



# Final Plan of Cooperation Beaufort Sea, Alaska

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May 2010

Prepared for

**ION Geophysical**  
2105 CityWest Boulevard, Suite 900  
Houston, TX 77042

Prepared by



2700 Gambell, Suite 200  
Anchorage, Alaska 99503



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## ACRONYMS & ABBREVIATIONS

2D	two-dimensional
AEWC	Alaska Eskimo Whaling Commission
CFR	Code of Federal Regulations
cu in	cubic inch(es)
FLIR	forward looking infrared
ft	foot/feet
G&G	Geological and Geophysical
ICAS	Inupiat Community of the Arctic Slope
IHA	Incidental Harassment Authorization
ION	ION Geophysical
km	kilometer(s)
KSOP	Kuukpikmiut Subsistence Oversight Panel, Inc.
LOA	Letter of Authorization
m	meter(s)
mi	mile(s)
MMS	Minerals Management Service
NMFS	National Marine Fisheries Service
NSB	North Slope Borough
POC	Plan of Cooperation
psi	pounds per square inch
USFWS	U.S. Fish and Wildlife Service

## 1.0 INTRODUCTION

ION Geophysical, Inc. (ION) will conduct an exploratory two-dimensional (2D) marine seismic survey in the Beaufort Sea of Alaska called the BeaufortSPAN™ West Program. This seismic survey will image the subsurface geological structures in the region, providing geologists and geophysicists with information to better evaluate prospects for potential oil and gas reserves.

The proposed survey will occur during early winter and in broken ice conditions from October 1, 2010 through mid-December 2010. The primary project area will extend from the U.S. and Canadian border in the east to Point Barrow in the west. Two shorter transect lines will extend west of Point Barrow into the Chukchi Sea. All activity will occur in federal waters of the Beaufort Sea. The project area is shown in Figure 1.

Three vessels will be used for operations: the *BOS Atlantic*, the *Polar Prince*, and the *Talagy* or similar vessels. The *BOS Atlantic* is the seismic source vessel and will tow the seismic array and hydrophone streamer. The *Polar Prince* is the support/supply vessel and The *Talagy* is an icebreaker that will break and clear ice in advance of the source and support/supply vessels. The vessels will enter the project area from Canadian waters in late September/early October and will exit and travel south through the Chukchi and Bering seas upon completion of the survey.

The survey has been timed to take place when many marine mammals will have migrated out of the project area. Starting the survey in the east also allows a greater buffer since typical marine mammal migrations are from the east (Beaufort Sea) to the west (Chukchi Sea); therefore, interference with marine mammal migrations are expected to be avoided. Due to the timing and location of the surveys, conflicts with subsistence activities are also expected to be avoided.

### 1.1 Purpose

A Draft Plan of Cooperation (POC) was submitted to leadership within the affected communities in April, followed by public meetings, also during the month of April. Potential conflicts between the proposed offshore activities and subsistence activities were identified during the public meetings and when appropriate were incorporated into this Final POC. This POC outlines measures to avoid any potential conflicts between subsistence activities and the proposed ION seismic survey area.

### 1.2 Permits

Permit authorization requests for ION's proposed seismic survey activities are underway. Federal permit applications have been submitted to the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the Minerals Management Service (MMS). Because the proposed project area and activity will occur entirely in federal waters, no state or North Slope Borough (NSB) permits are needed.

#### ***National Marine Fisheries Service***

In order to obtain an Incidental Harassment Authorization (IHA) from NMFS, ION must demonstrate that they have developed a POC in accordance with the 50 Code of Federal Regulations (CFR) 216.104(a)(12). If the proposed activities will take place in or near traditional Arctic subsistence hunting areas and/or may affect the availability of a species or stock of marine mammals for subsistence use, the POC must identify what measures will be taken to minimize adverse impacts on the availability of whales and seals for subsistence use. At a minimum, the POC must include the following:

- Statement that the applicant has provided the affected communities with a draft POC

- Schedule for meeting with the affected subsistence communities to discuss proposed activities and resolve potential conflicts related to proposed operations or the POC
- Description of the measures the applicant has taken or will take to ensure that the proposed activities will not interfere with subsistence hunting
- Plan to continue to meet with the affected subsistence communities, both prior to and during operations, to resolve conflicts and notify communities of operational changes

### **U.S. Fish and Wildlife Service**

In order to obtain a Letter of Authorization (LOA) for the non-lethal incidental take of Pacific walrus and polar bear from USFWS, ION must demonstrate that they have developed a POC in accordance with the 50 CFR 18.124. If the proposed activities will take place in or near a traditional subsistence hunting area the POC must identify what measures will be taken to minimize adverse impacts on the availability of polar bear and Pacific walrus for subsistence use.

### **Minerals Management Service**

A Geological and Geophysical (G&G) permit is required from MMS, pursuant to 30 CFR 251.4, in order for ION to conduct geological or geophysical exploration for mineral resources. The G&G permit will allow ION to conduct their seismic survey in accordance with appropriate statutes, regulations, and stipulations for a specified length of time and in a specified area.

## **1.3 Description of Proposed Project**

The proposed survey will occur during early winter and in broken ice conditions for about 76 days from October 1, 2010 through mid-December 2010. In total, 7,250 kilometers (km) (4,505 miles [mi]) of transect lines will be run. All activity will occur in federal waters of the Beaufort Sea 12 to 250 km (7.5 to 155 mi) offshore in water depths of less than 25 meters (m) (82 feet [ft]) to greater than 3,500 m (11,483 ft) over the continental shelf, continental slope, and the abyssal plain. The primary project area will extend from the U.S. and Canadian border in the east to Point Barrow in the west. Two shorter transect lines will extend west of Point Barrow into the Chukchi Sea. Ice conditions during the survey are expected to range from open water to 10/10 ice cover.

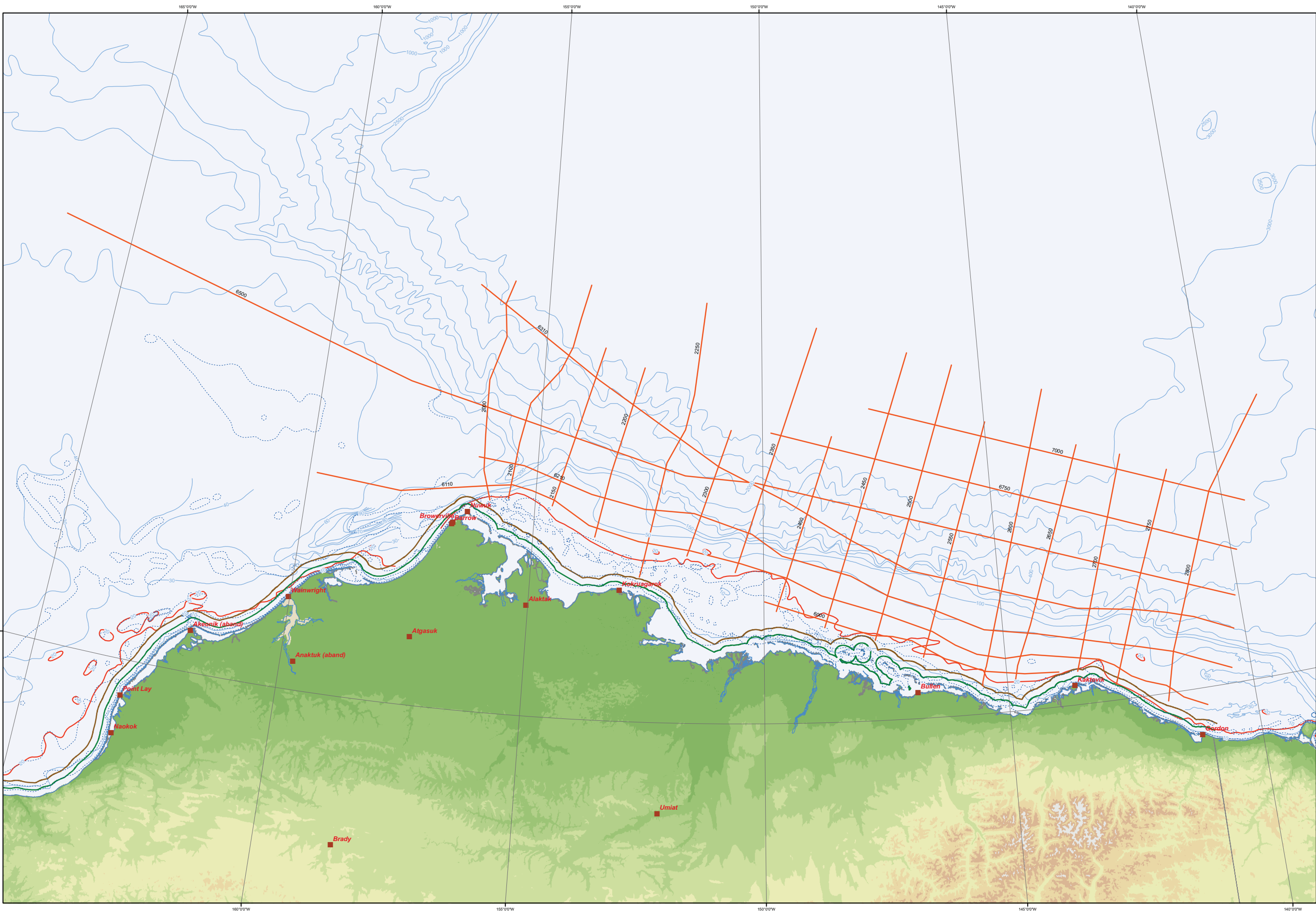
The proposed seismic survey will utilize an airgun array comprised of 28 Bolt airguns, with a total capacity of 4,330 cubic inches (cu in). Two subarrays arranged with 14 airguns each will be operated at 2,000 pounds per square inch (psi). The seismic array will be towed behind the *BOS Atlantic* floating underneath any ice in the area.

Additional systems to be operated, typically simultaneously with the airgun array, are:

- A single-beam echosounder
- An ice profiler

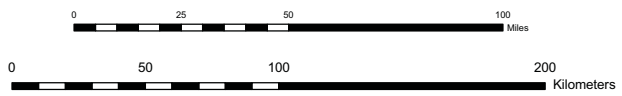
A hydrophone streamer (echosounder) will be used for ice profiling and bathymetry data collection. The ice-profiler will be oriented forward to monitor ice ahead of the *BOS Atlantic*.

Three vessels will be used during the proposed activities: the *BOS Atlantic*, the *Polar Prince*, and the *Talagy*. The *Talagy* will travel 0.5 to 1.0 km (0.3 to 0.6 mi) ahead of the source vessel, *BOS Atlantic*, and support/supply vessel, *Polar Prince*, to break and clear ice. There is no air support planned or necessary for the proposed activities.



- Legend**
- Populated Place
  - BeaufortWest\_v6
  - DepthLineFeature**
  - DEPTH\_TYPE
  - DepthAreaLine
  - ⋯ DepthContour
  - Federal - State Line
  - LINE\_8G

Projection Information:  
 Name: Beaufort Lambert Conformal Conic  
 Projection: Lambert Conformal Conic  
 Datum: North American 1983  
 False Easting: 4000000  
 False Northing: 1000000  
 Central Meridian: -150.5  
 Standard Parallel 1: 69.166666666667  
 Standard Parallel 2: 73.833333333333  
 Latitude Of Origin: 71.5  
 ION - GX Technology



BeaufortSPAN West (v6)  
 6,811km

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## **2.0 PLAN OF COOPERATION FOR CONFLICT AVOIDANCE**

ION will submit this POC to potentially affected subsistence communities and subsistence stakeholder groups, as well as to the USFWS and NMFS. The Draft POC was made available to communities prior to the planned public meetings which gave community members the opportunity to evaluate the proposed activities. Appropriate community feedback was incorporated into this POC.

### **2.1 Affected Subsistence Communities and Stakeholders**

The following subsistence and community groups have been identified by ION as being potentially affected by proposed activities. ION included these groups in the POC process and has met with representatives of each group. Because many of the marine mammal co-management groups (e.g., Alaska Ice Seal Committee) have members in several communities, representatives from the potentially affected communities were individually invited to leadership and/or public meetings so that their input could be solicited. Copies of invitations are provided in Appendix A.

- Alaska Eskimo Whaling Commission (AEWC)
- Alaska Ice Seal Committee
- Alaska Nanuuq Commission
- Inupiat Community of the Arctic Slope (ICAS)
- Kuukpikmiut Subsistence Oversight Panel, Inc. (KSOP)
- Native Village of Nuiqsut
- Native Village of Barrow
- Native Village of Kaktovik
- Village whaling captains of Kaktovik, Nuiqsut, and Barrow

### **2.2 Meetings with Communities and Subsistence Users**

Presentations to community and stakeholder groups began in late 2009 and are expected to continue through 2010. These meetings are designed to share information and document concerns and comments regarding impacts to subsistence activities in the potentially affected community. Table 2.2-1 lists communities and subsistence users potentially affected and the date and location of their leadership and/or public meeting.

ION has responded to community and subsistence users' comments and concerns and when appropriate, incorporated both comments and responses into this POC. This POC includes the proposed measures for mitigation, avoidance, and communication developed as a result of meetings with community and subsistence users. This POC will be submitted to the potentially affected communities and stakeholder groups, as well as the appropriate federal agencies.

TABLE 2.2 Meetings with Potentially Affected Stakeholders and Subsistence Users

Community/Stakeholder	Date	Location	Notes
NSB – Department of Wildlife Management	15 December 2009	Barrow	Meeting with Robert Suydam of NSB to discuss proposed project.
AEWC and Village Whaling Captains	12–13 February 2010	Barrow	Presented the proposed project to AEWC as part of the 2010 Annual Captains' Mini-Convention.
Kaktovik Leadership	16 March 2010	Anchorage	Meeting with Kaktovik mayor and president of Kaktovik Inupiat Corporation scheduled, but canceled due to illness.
Nuiqsut Leadership	17 March 2010	Nuiqsut	Meeting with KSOP and Native Village of Nuiqsut. Thomas Napageak Jr., mayor of Nuiqsut was present.
NSB Planning Commission	18 March 2010	Barrow	Presented the proposed project to NSB Planning Commission. Representatives of NSB Planning Department were present.
Barrow Leadership	18 March 2010	Barrow	Meeting with NSB Dept. of Wildlife Management, ICAS, and Native Village of Barrow.
NMFS Open Water Meeting	22–24 March 2010	Anchorage	Presented at NMFS Open Water Meeting.
NMFS Peer Review Meeting	25 March 2010	Anchorage	Presented to NMFS Peer Review Panel.
Barrow public meeting	8 April 2010	Barrow	Public meeting held at Inupiat Heritage Center from 7pm to 9pm.
Kaktovik public meeting	10 April 2010	Kaktovik	Public meeting held at Kaktovik Community Center from 7pm to 9pm.
Nuiqsut public meeting	17 April 2010	Nuiqsut	Public meeting held at Kusik Community Center from 7pm to 9pm.
Barrow update	August 2010 (proposed)	Barrow	ION will provide an update of the proposed project prior to beginning operations.
Nuiqsut update	August 2010 (proposed)	Nuiqsut	ION will provide an update of the proposed project prior to beginning operations.
Kaktovik update	August 2010 (proposed)	Kaktovik	ION will provide an update of the proposed project prior to beginning operations.

## Notes:

AEWC = Alaska Eskimo Whaling Commission

ICAS = Inupiat Community of the Arctic Slope

NMFS = National Marine Fisheries Service

NSB = North Slope Borough

KSOP = Kuukpikmiut Subsistence Oversight Panel, Inc.

## 2.3 Meeting Summaries

Agendas, flyers, notes, comments, and sign-in sheets from the following meetings are included in Appendix B.

- KSOP and Native Village of Nuiqsut meeting, March 17, 2010
- NSB Planning Commission meeting, March 18, 2010
- ICAS meeting, March 18, 2010
- NSB Department of Wildlife Management, March 18, 2010
- Native Village of Barrow, March 18, 2010
- Open Water Meeting presentation, March 23, 2010
- Barrow Public Meeting, April 8, 2010
- Kaktovik Public Meeting, April 10, 2010
- Nuiqsut Public Meeting, April 17, 2010

## 2.4 Project Information and Presentation Materials

Copies of presentation materials provided at the leadership meetings and the public meetings are included in Appendix C.

## 3.0 PROPOSED MITIGATION

ION proposes to avoid potential conflicts with subsistence users by timing their activities to take place when subsistence hunting is not anticipated. The program is scheduled to start after whaling activities have concluded for the season and many marine mammals have migrated out of the project area (October for eastern project area; November for western project area). Subsistence hunting of seals is not anticipated during the project. Subsistence hunters have commented that seal hunting typically does not occur during October through mid-December due to hazardous ice and weather conditions. The survey will be conducted from east to west, following behind the whale migration and thus limiting potential effects on whales and the subsistence harvest.

### 3.1 Marine Mammal Monitoring and Mitigation

A plan to monitor for marine mammals during offshore operations and mitigate impacts is required by NMFS and USFWS. Proposed monitoring is included in Section 11 of the IHA application and Section 2 of the LOA application. Proposed mitigation measures are included in Section 13 of the IHA application and Section 2 of the LOA application.

### 3.2 Proposed Conflict Avoidance Measures

ION has developed their operational schedule so that there is very little opportunity to interfere with subsistence activities. Program features include:

- Scheduling the seismic survey to occur from October 1, 2010 through mid-December, 2010 in order to avoid periods of higher abundance of marine mammal species and most of the subsistence hunting activities that occur during the open-water season

- Planning the survey to proceed from the eastern to western Beaufort Sea to avoid, as much as possible, any remaining migratory animals and associated subsistence activities
- Completing the survey prior to the time when ringed seals would establish and enter lairs for reproductive purposes

Other operational activities that will minimize the disturbance of marine mammals includes the following measures:

- Safety radii have been modeled for the proposed seismic source and will be measured as part of initial project activities.
- Ramp-up and soft-start methods will be employed when initiating airguns and seismic operations. This will allow any marine mammals in the area an opportunity to swim away from the source before the full energy is emitted.
- Marine Mammal Observers will actively watch for signs and sightings of marine mammals and will initiate power-down, shut down, or speed and course alterations if marine mammals are observed in or entering safety radii.
- Vessel lights, night vision equipment, and/or a forward looking infrared (FLIR) system will be used during nighttime and low-light conditions.
- A record of all marine mammal sightings, including distance from source vessel and vessel operations, will be maintained. Periodic updates will be made to USFWS and NMFS as required by the LOA and IHA, respectively.

**APPENDIX A**  
**INVITATION LETTERS**

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April 2, 2010

Thomas Olemaun, Executive Director  
Native Village of Barrow  
P.O. Box 1130  
Barrow, AK 99723

Re: Leadership Meeting with ION Geophysical, Inc.

Dear Mr. Olemaun:

On behalf of ION Geophysical, Inc. (ION), my colleagues and I would like to thank you for taking the time to meet with us regarding the proposed ION BeaufortSPAN™ West Program. We appreciate the numerous informative comments and the input that you shared addressing our planned operations.

Enclosed please find a copy of our Draft Plan of Cooperation (POC) for your review. The Draft POC describes the procedures ION will follow to avoid conflicts with subsistence activities and is designed to address your comments and concerns. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project and the Draft POC. A Final POC incorporating comments and suggestions from the public meetings will be submitted to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Copies will be provided to interested parties upon request.

The Barrow public meeting is scheduled to take place on April 8<sup>th</sup> from 7pm to 9pm in the Multipurpose Room at the Inupiat Heritage Center. We would like to extend to you and your staff a special invitation to attend the meeting and provide your input. Refreshments and door prizes will be provided.

If you have any questions or would like to provide comments on the Draft POC, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Once again thank you for your time and have a wonderful day.

Sincerely,



Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

cc: Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/RS  
15337-02-10-002A/10-026A



[ CHARGED WITH INNOVATION ]



April 2, 2010

Taquilik Hepa  
North Slope Borough Department of Wildlife Management  
P.O. Box 69  
Barrow, AK 99723

Re: Leadership Meeting with ION Geophysical, Inc.

Dear Ms. Hepa:

On behalf of ION Geophysical, Inc. (ION), my colleagues and I would like to thank you for taking the time to meet with us regarding the proposed ION BeaufortSPAN™ West Program. We appreciate the numerous informative comments and the input that you shared addressing our planned operations.

Enclosed please find a copy of our Draft Plan of Cooperation (POC) for your review. The Draft POC describes the procedures ION will follow to avoid conflicts with subsistence activities and is designed to address your comments and concerns. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project and the Draft POC. A Final POC incorporating comments and suggestions from the public meetings will be submitted to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Copies will be provided to interested parties upon request.

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If you have any questions or would like to provide comments on the Draft POC, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Once again thank you for your time and have a wonderful day.

Sincerely,

Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

cc: Robert Suydam, NSB  
Harry Brower, NSB  
Todd Sformo, NSB  
Leslie Pierce, NSB  
Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/RS  
15337-02-10-002A/10-026A





April 2, 2010

Edward Itta, Mayor  
North Slope Borough  
P.O. Box 69  
Barrow, AK 99723

Re: Leadership Meeting with ION Geophysical, Inc.

Dear Mayor Itta:

On behalf of ION Geophysical, Inc. (ION), my colleagues and I would like to thank you for allowing your representative, Mr. Andy Mack, to meet with us regarding the proposed ION BeaufortSPAN™ West Program. We appreciate the input that Mr. Mack has shared addressing our planned operations.

Enclosed please find a copy of our Draft Plan of Cooperation (POC) for your review. The Draft POC describes the procedures ION will follow to avoid conflicts with subsistence activities and is designed to address your comments and concerns. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project and the Draft POC. A Final POC incorporating comments and suggestions from the public meetings will be submitted to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Copies will be provided to interested parties upon request.

The Barrow public meeting is scheduled to take place on April 8<sup>th</sup> from 7pm to 9pm in the Multipurpose Room at the Inupiat Heritage Center. We would like to extend to you a special invitation to attend the meeting and provide your input. Refreshments and door prizes will be provided.

If you have any questions or would like to provide comments on the Draft POC, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Once again thank you for your time and have a wonderful day.

Sincerely,



Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

cc: Andy Mack, Special Assistant to Mayor Itta, NSB  
Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/RS  
15337-02-10-002A/10-026A



[ CHARGED WITH INNOVATION ]



April 2, 2010

Joseph Sage, Boardmember  
Alaska Eskimo Walrus Commission  
c/o Native Village of Barrow  
P.O. Box 1130  
Barrow, AK 99723

Re: Leadership Meeting with ION Geophysical, Inc.

Dear Mr. Sage:

ION Geophysical, Inc. (ION) is proposing to conduct a 2D marine seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

The Barrow public meeting is scheduled to take place on April 8<sup>th</sup> from 7pm to 9pm in the Multipurpose Room at the Inupiat Heritage Center. We would like to extend a special invitation to you and any member of the Alaska Eskimo Walrus Commission to attend the public meeting and provide your input. Refreshments and door prizes will be provided. If you are available, we would be happy to meet with you at your convenience while we are in Barrow.

Enclosed please find a copy of our Draft Plan of Cooperation (POC) for your review. The Draft POC describes the procedures ION will follow to avoid conflicts with subsistence activities and is designed to address your comments and concerns. A Final POC incorporating comments and suggestions from the public meetings will be submitted to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Copies will be provided to interested parties upon request.

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Thank you for your time and have a wonderful day.

Sincerely,

Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

cc: Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/RS  
15337-02-10-002A/10-026A



[ CHARGED WITH INNOVATION ]



April 2, 2010

George Edwardson, President  
Inupiat Community of the Arctic Slope  
P.O. Box 1121  
Barrow, AK 99723

Re: Leadership Meeting with ION Geophysical, Inc.

Dear Mr. Edwardson:

On behalf of ION Geophysical, Inc. (ION), my colleagues and I would like to thank you for allowing your representatives, Mr. Lloyd Paningona and Ms. Helen Simmonds to meet with us regarding the proposed ION BeaufortSPAN™ West Program and for providing your input at the Open Water Meeting. We appreciate the information that you have shared addressing our planned operations.

Enclosed please find a copy of our Draft Plan of Cooperation (POC) for your review. The Draft POC describes the procedures ION will follow to avoid conflicts with subsistence activities and is designed to address your comments and concerns. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project and the Draft POC. A Final POC incorporating comments and suggestions from the public meetings will be submitted to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Copies will be provided to interested parties upon request.

The Barrow public meeting is scheduled to take place on April 8<sup>th</sup> from 7pm to 9pm in the Multipurpose Room at the Inupiat Heritage Center. We would like to extend to you and your staff a special invitation to attend the public meeting and provide your input. Refreshments and door prizes will be provided.

If you have any questions or would like to provide comments on the Draft POC, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Once again thank you for your time and have a wonderful day.

Sincerely,

Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

cc: Lloyd Paningona, ICAS  
Helen Simmonds, ICAS  
Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/RS  
15337-02-10-002A/10-026A



[ CHARGED WITH INNOVATION ]



April 2, 2010

Harry Brower, Chairman  
Alaska Eskimo Whaling Commission  
P.O. Box 570  
Barrow, AK 99723

Re: Leadership Meeting with ION Geophysical, Inc.

Dear Mr. Brower:

On behalf of ION Geophysical, Inc. (ION), my colleagues and I would like to thank you for taking the time to meet with us regarding the proposed ION BeaufortSPAN™ West Program. We appreciate the numerous informative comments and the input that you shared addressing our planned operations.

Enclosed please find a copy of our Draft Plan of Cooperation (POC) for your review. The Draft POC describes the procedures ION will follow to avoid conflicts with subsistence activities and is designed to address your comments and concerns. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project and the Draft POC. A Final POC incorporating comments and suggestions from the public meetings will be submitted to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Copies will be provided to interested parties upon request.

The Barrow public meeting is scheduled to take place on April 8<sup>th</sup> from 7pm to 9pm in the Multipurpose Room at the Inupiat Heritage Center. We would like to extend a special invitation to you and any member of the marine mammal co-management groups you are a member of (the Alaska Eskimo Whaling Commission, Ice Seal Committee, the Alaska Nanuq Commission, and the Alaska Beluga Whale Committee) to attend the meeting and provide input. Refreshments and door prizes will be provided.

If you have any questions or would like to provide comments on the Draft POC, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Once again thank you for your time and have a wonderful day.

Sincerely,

Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

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MT/EB/NS/RS  
15337-02-10-002A/10-026A



April 2, 2010

Eugene Brower, President  
Barrow Whaling Captains' Association  
P.O. Box 4927  
Barrow, AK 99723

Re: Leadership Meeting with ION Geophysical, Inc.

Dear Mr. Brower:

ION Geophysical, Inc. (ION) is proposing to conduct a 2D marine seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

The Barrow public meeting is scheduled to take place on April 8<sup>th</sup> from 7pm to 9pm in the Multipurpose Room at the Inupiat Heritage Center. We would like to extend a special invitation to you and any member of the Barrow Whaling Captains Association to attend the public meeting and provide input. Refreshments and door prizes will be provided. If you are available, we would be happy to meet with you at your convenience while we are in Barrow.

Enclosed please find a copy of our Draft Plan of Cooperation (POC) for your review. The Draft POC describes the procedures ION will follow to avoid conflicts with subsistence activities and is designed to address your comments and concerns. A Final POC incorporating comments and suggestions from the public meetings will be submitted to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Copies will be provided to interested parties upon request.

If you have any questions or would like to provide comments on the Draft POC, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Thank you for your time and have a wonderful day.

Sincerely,



Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

cc: Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/RS  
15337-02-10-002A/10-026A



April 2, 2010

Isaac Akootchook, President  
Native Village of Kaktovik  
P.O. Box 130  
Kaktovik, AK 99747

Re: Public Meeting with ION Geophysical, Inc.

Dear Mr. Akootchook:

ION Geophysical, Inc. (ION) is proposing to conduct a 2D marine seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. Some information about the program was sent to you on March 25<sup>th</sup>. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

The Kaktovik public meeting is scheduled to take place on April 10<sup>th</sup> from 7pm to 9pm in the Kaktovik Community Center. Refreshments and door prizes will be provided. We would like to extend a special invitation to you and any member of the Native Village of Kaktovik Board to attend the meeting and provide input. If you are available, we would be happy to meet with you at your convenience while we are in Kaktovik.

Enclosed please find a copy of our Draft Plan of Cooperation (POC) for your review. The Draft POC describes the procedures ION will follow to avoid conflicts with subsistence activities and is designed to address your comments and concerns. A Final POC incorporating comments and suggestions from the public meetings will be submitted to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Copies will be provided to interested parties upon request.

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Sincerely,



Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

cc: Fenton Rexford, Native Village of Kaktovik  
Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/RS  
15337-02-10-002C/10-026C



[ CHARGED WITH INNOVATION ]



April 2, 2010

Nathan Gordon, President  
Kaktovik Inupiat Corporation  
P.O. Box 73  
Kaktovik, AK 99747

Re: Public Meeting with ION Geophysical, Inc.

Dear Mr. Gordon:

ION Geophysical, Inc. (ION) is proposing to conduct a 2D marine seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. Some information about the program was sent to you on March 25<sup>th</sup>. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

The Kaktovik public meeting is scheduled to take place on April 10<sup>th</sup> from 7pm to 9pm in the Kaktovik Community Center. Refreshments and door prizes will be provided. We would like to extend a special invitation to you and any member of the Kaktovik Inupiat Corporation (KIC) Board to attend the public meeting and provide input. If you are available, we would be happy to meet with you at your convenience while we are in Kaktovik.

Enclosed please find a copy of our Draft Plan of Cooperation (POC) for your review. The Draft POC describes the procedures ION will follow to avoid conflicts with subsistence activities and is designed to address your comments and concerns. A Final POC incorporating comments and suggestions from the public meetings will be submitted to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Copies will be provided to interested parties upon request.

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Sincerely,

Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

cc: Phillip Tikluk, KIC  
Michelle Turner, AES  
AES Project File  
Administrative Record

ML/MT/NS/RS  
15337-02-10-002C/10-026C



April 2, 2010

Annie Tikluk, Mayor  
City of Kaktovik  
P.O. Box 27  
Kaktovik, AK 99747

Re: Public Meeting with ION Geophysical, Inc.

Dear Ms. Tikluk:

ION Geophysical, Inc. (ION) is proposing to conduct a 2D marine seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. Some information about the program was sent to you on March 25<sup>th</sup>. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

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Sincerely,



Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

cc: Michelle Turner, AES  
AES Project File  
Administrative Record

ML/MT/NS/RS  
15337-02-10-002C/10-026C





[ CHARGED WITH INNOVATION ]



April 2, 2010

Nora Jane Burns  
NSB Village Liaison  
P.O. Box 102  
Kaktovik, AK 99747

Re: Public Meeting with ION Geophysical, Inc.

Dear Ms. Burns:

ION Geophysical, Inc. (ION) is proposing to conduct a 2D marine seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. Some information about the program was sent to you on March 25<sup>th</sup>. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

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Sincerely,

Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

cc: Michelle Turner, AES  
AES Project File  
Administrative Record

ML/MT/NS/RS  
15337-02-10-002C/10-026C



[ CHARGED WITH INNOVATION ]



April 2, 2010

Fenton Rexford, President  
Kaktovik Whaling Captains Association  
P.O. Box 137  
Kaktovik, AK 99747

Re: Public Meeting with ION Geophysical, Inc.

Dear Mr. Rexford:

ION Geophysical, Inc. (ION) is proposing to conduct a 2D marine seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. Some information about the program was sent to you on March 25<sup>th</sup>. We are expecting to hold public meetings in Barrow, Nuiqsut, and Kaktovik to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

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Enclosed please find a copy of our Draft Plan of Cooperation (POC) for your review. The Draft POC describes the procedures ION will follow to avoid conflicts with subsistence activities and is designed to address your comments and concerns. A Final POC incorporating comments and suggestions from the public meetings will be submitted to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Copies will be provided to interested parties upon request.

If you have any questions or would like to provide comments on the Draft POC, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Sincerely,

Ed Nelson  
Project Manager  
ION Geophysical, Inc.

Enclosure: Draft Plan of Cooperation

cc: Michelle Turner, AES  
AES Project File  
Administrative Record

ML/MT/NS/RS  
15337-02-10-002C/10-026C



[ CHARGED WITH INNOVATION ]



April 14, 2010

Billy Oyagak, President  
Nuiqsut Whaling Captains Association  
P.O. Box 89013  
Nuiqsut, AK 99789

Re: Public Meeting with ION Geophysical, Inc.

Dear Mr. Oyagak:

ION Geophysical, Inc. (ION) is proposing to conduct a two-dimensional (2D) seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. We are planning to hold a public meeting in Nuiqsut to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

The Nuiqsut public meeting is scheduled to take place on April 17<sup>th</sup> from 7:00pm to 9:00pm in the Kusik Community Center. We would like to extend a special invitation to you and any member of the Nuiqsut Whaling Captains Association to attend the public meeting and provide your input. Refreshments and door prizes will be provided. If you are available, we would be happy to meet with you at your convenience while we are in Nuiqsut.

If you have any questions, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Thank you for your time and have a wonderful day.

Sincerely,

Ed Nelson  
Project Manager  
ION Geophysical, Inc.

cc: Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/GS  
15337-02-10-003/10-033

April 14, 2010

Bernice Kaigelak, President  
Native Village of Nuiqsut  
P.O. Box 169  
Nuiqsut, AK 99789

Re: Public Meeting with ION Geophysical, Inc.

Dear Ms. Kaigelak:

ION Geophysical, Inc. (ION) is proposing to conduct a two-dimensional (2D) seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. We are planning to hold a public meeting in Nuiqsut to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

The Nuiqsut public meeting is scheduled to take place on April 17<sup>th</sup> from 7:00pm to 9:00pm in the Kusik Community Center. We would like to extend a special invitation to you and any member of the Native Village of Nuiqsut to attend the public meeting and provide your input. Refreshments and door prizes will be provided. If you are available, we would be happy to meet with you at your convenience while we are in Nuiqsut.

If you have any questions, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Thank you for your time and have a wonderful day.

Sincerely,



Ed Nelson  
Project Manager  
ION Geophysical, Inc.

cc: Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/GS  
15337-02-10-003/10-033



[ CHARGED WITH INNOVATION ]



April 14, 2010

Isaac Nukapigak, President  
Kuukpik Corporation  
P.O. Box 89187  
Nuiqsut, AK 99789

Re: Public Meeting with ION Geophysical, Inc.

Dear Mr. Nukapigak:

ION Geophysical, Inc. (ION) is proposing to conduct a two-dimensional (2D) seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. We are planning to hold a public meeting in Nuiqsut to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

The Nuiqsut public meeting is scheduled to take place on April 17<sup>th</sup> from 7:00pm to 9:00pm in the Kusik Community Center. We would like to extend a special invitation to you and any member of Kuukpik Corporation to attend the public meeting and provide your input. Refreshments and door prizes will be provided. If you are available, we would be happy to meet with you at your convenience while we are in Nuiqsut.

If you have any questions, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Thank you for your time and have a wonderful day.

Sincerely,

Ed Nelson  
Project Manager  
ION Geophysical, Inc.

cc: Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/GS  
15337-02-10-003/10-033



[ CHARGED WITH INNOVATION ]



April 14, 2010

Annie Gray, Executive Director  
Kuukpikmiut Subsistence Oversight Panel, Inc.  
P.O. Box 89126  
Nuiqsut, AK 99789

Re: Public Meeting with ION Geophysical, Inc.

Dear Ms. Gray:

ION Geophysical, Inc. (ION) is proposing to conduct a two-dimensional (2D) seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. We are planning to hold a public meeting in Nuiqsut to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

The Nuiqsut public meeting is scheduled to take place on April 17<sup>th</sup> from 7:00pm to 9:00pm in the Kusik Community Center. We would like to extend a special invitation to you and the members of KSOP, Inc. to attend the public meeting and provide your input. Refreshments and door prizes will be provided. If you are available, we would be happy to meet with you at your convenience while we are in Nuiqsut.

If you have any questions, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Thank you for your time and have a wonderful day.

Sincerely,

Ed Nelson  
Project Manager  
ION Geophysical, Inc.

cc: Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/GS  
15337-02-10-003/10-033



[ CHARGED WITH INNOVATION ]



April 14, 2010

Thomas Napageak Jr., Mayor  
City of Nuiqsut  
P.O. Box 89148  
Nuiqsut, AK 99789

Re: Public Meeting with ION Geophysical, Inc.

Dear Mr. Napageak:

ION Geophysical, Inc. (ION) is proposing to conduct a two-dimensional (2D) seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010. We are planning to hold a public meeting in Nuiqsut to present the BeaufortSPAN™ West Program to the general public and obtain feedback on the project.

The Nuiqsut public meeting is scheduled to take place on April 17<sup>th</sup> from 7:00pm to 9:00pm in the Kusik Community Center. We would like to extend a special invitation to you and any member of the City of Nuiqsut to attend the public meeting and provide your input. Refreshments and door prizes will be provided. If you are available, we would be happy to meet with you at your convenience while we are in Nuiqsut.

If you have any questions, please don't hesitate to contact me at [Edward.Nelson@iongeo.com](mailto:Edward.Nelson@iongeo.com) or Michelle Turner with ASRC Energy Services (AES) at 907-339-5460 or [michelle.turner@asrcenergy.com](mailto:michelle.turner@asrcenergy.com).

Thank you for your time and have a wonderful day.

Sincerely,

Ed Nelson  
Project Manager  
ION Geophysical, Inc.

cc: Michelle Turner, AES  
AES Project File  
Administrative Record

MT/EB/NS/GS  
15337-02-10-003/10-033





**APPENDIX B**  
**MEETING NOTES**

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Kuukpikmiut Subsistence Oversight Panel, Inc  
2205 2<sup>nd</sup> Ave. P.O. Box 89126  
Nuiqsut, Alaska 99789  
Ph.# (907) 480-2713 Fax# (907) 480-2714  
Email ksopi@astacalaska.net

March 17, 2010

**SPECIAL MEETING**

Call to order: 3:00 pm

Roll Call:

(Present, Absent, Excused)

Eli Nukapigak

✓ patcheeep in

Gordon Brown

absent

Thomas Napageak Jr.

✓

Eli Kilapsuk

✓

Jonah Nukapigak

✓

Frank Oyagak Jr.

✓

Theodore Pausanna

✓

Also present: Myrna Skier - NVN  
Josaphine Leavitt - NVN  
Hazel Kunakuaana - NVN

Invocation:

Maggie Ahmasoq

Ed Nelson

Beth Haley

Michele Turner

Special meeting with GXI - ASRC Energy

adjn - 4:00 pm



## Nuiqust Combined Leadership Meeting

### Meeting Notes

Attendees: Eli Nukapigak, KSOP member (via telephone)  
 Thomas Napageak Jr., KSOP member and Nuiqsut Mayor  
 Eli Kilapsuk, KSOP member  
 Jonah Nukapigak, KSOP member  
 Frank Oyagak Jr., KSOP member  
 Theodore Pasanna, KSOP member  
 Myrna Skin, Native Village of Nuiqsut  
 Josaphine Leavitt, Native Village of Nuiqsut  
 Hazel Kunakuana, Native Village of Nuiqsut  
 Ed Nelson, Ion, Project Manager  
 Beth Haley, LGL, Marine Biologist  
 Maggie Ahmaogak, AES, Stakeholder Relations  
 Michelle Turner, AES, Project Manager

Date: 17 March 2010, 3pm

General – provided an overview of the proposed project using the Leadership powerpoint slide. These notes are meant to capture comments and responses from meeting attendees.

Thomas	Has there been any issue in the past regarding incidental takes?
Ed	I believe that there was one take in Greenland.
Beth	To attendees: Do you agree that ice isn't fast (shorefast) by mid-December?
Thomas	It should like the time planned for the project (October through mid-December) is the best time. Nobody risks boats in November.
Thomas	Do the vessels have incinerators for waste?
Ed	Yes. We will provide you with the particulars for waste streams. AES will distribute them
Thomas	Regarding FLIR: I like this.
Margie	Did AEWG like the idea of the program (timing)?
Ed	We talked to Eugene and Harry Brower and they seemed to like the program.
Margie	You are taking care of our animals by doing things this way.
Eli	The time when you propose to work is the season for winds and storm surge in the area. Can you do a seismic survey during storms?
Ed	If there's a storm, we'll have to run for cover. Ion hasn't worked in this area at this time before. We would like to get input from you about safe harbor. Discussion about storms and safe harbor near barrier islands (Pole Island, Alaska Island)
Eli	Will you continue doing seismic in heavy ice conditions?
Ed	We have to take into account the safety of the crew and make sure we don't lose

Nuiqust Combined Leadership Meeting

Meeting Notes

	anything. When in doubt, we'll go to safety.
Thomas	To Eli – the boats are 300 ft long.
Ed	Even though the vessels are big, we still have to look at weather, shut down for weather.
Eli	In October you can get caught in freezeup inside the barrier islands.
Thomas	October & November is the best time to work, it's out of the way of subsistence hunters.
Ed	We want to work with subsistence hunters so that we don't interfere with their activities.
Thomas	The last project you worked well with us.
Hazel	The Native Village of Nuiqsut would like to get copies of the MMO reports like you provide to NSB Wildlife. Please sent to <a href="mailto:native.village@astacalaska.net">native.village@astacalaska.net</a>

**NORTH SLOPE BOROUGH PLANNING COMMISSION  
REGULAR MEETING AT NSB ASSEMBLY ROOM  
MARCH 18, 2010 AT 9:30 A.M.  
AGENDA**

---

- 1. CALL TO ORDER**
- 2. INVOCATION**
- 3. OATH OF OFFICE a) Paul S. Bodfish Sr. b) Lawrence Burris**
- 4. ROLL CALL**
- 5. APPROVAL OF AGENDA**
- 6. APPROVAL OF MINUTES a)December 17, 2009**
- 7. LAND MANAGEMENT ADMINISTRATOR'S REPORT**
- 8. CORRESPONDENCE**
- 9. PLATTING ADMINISTRATOR'S REPORT**
- 10. PUBLIC HEARING**
  - a. ConocoPhillips Ak – Conditional Use Permits, NSB 10-226 – Hemi Springs #1 Well for Ice Roads & Plug and Abandon Well, Resource and Conservation District
  - b. ExxonMobil Corporation – Drilling Program and Equipment Staging at Alaska State C-1 Pad in the Point Thomson Unit, Resource District
- 11. NEW BUSINESS**
  - a. ION 2010 Marine Seismic Survey Program – Beaufort Sea
  - b. Resolution 2010-04 CIP Ordinance 2009-10G
- 12. OLD BUSINESS**
  - a. Denali – The Alaska Gas Pipeline – Project Status Update
  - b. CIP Project Recommending Committee
- 13. VILLAGE CONCERNS**
- 14. SCHEDULING OF NEXT MEETING (APRIL 29, 2010, Last Thursday)**
- 15. ADJOURNMENT**

\*\*\*\*\*  
THE PUBLIC is invited to attend the meeting. Pertinent reference materials, if used, will be made available to those members of the public who wish to participate in the meeting. If you plan on attending the meeting and require special accommodation because of a hearing or speech impairment, please contact Margie Fischer at 852-0320, three days prior to the scheduled meeting date, so that arrangements may be made. The meeting locations are accessible to the physically disabled.

**ORDER OF BUSINESS IS SUBJECT TO CHANGE BY CHAIRMAN**





## Native Village of Barrow

### Meeting Notes

Attendees: Thomas Olemaun, Native Village of Barrow Executive Director  
Ed Nelson, Ion, Project Manager  
Beth Haley, LGL, Marine Biologist  
Maggie Ahmaogak, AES, Stakeholder Relations  
Michelle Turner, AES, Project Manager

Date: 18 March 2010, 1pm

General – provided an overview of the proposed project using the Leadership powerpoint slide. These notes are meant to capture comments and responses from meeting attendees.

In general, Mr. Olemaun did not have concerns about the project. He was interested in finding out about opportunities for local hire. Native Village of Barrow has a list of local residents who are available for hire and would like to be advised about opportunities (contact Joseph Sage or himself). Local hire opportunities for the Ion project may include Inupiat MMOs and Subsistence Advisors.

Mr. Olemaun also mentioned that spring whaling is occurring earlier in Barrow than previously. He suggested that a good time to schedule a public meeting would be April 8<sup>th</sup> or 9<sup>th</sup>, prior to the beginning of spring whaling.



# Inupiat Community of the Arctic Slope

## Meeting Notes

Attendees: Lloyd P, ICAS Land Manager  
Helen, ICAS Board of Directors member  
Ed Nelson, Ion, Project Manager  
Beth Haley, LGL, Marine Biologist  
Maggie Ahmaogak, AES, Stakeholder Relations  
Michelle Turner, AES, Project Manager

Date: 18 March 2010, 2pm

General – provided an overview of the proposed project using the Leadership powerpoint slide. These notes are meant to capture comments and responses from meeting attendees. George Edwardson, ICAS President was unable to attend due to plane trouble.

Lloyd	How far does the noise from the source vessel travel?
Beth	Based upon modeling, the 180 dB zone (which is where NMFS requires mitigation such as powering down guns) is about ½ mile from the sound source. Ion will measure how far sounds carry (Sound Source Verification) upon beginning their program.
Lloyd	What about fueling of vessels and fuel containment?
Ed	The Ion vessels can go 6 weeks without refueling. Ion has standard procedures in place to address fueling as well as disposal of waste, etc. These procedures are similar to what we do on land that you're familiar with. We can send these procedures to you in a couple of weeks. We will keep track of waste management and document it as required by permits.
Lloyd	What about risk of crushing the vessel hulls in ice.
Ed	Both vessels are ice-class vessels. They can be frozen in the ice without damaging the ships.
Lloyd	Can you develop something that shows how the icebreaker and source vessel will actually work?
Ed	We already have something developed. We can get it to you in a couple of weeks. We can send it up as a link or send up CDs with the information.



North Slope Borough Department of Wildlife Management

Meeting Notes

Attendees: Taqulik Hepa, NSB Wildlife Department, Director  
 Harry Brower, NSB Wildlife Department, Deputy Director  
 Leslie Pierce, NSB Wildlife Department, Outreach Coordinator  
 Todd Sformo, NSB Wildlife Department  
 Ed Nelson, Ion, Project Manager  
 Beth Haley, LGL, Marine Biologist  
 Maggie Ahmaogak, AES, Stakeholder Relations  
 Michelle Turner, AES, Project Manager

Date: 18 March 2010, 3pm

General – provided an overview of the proposed project using the Leadership powerpoint slide. These notes are meant to capture comments and responses from meeting attendees.

Harry	Can you work with ice closing in on the vessel?
Ed	We've had no incidents or reports of issues. The cable [for airgun array and streamer] is run down from the bottom of the boat beneath the ice.
Taqulik	You are starting in October because of the timing of the hunts?
Ed	Yes.
Taqulik	Is the 4500 in3 airgun array what you want to shoot?
Ed	That is the maximum we will be able to shoot. The size of the airgun array will depend upon what is needed to obtain good data. We don't want to have an array that is too big to obtain the maximum amount of useable data.
Harry	Will you do the nearshore areas earlier in the survey?
Ed	We will start from the north and would toward the south/shallow water. Because all activities would take place in federal waters, the boats would stay 6 miles from the beach.
Harry	If you wait until the ice is formed near the shore, it may impact ringed seals.
Todd	What ice thickness could you shoot in.
Ed	We try to stay away from 10/10ths ice coverage. [ION vessels can work safely in 10/10ths ice coverage. Decisions regarding working in 10/10ths ice coverage will be made in the field.]
Harry	[responding to a slide saying "avoid impacts by completing work before ice is thick enough to support large numbers of seals and polar bears on the ice"] Marine mammals are in the project area during all times of year.
Taqulik	When hiring local residents for MMOs, consider having the pay scale based upon the number of years of hunting experience.
Taqulik	Have a debrief session (with MMOs) to see what works
Beth	We (LGL & AES) are planning on having a post-season debrief this year.

North Slope Borough Department of Wildlife Management

Meeting Notes

Todd	Will you be collecting bathymetric data as part of the program? If so, can NSB get a copy of it – the existing data for this location is limited.
Ed	We can share the bathymetric data with the NSB.

## 2010 Open Water Meetings

### Meeting Notes

Attendees: Joe Gagliardi, ION  
Darren Ireland, LGL (representing ION)  
Open Water Meeting Panel Members  
Open Water Meeting Attendees

Date: 23 March, 2010, 3pm

General – provided an overview of the proposed project using a powerpoint slide. These notes are meant to capture comments and responses from meeting attendees.

Joe Gagliardi	ION is interested in signing a CAA-type agreement, but not the same one that will be written for open water seismic operations. ION is interested in a CAA tailored to fit the timing of their operations.
Diane Sanzone BPXA	Your mitigation suggests that you are moving out of the bowhead migration season but into polar bear denning season. I suggest coordinating with USGS regarding maternal dens.
Darren Ireland LGL	Bears will be denning mid November on average, but sometimes sooner.
Craig Perham USFWS	Darren is correct for onshore, but less is known regarding denning timing offshore.
John Hopson Whaling Captain	The CAA will be very hard to amend, because it will need by-in from all villages. I am against ice breaking activities. I am against this project. I urge the federal agencies to not allow ice breaking, because it makes the smaller floes melt faster. It doesn't allow for multi-year ice to form, which I need to feed my family.
Unknown	I am concerned with Arctic Cod and other fish under ice habitat. Impacts to these fish could affect seals.
Michaele TGS	I am curious about how effective FLIR (forward-looking infrared camera) will be. I am interested in this possibly for my program.
Unknown	I am concerned that there will only be one MMO onboard (the source vessel). Is that person going to monitor for 24-hour shifts?
Darren Ireland LGL	MMOs will only monitor during daylight hours.
Robert Suydam NSB Wildlife Dept.	I would like additional monitoring effort due to the extensive ice coverage- Possibly aerial surveys.







# Public Notice of Barrow Community Meeting

- Who** ION Geophysical, Inc. (ION)  
(working as GX Technology)
- Why** ION is proposing to conduct a 2D seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010.
- What** Present the proposed BeaufortSPAN™ West Program and obtain community feedback
- When** April 8th, 2010 at 7pm to 9pm
- Where** Inupiat Heritage Center Multi-Purpose Room

**Door Prizes and Refreshments will be provided.**





ATTENDANCE SIGN-IN SHEET  
BARROW, ALASKA  
April 8, 2010

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
David Sapiwa	ME	852-6916			P.O. Box 227
Shunni Ningedk		852-6916		Mumegama G-Mail.Com	P.O. Box 103
Sheldon Adams	ME	852-5330		N/A	per box 176
* Quincy Adams	self	852-2755		(MIND STATED) Hence stated quincy2002@yahoo.com	P.O. Box 176 *
MAX ADAMS	self	367-8058		none	P.O. Box 26
Dannik Ningedk	self	367-4166			Box 1407 Barrow, AK
Kate A. Brower	self	367-4455			Box 1532, Barrow, AK 99725
Yug y nio geak	self				Box 1407 Barrow



ATTENDANCE SIGN-IN SHEET  
BARROW, ALASKA  
April 8, 2010

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
JOSEPH AKPIK	SELF	367-4726			
Wilbur Ahtungasak	SELF	852-2145			P.O. Box 848
Richard Olyeada	SELF	852-6355			Box 1483
Raenelle Olyeada	SELF	852-6355			Box 1483
Susan Patkotak	SELF	852-6355			Box 1483
Pearlitta Patkotak	SELF	852-6355			Box 1470
Gideon Patkotak	SELF	876-5993			
Julia Ningsook	SELF	367-4166			Box 1407 Barrow, AK 99723



ATTENDANCE SIGN-IN SHEET  
BARROW, ALASKA  
April 8, 2010

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
Stevenson, Dan	me	457-5542			Box 728
Ron Saganis	me	852-6262			Box 1755
Dora Brown		852-3624			1532
Renee Hup	self	852-5333			Box 677
Patrick Hup	self	852-5333			Box 677
Seaver	me	852-5542		fgleavie@hotmail.com	Box 728
Steve Furnick	Self	852-6296		—	Box 1296
Rick L Rice	self	852-6585			Box 1230



ATTENDANCE SIGN-IN SHEET  
BARROW, ALASKA  
April 8, 2010

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
MASCHENA JIM JOHNSON	ME	367-365			Box 1918
ROBERT NINGSOOK	ME	367-4166			Box 1407
DAVID KOCARAIK	=	852-4866			Box 8
Doreen Knodel	ME	235-9054 852-3680			Box 571 Anchor Pt. A Barrow, AK 99723
Mary Huges	✓	<del>852-2117</del>			
Charlie Nagalik	ME	852-2117			
Clarence Fishel	ME	852-5325			P.O. Box 118
Nathan Fishel	ME	852-5325			P.O. Box 31



ATTENDANCE SIGN-IN SHEET

BARROW, ALASKA

April 8, 2010

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
Deidre Simmonds	myself	857-3309	N/A	deidre-emilyam@ hotmail	P.O. Box 31
Ellen Oyagak	myself	852-3173	N/A	ellen Oyagak @hotmail.com	P.O. Box 321
Thomas Clemens	myself	852-4411	N/A	tomclemens@ nu-bearrow.net	Box 1130
Aiden Clemens	CC	11	11	11	11
Gemelle Okpeaha		852-6355			P.O. Box 1183 Barrow, AK 99723
<del>Harley</del> Agasi Okpeaha		852-6355			P.O. Box 1183 Barrow, AK 99723





Plan of Cooperation Meeting  
 ION/Community of Barrow  
 Inupiat Heritage Center Multi-Purpose Room  
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 Presentation 7:00 – 9:00 pm  
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**Attendees:**

David Saganna	Beverly Hugo
Johnny Ningeok	Patnck Hugo
Sheldon Adams	Clyde Numnik
Quincy Adams	Rick L. Rice
Max Adams	Mascheena , Johnson
Qannik Ningeok	Robert Ningeok
Kate A. Brower	David Koganaaluk
Yugu Ningeok	Doreen Knodel
Joseph Akpik	Mary Hugo
Wilbur Ahtungaruak	Charlie Nayakik
Richard Olpeaha	Clarence Fishel
Raenelle Okpeaka	Nathan Fishel
Susan Patkotak	Deidre Simmonds
Pearletha Patkotak	Ellen Oyagak
Gideon Patkotak	Thomas Olemaun
Julia Ningeok	Aiden Olemaun
Steu	Genelle Okpeaha
Ron Saganna	Aqsi Okpeaha
Dora Brower	

The following organizations were informed of the POC Community Meeting:

Native Village of Barrow  
 Inupiat Community of the Arctic Slope  
 North Slope Borough Wildlife Department  
 Alaska Eskimo Whaling Commission

Ed Nelson, ION Exploration Manager  
 Maggie Ahmaogak, ASRC Energy Services (AES) Community Affairs  
 Beth Hayley, LGL Research, Marine Biologist  
 Michelle Turner, AES Stakeholder Engagement

General – provided an overview of the proposed ION 2010 BeaufortSPAN West project using a power point slide. These notes are meant to capture comments and responses from meeting attendees.

Public	How many decibels does your airgun operate at?
ION Representative	Before we start production we are going to run a sound source verification and that will determine the decibels. We have from 120, 160, 180, 190 decibels but we can't start anything until we run a test and submit it to the NSB, USFWS, and other agencies and then we will determine what decibel we are going to be shooting. It is all going to depend if we are going to shoot 2000 cubic inch (cu in), 1000 cu in, 4000 cu in, it is going to change so we are going to try different tests before we pick which one. All

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	<p>this will be done the first couple days around October 1<sup>st</sup> to October 5<sup>th</sup>. What we expect considering the number of guns and the size of the array and how the airgun array is configured, that the 180 decibel radius around the guns when they are operating will be about a half a mile. So if ever, the MMOs on board actually see a whale or a seal approaching half a mile, the guns will be powered down or shut down completely.</p>
Public	<p>Are you guys going to have a lookout post (a chase boat) a few miles away from your gun array? Have a chase boat (like a lookout range) like 10 miles out because pretty much you can't see within 5 or 10 miles from a vessel. It is going to affect a lot of hunters that you can't even see 20 miles or 30 miles away from the vessel.</p>
ION Representative	<p>We will not have the resources to put people 10 to 20 miles away from our vessel at that time of year. We will have MMOs on both boats is what we will have.</p>
Public	<p>What I am saying is that the sound from the boat is going to travel fast under water and it will travel 50 to 70 miles and there will be someone hunting there. It is good to have a lookout. The icebreaker is just to open up the ice right?</p>
ION Representative	<p>Yes but there will be MMOs on that boat.</p>
Public	<p>How far will the icebreaker be from your seismic vessel?</p>
ION Representative	<p>The ice breaker will be from 1600 feet to 3300 feet in front of the seismic vessel. We will have MMOs on both vessels.</p>
Public	<p>You are only looking at what you can see on the horizon for marine mammals. That sound travels fast underwater.</p>
ION Representative	<p>We do have some big eye binoculars and an infrared camera that can look out to sea when it is dark.</p>
Public	<p>What I am saying is that your camera will not be able to see over the horizon. You know how far they can see will only be a certain distance. Unless you have another lookout station way beyond the project area on the outside.</p>
ION Representative	<p>These guys are going to be doing their seismic during the time the ocean is forming into ice. Further in the presentation we will show pictures of the ice conditions during the planned operation. It will all come together by the end of the presentation and it will make sense as to why we want to conduct during early October.</p>
Public	<p>It is pretty much useless when you are trying to look at something that is popping out of the water, it is pretty useless. I tried those infrared, they are good for animals out of the water or on ice but anything that is in the water they do not work.</p>
ION Representative	<p>Yes, we know that but we are being encouraged by the NSB Wildlife Management Department to use it and continue to test it and give them some feedback on whether or not they can be improved. We all know that in the industry that this is one of its weaknesses but we would like to test it further and use it on this job.</p>
Public	<p>How many observers do you have on each vessel?</p>
ION Representative	<p>Well that is going to be determined by our experiments. I know that the MMOs, they work 4 hour shifts, 24 hours a day so if the permits says we need to have 6 in a boat then for us to work we will have to put 6 MMOs on each vessel so that will be a total of 12. That is going to be determined when we get our permit back.</p>

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Public	Will you be hiring MMOs?
ION Representative	Yes, ASRC is handling the MMO hiring. If people are interested please contact Michelle or Maggie. ASRC Energy Services is starting the training if you are interested please sign up here. They will be starting the training May 30 <sup>th</sup> through June 13 <sup>th</sup> and then right after you will get deployed to the ships.
Public	How does seismic testing affect the Arctic Cisco and the cod?
ION Representative	There are a couple dozen studies on how airguns affect fish and basically what has been found is that they avoid the noise. Essentially what they do first is to head towards the bottom and if they are not comfortable there because the noise is too loud for them they will disperse and that may be going on as the airgun is firing and following the track line but within (I think) 6 hours the fish usually return to the area where they usually reside.
Public	Have any of the small mammals come up floating from your seismic testing?
ION Representative	No, we have seen some carcasses while out in the field but they have been in really high decomposed states and have been dead for a long time.
Public	What does KSOP stand for?
ION Representative	Kuukpikmiut Subsistence Oversight Panel
Public	Is there a website we can go to observe your daily activity?
ION Representative	We have a website, we have a couple websites but I do not think you will be able to see our daily activity. Maggie don't we have something in place if the community wants to know where the boat is going to be and what transect line they are shooting, they can get that from who?
Maggie	They can get it from the AEWC. All of the daily activities are monitored by them per the CAA.
ION Representative	The AEWC will monitor all of our daily activities.
Maggie	Or the communication centers.
Public	Will you have a Communication Plan?
ION Representative	The Communication Plan for ION is to work through the Search and Rescue Office in Barrow. ION has contacted the president of the Barrow Search and Rescue to discuss the Communication Plan.
Maggie	ION will be contacting Oliver Leavitt, President Barrow SAR and they will be meeting with Search and Rescue officers. Because the Communication Centers for the Open Water Season for the Beaufort and Chukchi will be closed by the time they reach the Barrow area, so they want to employ Barrow Search and Rescue to do their communications.
Public	Will this be going on every year?
ION Representative	No, this is a pretty big job and if we can get half of it done we will be looking at two seasons maybe two and a half early winter seasons. This is a huge job it goes from the Canadian Border all the way out to almost Point Barrow or just before it starts going west down to the Bearing Straight. So just for this project itself this is the only one I can talk about.

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Public	Is it a single hull on that Geo Explorer [source vessel]
ION Representative	No it's a double hull because it is an ice class vessel.
Public	Will the ice breaker be operating west or east?
ION Representative	From the east to the west.
Public	How many airguns will you have?
ION Representative	There will be 28 airguns itself [on the array] ranging the smallest at 65 cubic inch and the biggest being 350 cubic inches. We will be using different arrays depending on what psi we are going to be shooting when we determine from the test.
Public	Do you test your airguns?
ION Representative	You know I think we have tested all of them but I doubt very much if we have used all of them at one time in production. They have to be tested to make sure they are all functioning because say we are only going to use 16 out of the 28 or 12. If one of them breaks down we will have to turn on another one and it needs to be tested and ready to go.
Public	How long have you been monitoring these ice movements within that polar cap where the seismic is going to be conducted?
ION Representative	We go back five years but we monitor it every day, twenty four hours a day.
Public	I mean for how many years have you monitored the ice movement, the current? This is a very powerful project from what I can see because in Greenland I can see there is different ice and hardly any current...
ION Representative	There is current in Greenland
Public	But here there is a lot of swift current and the open current is different so actually this to me is very powerful especially during the period where you guys are going to conduct this project. We can see outside of Barrow where there is ice movement, ice berms and everything builds up, the current, the wind, everything. It is a very harsh environment. It is all together very different than any other place I have been. Do you have a satellite view of the way the ice moves, I mean daily? Every day there is a harsh wind, every day that ice is moving. It is a very harsh environment.
ION Representative	Harry Brower Jr., the President of the AEWC, when we first talked to him and gave this presentation with stuff like that, that is exactly what he said. He said it is going to be rough, it's going to be tough, and it is going to be a big undertaking and we do have people going back through the years with ice satellite coverage and its movement. All of our ice coverage is going to be in real time straight from the satellite to the boat.
Public	Where is your main headquarters for ION?
ION Representative	Houston, Texas
Public	Houston, so actually you will have a daily satellite view of the ship? It will be monitored and that will include the ice movement? It is important because it is a very

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	harsh environment and this is a very risky project.
ION Representative	Yes, the ice monitoring will all be in real time.
Public	Your wind conditions down in Canada the wind is coming from the land side instead of the ocean side right? You come out there and it's all open and the weather can change just like that, boom really quick.
ION Representative	You know I have worked out on the ice in the Beaufort in the winter time and the wind does not stop blowing and it changes really fast and in the winter time it is one really hard place to work.
Public	Thank you for saying that, ice conditions yea it is. There might be some young ice 9/10ths ice like she was saying just some really small ice and then when the wind comes out boom.
ION Representative	I appreciate that input there.
Public	How often will you use your sonar [echosounder and ice profiler]? You guys have sonar off the back right?
ION Representatives	Yes, we use it all the time to check ice conditions and to check water depth.
Public	Water depth; is it constant always on?
ION Representatives	Yes, we have it on all the time.
Public	There were sometimes a while back that sonar on marine mammals is pretty hard on their ability to hear in the water. Their ears are so sensitive that sonar goes along ways it goes about a thousand miles and the intensity on their ears and the animals will go really quick. In fact under the Navy they tried it, they observed it there were no animals. That sonar technology they shut them down and told them no more sonar. All the animals, boom disappeared.
ION Representative	That is right, if I may respond to that, the Navy sonar is very different from the echo sounder that will be used onboard, it is directed out horizontally, they are trying to look around the actual sonar units. The unit that will be used onboard these vessels are looking down in a very narrow beam, directly in front of them. It is not as expansive as what the Navy is using and that is a mid frequency range and you are absolutely right that travels for miles and miles.
Public	If you are doing some seismic way out there and we have hunters up there, you never know the weather may be real bad up there and we might not start whaling until later October. Like a couple times we have started late September and we always try to start our whaling mid-September and before the end October comes around, like when you guys are going to start, the weather is bad. Mother nature, you guys bring your sonar around there, well it's going to hit Barrow, it's going to deflect whales out the other way.
ION Representative	Well again these sonar's are really different from Navy sonar you are talking about this is a narrow beam so it should only affect animals very close to the vessel. And the whole part of these stakeholder meetings is to get your input and to hear about

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	your concerns and there will be another meeting I expect, I cannot speak for ION. But if you guys haven't caught your quota yet there will be more discussion.
Public	Actually what you are doing on this project is that you are taking a picture of the formation down below underneath am I right?
ION Representative	That is correct we are mapping....
Public	Whatever it is because when you are going towards the ocean it is a rock formation and when you go beyond the ocean it is a formation that marks where you need to drill. Because there is sand and silt and you have everything on the bottom of the ocean in both the Chukchi and the Beaufort. I hope you are going to get everything on this trip.
Public	When that sonar is on and you guys see in one direction do you see any animals? Do the lookout guys on the outside, do they see any animals on the outside around the perimeter like 5 or 10 miles out?
ION Representative	Well you are better acquainted with the equipment again, the sonar on the boat is just looking directly under the boat to find out what the water depth is, the other one just goes ahead to tell the boat the condition of the ice.
Public	The one that goes...
ION Representative	The one that goes down just gives you water depth. We have to measure water depth.
Public	I said there were signs and in fact even one direction that thing will go a long way.
ION Representative	Actually it is a fathometer. A depth finder. It is basically different it just goes down and comes back up. It really is different from the Navy sonar which you are absolutely right is looking all around. This is just looking right to the bottom.
Public	They used it they tried it and misused it by the Navy even when they were trying to get one depth down into the ground. To the bottom of the ocean they said they were doing just one direction and it took them years and years, the scientist and they figured it out that it was the sonar. When they quite using that...
ION Representative	Comparing what the US Government and how far they are ahead with all this electronic and stuff like that and comparing ION, we are nothing really. The government is using stuff that people don't even know about and we don't even know about until 20 years from now we find out that they were doing this. I don't know what to say but we are not using high powered US Navy coast guard stuff. Our equipment you can buy commercially.
Public	The lowest sonar thing they used, even in one direction checking the depth down on the bottom of the ocean, that is what you guys are using right now.
ION Representative	I thank you for that comment and I will see what I can do to get more technical information to you about our depth finder (fathometer) and we will just move forward from there. I do not have the details or the technical expertise to explain the level of detail that you want now on sonar but I can get that for you from our support people and I will make sure it gets back to you or the group here.
Public	That is still powerful and misinterpreted.
Public	What will happen if the ice skeg breaks?

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ION Representative	We have had pretty good luck with it including every year, every year after the ice season we bring it back on dry dock and look at it and we continue improvements on it and just hope that it doesn't break. It is pretty well built. I mean you can break it if you just pull the boat at full speed and just start mowing everything down but the boat will travel maybe 4.5 to 5 knots and sometimes slower.
Public	Really slow huh?
ION Representative	Yes, very slow.
Public	Do you guys do a survey check after you guys do all your seismic in one area within a one or two month time frame? Do you go back to that same area and check it to see how much mammal migration there is through there? They might eat there, it could be their eating spot where they go, do you go back and monitor that same area after a few months have passed?
ION Representative	To tell you the truth I just did the Nikaitchuq job and we did not do it there. It was inside the Thetis Island so...
Public	It's like when we go to our favorite hunting ground and some guys comes around and now we don't want to go there anymore. It is the same with the animals out there. That might be their favorite spot for spawning, their eating place and with all that equipment that you are playing with you might scare them.
ION Representative	Well we will only be towing one cable, not six or twelve. I thank you for that comment.
Public	What about the range when we hunt, for example when we fire bullets will they have to stop us from hunting when you are out there? How safe will we be to not shoot your boat?
ION Representative	The timing and location of the operation will hopefully avoid this. ION will start October 1 through the middle of December.
Public	Oh, I see.
Public	What about the guys that hunt...
ION Representative	They are down on the South, the furthest east, from Canada on.
Public	October time is when all the fish come out of the rivers and the creeks and hit the ocean, right? They go out to the ocean and pretty much they stay out there and lay their eggs, you guys might be hitting the favorite spawning ground for fish. The fish go a long ways.
ION Representative	You are right about the Arctic Cod and there are not many studies about what they are doing under the ice. There are some that, through using acoustics, they are able to find that the fish are pretty low in the waters but there are no mapped areas for Cod spawning right now. We do not know where they do it. We know there is a congregation in the Eastern Beaufort and the Southern Amundsen Bay but that is something we really can't answer because there are no studies available, you are right the Arctic Cod will be out there for sure. The Arctic Cisco are probably following the salt wedge by October into the mouth of the Colville. You are right there are fish out there and thank you for your comment.

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Public	Just like that one year in Nuiqsut some boys out there out by Kaktovik that fish, the year before they did all their seismic stuff and the next year there were hardly any fish coming inside that river and hardly anything coming out.
ION Representative	Was that in 2006 or 2007? Studies at Endicott had predicted that there would not be a good return that year because the fisheries recruitment of the little guys that come from the Makenzie River was really poor that year and the expectation is that it had to do with the winds out of the west because it is the winds out of the west and the currents that drive the one year old fish that were just born that year towards the Colville. And it is not until they are about 6 to 8 years old that they are actually caught in the Colville and that was actually forecasted from some of the BP studies the fact that there would be bad fishing that year.





**BEAUFORTSPAN™ WEST PROGRAM**  
**2010 2D MARINE SEISMIC SURVEY -**  
**BEAUFORT SEA**

**Comment Card**  
**We appreciate your comments!**

If you would like to be added to our information list, please fill out area below:

Name: Steven Lavitt Address: \_\_\_\_\_

Email: \_\_\_\_\_ Phone: \_\_\_\_\_

Comment: Depth Finder — stated that it  
was a Sonar Ed Nelson to  
clarify, and get info to Steven.  
Just need to write him a letter  
clarifying





# Public Notice of Kaktovik Community Meeting

- Who** ION Geophysical, Inc. (ION)  
(working as GX Technology)
- Why** ION is proposing to conduct a 2D seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010.
- What** Present the proposed BeaufortSPAN™ West Program and obtain community feedback
- When** April 10th, 2010 at 7pm to 9pm
- Where** Kaktovik Community Center

**Door Prizes and Refreshments will be provided.**





ATTENDANCE SIGN-IN SHEET  
KAKTOVIK, ALASKA  
April 10, 2010

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
Norma Gordy		6425			Box ) Kaktovik 116) AK.
Marek Kowalewski					BX 81 KAK
Nora Jay Burns		640-6722			Bx 01 Kaktovik
Kimberly Ann B.					
Carla Simsteydick		640-5893			16 Kaktovik, AK 99747
Eunice Anna		640- <del>8</del> 6820			1 / (
Nathan Jaganath		640-7884			P.O. Box 120
Charlie Nagel		640-3242			P.O. Box 14



ATTENDANCE SIGN-IN SHEET  
KAKTOVIK, ALASKA  
April 10, 2010

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
<i>Suey Telea</i>		<i>6</i>			<i>Box 83</i>
<i>Joseph K...</i>					
Virginia Bowyer					Box 17
Fred TA CAROOK Sr					Box 17
Mildred Aishanna					Box 58
Doreen Kaychuk					
Fred KALEAK		<i>640-6213</i>			Box 83
<i>Jeanine Kaychuk</i>		<i>640-0200</i>			<i>Box 23</i>



ATTENDANCE SIGN-IN SHEET  
KAKTOVIK, ALASKA  
April 10, 2010

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
Nathan Gordon Sr.	K.I.C	440-6925		nlgordon@gc.net	P.O. Box 116 Kaktovik 99747
John Hi Tagarok	KAK VFD	640-0030		john.tagarok@hotmail.com	Box 98 Kaktovik AK 99747
Stephanie Aishanna	TGC	640-1311		stephanie.aishanna@north-slope.org	Box 55 Kaktovik AK 99747
Jules Lampe		640-0900			
Mickey Gordon	KIC	440-3250			P.O. Box 6 Kaktovik, AK,
Fred Tagarok sr					P.O. Box 17 Kaktovik AK
Mike Solomon	KIC	640-6200			P.O. Box 61 Kaktovik
Ruth Tagarok	Kaktovik	640-7448			Gen. del. Kaktovik AK 99747



ATTENDANCE SIGN-IN SHEET  
KAKTOVIK, ALASKA  
April 10, 2010

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
Marie Rexford	Self				P.O. Box 103 Kaktovik Alaska 99747
David Rexford	Self	640-6025			P.O. Box 103
Thomas Browney	Self	N/A			P.O. Box 21
Betsy Brewer					
Annie Tikluk	City of Kaktovik	640-6313	640-6314		Box 27
Larry Tikluk	Self				
Melanie Tikluk	Self				





ATTENDANCE SIGN-IN SHEET  
 KAKTOVIK, ALASKA  
 April 10, 2010

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
Susan Conder	Kaktovik	646-1210			BX 12
Natasha Gordon		6925			116
Phil Tiklak Jr	Kaktovik	1270			BX 51 99747
Robert Avey	Kaktovik				Box 80
EVA Avey	Kaktovik				Box 80
Ellis Tikluk	Kaktovik				Box 31



ATTENDANCE SIGN-IN SHEET  
 KAKTOVIK, ALASKA  
 April 10, 2010

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
Justin Kayotuk	Self				<del>PO Box</del> 72
Russell Tayme					Box 120
Angel Sims	Self				Box 68 Kaktovik AK
Caitlin Gallager	Self				Kaktovik
Marcus Gallager	Self				Kaktovik
Seanard Sark					Kaktovik

Plan of Cooperation Meeting  
 ION/Community of Kaktovik  
 Kaktovik Community Center  
 April 10, 2010  
 Presentation 7:00 – 9:00 pm  
 Kaktovik, Alaska  
 Meeting Notes

**Attendees:**

Norma Gordon	Mike Soloman
Marie Kaveolook	Ruth Tagarook
Nora Jane Burns	Marie Rexford
Kimberley Ann B.	David Rexford
Carla Sims Kayotuk	Thomas Brower
Eunice Simms	Betty Brower
Nathan Tagarook	Annie Tikluk
Charlie Nageak	Larry Tikluk
Lievy Kaleadk	Melanie Tikluk
Joseph K.	Susan Gordon
Virginia Brower	Natasha Gordon
Fred Tagarook Sr.	Phil Tikluk Jr.
Mildred Aishanna	Robert Arey
Darren Kayotak	Eva Arey
Fred Kaleak	Ellis Tikluk
Jeanine Kayotuk	Austin Kayotuk
Nathan Gordon Sr.	Tussel Tagarook
John H. Tagarook	Angel Simms
Stephanie Aishanna	Caitlin Gallager
Jules Lampe	Marcus Gallager
Mickey Gordon	Leonard Lord
Fred Tagarook Jr.	

The following organizations were informed of the POC Community Meeting:

Native Village of Kaktovik  
 Kaktovik Whaling Captains Association  
 Kaktovik Inupiat Corporation  
 City of Kaktovik

Ed Nelson, ION Exploration Manager  
 Maggie Ahmaogak, ASRC Energy Services (AES) Community Affairs  
 Beth Hayley, LGL Research, Marine Biologist  
 Michelle Turner, ASRC Energy Services (AES) Stakeholder Engagement Specialist

General – provided an overview of the proposed ION 2010 BeaufortSPAN West project using a power point slide. These notes are meant to capture comments and responses from meeting attendees.

Public	So you are not going to do the seismic over the ice you are going to be breaking the ice and making a trail? Is that the plan?
ION Representative	Yes that is true however basically as we go further you will see the ice conditions that we will have when we talk about the ice. We are talking about the coverage because

Plan of Cooperation Meeting  
 ION/Community of Kaktovik  
 Kaktovik Community Center  
 April 10, 2010  
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 Kaktovik, Alaska  
 Meeting Notes

	if the ice is anywhere between 1 to 1.5 feet thick we stop breaking ice at 1.5 feet thick but doing our survey in October/November depending on ice conditions we will probably have a lot of scattered ice. Our ships are only built to break ice at a maximum of 1.5 feet or 18 inches. And the actual seismic data that is being gathered is under the ice and the streamers are under the ice.
Public	Last fall we were delayed in fall whaling and I hope that it is going to be better this coming fall. It was close to October when we were finished.
ION Representative	We will not start until the bowhead whale hunt for Kaktovik is finished.
Public	Do you carry all your fuel with you or how do you fuel your vessels?
ION Representative	We have the capacity to run six weeks before we need fuel. Basically we are looking to be out there only 6 weeks and we don't think we are going to be out there longer but if we are and we extend it to the 1 <sup>st</sup> we are working with Alaska Marine Maritime to run support for us and we are either going to bring the fuel in from the east instead of trying to come up and around when the whales are still going to be going down around Barrow. We always going to try to come in from the east because the whales are moving out west and south. We don't want to get in from of the whales or bring anything in that way so that is why we are starting from the east so if we have to run support we have to go back out so we can bring our other support vessel in from the east from behind the boat from behind the survey.
Public	You say it may take you several winters to get this project done, where are you storing your vessels?
ION Representative	When we finish we are going to go down to Dutch Harbor to resupply and send them off to where we are going to work for 10 months and then bring them back up here. They will be transiting to Dutch Harbor around Mid-November and hopefully before Thanksgiving.
Public	On October 1 <sup>st</sup> where will you be coming from?
ION Representative	On October 1 <sup>st</sup> we will be coming over from the east.
Public	Are your vessels, what is the thickness of the vessels? Are they double hulled?
ION Representative	They are both Class A ice breakers [ice class vessels] so basically you can freeze them in and you will be ok. They are been certified to function in an ice breaking capacity. And yes, they are double hulled.



# Public Notice of Nuiqsut Community Meeting

- Who** ION Geophysical, Inc. (ION)  
(working as GX Technology)
- Why** ION is proposing to conduct a 2D seismic survey in the Beaufort Sea during fall 2010. The proposed ION BeaufortSPAN™ West Program operations are planned for October 1, 2010 through mid-December 2010.
- What** Present the proposed BeaufortSPAN™ West Program and obtain community feedback
- When** April 17th, 2010 at 7pm to 9pm
- Where** Kisik Community Center

**Door Prizes and Refreshments will be provided.**



**Ion Geophysical**  
**BeaufortWest Span Program**  
**2010 2D Marine Seismic Survey – Beaufort Sea**  
**ATTENDANCE SIGN-IN SHEET**  
**NUIQSUT, ALASKA**  
**April 17, 2010**

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
DAVID ARNOLD	City of Nuiqsut	480-6744		drdavid@arnoldengineering.com	222 C Fausannast.
James Taralak	ASRC	480-2117	480-2116	jtalarak@asrc.com	
Nannie Woods	Self	480-0041		Misswoods@yopco.com	P.O. Box 89000 NAT
Cindy Wasson	City	480-6744		Cindywasson@yahoo.com	P.O. Box 89094 Nuiqsut AK 99789
Edna Sytko	Self	480-1250		aalalak42@hotmail	Box 89323 Nuiqsut, AK 99789
Billy Oyagak	Self	480-7274			
Sarah Oyagak	City	480-7274		royogak@yahoo.com	Box 89013 Nuiqsut, AK 99789
SAMANTHA C KUMAKIANA	Self	480-0050		hotmail@SAMANTHALCUMAKIANA	P.O. Box 64DL
Wendy s. Brower	Self				

**Ion Geophysical**  
**BeaufortWest Span Program**  
**2010 2D Marine Seismic Survey – Beaufort Sea**  
**ATTENDANCE SIGN-IN SHEET**  
**NUIQSUT, ALASKA**  
**April 17, 2010**

Name (Please Print)	Representing	Phone No.	Fax No.	E-Mail	Mailing Address
Dora Leavitt	City of Nui				PO Box 59226 NUIQSUT, AK 99759
Lydia Sovalik	AIEA				Box 89-75 NUIQSUT
Carlyle Anderson	Self				
Anita Kukua	Kuepik corp.				
Anetha Lange	Purcell				
Jen Moore					
JOE ERICKSON	self				
Geoff Sieft	—				
Beverly Sieft	—				

Flora of Portland



Plan of Cooperation Meeting  
 ION/Community of Nuiqsut  
 Kusik Community Center  
 April 17, 2010  
 Presentation 7:00 – 9:00 pm  
 Nuiqsut, Alaska  
 Meeting Notes

**Attendees:**

David Arnold	Lydia Sovalik
James Talaak	Carolyn Ahkiviana
Nannie Woods	Archie Ahkiviana
Cindy Wasson	Martha Lampe
Edna Syfko	Jane Mas
Billy Oyagak	Joe Ericklook
Sarah Oyagak	George Sielak
Samantha L Kunaknana	Beverly Sielak
Wendy S. Brower	Flora Ipalook
Dora Leavitt	

The following organizations were informed of the POC Community Meeting:

- Native Village of Nuiqsut
- Kuukpik Corporation
- City of Nuiqsut
- Kuukpikmiut Subsistence Oversight Panel, Inc., (KSOP)
- Nuiqsut Whaling Captains Association

Ed Nelson, ION Exploration Manager  
 Maggie Ahmaogak, ASRC Energy Services (AES) Community Affairs  
 Beth Hayley, LGL Biologist  
 Michelle Turner, ASRC Energy Services (AES) Stakeholder Engagement Specialist

General – provided an overview of the proposed 2010 ION BeaufortSPAN West project using a power point slide. These notes are meant to capture comments and responses from meeting attendees.

Public	You use the word radar and I don't know if you mean to do that or not but are we talking about the infrared wavelengths that are used by active remote sensors? You're not talking about radio waves which is what radar is?
ION Representative	No we are not talking about radio waves.
Public	Ok, so radar was just a figure of speech?
ION Representative	Yes
Public	Is that infrared a heat source type of thing?
ION Representative	Yes, it is thermal. We are doing this as part of a study for the North Slope Borough Fish and Wildlife Department; the Wildlife Management team wants us to keep testing this. It works well on land but we still need to further test it on marine mammals in the water, our signature is not as good and we need to continue to test it and furnish the data back home and see if we can proceed.
Public	I know you have been using these DSARs [directional autonomous seafloor acoustic

Plan of Cooperation Meeting  
 ION/Community of Nuiqsut  
 Kusik Community Center  
 April 17, 2010  
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 Meeting Notes

	recorders] for years and what does the data show? Are you still studying that or is it just different every year?
ION Representative	No, the DASARs especially around North Star have been there for years. You are absolutely right and the data is being accumulated and is looked at every year and that is something that is discussed during the Open Water Meeting so you should attend. They are mapping occurrences of vocalizing whales from that data and we have a really nice corridor that is defined from those mobilizations. I don't know enough about the DASAR data to tell you much more but they continue to collect data so they can be more confident about the data they have.
Public	Are the different companies accumulating all that data?
ION Representative	Yes
Public	So you guys can share that information?
ION Representative	Yep, BP and Shell, everybody is sharing the data.
Public	Ok
Public	When you do the ramp up how far apart are they – the distance for the airguns when you are shooting? I know when they do seismic on land they have like a half a mile or quarter mile between shots.
ION Representative	We are going to shoot on time so I think we are going to be shooting like every 110 feet to 120 feet so we will shoot based on time instead of distance. So for example the boat will go at 4.5 knots per hour so we will be shooting on time and will roughly be 110 feet between each shot.
Public	What does ION stand for?
ION Representative	You know I don't really know what the answer is, ION basically has been in the oil and gas business for 35 years but before that we manufactured seismic equipment for the seismic companies. And then we started up GX Technologies.

**APPENDIX C  
MEETING MATERIALS**

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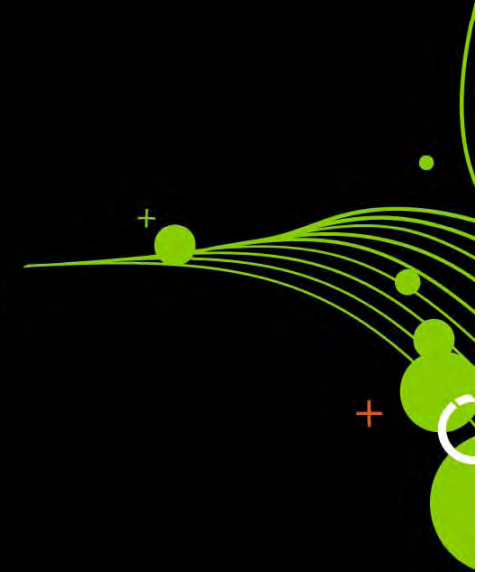
**LEADERSHIP  
PRESENTATION**

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# 2010 BeaufortSPAN West

Ed Nelson  
ION GEOPHYSICAL



# Who is ION Geophysical Corporation

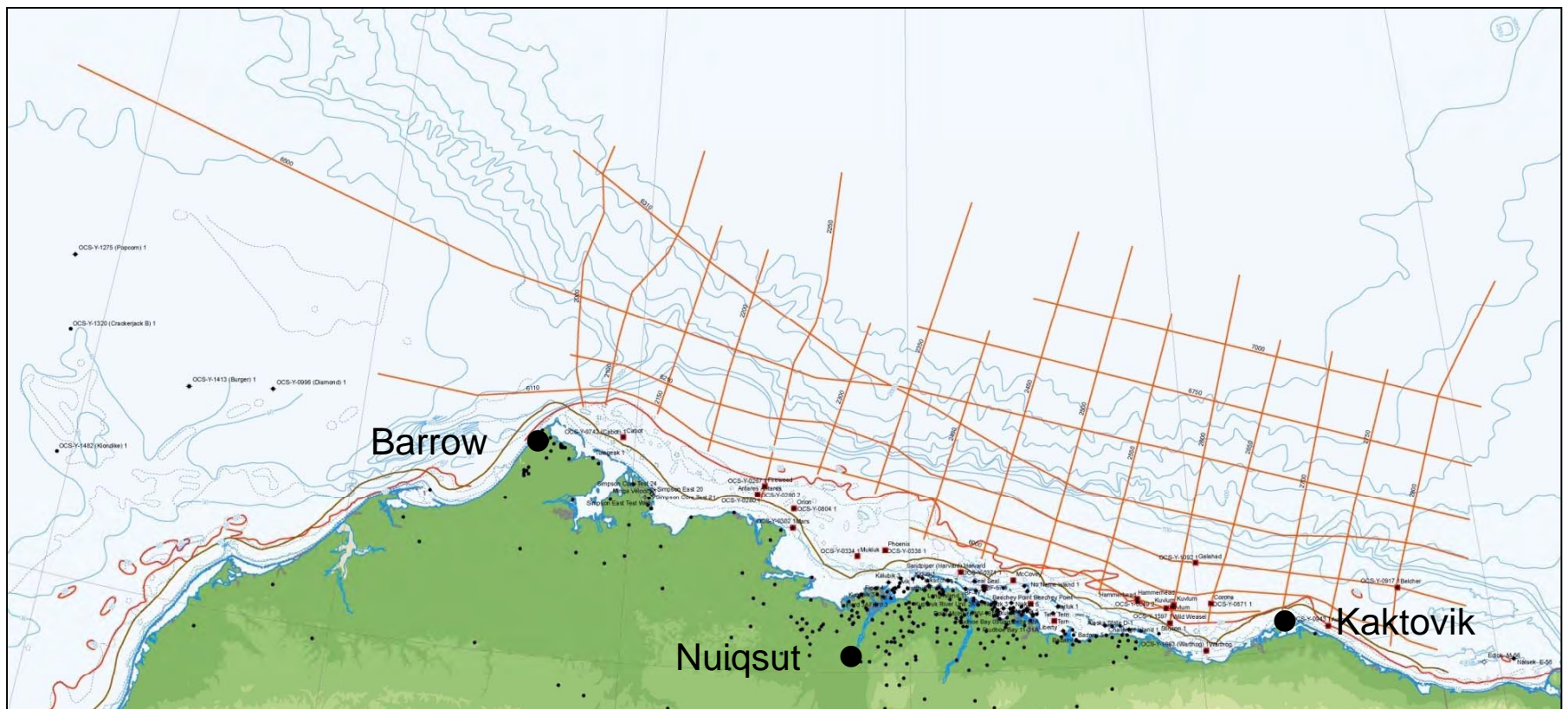


- ION Geophysical Corporation is a leading provider of geophysical technology services and solutions for the global oil and gas industry. ION has over 35 years of oil & gas industry experience worldwide.
- ION is the parent company for GX Technology Corporation.
- ION is Arctic focused
  - Acquired seismic survey data in the Chukchi Sea in 2006
  - Acquired seismic survey data in Canadian Beaufort Sea in 2006, 2007, and 2008. Northeast Greenland in 2009
  - Planned marine seismic survey in the U.S. Beaufort Sea in 2010 (BeaufortSPAN™ West Program)



# Location and Timeframe

- Beaufort Sea OCS (Federal Waters)
- Data acquisition in October – mid-December 2010



# Project Description



- Survey of 7,250 km (4,500 mi) of transect line (not including times when airgun is not operating)
- Water depth ranges from 20 m to 3,500 m (65 ft to 11,500 ft) deep
- Towed seismic array and hydrophone streamer from source vessel (*Geo Explorer*)
- Ice breaker *Vladimir Ignatyuk* will break and clear ice ~0.5 – 1 km (1,640 – 3,300 ft) in advance of the *Geo Explorer*
- Three sound sources
  - Airgun array - 4330 in<sup>3</sup> array; 28 airguns ranging from 65 in<sup>3</sup> to 350 in<sup>3</sup>
  - Ecosounder
  - Ice profiling sounder

# Proposed Marine Mammal Monitoring & Mitigation

- Timing of and location of activities will avoid most marine mammals and subsistence activities
- Start 1 October and end mid-December
- Work from east (Canadian/US border) to west (Barrow)
  - Kaktovik & Nuiqsut bowhead whale hunts should be concluded by 1 October
  - Avoid October bowhead hunt in Barrow by beginning in eastern project areas
  - Avoid impacts by completing work before ice is thick enough to support large numbers of seals and polar bears on the ice

# Proposed Marine Mammal Monitoring & Mitigation

- Vessel based Marine Mammal Observers
  - MMOs on ice-breaker (operating ahead of source vessel)
  - MMOs on source vessel
- Big-eye binoculars on both vessels for use during daylight
- Use of large spotlights for monitoring at night when necessary
- Forward looking infrared (FLIR) camera on ice – breaker for use during darkness

# Proposed Marine Mammal Monitoring & Mitigation

- Sound source verification on sound sources and radii established
- Area around source vessel and will be monitored by MMOs for 30 minutes prior to airgun start
- Ramp-up procedures will be used
- Power down and shut down-power down procedures for marine mammals within radii will be followed

# Stakeholder Outreach

- Met with NSB Wildlife Department on (December 15, 2009)
- Attended AEWC 2010 Annual Captains' Mini Convention to discuss 2010 CAA (February 12 & 13, 2010)
- Meetings with Barrow, Nuiqsut, and Kaktovik leadership (March 16, 17 & 18, 2010)
- NMFS Open Water Meeting (March 22 - 24, 2010)
- NMFS Peer Review Meeting (March 25, 2010)
- Public meetings in Barrow, Nuiqsut, Kaktovik (planned for April)

# Vessels

- Geo Explorer – Seismic Vessel
  - DNV 1A1 ICE-1A\* EO or similar
- Vladimir Ignatyuk – Ice Breaker
  - Russian Icebreaker7 or similar



# Ice Escort Operations





# Experience In Harsh Environments



# Ice Conditions Encountered During Survey Operations



# ION GEOPHYSICAL





**PUBLIC MEETING  
PRESENTATION**

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# 2010 BeaufortSPAN West

Ed Nelson  
ION GEOPHYSICAL



# Introduction



- Thank you for being here. We are here to present ION's scope of operations for the BeaufortSPAN™ West Program. We appreciate your comments and input.
- The ION Geophysical Team
  - Ed Nelson – Project Manager
  - Maggie Ahmaogak – Community Relations
  - Beth Haley – Marine Biologist
  - Michelle Turner – Stakeholder Relations



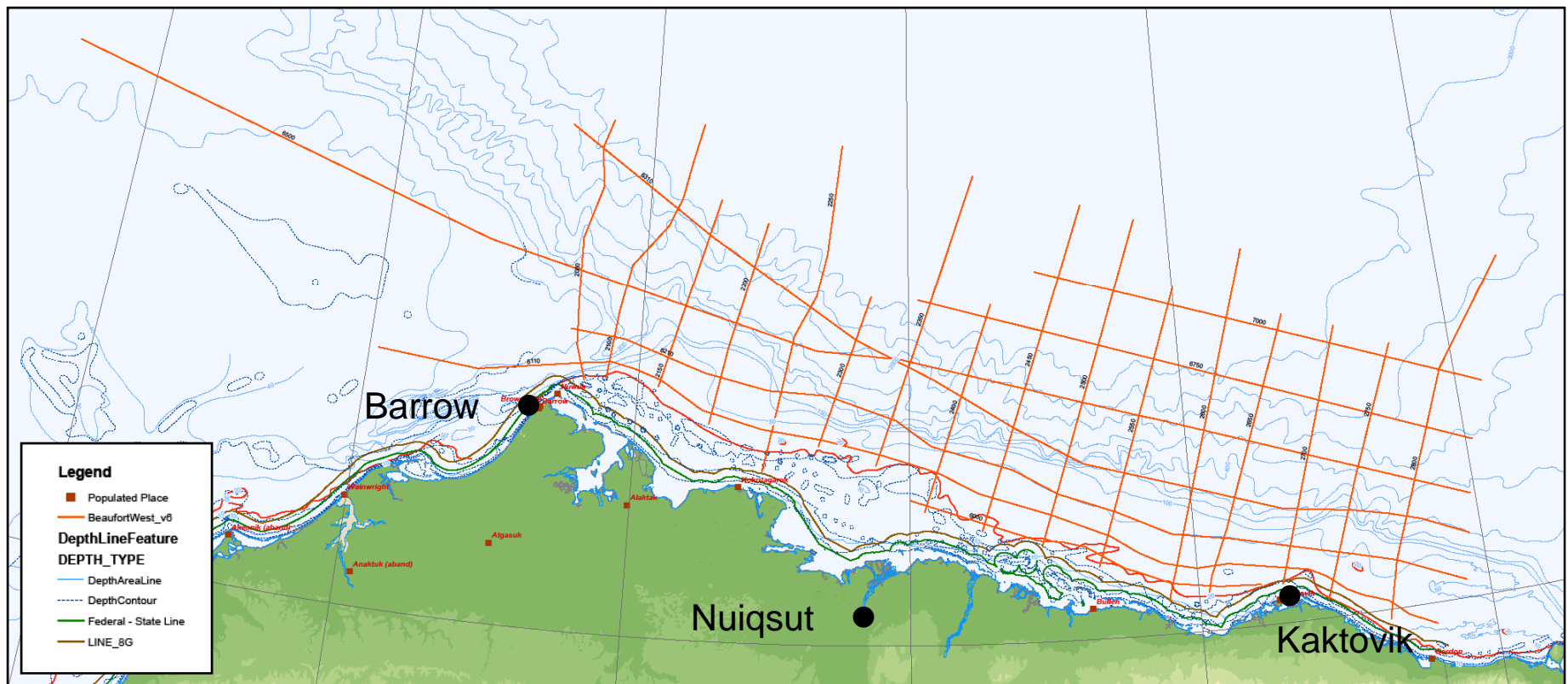
# Who is ION Geophysical Corporation



- ION Geophysical Corporation is a leading provider of geophysical technology services and solutions for the global oil and gas industry. ION has over 35 years of oil & gas industry experience worldwide.
- ION is the parent company for GX Technology Corporation.
- ION is Arctic focused
  - Acquired seismic survey data in the Chukchi Sea in 2006
  - Acquired seismic survey data in Canadian Beaufort Sea in 2006, 2007, and 2008. Northeast Greenland in 2009
  - Planned marine seismic survey in the U.S. Beaufort Sea in 2010 (BeaufortSPAN™ West Program)

# Location and Timeframe

- Beaufort Sea OCS (Federal Waters)
- Data acquisition in October – mid-December 2010
  - starting furthest offshore, east (U.S – Canadian border) to minimize exposure to migrating bowhead whales



# Project Description



- Survey of 7,250 km (4,500 mi) of transect line (not including times when airgun is not operating)
- Water depth ranges from 20 to 3,500 m (65 to 11,500 ft) deep
- All activities will occur 12 to 250 km (7.5 to 155 miles offshore)
- Towed seismic array and hydrophone streamer from source vessel (R/V *Geo Explorer*)
- Ice breaker *Talagy* will break and clear ice ~0.5 – 1 km (1,640 – 3,300 ft) in advance of the R/V *Geo Explorer*
- Three sound sources
  - Airgun array - 4330 in<sup>3</sup> array; 28 airguns ranging from 65 in<sup>3</sup> to 350 in<sup>3</sup>
  - Echo sounder (measure water depth)
  - Ice profiling sounder (check ice conditions ahead of vessel )

# Proposed Marine Mammal Monitoring & Mitigation

- Timing of and location of activities will avoid most marine mammals and subsistence activities
- Start 1 October and end mid-December
- Work from east (Canadian/US border) to west (Barrow)
  - Kaktovik & Nuiqsut bowhead whale hunts should be concluded by 1 October
  - Avoid October bowhead hunt in Barrow by beginning in eastern project areas
  - Mitigate impacts by completing the survey prior to the time when ringed seals establish and enter lairs for reproductive purposes and prior to most subsistence hunting

# Proposed Marine Mammal Monitoring & Mitigation

- Vessel based Marine Mammal Observers
  - MMOs on ice-breaker (operating ahead of source vessel)
  - MMOs on source vessel
- Big-eye binoculars on both vessels for use during daylight
- Use of large spotlights for monitoring at night when necessary
- Forward looking infrared (FLIR) camera on ice – breaker for use during darkness

# Proposed Marine Mammal Monitoring & Mitigation

- Sound source verification on sound sources and radii established
- Area around source vessel and will be monitored by MMOs for 30 minutes prior to airgun start
- Ramp-up procedures will be used
- Power down and shut down-power down procedures for marine mammals within radii will be followed

# Stakeholder Outreach

- Met with NSB Wildlife Department (Robert Suydam) on December 15, 2009
- Attended AEWC 2010 Annual Captains' Mini Convention to discuss 2010 CAA (February 12 & 13, 2010)
- Leadership meetings March 16, 17, & 18, 2010 (details on next page)
- NMFS Open Water Meeting (March 22 – 24, 2010)
- NMFS Peer Review Meeting (March 25, 2010)
- Public meetings in Barrow, Nuiqsut, and Kaktovik (April 8 - 17, 2010)

# Stakeholder Outreach – Leadership Meetings

- Met with Special Assistant to NSB Mayor Itta (March 16<sup>th</sup>)
- Nuiqsut (joint meeting March 17<sup>th</sup>)
  - KSOP, Inc.
  - Representatives from Native Village of Nuiqsut
  - Mayor of City of Nuiqsut (Mr. Thomas Napageak, Jr., Mayor)
- Barrow (March 18<sup>th</sup>)
  - NSB Planning Commission
  - Native Village of Barrow (Thomas Olemaun)
  - ICAS (Lloyd Panningona & Helen Simmonds)
  - NSB Department of Wildlife Management (Taquulik Hepa, Harry Brower, Todd Sformo, Leslie Pierce)



# Stakeholder Outreach – Leadership Meetings

- Kaktovik
  - Scheduled meeting with Kaktovik Mayor Annie Tikluk and Kaktovik Inupiat Corporation representative Phillip Tikluk for March 16<sup>th</sup>, but it was canceled due to illness
  - Was unable to schedule appropriate date/time to meet with Native Village of Kaktovik in March due to other planned activities in Kaktovik – scheduled meeting on April 10<sup>th</sup>.

# Stakeholder Outreach – Current and Upcoming

- Public meetings in affected communities
  - Barrow – Inupiat Heritage Center, April 8<sup>th</sup> 7pm – 9pm
  - Nuiqsut – Kisik Community Center April 17<sup>th</sup> 7pm – 9pm
  - Kaktovik – Community Center April 10<sup>th</sup> 7pm – 9pm
- After consultation with leadership in the affected communities, ION developed a Draft Plan of Cooperation which includes input from the communities.
- Ion will provide an update to the affected communities prior to beginning seismic operations in October (updates are tentatively scheduled for August). The communities will be informed about any changes in the project.

# Conflict Avoidance Agreement

- ION is working with AEWC to develop a CAA specific to their project because of the October through mid-December timeline.
- The communication plan for ION is to work through the Search & Rescue office in Barrow.
- ION has contacted the president of the Barrow Search & Rescue to discuss the communications plan.

# Survey Vessels

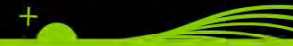
- R/V Geo Explorer - Seismic Vessel
  - DNV 1A1 ICE-1A\* E0



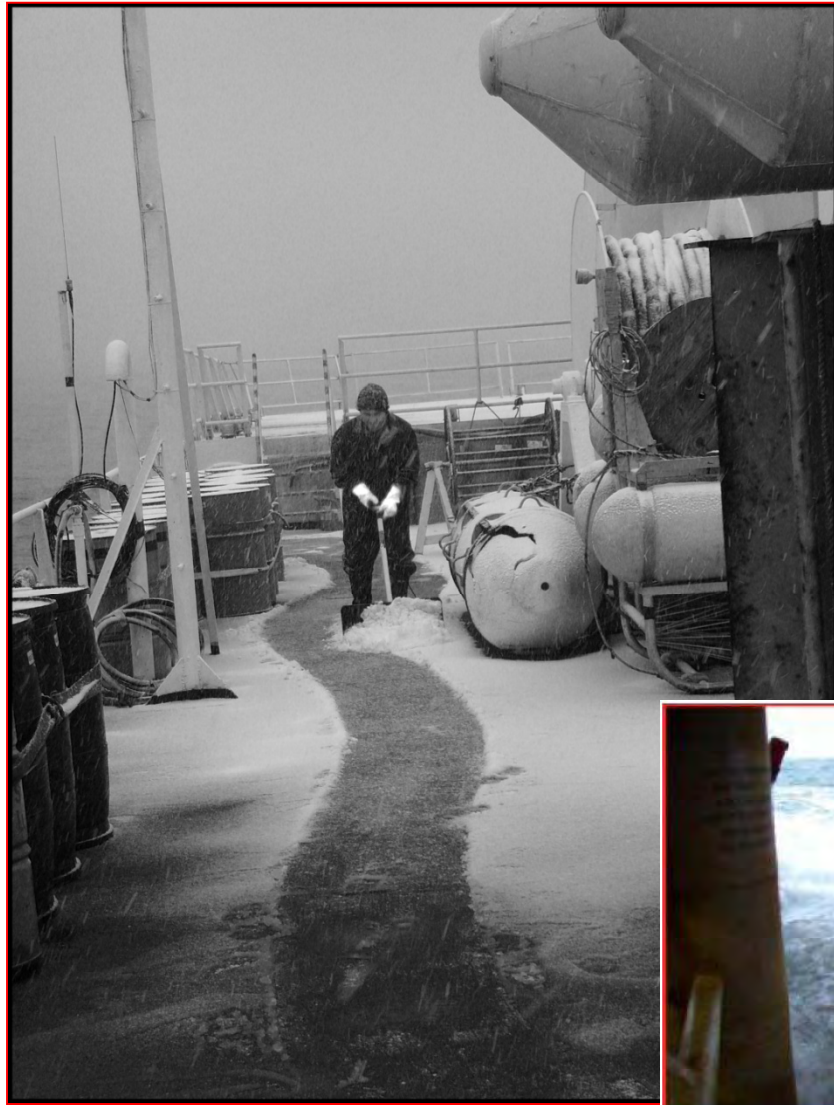
- Talagy – Icebreaker
  - Russian Icebreaker7



# Ice Escort Operations



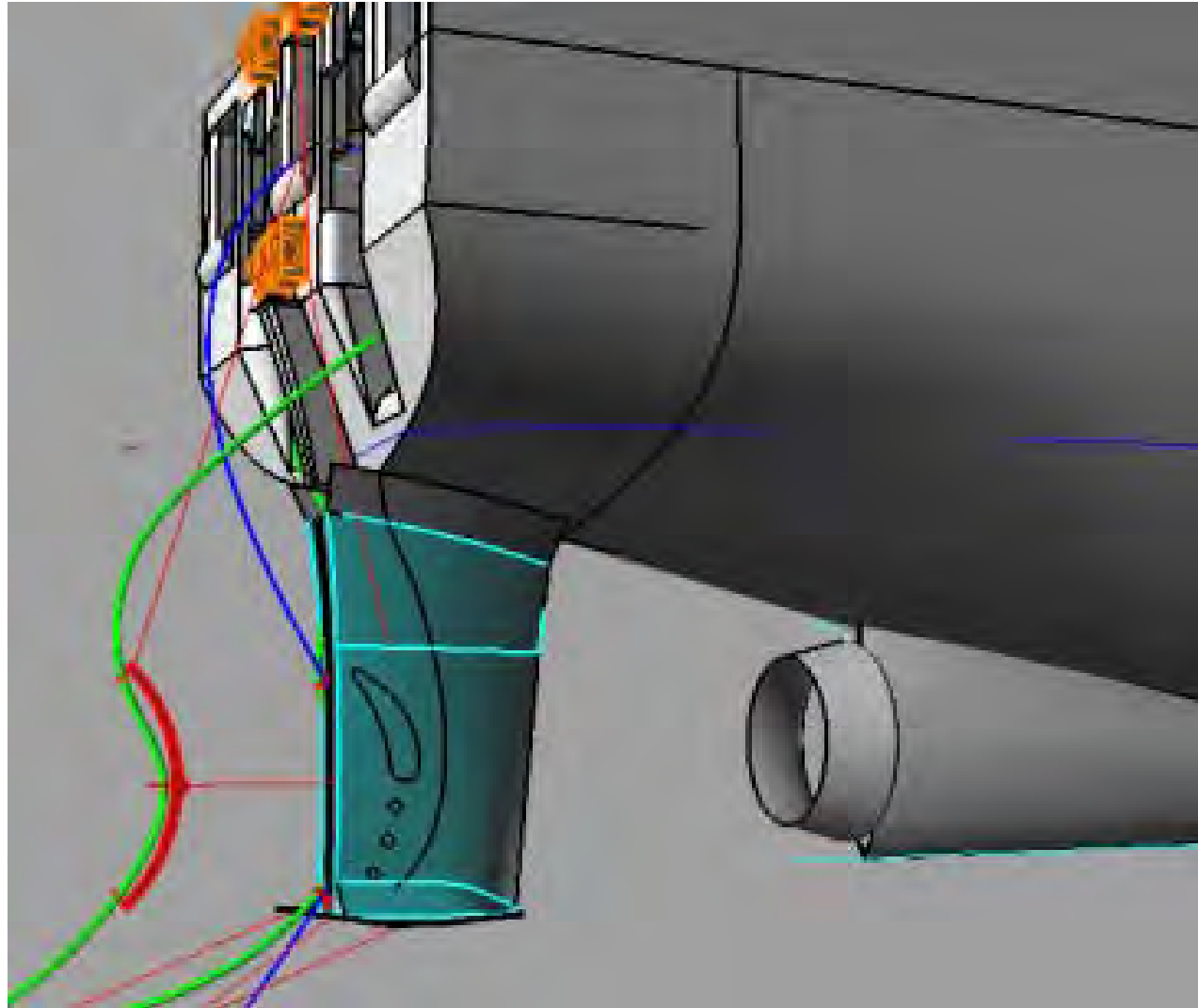
# Experience In Harsh Environments



# Ice Conditions Encountered During Survey Operations



# Ice Skeg





# ION GEOPHYSICAL





## Distribution

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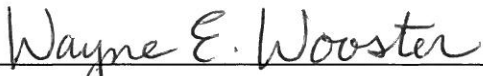
Annie Gray, Executive Director Kuukpikmiut Subsistence Oversight Panel, Inc. P.O. Box 89126 Nuiqsut, AK 99789	Craig Perham U.S. Fish and Wildlife Service 1011 E. Tudor Road, MS-341 Anchorage, AK 99503
Shane Guan National Marine Fisheries Service 1315 East-West Highway Silver Spring, MD 20910	Andy Mack NSB Special Assistant to the Mayor Government and External Affairs 3000 C Street, Suite 200 Anchorage, AK 99503
Edward Itta, Mayor North Slope Borough P.O. Box 69 Barrow, AK 99723	Taqulik Hepa NSB Department of Wildlife Management P.O. Box 69 Barrow, AK 99723
Robert Suydam NSB Department of Wildlife Management P.O. Box 69 Barrow, AK 99723	Thomas Olemaun, President Native Village of Barrow P.O. Box 1130 Barrow, AK 99723
George Edwardson, President Inupiat Community of the Arctic Slope P.O. Box 1121 Barrow, AK 99723	Thomas Napageak Jr., Mayor City of Nuiqsut P.O. Box 89148 Nuiqsut, AK 99789
Eugene Brower, President Barrow Whaling Captains' Association P.O. Box 4927 Barrow, AK 99723	Bernice Kaigelak, President Native Village of Nuiqsut P.O. Box 169 Nuiqsut, AK 99789
Nathan Gordon, President Kaktovik Inupiat Corporation P.O. Box 73 Kaktovik, AK 99747	Isaac Akootchook, President Native Village of Kaktovik P.O. Box 130 Kaktovik, AK 99747
Fenton Rexford, President Kaktovik Whaling Captains Association P.O. Box 137 Kaktovik, AK 99747	Annie Tikluk, Mayor City of Kaktovik P.O. Box 27 Kaktovik, AK 99747
Joseph Sage, Boardmember Alaska Eskimo Walrus Commission c/o Native Village of Barrow P.O. Box 1130 Barrow, AK 99723	Harry Brower, Chairman Alaska Eskimo Whaling Commission Member, Ice Seal Committee Member, Nanuuq Commission Member, Alaska Beluga Whale Commission P.O. Box 570 Barrow, AK 99723

Billy Oyagak, President  
Nuiqsut Whaling Captains Association  
P.O. Box 89013  
Nuiqsut, AK 99789

Isaac Nukapigak, President  
Kuukpik Corporation  
P.O. Box 89187  
Nuiqsut, AK 99789

Project File  
Administrative Record  
Project Manager

QUALITY CONTROL REVIEWER

  
\_\_\_\_\_  
Wayne Wooster  
Regulatory Affairs Department Manager

Technical Editor: Nikishka Stewart