



File Ad-GA-RG-COGDPR-02  
5 April 2007

To: All Potentially Interested Parties

**Stakeholder Comment Period  
Development of Well Spacing requirements**

The National Energy Board (NEB or the Board) is collaborating with several federal and provincial agencies to develop goal-oriented *Drilling and Production Regulations* (DP Regs) under the *Canada Oil and Gas Operations Act* (COGOA) and the Offshore Accord Acts<sup>1</sup>. The agencies that are part of this Project Working Group include Natural Resources Canada, the Department of Indian Affairs and Northern Development, the NEB, the Province of Newfoundland and Labrador, the Province of Nova Scotia, the Canada-Newfoundland and Labrador Offshore Petroleum Board and the Canada-Nova Scotia Offshore Petroleum Board.

On 5 April 2007, the Project Working Group released draft *Drilling and Production Regulations* (DP Regs) under each Act for stakeholder comment. The NEB has responsibilities to administer regulations under the COGOA, such as the draft DP Regs currently under consideration. Section 3 of the COGOA version of the draft DP Regs would provide the Board with the authority to establish orders necessary for the management and control of oil or gas production. Section 3 states:

*Spacing*

3. The Board is authorized to make orders respecting the allocation of areas, including the determination of the size of spacing units, and the well production rates for the purpose of drilling for or producing oil or gas and to exercise such powers and perform such duties as may be necessary for the management and control of oil or gas production.

To promote a clear and efficient stakeholder engagement process, the Board has decided to release, concurrently with the release of the draft DP Regs, draft requirements it is considering related to well spacing (Attachment 1). Such requirements could, in the future, be organized as an order, as described above.

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1 *Canada-Newfoundland Atlantic Accord Implementation Act; the Canada-Newfoundland Atlantic Accord Implementation Newfoundland and Labrador Act; the Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act; and the Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act* (Offshore Accord Acts).

Administrative tools such as orders permit the Board to tailor specific requirements to geographic areas and circumstances where they are needed and appropriate. In this instance, the draft spacing requirements being considered would apply to all wells, except exploratory wells, located north of the 60<sup>th</sup> parallel to which the COGOA applies. The draft requirements are intended to promote conservation, prevent the waste of oil and gas resources and to protect correlative rights. Included are draft requirements related to locating wells, including the geographic and target area that would be allocated for a well and penalty formulas that would be applied if a well were drilled off target (Attachment 1).

The Board welcomes any comments on the draft spacing requirements. Comments should be provided by **Friday 17 August 2007** and can be submitted by email, fax or mail. Please submit all comments to:

David Young, Acting Secretary  
National Energy Board  
444 Seventh Avenue S.W.  
Calgary, Alberta T2P 0X8  
Email: [secretary@neb-one.gc.ca](mailto:secretary@neb-one.gc.ca)  
Facsimile: (403) 292-5503

Please identify your written comments to the Secretary with “*Consultation process for the draft spacing requirements*”.

All documents related to both the draft DP Regs and the NEB’s draft spacing requirements, including background information, previous correspondence and all comments that are received, are posted on the NEB’s website site ([www.neb-one.gc.ca](http://www.neb-one.gc.ca)). From the homepage, click on the button “Engaging Canadians” then select the heading “Drilling and Production Regulations”. A link will also be located on the “What’s New” page listed using today’s date.

### **Additional Information**

If you have any questions or wish to discuss the project, please contact the Project Manager, Ms. Jann Atkinson, at (403) 299-3923 (toll free at 1-800-899-1265) or via e-mail at [jatkinson@neb-one.gc.ca](mailto:jatkinson@neb-one.gc.ca). For communication in French, please contact Ms. Chantal Briand at (403) 299-4192 (toll free at 1-800-899-1265) or via e-mail at [cbriand@neb-one.gc.ca](mailto:cbriand@neb-one.gc.ca).

Yours truly,



David Young  
Acting Secretary

Attachment

**Draft Spacing Requirements**  
**Draft Drilling and Production Regulations**  
**For Stakeholder Comment**

**Application**

1. The proposed spacing requirements would apply to all wells, except exploratory wells, as defined below, located on lands north of the 60<sup>th</sup> parallel to which the *Canada Oil and Gas Operations Act* applies.

**Definitions**

The definitions contained in the April 2007 draft *Drilling and Production Regulations*, as well as the following definitions would apply:

“central part” means

- (a) for a gas spacing unit, the central area within the spacing unit having sides one grid unit dimension from the sides of the section and parallel to them;
- (b) for an oil spacing unit, the central area within the drilling spacing unit centered on the four grid units located in either the northwest, northeast, southwest and southeast quarter of the section and comprising an area equivalent to the area of one grid unit having sides one half grid unit dimension from the sides of the quarter section and parallel to them;

“common ownership” respecting a pool, means:

- (a) there is one interest owner,
- (b) the working interest owners are the same throughout the pool, or
- (c) the working interest owners have entered into a unit agreement or unit operating agreement;

“exploratory well” has the same meaning as in section 101 of the *Canada Petroleum Resources Act*;

“grid unit” means an area described as a “unit” in section 8 of the *Canada Oil and Gas Land Regulations*;

“operator” has the same meaning as section 1 of the draft *Drilling and Production Regulations*;

“section” has the same meaning as in section 7 of the *Canada Oil and Gas Land Regulations*;

“spacing unit” has the same meaning as in section 29 of the *Canada Oil and Gas Operations Act*;

“target area” means the central part of the spacing unit within which the downhole location of a well is to be completed for the purpose of producing oil or gas;

“unit agreement” has the same meaning as in section 29 of the *Canada Oil and Gas Operations Act*;

“unit operating agreement” has the same meaning as in section 29 of the *Canada Oil and Gas Operations Act*;

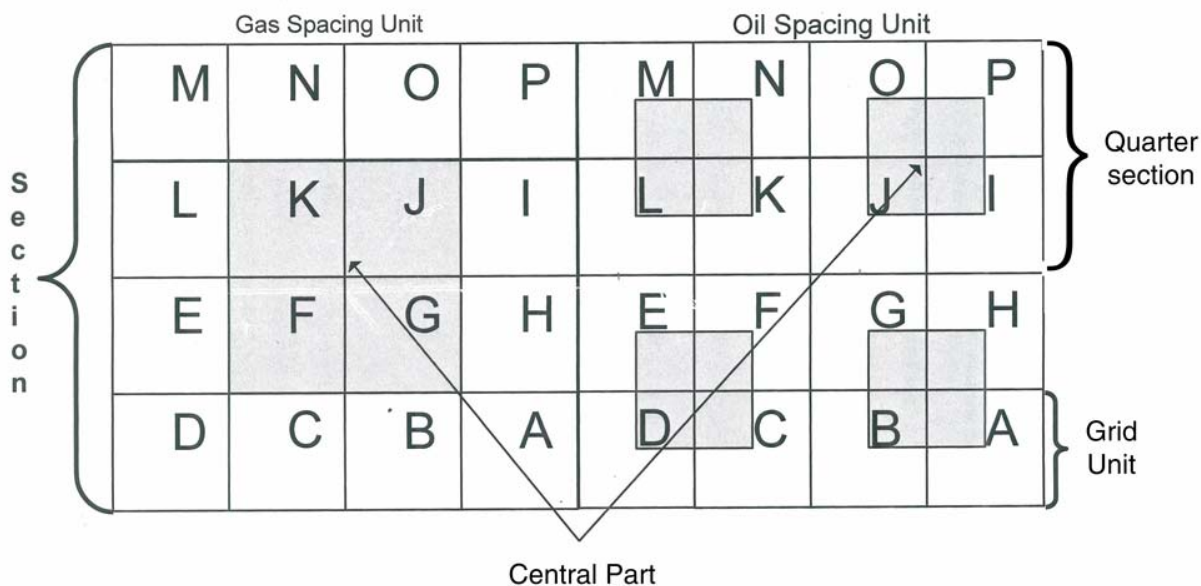
“well” means any well, other than an exploratory well, that is approved for the production of oil or gas.

### *Spacing Units*

Guidance Notes for section 2 & 3: A spacing unit for a well outlines the surface area allocated to that well for the purpose of drilling for and producing oil and gas and includes the subsurface area vertically beneath the allocated area. ‘Section’ is a defined term, as above.

2. The surface area assigned to a spacing unit for a well shall be:
  - (a) one section for a gas well;
  - (b) one quarter section for an oil well.

### Area Assigned to a Spacing Unit



3. The boundary or limits assigned to a spacing unit is the surface area assigned to the spacing unit and:

- (a) the subsurface vertically beneath that area, or
- (b) where the spacing unit is defined with respect to a specific pool, geological formation, member or zone vertically beneath that area.

#### *Target Areas*

*Guidance Notes for sections 4, 5 & 6:* A target area is the central part of a spacing unit. It establishes the area in which the well bore must intersect the producing zone for the purpose of producing oil or gas.

4. The surface area assigned to a target area shall be:

- (a) the central part of a section for a gas well;
- (b) the central part of a quarter section for an oil well.

5. The boundary or limits assigned to a target area is the surface area assigned to the target area and:
- (a) the subsurface vertically beneath that area, or
  - (b) the specific pool, geological formation, member or zone vertically beneath that area to which the target area is restricted.
6. Subject to section 7, the proposed downhole location of a well shall be completed within the target area.

*Application to drill a well*

Guidance Notes for section 7: An application for an approval to drill a well would be required to include a diagram showing the proposed downhole location of the well relative to the spacing unit and target area. For wells drilled within a drilling spacing unit, the operator would be required to demonstrate that the radius of uncertainty in regards to the accuracy of a deviation survey falls within the target area boundary.

7. An application for the approval of a well shall include a diagram showing the proposed downhole location of the well bore relative to the spacing unit and target area.

*Variation to a Spacing Unit or Target Area*

Guidance Notes for sections 8, 9 & 10: An operator could apply to the Board at any time to request a variation to the area assigned to a spacing unit or spacing units, and/or the size and shape of a target area or target areas. The application would be required to identify the grounds for the variation request. Variation to spacing units or target areas may be approved if one or more of the conditions under section 9 are met. The application would be required to include the information under section 10 to assist the Board its decision.

Under section 9, the Board could choose to make a variation on its own if it is satisfied that one or more of the grounds for variation are met.

8. An operator may apply to the Board for a variation to the area assigned to the spacing unit or the size or shape of the target area.
9. The Board may vary the area assigned to a spacing unit or the size or shape of the target area if the Board is satisfied that:
  - (a) improved recovery will be obtained,
  - (b) additional wells are necessary to provide capacity to drain the pool at a rate that will not adversely affect the recovery from the pool,
  - (c) increased deliverability from a gas field is desirable,
  - (d) there is common ownership,
  - (e) recovery will be improved while not affecting the recovery of adjacent rights holders, or
  - (f) it is deemed necessary by the Board for the management or control of oil or gas production
10. An application requesting a variation to the area assigned to a spacing unit or the size or shape of the target area shall include:
  - (a) the proposed size of the spacing unit or the proposed size and orientation of target area, as applicable;
  - (b) the legal description of the land that is the subject matter of the application;
  - (c) maps showing:
    - (i) the subsurface rights and the names of the interest holders in and adjacent to the area that is the subject matter of the application,
    - (ii) wells in the area and the status of each,
    - (iii) field boundaries, existing and proposed spacing unit boundaries, and target area boundaries, and
    - (iv) if the application relates to an experimental scheme, the proposed well pattern including inter-well distances, buffer zone distances from the boundaries of the area that is the subject matter of the application and the proposed use of each well in the project,
  - (d) the proposed well density and inter-well distance within the proposed spacing unit; and

- (e) the proposed minimum distance from a production well to the boundary of the proposed spacing unit.
- (f) a description of the physical characteristics of the formation;
- (g) a description of the effect on the recovery of oil and gas of the proposed variation to the area assigned to the spacing unit or the location and/or size of the target area;
- (h) the names and mailing addresses of the surface owners and occupants in the area that is the subject matter of the application;
- (i) a description of the current land uses of the area;
- (j) a description of the effect on current land uses of the proposed variation to the area assigned to the spacing unit and the location and/or size of the target area, and
- (k) a summary of the discussions related to the proposed variation of the area assigned to the spacing unit and the location and/or size of the target area by the applicant with affected persons and indicating the position of those persons regarding the proposal;
- (l) any other information that the Board may require

*Production Rates & Off-target Penalty Factors*

*Guidance Notes for section 11:* Wells drilled off-target would be subject to an off-target penalty factor applied to production. The further a well is off-target the lower the permitted production rate.

11. If the downhole location of a well is completed outside of its target area, the permitted production rate for that well shall be reduced by an off-target penalty factor

- (a) The off-target penalty factor is determined by the minimum horizontal distance, measured in metres, from the nearest target area boundary to the nearest spacing unit boundary, and is calculated using the following formula:

$$\text{penalty factor} = 0.9 * (d1 / d2) - 1.8 * (d1 / d2) + 1$$

where,

$d1$  is the distance from the well's downhole location to the nearest target area boundary, and

$d2$  is the distance from the nearest target area boundary to the nearest spacing unit boundary.

- (b) The maximum permitted sustained peak oil or gas withdrawal rate shall be calculated using the following formula:

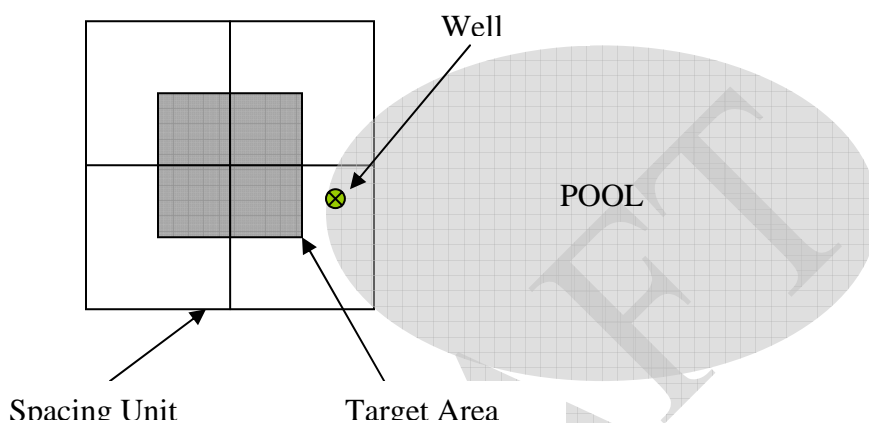
$$q(\text{well}) = q(\text{pool}) * \text{penalty factor}$$

where,

$q(\text{pool})$  is the sustained peak oil or gas withdrawal rate from the entire pool averaged to the number of production wells over a period of three months, and,

$q(\text{well})$  is the maximum permitted sustained peak oil or gas withdrawal.

Guidance Notes for section 12: For pools that extend into an operator's spacing unit, but not into the target area where the operator could access the pool without being off-target, the well's permitted production rate would be calculated by multiplying the sustained peak oil or gas rate from the entire pool (averaged by the number of producing wells) by the fraction of reserves contained within the reserve extension (see diagram, below).



12. (1) For a well that extends a pool in which there is not common ownership, the maximum permitted sustained peak oil and gas withdrawal rate shall be calculated using the following formula:

$$q(\text{well}) = q(\text{pool}) * (R_e / R_p)$$

where,

$q(\text{well})$  is the maximum permitted sustained peak oil or gas withdrawal, and,

$q(\text{pool})$  is the sustained peak oil or gas withdrawal rate from the entire pool averaged to the number of producing wells over a period of three months, and,

$R_e$  is the reserves of the extension, and

$R_p$  is the reserve of the pool, including the extension.

(2) additional wells drilled into the pool extension are subject to the same maximum recovery rate restriction as any well subject to section 12 (1).

*Exceptions to Off-target Penalties*

*Guidance Notes for sections 13, 14 & 15:* If common ownership of a pool exists an operator may apply to the Board requesting an exception to the off-target penalty. An application requesting exception to the off-target penalty would be required to include evidence of common ownership.

Wells that have been drilled or that have commenced drilling prior to the requirements coming into effect would not be subject to the requirements.

13. The Board may waive the off-target penalty for a well drilled off-target in a pool where there is common ownership and the Board is satisfied that the off-target well would not adversely affect the recovery from the pool,

14. Wells that were drilled on-target shall not be deemed to be off target solely by reason of a change of regulation that re-defines a target area.

15. Any well that commenced drilling prior to the date of these requirements being finalized shall not be penalized under this section even if it is not drilled on target.

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