



Shell Canada Limited
400 - 4th Avenue S.W.
P.O. Box 100, Station M
Calgary, Alberta T2P 2H5
Tel (403) 691-3111
Internet www.shell.ca

March 28, 2013

Ecology Action Center
2705 Fern Lane
Halifax, Nova Scotia
Canada B3K 4L3

Attention: Mark Butler – Policy Director

Dear Mr. Butler,

CNSOPB Rec'd	MAR 28 2013
Date:	
Distribution:	KL/ELT/EM
Orig to file	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Doc. Reg. No.:	16608
File No.:	30,008.28

Subject: Response to Concerns Related to Shell's Shelburne Basin 3D Seismic Project

This letter is in response to the concerns raised by the Ecology Action Centre (EAC) regarding the location, duration and timing of Shell Canada Limited's 2013 seismic program. These concerns were expressed by the EAC in a letter dated January 30, 2013 to the Canada – Nova Scotia Offshore Petroleum Board (CNSOPB), a letter provided by the EAC to the CNSOPB on March 4, 2013, and during a March 7, 2013 meeting between Shell, CNSOPB, WWF and the EAC. Shell has considered these concerns and provides the following response.

In designing its projects, Shell seeks to reduce impacts on the environment and reconcile input from its stakeholders. In designing the 2013 seismic program, spatial and temporal parameters were considered and Shell selected the location, duration and timing for the project having regard for a variety of factors including potential environmental impacts, input from fishing groups and First Nations, as well as environmental conditions and safety.

In undertaking the program from May to September, Shell will be operating within a fair weather window in order to reduce exposure to potentially adverse weather conditions and make it safer for seismic crews and vessels. Additionally, the proposed duration of the program (90 to 120 days) was selected to provide Shell with the greatest opportunity to complete the seismic program within one season. Twenty-four hour operation is required for the duration of the survey to ensure the safety of both the vessels and crew in deploying and operating the seismic streamers, to potentially complete the program within one season, and to maximize seismic coverage for the survey area.

Further, in order to appropriately consider the potential environmental effects of the project as well as inform the project design, Shell undertook an environmental assessment (EA) as required by the CNSOPB as part of the *Geophysical Work Authorization Application*. Shell advised the EAC of the proposed 2013 seismic program and its environmental assessment as part of information packages dated November 6, 2012.

The environmental assessment considered the potential environmental effects of the assessed project parameters, including spatial and temporal scope. Additionally, it considered impacts to migrating marine life, sensitive marine species and special areas as well as potential impacts/interactions with fisheries and other users within the defined Project Area (see section 6.0 of the EA). The EA also describes mitigation measures (see section 11.0 of the EA) Shell incorporated into its project plans to reduce the potential for environmental effects that may result from the project.

In consideration of the results of the environmental assessment, Shell will adhere to the mitigation measures outlined in the *Statement of Canadian Practice with respect to the Mitigation of Seismic Sound in the Marine Environment*. Shell is also incorporating additional mitigation measures to further reduce potential impacts associated with the proposed timing, location and duration of the 2013 seismic survey.

These additional mitigation measures include:

- 1) inclusion of a 1000 m safety zone for all Schedule 1 SARA species as well as baleen whale species and sea turtles;
- 2) inclusion of pinnipeds within the 500m safety zone;
- 3) delay of ramp up for 60 minutes if a beaked whale is detected within the respective safety zone;
- 4) shutting down all airgun arrays during line turns;
- 5) utilizing Marine Mammal Observers (MMO) on each seismic vessel to monitor the associated safety zones during daylight hours;
- 6) use of turtle guards;
- 7) use of Passive Acoustic Monitoring (PAM) during ramp up as well as during night operations and periods of poor visibility;
- 8) use of WesternGeco's Whale Watcher™ PAM system, an additional proprietary technology which integrates monitoring hydrophones within the seismic streamer spread to identify vocalizing marine mammals and their location. This system is to be used in addition to standard PAM systems which will be located on all vessels.

In addition to these measures, seasonal restrictions were also considered for survey areas proximal to sensitive habitats. As a result, Shell is delaying seismic activity in the vicinity of EL 2429 (approximately 80 km from the Roseway Basin) to later in the seasonal window (July to September) when sound propagation onto the Scotian Shelf would be decreased.

With the inclusion of these mitigation measures, the environmental assessment concludes that the proposed timing, location and duration of Shell's 2013 program is not anticipated to have any significant residual environmental effects on sensitive species or their habitats.

In closing, we would like to thank the EAC for their input and expression of interest in regards to Shell's proposed 2013 seismic program. As well, we also appreciate the clarity that was provided in regards to future engagement during our meeting on March 7, 2013. Shell seeks to gather input from various stakeholders in designing its operational programs and will continue to engage those stakeholders that express an interest in upcoming activities to ensure appropriate feedback is gathered and considered.

Please contact the undersigned at (902) 471-3798 with any further questions, comments or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read 'Scott McDonald', written in a cursive style.

Scott McDonald
East Coast Operations Manager
Shell Canada Limited

cc. Candice Cook-Ohryn – Shell
Erik Goodwin – Shell
Eric Theriault – CNSOPB
Elizabeth MacDonald – CNSOPB
Keith Landra - CNSOPB



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March 28, 2013

World Wildlife Fund
Atlantic Region
Halifax, Nova Scotia
Canada

Attention: Tonya Wimmer – Manager, Species Conservation

Dear Ms. Wimmer,

Subject: Response to Concerns Related to Shell's Shelburne Basin 3D Seismic Project

This letter is in response to the concerns raised by the World Wildlife Fund (WWF) regarding Shell Canada Limited's 2013 seismic program. Concerns regarding the location, duration and timing of Shell's seismic survey were expressed by the WWF in an email provided to the CNSOPB on March 4, 2013 and during a March 7, 2013 meeting between Shell, CNSOPB, WWF and the EAC. Additionally, concerns regarding potential impacts to the North Atlantic right whale during seismic operations closest to the shelf slope/edge were expressed in an email provided to Shell and the CNSOPB on March 20, 2013. Shell has considered these concerns and provides the following response.

In designing its projects, Shell seeks to reduce impacts on the environment and reconcile input from its stakeholders. In designing the 2013 seismic program, spatial and temporal parameters were considered and Shell selected the location, duration and timing for the project having regard for a variety of factors including potential environmental impacts, input from fishing groups and First Nations, as well as environmental conditions and safety.

In undertaking the program from May to September, Shell will be operating within a fair weather window in order to reduce exposure to potentially adverse weather conditions and make it safer for seismic crews and vessels. Additionally, the proposed duration of the program (90 to 120 days) was selected to provide Shell with the greatest opportunity to complete the seismic program within one season. Twenty-four hour operation is required for the duration of the survey to ensure the safety of both the vessels and crew in deploying and operating the seismic streamers, to potentially complete the program within one season, and to maximize seismic coverage for the survey area.

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Further, in order to appropriately consider the potential environmental effects of the project as well as to inform the project design, Shell undertook an environmental assessment (EA) as required by the CNSOPB as part of the *Geophysical Work Authorization Application*. Shell advised the WWF of the proposed 2013 seismic program and its environmental assessment as part of information packages dated November 6, 2012.

The environmental assessment considered the potential environmental effects of the assessed project parameters, including the location and timing of the 2013 seismic survey. Additionally, it considered impacts to migrating marine life, sensitive marine species and special areas as well as potential impacts/interactions with fisheries and other users within the defined Project Area (see section 6.0 of the EA). The EA also describes mitigation measures (see section 11.0 of the EA) Shell incorporated into its project plans to reduce the potential for environmental effects that may result from the project.

In consideration of the results of the environmental assessment, Shell will adhere to the mitigation measures outlined in the *Statement of Canadian Practice with respect to the Mitigation of Seismic Sound in the Marine Environment*. Shell is also incorporating additional mitigation measures to further reduce potential impacts associated with the proposed timing, location and duration of the 2013 seismic survey.

These additional mitigation measures include:

- 1) inclusion of a 1000 m safety zone for all Schedule 1 SARA species as well as baleen whale species and sea turtles;
- 2) inclusion of pinnipeds within the 500m safety zone;
- 3) delay of ramp up for 60 minutes if a beaked whale is detected within the respective safety zone;
- 4) shutting down all airgun arrays during line turns;
- 5) utilizing Marine Mammal Observers (MMO) on each seismic vessel to monitor the associated safety zones during daylight hours;
- 6) use of turtle guards on tail buoys;
- 7) use of Passive Acoustic Monitoring (PAM) during ramp up as well as during night operations and periods of poor visibility;
- 8) use of WesternGeco's Whale Watcher™ PAM system, an additional proprietary technology which integrates monitoring hydrophones within the seismic streamer spread to identify vocalizing marine mammals and their location. This system is to be used in addition to standard PAM systems which will be located on all vessels.

In addition to these measures, seasonal restrictions were also considered for survey areas proximal to sensitive habitats. As a result, Shell is delaying seismic activity in the vicinity of EL 2429 (approximately 80 km from the Roseway Basin) to later in the seasonal window (July to September) when sound propagation onto the Scotian Shelf would be decreased. Further, with respect to the WWF's specific concern regarding the impact to right whales during night operations in areas closest to the shelf slope/edge, the risk of direct interaction with marine mammals is further reduced based on the survey location (approx 80 km from the Roseway Basin and 25 km from the Scotian Shelf) as well as the straight course and relatively slow speed (<10km/h) that the seismic vessels will travel for the duration of the program.

With the inclusion of these mitigation measures, the environmental assessment concludes that the proposed timing, location and duration of Shell's 2013 program is not anticipated to have any significant residual environmental effects on sensitive species or special areas.

In closing, we would like to thank the WWF for their input and expression of interest in regards to Shell's proposed 2013 seismic program. As well, we also appreciate the clarity that was provided in regards to future engagement during our meeting on March 7, 2013. Shell seeks to gather input from various stakeholders in designing its operational programs and will continue to engage those stakeholders that express an interest in upcoming activities to ensure appropriate feedback is gathered and considered.

Please contact the undersigned at (902) 471-3798 with any further questions, comments or concerns.

Sincerely,



Scott McDonald
East Coast Operations Manager
Shell Canada Limited

cc. Candice Cook-Ohryn – Shell
Erik Goodwin – Shell
Eric Theriault – CNSOPB
Elizabeth MacDonald – CNSOPB
Keith Landra - CNSOPB
Daniela Diz - WWF