



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Environmental Permitting Fact Sheet

General Permit for In Situ Groundwater Remediation: Enhanced Aerobic Biodegradation

Permit Overview

This general permit is issued under the authority of, and is administered by, the Department of Environmental Protection (DEP) Bureau of Water Protection and Land Reuse. DEP uses both individual and general permits to regulate activities. Individual permits are issued directly to an applicant, whereas general permits are issued to authorize similar activities by one or more registrants throughout a prescribed geographic area. Authorization of an activity under a general permit is governed by that general permit. A general permit sets terms and conditions for conducting an activity which, when complied with, are protective of the environment. General permits are a quicker and more cost-effective way to permit specific activities for both DEP and the permittee.

This general permit authorizes the introduction of oxygen, at a controlled rate, and any necessary supplemental substances into soil or groundwater to enhance in situ aerobic biodegradation of pollution.

Authorizing Statutes

Sections 22a-133z, -430, -430b, and -454(e) of the Connecticut General Statutes authorize this permit.

Specific Authorized Activities

As used in this general permit:

“Aerobic biodegradation” means the degradation of organic pollutants, as a result of biological activity in the presence of oxygen, by the breaking of intramolecular bonds through the substitution of functional groups, mineralization, or other processes, resulting in the derivation of energy or increase in biomass; and

“Oxygen releasing substance” means a substance that, when combined with water, supplies oxygen **at a controlled rate** in a concentration suitable to support aerobic biologic activity. Oxygen releasing substances include, but are not limited to, metal peroxides and oxyhydroxides, and may have intercalated phosphates, but exclude any substance that by intended or unintended effect results in direct chemical oxidation of a measureable volume of organic constituents.

The specific activities authorized pursuant to this general permit are:

- (1) Emplacement of oxygen releasing substances in an open excavation, resulting from removal of a tank or polluted soil, to remediate petroleum pollution;
- (2) Emplacement of removable devices containing oxygen releasing substances to remediate petroleum pollution;
- (3) Injection or emplacement of oxygen releasing substances on or below the ground surface to remediate petroleum pollution;
- (4) Discharge, injection, or emplacement of other, supplemental nutrient substances and/or pH adjusting chemicals, as determined necessary to enhance the aerobic growth environment;
- (5) Discharge, injection or emplacement of cultured naturally occurring biologic organisms, as determined necessary to augment the site's natural organisms;
- (6) Injection or emplacement of oxygen releasing substances to enhance aerobic biodegradation of organic chemicals other than petroleum;
- (7) Discharge of oxygen or ozone in gaseous form or of oxygen, ozone, or dilute hydrogen peroxide contained in water, below the ground surface, to enhance aerobic biodegradation of petroleum or other organic chemicals;
- (8) Maintenance of any well, borehole, or infiltration structure, through ancillary short term discharge of substances necessary to maintain a condition facilitating its continued use as intended; and
- (9) The generation, and subsequent presence in water within the area of authorized activity, of metabolic byproducts associated with the authorized activities.

Requirements For All Authorized Activity

All authorized activity must comply with the conditions set forth in the general permit, which include discharge limits, management practices, and monitoring and notification requirements. Read the general permit carefully to be sure you can comply with the general permit. If you fail to comply with the general permit, you are potentially subject to legal action.

Registrations for activities with potential to impact a public water supply must be approved by DEP.

Registrations for activities conducted in areas near private supply wells or with sensitive site conditions, as identified in the general permit, must be approved by DEP. Registrants may, in some cases, optionally provide a certification for sensitive site conditions. DEP may base an expedited review on such certification and issue a certificate of coverage in lieu of an otherwise required approval.

Registration

Who Must Register? Anyone wishing to introduce oxygen, at a controlled rate, and any other necessary supplemental substances into soil or groundwater to enhance aerobic biodegradation of pollution. The registrant may be a property owner or an environmental consultant or remediation contractor, acting with the owner's permission.

How many activities can be registered on one form? A registrant shall register all activities at a site for which the registrant seeks authorization under this general permit on a single registration form. Activities at adjacent parcels that are associated with a single source of pollution may all be registered on the same form. Separate unassociated sites must each be registered on separate forms.

When should a registration form be submitted? (1) A person who wishes to introduce oxygen, and any necessary supplemental substances, into soil or groundwater to enhance aerobic biodegradation of pollution must register under this general permit for this activity to be authorized. (2) A permittee must submit a new registration if there will be significant changes in the operations, the area of activity, or the types or quantities of the oxygenating substances introduced. (3) A permittee must submit a renewal of the registration within 180 days before the expiration date of any current Certificate of Coverage or Approval of Registration if they wish to continue to introduce oxygen into soil or groundwater under the authority of the general permit. The same form should be used for either a new registration or renewal of an existing registration.

What must I submit to Register? A person ("registrant") must submit to DEP a *complete* registration form with the appropriate fee, a permit application transmittal form, supporting documents, and certifications, including any optional LEP or P.E. certification for sensitive site conditions.

Is a new registration always required when I want to change my authorized activities? No, if a permittee wants to change the operations, the area of activity, or the quantities of the substances introduced by implementing additional phases of activity not significantly different from what has been authorized, the permittee may submit a modified work plan for DEP approval.

DEP Response

How do I know my registration has been accepted by DEP and my actions are authorized? DEP will, in most circumstances, issue either an Approval of Registration or a Certificate of Coverage, as confirmation that the actions proposed in the registration are authorized. (See Section 3(e) of the general permit.)

How is an Approval of Registration obtained for an activity? When the proposed activity requires specific DEP approval and no optional certification for sensitive site conditions is permissible or provided, the commissioner will issue a decision regarding the registration after departmental review. The decision may be an Approval of Registration (with or without conditions), or a rejection or disapproval.

What is a Certification for Sensitive Site Conditions? A Certification for Sensitive Site Conditions is an optional certification prepared by a Professional Engineer (P.E.) or Licensed Environmental Professional (LEP) that is submitted by a registrant. It documents the professional's opinion that the proposed activity is appropriate and necessary, and any adverse effects are minimized and managed appropriately. To expedite authorization of an eligible activity, the commissioner may rely on the Certification for Sensitive Site Conditions to issue a Certificate of Coverage in lieu of an Approval of Registration otherwise required when certain site conditions exist. (See Section 4(c)(4)(C) of the general permit.)

What is a Certificate of Coverage, and how do I obtain one? A Certificate of Coverage is a document provided by DEP acknowledging that a complete registration under this general permit has been submitted, and the proposed activity is authorized as provided in the general permit. It is issued when the proposed activity either requires no specific DEP approval, or when an activity otherwise requiring a DEP approval due to sensitive site conditions has been certified as appropriate and necessary by a LEP or P.E. through submittal of a Certification for Sensitive Site Conditions.

Are there any circumstances when I can begin activity upon submittal of a registration, without any response from DEP? Introduction of oxygen releasing substances into an open excavation associated with remediating a release from a tank with a capacity of less than 2,100 gallons used to store heating oil is authorized when a complete registration is received by DEP; **provided that**, if DEP approval of registration is needed (see Section 3(e) of the general permit), a certification for sensitive site conditions is included with the registration and the proposed activity is not within an area where a public water supply may be affected.

Is a Certificate of Coverage or an Approval of Registration transferable? A permittee may not transfer a Certificate of Coverage or an Approval of Registration to another person. If a transfer to a new person is required, the new person must complete a new registration form and submit it with the applicable fee.

Fees

How much does it cost to register an activity? Fees vary based on the level of DEP review (see Section 4(c)(1) of the general permit):

- For introduction of oxygen releasing substances into an open excavation associated with remediation of a release from a tank with a capacity of less than 2,100 gallons used to store heating oil:
 - if approval of registration is required \$1,000.00
 - if no approval is required, or if certification for sensitive site conditions is permissible and submitted \$500.00
- For activity associated with use of oxygen releasing substances, other than in an open excavation, at any site with solely a heating oil release from a tank with less than 2,100 gallon capacity:
 - if approval of registration is required \$2,000.00
 - if no approval is required, or if certification for sensitive site conditions is permissible and submitted \$1,000.00
- For activity associated with use of oxygen releasing substances and supplemental materials to remediate petroleum at a supervised remediation site (as defined in the general permit):
 - if approval of registration is required \$2,000.00
 - if no approval is required, or if certification for sensitive site conditions is permissible and submitted \$1,000.00
- For other activity authorized pursuant to the general permit, including alternate means of oxygen delivery, activity at unsupervised remediation sites not included above, and activity to remediate pollution other than petroleum: \$4,000.00

Notes regarding Fees:

In accordance with Section 22a - 6(b) of the General Statutes, the fee for municipalities is fifty percent (50%) of the fee listed above.

Registration fees are non-refundable.

Registration fees may be waived for activity associated with remediating pollution originating at single family residences.

Permit Duration

The *General Permit for In Situ Groundwater Remediation: Enhanced Aerobic Biodegradation* is valid for a period of ten (10) years after the date of issuance.

Contact Address

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
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This overview is designed to answer general questions and provide basic information. You should refer to the appropriate statutes and regulations for the specific regulatory language of the different permit programs. This document should not be relied upon to determine whether or not an environmental permit is required. It is *your* responsibility to ensure that all required permits have been obtained.

Table 1. Summary of Registration Requirements. Please reference the indicated general permit section for more detailed information.

	Activity	Sensitive Site Condition	Heating Oil <2100 gal. Tank § 3(e)(2)(B) Note 1	Supervised Remediation Site § 3(e)(2)(A)	Any Other Site Type
Petroleum Oxygen Releasing Substance	§ 3(a)(1) Tank Grave	§3(e)(1)(A) PWS	Approval	Approval note 3	Approval ↑ ↓
		§3(e)(2)(A)(ii) Other supply well	Approval or*	Approval or*	
		§3(e)(2)(A)(iii) Other condition	Register note 2	Certificate note 3	
		None	Register note 2	Certificate note 3	
	§ 3(a)(2) Removable Device	PWS § 3(e)(1)(A)	Approval	Approval	
		§3(e)(2)(A)(ii) Other supply well	Approval or*	Approval or*	
		§3(e)(2)(A)(iii) Other condition	Certificate	Certificate	
		None	Certificate	Certificate	
	§ 3(a)(3) Injection/Emplacement	PWS § 3(e)(1)(A)	Approval	Approval	
		§3(e)(2)(A)(ii) Other supply well	Approval or*	Approval or*	
		§3(e)(2)(A)(iii) Other condition	Certificate	Certificate	
		None	Certificate	Certificate	
Amendment	§ 3(a)(4) Nutrients	§ 3(e)(2)(A)(i)	Approval	Approval or*	
	§ 3(a)(5) Biologic	§ 3(e)(2)(A)(i)	Approval	Certificate	
	§ 3(a)(8) Maintenance Discharge	<i>Requires approved supplemental work plan (no added fee)</i>			
	Phased Implementation	<i>Requires supplemental work plan for approval (unless pre-approved or no sensitive site conditions exist) (no added fee)</i>			
Other	§ 3(a)(6) Non-petroleum	← Approval →			
	§ 3(a)(7) Other Technology				

PWS – Public Water Supply Well Source Water Area, Aquifer Protection Area, or other GAA groundwater quality classification

Approval – indicates an activity that requires approval of registration by the Commissioner

* - indicates an activity for which the Commissioner may issue a certificate of coverage in lieu of an approval when a LEP/P.E. has submitted a certification for sensitive site conditions

Certificate – indicates an activity that requires a certificate of coverage from DEP

Register – indicates an activity that is authorized under the general permit when a complete registration package, including fees, supporting documents, and certifications, to include any permissible optional certifications for sensitive site conditions if an approval is otherwise required. It is not necessary for DEP to issue a certificate of coverage or approval of registration for the activity to be authorized.

Notes: 1- Heating oil must be the only release in the area where activity is proposed.

2- Authorized on day the complete registration package submitted, including any needed certifications for sensitive site conditions; see § 3(e)(3).

3- If supervised remediation site but release at site is solely heating oil from a tank with less than 2,100 gal. capacity, column to left applies.