

November 29, 2013

Ref: 10-L-0069-13

Ms. Elizabeth Young
Environmental Assessment Officer
Canada-Newfoundland and Labrador Offshore Petroleum Board
Fifth Floor, TD Place, 140 Water Street
St. John's, NL
A1C 6H6

RE: Corridor's Response to Comments Received on November 5, 2013, from the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB), regarding the Old Harry Assessment

Dear Ms. Young,

Please see below Corridor's response to the comments received on November 5, 2013. If you have any questions or require additional information, please let us know.

St. Lawrence Coalition/Ecojustice Comment # 1

Corridor is requested to provide a complete explanation, with supporting documents, for their reliance upon the (probabilistic) calculated blowout frequencies (see s. 8.4.5). We do not have confidence in the bases for conclusions that the likelihood of an extremely large oil spill (>150,000 barrels) is equivalent to 1 in 25,189 for each well drilled, a very large oil spill (>10,000 barrels) is equivalent to 1 in 12,610 for each well drilled, and a large oil spill (>1000 barrels) is equivalent to 1 in 10,091 for each well drilled. Obviously, the probability of a blowout increases significantly with each additional exploratory well drilled, and must be clearly incorporated into risk calculations. In addition, these probabilities are inconsistent with those presented by Mr. David Pryce (see below). Finally it is critical that uncertainties inherent in such probabilistic assertions be articulated plainly with a view to enabling public comprehension.

It is obviously true that not every well results in a serious "loss of control" incident. Statistics about the unlikelihood of an accident may seem reassuring to some, at least in the abstract: only four blowouts out of 647 Canadian wells drilled by 2010 (one blowout every 16 years), one pipeline spill over 1,000 litres in Canada between 2003 and 2012, and 3.3 tanker spills over 7 tonnes per year worldwide from 2000 to 2009.

Corridor Response

The complete explanation, with references to supporting documentation, for Corridor's reliance on (probabilistic) calculated blow-out frequencies is provided in Sections 8.4.2 to 8.4.4 in the Environmental Assessment and is summarized herein. As of May 2010, approximately 50,433 offshore exploration and delineation wells have been drilled world-wide (Deloitte Petroleum Services, 2010). Since 1955, only two extremely large spills have ever occurred from offshore drilling. In other words, two offshore wells out of 50,433 wells drilled resulted in extremely large spills, including the Macondo spill (Deepwater Horizon event). The probability, therefore, is one extremely large spill for

every 25,216 wells drilled (or 1 divided by 25,433 = 3.97×10^{-5} spills per well drilled). If there were one well drilled in the Gulf of St. Lawrence every year, the likelihood of an extremely large spill would be one large spill every 25,216 years.

The probabilities stated in the Corridor EA are not inconsistent with the statistics presented by Mr. David Pryce (Vice-President, Canadian Association of Petroleum Producers). In his presentation to the Standing Committee on Natural Resources, Mr. Pryce indicated that there have been four blowouts in Canadian waters out of 647 wells drilled (to 2010). None of these incidents resulted in a large oil spill, which is the context of the stated Corridor/SL Ross numbers. The four incidents include two in the Nova Scotia Offshore Area in the 1980s during the drilling of Shell's Uniacke G-72 and Mobil's West Venture N-91 wells (both gas). There were two significant blowouts in the north. The first was Panarctic's Drake Point N-67 well, drilled in 1969 to 2577m on the Sabine Peninsula of Melville Island. A well drilled in 1970 on King Christian Island resulted in another blowout. The King Christian D-18 blowout continued for 91 days and may have been emitting as much as 200 million cubic feet ($5,700,000 \text{ m}^3$ of gas per day).

St. Lawrence Coalition/Ecojustice Comment # 2

Corridor is requested to explain their "low risk" characterization in relation to potential spill impacts on commercial fisheries, based on the assertion of limited fishing activity within 10-12km of the proposed drill site. Furthermore, this characterization is based on Corridor's spill simulation that has been heavily criticized by DFO and EC. We further submit that Corridor has failed to account for the prospect of future stigma risks to regional fisheries interests, should a spill occur. Thus, the negative impacts on the fisheries sector related to a spill would occur even if the oil did not physically reach areas of the Gulf that are subject to fisheries operations.

Corridor Response

The "low-risk" characterization in relation to potential spill impacts on commercial fisheries is based on a variety of components. The first of these is the fact that the probability of any spill occurring (and thus potentially commercial fisheries) is 0.18% for a non-blowout spill (50-999 barrels), with the next possible spill type affecting commercial fisheries (subsea blowout) occurring 0.02% of the time. These probabilities are extremely low and thus can be classified as "low risk". This fact, combined with the fact that the closest fisheries, which are located 10 to 12 km outside of the project area, include redfish, cod, and white hake. Redfish, cod, and white hake are mobile fish, and, in the event of a major spill or blow-out of hydrocarbons, these species are likely to leave the impacted area for more favourable conditions. The majority of the closest invertebrate fisheries, which are less mobile, are located over 25 km away from the edges of the project area and are located outside of the "Predicted Maximum Extent of Oil Plume Trajectory in Relation to Exploratory License 1105". With respect to the prospect of future stigma risks to regional fisheries interests, fishing and harvesting restrictions can be imposed after an oil spill in order to prevent and minimize contamination of fishing gear and to protect and reassure consumers. Fishing can resume after the appearance of surface and subsurface oil has subsided. In the unlikely event of a spill, affected parties will be compensated in accordance with the Compensation Guidelines Respecting Damages Relating to Offshore Petroleum Activity (C-NLOPB and CNSOPB 2002).

Reference: C-NLOPB (Canada-Newfoundland and Labrador Offshore Petroleum Board) and CNSOPB (Canada-Nova Scotia Offshore Petroleum Board). 2002. Compensation Guidelines for Respecting Damages Relating to Offshore Petroleum Activity.

St. Lawrence Coalition/Ecojustice Comment # 3

Corridor still does not address the fact that a 23-year old reference is provided to show no significant mortality to marine mammals, while recent oil spills have shown the contrary.

Corridor Response

As described in Section 8.7.1.3, it has been stated that oil spills can negatively affect marine mammals. Some species of whales avoid oil slicks and thus negate any negative consequences of a spill. Based on a comparison of sperm whale acoustic activity from pre-spill (2007) and post-spill (2010) conditions, Ackleh et al. (2012) suggested that sperm whales may have relocated farther away from the Deepwater Horizon oil spill site in the Gulf of Mexico, as there was a statistically significant reduction in acoustic activity and abundance at a site 40 km (25 miles) compared with 14.5 km (9 miles) from the spill in 2010. Humpback whales may have shown temporary avoidance during the *Exxon Valdez* spill in Prince William Sound (von Ziegesar et al. 1994). The potential for a major oil spill or blowout occurring during exploratory drilling is extremely unlikely. The size of a worst case scenario oil spill will measure approximately 25 km x 50 km, with less major spills taking up much less area. Due to the fact that the likelihood of a major oil spill is extremely low, and in the event of a spill, the affected area is expected to be confined to a small area of the Gulf based on spill trajectory modeling, there is unlikely to be a significant adverse environmental effect on marine mammals (i.e., not likely to result in a decline or change in abundance and/or distribution of a marine mammal population over one or more generations and/or where natural recruitment may not re-establish the population to its pre-project level within several generations and/or where avoidance of the area becomes permanent).

References:

Ackleh, A.S., G.E. Ioup, J.W. Ioup, B.Ma, J.J. Newcomb, N. Pal, N.A. Sidorovskaia and C. Tiemann. 2012. Assessing the *Deepwater Horizon* oil spill impact on marine mammal population through acoustics: Endangered sperm whales. *Journal of the Acoustical Society of America*, 131: 2306-2314.
von Ziegesar, O., E. Miller and M.E. Dahlheim. 1994. Impacts on humpback whales in Prince William Sound. Pp. 173-191. In: T.R. Loughlin (ed.). *Marine Mammals and the Exxon Valdez*. Academic Press, Inc., San Diego, CA.

If you have any questions, please do not hesitate to call me at 902-406-8011.

Sincerely,



Health, Safety, Environment and Regulatory Affairs Manager
Corridor Resources Inc.