(i) and other standard conditions);

- The RP violates any terms of a CSP decision document or agreement applicable to the site; or
- New information (i.e., toxicological, chemical parameters, or exposure data) results in a CSP determination that there are hazardous substances present above levels acceptable for human or ecological exposure, and/or additional exposure pathways are found to be complete. For example, updated toxicological information may show that existing contaminant levels at a site pose a vapor intrusion risk, or are no longer safe for using groundwater for drinking, vegetable garden irrigation, aquaculture, or another beneficial use.

Regulatory Authority

AS 46.04.300 – 46.04.390, 18 AAC 75.375(a), 18 AAC 75.380(d), 18 AAC 78.276(f), and 18 AAC 78.625(a).

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Stephanie Buss
Contaminated Sites Program Manager