



**Connecticut Department of
Energy & Environmental Protection**
Bureau of Water Protection & Land Reuse
Remediation Division

Environmental Permitting Fact Sheet

General Permit for In Situ Remediation: Chemical Oxidation

Permit Overview

This general permit is issued under the authority of, and is administered by, the Department of Energy and Environmental Protection (DEEP) Bureau of Water Protection and Land Reuse. DEEP 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 DEEP and the permittee.

The *General Permit for In Situ Remediation: Chemical Oxidation* authorizes introduction of chemical oxidants and necessary associated substances to soil and groundwater to remediate pollution through the chemical destruction of fuels and other organic materials, and in some cases chemical modification of inorganic chemicals. The oxidizing chemical classes authorized are: Peroxides, Permanganates, Ozone, Persulfates, and Percarbonates.

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:

“Chemical oxidant” means any substance that oxidizes another substance, being itself reduced in the process, including permanganates, persulfides, peroxides, percarbonates and ozone, and combinations thereof;

“Petroleum Fuel” means a petroleum product produced for use as fuel for heating or transportation, including but not limited to gasoline, jet fuel, diesel fuel, and heating oil, excluding petroleum

products produced for use as lubricants or solvents, and excluding fuels blended with solvents or wastes or over twenty percent (20%) non-petroleum in origin;

“*Supervised Remediation Site*” means a site at which remediation is being conducted: i) in accordance with sections 22a-133x, 22a-133y, 22a-134a , or 32-9mm of the Connecticut General Statutes, ii) under sections 22a-449(c)-105(h) or 22a 449(d)-106 of the Regulations of Connecticut State Agencies, or iii) to achieve compliance with an order of the commissioner issued pursuant to section 22a-432 of the Connecticut General Statutes; and

“*Zone of Influence*” means the area or spatial volume of groundwater within which some alteration of water quality or inconsistency with water quality criteria is anticipated as a result of the permitted discharge and its interaction with the hydrogeology and pollution on the site.

The specific activities authorized pursuant to this general permit are:

- (1) Emplacement of chemical oxidants and associated substances in an open excavation, resulting from removal of a tank or polluted soil, to remediate petroleum fuel pollution;
- (2) Injection or emplacement of chemical oxidants and associated substances on or below the ground surface to remediate petroleum fuel pollution;
- (3) Injection or emplacement of chemical oxidants and associated substances on or below the ground surface to remediate polyaromatic hydrocarbon or organic solvent pollution;
- (4) Discharge of chemical oxidants and associated substances, below the ground surface, to remediate pollution by other substances amenable to chemical oxidation;
- (5) 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
- (6) The generation, and subsequent presence in water within the area of authorized activity, of intermediate, daughter-, by- and end-products and metabolic byproducts associated with the authorized activities.

Requirements For All Authorized Activity

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.

All authorized activity must comply with the conditions set forth in the general permit. General permit conditions include: supervision by qualified individuals; consent of property owners; notification of abutters and others; prohibited activities; discharge limits;

management practices; and monitoring requirements, especially with respect to potential impacts to supply wells and excursions beyond the predicted zone of influence. The general permit also requires reporting of activity, specific notification of any indications of unexpected outcomes, and mitigation of adverse conditions caused by the discharge.

Evidence of a release of pollution is required (either qualitative or quantitative) for any activity to remediate the pollution to be authorized pursuant to this general permit. DEEP authorization of remediation activity does not provide a guarantee that remedial goals will be met by the proposed activity.

Authorization of Activity

Registrations for activities to remediate activities with potential to impact a public water supply or on certain water company lands ***must*** be approved by DEEP before activities may begin, as identified in Section 3(e)(1) of the general permit.

Registrations for most other activities must be also be approved by DEEP, however DEEP may instead issue a certificate of coverage in lieu of an approval for certain sites: 1) polluted by petroleum fuel, polyaromatic hydrocarbons, or organic solvents that are in supervised remediation programs or 2) polluted solely by heating oil released from a 2100 gallon or smaller tank when the zone of influence is less than 30 feet across.

Registration

Who must register?

Anyone wishing to introduce chemical oxidants and any other necessary supplemental substances into soil or groundwater to remediate pollution. The registrant may be a property owner or, if acting with the owner's permission, an "other responsible party", environmental consultant or remediation contractor.

When should a registration form be submitted?

(1) A person who wishes to introduce chemical oxidants and any necessary supplemental substances, into soil or groundwater to remediate pollution must register under this general permit for this activity to be authorized.

(2) 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 oxidants 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.

Note: A permittee must submit a new registration if there will be significant changes in the type of activity, area of activity, or nature of oxidizing substances introduced.

What must I submit to register?

A person ("registrant") must submit to DEEP a *complete* registration form with the appropriate fee, supporting documents, and certifications, including a Certification by a Licensed Environmental Professional (LEP) or a Professional Engineer (P.E.)

The required supporting documents include a location map, a site conditions report, a site plan, a work plan, a monitoring plan, and other documents.

What is the required Certification for?

A Certification prepared by a Professional Engineer (P.E.) or Licensed Environmental Professional (LEP) is submitted by a registrant as part of the registration. It documents the professional's opinion that the proposed activity is appropriate and necessary and is based on an appropriate site characterization; that the activity design and implementation plan is consistent with prevailing standards; that implementation is not expected to affect water quality beyond the zone of influence; and that monitoring will ensure any adverse effects are minimized and managed appropriately.

The Certification may be used by DEEP to expedite review when an Approval of Registration is not required.

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. Adjacent parcels that are associated with a single source of pollution are considered a single site in this general permit, and may all be registered on the same form. Separate unassociated sites must each be registered on separate forms.

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 DEEP approval.

DEEP Response

How do I know my registration has been accepted by DEEP and my actions are authorized?

DEEP will issue either an Approval of Registration or a Certificate of Coverage, as confirmation that the actions proposed in the registration are authorized.

How is an Approval of Registration obtained for an activity?

When the proposed activity requires specific DEEP approval 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 Certificate of Coverage, and how do I obtain one?

A Certificate of Coverage is a document provided by DEEP 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 in lieu of an approval when the proposed activity requires no specific DEEP approval. To expedite authorization of an eligible activity, the commissioner relies on the P.E. or LEP Certification provided with the registration to issue a Certificate of Coverage after a screening-level review.

Are there any circumstances when I can begin activity upon submittal of a registration, without any response from DEEP?

There are no provisions for self-implementation, in all cases the initial discharge may not begin until DEEP has confirmed the activity is authorized.

When multiple phases of discharge activity are desired, in some circumstances the subsequent phases may be self-implementing after advance notice to DEEP.

Is a Certificate of Coverage or an Approval of Registration transferable?

A permittee may transfer a Certificate of Coverage or an Approval of Registration to another person. If a transfer to a new person is required, the parties must complete a DEEP license transfer form and submit it with the applicable fee.

In addition, if the supervising LEP or P.E. changes with the transfer, the new LEP or P.E. must provide an update to the certification submitted with the original registration.

Fees

How much does it cost to register an activity?

The fee is \$500.

Notes regarding fees:

- 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 Remediation: Chemical Oxidation* is valid for a period of ten (10) years after the date of issuance.

There is no specific limit on the duration of any individual authorized activity however the Commissioner may impose a limit as a condition of approval of registration.

Contact Address

REMEDICATION DIVISION, 2ND FLOOR
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127
860-424-3705

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.