



CANADA – NOVA SCOTIA OFFSHORE PETROLEUM BOARD

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April 13, 2011

Mr. Jeff Hurley
EHS&Q Manager
EnCana Corporation
Suite 700, Founders Square
1701 Hollis Street
Halifax, Nova Scotia
B3J 3M8

Dear Mr. Hurley:

RE: Offshore Production Environmental Effects Monitoring Plan (EEMP) for the Deep Panuke Project

The CNSOPB has reviewed the draft of EnCana's EEMP, in conjunction with Fisheries and Oceans Canada and Environment Canada. Comments on the EEMP are provided below. Advice received from DFO and Environment Canada is attached for your information.

Comments on the technical aspects of the Offshore Production Environmental Effects Monitoring Plan (EEMP) for the Deep Panuke Project:

1. There is a lack of information provided on the statistical analyses of the data from the EEM studies, throughout the document. It is expected that each study will also include a quantitative statistical assessment of the results. This information would demonstrate how successive studies should also be statistically analyzed to determine any possible trends. Also, if statistical measurements (e.g. Analysis of Variance – ANOVA) were used in designing the proposed sampling scheme outlined in the monitoring plan they should be stated.
2. There is little detail provided on the sampling design and testing regime planned for fish health monitoring. A large body of information available indicates that there is little reason to expect acute toxicity beyond a few metres of discharge caisson. However, the same cannot be said for chronic toxicity and potential fish health and tainting issues that are much more difficult to predict. See attached comments from DFO and Environment Canada for more detail and specific suggestions on possible sampling design.
3. Additional parameters such as pH, total organic carbon (TOC), and sediment particle size analysis should also be considered as part of the sampling design for marine water quality and sediment chemistry analysis, as well as any other measurements that can be taken easily during monitoring. See attached comments from DFO and Environment Canada for more detail.

4. It is suggested that EnCana consider using a modeling program, such as the Dose-related Risk and Effect Assessment Model (DREAM), to help track the produced water plume to inform the EEM sampling design in real time rather than relying on tide tables, since tide direction around the platform can change significantly even during the time that sampling is occurring. This can help prevent inadvertent sampling outside of the produced water plume. Refer to attached comments by DFO.

General Comments on the presentation of the Offshore Production Environmental Effects Monitoring Plan (EEMP) for the Deep Panuke Project:

1. In section 1, page 7, Introduction and Scope, the requirement for the Environmental Effects Monitoring (EEM) plan is explained. While EEM is the focus of this document, it would be beneficial to identify, in this section, the other key environmental monitoring effort that will be undertaken and how the two intend to work together. The other monitoring effort is the Environmental Protection and Compliance Monitoring (EPCMP).
2. In the goals for each component mentioned in section 6, the verification of relevant predictions contained in table 4.4 should also be included.
3. Section 6.6.1 refers to findings that indicate there is no seabird attraction to platform lights and structures. Environment Canada noted that the CWS is not aware of any study designed specifically to quantify avoidance/attraction to offshore platforms in the region, nor of an analysis of the data described here been done to specifically address avoidance/attraction. Unless adequate supporting data and analysis is provided, these statements should be removed from the EEM Plan.
4. For EEMP table 4.4, the dispersion modeling that was conducted for Air Quality as part of the EA predictions, should be referenced in the same way the produced water modeling is referenced in footnote 9.
5. Section 6.6.6, page 48, an additional bullet should be included to state that beached bird survey data collected on Sable Island will be analyzed using a standardized approach. See Environment Canada comments for more detail.
6. Pages 38 and 39, state that mud/cuttings piles can provide additional habitat for crustaceans in reference to piles from SOEP that were found to have provided habitat for Jonas Crabs. However, Jonas Crabs from this cuttings pile were the only organisms found to show signs of tainting effects to date. It is recommended that EnCana consider reviewing this lesson learnt from the SOEP EEM program.

Clarification is sought on the following items with respect to the EEMP:

1. Page 31, figure 6.1, shows that the produced water (blue color pipe) will be discharged at 25 m below LAT, however, Appendix D of Volume 4 of the Deep Panuke Offshore Gas Development Environmental Assessment Report indicated a discharge depth of 10 m, which is confusing. According to Deep Panuke Offshore Gas Development Environmental Assessment Report, produced water from Deep Panuke is heavier than seawater and therefore a discharge more close to the surface (instead of at the middle of water column) may help to achieve a higher order of dilution (low environment concentration) and therefore help to mitigate the impact. Has the discharge depth been considered in the mitigation plan or production centre design – this should be indicated in the plan.

2. Sections 5.3 and 6.2.5 refer to baseline sampling, following drilling, and prior to first gas. Please clarify EnCana's plan for conducting this sampling by providing more detailed information in the EEMP document.

A revised EEMP, based on the above commentary, would be appreciated by May 23rd, 2011. Should you require, a meeting can be arranged between the Board, EnCana, DFO and Environment Canada to further discuss comments.

In the meantime, should you have any questions on these comments please do not hesitate to contact me at (902) 496-0717.

Sincerely,



Don Logan,
Environmental Analyst

DL/kh

Attachments: 2

cc: E. Theriault, CNSOPB
M. Thillet, EnCana
K. Curran, DFO
R. Alexander, DFO
S. Ellen-Maher, EC
J. Weiss-Reid, CEAA