



Instructions for Completing the General Permit Registration Form for In Situ Groundwater Remediation: Enhanced Aerobic Biodegradation

Use these instructions to complete the registration form for the General Permit for In Situ Groundwater Remediation: Enhanced Aerobic Biodegradation (DEP-REM-REG-001). These instructions are not a substitute for the requirements of any relevant statutes or regulations. You should review all applicable laws prior to completing the registration form. Remember, it is your responsibility to comply with all applicable laws.

A completed registration form must be submitted for all activities taking place at a single site for which the registrant seeks authorization under this general permit. Activities taking place on more than a single parcel may not be consolidated on one registration form unless they are associated with the remediation of a single pollution release. You may package multiple registrations with one *Permit Application Transmittal Form*.

Introduction

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.

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; and

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 fuels blended with solvents or wastes or over 20% non-petroleum in origin.

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 fuel pollution**;

- (2) Emplacement of removable devices containing oxygen releasing substances to remediate **petroleum fuel pollution**;
- (3) Injection or emplacement of oxygen releasing substances on or below the ground surface to remediate **petroleum fuel 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) Discharge of oxygen or ozone in gaseous form, or of oxygen, ozone or dilute hydrogen peroxide contained in water below the ground surface, to remediate **petroleum fuel pollution**;
- (7) Discharge of oxygen or ozone in gaseous form or of oxygen, ozone, dilute hydrogen peroxide contained in water, or oxygen releasing substances into open excavations or below the ground surface, to enhance aerobic biodegradation of **biodegradable pollutants other than petroleum fuel**;
- (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 for other activity under this permit; and
- (9) The generation, and subsequent presence in water within the area of authorized activity, of metabolic byproducts associated with the authorized activities.

Following submittal of all required materials for this general permit, the registrant, in most cases, will be notified in writing if the department will authorize the activity (with or without conditions) or if the registration has been rejected. An authorization will either be in the form of:

1. Approval of Registration, or

2. Certificate of Coverage

An Approval of Registration would be issued for proposed activities that require specific DEP approval and no optional Certification for Site Conditions is permissible or provided.

A Certificate of Coverage would be issued for proposed activities that require no specific DEP approval, or when an activity otherwise requiring a DEP approval due to certain site conditions has been certified as appropriate and necessary by a Licensed Environmental Professional (LEP) or Professional Engineer (P.E.) through the submittal of a Certification for Site Conditions.

A Certification for Site Conditions is an optional certification prepared by a LEP or P.E. that is submitted by a registrant. It is explained in further detail in Part VII-B of these instructions.

There is one exception to the above authorization process. One activity is allowed upon submittal of the registration without any response from DEP, provided the proposed activity meets the following requirements:

- The activity is limited to the introduction of oxygen releasing substances to supply 150 pounds or less of oxygen into an open excavation for the purpose of remediating a release of heating oil from a tank with a capacity less than 2,100 gallons; and
- the proposed activity is not on water company land, within an area where a public water supply may be affected or within 2-feet of bedrock; and
- an *optional* Certification for Site Conditions is included with the registration if the activity is within 75 feet of a supply well other than the property owner's or within 25 feet of a sensitive site condition other than a basement. (Without such certification for sites with these conditions a full review and approval of registration by DEP is necessary.)

Figure 1 of these instructions outlines when an approval of registration or certificate of

coverage may be issued. The commissioner may always issue a conditional approval instead of a certificate of coverage if deemed appropriate.

Any questions that you may have regarding the General Permit for In Situ Groundwater Remediation: Enhanced Aerobic Biodegradation should be directed to the Remediation Division at 860-424-3705.

Who May Apply for General Permit Authorization?

Any person or municipality seeking authorization under the subject general permit to introduce oxygen, at a controlled rate, and any necessary supplemental substances into soil or groundwater to enhance in-situ aerobic biodegradation of pollution must file a registration with DEP.

A registrant may be a property owner, an “other responsible party”, an environmental consultant, or a remediation contractor.

How To Apply

Your general permit registration must include the following:

- A *Permit Application Transmittal Form* (DEP-APP-001);
- An original *General Permit Registration Form for In Situ Groundwater Remediation: Enhanced Aerobic Biodegradation* (DEP-REM-REG-001) and all supporting documents;
- Two of copies of the registration package;
- The applicable initial fee, paid by check or money order, made payable to the “Department of Environmental Protection”.

You must submit the above materials together as a package to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

If the proposed activity is within any part of an aquifer protection area or a public drinking water supply source water area, or if the activity is on land owned by an owner or operator of a public

water supply, a duplicate original or certified copy shall be filed with the Department of Public Health at the following address:

DRINKING WATER SECTION
DEPARTMENT OF PUBLIC HEALTH
410 CAPITOL AVENUE – MS #51 WAT
P.O. BOX 340308
HARTFORD, CT 06134-0308

If the proposed activity is within 200 feet of any water supply well pumping over ten (10) gallons per minute, or within seventy-five (75) feet of any other water supply well, a duplicate original or certified copy shall be filed with the local Director of Health.

Refer to the Available Resources Section at the end of these instructions to obtain all required documents related to the subject general permit.

Throughout these instructions there is text or bracketed reference to specific parts of the *General Permit for In Situ Groundwater Remediation: Enhanced Aerobic Biodegradation*. Please refer to the general permit for additional information.

When submitting your general permit registration, label your supporting documents as directed on your registration form and always include, on each document, the registrant's name as indicated on the *Permit Application Transmittal Form*. When additional space is necessary to answer a question stated in the registration, please insert additional sheets by the appropriate question. Label each sheet with the applicant's/registrant's name as indicated on the *Permit Application Transmittal Form*, along with the corresponding part number and question number indicated on the general permit registration form. You should retain a copy of all documents for your files.

Part I: Registration Type

Check the appropriate box to specify if the registration is for a *new* authorization under a general permit, a *replacement* of an existing individual permit or registration, a *renewal* of

an existing authorization under a general permit, or a *modification* of an existing authorization under a general permit. If your activity has been formerly licensed by an individual permit, registration or other authorization, or if you are applying for a renewal or modification of an existing general permit authorization, please identify the previous or existing permit/authorization/registration number in the space provided [GP: §4(c)(2)(T)].

Include the proposed start and end dates for your activity [GP: §4(c)(2)(T)], including all proposed project phases but excluding post-activity monitoring. For existing activity enter the actual start date. Ensure that project planning includes a time provision for DEP to process your registration.

Any person proposing to transfer a DEP permit must submit a completed *Permit Transfer Form* (DEP-APP-006) and transfer fee to DEP. The *Permit Transfer Form* may be used for changes in owners and operators of the licensed activity; if other changes are proposed to the facility, the site, and/or to facility operations, the proposed transferee must also request a permit modification. For further information concerning permit transfers or to obtain a *Permit Transfer Form*, please contact the Permit Assistance Office at 860-424-3003.

Principal Location

Fill in the appropriate box to indicate the principal location where the proposed subject activity will take place including the name by which the site or facility is commonly known and/or uniquely identified, the street address, and official town. Any local place name that clarifies the location within the official town may be included after the address within brackets.

Part II: Fee

Each proposed subject activity requires a separate registration and fee. The registration will not be processed without the fee. The payment should be in the form of a check or money order made payable to “Department of Environmental Protection”.

Several factors determine the required fee including: the nature of the proposed activity, the environmental setting of the parcel, and the level of DEP review required in processing the registration. These factors are incorporated by a tiered base fee [GP: §4(c)(1)(A) to GP: §4(c)(1)(C)] that may be reduced [GP: §4(c)(1)(D)] when full DEP review for approval is not necessary. Refer to the following guidelines and Figure 2 of these instructions to determine the required fee.

- 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, the base fee is \$1,000.00
 - if Approval of Registration is not required, or if Certification for Site Conditions is permissible and submitted, the reduced fee is \$500.00
- For activity associated with in situ remediation of pollution by introducing oxygen for enhancement of aerobic biodegradation 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, the base fee is \$2,000.00
 - if Approval of Registration is not required, or if Certification for Site conditions is permissible and submitted, the reduced fee is \$1,000.00
- For activity associated with in situ remediation of petroleum fuel pollution by enhancement of aerobic biodegradation at a supervised remediation site (as defined in the general permit):
 - if Approval of Registration is required, the base fee is \$2,000.00
 - if Approval of Registration is not required, or if Certification for Site Conditions is permissible and submitted, the reduced fee is \$1,000.00
- For other activity pursuant to the general

permit, including activity at sites not in remedial programs and not included as heating oil sites above, and for any activity to remediate pollution other than by petroleum fuel, the base fee is \$4,000.00

It should be noted that fees may be waived for any activity addressing pollution originating from a single family residence. Check the appropriate box and sign where indicated to request a fee waiver.

Additionally, fees for sites owned by municipalities may be reduced by fifty percent (50%), even when already reduced due to other general permit provisions [GP- §4(c)(1)(E)].

Check the boxes provided to indicate the applicable base fee and the reductions taken, and enter the fee paid in the space provided.

Part III: Registrant Information

When completing this part, please use the following standards:

- *Name* - Provide the full, legal *company/firm* name. (If identifying an entity registered with the Secretary of the State, fill in the name exactly as it is shown on such registration.) If identifying an *individual*, provide the full legal name (include title and suffix) in the following format: Title (Ms, Dr, etc.); First Name; Middle Initial; Last Name; Suffix (Jr, PE, PhD, etc.)
 - *Phone* - Unless otherwise indicated, the phone number provided should be the number where the individual can be contacted during daytime business hours.
1. *Applicant/Registrant* [GP: §4(c)(2)(A)]- Fill in the applicant/registrant's name and phone number exactly as it appears on the *Permit Application Transmittal Form* (DEP-APP-001). The registrant may be the property owner, or with the permission of the property owner may be an "other responsible party", an environmental consultant, or the remediation contractor. Describe the registrant's interest in the activity proposed. Check the appropriate box if there are co-registrants.

2. *Primary Parcel Owner* [GP: §4(c)(2)(B)]- List the owner of the primary parcel where the proposed activity is to take place, if different from the *Applicant/Registrant*. If the primary parcel owner is not a co-registrant you must provide an explanation of how you have access permission for your activity, and include supporting documentation in Attachment F.
3. *Attorney* [GP: §4(c)(2)(C)]- It is not required that a registrant be represented by an attorney or any other agent. If you do have an attorney who is advising you for this activity, complete this section.
4. *Engineers or Consultants* [GP: §4(c)(2)(D)]- List the principal engineer or other consultant employed or retained to prepare the registration and/or to design, construct, operate or supervise the proposed activity. Be sure to describe the service provided.
5. *Primary Technical Contact* - List, if different than the Registrant or the contact identified in question four (4), the primary technical contact for the proposed activity. This may be a remedial contractor implementing the activity, but a different entity than the design consultant. Describe this contact's role relative to the person listed for question (4).
6. *Additional Parties* - List any additional parties involved with the registration or the proposed activity. Identify how the party is involved with the proposed activity and include the relevant information described above for each.

Do not list additional parcel owners whose land is affected by your activity in this box, but instead enter them in Table 1 of the registration form (see Part IV).

Part IV: Site Location and Additional Parcels

1. *Primary Parcel* [GP: §4(c)(2)(E)]- Fill in the name and location of the parcel where the pollution originates. If the proposed activity or expected zone of influence will

affect any nearby properties, those properties would be considered *additional parcels* and shall be identified later in the registration.

Please note that if the proposed activity will be treating the distal edge of a plume that is already attenuated at the source, the *primary parcel* would be considered the parcel where the pollution is remaining.

Include the street address and municipality. If the property does not have a street number, describe the location in terms of the distance and direction from an obvious landmark such as an intersection with another roadway, a bridge, or a river. For example, "... on River Street, approximately 1000 feet north of its intersection with Bear Swamp Road."

Provide the latitude and longitude, in degrees, minutes and seconds, of the exact location of the proposed activity. In addition, please indicate the method used to determine the latitude and longitude coordinates. There are a variety of methods for deriving latitude and longitude coordinates, with the Global Positioning System (GPS) being the most accurate.

2. *Parcel Character* [GP: §4(c)(2)(F)]- Check the appropriate box to indicate the use of the property. A residential property is defined as real property with a house, apartment, trailer, mobile home, condominium or other structure, composed of up to four residential units solely occupied by individuals as dwelling. Include for non-residential properties a single phrase description of their general nature.
3. *Additional Parcels* [GP: §4(c)(2)(E)]- Fill in Table 1 (page 9 of the registration form) with the appropriate information for any additional parcels that may be affected by the proposed activity or expected zone of influence. Describe the general character of the parcel land use in the column in Table 1. Written permission is required from the owners of parcels where any part of the proposed activity or expected zone of influence will be present. Note the nature of the access permission in Table 1 of the registration form and include, as Attachment F, copies of

supporting documentation of access permissions for all additional parcels.

Part V-A: Site Information – Site Setting

Part V-A of the registration collects site specific information intended to ensure that appropriate divisions of DEP, outside of the Remediation Division, will partake in review of the registration as necessary.

1. Review the following sections to determine if the specific site setting aspects apply to the primary parcel, any associated parcels or any part of the expected zone of influence[GP: §4(c)(2)(G)].

You must affirmatively indicate if none of the specific site setting circumstances apply, using the box provided.

A. *Coastal Management Act Consistency*

Activities within the state's coastal area must be consistent with the Connecticut Coastal Management Act, i.e., sections 22a-90 through 22a-112 of the Connecticut General Statutes (CGS). You may be required to complete a *Coastal Consistency Review Form* (DEP-APP-004) to demonstrate that the activity is consistent with the standards and policies of the Connecticut Coastal Management Act. To determine whether this requirement pertains to you, you must first decide if your activity is, or is proposed to be, located in either the coastal area or the coastal boundary.

The *coastal area*, as defined in CGS section 22a-94 (a), includes the land and water within the following towns:

Branford	Guilford	Old Saybrook
Bridgeport	Hamden	Orange
Chester	Ledyard	Preston
Clinton	Lyme	Shelton
Darien	Madison	Stamford
Deep River	Milford	Stonington
East Haven	Montville	(Borough)

East Lyme	New London	& Town of)
Essex	New Haven	Stratford
Fairfield	North Haven	Waterford
Greenwich	Norwalk	West Haven
Groton (City	Norwich	Westbrook
& Town of)	Old Lyme	Westport

The *coastal boundary*, as defined in CGS section 22a-94(b), is a designated region within the coastal area. It is delineated on DEP-approved coastal boundary maps which are available for review at the DEP Office of Long Island Sound Programs (OLISP), the DEP File Room, and municipal offices of towns located in the coastal area. Copies of these maps may also be purchased from DEP Maps and Publications.

Activities within the coastal boundary:

Check the appropriate box to indicate if the proposed activity is within a coastal boundary. If your activity is, or is proposed to be, located in the coastal boundary, and you are applying for either a new authorization under a general permit or a modification to an existing authorization under a general permit, you must complete a *Coastal Consistency Review Form* (DEP-APP-004) and submit it with your registration as Attachment G.

For renewals of existing authorizations for activities located within the coastal boundary, you are not required to submit a *Coastal Consistency Review Form* with your initial registration materials.

However, DEP may notify you that submission of this form is required to process your registration depending upon the specific activities to be conducted and their potential impact on coastal resources.

Activities outside the coastal boundary but within the coastal area:

For general permit registrations for activities located outside of the coastal boundary, but within a town in the coastal area, you are not required to submit a *Coastal Consistency Review Form* with your initial registration materials. However, DEP may notify you that

submission of this form is required to process your registration depending upon the specific activities to be conducted and their potential impact on coastal resources.

If you need copies of the *Coastal Consistency Review Form*, refer to the Available Resources Section at the end of these instructions. For assistance in completing the form, or if you have questions on this process, call OLISP at 860-424-3034.

B. *Federally Recognized Indian Lands*

Check the appropriate box to specify if the proposed activity will take place on federally recognized Indian lands.

C. *Conservation/Preservation Restriction*

Check the appropriate box to indicate if the proposed activity will take place on a parcel that is subject to a conservation or preservation restriction. If applicable, submit a letter from the holder of the restriction verifying that the registration is in compliance with the terms of the restriction as Attachment H.

D. *Natural Diversity Data Base - Endangered or Threatened Species*

Section 26-310 (a) of the Connecticut General Statutes states that each state agency, in consultation with the DEP commissioner, shall conserve endangered and threatened species and their essential habitats, and shall ensure that any activity authorized, funded or performed by such agency does not threaten the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat designated as essential to such species.

Please refer to the “*Connecticut Natural Diversity Data Base- (NDDDB) Review of Endangered or Threatened Species*” located on the DEP website

at: www.ct.gov/dep/endorangeredspecies (Review/Data Requests) to determine if your activity is located within an area identified as a habitat for endangered, threatened or special concern species. If applicable, include copies of any correspondence to and from the NDDB staff, including a copy of the completed *CT NDDB Review Request Form* with your registration as Attachment I.

Check the appropriate box to indicate if the proposed activity or expected zone of influence will take place on or within an area identified as a habitat for endangered, threatened or special concern species as identified on the “State and Federal Listed Species and Natural Communities Map. Specify the date of the map in the appropriate space. If yes is checked, DEP may request additional information.

2. Check all the appropriate boxes to indicate if the proposed activity, including access and support activities, or any part of the expected zone of influence will occur within 100 feet of any watercourse, coastal water, inland wetland, or tidal wetland [GP: §4(c)(2)(H)]. Further indicate if the activity is to be located within any identified floodplain; or within stream channel encroachment lines. Check the appropriate box to indicate if the above does not apply to the proposed activity. If any of the above apply, local permits or state reviews may be required.
3. Provide the name, distance from the zone of influence, and the surface water quality goal, as identified in the *Connecticut Water Quality Standards*, for the nearest down gradient stream or surface water body [GP: §4(c)(2)(I)]. (See “Available Resources”.)
4. Indicate if the proposed activity or the predicted zone of influence is located within one mile of any public water supply well [GP: §4(c)(2)(J)]. Consult “Available Resources” below for guidance in determination of this information.

Part V-B: Site Information – Site Character

Information provided in Part V-B of the registration helps DEP quickly identify any administrative programs that may already be involved with the site.

1. Check the appropriate boxes to indicate if the primary parcel for the proposed activity is subject to remedial obligations within the framework of the remediation and regulatory programs listed on the registration form [GP: §4(c)(2)(K)]. Affirmatively check the appropriate box to indicate if none apply for the primary parcel. Include in the registration form Table 1 “character” column appropriate information regarding remedial obligations that apply separately or uniquely to additional affected parcels. Affirmatively check the appropriate box to indicate if none apply to any other parcels. This information will be used to ensure cross program coordination within DEP. If boxes in this section are checked, DEP staff may contact you for additional details.
2. If the site is subject to any of the above remedial programs, indicate if supervision of the site has been delegated to DEP, an LEP or if a delegation of supervision has not yet been made. Fill in the name and license number of the supervising LEP as appropriate.
3. Check the appropriate boxes to indicate if the primary parcel is subject to any of the regulatory programs listed on the registration form [GP: §4(c)(2)(L)]. Affirmatively check the appropriate box to indicate if none apply to the primary parcel. Fill in all associated identification numbers. Include in the registration form Table 1 “character” column appropriate information regarding regulatory programs that apply separately or uniquely to additional affected parcels, including associated ID numbers. Affirmatively check the appropriate box to indicate if

none apply to any other parcels. This information will be used to ensure cross program coordination within DEP and other departments. In addition, sites in these programs may have added considerations needed in developing a contaminant of concern (COC) list.

Part V-C: Site Information – Site Conditions

Part V-C of the registration collects site specific information detailing the existence of sensitive site conditions, the presence of pollution, proximity to public water supplies, proximity to public wells and groundwater quality goals in the area of the proposed activity. This further helps DEP determine the administrative activity required to process the registration. Additionally, refer to Figure 1 of these instructions to determine how the registration will be processed.

Check the appropriate box to indicate if a Certification for Site Conditions is included as part of the registration. The commissioner may rely on such a certification to expedite the review process.

1. Check the appropriate boxes to indicate if the subject activity or expected zone of influence will occur at a location where sensitive site conditions exist as listed on the registration form [GP: §4(c)(2)(M)]. Affirmatively check the appropriate box to indicate if none apply. This information is generally derived from the site characterization study. For site conditions associated with knowledge of groundwater complete the appropriate box, answering “don’t know” if no groundwater data are available. Discuss in Part V-D how any conditions present or unknown are addressed in the general permit registration supporting documents.
2. Check the appropriate boxes to indicate the known character and extent of pollution [GP: §4(c)(2)(N)]. Understanding of the nature of the pollution problem through site characterization is important for design of remedial and monitoring activity. Briefly indicate the nature of your evidence of a

release. If recoverable free product remains present at the time of registration, describe in Part V-D how it will be removed to meet permit requirements. Discuss in Part V-D how any non-petroleum fuel pollutants or additional AOCs are addressed in the general permit registration supporting documents. Also discuss in Part V-D why “don’t know” answers are adequately addressed by the activity design.

3. Check the appropriate boxes to define the proximity of the proposed activity or expected zone of influence to a public water supply [GP: §4(c)(2)(O)]. Affirmatively check the appropriate box to indicate if none apply. Consult “Available Resources” below for guidance in determination of this information. Proximity to public water supplies will typically require approval of your registration prior to implementation. In addition, a duplicate original or certified copy of your registration must be sent to the Department of Health, who may wish to review the proposed actions. Indicate the date this copy was or will be sent in the space provided.
4. Check the appropriate box to indicate the groundwater classification, pursuant to CGS section 22a-426, for the area of the proposed activity and anticipated zone of influence [GP: §4(c)(2)(P)].
5. Check the appropriate boxes to indicate the proximity to water supply wells for the area of the proposed activity and anticipated area of influence [GP: §4(c)(2)(Q)]. Consult “Available Resources” below for guidance in determination of this information. Explicitly specify if the only water supply well identified is owned by the registrant or primary parcel owner. Proximity to private supply wells requires that a duplicate original or certified copy of your registration be sent to the local Director of Health, who may wish to review the proposed actions. Indicate the date this

copy was or will be sent in the space provided.

6. Fill in the appropriate information on Table 2 (page 9 of the registration form) to indicate the presence of public water supply wells within 1,000 feet and also all other water supply wells within 500 feet of the proposed activity or anticipated zone of influence [GP: §4(c)(2)(Q)]. For public water supply wells, include the PWS ID number in the “remarks” column. Identify how the list of wells was developed, and specifically indicate in the box provided if no wells are present.

If the data for questions 5 and 6 is not based on a water supply well receptor survey consistent with prevailing standards and guidance discuss in Part V-D.

When your responses to any questions in Part V include “don’t know” answers, an explanation of how these are not relevant to the decision process for authorizing your proposed activity should be provided in Part V-D. Also, DEP staff may contact you for more information, with a possible delay in authorization.

Part V-D: Site Information – Environmental Effect Mitigation

The previous parts of the registration collect information specific to the site conditions and character. The purpose of Part V-D is to allow the registrant to *summarize* how the site conditions and character have been taken into account and how any potential adverse environmental effects of the proposed activity will be mitigated [GP: §4(c)(2)(R)]. The text included here should be an executive summary of relevant parts of the supporting documentation for the general permit registration. Attach continuation sheets as necessary.

Include a brief discussion of how any potential adverse impacts associated with activity in areas identified in Part V-A – Site Setting (and listed in Section 3(b) of the General Permit) are mitigated by design of the proposed actions.

Separately briefly discuss how the work plan and monitoring plan provide for mitigation of adverse impacts potentially associated with site conditions

identified in Part V-C – Site Conditions, and how the presence of free product or pollutants other than petroleum fuels are addressed.

Part VI: Activity-Specific Information

Part VI of the registration form focuses on identifying the nature of the proposed activity. You are asked to describe the pollution that the proposed activity is intended to treat, the substances that you are proposing to introduce into groundwater, the method by which the substance will be introduced, and details of the proposed activity. This further helps DEP to determine the administrative activity required to process the registration (see also figure 1 of these instructions). Check the appropriate boxes and fill in the appropriate information to fully describe the nature of the proposed activity. Consult the general permit as necessary in completing this section.

1. Indicate the nature of the pollution the proposed activity is intended to treat. Note that any pollutant other than heating oil and petroleum fuel will always require an Approval of Registration issued by the commissioner.
2. Indicate if the pollution is the result of a release from a storage tank with a capacity equal to or less than 2,100 gallons. Such tanks may be regulated differently than larger tanks.
3. Indicate if the release is solely associated with a release from a residential heating oil tank. Such tanks may be regulated differently than non-residential tanks.
4. Indicate the substance that is proposed to be introduced into groundwater. If more than one substance will be introduced, check all that apply. Identify the specific product(s) being used in the space provided.
5. Indicate how the proposed substance will be introduced to the groundwater. If more than one technique is proposed, indicate all that apply.
6. Indicate if the proposed activity entails the

introduction of substances into bedrock, or within 2 feet of bedrock, and whether this determination is based on borings, test pits, extrapolation of local geologic conditions, or other information. Note that activities of this nature will always require an Approval of Registration issued by the commissioner.

7. Indicate how many pounds of oxygen are proposed to be supplied to the groundwater in the space provided. Several permit requirements are different for small projects supplying less than 150 pounds of oxygen.
8. Indicate if more than 50,000 gallons per day of water/solution will be managed. DEP will evaluate if groundwater withdrawal or diversion program input is needed.
9. Indicate if the project will be multi-phased, including scaling up of a project scope from an authorized pilot study. Note that multi-phased projects may require evaluation and report submittal prior to the implementation of subsequent phases, but DEP may waive its required approval of such reports for a planned multiphase action with a clearly defined process for evaluation and implementation of subsequent phases. Refer to Section 5(a)(9) of the general permit for more details.
10. Indicate if an optional Certification for Site Conditions is being submitted as part of the registration. Note that a Certification for Site Conditions may expedite the processing of the registration and, under certain circumstances, DEP may issue a Certificate of Coverage in lieu of an Approval of Registration from the commissioner as otherwise required.

Part VII-A: Supporting Documents

Check the appropriate box by each attachment being submitted as verification that all applicable attachments have been submitted. Please label all attachments as referenced in the registration form and these instructions and be sure to include the name of the registrant as indicated on the *Permit Application Transmittal Form*. The attachments may be submitted under one cover (e.g. presented

as a single report) as long as each section is properly labeled with the proper attachment letter.

Attachment A: Topographic Quadrangle Map

Submit as Attachment A an 8 ½” x 11” copy of the relevant portion or a full-sized original of a USGS Quadrangle Map, at a scale of 1:24,000, indicating the exact location of the project site and proposed activities [GP: §4(c)(2)(S)]. The quadrangle name should be noted on the copy of the map submitted.

DEP will use this map in its review of the site setting and to enter your project location into its Geographic Information System (GIS) in conjunction with the latitude and longitude you provide. It is important that you accurately locate the project site and proposed activities because the GIS generates natural resource information relevant to your site. An inaccurate description of the project location may delay the processing of your registration.

Attachment B: Site Conditions Report

Submit as Attachment B a site conditions report, as detailed in Section (4)(c)(3)(A) of the general permit. The purpose of a site conditions report is to describe the environmental conditions at the site and the character of the release that the proposed activity is aimed at remediating. Additionally, the site conditions report should describe how the proposed activity (e.g. discharge) will potentially affect the environment and the targeted pollution.

If the site is a residential property with only a heating oil release originating on the site, the presumptive conceptual model is simple, and the site conditions report requirements are limited to the following:

- a description of the origin and character of the petroleum release, and all details (construction, size, depth, age, etc.) of any associated tanks;
- an identification (“site review”) of any historical releases of pollution, non-

- residential uses, or importation of fill at the site;
- a description of any remediation conducted to date to prevent further releases or remove free product, polluted soil, or polluted groundwater; and
- a summary of available information regarding hydrogeology, groundwater flow, and groundwater quality, including, if known, depths to water table and bedrock, and, if known for groundwater within the release area, dissolved iron and dissolved manganese concentrations.

If the site is not a residential property, or is a residential property with a release other than heating oil, the site conditions report must instead include a description of the conceptual site model and a discussion of how it relates to the activity proposed, including the following specific information:

- the origin and character of the petroleum or other pollutant release and all details of any associated tanks;
- a review of current and past activities at and uses of the site, identification of any potential pollutants other than petroleum that may be present as a result of releases due to such activity or use or due to importation of polluted fill, and identification and description of specific areas of concern that may be affected by the proposed activity;
- a description of any remediation conducted to date to prevent further releases or remove free product, polluted soil, or polluted groundwater;
- a description of the hydrogeology, groundwater flow and groundwater quality at the site, including depths to water table and bedrock, and, except for sites where the proposed activity is only emplacement of oxygen releasing substances in an open excavation resulting from removal of a tank or polluted soil, for groundwater within the release area, dissolved iron and dissolved manganese concentrations, total petroleum hydrocarbon concentration, chemical oxygen demand, pH, dissolved oxygen, and oxidation-reduction potential; and
- a delineation of the extent of polluted soil, free product, and groundwater pollution present, except where the proposed activity is only

emplacement of oxygen releasing substances in an open excavation resulting from removal of a tank or polluted soil.

Please note that additional requirements to the Site Conditions Report, pursuant to Section 4(c)(3)(A)(iii) of the general permit, may apply to certain sites, especially those that checked boxes within Part V-B of the registration. These sites may require site specific evaluation of constituents of concern.

Attachment C: Site Plan

Submit as Attachment C a legible drawing, as detailed in Section (4)(c)(3)(B) of the general permit, of the location of the property where the activity will occur. The plan must show a north meridian arrow and be drawn to scale, with the scale shown as either a numerical ratio (e.g., 1:200) or as a bar scale (e.g., 1" = 40').

The plan must show, at a minimum:

- the site and parcel boundaries;
- the location of the subject activity;
- the location, on the site and off-site but within 100 feet of the proposed activity or zone of influence, of structures, paved areas, water supply wells, leaching systems, known wetlands boundaries, floodplains, watercourses, and existing tanks (including pipelines, and fill and dispenser locations), drains, utilities and other structures, along with notes of any installed corrosion protection on any underground structures;
- the former location of any removed tanks (including pipelines, and fill and dispenser locations) and petroleum polluted soils, and the extent and depth of remaining petroleum polluted soil;
- the location of any other area of concern identified pursuant to the requirement of Section 4(c)(3)(A) of the general permit;
- the locations of all existing and proposed wells, and identification of any proposed discharge monitoring wells;
- the inferred direction of groundwater flow and extent of any identified free product and groundwater pollution; and

- the locations and expected zone of influence of each specific point where substances will be emplaced on or below the ground surface, and the resultant composite zone of influence.

Attachment D: Work Plan

Submit as Attachment D a work plan, as detailed in Section (4)(c)(3)(C) of the general permit, describing all activities associated with the proposed activity including the following:

- information regarding the exact substance(s) to be introduced, including identification of all chemical constituents, any additives, and any amendments or supplements, including cultured biologic organisms, proposed to be used;
- evaluation of the interaction between the proposed substance(s) to be emplaced and the location's aquifer matrix and groundwater, and also any pollutants identified as present, including those identified based on the results of any evaluation conducted in fulfillment of Section 4(c)(3)(A)(iii) of the general permit, and discussion of how any adverse interaction will be mitigated and monitored;
- results of any treatability studies, bench scale studies, or pilot studies conducted to gather information to design the proposed action;
- for activity pursuant to Section 3(a)(4) of the general permit, detailed evaluation of the necessity for any proposed supplements or amendments, based on monitoring nutrient levels and pH in groundwater prior to any activity, determination of the specific supplements or amendments needed, and calculations of the amounts and concentrations required;
- details of the concentration and amount of substance(s) to be used, including the total pounds of oxygen that will be supplied, the data and calculations used to determine the amount, its proposed distribution relative to the pollution to be remediated, and a description of the detailed emplacement locations and depths, their expected zones of influence, and specific emplacement mechanisms, including proposed injection pressures and flow rates, and a discussion of how these activities will be monitored at the discharge point(s);

- for activity pursuant to Section 3(a)(5) of the general permit, microcosm studies of biologic populations and levels and the evaluation and details of the proposed biologic augmentation;
- details of the procedures for material storage and handling, including procedures for reagent handling, mixing, measurement, applicable controls and alarms, and methods for disposal of excess or off-specification material; and
- contingency procedures, including spill management procedures, actions to take in response to observations during active emplacement, and actions to take in response to monitoring results.

Attachment E: Monitoring Plan

Submit as Attachment E (except as noted below) a monitoring plan describing the proposed monitoring program, as detailed in Section (4)(c)(3)(D) of the general permit. The plan should be designed to meet the requirements of Section 5(b) of the general permit, monitor the performance of any discharge delivery system, document the effect of the proposed activity on the waters of the state and include the following:

- identification of water supply wells within 75 feet of the proposed activity, or otherwise required or proposed to be monitored pursuant to this general permit, and specifics of the well and water system construction;
- identification of proposed discharge monitoring wells outside the expected zone of influence, and their hydrogeologic relationship to such zone, as well as any proposed activity monitoring at discharge points or monitoring wells within the expected zone of influence, and, for all proposed monitoring wells, the specifics of their construction and the rationale for their inclusion in the monitoring program;
- a description of how any discharge that is active for more than 24 hours or is pressurized will be evaluated for its effects on the hydrogeologic flow regime and its

- conformance with the zone of influence identified in the registration;
- a list of project-specific constituents of concern, including parameters specific to the substance proposed for discharge, the pollutant present, and those based on the results of any evaluations conducted in fulfillment of Sections 4(c)(3)(A)(iii) and 4(c)(3)(C) of the general permit, and a proposed project-specific monitoring parameter list, including the rationale for inclusion or exclusion from the monitoring program of each constituent of concern;
 - a description of the sampling and analysis procedures to be used; and
 - a description of the data evaluation procedures to be used in drawing conclusions from the monitoring data consistent with the objectives and requirements of this general permit.

Please note that Section 4(c)(3)(D) of the general permit includes a limited exception from the requirement for a monitoring plan. General permit required monitoring of water supply wells using prevailing standards of care is not excused, but a specific written monitoring plan is not required as part of the registration, unless the commissioner deems it necessary. The exception only applies *if all of the following conditions exist*:

- the release is limited to heating oil originating from the site from a tank with a capacity less than 2,100 gallons; and
- the proposed activity is limited to less than 150 pounds of oxygen released; and
- the activity is identified in Section 3(a)(1) through 3(a)(3) or 3(a)(6) of the general permit.

Attachment F: Access Permissions

Written permission is required from the owner of any parcel where any part of the proposed activity will occur or where the expected zone of influence will be present unless the owner is the registrant or a co-registrant. Permission may vary in nature from lease or access agreements to a simple permission letter, but must be in writing. Provide as Attachment F supplemental documentation of written access permission for the primary parcel, if required, and also

supplemental documentation of written access permission for additional parcels summarized on Table 1 of the registration.

Attachment G: Coastal Consistency Review Form

Activities within the state's coastal area which includes the coastal boundary must be consistent with the Connecticut Coastal Management Act (CGS sections 22a-90 through 22a-112). You may be required to complete a *Coastal Consistency Review Form* (DEP-APP-004) to demonstrate that the activity is consistent with the standards and policies of the Connecticut Coastal Management Act. Please refer to the instructions in Part V-A to determine if this requirement pertains to you.

Attachment H: Conservation/Preservation Restriction Information

If the proposed activities are on or may affect property subject to a conservation or preservation restriction, proof of written notice of the registration to the holder of such restriction or a letter from the holder of such restriction verifying that the registration is in compliance with the terms of the restriction must be provided as Attachment H. Please refer to the instructions in Part V-A to determine if this requirement pertains to you.

Attachment I: CT NDDB Information

Submit copies of any correspondence provided to or received from the CT NDDB program, including a copy of a *completed CT NDDB Request Form* (DEP-APP-007) as Attachment I, as explained in Part V-A of these instructions.

Part VII-B: Technical Certifications

In addition to the applicant/registant certification (see Part VIII) the general permit requires one of the following certifications by a Licensed Environmental Professional (LEP) or Professional Engineer (P.E.).

1. Certification of Site Evaluation

Each registration, except as discussed below, must have a certification of site evaluation signed by a P.E. or LEP. The certification documents the professional's opinion that the proposed activity is appropriate and necessary and is based on an appropriate site characterization. Refer to Section 4(c)(4)(B) of the general permit for further information.

Submittal of a certification of site evaluation is not necessary if a Certification for Site Conditions is *optionally* provided, as described in Part VII – B -3 below.

2. Exception - *Alternative Certification*

Alternative certification for site evaluation is permissible pursuant to Section 4(c)(4)(D) of the general permit for certain residential sites under certain conditions, provided an approval of registration is not required. Specifically, the activity must involve the placement of an amount of an oxygen releasing substance that provides less than 150 pounds of oxygen into an open excavation to remediate a release from a residential heating oil tank with a capacity less than 2,100 gallons.

Submittal of this certification, by a property owner presumed knowledgeable of the residential site history, is permissible in lieu of a certification of site evaluation by an LEP or P.E.

Since an LEP or P.E. may not be involved with the activity proposed for authorization under the general permit, the remediation contractor must either be a co-registrant or registration preparer, or otherwise sign a copy of the registrant certification in Part VIII if this alternative certification of site evaluation is made.

In many cases the limited type of activity for which this exemption is applicable may be self implementing upon registration. However, for some site settings and conditions self-implantation is not permissible and an approval of registration is mandatory under Section 3(e)(1)(A) of the general permit. Also, when site conditions are such that an offsite water supply well is within 75 feet, or a water resource, underground utility, or subsurface structure other than a basement is

within 25 feet, approval of registration is required, unless an *optional* Certification for Site Conditions pursuant to Section 4(c)(4)(C) of the general permit is submitted, as described below. Refer to Section 3(e)(3) of the general permit, and Figure 1 of these instructions, for further information.

3. Certification for Site Conditions

A Certification for Site Conditions is an *optional* certification prepared by a P.E. or LEP that is submitted by a registrant. It may be submitted for sites with certain conditions (described in Section 3(e)(2) of the general permit) that would otherwise require commissioner's Approval of Registration. Submitting an *optional* Certification for Site Conditions allows the commissioner to issue a Certificate of Coverage in lieu of an Approval of 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 DEP may rely on the *optional* Certification for Site Conditions in making an expedited authorization decision, and may conduct only a limited review of the registration package prior to issuing a certificate of coverage in lieu of an approval of registration. Refer to Sections 3(e)(2) and 4(c)(4)(C) of the general permit, and Figure 1 of these instructions, for further information. If an approval is required pursuant to the general permit and no permissible *optional* Certification for Site Conditions is submitted, DEP will conduct a full review of the registration package before issuing an authorization decision. Note that some site conditions and settings are such that an approval of registration is mandatory under Section 3(e)(1)(A) of the general permit, and the submittal of a Certification for Site

Conditions is not applicable.

Submittal of a Certification for Site Conditions serves to meet the requirement for a certification of site evaluation described in Part VII – B -1 above. Any residential property owner certifications as described in Part VII – B -2 may be considered, as appropriate, by the LEP or P.E. making a Certification for Site Conditions.

Part VIII: Registrant Certification

After the registration has been completed it must be reviewed and signed by both the registrant and the individual(s) who actually prepared the registration and any part thereof required by the registration [GP: §4(c)(4)(A)]. This includes consultants, professional engineers, surveyors, soil scientists, etc. By their signature, they certify that, to the best of their knowledge and belief, the information contained in the registration, including all attachments, is true, accurate and complete.

The certification of the registration package shall be signed as follows:

1. For an individual(s) or sole proprietorship: by the individual(s) or proprietor, respectively;
2. for a corporation: by a principal executive officer of at least the level of vice president, or his agent;
3. For a limited liability company (LLC): by a manager, if management of the LLC is vested in a manager(s) in accordance with the company’s “Articles of Organization”, or by a member of the LLC if no authority is vested in a manager(s);
4. for a partnership: by a general partner;
5. for a municipal, state, or federal agency or department: by either a principal executive officer, a ranking elected official, or by other representatives of such registrant authorized by law.

A registration will be considered insufficient unless all required signatures are provided. Note that this certification language is independent from the certification of site evaluation and certification for site conditions, and requires a

separate signature by any LEP or P.E. involved, although no seal is required for this signature.

For activity at certain residential sites, when an LEP or P.E. has not submitted a certification of site evaluation or Certification for Site Conditions and a homeowner has instead provided an alternative certification as described in part VII—B, the principal remediation contractor, if not a registrant, co-registrant, or preparer, must also complete this certification [GP: §4(c)(4)(D)(iii)].

Available Resources:

Below is a list of possible resources for specific information required for this application. Be sure to also check the DEP website, www.ct.gov/dep and your local town hall or library for maps and other reference materials.

Both the DEP Maps and Publications 860-424-3555 and the DEP File Room 860-424-4180 are located on the store level at 79 Elm Street, Hartford, CT. Please call the appropriate office in advance for hours of operation.

For the subject general permit, registration form, instructions and other required documents visit the DEP website at www.ct.gov/dep/permits&licenses (Air, Waste, Water and Land Use | Land Use Permits and General Permits)

Remediation Division Guidance Documents

Remediation Division Guidance Documents that may assist in preparation of this registration may be found at www.ct.gov/dep/remediation (Guidance) and include:

- Site Characterization Guidance Document, September 2007
- Water Supply Well Receptor Survey Guidance, September 2009

Other DEP Information Sources

Other sources of DEP originated information

include:

- DEP Water Quality Standards: www.ct.gov/dep/wqsc
- Coastal Boundary Areas: Town Hall and/or DEP Maps and Publications; "Coastal Boundary Map". Additional information: Office of Long Island Sound Programs: 860-424-3034
- Coastal Resource Maps: Town Hall and/or DEP Maps and Publications 860-424-3555
- Endangered or Threatened Species Areas: DEP File Room; "State and Federal Listed Species and Natural Communities"; www.ct.gov/dep/endangeredspecies
- Aquifer Protection Area Maps: www.ct.gov/dep/aquiferprotection, DEP Maps and Publications, or town hall
- Aerial Photographs: DEP OLISP 860-424-3034
- Tidal Wetland Boundary Maps: DEP Maps and Publications 860-424-3555
- Coastal Policies and Use Guidelines (Planning Report 30): DEP OLISP 860-424-3034
- Wetlands of Connecticut: DEP Maps and Publications 860-424-3555
- 2002 Connecticut Guidelines for Soil Erosion and Sediment Control www.ct.gov/dep/stormwater (2002 Connecticut Guidelines for Soil Erosion and Sediment Control)
- Drainage Basins: DEP Maps and Publications, "Natural Drainage Basins in Connecticut", 1988; www.ct.gov/dep/gis

Other Information Sources

Other information sources that may pertain to completion of your registration for the general permit include:

- Land Conservation Areas: Town Hall and/or DEP Maps and Publications; "Open Space Map"
- USGS Topographic Quadrangle Map: (www.ct.gov/dep/gis) DEP Maps and Publications, 860-424-3555, or USGS Office, 303-202-4700, or US Geological Survey, Western Distribution Branch, Box 25286, Denver Federal Center, Denver, CO 80225 (sells USGS maps and publications)

www.usgs.gov

- Soil Series Description and Delineation: County Soil and Water Conservation District Offices and the United States Department of Agriculture Conservation Service Office
- Historic Aerial Photographs: State Library
860-566-4301
- National Wetland Inventory Maps: DEP Maps and Publications 860-424-3555

Information Sources Regarding Water Supply Wells

Information about public water supply wells and source water areas may be obtained from the local health director or Town Hall. Alternatively, DPH Water Supplies Section may be contacted.

Information regarding the presence of private supply wells may sometimes be obtained from the local health director, the local sanitarian, or local building officials. In some towns the information may be available in the assessor's office. In areas without public water available, it should be assumed that all developed parcels have a supply well. In areas with public water available a crosscheck of developed properties with the local water company billing records is usually necessary to ensure that all properties are connected to public water, especially in areas developed prior to water installation. In some circumstances a physical inspection of a neighborhood through a door to door survey may be necessary to confirm the presence or absence of supply wells. See also the Water Supply Well Receptor Survey Guidance, September 2009 for an expanded discussion.

Laws and Regulations

State and federal statutes and regulations are available for review at various locations:

- On the web:
 - State Statutes: www.cga.ct.gov/asp/menu/Statutes.asp
 - DEP website for statutes and regulations: www.ct.gov/dep/laws-regs

- Code of Federal Regulations:
www.epa.gov/epahome/rules.html -
[codified](#)
- Laws, Regulations, Policy, Guidance and
Legislation (US EPA Web Site)
www.epa.gov/epahome/lawregs.htm
- Book Format:
 - State Library (Hartford)
 - University Law Schools (UCONN-
Hartford, Yale)
 - Superior Courthouse Libraries (located
throughout the state)
 - Town Halls and Libraries (statutes)

Figure 1. *Authorization Process*. Refer to Section 4 of the general permit for additional detail.

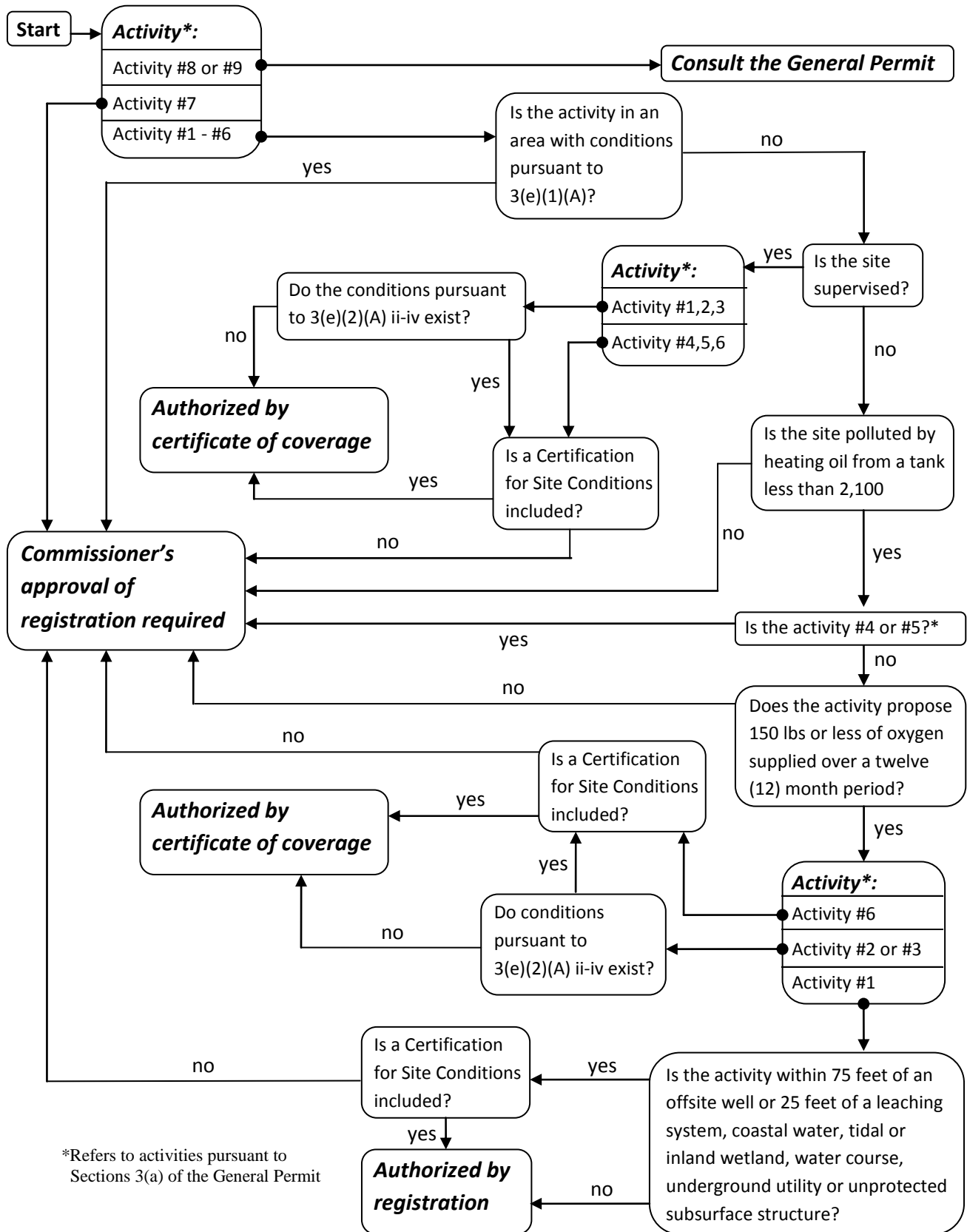
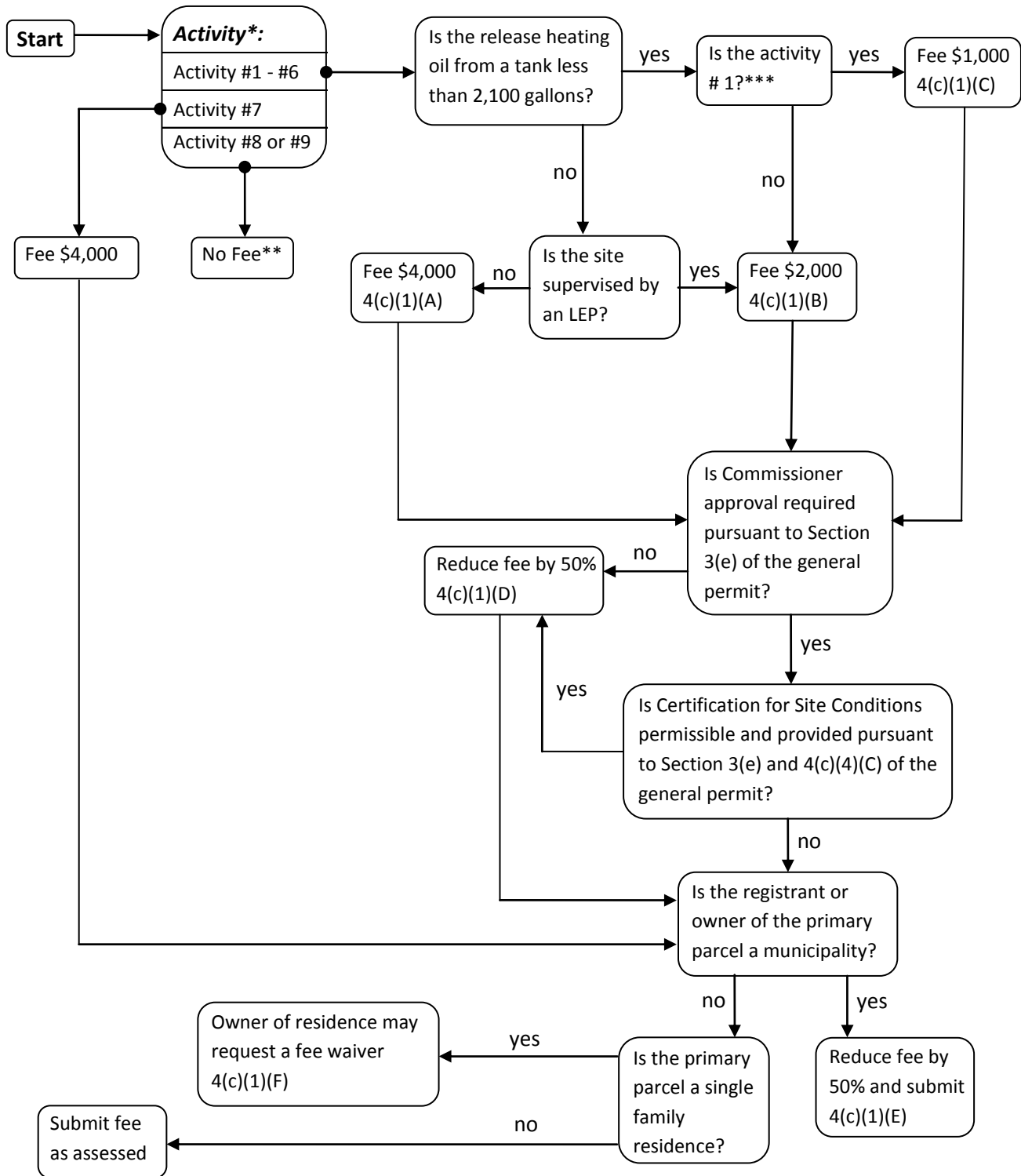


Figure 2: **Fee Determination.** Consult Section 4(c)(1) of the general permit for specifics.

Please note that *fees may be waived* for any proposed activity addressing pollution originating from a **single family residence**. Check the appropriate box on the registration form and sign where indicated to request a fee waiver.



*Refers to activities pursuant to Sections 3(a) of the General Permit

**No fee applies when the supplemental or incidental activity is at a site with an existing authorization under the General Permit

***Refers to any activity pursuant to Section 3(a)(1) of the General Permit