

Oil and Gas Commission
Planning and Construction
Guide- December, 2006

For Oil and Gas Operations
in British Columbia

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Note: Sections marked with an asterisk (sections 6.6, 6.7 and 6.8) discuss new processes that require enhanced pre-planning and that deliver significant application benefits.

1. Introduction

The Planning and Construction Guide is a tool providing guidelines for oil and gas companies, construction contractors and service firms conducting business in British Columbia.

2. Purpose

The purpose of the Planning and Construction Guide is to describe typical maximum disturbance allowances for the development of:

1. Wellsites;
2. Access routes;
3. Rights of way for pipelines; and
4. Other associated project requirements, such as remote sumps, decking sites, campsites, and borrow pits.

3. Objectives

The objective of the Planning and Construction Guide is:

1. To encourage companies, construction contractors, and service firms to reduce environmental impact and consider land use and water management techniques in development plans and operational strategies; and
2. To specify acceptable parameters for typical oil and gas development activities.

4. Expected Outcomes

Construction proposals that meet the objectives of the Planning and Construction Guide will assist in reducing application review time.

Pipeline applications that conform to the Guide will be screened as routine in this category.

Rationale must be provided for any project or associated activity that exceeds the Planning and Construction Guide criteria. The rationale must clearly explain deviations from the recommendations within the guide (example: “The additional 5-meter road width at km 1.5 of the well access is due to the 10% side slope”). This information may be included in the Timber Harvesting and Field Assessment Form, on the construction plan, or as an attachment.

Pipeline applications that exceed the Guide criteria must include a rationale and will be screened as non-routine in this category

The OGC recommends the practice of field scouting by the construction supervisor in order to provide comprehensive and accurate information in applications.

5. Applications Within the Muskwa-Kechika Management Area

Strategic management direction and specific requirements for proposals within the M-KMA are identified in the pre-tenure plans for specific areas. Refer to the Ministry of Sustainable Resource Management (MSRM), Resource Division, [Pre-Tenure Plan Home Web Page](#) for general pre-tenure plan information and the links below for specific plan areas.

[Upper Sikanni Management Plan \(USMP\)](#)

Applicable to all tenures located in this area

[Besa-Prophet Pre-Tenure Plan - Phase 1 \(BPPTP\)](#)

For tenures acquired prior to May 20, 2004

[Pre-Tenure Plans for the Muskwa-Kechika Management Area- May, 2004 \(PTP's\)](#)

For all other pre-tenure plan areas,

Refer to the [Guidelines For Application Submission: Besa Prophet Pre-Tenure Plan](#) (M-KMA Submission Guide) on the OGC web site for general application planning and submission procedures applicable to all pre-tenure plan areas.

The May, 2004 Pre-Tenure Plans (PTP's) are different from previous PTP's (USMP & BPPTP) by being less prescriptive and more results-based. These new PTP's describe the important resource values that need to be addressed in development proposals and the expected outcomes to be achieved by operators during oil and gas development. There is more reliance on proponent pre-development operational planning and operator reporting on changes to plan indicators to maintain M-KMA values.

The basic stages of project review and operator submission requirements from the M-KMA Submission Guide still apply. The following additional documents have been developed to address the new reporting and monitoring requirements:

1. [Operational Planning & Application Submission Process Flow Sheet](#):
 - updates BPPTP submission flow-sheet
2. [Summary of Reporting Requirements to MSRM](#):
 - table summarizes output reporting requirements from PTP's
3. [OGC Checklist Form A](#):
 - checklist that OGC will use to document compliance with operational planning requirements at the project application stage

4. [Form B1](#):
 - proponent summary report of initial baseline PTP indicators prior to development
5. [Form B2](#):
 - operator PTP indicator monitoring report
6. [Operator Information Sheet for new reporting requirements in PTP's](#):
 - supplemental direction for completing Forms A, B1, and B2
7. [Appendix 1](#):
 - provides summary of indicator reporting requirements for each objective in the PTP's

6. Wells and Access Roads

6.1 Definitions

Compactable fill (borrow): defined in accordance with the Unified Classification System for Soils as soils containing less than half by weight particle sizes that are smaller than 0.075mm through a sieve screening test using U.S. Standard sieves (A.S.T.M.).

Gravels: defined in accordance with the Unified Classification System for Soils as soils containing more than half by weight particle sizes that are larger than 0.075mm through a sieve screening test using U.S. Standard sieves (A.S.T.M.).

High-grade access: permanent production access surfaced with gravel.

Low-grade access: temporary drilling/construction access constructed in non-frozen ground conditions with a minimal grade and adequate drainage control. In special circumstances, low-grade access may be constructed in frozen ground conditions.

Winter access: temporary access constructed in frozen ground conditions with minimal soil disturbance for seasonal production or drilling purposes.

6.2 Setbacks

6.2.1 From other wells

The minimum well-to-well distance is 25 meters. For closer positioning of wells, the applicant must provide a written description of the proposed safe servicing procedures during the life of the well.

6.2.2 From roads

The well center must be a minimum of 80 meters from any public road, or the right of way or easement of any road allowance ([Drilling and Production Regulation, section 5](#)), and 100 meters if the content of the well is sour. See also [Emergency Response Planning and Requirements for Sour Wells - Oil and Gas Handbook, Section 11 \(11.2.3 Minimum Separation Distance Requirements\)](#).

6.2.2.1 Exemptions from road setback criteria

The following are exemptions from the criteria described above for road setbacks:

1. The well center may be located a minimum of 60 meters from the surveyed boundary of an existing low-grade oil and/or gas well access road utilized only for oil and gas purposes. This distance is not acceptable if there are other industrial users utilizing the road (i.e.: forestry or mining users), or if the road is a major access to a multi-well oil and/or gas field.
2. Within the Agricultural Land Reserve (ALR), a well center may be located 40 meters from an existing well access road where the operator of the well and access are common and the access is used exclusively for servicing the well(s).
3. Winter access through a wellsite may be constructed to a minimum 40-meter distance between the well center and the surveyed access boundary. Written consent must be provided if crossing a wellsite operated by a different company. This distance is not acceptable for a traditional or major winter access road leading to a different field with other oil and gas, or multi-industrial users. In the latter case, a 60-meter minimum setback is required.

6.2.3 From flare stacks or ends of flare lines

Flare stacks or ends of flare lines must be at least 50 meters from the well center ([Drilling and Production Regulation, section 62\(c\)\(i\)](#)) and must have a sufficient area beneath the flare stack that is free of combustible materials and vegetation ([Drilling and Production Regulation, section 62\(n\)](#)).

Wellsite trailers may be located a minimum of 25 meters from the flare. Click [here](#) for more information.

A distance of 80 meters must be maintained between a surveyed access boundary and flare stacks, or ends of flare lines ([Drilling and Production Regulation, section 62\(c\)\(iv\)](#)).

6.2.4 From water courses

A wellsite edge (and other associated disturbances) should be set back from the breaks or banks of classified streams and water bodies. If any portion of the clearing or wellsite is located within the Riparian Management Area (RMA) of the stream, justification must be provided, including the construction methods proposed for the wellsite to ensure all surface runoff and hazardous fluids are contained on location. For more details on

Riparian Management, refer to the [Forest Practices Code Riparian Management Area Guidebook](#). For specific RMA setback details, click [here](#).

Wellsite design and construction must ensure that surface water drainage does not impact streams or cause erosion to stream-banks.

6.2.5 From pipelines

Wellsites may be located over existing pipeline rights of way. Land owner/tenure holder consent is required if constructing over a pipeline right of way operated by a different company.

6.2.6 From wellsite trailers (i.e.: first aid, drilling engineer)

Trailers located on wellsites must be a minimum of 25 meters from the well center. For more information, click [here](#).

6.3 Typical disturbance parameters

6.3.1 Wellsite - Refer to IRP#20 Wellsite Spacing Recommendations

Apply for the appropriate size and configuration to ensure the surface positioning setbacks relating to the drilling and completions operations are adhered to.

6.3.2 Temporary winter access

Roads intended to provide temporary winter access should be a maximum of 10 meters in width. Provide rationale if the terrain requires increased width.

6.3.3 Low-grade summer access

Roads intended to provide low-grade summer access should be no wider than 15 meters if utilizing a fully padded (overland) construction technique. A 20-meter-wide low-grade access is acceptable if utilizing a full ditch cut technique, or ditch cut with additional fill material required from alternate borrow sources other than the road right of way. Provide rationale if a width of more than 20 meters is required.

When a 20-meter-wide low-grade access is applied for with one or more borrow pits, indicate if the borrow pit or pits are proposed for the access road and/or the wellsite.

6.3.4 High-grade access

Roads intended to provide high-grade access should be a maximum of 20 meters wide. Provide rationale if increased width is required.

6.3.5 Standard corridor width

The OGC encourages multi-use corridors. For access roads with an adjacent pipeline right of way or linear use, the standard corridor width is 30 meters if there is a minimum of 5 meters of overlap. The standard corridor width can be increased up to 35 meters with a minimum of 5 meters overlap for Petroleum Development Roads(PDRs), Forest Service Roads(FSRs), and public Highways. Provide rationale if additional width is required (i.e.: terrain, safety, or other reasons).

6.3.6 Variable width access

In areas with challenging terrain or other features, where extra operating area is required, variable width access may be considered. Provide rationale.

6.4 Construction Techniques

For stream crossing procedures, refer to the [Stream Crossing Planning Guide](#) and the [Fish Stream Crossing Guidebook](#) on the OGC web site.

Use existing clearings and multi-well pad drilling where possible.

In order to consider in-stream works (i.e.: closed bottomed structure installations) on fish bearing streams, a fish habitat assessment must be completed and submitted to the OGC for evaluation. A site-specific review process is used to assess these stream crossings.

Use existing open seismic lines, cleared rights of way, existing abandoned trails, and/or other open corridors where possible.

Use low-impact construction techniques such as ice pads or matting materials where feasible.

Avoid cutting new access to water removal sites.

Permanent access routes and pipelines should share a common corridor.

Where possible, feather the edges of new-cut clearings.

Where new construction methods are proposed, a concise supplement detailing material, design and operational information should be included with the application.

Note: Materials with the potential to cause environmental damage or contamination by way of function, nature or composition (i.e.: aspen corduroy) will not be approved unless measures are taken to ensure no damage will occur.

6.5 Application Submission

For more information, refer to the following updated section of the Oil and Gas Handbook:

[Wells and Test Holes - Oil and Gas Handbook, Section 6.](#)

A water use application is required for any use of surface water, including drilling purposes, freezing-in winter access, dust control, etc.

Water sources must be applied for as per section 8 of the *Water Act* ([Application For Short-Term Use of Water](#)). Refer to the OGC web site for a listing of available water sources.

6.5.1 Submissions

Submit all reports, photographs of the project area, assessments and/or studies with the application (i.e.: pre-scouting reports, fish habitat assessments).

6.5.2 Watercourses

Watercourses in the immediate vicinity (within 100 meters) of all proposed disturbances should be identified and classified.

6.5.3 Temporary workspaces

For tenuring purposes on Crown Land only, temporary workspaces located adjacent to wellsites must be incorporated into the wellsite area. If the temporary workspace area is described as having a particular use only connected with the construction or drilling of the well (i.e.: short term storage of strippings pulled back at the initial clean-up of wellsite), or is temporary in nature (meaning it will never be used in connection with the operation or servicing of the well [i.e.: cleared area around the outside fencing of a wellsite within a range tenure to allow for cattle movement]), it does not have to be incorporated into the wellsite area for tenure purposes.

The purpose of the temporary workspace must be identified on either the construction plan or within the Timber Harvesting & Field Assessment.

6.5.4 Existing wellsites

When the surface area of a new wellsite overlaps a portion of or the entire surface area of an existing wellsite owned/operated by a different company, the entire area required to operate and service the new wellsite must be applied for. A separate surface tenure document will be issued over the entire area required for each well. This only applies to wells on Crown land. A letter authorizing the use of the overlapped area must be obtained and submitted with the application.

6.5.5 Proposed pipeline rights of way

Identify the proposed route of potential pipeline right of way with the well application, where possible.

6.5.6 Existing open seismic lines

Use existing open seismic lines, cleared rights of way, existing abandoned trails, and/or other open corridors where possible.

6.5.7 Access route

With application submissions, include details of the access route, such as the presence and percent of slopes, and the width and condition of seismic lines to be used (vegetation description).

6.6 Permanent high-grade wellsite access road application process*

Permanent access with the associated borrow pits/decking sites may be applied for in new well applications. Prior to construction commencement, written notification on the prescribed form must be submitted to the OGC identifying a successful well. This process applies only to permanent high-grade roads accessing wellsites where permanent access was identified at the time of application of the well.

When permanent access is required on a well access road subsequent to the new well application submission or approval, the permanent access may be applied for as an amendment to the original well application.

In sensitive or Special Management Areas, companies should, where possible, coordinate access plans with other users. In some cases a particular Land & Resource Management Plan (LRMP), or other planning initiative may provide specific direction on access management to minimize impacts.

If the permanent access is applied for in the initial application, it must be identified in the application. The areas required for both the temporary access and permanent access must be clearly identified on the survey plan and included in the area table, along with all other public road access connected to the well application requiring upgrades (i.e.: padding and/or gravel surfacing).

Note: Gravel sources require a separate authorization Permit under the *Land Act*.

Refer to the [Application Submission Process](#) information letter on the OGC web site.

6.7 Multi-season application process*

Applications covering multiple seasons must include both seasons of construction (i.e.: the area required for winter and summer must be clearly identified on construction plans) and stream crossing methodology, with supporting information provided. Refer to the [Stream Crossing Planning Guide](#) on the OGC web site.

When applying for a low-grade access road to a well that has a significant probability of becoming a producer, ensure the culverts and/or bridges are adequately sized to meet or exceed the Q100 flow requirements. This will prevent the future removal and upgrade of those crossing structures when a high-grade permanent access road is constructed. Provide rationale if increased width is required (i.e.: terrain, safety, or other reasons).

6.8 Use of planning corridors for access*

New well applications may utilize a maximum corridor width of 150 meters for access roads to wells, and 80 meters around the wellsite allowing flexibility for road placement and associated disturbances such as borrow pits and decking sites. Refer to the [Application Submission Process](#) information letter on the OGC web site. The use of a well access corridor facilitates a reduced application timeline for a pipeline that is proposed fully within the same corridor.

Note: Where the gradient is over 60%, and/or there is potential for slope instability, a Terrain Stability Field Assessment (per FPC [Mapping and Assessing Terrain Stability Guidebook](#)), completed by a qualified registered professional (as described in the Forest Road Regulation, Part 1 - Definitions), is required and must be submitted with the application. A Terrain Stability Field Assessment may also be required for areas where the gradient is less than 60%, or where there are known stability concerns.

7. Pipeline Rights of Way

7.1 Typical disturbance parameters

Standard pipeline right of way width is 15 meters outside of the Agricultural Land Reserve (ALR) and a maximum of 18m within the ALR.

The OGC encourages multi-use corridors. A standard cleared corridor width is up to 30 meters utilizing a minimum of 5 meters of overlap. The standard corridor width can be increased up to 35 meters with a minimum of 5 meters overlap for Petroleum Development Roads (PDRs), Forest Service Roads (FSRs), and public Highways. Provide rationale if additional width is required (i.e.: terrain, safety, or other reasons).

7.2 Construction Techniques

For stream crossing procedures, refer to the [Stream Crossing Planning Guide](#) and the [Fish Stream Crossing Guidebook](#) on the OGC internet web site.

7.2.1 Clearings and setbacks

Use existing disturbances such as open seismic lines, access roads, cleared rights of way, existing abandoned trails, and/or other open corridors where possible. Existing hand cut and avoidance type seismic lines are considered low impact disturbance, so these should be considered as secondary routing preference for a ROW if adjacent seismic or other linear corridors are within functional distance of operations.

Locate pipeline rights of way adjacent to well access and incorporate pre-existing cleared areas such as log decks and camps where possible.

Paralleling existing disturbances is encouraged. If the existing disturbance already includes a pipeline and access road, then a second pipeline should not be located on the opposite side of the road.

When additional temporary workspace is required due to excessive debris or snow load, and/or terrain limitations, details must be included with the application (or amendment) for consideration.

7.2.2 Water Courses

When directional drill or boring techniques are used to cross streams or creeks, alternate access routes should be considered if there are no immediate viable existing crossing structures in place. New access route crossings will not be authorized if a viable existing route is available. A fish habitat assessment may be required by the company as per the requirements identified in the Stream Crossing Planning Guide and be made available to the OGC upon request.

A fish habitat assessment must be completed and submitted with the application for all stream crossing variance requests.

For more information on pipeline crossings, refer to the information letter entitled [Bored and Directionally Drilled Pipeline Crossings - Operational Setbacks](#).

In order to consider in-stream works (i.e.: open cut pipeline crossings) on fish bearing streams, a fish habitat assessment must be completed and submitted to the OGC for evaluation. A site-specific review process is used to assess these stream crossings.

7.3 Application submission

7.3.1 Water use

A water use application is required for hydrostatic testing and where required for directional drilling.

Water sources required for drilling must be applied for as per section 8 of the *Water Act* ([Application For Short-Term Use of Water](#)).

7.3.2 Photography and assessment reports

Submit any reports, photographs of the project area, assessments and/or studies with application.

8. Ancillary Disturbances/Other Information

8.1 Setbacks

8.1.1 Minimum construction setbacks from habitat values

The following are the minimum setbacks required for each identified habitat value:

1. Trumpeter Swan Nest – 200 meters;
2. Other nesting sites (i.e.: Osprey stick nest, Sandhill Crane ground nests) – 100 meters;
3. Mineral licks – 100 meters;
4. Bear dens (applies to winter construction only) – 50 meters;
5. Beaver ponds – 50 meters; and
6. Oxbow lakes – 50 meters.

Note: Additional setbacks may be required due to lack of topographical relief, sparse vegetation density, extensive use of habitat, and other special considerations.

The [Fish and Wildlife Timing Windows document](#) and [table](#) for fish bearing streams and wildlife lambing/calving, rutting and winter range may apply.

8.1.2 Airstrips

Airstrips are considered “no development zones”, whether the airstrips are active or abandoned.

For activity setbacks from airstrips, refer to the [Aerodrome Standards and Recommended Practices](#), available at the OGC or from Transport Canada's Aerodrome Safety Branch. For further information refer to the [Aeronautics Act](#).

8.1.3 Borrow pit/remote sump excavation setback

Within the clearing of a remote sump or borrow pit, excavation should be set back a minimum of 15 meters from the road edge for safety reasons and possible future pipeline placement.

8.2 Typical disturbance parameters

8.2.1 Locate ancillary disturbances

Unless absolutely necessary, all campsites, remote sumps, borrow pits, temporary workspaces, decking sites and any other temporary disturbances are to be located using the following selection criteria to reduce the impact on the forested land base. The selection criteria have been prioritized to represent least to greatest impact to the forested land base. Therefore, where possible, disturbances are to be located in natural openings or brush types to mitigate impacts.

1. Natural openings, existing development or;
2. Brush types;
3. Non-commercial types, or non-marketable vegetation/timber (i.e. black spruce, tamarack/larch);
4. Mature Conifer or Deciduous types; and
5. Immature Conifer or Deciduous types, including plantations.

8.2.2 Temporary drilling, construction, or centralized camps

Temporary drilling, construction, or centralized camps must not be located in gravel pits without sewage containment (i.e.: liners or tanks).

8.2.3 Areas of temporary campsites, decking sites, remote sumps and borrow pits

The following are the typical areas for the identified temporary disturbances:

1. Standard campsite – 2400m²;
2. Standard decking site – 1200m²; and
3. Remote sump site – 3600m², for a single well.
4. Borrow pit – 4800m².

8.3 Construction Techniques

Where possible, borrow pits and remote sumps should be pre-tested to ensure suitability of the site. The results should be submitted with the application.

Water diversion will **NOT** be permitted from stocked borrow pits, or those occupied by nesting waterfowl or beavers.

Note: For identification, signage is typically present to caution water users where borrow pits have been stocked.

A permit is not required for water diversion from borrow pits.

8.4 Application submission

For more information on Campsites, refer to the following updated section of the Oil and Gas Handbook:

[Campsites - Oil and Gas Handbook, Section 1.](#)

8.4.1 Wildlife and fisheries considerations

If special wildlife/habitat features are encountered in the field, pictures and details should be submitted with the application to assist review staff. Habitat overviews are encouraged, and assessments may be required for projects proposed in sensitive areas and where high value habitat is presumed or known to exist. If an assessment is required, it must be performed by a person or persons with qualifications and experience in conducting habitat assessments. A summary of the person or person's education, professional history, and job qualifications may be requested.

9. Contact Information

If you have any questions or comments regarding the Planning and Construction Guide, please contact an Oil and Gas Resource Officer or Program Manager at the Oil and Gas Commission, at (250) 261-5700.