**APPLICATION FOR**

**APPROVAL TO ALTER THE CONDITION OF A WELL (ACW)[[1]](#footnote-1)**

|  |  |
| --- | --- |
| Operator[[2]](#footnote-2): |  |
| Well[[3]](#footnote-3): |  |

***Information submitted in this document is privileged under subsection 119 (2) of the Canada-Newfoundland Atlantic Accord Implementation Act (Canada) and subsection 115 (2) of the Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act, and shall not be released or made public except as provided for in that Act.***

The Operator hereby applies for Approval to Alter the Condition of a Well (ACW), pursuant to sections 10 and 12 of the *Newfoundland Offshore Petroleum Drilling and Production Regulations (SOR/2009-316).[[4]](#footnote-4)*

The undersigned Operator’s Representative hereby declares that, to the best of his or her knowledge, the information contained or incorporated herein is true, accurate and complete.

Operator’s

Representative[[5]](#footnote-5): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (Printed Name)

Job Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Instructions:**

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| 1. An Approval to Alter the Condition of a Well (ACW) is required for any operation that involves re-entering a well following completion of the scope of activities covered by the Approval to Drill a Well (ADW). An ACW is not required if the planned operation is covered by the Operations Authorization or is exempted pursuant to subsection 10(2) of the *Newfoundland Offshore Petroleum Drilling and Production Regulations, SOR/2009-316* (theRegulations).
2. The specific well operations that do or do not require an ACW are described in the Board’s Drilling and Production Guidelines (the guidelines) respecting section 10 of the regulations. **Operators should consult with the Board on a case-by-case basis if uncertainty exists as to whether or not an ACW is required.**
3. Instructions to assist the Operator in completing this application are provided throughout the document in Blue font. The text in Blue font should be deleted prior to submission to the Board.
4. Once the application is completed, it should be signed and dated (handwritten or digitally) by the Operator’s representative responsible for the program. The application may be submitted electronically or in hard copy. If submitted by hard copy, the application package must also include digital copies of the MS Word Document and a pdf of the signed version of the application, as well as digital copies of any files and attachments associated with the application.
5. Provided that the application is complete and the proposed program is consistent with the regulations and assorted guidelines, approval will normally be issued within 21 days.
6. When completing this application, Operators should note that all of the requirements related to the “Operations Authorization” including Canada-Newfoundland and Labrador benefits plans, financial responsibility, safety plans, contingency plans, environmental protection plans and field data acquisition programs also apply to this approval.
7. For applications associated with development wells, reference to geologic tops and/or targeted formations within this application must agree, where applicable, with pool and/or zone names as designated by the C-NLOPB's Chief Conservation Officer. **Failure to comply will result in the return of the application and a re-start of the 21 day review period upon receipt of the revised application**.
8. All diagrams, schematics, tables or other documents embedded within this application, or attached as an Appendix to this application, must be of high resolution for easy readability.
9. Any deviations from an approved ACW during the execution of the program should be brought to the attention of the C-NLOPB’s Well Operations Engineer as soon as reasonably practicable. In all circumstances, the C-NLOPB is to be notified prior to the implementation of any proposed change.
 |

## Introduction

Describe the purpose and objectives of the well operation (1-2 paragraphs).

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| *[Please type here]* |

## General Information

Complete the table (refer to the relevant note for an explanation of the information needed).

|  |  |
| --- | --- |
| Prospect or Field Name: |  |
| Installation(s)[[6]](#footnote-6):  |  |
| EL/SDL/PL Number[[7]](#footnote-7):  |  |
| Operations Authorization No.[[8]](#footnote-8):  |  |
| Gas Storage License No.[[9]](#footnote-9):  |  |
| Guidebase/Slot Number[[10]](#footnote-10):  |  |
| Well Type[[11]](#footnote-11):  |  |
| Pool(s)/Zone(s)[[12]](#footnote-12):  |  |
| Anticipated Start Date[[13]](#footnote-13):  |  |
| Estimated Duration[[14]](#footnote-14):  |  |
| Estimated Cost[[15]](#footnote-15):  |  |

## Well Operations Policies

Confirm that the well operation will be conducted in accordance with the Operator’s well operations policy documents listed in the application for Operations Authorization. Otherwise, identify any deviations from the Operator’s policies or procedures in respect of this well operation that affect regulatory compliance.

Confirmation should also be provided that a well barrier analysis has been undertaken to confirm that there will be at least two well barriers in place at all times during each step of the well operation. Any exceptions to having at least two well barriers should be described, along with details of the risk mitigation measures that the Operator proposes to implement.

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| *[Please type here]* |

## Special Safety Considerations

Discuss any conditions unique to this well that may affect the safety of the well operation. Describe additional mitigation measures in place as a result of such conditions.

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| *[Please type here]* |

## Equipment

Indicate the name of the drilling installation or vessel that will be performing the well intervention. Also, indicate if the well operation will be conducted by drill rig, slickline, wireline, coiled tubing or other equipment.

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| *[Please type here]* |

## Well Schematic

Embed in this section of the application, or attach as an Appendix, a schematic illustrating the current status of the well including the downhole equipment and tubulars. Also, in a separate schematic, illustrate the proposed configuration of the well after the proposed well operation has been completed. The schematic should emphasize the equipment to be installed as part of the well operation and the changes to the well as a result of the well operation.

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| *[Please type here]* |

If not part of the well schematic, embed in this section of the application, or attach as an Appendix, a schematic illustrating the production tree and wellhead.

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| *[Please type here]* |

A summary of the existing perforations, together with any new proposed perforations are to be provided in the following table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Proposed and/or Existing****Perforations** | **Top****(mRT MD)** | **Bottom****(mRT MD)** | **Pool** | **Zone** | **Status****(Open/Closed)** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

## Well Barrier Diagrams

Attach the individual well barrier diagrams for the various stages of the operation. There should be a separate diagram included for any stage at which the well barrier envelopes would be re-defined. These diagrams should include all well control equipment installed on the well, define the primary and secondary well barrier envelopes, list each element within the barrier envelope, and note the criteria used to validate it.  (Reference the NORSOK Standard D-010 for further guidance)

## Sequence of Operations

Provide, at a high level, the step-by-step sequence of operations for the proposed well operation, including, in the case where pressure control equipment[[16]](#footnote-16) is utilized, the pressure (in either kPa, or MPa) to which the equipment will be pressure tested upon installation. Also identify any pressure tests that are required, subsequent to the well operation, to confirm the integrity of well barriers affected by the well operation (e.g., production tree, downhole safety valves). Pressure test details are to be recorded in the pressure testing summary tables below. In cases where the well operation could change the deliverability, productivity or injectivity of the well, any plans to test the well to determine the effects of the well operation should be listed as a step in the sequence of operations.

|  |
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| *[Please type here]* |

## Pressure Testing Summary

Complete Table 7a and 7b to describe all the pressure tests and inflow tests to be conducted, including the relevant test details (pressure, duration, testing fluid).

*Table 7a: Pressure Tests*

|  |  |  |  |
| --- | --- | --- | --- |
| **Surface Pressure (kPa)** | **High Test Duration****(mins)** | **Fluid/Density for Pressure Test****(kg/m3)** | **Identify the well barrier elements being pressure tested.** |
| **Low** | **High** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

*Table 7b: Inflow Testing Details*

|  |  |  |
| --- | --- | --- |
| **Differential Pressure (kPa)** | **High Test Duration****(mins)** | **Identify the well barrier elements being pressure tested.** |
| **Low** | **High** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Clearly identify any well barrier elements that are proposed to **NOT** be tested in the direction of flow to confirm its integrity for the maximum anticipated operating pressure. Provide rationale.

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| *Please type here]* |

## Flaring Operations

If a well is to be cleaned-up using a production installation, the flaring issues do not need to be addressed as part of this application; however in the case of a MODU using a testing spread, the application should address the safety and environmental protection issues associated with flaring during well clean-up or testing operations. In this respect, provide a description of the measures that will be implemented to prevent spilling hydrocarbons to the sea that includes but is not necessarily limited to:

* any “pre-flare” meetings, tool-box talks and other activities to ensure that relevant personnel understand their roles and responsibilities with respect to spill prevention;
* any “pre-flare” checklists that will be utilized to ensure that all appropriate spill prevention initiatives have been taken prior to initiating flaring operations;
* the measures that will be in place to prevent non-combustible fluids from going to flare and causing a spill;
* the protocol that will be in place to ensure that flaring operations are immediately suspended in the event of a spill;
* the measures that will be in place to maintain a flare watch for the early detection of any spill;
* any other measures that will be implemented to prevent spilling hydrocarbons to the sea with particular emphasis on any lessons learned from previous flaring operations; and
* a description of any specific initiatives to be taken onboard either the drilling installation or the supply vessels to heighten readiness to respond to a spill of hydrocarbons.

In the case where a description of spill preventative measures during flaring operations has previously been provided to the C-NLOPB, a reference to the document(s) that contains those provisions may be made in lieu of describing them in this application

|  |
| --- |
| *[Please type here]* |

## Anticipated Pressures

Complete the table:

|  |  |
| --- | --- |
| **Parameter** | **Pressure (kPa)** |
| Maximum Shut-in Tubing Head Pressure: |  |
| Maximum Flowing Wellhead Pressure: |  |
| Maximum Bottom Hole Shut-in Pressure: |  |
| Maximum Surface Injection Pressure (where applicable): |  |

## Fluids

Indicate the workover fluid to be used during the well operation, as well as the completion/packer fluid in the tubing/production casing annulus.

|  |
| --- |
| *[Please type here]* |

## Reference Log

Indicate the name of the log (including Trip #, Run # and Date) to be utilized for depth control and correlation purposes in respect of the well operation.

|  |
| --- |
| *[Please type here]* |

## Well Test Summary

In the case of a well abandonment, and using tables where appropriate, provide a summary of well tests performed to date, including date and time of the test, FTHP (kPa), downhole gauge pressure (kPa), oil rate (m3/d), gas rate (m3/d), water rate (m3/d), GOR (sm3/m3) and water cut (%). In cases where this information has been provided under separate cover, a reference to the document containing this information may be made in lieu of including the information in this application.

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| *[Please type here]* |

## Reservoir Justification

Where the operation involves the addition of perforations or the abandonment of a completion interval, an assessment on the ultimate hydrocarbon recovery from the zones or pools involved should be provided in the form of a report, appended to this application, that sets out:

* + the amount of oil, gas or condensate recovered from the well;
	+ an estimate of the amount of gas-in-place and/or oil-in-place remaining in the pool;
* in the case of abandonment; documentation demonstrating that production or injection can no longer be economically maintained including a discussion of the alternative recovery methods that have been evaluated and the alternative uses for the well that have been considered.

The report should contain sufficent information to justify the Operator’s proposed well operation and should specifically include, but not necessarily be limited to the following information as may be applicable to the proposed operation:

* production rates and the corresponding fluid ratios or injection rates for all wells impacted by the well operation (include graphs as necessary illustrating daily oil production, daily water production, daily gas production, gas/oil ratio, daily water cut, cumulative oil production, cumulative water production, daily water injection, cumulative water injection);
* bottom hole pressure and production characteristics of adjacent wells;
* a geological assessment of the areal region and the stratigraphic zones that are impacted by the abandonment, including an overview of the blocks or layers, structural maps and cross sections as well as STOOIP estimates;
* a summary of the relevant petrophysical data;
* an assessment of the effect of the operation on ultimate recovery;
* post-job expectation(s) on flow performance; and
* complete the table:

**Anticipated rates (m3/d) post operation:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Well Type** | **Expected Oil Rate** | **Expected Gas Rate** | **Expected Water Rate** |
| Production |  |  |  |
| Injection |  |  |  |

## Plugging Program

In the case where a zone, pool or well (or part of a well) is to be suspended or abandoned, a description of the plugging program should be provided. This description should focus on the manner in which the program is designed to meet the requirements specified in sections 56-59 of the *Newfoundland Offshore Petroleum Drilling and Production Regulations[[17]](#footnote-17)* and associated guidelines. In the case of subsea wells that are to be permanently abandoned, any plans for the recovery of the wellhead, guidebase and any other subsea equipment, together with any plans to conduct a ROV seabed clearance survey, should also be indicated.

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| *[Please type here]* |

In the case of well suspension, indicate the anticipated duration of the suspension, the future plans for the well and the monitoring activities that will be conducted while the well is suspended.

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| *[Please type here]* |

Complete the following table:

Note: The depth/interval should be listed in m Measured Depth Rotary Table (mRT MD) and True Vertical Depth (mRT TVD).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Plug #** | **Description** | **Depth/Interval** | **Pressure Test** | **Tagging** |
| **Proposed Pressure Test (kPa)** | **Well Fluid Density (kg/m3)** | **To be Tagged (Yes/No)** | **Tagging Weight****(MT)** |
| **mRT (MD)** | **mRT (TVD)** |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

In the case of cement plugs, a description of the composition of the slurries should be provided below:

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| *[Please type here]* |

In the case where a liner or casing string is set as part of an abandonment or suspension and is part of the primary or secondary well barrier envelope; please fill out the following table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Liner or Casing** | **Depth/Interval****(mRT MD/TVD)** | **Pressure Test** | **Top of Cement behind casing/liner** | **Cement Validation Method** |
| **Proposed Pressure Test (kPa)** | **Well Fluid Density (kg/m3)** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

Provide commentary confirming that any annulus that is open to a hydrocarbon bearing zone or a discrete pressure zone is isolated at the time of abandonment.

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| *[Please type here]* |

## Completion String Design

In the case where a well is being recompleted a description of the completion design loads should be provided. This description should include a summary of the design load cases that were evaluated, together with a description of the worst-case design load and the depth at which the lowest safety factor occurs.

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|  |
| **Burst** | **Design Summary** | **Comments1** |
| Highest Load (kPa) |  |  |
| Safety Factor |  |
|  |
| **Collapse** | **Design Summary** | **Comments1** |
| Highest Load (kPa) |  |  |
| Safety Factor |  |
|  |
| **Tensile** | **Design Summary** | **Comments1** |
| Highest Load (daN) |  |  |
| Safety Factor |  |

Please provide any additional comments as necessary in the space provided below.

|  |
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| *[Please type here]* |

## Cased Hole Logs Acquired/Planned:

In the case where a well is being recompleted provide details of any cased hole logging program to be conducted.

|  |
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| *[Please type here}* |

## Environmental Considerations

### Environmental Assessment

Provide the title and date of the applicable environmental assessment document pertaining to the program.

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| *[Please type here]* |

###  19.2 Discharges Not Described in the Environmental Protection Plan

Provide a description of any discharges to the sea in association with the well operation, that are not described in the Environmental Protection Plan submitted with the application for authorization, or that have not been authorized by amendment to the Operations Authorization, together with an explanation of why the discharge is necessary. In such cases, information on the properties, volumes and environmental toxicity of the material to be discharged should be appended to this application.

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| *[Please type here]* |

## Contact Information

Identify the person from whom the C-NLOPB can seek clarification in the event of any questions with this application.

|  |  |
| --- | --- |
| Name: |  |
| Title: |  |
| Telephone Number: |  |
| E-mail Address: |  |

**oOo**

**End**

1. ACW Application Template BMS-FM-055, Rev. 1 [↑](#footnote-ref-1)
2. The Operator is the entity that has been issued the Operating License and the Operations Authorization. [↑](#footnote-ref-2)
3. The name of the well should be the full legal name as assigned by the Board when the ADW was issued. [↑](#footnote-ref-3)
4. There are federal and provincial versions of these regulations – the federal version is referenced here. [↑](#footnote-ref-4)
5. The application shall be signed by the Operator’s Representative responsible for the program. [↑](#footnote-ref-5)
6. Identify all installations that will conduct activities covered by this application. [↑](#footnote-ref-6)
7. Indicate the C-NLOPB Land Interest, for example: EL 1010. [↑](#footnote-ref-7)
8. Provide the Operation Authorization number under which the approval is being sought. [↑](#footnote-ref-8)
9. If applicable, indicate the Gas Storage License Number. [↑](#footnote-ref-9)
10. Provide the guidebase or well slot number. [↑](#footnote-ref-10)
11. Indicate the well type: “oil producer”, “water injector”, or “gas injector” [↑](#footnote-ref-11)
12. Indicate any pools or zone to be affected by the proposed well operation as per C-NLOPB’s zone designations. [↑](#footnote-ref-12)
13. Format the date as: Month, Day, Year (e.g. June 1, 2009). [↑](#footnote-ref-13)
14. Provide the estimated duration of the well operation in days. [↑](#footnote-ref-14)
15. Provide the total estimated cost of the operation (CAD $ million) to the nearest 0.01 million. [↑](#footnote-ref-15)
16. In the case of BOP, the proposed pressure test of the equipment should be indicated. [↑](#footnote-ref-16)
17. There are federal and provincial versions of these regulations – the federal version is referenced here. [↑](#footnote-ref-17)