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REPLY FROM GAIL FRASER AND JOANNE ELLIS TO LETTER FROM C-NLOPB

In response to the C-NLOPB's comments on our article we use the same three subheadings: Accuracy of Oil Spill Predictions, Responsible Authorities' Response and Regional Information Considered in Environmental Assessments. We preface the following with a summary of the difficulties we have experienced in obtaining data from the C-NLOPB. Between 2003 and 2006 GSF and two Newfoundland-based non-governmental organisations, the Alder Institute and the Natural History Society of Newfoundland and Labrador (NHSNL) were attempting to review the management of the oil and gas industry in Newfoundland and Labrador (NL). The NHSNL provided participant reviews for the Canadian Environmental Assessment Agency for the Terra Nova and White Rose environmental assessments, while Alder provided public comments in each review process. To start the review process, a written request for oil sheen data was submitted by GSF to the board in August 2003. Despite repeated requests, no data were received.

In July 2005, GSF, NHSNL and the Alder Institute requested spill data from the board on a "per operator" basis for the Terra Nova (Petro Canada, 1997) and White Rose (Husky Oil, 2000) projects. Such data are essential for comparing EA predictions with actual results. There was no response from the Board. In August 2005, Fraser *et al.* (2005) presented a poster at the *Effects of Oil on Wildlife* Conference in St. John's NL. This prompted a radio interview by the Canadian Broadcast Corporation with both GSF and the Chair of the Board on the topic of access to the requested data. A follow-up phone call to the Board was made in November 2005. Again, no response was forthcoming. In June 2006, we placed an Access to Information request for the above oil spill data. Our request for these data was denied in August 2006 on the grounds that the data were proprietary (see Fraser and Ellis, 2008).

The above information demonstrates our difficulty in obtaining meaningful data and other information from the Board, even when collaborating with NGOs who had actively participated in the environmental assessment (EA) review process. In the absence of an analysis by the Board as Responsible Authority comparing EA spill predictions with reported spills, combined with a failure on the part of the

board to supply the data we requested, we were limited to the data presented on the C-NLOPB website.

Accuracy of Spills

In this section, we address two main points argued by the C-NLOPB:

(a) that "the proponent is actually predicting a probability of occurrence of spills between 1 barrel and 50 barrels in volume" and hence, spills less than 1 barrel (bbl) do not count towards Terra Nova project's prediction of spills less than 50 bbls (Petro Canada 1997);
(b) spills of synthetic based muds (SBM) are not included in the predictions for spills less than 50 bbls in both the Terra Nova and White Rose Projects (Husky Oil, 2000).

The exclusion of spills < 1 *bbl for Terra Nova project in the spills less than 50 bbl category.* On pp. 5–82 of the Terra Nova EA (Petro Canada, 1997) the following is noted: "…For the Terra Nova Development the predictions are $312 \times 1.7 \times 10^{-2} = 5.3$ spills less than fifty barrels over the course of the development…." The reader will note that this prediction does not explicitly exclude spills less than 1 bbl (see also Table 5.7-10 pp. 5–86). It should also be noted, as the Board did in their response to our article, that spills less than 1 bbl were explicitly excluded in the White Rose EA prediction for this spill category. From the quote above for the Terra Nova EA, a reader is led to conclude that less than fifty barrels includes *all spills* less than fifty barrels. The Board cannot argue a point based on what should have been said, rather the point must be argued on what was actually stated and a *post hoc* reinterpretation of the spill category for the Terra Nova project is inappropriate. A flaw in the wording of the EA prediction does not render our interpretation of the number of spill observations of less than 50 bbl category untenable. In the future, if spills less than 1 bbl are to be excluded from this category this needs to be explicitly stated in the EA.

Synthetic based muds (SBM) are excluded from the spill predictions — The Board states that SBM do not count towards the spills less than 50 bbl category for both the White Rose and Terra Nova projects (Husky Oil, 2000, Petro Canada, 1997). We discuss three points which collectively supported our decision to include SBM in our spill calculations and argue the EAs reviewed did not clearly exclude SBM from the spill predictions.

(1) No spill predictions for SBM were provided in the EAs (Husky Oil, 2000, Petro Canada, 1997). The Terra Nova and White Rose projects each provide a single prediction for spills less than 50 bbls; a separate spill prediction for SBM was not provided.

(2) The EAs state that all pollutants are included in the spill predictions. The Board argues that SBM are excluded from the less than 50 bbl spill prediction category and provide the following statement to support their position (White Rose EA, Husky Oil, 2000): "The spills involved various pollutants including crude oil, condensate, refined product, mineral oil, and diesel." We note the word "*including*" is not equivalent to "only" or "limited to". The phrasing suggests that the list is not a thorough list of pollutants. That other pollutants are included, but not listed, is further supported by the following statement in the White Rose EA, "The 1,857 spills noted in Table 5.4-1 (including ***all pollutants***, not just crude oil) occurred mostly in the early years of the reporting period (1971 to 1995)" (italics and bold ours). The Terra Nova EA also notes that the Mineral Management Services database is for "…***all pollutants*** from facilities and operations…" (pp. 5–80; italics and bold ours).

Are SBM considered a pollutant? The Offshore Waste Treatment Guidelines (National Energy Board *et al*., 2002 p. 7) provide clear restrictions on disposal of SBM in NL,

> "Where re-injection of drill solids associated with SBM or EMOBM is not technically or economically feasible, the solids may be discharged at the drill site provided they are treated prior to discharge with best available treatment technology. At the time of publication of these Guidelines best available technology in some offshore regions internationally is believed to be capable of achieving a concentration of 6.9 g/100 g or less oil on wet solids…"

as such, they are considered a pollutant by the Board.

The White Rose spill 1–49 bbl prediction was based on a historical database from the U.S. Mineral Management Services from 1971 to 1995 (Table 5.4-1, p. 415). The Terra Nova spill prediction less than 50 bbl was based on Mineral Management Services historical database from 1971–1993 (Table 5.7-6). The first SBM were used in the Gulf of Mexico in 1992 (Neff *et al.*, 2000) and thus were presumed to be in the Mineral Management Services "all pollutants" database. Nor did the White Rose or the Terra Nova EA explicitly exclude SBM from these predictions.

In our spill calculations we interpreted the predictions to cover all pollutants, including SBM. The NHSNL also made this interpretation in their participant's review of the White Rose EA (Husky Oil Operations Ltd, 2001, p. 52)

> "Based on the historical data Husky predicts that there will only be 2.38 spills less than 50 barrels over the course of the average 13-yr project (one every five years). Based

> on reported spills to date in the Newfoundland offshore ***we find this prediction baffling***. Using the EIS definitions all reported platform spills in offshore Newfoundland to date have been either small (1–49.9 barrels) or tiny (<1 barrel). Between July 1997 and March 2001 there were 103 such spills reported by the operators to the C-NOPB. Since May 1999, Husky itself has reported 10 spills from the White Rose field. The largest of these was 130 L of crude formation on drill cuttings. Several spills were flare related." (italics and bold ours).

At least 16 of the 103 spills noted in this quote were SBM (C-NLOPB, 2008), thus NHSNL also concluded that SBMs were included in the 1–49 bbl spill category. Further, in their response to the NHSNL review, Husky Oil Operations Ltd (2001) did not correct NHSNL's interpretation of the spill category, although they clearly had the opportunity to do so.

(3) SBM and hydrocarbon spills both have the potential to kill marine birds. The purpose of an EA is to identify the impact of a project on the environment and to mitigate those impacts (Canadian Environmental Assessment Act, 1992). In both projects reviewed, marine birds were identified as an important ecosystem component potentially significantly impacted by accidental spills (Terra Nova EA, section 5.7.6, White Rose EA section 5.9.2.2). On May 9, 2001, the Environmental Manager of the C-NLOPB was interviewed on a radio show, Open Air, on the waste management of SBM (Alder, 2001). In this interview, the C-NLOPB representative noted that SBM could compromise marine bird thermoregulatory capabilities — the main cause of oil-related mortality of birds in the North Atlantic (Jenssen *et al.,* 1985, Wiese and Ryan, 2003). The exclusion of SBM in the < 50 bbl spill category means that the significance rating of the environmental effects of SBM spills on marine birds was not predicted even though the C-NLOPB suggests that they have similar impacts on birds as hydrocarbons.

If SBM are not included in the less than 50 barrel spill category as the C-NLOPB suggests, then this exchange has identified a serious weakness in the EAs. Future EAs will have to state explicitly that this source of environmental pollution is not included in the predictions and/or include separate spill prediction statistics for SBM.

Responsible Authorities Response

In this section the Board outlines the responsible authorities' actions where projects exceeded predictions. We thank the Board for outlining the compliance and

enforcement actions that are taken following a spill event. We are aware that the Board works closely with industry to ensure appropriate mitigation measures are taken, however our paper focused on whether information is available in the public domain (see also Fraser and Ellis, 2008). We would encourage the Board to ensure that follow-up actions taken by the C-NLOPB after spill events are summarized and presented in the public literature, such as annual reports or annual spill statistics with additional information of compliance/enforcement actions taken to be provided on the Boards current webpage.

Regional Information Considered in Environmental Assessments

This section of our response focuses on whether regional spill data were considered in future environmental assessments. This section is specific to the White Rose project which occurred subsequent to the Hibernia and Terra Nova projects and could therefore include regional spill data. In any public review process it is normal practice for the public to be invited to comment on the Comprehensive Study EA prepared by a proponent and to submit comments to the Canadian Environmental Assessment Agency. The original Environmental Assessment for the White Rose project was published in October 2000. This original document did not incorporate local spill data but rather utilized statistics from the US Minerals Management Service (MMS) data base. We reviewed the original EA in accordance with standard practice. As noted by the C-NLOPB a supplemental report was published by Husky Oil Operations Ltd in April 2001, and this supplemental report included consideration of local spill data. Hence we are pleased to note that subsequent to the original White Rose EA regional spill data have been considered for this project. However, in future, regional information should be incorporated into original production project EAs as this is the document reviewed by the public. We note that this procedure was done for the exploratory drilling Orphan Basin EA (LGL Limited, 2006), but that this EA was not part of our production project review.

Concluding Remarks

We appreciate the Board's response to our article. This exchange has clearly identified a need for clarity in the EA predictions discussed. The goal of our original paper was to identify best practices in both the EA and follow-up process and despite the Board's rebuttal we still think there is room for improvement in the regulatory processes for the oil and gas sector in NL. We hope that the Board will, in the near future, provide spill data in the context of the predictions in the EAs on their website.

Further, we would also hope to see a detailed analysis on the follow-up for spills, particularly in instances where there are repeated occurrences of the same problem. Finally, it would be useful for all stakeholders involved to understand the response mechanisms in place for the Board for projects that exceed EA spill predictions. The Board should clearly provide this information on their website and in future EA public consultations.

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