

Chapter 4.4 Completing Geophysical Activity Details

4.4 Geophysical Activity Tab

Applicants applying for a geophysical permit must complete the geophysical application tab in the Application Management System. The geophysical tab is made up of two components: geophysical details and geophysical land details.

This section includes an overview of geophysical permitting, guidance regarding geophysical planning and design, details related to geophysical specific application requirements and detailed instructions for completing the data fields within the geophysical tab.

Please Note:

This manual is written as a whole and provided to industry in sections to allow permit holders to access activity chapters. It is prudent of the permit holder to review the manual in its entirety and be aware of the content in other sections of the manual.

4.4.1 Geophysical Exploration Defined

Geophysical exploration is an oil and gas activity under the [Oil and Gas Activities Act](#) (OGAA) and is specifically defined in the [Petroleum and Natural Gas Act](#) (PNG) Act as:

- Investigation of the subsurface by seismic, gravimetric, magnetic, electric and geochemical operations and by any other method approved by the Commission, but does not include the use of geophysical well

logs, vertical seismic profile surveys or other surveys obtained from a well.

Approved oil and gas applications receive a permit under Section 25 of OGAA to carry out construction and operations pertinent to the activity. The permit expires where construction activities have not started within two (2) years of permit issuance. Unless expired, the permit remains active until cancelled, suspended or declared spent, according to the provisions of OGAA.

A geophysical exploration permit is spent when the Commission receives a final plan from the permit holder. The [Geophysical Regulation](#) states final plans must be submitted within 60 days after the date of project completion.

4.4.2 Creating a New Geophysical Application

New Geophysical Applications

A new geophysical permit is required for all new geophysical exploration programs to be carried out including programs or portions of programs carried out within existing disturbance.

Since geophysical exploration includes surface, subsurface and aerial, applicants must indicate the program type, energy source and construction method for the activity within the geophysical details component of the geophysical tab.

Geophysical Permit Amendments

A permit amendment is required before the associated changes are carried out. A geophysical exploration permit amendment is required for the following scenarios:

- Adding lines.
- Changing line locations or details, where the permit does not explicitly provide for this via authorization of 'Line Shift Variance'.
- Corrections to inadvertent data errors where the error is in the permit or impacted on the decision.

4.4.3 Geophysical Exploration Planning & Design

This section provides typical planning and design requirements, guidelines and considerations when planning and designing geophysical exploration. The standards and guidelines presented here form a substantial basis for assembling an application. The Commission reviews the geophysical application relative to the engineering and technical information provided in the Application Management System; therefore, applicants should review this section for an indication of any application requirements or attachments required in relation to the required components.

Regulatory Requirements

Geophysical exploration activities must meet the design and operational requirements outlined in the [Oil and Gas Activities Act](#) (OGAA), [Geophysical Exploration Regulation](#) (GER) and the [Environmental Protection and Management Regulation](#) (EPMR).

If an exemption is requested from regulatory requirements, an exemption request must be prepared at the time of application and include:

- Specific regulatory provision requiring an exemption.
- Rationale for exemption (explanation of why an exemption is required).
- Proposed plan showing mitigation strategies to reduce impacts.

If exemptions are approved prior to the application, this approval must be attached to the application.

Specific to geophysical exploration, an applicant may request an exemption from part or all of the geophysical project report and the final plan in accordance with Sections 2 and 3 of the Geophysical Exploration Regulation.

Guidance Requirements

In addition to this Oil and Gas Activity Application Manual, geophysical exploration activities should meet guidance recommendations in the following Commission documents:

- [Oil and Gas Activity Operations Manual](#).

- Environmental Protection & Management Guideline.
- [Horn River Basin and Muskwa-Kechika Management Area Guidance](#) document.

If oil and gas activities cannot be carried out in accordance with the guidance recommendation then justification must be included in the application. Include specifics of the guidelines not followed, an explanation of why they cannot be followed, proposed plan and applicable mitigation strategies.

Notification in Advance of Camp Applications

Applicants must notify Peace River Regional District (PRRD) as a rights holder in advance of submitting any camp applications.

Geophysical Exploration Buffers & Prior Consent for Reduced Buffer Distances

Section 4 and Schedule 1 and 2 of the Geophysical Exploration Regulation (GER) states buffer distances for geophysical exploration near pipeline, utility, residence, etc. and establishes buffer distances in relation to prescribed structures for the use of energy sources in carrying out geophysical exploration.

Where reduced buffer distances are planned, as provided in Schedule 2 of GER, written consent must be obtained from the owner of the structure prior to carrying out the activity. In order to avoid amendments, the Commission encourages applicants to obtain consent from structure owners for any planned reduced buffer distances prior to application submission.

When planning projects and buffer distances, applicants should take into consideration that some residences, as defined within the GER, may not be registered or identified in provincial land registries. All residences, including permanent and temporary dwellings, and cabins, must be factored into application planning and buffers complied with during geophysical operations.

Overlapping Projects

Applicants should use the analysis tool within the Application Management System to investigate for overlapping geophysical projects in an effort to minimize environmental impacts on the land base. Overlaps exist where two or more geophysical projects cover portions of the same area of land.

The coordination of overlapping projects should occur wherever practicable and arrangements made to use the same seismic lines (source or receiver) and/or access other geophysical projects for overlap. As a general permit condition, the Commission requires that any opportunity to coordinate or use existing lines or access identified in the field (not previously identified by an applicant or the Commission) must be taken wherever practicable. Justification and mitigation measures must be explained for geophysical programs overlapping and not coordinated or using existing seismic lines within 400 metres of the proposed line.

Geophysical Line Shift Variance

Line shift variance provides flexibility in the field to move geophysical lines one way or another within the variance permitted. The line shift variance must comply with buffer distances and appropriate archaeology and consultation and notification requirements must be conducted. Geophysical projects without a line shift variance and needing to move locations require an amendment.

Completing Reconnaissance as Part of Geophysical Application Planning

Observing field conditions is critical, and reconnaissance evaluations are essential to planning for and completing a geophysical exploration application. Ideally, site evaluations are assessed through a combination of aerial and ground reconnaissance.

Pictures taken during the area reconnaissance may accompany the application in order to assist in the Commission decision making process. Digital pictures must be .jpg format uploaded in the attachments tab of AMS. Suggested pictures include:

- Wildlife/wildlife features encountered.
- Stream crossing locations.

- Re-growth on existing lines that are planned for use.
- Overall picture of area.

In addition, applicants may be able access the following tools and methods through Data BC and other external sources to assist in evaluating site conditions and operational planning:

- Crown land status maps.
- Forest development plans/ forest stewardship plans.
- Aerial photography.
- Forest cover maps.
- Fish and wildlife mapping.
- Light Detection and Ranging (LiDAR).

4.4.4 Geophysical Program Activity Requirements

This section outlines application requirements for geophysical applications. Requirements are dependent on the characteristics of each geophysical program. In most cases, the details are input into the geophysical application tab.

Applicants must provide general statements regarding primary and secondary watercourse crossing methods and how they will be constructed. Applicants are then required to submit a list of all watercourse crossings constructed with method of crossing utilized within the post construction submission (final plan).

Mapping Requirements Specific to Geophysical Programs

In addition to the mapping requirements for all projects, proposed geophysical projects require the following mapping:

- 1) 1:50,000 Maps:
 - 2D project maps require UTM (NAD 83 CSRS) or latitude and longitude coordinates at the start and end of each line.
 - 3D project maps require UTM (NAD 83 CSRS) or latitude and longitude coordinates at the corners of the project area.
 - Forestry cutblocks (colour coded to status) and any other overlapping tenures.
 - Mechanical creek crossings.
 - Approximate number of push outs to be constructed; total to be confirmed on the final plan.
 - If heli-assisted operations are proposed, amount and size of helipads must be indicated on the legend; total to be confirmed on final plan.
 - Include staging areas and campsites (if required for less than 100 days).
- 2) 1:250,000 Access Map (this can be inset into the above map or on a separate map):
 - Access to the project highlighted in yellow.
 - Project outline.
 - Trapper boundaries and numbers.

4.4.5 Geophysical Program Activity Submission: Data Field Completion

Table 4-F below provides detailed instructions for each of the data fields requiring input (not auto populated) within the Application Management System.

Table 4-F: Application Instruction Table for the Geophysical Tab

Label	Instructions
Program Type	Select the appropriate type to describe the project: two dimensional seismic, three dimensional seismic, other - may include: aeromagnetic, geomagnetic, and geochemical or 4D microseismic.
Program Name	Indicate name that the project is running under.
Energy Source	Choose the appropriate energy source to describe the project: dynamite, vibroseis, other - provide description when selecting other.
Lines within 400m Indicator	Indicate yes, if lines are planned within 400 metres of existing lines. Indicate no, otherwise.
Rationale Explanation	If lines are planned within 400 metres of existing lines, provide rationale and indicate why the existing lines cannot be used.
Rationale Explanation	If proposed program overlaps another program, provide a justification.
Summary by Type of Cut	
Width (m)	Line Width should always be measured relative to a known reference point (such as a shot point), and measured at a recommended interval of every 500 metres. Where dense stands exist, the line width is usually measured from standing tree to standing tree across the line. In open stands, the line width is the disturbed area used for operational purposes, and is at least as wide as the mechanical equipment used. In all cases, the line width measurement must be perpendicular to the line direction and must include the area occupied by the windrow.
Exemptions	
Line Shift Variance Requested	Select yes if the geophysical project proposes to have the ability to shift the movement of lines a certain distance either side of the seismic lines. Indicate no otherwise.
Exemption from Geophysical Exploration Regulation	Indicate if an exemption from the Geophysical Exploration Regulation is required.
Section of Regulation	Provide the section of the regulation for which an exemption is required.

Label	Instructions
Explanation	Provide a detailed explanation / rationale for the regulatory exemption request. Include statements indicating why the regulation cannot be followed, proposed alternate strategies and mitigation.