

April 10, 2013

Shane Guan, Fishery Biologist
National Marine Fisheries Service
1315 East West Highway
Silver Spring, MD 20910
shane.guan@noaa.gov

Re: Final Plan of Cooperation, TGS 2013 2D Seismic Survey, Chukchi Sea, Alaska

Dear Shane Guan:

TGS is planning to conduct a two-dimensional (2D) marine seismic survey in the Chukchi Sea during the 2013 open water season. The attached Final Plan of Cooperation (POC) has been prepared in accordance with federal regulations 50 CFR 216.104(a) (12); and 50 CFR 18.124 to fulfill the requirements of the three major federal permits for the project:

1. National Marine Fisheries Service Incidental Harassment Authorization
2. US Fish and Wildlife Service Letter of Authorization
3. Bureau of Ocean Energy Management Geological and Geophysical permit.

TGS submitted a Draft POC in January 2013 to federal agencies; to the Barrow, Wainwright, Point Lay, Point Hope, and Kotzebue community governments, village councils, and village corporations; the Iñupiat Community of the Arctic Slope; the North Slope Borough (NSB) and Northwest Arctic Borough leadership; the NSB Wildlife Department; the Alaska Eskimo Whaling Commission (AEWC); and mammal co-management groups (Ice Seal Commission, Alaska Beluga Whale Committee, Alaska Eskimo Walrus Commission, and the Alaska Nanuuq Commission). TGS held POC meetings in the communities of Barrow, Wainwright, Point Lay, Point Hope, and Kotzebue in January and February 2013. TGS presented its program to the village whaling captains associations, the representatives of the marine mammal co-management associations, and the AEWC at the March 2013 AEWC Annual Convention in Anchorage, Alaska.

Similar to the Draft POC, the attached Final POC describes the proposed survey activities, schedule for operations, and the mitigation measures TGS has identified to date to minimize potential adverse effects during seismic surveys on the availability of marine mammals for subsistence use.

At the meetings, TGS described the proposed seismic survey, and discussed the measures they propose to take to ensure activities will not interfere with subsistence hunting. Comments from participants are documented in the Final POC and have

been incorporated into the TGS survey program design and schedule. TGS also signed the AEWC 2013 Conflict Avoidance Agreement.

Thank you for your consideration of TGS's program and, if you have any questions, please do not hesitate to contact me at (403) 852-6115 or steve.whidden@tgs.com; Troy Nelson at (403) 781-1448 or tnelson@arcis.com; Inuuteq Stotts with ASRC Energy Services (AES) at (907) 334-1563 or inuuteq.stotts@asrcenergy.com; or Elizabeth Benson with AES at (907) 339-5477 or elizabeth.benson@asrcenergy.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Whidden".

Steve Whidden, P. Gphys.
Program Manager
TGS

A handwritten signature in black ink, appearing to read "Troy Nelson".

Troy Nelson
Regulatory & Compliance
TGS

Enclosure: Final 2013 TGS Plan of Cooperation

cc:

Craig Perham, USFWS
Joel Garlic-Miller, USFWS
Jolie Harrison, NMFS
Candace Nachman, NMFS
Shane Guan, NMFS
Susan Banet, BOEM
Rance Wall, BOEM



Plan of Cooperation 2013 Chukchi Sea 2D Seismic Survey

April 2013

Prepared for

TGS
2500 CityWest Boulevard, Suite 2000
Houston, TX 77042

Prepared by



3900 C Street, Suite 700
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Distribution

ACRONYMS AND ABBREVIATIONS

2D	two-dimensional
BOEM	Bureau of Ocean Energy Management
CFR	Code of Federal Regulations
Com Center	Communication Center
dB	decibel(s)
IHA	Incidental Harassment Authorization
km	kilometer(s)
LOA	Letter of Authorization
mi	mile(s)
NMFS	National Marine Fisheries Service
NSB	North Slope Borough
POC	Plan of Cooperation
PSO	Protected Species Observer
SAR	Search and Rescue
SSV	sound source verification
TGS	TGS-NOPEC Geophysical Company ASA
USFWS	US Fish and Wildlife Service

1.0 Introduction and Purpose

TGS proposes to conduct two-dimensional (2D) seismic exploration activities during the 2013 open-water period in Alaska and international waters of the Chukchi Sea. Seismic operations are proposed to occur for approximately 68 days (35 days in Alaska waters and up to 33 days in international waters) sometime between 15 July and 31 October 2013 (depending on ice, weather conditions, and subsistence activities).

2.0 Plan of Cooperation Requirements

TGS has prepared this Plan of Cooperation (POC) to fulfill the requirements of the three major federal permits: the National Marine Fisheries Service (NMFS) Incidental Harassment Authorization (IHA), the US Fish and Wildlife Service (USFWS) Letter of Authorization (LOA), and the Bureau of Ocean Energy Management (BOEM) Geological and Geophysical permit.

To obtain an IHA from NMFS, an applicant must demonstrate that it has developed a POC in accordance with federal regulations (Title 50, Code of Federal Regulations, Part 216.104(a)(12) [50 CFR 216.104(a)(12)]). If the proposed activities will take place in or near traditional arctic subsistence hunting areas and/or 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 to the availability of whales and seals for subsistence use.

To obtain an LOA from the USFWS for the nonlethal incidental take of Pacific walrus and polar bear, an applicant must demonstrate that it has developed a POC in accordance with 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 to the availability of polar bear and Pacific walrus for subsistence use.

The POC document outlines the stakeholder engagement activities that TGS has had with local stakeholders, outlines potential conflicts that the proposed activities may have with subsistence activities, and describes mitigation measures that TGS will take, or has taken, to minimize adverse impacts to the availability of marine mammals for subsistence use.

The POC document contains the following information:

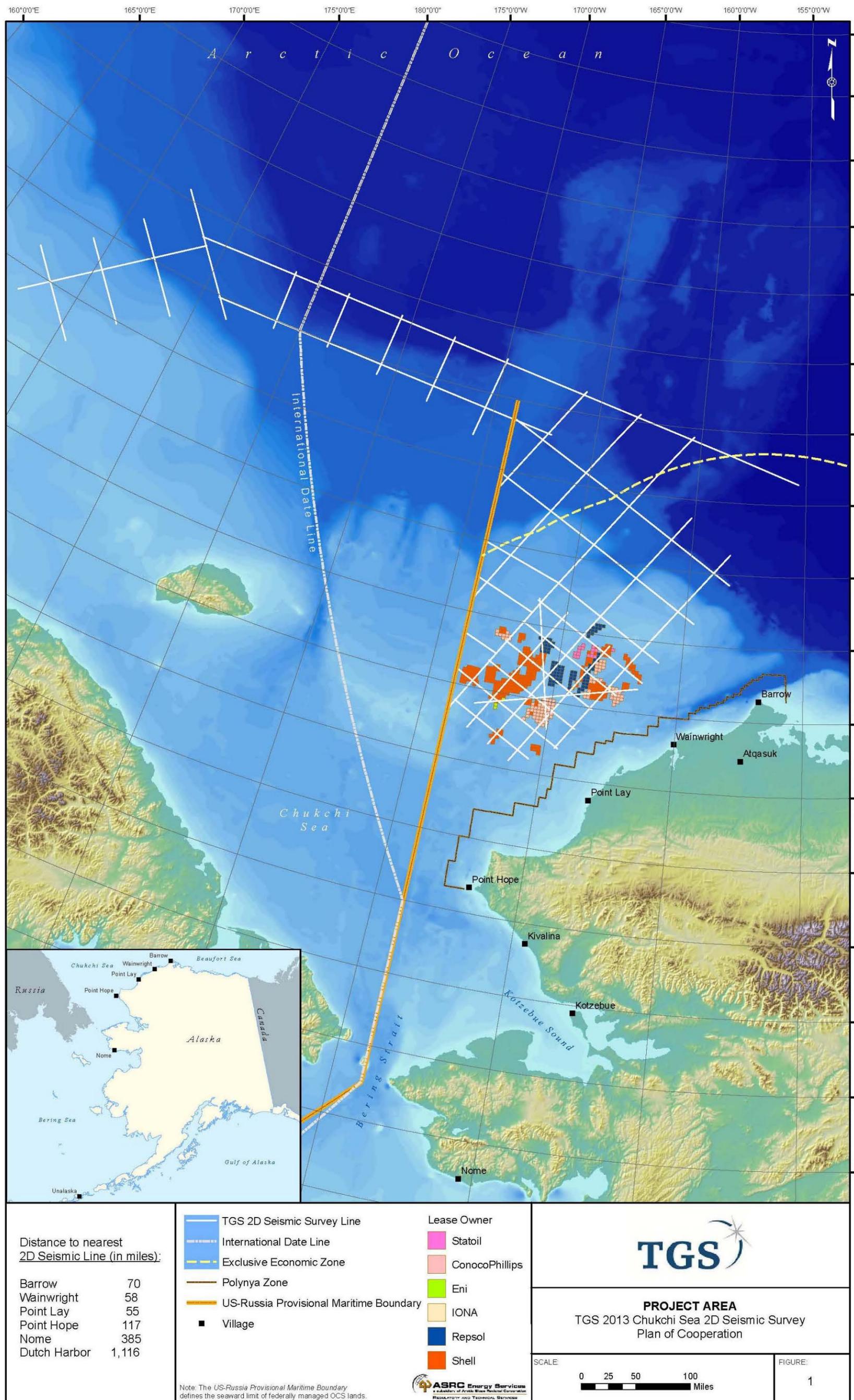
- A description of the project and proposed marine seismic survey
- A description of the POC process and schedule for meeting with the affected subsistence communities to discuss proposed activities and resolve potential conflicts related to proposed operations
- A description of the measures the applicant has taken, or will take, to ensure that the proposed activities will not interfere with subsistence hunting
- A plan to continue to meet with the affected subsistence communities, both before and during operations, to resolve conflicts and notify communities of operational changes

2.1 Project Description

The seismic operations are proposed to occur in US and international waters of the Chukchi Sea between about 70–77°N and 154–165°W (Figure 1). Seismic activities are proposed to start first in Alaska waters on or after 15 July (depending on ice and weather conditions and when Point Lay residents finish beluga whaling) and proceed north and west into international waters through 31 October depending on weather and ice.

Two vessels will be used during the survey: (1) a seismic source vessel that will tow the seismic source array and a single 8.1-kilometer (km)-long (5-mile-[mi]-long) hydrophone solid streamer and (2) a smaller vessel that will be used to monitor for marine mammals and scout for ice and other navigation hazards ahead of the seismic vessel. Currently, no particular vessels are under contract with TGS for the project. When contracts for each of these two vessels are secured, TGS will provide full vessel specifications.

The two TGS project vessels plan to depart Dutch Harbor, Alaska, in the Bering Sea sometime between 10–21 July and arrive at the Chukchi Sea project area about five days later (depending on ice and weather conditions). Upon arriving at the project area, sound source verification (SSV) measurements will be collected to validate modeled radii for marine mammal monitoring, potentially as early as 15 July. Seismic line operations are proposed to begin sometime between 15 July and 5 August, depending on duration of SSV measurements, weather and ice conditions, and when Point Lay residents finish beluga whaling. The survey will progress with ice-free areas acquired first. TGS plans to survey Alaska waters first, with seismic operations occurring over a period of about 45–60 days. When the Alaska seismic surveys are complete, TGS plans to conduct up to about 33 days of seismic operations in international waters (weather and ice contingent). Seismic operations are planned to end by 31 October in international waters. It is possible, though not anticipated or planned, that seismic operations would start in international waters if Alaska waters are not ice-free. Subsequent seismic lines would be selected based on proximity to ice-free areas. Upon completion of data acquisition, all vessels will demobilize to Dutch Harbor with an estimated return transit of five days.



NAD83, Alaska Albers Equal Area

AES-RTS: 12-194-001.mxd, 10/29/12, R00

Figure 1. Project Area

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3.0 Plan of Cooperation Process and Schedule

Community POC meetings occurred in Barrow, Wainwright, Point Hope, Point Lay, and Kotzebue between January and February 2013. A draft POC document was provided to community leaders, NMFS, USFWS, and BOEM in advance of the meetings.

This POC documents all consultations with community leaders and subsistence users and will be submitted to NMFS, USFWS, and BOEM at the completion of consultation. The POC includes feedback from the Leadership Meetings and POC meetings. TGS will continue to document all consultation with the communities and subsistence stakeholders as the survey progresses.

3.1 Affected Subsistence Stakeholders

TGS identified the following subsistence stakeholders as being potentially affected by the proposed activities. TGS has included these groups in the POC process and will continue to meet with representatives of each group. Table 3.1-1 lists the marine mammal co-management groups and regional stakeholder entities.

Table 3.1-1. Affected Subsistence Stakeholders

Type of Stakeholder Entity	Organization Name
Marine Mammal Co-management Groups	Alaska Eskimo Whaling Commission (registered whaling captains and their crew members)
	Village Whaling Captains Associations
	Alaska Beluga Whale Committee
	Alaska Ice Seal Committee
	Alaska Nanuuq Commission
	Alaska Eskimo Walrus Commission
Regional Entities	North Slope Borough
	Northwest Arctic Borough
	Iñupiat Community of the Arctic Slope

3.2 Community and Subsistence User Outreach

TGS began community and subsistence outreach with Chukchi Sea communities by introducing the project to the North Slope Borough (NSB) Planning Commission on 25 October 2012. They also met with the NSB Planning Director and other Barrow leadership. In December 2012, TGS meet Chukchi Sea community leaders at the tribal, city, regional and corporate levels in Barrow, Wainwright, Point Hope, Point Lay, and Kotzebue. TGS also introduced the project to the Alaska Eskimo Whaling Commission at their 4th Quarter Meeting on 13–14 December 2012 in Anchorage, Alaska.

Table 3.2-1 lists the 2012–2013 meetings TGS held with leadership and Chukchi Sea communities.

Table 3.2-1. 2012–2013 Leadership and Community Meetings

Stakeholder Entity	Date	Location(s)	Notes
North Slope Borough (NSB) Planning Commission	25 October 2012	Barrow	TGS-NOPEC Geophysical Company ASA (TGS) presented the proposed project to the NSB Planning Commission. Representatives of the NSB Planning Department were present.
Leadership Meetings	3–7 December 2012	Barrow Kotzebue Point Hope Point Lay Wainwright	TGS presented the proposed project to the community leadership. Entities invited included: <ul style="list-style-type: none"> • City of Barrow • Native Village of Barrow • Ukpeaġvik Iñupiat Corporation • City of Wainwright • Wainwright Traditional Council • Olgoonik Corporation • Native Village of Point Lay • Cully Corporation • City of Point Hope • Native Village of Point Hope • Tikigaq Corporation • Native Village of Kotzebue • City of Kotzebue • Kikiktagruk Iñupiat Corporation • Northwest Arctic Borough • North Slope Borough, Mayor's Office • North Slope Borough Department of Wildlife Management
Alaska Eskimo Whaling Commission (AEWC) 4th Quarter Meeting	13–14 December 2012	Anchorage	TGS presented the proposed project to the AEWC.
Plan of Cooperation Meetings	January–February 2013	Barrow Kotzebue Point Hope Point Lay Wainwright	TGS presented the proposed project to the affected communities.
AEWC Mini-convention	February 2013	Barrow	Conflict Avoidance Agreement discussion
NMFS Open Water Meeting	March 2013	Anchorage	TGS presented the proposed project at the 2013 Open Water Meeting.

3.3 Communications Center and Emergency Response

TGS will participate in the Emergency Communications Center (Com Center) program during the 2013 open-water season. Operators will staff the Emergency Com Center to allow 24 hours a day/7 days a week operation during the survey operational window. Vessels will report to the Com Center a minimum of every six hours to provide information about the vessel's location, speed, and direction. Vessels will notify the Com Center if there are any significant changes in plans or any potentially unsafe or unanticipated conditions (e.g., weather, ice conditions).

In the event of an emergency, TGS will coordinate with NSB Search and Rescue (SAR). TGS anticipates that, if an emergency requiring NSB SAR response occurs, the NSB SAR helicopter stationed in Barrow will be available.

The source vessel will have a physician's assistant and a full clinic onboard to respond to a medical emergency. If a medical evacuation is necessary, TGS will engage with the NSB SAR for helicopter transports.

4.0 Proposed Mitigation Measures

TGS has designed its 2013 2D seismic survey timing and location to minimize potential impacts to marine mammal migrations, and peak marine mammal abundance periods, and subsistence hunting activities. TGS proposes to begin late July or early August after spring whaling, which generally ends by July. Beluga whaling is typically done after the bowhead spring whaling has finished. The peak months for hunting of walrus are July and August. Walrus are generally taken within 32 km (20 mi) offshore (MMS 2008). Subsistence hunting of seals is not anticipated to begin until shore-fast ice is formed, typically in January. Polar bear subsistence hunting occurs during the winter and spring and comprises a small percentage of the marine mammal takes for subsistence. The closest survey point to an Alaskan community is 88 km (55 mi) west of Point Lay, and most survey lines are well over 200 km (125 mi) to the northwest including international waters. TGS understands from discussions at the POC meetings whalers typically are 2–5 km (1–3 mi) from shore, although they may occasionally travel as far as 24 km (15 mi) from shore, depending on the community.

Table 4-1 below summarizes TGS operations and mitigation to avoid effects on marine mammals and subsistence activities.

Table 4-1. Summary of TGS 2D Seismic Activities, Timeframe, and Mitigation

Activity	Timeframe (2013)	Mitigation
Begin seismic operations	Late-July or early-August (depending on ice conditions and weather)	After spring whale hunt complete
Remain in ice-free waters	Throughout survey	Avoid most encounters with ice-associated ice-seals, walrus and polar bears
Survey south of 72 °N first	July-August	Avoid bowhead/belugas and subsistence activities
Extend northward into international waters as ice recedes (>200 nm N/NW from shore)	September -October	Avoid fall migrating bowhead whales and subsistence hunts

Vessel operators associated with TGS's proposed 2013 seismic program anticipate monitoring Communication Com- and Call-Centers proposed to be operated in Barrow, Point Hope, and Point Lay. This will further enable vessel operators to be aware of marine mammals and subsistence activity in the area. PSOs will be placed onboard the seismic and scout vessels to implement mitigation measures minimizing exposure to the seismic sound source. Vessel-based mitigation measures include ramp-up procedures while initiating seismic operations and power-down and a shut-down procedure if a marine mammal is detected approaching or within designated distances from the sound source. TGS will implement a polar bear interaction plan that addresses food and waste management, personnel training, and safety and communication regarding polar bear.

TGS will manage an exclusion zone around the seismic source. If a marine mammal is observed in the exclusion zone, TGS will shut down the source and not start it up again until the animal is outside the exclusion zone. The threshold for cetaceans and walrus is 180 decibels (dB), and is 190 dB for polar bear and ice seals. TGS will adhere to exclusion zones required by the IHA. Table 4-2 shows the proposed marine mammal exclusion/safety zones at three water depths.

Table 4-2. Proposed Marine Mammal Exclusion/Safety Zones at Three Water Depths.

Root Mean Square dB (re 1 μ Pa)	Exclusion Zone m (ft)		
	Depth 17–40 m (58–131 ft)	Depth 40–100 m (131–328 ft)	Depth > 100 m (328 ft)
190	930 m (3,051 ft)	920 m (3,018 ft)	430 m (1,411 ft)
180	2,200 m (7,218 ft)	2,500 m (8,202 ft)	2,400 m (7,874 ft)
160	8,500 m (27,887 ft)	9,900 m ³ (32,480 ft)	15,000 m (49,213 ft)

Notes:

μ Pa= microPascal

dB = decibel(s)

ft = foot/feet

m = meter(s)

4.1 Marine Mammal Monitoring and Mitigation

NMFS and USFWS require a monitoring and mitigation plan to minimize impacts to marine mammals during offshore operation. Section 11 of the IHA application and Section 2 of the LOA application include proposed mitigation measures. Section 13 of the IHA application and Section 2 of the LOA application include proposed monitoring measures. The mitigation and monitoring plan is filed with the IHA and LOA applications.

TGS will employ experienced and trained Scientific Protected Species Observers (PSOs) and Iñupiat PSOs with Traditional Knowledge. TGS will deploy a sufficient number of PSOs on the seismic source vessel and two PSOs on the monitoring vessel. These PSOs will be on board the vessels to ensure that appropriate precautions are taken to avoid harassment of marine mammals, including whales, seals, walrus, or polar bear when the vessel is operated near these animals.

4.2 Proposed Conflict Avoidance Measures

TGS has developed its operational schedule so there is little opportunity to interfere with subsistence activities. Program features include the following elements:

- Plan the start survey in US waters to minimize potential impact to migrations and subsistence hunts.
- Complete the US waters survey before the commencement of fall bowhead whaling in the Chukchi Sea. The fall whaling season typically occurs between September and October.

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

- Exclusion radii have been modeled for the proposed seismic source. Upon arrival to the survey area, specific measurements of the sound source levels will be measured during SSV at the start of seismic operations to establish more precise distances for the exclusion radii (JASCO 2011).
- PSOs will actively watch for signs and sightings of marine mammals and will initiate mitigation measures, including power-down, shut down, or speed and course alterations if marine mammals are observed in, or about to enter, safety radii.

- PSOs will be equipped with night vision binoculars and/or vessel lights to aid visibility during periods of darkness and/or low visibility.
- Ramp-up procedures will be employed when initiating seismic operations. This procedure is intended to warn marine mammals of seismic activity and to allow sufficient time for those animals to leave the immediate vicinity so as to avoid injury or hearing impairment.
- All marine mammals detected during the survey, including those detected within the exclusion radii, will be recorded. Summary reports will be prepared in accordance with requirements of NMFS and USFWS.

5.0 Plan for Future Cooperation Activities

TGS plans to continue to engage with the affected subsistence communities regarding its Chukchi Sea activities. TGS will present its data about marine mammal sightings and the results of the 2013 marine mammal monitoring program as part of the 90-day Report to the regulatory authorities and will participate in the 2013 and 2014 Open Water Meetings. TGS will also present an overview of the survey activities to the NSB and the Chukchi Sea communities at the conclusion of activities.

TGS has updated this POC document with the results from engagement with affected subsistence communities and marine mammal groups in 2012-2013. See Appendices A - F.

6.0 References

- JASCO (JASCO Applied Sciences). 2010. *Modeling of Underwater Sound from TGS's Proposed 2010 Chukchi Sea Seismic Program, 2010 March 11 P001094-002 Version 1.0.*
- MMS (Minerals Management Service). 2008. *Beaufort Sea and Chukchi Sea Planning Areas: Oil and Gas Lease Sales 209, 212, 217, and 221: Draft Environmental Impact Statement.* OCS Report MMS 2008-0055.

Appendix A
2012 North Slope Borough Planning Commission Meeting

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Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	North Slope Borough (NSB) Planning Commission Regular Meeting		
Meeting Location	Barrow, Alaska		
Meeting Facility	NSB Administration Building		
Date and Time of Meeting:	October 25, 2012		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Steve Whidden (SW)	TGS	Aquilluk Hank (AH)	NSB Point Hope Commissioner
Zbigniew Doborzynski	TGS	Raymond Aguvluk, Jr. (RA)	NSB Wainwright Alternate Commissioner
Troy Nelson	TGS	Margie Fischer (MF)	NSB Planning Commission
Inuteq Stotts	AES	Hubert Hopson	NSB Capital Improvement Project Management (CIPM)
Richard Glenn (RG)	NSB Barrow Commissioner	Matt Dunn (MD)	NSB CIPM
Willard Neakok	NSB Point Lay Commissioner	Thomas Brower	NSB Planning
Paul Bodfish, Sr. (PB)	NSB Atqasuk (Chair)	Gordon Brower (GB)	NSB Planning
Eli Nukapigak	NSB Nuiqsut Commissioner	Ralph Burke	NSB Planning
Matthew Rexford	NSB Kaktovik Commissioner	Waska Williams	NSB Planning
Lawrence Burris	NSB Anaktuvuk Pass Commissioner	James Patkotak	Independent
Item	Agenda Item	Representative	Duration
1.	Refreshments are served	MF	5 mins
2.	Invocation prior to the presentation	RG	1 min
3.	TGS Presentation	SW	35 mins
4.	Question and Answer Period	SW	10 mins
Item	Action Item	Action By	Follow up Deadline
1.	TBD	TBD	TBD
KEY ISSUES:			
1.	Stakeholder Engagement – General question: What is your past experience with communities in Greenland?		
2.	Project Location – Russian waters: What does it take to perform this work in Russia?		
3.	Project Location – Red transect lines: What are the red lines? The black line is data already acquired?		
4.	Project Design/Description – Seismic: What does 160 db feel like? How about underwater? Is it amplified?		
5.	Project Design/Description – General: What is the cubic inch of the array and water depth?		
6.	Project Schedule –General: When will your operations start? What months?		

North Slope Borough (NSB) Planning Commission Regular Meeting
October 25, 2012

KEY ISSUES:	
7.	Project Design/Description – General: This is the most ice we have had in years. If there is ice are you going to delay your operations?
8.	Project Design/Description – Marine mammal mitigation: Is TGS mindful of the subsistence activities? Will you shut down operations when the marine mammals are around?
9.	Environmental Effects – Impacts on marine mammals: You will be at the tail end of the spring bowhead whale migration. You are right in the heart of bearded seal, ringed seal, and walrus movement. Be aware of the belugas.
10.	Affected Communities – Affected communities on the North Slope: You are going to have to pay special attention to our western communities: Point Hope, Point Lay, and Wainwright.
11.	Project Design/Description – General: Can you share with us your biggest concerns and conflicts you have had in regions of the north?
12.	Project Design/Description – General: Is this a solid streamer operation?
13.	Project Design/Description – Logistics: Does the chase vessel plan to refuel? Is it possible to refuel from a barge off Wainwright?
14.	Project Design/Description – PSOs: You will have PSOs on both vessels, correct?
15.	Field Studies – Biological studies: Does your company collaborate with scientists with whale tagging?
16.	Stakeholder Engagement – General timing: You will engage with communities soon?
17.	Environmental Effects – Impacts on marine mammals: I am looking at the red lines on your map. You are right there where the walrus migrate.
18.	Stakeholder Engagement – General: Are you meeting with residents of Kotzebue? Kivalina?
DISCUSSION ITEMS:	
1.	Question (Q): AH asked, “Where is the proposed area?” Answer (A): SW replied, “Here it is. I will show it in a bigger blow-up.”
2.	Q: RG asked, “What is your experience in working with locally affected communities in Greenland?” A: SW replied, “Our experience is good. We try to maintain a consistent balance around the world with stakeholder engagement and with communities. Greenland is different compared to Canada, Alaska, and Norway. There are similar concerns.”
3.	Q: AH asked, “What does it take to perform this work in Russia? Is there some sort of agreement between the US and Russia to allow you in there?” A: SW replied, “In this program we are not proposing anything in the Russian waters. The black lines have already been acquired from the previous years. I believe it was in 2008.”
4.	Q: AH asked, “What about the red lines? The black is data that has already been done? When was that done?” A: SW replied, “Those red lines are in international waters. The black data is already done. It was finished in 2008.”
5.	Q: RG asked, “What does 160 db feel like?” A: SW replied, “In water it is different than on air. One hundred sixty db on air is a very loud noise. The noise is quieter than a rock concert. It is about the same as slamming a door.”
6.	Q: AH asked, “How about underwater? Is it amplified?” A: SW replied, “No, it is hard to explain. One hundred sixty db is the power measurement in the water –its impact to an ear. It is comparable to 100 db on air.”
7.	Q: MD asked, “What is the cubic inch of the array and water depth?” A: SW replied, “Four thousand one hundred cubic inches. The water depth varies from 20 meters – 1,000 meters. The majority of the survey is 20 – 50 meters.”
8.	Comment (C): PB asked if anyone online had questions. No one answered.
9.	C: AH commented, “Those are good questions, Matt.”

North Slope Borough (NSB) Planning Commission Regular Meeting
October 25, 2012

DISCUSSION ITEMS:	
10.	Q: AH asked, "So you are starting from the Russian lines? Continuing from where you left off in Russia? Carrying it on to the US side?" A: SW replied, "That is correct. We will tie it to existing lines."
11.	Q: AH asked, "When will your operations start? What months?" A: SW replied, "Ice will determine that. We anticipate the middle of July to the middle of August. Those are our start dates."
12.	Q: PB commented, "You know in the Chukchi Sea, this is the most ice we have had in years. If there is ice are you going to delay your operations?" A: SW replied, "We will delay until it is ice-free."
13.	Q: PB asked, "Is TGS mindful of the subsistence activities? Will you shut down operations when the marine mammals are around?" A: SW replied, "That is going to be part of our mitigation program. We will shut down our sources if any marine mammals are within our 180-db area. Our PSOs will assist in that."
14.	Q: RG asked, "So that is how long it takes in covering that distance?" A: SW replied, "That is correct."
15.	Q: AH asked, "Can you share with us your biggest concerns and conflicts you have had in regions of the north?" A: SW replied, "I think any time we go out to water it is not risk-free. Risks are there. Interaction with the environment and other operators in the area. That is a large concern with us, that risk. We want to minimize and mitigate that risk."
16.	Q: AH asked, "What about concerns with locals in Canada, Greenland, and Russia?" A: SW replied, "I think the concerns in our engagement with the people are important. We cannot do one of these operations until we [have] engaged and consulted with the people, organizations, and government who could possibly be affected. Whether it is Greenland, Norway, Russia, and Canada, I think seismic has been acquired safely and responsibly by TGS."
17.	C: RG commented, "I appreciate you coming in and taking time to present your project. I have some pointers. The timing of your operation in July is a huge migration activity. You will be at the tail end of the spring bowhead whale migration. You are right in the heart of bearded seal, ringed seal, and walrus movement. Following the ice edge hanging around the barrier islands. You are going to have to pay special attention to our western communities: Point Hope, Point Lay, and Wainwright. Be aware of the belugas. I wish you well and good luck with your engagement with the communities."
18.	Q: MD asked, "Is this a solid streamer operation? Does the chase vessel plan to refuel?" A: SW replied, "Yes, this is a solid streamer operation. Our refueling and crew change will be down after we come in and go inshore. The choice is whether to come offshore to Wainwright or Nome. We are still looking at those different options. We are not going to refuel from the scout vessel. That will not be one of the functions."
19.	Q: MD asked, "Is it possible to refuel from a barge off Wainwright?" A: SW replied, "Yes."
20.	Q: MD asked, "Will the chase vessel run any groceries or any other resupply?" A: SW replied, "No, because we will do all that when we do the crew change. We anticipate every 35 days."
21.	Q: MD commented, "I'm assuming you have coordinated with Shell or companies that may make noise around your survey area." A: SW replied, "Yes, we definitely are going to deal with the rest of the oil and gas companies. Our biggest concern is making sure we stay out of their exclusion zone around the drill location."
22.	Q: MD asked, "You did say you will have PSOs on both vessels, correct?" A: SW replied, "Correct."
23.	Q: MD asked, "Your intent is to have the chase vessel stay with the survey vessel at all times?" A: SW replied, "Yes."
24.	Q: GB asked, "Does your company collaborate with scientists with whale tagging?" A: SW replied, "TGS has participated in scientific surveys around the world in regards to seismic impact to the environment. On whales, crab, and fish. It would be a great opportunity to do one here in Alaska."

North Slope Borough (NSB) Planning Commission Regular Meeting
October 25, 2012

DISCUSSION ITEMS:	
25.	<p>Q: GB asked, "You mentioned you may need shore support. I encourage you to work with the NSB to get that type of permitting done within three miles of the borough." A: SW replied, "We are still putting together and formulating our logistics plan. I think Wainwright is one of our options."</p>
26.	<p>Q: RA asked, "So you will engage with communities soon?" A: SW replied, "Yes."</p>
27.	<p>C: RA commented, "I am looking at the red lines on your map. You are right there where the walrus migrate. I wish you guys could go further down. All right; thank you." A: SW replied, "You know the migrations will be a huge portion of our studies and understanding how this program could potentially affect those migrations and how we could mitigate and minimize our impacts to the migration. We will work closely with Traditional Knowledge experts, scientific experts, etc."</p>
28.	<p>Q: AH asked, "Back to the stakeholder outreach page. Are you meeting with residents of Kotzebue? Kivalina?" A: SW replied, "Yes, we are."</p>
GENERAL OBSERVATIONS:	
<p>Throughout the presentation TGS was well received with varied questions. The key concerns are listed above in the key issues table. The most asked question was on project description/design. The questions on that topic were wide-ranging. No action items were listed from the planning commission regular meeting.</p>	

Appendix B
2012 Leadership Meeting Minutes and Sign-In Sheets

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Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Native Village of Barrow Leadership Meeting		
Meeting Location	Barrow, Alaska		
Meeting Facility	Native Village of Barrow Building		
Date and Time of Meeting:	December 3, 2012 (9:10 am – 10:20 am)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Dorothy Edwardsen	Native Village of Barrow
Mari Smultea (MS)	AES/SES	Doreen Ahgeak	Native Village of Barrow
Inuuteq Stotts (IS)	AES	Doreen Lampe	Native Village of Barrow
Thomas Olemaun (TO)	Native Village of Barrow	Martha Koonaloak	Native Village of Barrow
George Olemaun (GO)	Native Village of Barrow	Marjorie Solomon	Native Village of Barrow
Fannie Suvlu	Native Village of Barrow		
Item	Agenda Item	Representative	Duration
1.	Refreshments are served	TO	5 mins
2.	Invocation before the presentation	GO	1 min
3.	TGS Presentation	TN, MS, & IS	35 mins
4.	Question and Answer Period	Native Village of Barrow	30 mins
Item	Action Item	Action By	Follow up Deadline
1.	“A good idea for the Plan of Cooperation is to have something on paper. It would be nice to have something signed to show cooperation. It would be nice to start something new. That would be my recommendation. Just with the Native Village of Barrow.”	TO	Before POC meetings
2.	“I can send you a table about the comparison of seismic sounds and marine mammal sounds.”	MS	Before POC meetings
3.	“The next time we meet, can you please share with us information the other leadership entities asked about. That would be nice to see.”	Unidentified	Before POC meetings
KEY ISSUES:			
1.	Project design/description – General questions: What kind of data do you have? Have you done work in the Chukchi Sea?		
2.	Project design/description – General question: What is the difference between 2D and 3D seismic?		
3.	Affected Communities – General questions: How many entities have you worked with in stakeholder engagement? What do the First Nations think of all the work that is going on in their area?		
4.	Project schedule – General questions: Are the lines what you plan to do for 2013? When do you plan to start your operations?		
5.	Environmental effects – General comment: That sound array is very loud. I believe the sound will break the marine mammal’s ear drum. With the future vessel traffic, it may get worse or disarray the marine mammals.		

NATIVE VILLAGE OF BARROW LEADERSHIP MEETING DECEMBER 3, 2012

6.	Project design/description – General questions: 180 decibels is comparable to what? How many times do you shoot the sound? How many shots in each line?
KEY ISSUES:	
7.	Project design/description – Permitting questions: What is the LOA and what does it mean? Authorization to do what? Within the IHA, if there is a strike, who do you contact?
8.	Stakeholder – General timing question: The next meeting will be in the end of January?
9.	Stakeholder – Community investment: We have a food bank here and I see in your presentation that you actively support charitable programs. Our food bank is always struggling to find donors.
10.	Stakeholder – Regional question: The next time we meet, can you please share with us information the community leaders asked about. That would be nice to see.
DISCUSSION ITEMS:	
1.	Question (Q): TO asked, “What does TGS stand for?” Answer (A): TN replied, “It stands for Tomlinson Geophysical Services.”
2.	Q: GO asked, “What kind of data do you have?” A: TN replied, “We collect geophysical data. Our geophysicists analyze the subsurface images. TGS provides this information to oil and gas companies.”
3.	Q: GO asked, “Have you done work in the Chukchi Sea?” A: TN replied, “No, we have not. This will be our first program.”
4.	Q: GO asked, “Do you do subsurface services near the coastline?” A: TN replied, “We could look into that kind of service. That would be more of a bathometric survey. It is a little different work than what we do.”
5.	Q: Unidentified asked, “How many entities have you worked with in stakeholder engagement?” A: TN replied, “We have extensive experience working in offshore Greenland, East Coast Canada, and different First Nations in Canada. We also do onshore seismic work in western Canada.”
6.	Q: Unidentified asked, “You have worked in the orange areas?” A: TN replied, “That is correct. Orange and red.”
7.	Q: GO asked, “What is the difference between 2D and 3D seismic?” A: TN replied, “2D gives you more of a regional look. In 2D we are getting a vertical and horizontal slice of the data. In 3D, it would be more of a regular grid pattern.”
8.	Q: Unidentified asked, “What do the stars mean on the map?” A: TN replied, “I am not sure what the stars represent.”
9.	Q: Lady asked, “What do the First Nations think of all the work that is going on in their area?” A: TN replied, “In Greenland, a lot of data has been acquired. They have been exposed to it for a while. Some of the data in Greenland was acquired in the 1990s. South of Nunavut, it is new to them. We have been doing stakeholder outreach in Nunavut.”
10.	Q: TO asked, “Are the lines what you plan to do for 2013?” A: TN replied, “Yes, that is correct.”
11.	Q: Unidentified asked, “When do you plan to start your operations?” A: TN replied, “As soon as the ice is clear. We are hoping to start in the areas closest to shore.”
12.	Comment (C): TO commented, “We have people who could help with the PSO program. We can help with our Traditional Knowledge. Keep that in mind.”
13.	Q: Unidentified asked, “These meetings are required for you, right?” A: TN replied, “It is a requirement. It is good consultation.”
14.	Q: GO asked, “Is this the whole area you are covering?” A: TN replied, “That is correct.”
15.	Q: GO asked, “Your schedule is fast-track. Is your schedule a multiyear?” A: TN replied, “That is correct.”
16.	Q: GO asked, “You are using just two boats?” A: TN replied, “That is correct.”
17.	Q: Unidentified asked, “What do your boats discharge?” A: TN replied, “Compressed air.”

**NATIVE VILLAGE OF BARROW LEADERSHIP MEETING
DECEMBER 3, 2012**

18.	C: TO commented, "That sound array is very loud. I believe the sound will break the marine mammal's ear drum. With the future vessel traffic, it may get worse or disarray the marine mammals."
DISCUSSION ITEMS:	
19.	Q: Unidentified asked, "180 decibels is comparable to what?" A: MS replied, "The sound is loud in the immediate area. As the sound disperses, it gets less loud. I will show you a comparison of the sound in my chart. There are current underwater sound studies."
20.	Q: Unidentified asked, "How many times are you guys shooting this sound?" A: TN replied, "Just once. We do a transect line once. We don't revisit that line again."
21.	Q: Unidentified asked, "How many times do you shoot the sound?" A: TN replied, "Every 25 meters. That is every 77 feet." C: MS commented, "They direct the sound to the bottom of the ocean."
22.	Q: Unidentified asked, "How many shots in each line?" A: TN replied, "The source array shoots every 70 feet to the bottom of the ocean."
23.	Q: Unidentified asked, "How does it affect the bottom feeders?" A: MS replied, "There have been studies on the affect to bottom feeders. Studies have shown the sound array can kill bottom feeders within 3 feet of the sound."
24.	C: Unidentified commented, "The seismic sound attracts seals." A: TN replied, "We will keep that in mind." A: MS replied, "If we see marine mammals, TGS will have a ramp-up and shut-down process." A: TN replied, "If any marine mammals are spotted, the vessels shut down."
25.	Q: TN asked, "Is August 1–August 15 a good time to begin open-water operations?" A: TO replied, "Yeah, it will be sea-ice-free. It depends on Mother Nature, but it may be a good time. It varies."
26.	C: Unidentified commented, "I know the Eskimo Walrus Commission has a big concern about so many ships being out there because walrus travel on ice floes. If there are ships between the land and ice, the walrus will not come any closer." A: MS replied, "TGS is only operating in open water. TGS does not have any vessels to push away the ice." C: TO commented, "It varies."
27.	Q: Unidentified asked, "What is the LOA and what does it mean?" A: TN replied, "It is very similar to the IHA. It is for polar bears and walrus through USFWS. It is a mitigation report."
28.	Q: Unidentified asked, "Authorization to do what?" A: MS replied, "Authorization to do the seismic sound. Every time you are going to make sounds you need to have authorization from the government. Through the USFWS it is for the polar bear and walrus. For the NMFS it is for the whales and seals. Anyone who makes noise needs to do public meetings."
29.	Q: GO asked, "Within the IHA, if there is a strike, who do you contact?" A: MS replied, "TGS will contact local authorities and National Fisheries. They will decide what to do."
30.	Q: Unidentified asked, "I have a question about PSOs. Do the PSOs get acoustic training and not just on watching?" A: TN replied, "That is still a work in progress. We are still trying to figure that out."
31.	Q: TO asked, "The next meeting will be in the end of January?" A: IS replied, "Yes, that seems to be a good time to have a community meeting." C: TO commented, "A good idea for the Plan of Cooperation is to have something on paper. It would be nice to have something signed to show cooperation. It would be nice to start something new. That would be my recommendation. Just with the Native Village of Barrow."
32.	A: Unidentified asked, "Does AES have a Panaaq Program? Who is your Panaaq?" Q: IS replied, "We did that a couple weeks ago in Wainwright and Atqasuk. It was a mix of shareholders and RTS employees." Q: Unidentified asked, "Who has Barrow?" A: IS replied, "I am not sure who is under Barrow."

NATIVE VILLAGE OF BARROW LEADERSHIP MEETING
DECEMBER 3, 2012

DISCUSSION ITEMS:	
33.	<p>C: Unidentified commented, "We have a food bank here and I see in your presentation that you actively support charitable programs. Our food bank is always struggling to find donors." A: TN replied, "These are the kind of things we would like to hear from you guys. We do social outreach. That is good information. We have assisted and sponsored in past work with the First Nations in Canada." C: Unidentified commented, "We spend about \$20,000 a month on the food bank."</p>
34.	<p>Q: GO asked, "Is there someone we can speak with? Do you guys have a point of contact here?" A: IS replied, "For community meetings AES uses the ASRC village representatives for each community. For Barrow, the village representative is the stock department."</p>
35.	<p>Q: GO asked, "You will not be based in Barrow? You are offshore all the time?" A: TN replied, "There is a good chance we will have a liaison. We are not sure where yet. That is still something we are working out." C: Unidentified commented, "That is a good job for a college student."</p>
36.	<p>C: MS commented, "It might be possible. I know with my work (I have my own company) I sometimes hire students to come and learn with me as interns. They learn how to do the permits and that kind of thing. There is that kind of internship for students. They learn on the job." A: TO replied, "Maybe you can pass that information to our workforce department. Give us your card and information." A: Unidentified replied, "Ilisaġvik College may be a good avenue for that. The college does a lot of summer programs."</p>
37.	<p>C: MS commented, "I can send you a table about the comparison of seismic sounds and marine mammal sounds."</p>
38.	<p>C: Unidentified commented, "The next time we meet, can you please share with us information the other leadership entities asked about. That would be nice to see." A: TN replied, "Okay."</p>
GENERAL OBSERVATIONS:	
<p>A good attendance by the Native Village of Barrow. An unidentified woman was on teleconference. She was a council member.</p>	

NATIVE VILLAGE OF BARROW
TRIBAL COUNCIL SPECIAL MEETING
December 3, 2012 9:00 A.m.

SIGN IN SHEET

NAME	REPRESENTING
1. Thomas Omebo	D
2. George Omebo	Council
3. Fannie Sivlu	Council
4. Inuuteq Stotts	AES
5. Troy Nelson	TGS / Arcis
6. Mari Smuitea	SES / AES
7. Glenn Ahjeak	Council
8. Dolly Elluaker	Council
9. M. S. Iuv	Council
10. Doreen Lampe	Teleconference Council
11. Martha Koonalook	Tribal Ops
12.	
13.	
14.	



NATIVE VILLAGE OF BARROW IÑUPLAT TRADITIONAL GOVERNMENT

**Native Village of Barrow
TGS Special Meeting
NVB Conference Room
December 3, 2012 9:00 am
Agenda**

1. Call to Order:
2. Invocation:
3. Roll Call:
4. Approval of Agenda:
5. Old Business:
6. New Business:

TGS - 2013 Chukchi Sea 2 D Seismic Program

7. Adjournment:

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	North Slope Borough Department Wildlife Management (NSB-DWM) Leadership Meeting		
Meeting Location	Barrow, Alaska		
Meeting Facility	Ilisaġvik College – Wildlife Management Department		
Date and Time of Meeting:	December 3, 2012 (1:30 pm – 3:15 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Brian Person (BP)	NSB-DWM
Mari Smultea (MS)	AES/SES	Todd Sformo (TS)	NSB-DWM
Inuuteq Stotts (IS)	AES	Leandra de Sousa (LS)	NSB-DWM
Robert Suydam (RSU)	NSB-DWM	Raphaela Stimmelmayer (RST)	NSB-DWM
Harry Brower, Jr. (HB)	NSB-DWM	Jessica Lefevre (JL)	Alaska Eskimo Whaling Commission
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, MS, & IS	75 mins
2.	Question and Answer Period	NSB-DWM	30 mins
Item	Action Item	Action By	Follow-up Deadline
1.	“Who is sponsoring with the Newfoundland research? Is it on spec?”	BP	Before POC meetings
2.	“I will talk to my friend Tom Norris who does a lot of localizing and hydrophone tows, and see what he thinks about all this. We could look at the cost estimate between a scout vessel and Twin Otters.”	MS	Before POC meetings
3.	“This line that is going right through Burger seems similar to what GXT (ION) shot in 2006 or 2007. BOEM and NMFS are supposed to do what they can to reduce environmental impacts. What are the chances you can get some of this data to reduce the amount of effort?”	RSU	
KEY ISSUES:			
1.	Project schedule – General questions: What time of the year? How late do you plan on being out there? So potentially you could be out in the Chukchi Sea until November?		
2.	Environmental effects – Impacts on subsistence: In that time of the year, Point Lay will be in the midst of their beluga hunt.		
3.	Project schedule – General comment: It may be worthwhile to focus on the areas closest to the communities closest to the coast. Try to finish the lines closest to the communities.		
4.	Project design/description – PSO program: How many PSOs per shift?		
5.	Project design/description – Marine monitoring/mitigation: One thing to consider is having some instruments further to the north near the shelf break, or even out near the Chukchi Plateau, just to better document what is happening in those areas.		
DISCUSSION ITEMS:			
1.	Question (Q): RSU asked, “Directional surveying being drilling? Directional drilling?” Answer (A): TN replied, “No, more like bathymetry. Our main product is geophysical data.”		
2.	Q: RSU asked, “Is this planning on spec? Do you have sponsors? Is it a combination?” A: TN replied, “Our business development people are working on underwriters right now.”		
3.	Q: RSU asked, “If you are not able to get sponsors to the program, would you go ahead and shoot it anyway? On spec, or is that still up in the air?” A: TN replied, “That is basically upper management. I do not know.”		

**NSB WILDLIFE MANAGEMENT LEADERSHIP MEETING
DECEMBER 3, 2012**

DISCUSSION ITEMS:	
4.	Q: BP asked, "Who is sponsoring with the Newfoundland research? Is it on spec?" A: TN replied, "I do not know. I can get back to you on that."
5.	Q: RSU asked, "What do the colors represent, specifically the orange and the stars?" A: TN replied, "I do not know about the stars."
6.	Q: TS asked, "What do the grey lines mean?" A: TN replied, "I do not know. They may be older surveys."
7.	Q: RSU asked, "How large is the array?" A: TN replied, "4,100 cubic inches."
8.	Q: TS asked, "Six- to eight-thousand meters behind?" A: TN replied, "Yes, that is just one streamer. In a 3D operation, you would have two to 10 streamers being towed behind the vessel. For 2D, it is just one streamer."
9.	Q: LS asked, "What depth is that?" A: TN replied, "Six to eight meters."
10.	Q: LS asked, "What time of the year?" A: TN replied, "As soon as ice permits. We will try to begin on July 15 or August 1."
11.	Q: TS asked, "How do you know what the ice is like?" A: TN replied, "We have contracted a company from Vancouver or Ontario Canutec. They will be doing our ice monitoring."
12.	C: BP commented, "In that time of the year, Point Lay will be in the midst of their beluga hunt." A: IS replied, "We will be visiting them on Thursday." A: BP replied, "That may not go well with folks there." A: TN replied, "That is what these visits are all about."
13.	Q: TS asked, "So is it one visit and you will know? Will you be coming back?" A: TN replied, "This is just our first. First of many. We plan on coming back in the end of January for community meetings."
14.	Q: TS asked, "What about when you are out actually doing this activity? How do you plan to work in the boat and work with communities?" A: TN replied, "We will be active participants in the [Conflict Avoidance Agreement] CAA. We will determine how we will be involved with the Communication Centers. That is something that needs to be worked out."
15.	Q: TS asked, "Will you be part of the CAA? Have you signed it already?" A: TN replied, "That doesn't get signed until February."
16.	C: RSU commented, "In reality, people don't make the start date. You may want to remove the start date altogether. For example, you should state you will not start the operations until after the beluga hunt is done in Point Lay." A: TN replied, "Yes, thank you. That is why we are doing these leadership meetings."
17.	C: RSU commented, "Slide 13 may be an issue. In past studies, bowhead whales have responded to 120 decibels. Stopping at 120 decibels would be more helpful. Providing a clear picture of the footprint of the sound from the airgun array down to 120 decibels is going to be more helpful than to stopping at 160 decibels. It would be valuable if that was in here. It bums me out that NMFS doesn't require it. It is worthwhile to put in here. Just to help people understand how big of a sound footprint we are talking about." A: MS replied, "That is the work done from Northstar that LGL has done?" A: RSU replied, "That is part of it. Some of the recent research in the Beaufort Sea says the same thing as the drilling in Camden Bay that was done by various people back in the 1980s and early 1990s. There is a variety of sources."
18.	C: RSU commented, "In terms of monitoring and mitigation in the Beaufort Sea, where NMFS is requiring some mitigation and monitoring up to the 120 decibels. This is specific to the cow/calf situation in the area. There is a lot room for improvement."
19.	C: RSU commented, "I encourage you review the peer review reports from the last three years, especially as it relates to ION. ION's operation is a little different from what you are planning. Some of the issues are still applicable."

**NSB WILDLIFE MANAGEMENT LEADERSHIP MEETING
DECEMBER 3, 2012**

DISCUSSION ITEMS:	
20.	Q: RSU asked, "Question for you on Slide 15. I take it you are not operating in ice? The picture of Slide 15 should be out. You do not want to give that impression." A: TN replied, "TGS will do their operations in free ice."
21.	Q: BP asked, "How late do you plan on being out there?" A: TN replied, "The latest is mid-October."
22.	Q: RSU asked, "Thirty-three days of acquisition on international waters?" A: TN replied, "Correct."
23.	Q: RSU asked, "So potentially you could be out in the Chukchi Sea until November?" A: TN replied, "That is correct."
24.	C: RSU commented, "So this year there were a large number of bowheads that were lingering in the lease tract area. I am guessing feeding; nobody knows. Some of the tagged whales hung around the leases. ION saw quite a few of them, as well as Shell, Conoco, and Statoil. Once whales get to Barrow and move further west, they spread out much more. It is kind of a broad front of migration."
25.	C: RSU commented, "It may be worthwhile to focus on the areas closest to the communities closest to the coast. Try to finish the lines closest to the communities."
26.	C: RSU commented, "We still have whales that linger during the migration. There is an indication that the whales that linger are the reproductive females with young. They are the last ones to come through during the fall time."
27.	Q: TS asked, "How many PSOs per shift?" A: MS replied, "Two people per shift. This is with both the survey and scout vessel."
28.	Q: BP asked, "So the vessels will be running 24/7? You will be shooting at night?" A: MS replied, "That is correct."
29.	Q: MS asked, "Has anyone done sight ability curves? Like with the big eyes? What do you propose with better monitoring?" A: RSU replied, "You guys should work on advancing the capabilities of PAM. Test it, improve what hasn't worked in the past, and make some progress there. The other thing, especially in the Beaufort, is aerial surveys."
30.	C: RSU commented, "One thing to consider is having some instruments further to the north near the shelf break, or even out near the Chukchi Plateau, just to better document what is happening in those areas."
31.	Q: MS asked, "Have they tried towing a PAM array behind a scout vessel?" A: RSU replied, "I think so and I think it had limited success. You may want to talk to Statoil. I think they towed a PAM two years ago. Maybe a year ago. They may have had some successes."
32.	C: MS commented, "I will talk to my friend Tom Norris who does a lot of localizing and hydrophone tows, and see what he thinks about all this. We could look at the cost estimate between a scout vessel and Twin Otters." A: RSU replied, "I think that is a great idea."
33.	Q: RSU asked, "This line that is going right through Burger seems similar to what GXT (ION) shot in 2006 or 2007. BOEM and NMFS are supposed to do what they can to reduce environmental impacts. What are the chances you can get some of this data to reduce the amount of effort?" A: TN replied, "That is something I can review with my colleagues. I haven't seen the GXT lines."
34.	Q: MS asked, "So the kind of information you guys are interested in north of the lease sale is when they are coming through, how many are there, and what age/size class they are?" A: RSU replied, "Variation from year to year, variation from within the year; there is just a lot we don't know about what is happening with the Chukchi mammals."
35.	Q: TN asked, "Who funds the acoustic monitoring, now?" A: RSU replied, "So, it depends. In the Beaufort Sea, Shell funds all of the acoustic monitoring, with the exception of the few hydrophones that are put out to monitor Northstar. Everyone, once in a while BP puts out a full array to monitor Northstar. Shell, Conoco, and Statoil joint-fund the array in Chukchi."

NSB WILDLIFE MANAGEMENT LEADERSHIP MEETING
DECEMBER 3, 2012

DISCUSSION ITEMS:	
36.	C: RSU commented, "It may be helpful to speak with Sheyna Wisdom at Olgoonik Fairweather."
37.	C: RSU commented, "The Alaska Ocean Observing Marine System is maintaining an Arctic Assets Map. They are keeping track of where all these instruments are being deployed, whether its hydrophones, ocean instruments, etc. It would be worth getting your seismic lines into the AOOS/Arctic assets maps, just so everyone knows."
38.	C: RSU commented, "You had mentioned earlier about modeling the sound footprint to estimate how many animals might be exposed to sound levels. A common aspect that is left out is how mammals travel through the area. That may be brought up in the peer review."
39.	C: RSU commented, "If you could get confidence intervals, that would be helpful."
GENERAL OBSERVATIONS:	
A good attendance by the NSB Wildlife Management Department. Jessica Lefevre was on teleconference from Washington, DC. Harry Brower, Jr., arrived to the meeting late.	



TGS Project
North Slope Borough (NSB) Wildlife – NSB Building
December 3, 2012 1:30 PM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) Robert Snyder	NSB Wildlife	0350		Box 69 BRW 99723
2) Douglas Stromberg	NSB Wildlife	0850		Box 69 BRW 99723
3) Alexandra di Sousa	NSB -DWM	0350		Box 69 BARROW-AK 99723
4) Todd Sformo	''	''		''
5) Troy Nelson	TGS			
6) MARI SMULTEA	Smulter ENV SCIENCES	707 362 5376	m-smulter@ gmail.com	PO Box 256 Preston, WA 98050
7) Hunter Stott	AES			
8) * Jessica (Tele- Lefevre conference)	A E W C Council			



TGS Project
North Slope Borough (NSB) Wildlife – NSB Building
December 3, 2012 1:30 PM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
9) BRIAN PERSON	NSB DWM	0350	Brian.Person@north-slope.org	Box 69 Barrow, AK 99723
10)				
11)				
12)				
13)				
14)				
15)				
16)				

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	City of Barrow Leadership Meeting		
Meeting Location	Barrow, Alaska		
Meeting Facility	City of Barrow Building		
Date and Time of Meeting:	December 3, 2012 (10:30 am – 11:15 am)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Inuuteq Stotts (IS)	AES
Mari Smultea (MS)	AES/SES	Robert Harcharek (RH)	City of Barrow (Mayor)
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, MS, & IS	35 mins
2.	Question and Answer Period	RH	10 mins
Item	Action Item	Action By	Follow-up Deadline
1.	TBD	TBD	TBD
KEY ISSUES:			
1.	Project design/description – General questions: When do you plan to start? Are the data you are collecting for a specific client?		
2.	Project location – General question: Where is your vessel going to be based?		
3.	Project design/description – General questions: What is the vessel's size? Ice reinforced? Do you own it or do you lease it?		
4.	Stakeholder – Community investment: We are looking for social investment, too. It has to do with funding the recreational activities. We are trying to find funding to pay for a full-size basketball court. The current recreational center cannot sustain the population.		
5.	Project design/description – Permitting question: Have you had any obstacles from the permitting agency?		
6.	Stakeholder – General Question: Do you have a Plan of Cooperation with the US Coast Guard?		
DISCUSSION ITEMS:			
1.	Question (Q): RH asked, "When do you plan to start?" Answer (A): TN replied, "We plan to start on July 1, depending on sea ice."		
2.	Q: RH asked, "Is the data you are collecting for a specific client?" A: TN replied, "The kind of seismic we acquire is called multi-client or spec seismic."		
3.	Q: RH asked, "Have the oil and gas companies given you any objection?" A: TN replied, "No. To acquire seismic you do not have to be a lease holder."		
4.	Comment (C): RH commented, "This map is interesting. I haven't heard much from Repsol. Conoco seems like a pretty decent player."		
5.	Q: RH asked, "Where is your vessel going to be based?" A: TN replied, "We are still working on that. We have had some discussions with Olgoonik Corporation in Wainwright. We may have some offshore support there or maybe Nome."		
6.	Q: RH asked, "What size vessel?" A: TN replied, "The vessel is about 240 feet."		
7.	Q: RH asked, "Ice reinforced?" A: TN replied, "Yes."		
8.	Q: RH asked, "Do you own it or do you lease it?" A: TN replied, "We contract it. We don't own any equipment ourselves. We contract everything out."		

**CITY OF BARROW LEADERSHIP MEETING
DECEMBER 3, 2012**

DISCUSSION ITEMS:	
9.	Q: RH asked, "Have you encountered any resistance?" A: TN replied, "No, not yet. This is our first trip for leadership meetings."
10.	C: RH commented, "We are looking for social investment, too. It has to do with funding the recreational activities. We are trying to find funding to pay for a full-size basketball court. The current recreational center cannot sustain the population."
11.	Q: RH asked, "Where else do you folks operate?" A: TN replied, "We are worldwide. On Slide 6, it shows our past work in the Arctic."
12.	Q: RH asked, "After you do your gridlines, what is the extent with your precision? How accurate is your seismic reading?" A: TN replied, "With 2D seismic it is a slice of the geology. This is what companies use to get a first look."
13.	Q: RH asked, "Is it possible you will come back for more work?" A: TN replied, "There is potential."
14.	Q: RH asked, "Does that happen a lot?" A: TN replied, "It depends on the area. 2D is a general overview look geologically into the area."
15.	Q: RH asked, "How many people on a boat?" A: TN replied, "About 50. That includes the ship crew, seismic crew, and the PSOs. The PSOs will be in the survey and scout vessels."
16.	Q: RH asked, "Have you had any obstacles from the permitting agency?" A: TN replied, "No. We submitted our IHA recently to NMFS."
17.	Q: RH asked, "Do you have a Plan of Cooperation with the US Coast Guard?" A: TN asked, "No, not with the Coast Guard."
18.	C: RH commented, "The Coast Guard may be a player in what you are doing. Not necessarily for compliance but more for cooperation within the US territorial waters. We experienced many vessel and cruise ship activities this year. It may be worth your while to get some coordination with the Coast Guard." A: TN replied, "That will be when we decide who our vessel provider is. They will be working with the Coast Guard."
19.	Q: TN asked, "Do you think a Coast Guard presence is needed here?" A: RH replied, "Yes."
20.	C: RH commented, "I appreciate the fact that you came. I don't have any more questions. I actually commend your insight."
21.	C: RH commented, "I think the last week of January is a good time to have a community meeting. Anytime after January 24 is good. There is an assembly meeting on February 5 and a North Slope Borough School District meeting on February 7."
GENERAL OBSERVATIONS:	
Mayor Harcharek was the only attendee. The meeting was brief, as the Mayor had a tight schedule.	

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	North Slope Borough (NSB) Leadership Meeting		
Meeting Location	Barrow, Alaska		
Meeting Facility	NSB Building		
Date and Time of Meeting:	December 3, 2012 (3:45 pm – 4:30 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Richard Camilleri (RC)	NSB (Advisor to the Mayor)
Mari Smultea (MS)	AES/SES	Fred Parady (FP)	NSB (Chief of Staff)
Inuuteq Stotts (IS)	AES		
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, MS, & IS	30 mins
2.	Question and Answer Period	RC & FP	15 mins
Item	Action Item	Action By	Follow-up Deadline
1.	TBD	TBD	TBD
KEY ISSUES:			
1.	Project schedule – General questions - What is your start date?		
2.	Environmental effects – How do you protect the marine mammals from the sound source? PSO Program: Is your mitigation plan going to have PSOs? Will you have communications with AEWG?		
3.	Project design/description: Is it a 6,000-km survey area in US waters? Have you done work in the Beaufort Sea? Is TGS coordinating with Shell?		
4.	Stakeholder/Outreach: We have some social investment ideas. First is assisting the North Slope school district with their science program. Second is assisting the borough childcare with housing. You could potentially assist with the Educational Summit occurring from January 17–19. Another idea is helping with the Kivgiq Festival.		
5.	Stakeholder/Outreach: Please be aware that communities get meeting burnout.		
DISCUSSION ITEMS:			
1.	Question (Q): RC asked, "Have you done work in the Beaufort Sea?" Answer (A): TN replied, "This is our first time working in US/Alaskan waters."		
2.	Q: FP asked, "Is it a 6,000-km survey area?" A: TN replied, "That is correct. Proposed within US/Alaskan waters."		
3.	Q: FP asked, "Can you give me a snapshot process of marine seismic?" A: TN replied, "It is a large pocket of air released from the compressors. There are compressors aboard the survey vessel. The compressed air is released from the array."		
4.	Q: FP asked, "Is the source array behind the boat?" A: TN replied, "That is correct."		
5.	Q: FP asked, "How do you protect the marine mammals from the sound source?" A: MS replied, "First you estimate JASCO, which is a company that specializes in modeling how far sound travels. NMFS identified two sound levels. 180 decibels has the potential for harm and 160 decibels is behavioral change. That distance varies on the sound of your sound source."		
6.	Q: RC asked, "Is your mitigation plan going to have PSOs?" A: MS replied, "Yes, we will have PSOs. We will also have a ramp-up and shut-down procedure with Iñupiat/scientist PSOs. We are still working with NMFS."		

**CITY OF BARROW LEADERSHIP MEETING
DECEMBER 3, 2012**

DISCUSSION ITEMS:	
7.	C: MS commented, "The source emits this pulse is every 25 seconds."
8.	Q: FP asked, "So the proposed program area is 6,000 km in US waters?" A: TN replied, "That is correct."
9.	Q: RC asked, "Is TGS coordinating with Shell?" A: TN replied, "We are still working on that with organizations like NMFS and BOEM. We will have to do collaboration with them."
10.	Q: RC asked, "How do you take into consideration with Shell's drilling and your seismic activities?" A: MS replied, "We will attempt to minimize the impacts." A: TN replied, "We will regulate our operations."
11.	Q: RC asked, "So that is your start date? July?" A: TN replied, "Correct, if everything goes smoothly. We understand there are other issues, such as ice and subsistence activities."
12.	Q: RC asked, "Will you have communications with AEWG?" A: TN replied, "Yes. Next week we are presenting the proposed program to the AEWG 4th Quarterly meeting."
13.	Q: FP asked, "Are you a subsidiary of AES?" A: TN replied, "Our company's headquarters are in Houston, United States, and Oslo, Norway."
14.	Q: FP asked, "What does TGS stand for?" A: TN replied, "Tomlinson Geophysical Services."
15.	C: FP commented, "We have some social investment ideas. We have three initiatives. First is assisting the North Slope school district with their science program. They need a science coach with their curriculum. Second is assisting the borough childcare with housing. C: RC commented, "You could potentially assist with the Educational Summit occurring from January 17-19. Another idea is helping with the Kivgiq Festival. Our advisor, Dorothy Edwardsen, is the Kivgiq coordinator."
16.	C: RC commented, "A place to have community meetings is the Barrow High School."
17.	C: RC commented, "Please be aware that the communities get meeting burnouts."
18.	C: FP commented, "I believe the North Slope Wildlife Department would like to see your information and presentation." A: TN replied, "Yes we just had a meeting with them."
GENERAL OBSERVATIONS:	
Two people attended the meeting. Borough Mayor Charlotte Brower was unable to attend the meeting because of her busy schedule.	



TGS Project
North Slope Borough (NSB) – NSB Building
December 3, 2012 3:00 PM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) Inunteg Stotts	AES			
2) Troy Nelson	TGS			
3) FRED PARADY	NSB - Mayor's Office	852-0412	fred.parady@ north-slope.org	P.O. Box 69 Barrow, AK 99723
4) Richard Camilleri	NSB - Mayor's	852-0415	richard.camilleri @north-slope.org	" "
5) MARI SMULTEA	ASRC/SES			
6)				
7)				
8)				

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Olgoonik Corporation Leadership Meeting		
Meeting Location	Wainwright, Alaska		
Meeting Facility	Olgoonik Corporation Building		
Date and Time of Meeting:	December 4, 2012 (9:00 am – 9:50 am)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Mary Jane Lang	Olgoonik Corporation
Mari Smultea (MS)	AES/SES	Nina Fox	Olgoonik Corporation
Inuuteq Stotts (IS)	AES	Gail McKenzie (GM)	Olgoonik Corporation
Howard Patkotak (HP)	Olgoonik Corporation	Teresa Clark (TC)	Olgoonik Corporation
Wayne Bond (WB)	Olgoonik Corporation		
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, MS, IS	35 mins
2.	Question and Answer Period	Olgoonik Corporation	15 mins
Item	Action Item	Action By	Follow-up Deadline
1.	“For the scout vessel, the decision is still outstanding, correct?”	Unidentified	TBD
2.	“Could you give us a couple samples of the noise? The 160 decibels to 180 decibels. I would like an example of that.”	Unidentified	Before POC meeting
KEY ISSUES:			
1.	Project design/description – Logistics: Do you have the name of the seismic vessels? Do you have contractors? For the scout vessel, the decision is still outstanding, correct?		
2.	Environmental – Seismic Noise: When is the pulse? How often? Have you decided on your source array?		
3.	Project schedule – General questions: How long does it take to get from one line to the other end? So this is the start date? An August date?		
4.	Affected communities – General question: Are you meeting with the hunters and whalers?		
5.	Stakeholder engagement – Timing: When will you come again for meetings? The best days are January 28 and 31.		
DISCUSSION ITEMS:			
1.	Question (Q): Lady asked, “Do you have the name of the seismic vessels? Do you have contractors?” Answer (A): TN replied, “At this moment, no. We have spoken to a few contractors.”		
2.	C: Unidentified commented, “We would like to know the names of who your contractors are.” A: TN replied, “We will let you know.”		
3.	Q: Unidentified asked, “For the scout vessel, the decision is still outstanding, correct?” A: TN replied, “Yes, your scout vessel is being considered. We will let you know.” A: Unidentified replied, “That is great to hear. I will pass that on to Kevin.”		
4.	Q: Unidentified asked, “Could you give us a couple samples of the noise. The 160 decibels to 180 decibels. I would like an example of that.” A: MS replied, “I am providing information for Barrow. Would you like that information?” A: Unidentified replied, “Yes, please.”		
5.	Q: Unidentified asked, “When is the pulse? How often?” A: TN replied, “The pulse shoots in a 25-second cycle.”		

**OLGOONIK CORPORATION LEADERSHIP MEETING
December 4, 2012**

DISCUSSION ITEMS:	
6.	<p>Q: Unidentified asked, "How long does it take to get from one line to the other end?"</p> <p>A: TN replied, "It takes roughly one day to finish 70 miles."</p> <p>C: MS commented, "It depends on the ice, weather, and other subsistence activities."</p>
7.	<p>Q: Unidentified asked, "Have you decided on your source array?"</p> <p>A: TN replied, "The size of the source array is 4,100 cubic inches."</p>
8.	<p>Q: GM asked, "Are you meeting with the hunters and whalers?"</p> <p>A: TN replied, "Yes, that is our plan. This is the first of many trips. This week is leadership meetings. We plan on having community meetings in January."</p>
9.	<p>Q: TC asked, "So this is the start date? An August date?"</p> <p>A: TN replied, "Yes, and it depends on consultation with the various communities."</p> <p>C: MS commented, "We are documenting any concerns you may have or other recommendations for how we can avoid potential impacts to whaling and other resources."</p>
10.	<p>Q: GM asked, "When will you come again for meetings?"</p> <p>A: IS replied, "We plan to come again on the last week of January for community meetings."</p> <p>Q: IS asked, "Is there a good time that week for a Wainwright community meeting?"</p> <p>A: GM replied, "The 28th and 31st would be a good day."</p>
11.	<p>Q: WB asked, "How many people will be in your team for the community meetings?"</p> <p>A: IS replied, "I believe for that trip we will have 4 people."</p>
12.	<p>C: TN commented, "TGS has done social investment throughout their past work. If you have any ideas or suggestions please let Inuuteq know and he can relay that information to me."</p> <p>A: HP replied, "Okay, thank you."</p>
GENERAL OBSERVATIONS:	
<p>The meeting was brief. Mary Jane Lang, Nina, Fox, and Teresa Clark were on teleconference. Other individuals were on the teleconference.</p>	



TGS Project
 Olgoonik Corporation – Olgoonik Office
 December 4, 2012 10:00 AM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) Troy Nelson	TGS			
2) MARI SMULTEA	SES/AES	707 362 5376	msmultea gmail.com	
3) WAYNE BOND	olgoonik corp.	444-1613	wkb23@gci.net	
4) Inuuteq Stotts	AES			
5) Howard PATKOTAK	Olgoonik Corp	763-2613	howard.patkotak@ olgoonik.com	
6)				
7)				
8)				

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	City of Wainwright Leadership Meeting		
Meeting Location	Wainwright, Alaska		
Meeting Facility	City Chamber		
Date and Time of Meeting:	December 4, 2012 (3:30 pm – 4:30 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Ronnie Morales (RM)	Wainwright Traditional Council / ICAS
Mari Smultea (MS)	AES/SES	Eileen Kozevnikoff (EK)	City of Wainwright
Inuuteq Stotts (IS)	AES		
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, MS, IS	45 mins
2.	Question and Answer Period	RM & EK	15 mins
Item	Action Item	Action By	Follow-up Deadline
1.	“Another source to go to is the elders. Please contact me for more information. They are just getting active.”	RM	TBD
2.	“Are the data you are collecting available to the community?”	EK	TBD
3.	“Do you do an internship?”	EK	TBD
KEY ISSUES:			
1.	Stakeholder engagement – General question: What is your involvement with the community?		
2.	Environmental effects – Impacts on subsistence: I wonder how the noise will affect the marine mammals. I am worried the noise will hurt the marine mammals’ ears. The seismic sound may push the marine mammal migration closer to shore.		
3.	Project design/description – General questions: You will be surveying the surface floor? Are the data you are collecting available to the community?		
4.	Stakeholder engagement – General comment: In Wainwright there is a new Wainwright Tri-lateral Committee. I suggest for the next leadership meetings to coordinate through me to set that up.		
5.	Stakeholder engagement – General comment: RM : Another source to go to is the elders. Please contact me for more information. They are just getting active.		
6.	Stakeholder engagement – Community investment: EK : Will you go do investment to the village corporation? Do you do an internship?		
DISCUSSION ITEMS:			
1.	Comment (C): RM commented, “In Wainwright there is a new Wainwright Committee. I suggest for the next leadership meetings to coordinate through me to set that up.” Answer (A): IS replied, “Thank you; we will keep that in mind for the next trip.”		
2.	Question (Q): RM asked, “Do you share this information with other oil and gas entities?” A: TN replied, “Yes, it is a requirement for our permitting process which is through BOEM. We must coordinate our activities with other entities within the area.”		
3.	Q: EK asked, “What is your involvement with the community?” A: TN replied, “We are having meetings with communities this week. This is the first of many trips. We are here to hear any of your concerns; for example: Traditional Knowledge.”		
4.	Q: RM asked, “I wonder how the noise will affect the marine mammals. I am worried the noise will hurt the marine mammals’ ears.” A: TN replied, “Mari will get into that later in our presentation. She will discuss how we will mitigate that.”		

**CITY OF WAINWRIGHT LEADERSHIP MEETING
DECEMBER 4, 2012**

DISCUSSION ITEMS:	
5.	Q: RM asked, "You will be surveying the surface floor?" A: TN replied, "We will survey the subsurface."
6.	Q: EK asked, "Is the data you are collecting available to the community?" A: TN replied, "That is a good question. I will have to get back to you on that."
7.	C: RM commented, "I think it would be beneficial for the communities to have that information."
8.	Q: RM asked, "Are you working with the Barrow Arctic Science Consortium (BASC)? They have good information. The consortium is through the UIC." A: TN replied, "At the moment, no."
9.	C: EK commented, "We were given a presentation on a migration survey. The survey was on the marine mammals. BASC came into town and presented the information."
10.	Q: EK asked, "What is the distance the sound travels?" A: MS replied, "At low levels, it travels 60 miles. At 120 decibels, it would travel 50 miles."
11.	C: RM commented, "The seismic sound may push the marine mammal migration closer to shore." A: TN replied, "Gordon Brower from the North Slope Borough Planning Department mentioned that to us during our October meeting."
12.	C: EK commented, "The beluga whales came closer this year. The belugas came as close as 30 miles."
13.	Q: TN asked, "Does Wainwright whale beluga more than bowhead?" A: RM replied, "We whale both equally."
14.	C: RM commented, "Another source to go to is the elders. Please contact me for more information. They are just getting active."
15.	Q: RM asked, "Will you go do investment to the village corporation? Where do get your PSOs?" A: TN replied, "We plan on having PSOs on both vessels." A: IS replied, "AES runs a PSO program."
16.	Q: EK asked, "Do you do an internship?" A: TN replied, "I will look into that. I will get back to you on that."
17.	C: RM commented, "It would be great to incorporate the youth. Any way to motivate the youth."
GENERAL OBSERVATIONS:	
The meeting was brief. The Wainwright Traditional Council leadership meeting was cancelled because of people sick with the flu. Attendance of the City Council was limited to only the City Administrator, Eileen. Kozevnikoff. Ronnie Morales suggested coordinating through her with the Wainwright Tri-lateral leadership.	



TGS Project
 City of Wainwright – City Office
 December 4, 2012 3:00 PM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) MARI SMULTEA	ASRC/SES	707 362 5376		
2) Troy Nelson	TGS			
3) Inuuteq Stotts	ASRC/AES			
4) Ronnie Morales	Wainwright Traditional Council			
5) Eileen Kozvnikoff	City of AIN	703-2815		
6)				
7)				
8)				

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Point Hope Tri-lateral Leadership Meeting		
Meeting Location	Point Hope, Alaska		
Meeting Facility	Tikigaq Corporation Conference Room		
Date and Time of Meeting:	December 6, 2012 (2:00 pm – 4:00 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Jack Schaefer (JS)	Native Village of Point Hope
Mari Smultea (MS)	AES/SES	Bernie Nash (BN)	Native Village of Point Lay
Inuuteq Stotts (IS)	AES	Alzred Oomittuk (AO)	City of Point Hope
Herbert Kinneeveauk, Jr. (HK)	Tikigaq Corporation	Ronald Oviak, Sr. (RO)	City of Point Hope
Clark Lane, Sr. (CL)	Tikigaq Corporation		
Item	Agenda Item	Representative	Duration
1.	Invocation before the presentation	BN	1 min
2.	TGS Presentation	TN, MS, & IS	90 mins
3.	Question and Answer Period	Point Hope Tri-lateral Committee	30 mins
Item	Action Item	Action By	Follow-up Deadline
1.	Can you provide us with information with past lines? I would like to see your past work.	JS	Before POC meetings
2.	“What do the stars represent?”	HK	Before POC meetings
3.	“Has the seismic work affected the fish?”	JS	Before POC meetings
4.	“May I know the length between years of seismic operations? Compared to the older and new operations.”	JS	Before POC meetings
5.	“Do you know your competitors? I heard China has been doing seismic research in Alaska. They are. Can you get me that info? Find out the areas they are covering.”	JS	Before POC meetings
6.	“Are there any areas you need to stay away from? I would like to know information of areas where there were explosions.”	JS	Before POC meetings
KEY ISSUES:			
1.	Stakeholder engagement – Community investment: What examples do you have of charitable donations? Is there a limit on donations?		
2.	Stakeholder engagement – General questions: What did Point Lay say?		
3.	Project location – Previous experience: Can you provide us with information with past lines? I would like to see your past work. What is the difference between the lines? What do the stars represent? What are the red lines?		
4.	Project location – Previous experience: May I know the length between years of seismic operations? Compared to the older and new operations.		
5.	Project location – General question: What are the dotted lines on the map?		
6.	Environmental effects – Fish impacts: Has the seismic work affected the fish?		

**POINT HOPE TRI-LATERAL LEADERSHIP MEETING
DECEMBER 6, 2012**

7.	Environmental effects – Marine mammals: What marine mammals may be affected?
KEY ISSUES:	
8.	Environmental effects – General questions: What are the protected species? Are fish included in the protected species list?
9.	Environmental effects – General question: Does the seismic sound affect the krill? Have they done any studies?
10.	Project design/description – General questions: Who are your other competitors? Do you know your competitors here?
11.	Project design/description – PSO program: Will you have MMOs in your operations?
12.	Project design/description – General question: This is an open-water operation?
13.	Project design/description – General question: We would like to know which Comm Centers you will be using.
14.	Project design/description – General question: I would like to know the decibel differences.
15.	Project design/description – General questions: How deep does the sound go? What is your decibel max?
16.	Project design/description – General question: What would 160 decibels be comparable to?
17.	Project design/description – General question: Has your 2D equipment changed over time? Have the decibels changed over time?
18.	Project design/description – General question: Do you have any other boats in front of you? How tall are the seismic vessels?
DISCUSSION ITEMS:	
1.	Question (Q): JS asked, “What examples do you have of charitable donations?” Answer (A): TN replied, “On this trip we are learning about those issues. We are gathering that information from the communities.”
2.	Q: HK asked, “You are not affiliated with Shell?” A: TN replied, “We are our own company.”
3.	Q: SO asked, “Is there a limit on donations?” A: TN replied, “Yes, there is a limit. I do not know the limit.”
4.	Comment (C): JS commented, “We have been trying to get state TV broadcasting service going here. A rural communication service. That is a donation possibility.”
5.	C: HK commented, “We have the Tikigaq Education Foundation. It supports shareholders getting higher education and vocational training. This foundation supports Iñupiat culture. It is on our website.”
6.	C: SO commented, “The youth and elders program could need some assistance. The program supports an eating area for elders.”
7.	C: TN commented, “TGS has guidelines for donations. I will get back to you on that.”
8.	Q: JS asked, “Can you provide us with information with past lines?” I would like to see your past work.” A: TN replied, “I can try to get you more information on that.”
9.	Q: SO asked, “How active are the Russians with oil and activities in their area?” A: TN replied, “I don’t know.”
10.	C: JS commented, “We are trying to figure out what happened with our walrus.”
11.	Q: HK asked, “What is the difference between the lines?” A: TN replied, “The difference is the density of our past work.”
12.	Q: HK asked, “What do the stars represent?” A: TN replied, “I do not know. I will get back to you on that.”
13.	Q: JS asked, “Are you doing work in the McKenzie Delta?” A: TN replied, “I am not aware of any activity.”

**POINT HOPE TRI-LATERAL LEADERSHIP MEETING
DECEMBER 6, 2012**

14.	Q: SO asked, "What are the red lines? Leases?" A: TN replied, "The lines are past survey work and over lease sites."
DISCUSSION ITEMS:	
15.	Q: JS asked, "When did you gather the Greenland info?" A: TN replied, "Three to four years ago."
16.	C: SO commented, "I believe the Northwest Passage is opening up."
17.	Q: JS asked, "What are the grey lines?" A: TN replied, "Those are older programs."
18.	Q: SO asked, "Do the Canadians have a Coast Guard?" A: TN replied, "Yes. We also quite a few icebreakers."
19.	Q: JS asked, "Is there many oil rigs in the Europe end, specifically the UK, Ireland, Norway, and Denmark?" A: TN replied, "I believe so. I am not in the production side of things."
20.	Q: CL asked, "TGS just does seismic activity?" A: TN replied, "We just do seismic acquisition"
21.	Q: JS asked, "Has the seismic work affected the fish?" A: TN replied, "I can look into that for you."
22.	Q: JS asked, "May I know the length between years of seismic operations? Compared to the older and new operations." A: TN replied, "Yes I can look into that."
23.	C: JS commented, "We had indicated during our federal hearings that our interest goes beyond the 200-mile limit."
24.	Q: SO asked, "So the Canadian government has contracts with AES?" A: TN replied, "No, TGS is contracting AES with permitting and stakeholder engagement. We also do work with Canadian subcontractors."
25.	Q: JS asked, "Who are your other competitors?" A: TN replied, "I don't know specifically. I believe WesternGeco and CGGVeritas."
26.	Q: SO asked, "Will you have MMOs in your operations?" A: TN replied, "Yes, we plan to."
27.	Q: JS asked, "Do you know your competitors here?" A: TN replied, "We know of some, yes."
28.	Q: HK asked, "On this map, where are you surveying?" A: TN replied, "Throughout here on the white lines." (Displays to HK on the map)
29.	Q: HK asked, "Didn't they do this work before?" A: TN replied, "Shell has done concentrated 3D seismic over their lease blocks."
30.	Q: JS asked, "Do you know your competitors? I heard China has been doing seismic research in Alaska." A: TN replied, "I am not aware of Chinese operators in Alaska." A: JS replied, "They are. Can you get me that info? Find out the areas they are covering." A: TN replied, "I will try to get that information."
31.	Q: SO asked, "What are the dotted lines on the map?" A: TN replied, "That is the international date line."
32.	Q: JS asked, "Who do you pay to do this?" A: TN replied, "We have different contractors we employ." Q: JS asked, "Who do you pay to do these lines? Do you pay the United States government? Do they charge you to do it or do you do it on your own?" Q: TN replied, "We do it, we fund it, we pay for it. It is a big investment."
33.	C: SO commented, "I am curious about the ice." A: TN replied, "Our operation will depend on ice conditions."
34.	Q: HK asked, "What is AES doing with the TGS project?" A: IS replied, "AES is assisting with stakeholder engagement and regulatory permitting."
35.	Q: CL asked, "This is an open-water operation?" A: TN replied, "That is correct."
36.	Q: SO asked, "Corporations may assist with your work?" A: TN replied, "That is something we are working on, especially with other communities."

**POINT HOPE TRI-LATERAL LEADERSHIP MEETING
DECEMBER 6, 2012**

DISCUSSION ITEMS:	
37.	C: JS commented, "We would like to know which Comm Centers you will be using." A: TN replied, "That is something we are working on."
38.	Q: JS asked, "What did Point Lay say?" A: TN replied, "Point Lay advised us to avoid their beluga whaling."
39.	Q: TN asked, "When is the Point Hope whaling season?" A: SO replied, "It varies. They come in during October. It depends on the weather."
40.	C: JS asked, "I would like to know the decibel differences." A: MS replied, "We will bring a comparison table for upcoming meetings. Other communities have asked the same question."
41.	Q: JS asked, "What is the Plan of Cooperation?" A: MS replied, "It is a plan to engage TGS with the affected communities in TGS's proposed project area."
42.	Q: JS asked, "What marine mammals may be affected?" A: MS replied, "Any whales such as the bowhead and beluga whales. Seals, walrus, and polar bears."
43.	Q: SO asked, "So will you be on the boat?" A: MS replied, "No, I will not be on the boat."
44.	Q: JS asked, "You haven't done work in the Beaufort?" A: TN replied, "We haven't done work in the Beaufort."
45.	Q: JS asked, "What are the protected species?" A: MS replied, "All the marine mammals. Polar bear, walrus, bowhead whale, grey whale, ringed seal, bearded seal, spotted seal, and ribbon seal."
46.	Q: CL asked, "Are fish included in the protected species list?" A: MS replied, "No, only marine mammals are included."
47.	C: CL commented, "The arctic char was affected by seismic activities." A: MS asked, "What year? Are they still doing seismic?" A: CL replied, "I am not too sure."
48.	C: SO commented, "Tomcod were affected, too."
49.	C: JS commented, "The marine mammals are affected by the fish."
50.	Q: JS asked, "What is the dark yellow on Slide13?" A: MS replied, "That is the 180-decibel distance."
51.	Q: SO asked, "How do you get the information out of there from the sound? Does it show a picture?" A: TN replied, "Right. That is correct. The information is collected through the streamer cable. It collects the different data."
52.	Q: HK asked, "How deep does the sound go?" A: TN replied, "It goes down several miles."
53.	Q: SO asked, "The seismic goes down directly?" A: TN replied, "That is correct."
54.	Q: JS asked, "What does your decibel max?" A: TN replied, "At 200 decibels."
55.	Q: CL asked, "Do you know if humans have been tested?" A: MS replied, "They wouldn't do that." A: CL replied, "Thank you very much. I don't think they should put our animals at risk."
56.	Q: CL asked, "What would 160 decibels be comparable to?" A: MS replied, "It would be comparable to being near a large ship." C: CL commented, "We can hear whales before we see them. Just standing on ice, we can hear them. We don't really know how far they actually are."
57.	C: SO commented, "We can hear the whales with the tips of our oars. We put the oar in the water and then we can hear them."
58.	C: RO commented, "The whale sound (echo) is very important to our animals. The sound goes for many miles. I think the echo is very important."

**POINT HOPE TRI-LATERAL LEADERSHIP MEETING
DECEMBER 6, 2012**

DISCUSSION ITEMS:	
59.	Q: SO asked, "Does the seismic sound affect the krill? Have they done any studies?" A: MS replied, "They have done studies on affects to krill. Seismic has been shown to kill krill when very close."
60.	Q: JS asked, "Has your 2D equipment changed over time? Have the decibels changed over time?" A: TN replied, "Yes the equipment and technology have changed over time."
61.	Q: JS asked, "You have done work in other areas, correct?" A: TN replied, "Yes, I have done work in other areas. I am not a geologist or geophysicist."
62.	Q: CL asked, "Do you have any other boats in front of you?" A: TN replied, "We will have the one boat."
63.	Q: CL asked, "How tall are the seismic vessels?" A: TN replied, "The boat will be 240 feet." A: MS replied, "The boat will be roughly 12–18 feet tall."
64.	Q: SO asked, "Will you have warning sounds?" A: MS replied, "Yes, there will be warning sounds."
65.	C: SO commented, "Jack mentioned the whale tagging; if you go on the computer, you can know where they are."
66.	Q: JS asked, "Are there any areas you need to stay away from? I would like to know information of areas where there were explosions." A: TN replied, "I am not aware of any areas. I will look into it."
67.	Q: JS asked, "Do you know any information on submarines? Russia or USA?" A: MS replied, "No."
68.	Q: SO asked, "So you will have public meetings?" A: TN replied, "Yes."
69.	C: JS commented, "I suggest having the meeting at the Qalgi Center."
70.	C: CL commented, "Tikigaq Corporation board meeting is usually the last Friday of the month." C: SO commented, "Ours is the third Wednesday." C: JS commented, "Ours is the third Monday."
GENERAL OBSERVATIONS:	
The meeting had good attendance. The Point Hope Tri-lateral Committee included the head for each leadership entity, along with their alternate. The leadership didn't like the idea of future seismic activities.	



TGS Project
Point Hope Leadership – NVPH Building
December 6, 2012 2:00 PM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) Inuuteq Stotts	AES			
2) Troy Nelson	TGS			
3) MARI SMULTEA	AES/SES			
4) Herbert Kinneevauk St	TiKigaa			
5) CLARK LAWREN	TIKIGAA			
6) BERNIE NISH	NVPHO			
7) Jack Schaefer	NVPHO		jschaefer@tikigaa.com	
8) Alfred Oomittuk	City of Pt Hope	368-1645	steve.oomittuk@edna.com	



TGS Project
Point Hope Leadership – NVPH Building
December 6, 2012 2:00 PM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
9) Ronald W. Oviak ^{SR}	City of Pt. Hope	368-2537		Box 134
10)				
11)				
12)				
13)				
14)				
15)				
16)				

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Native Village of Point Lay Leadership Meeting		
Meeting Location	Point Lay, Alaska		
Meeting Facility	Point Lay ICAS Building		
Date and Time of Meeting:	December 5, 2012 (1:00 pm – 2:00 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Marjorie Long	Native Village of Point Lay
Mari Smultea (MS)	AES/SES	Bill Tracy (BT)	Native Village of Point Lay
Inuuteq Stotts (IS)	AES	Marie Tracy	Native Village of Point Lay
Willard Neakok (WN)	Native Village of Point Lay	Martha Tukrook	Native Village of Point Lay
Gwendolyn Pikok	Native Village of Point Lay		
Item	Agenda Item	Representative	Duration
1.	Invocation before the presentation	WN	1 min
2.	TGS Presentation	TN, MS, & IS	45 mins
3.	Question and Answer Period	Native Village of Point Lay	15 mins
Item	Action Item	Action By	Follow-up Deadline
1.	TBD	TBD	TBD
KEY ISSUES:			
1.	Project design/description – General question: What methods/procedures are you doing to monitor the marine mammals? When you shut down, does the vessel completely stop? How many PSOs total in the boats?		
2.	Environmental effects – Impacts on subsistence: Beluga whaling ends at the end of June or early July.		
3.	Project schedule – General question: It would be nice if you came after July 15. It would be nice if you could take care of these grids first, prior to the walrus hunt. It would be good if you do that to avoid the walrus and bearded seals. It would be better if you started south.		
4.	Project design/description – Location comments: Be careful surveying, specifically the Hanna Shoal area. The walrus prefer the Hanna Shoal area. They have been in that area the past 10 years. We go 10 to 25 miles for walrus in their haul-outs. It also depends of the currents.		
5.	Project design/description – General question: Which Comm Centers will you be using?		
6.	Stakeholder engagement – Community investment: What is your limit with donations?		
DISCUSSION ITEMS:			
1.	Question (Q): Unidentified asked, "What is that?" Answer (A): TN replied, "That is the proposed project area."		
2.	Q: Unidentified asked, "The activity is underwater?" A: TN replied, "It is subsurface."		
3.	Q: Unidentified asked, "Which square block is the Hanna Shoal?" A: TN replied, "It is north of the lease block."		
4.	Q: Unidentified asked, "Why PSOs?" A: TN replied, "They used to be called MMOs."		

**NATIVE VILLAGE OF POINT LAY LEADERSHIP MEETING
DECEMBER 5, 2012**

DISCUSSION ITEMS:	
5.	Q: Unidentified asked, "What kind of pitch is the sound? Is it high or low frequency?" A: MS replied, "The sound is low frequency."
6.	Q: BT asked, "How rough do the oceans need to be for your operations to stop?" A: TN replied, "It varies." Q: Unidentified asked, "Eight-foot swells?" A: TN replied, "We tend not to operate in heavy seas."
7.	Q: Unidentified asked, "So what have you seen out there? Have you been on a ship?" A: MS replied, "I have been on the ships and airplanes. I did surveys out there 20 years ago when Shell was exploring."
8.	C: WN commented, "Even after 14 miles, bowhead whales can hear the seismic sound."
9.	Q: BT asked, "What methods/procedures are you doing to monitor the marine mammals?" A: MS replied, "We are in the preliminary phases. We spoke with Robert Suydam from the Wildlife Department. We are also working with NMFS to do what they recommend."
10.	C: WN commented, "Beluga whaling ends at the end of June or early July." C: Unidentified commented, "Sometimes it carries over to July. It depends on the pods." C: BT commented, "Sometimes we wait till the 4th of July to get the beluga whales."
11.	Q: Unidentified asked, "When you shut down, does the vessel completely stop?" A: TN replied, "No the vessel doesn't stop completely. The vessel slows down. We try to keep the cables afloat so they don't tangle up."
12.	C: MS commented, "Robert Suydam suggested we put some listening devices in the water. He suggested putting them in an area where there isn't very many of them. He suggested north of the lease block." Q: WN asked, "Hydrophones?" A: TN replied, "That is something we are looking into to fund."
13.	Q: BT asked, "How many PSOs total in the boats?" A: TN replied, "We are working on it right now. The majority will be on the scout vessel, since that is its main function."
14.	Q: Unidentified asked, "How long are the cables?" A: TN replied, "The cables will be about 50 feet long."
15.	C: WN commented, "It would be nice if you came after July 15. It would nice if you could take care of these grids first, prior to the walrus. It would be good for you to do that to avoid the walrus and bearded seals. It would be better if you started south."
16.	C: Unidentified commented, "Be careful surveying, specifically the Hanna Shoal area."
17.	C: WN commented, "The walrus prefer the Hanna Shoal area. They have been in that area the past 10 years. We go 10 to 25 miles for walrus in their haul-outs. It also depends of the currents."
18.	Q: WN asked, "Which Comm Centers will you be using?" A: TN replied, "We are not sure yet. We still need to figure that out with the AEWC. We are presenting our proposed program to the AEWC 4th Quarterly meetings next week."
19.	Q: Unidentified asked, "Do you have the name of your ship?" A: TN replied, "No, not yet."
20.	Q: Unidentified asked, "How long does it take to survey one block?" A: TN replied, "We do not survey the lease blocks. We survey the gridlines."
21.	Q: Unidentified asked, "What is your limit with donations?" A: TN replied, "I do not know yet."
GENERAL OBSERVATIONS:	
The meeting went well. There was a good attendance by Native Village council. Near the end of the meeting, a lady gave a donation form for possible future meetings. The council stated a concern to avoid the beluga whaling which generally ends near the end of June or early July.	



TGS Project
 Native Village of Point Lay – Native Village Building
 December 5, 2012 1:00 PM

* Means add to email

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) Troy Nelson	TGS			
2) MARI SMULTEA	ASRC/SES			
3) Inuuteq Stotts	ASRC/AES			
* 4) Gwendolyn J. PiKok	NVPIE IRA COUNCIL	833-1554	gwendolyn.pikok@north-slope.org	P.O. Box 59047 Point Lay, AK 99759
5) Willard P. Neakok	NVPL IRA President	833-7854	wneakok@yahoo.com	P.O. Box 59039 Point Lay, AK. 99759
6) Marjorie Long	NVPL Member	833-0046	Marjoriepiz@yahoo.com	Box 5915 811sikrik Pt Lay AK 99759
7) Bill Tracey	NVPL Member	833-0055	batheo2@msn.com	Box 59087 PT. LAY AK 99759
* 8) Marie Tracey	NVPL Vice P.	833-2428	marie.tracey@north-slope.org	P.O. Box 59029 Point Lay, AK. 99759



TGS Project
Native Village of Point Lay – Native Village Building
December 5, 2012 1:00 PM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
9) MONA B. TAZUK	NUPILIRA Council NUPILIRA			P.O. 59078 Point Lay, AK 99759
10)				
11)				
12)				
13)				
14)				
15)				
16)				

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	City of Kotzebue Leadership Meeting		
Meeting Location	Kotzebue, Alaska		
Meeting Facility	City of Kotzebue Building		
Date and Time of Meeting:	December 7, 2012 (10:00 am – 11:00 am)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Keith Greene (KG)	City of Kotzebue
Mari Smultea (MS)	AES/SES	Clement Richards (CR)	City of Kotzebue
Inuuteq Stotts (IS)	AES		
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, MS, & IS	45 mins
2.	Question and Answer Period	KG & CR	15 mins
Item	Action Item	Action By	Follow-up Deadline
1.	TBD	TBD	TBD
KEY ISSUES:			
1.	Stakeholder engagement – suggestions for future meetings and/or contact information: Northwest Arctic Borough monthly meetings; summit in February; Willie Goodwin with the Elder's Council; Dennis Tiepelman with the Native Village of Kotzebue		
2.	Stakeholder engagement – community investment: Boys and Girls Club; youth camps; preschool immersion program through the Native Village of Kotzebue		
3.	Project design/description: what is the depth on [the East Canada map] shelf? How long is your program? How many PSOs will be on the boat?		
4.	Environmental effects: it is difficult to see the seals and polar bears with the infrared camera.		
DISCUSSION ITEMS:			
1.	Comment (C): CR commented, "That is good to know you do community investment."		
2.	Question (Q): CR asked, "What is the depth on this shelf?" (East Canada map) Answer (A): TN replied, "A couple of kilometers."		
3.	Q: CR asked, "How long is your program timeframe?" A: TN replied, "At max, it is 45 to 60 days. We are taking into account the weather, ice, and subsistence activities."		
4.	Q: CR asked, "How many PSOs will you have on your boat?" A: TN replied, "We are still working on that. Estimate to be six to eight PSOs."		
5.	C: CR commented, "Last time I heard about infrared camera use, they were not too successful. The seals and polar bears were so well insulated it was difficult to see them." Q: MS asked, "Yes exactly same with the whales."		
6.	C: CR commented, "You may want to coordinate with Northwest Arctic Borough monthly meetings. I believe it is the third week of every month." C: KG commented, "Yeah, you may want to check with the borough." C: CR commented, "There is a February summit coming up. You may want to look into that."		
7.	C: KG commented, "We may be going to Juneau during February."		
8.	C: CR commented, "You may want to contact Willie Goodwin. He is with the Elder's Council. He is affiliated with tribal council." C: KG commented, "Dennis Tiepelman is a good person to contact through the Native Village of Kotzebue."		

CITY OF KOTZEBUE LEADERSHIP MEETING
December 7, 2012

DISCUSSION ITEMS:

- | | |
|----|---|
| 9. | C: CR commented, "An idea for social investment is the Boys and Girls Club. The youth camps could use some assistance."
C: CR commented, "Another idea is the preschool immersion program through the Native Village of Kotzebue." |
|----|---|

GENERAL OBSERVATIONS:

The meeting was brief, but well received. There were no action items.



TGS Project
City of Kotzebue – City Office
December 7, 2012 10:00 AM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) MARI SMULLEN	AES/SES			
2) Troy Nelson	TGS			
3) Innuveg Stotts	ASRC / AES			
4) Kent Greene	City of Kotzebue			
5) Clement Richard	Vic MARLOR			
6)				
7)				
8)				

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Kikiktagruk Iñupiat Corporation (KIC) Leadership Meeting		
Meeting Location	Kotzebue, Alaska		
Meeting Facility	KIC Building		
Date and Time of Meeting:	December 7, 2012 (12:00 pm – 1:00 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Allen Jessup, Sr. (AJ)	KIC
Mari Smultea (MS)	AES/SES	Cole Schaeffer (CS)	KIC
Inuuteq Stotts (IS)	AES	Chester Ballot (CB)	KIC
Harold Lambert (HL)	KIC	Charlie Gregg (CG)	KIC
Cheryl Edenshaw (CE)	KIC		
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, MS, & IS	45 mins
2.	Question and Answer Period	KIC Leadership	15 mins
Item	Action Item	Action By	Follow-up Deadline
1.	“Could KIC get your seismic data?”	HL	Before POC meetings
KEY ISSUES:			
1.	Project design/description: How big are the units on the source array? Are you staging in Kotzebue or on the [North] Slope? Could KIC get our seismic data?”		
2.	Environmental effects: Does it harm the sea life? A 180 decibel is like a shotgun blast? Are there any studies on impacts to bearded seals?		
DISCUSSION ITEMS:			
1.	Question (Q): AJ asked, “What is the difference between colors? The red and orange?” Answer (A): TN replied, “It represents the extent of the lines. The thickness of the survey.”		
2.	Q: Man asked, “How big are the units on the source array?” A: TN replied, “They are about 3 feet long.”		
3.	Q: Man asked, “Does it harm the sea life?” A: TN replied, “We have come up with a marine mammal mitigation process. We are working with different agencies.”		
4.	Q: CE asked, “How did you decide on the schedule?” A: TN replied, “The schedule will vary depending on the weather, ice conditions, and subsistence activities.”		
5.	Q: Man asked, “A 180 decibel is like a shotgun blast?” A: MS replied, “It is comparable to a large ship. 160 decibels is similar to a fishing vessel. It is low frequency, not high.”		
6.	Q: CS asked, “Does the PSO training work under the same Shell program?” A: TN replied, “The PSO program is through AES.”		
7.	Q: CS asked, “How come they don’t use infrared?” A: MS replied, “They tried infrared. The marine mammals’ blubber makes it difficult to see them.”		
8.	Q: CS asked, “Is there any studies on impacts to bearded seals?” A: MS replied, “When we do the permit, we have to look at the impacts to bearded seals. We are looking at the most recent information.”		
9.	C: CS commented, “The bearded-seal-tagging program started here in Kotzebue.”		

KIC LEADERSHIP MEETING
December 7, 2012

DISCUSSION ITEMS:	
10.	Q: CS asked, "Are you staging in Kotzebue or in the slope?" A: TN replied, "We are still working on that issue. We have been talking to Olgoonik Corporation in Wainwright because of its proximity. They may be a potential resupply."
11.	C: CE commented, "We are establishing a magnet school here. It is going to serve the state. There is information in the Northwest Arctic Borough School District website. There is some educational program involved."
12.	Q: HL asked, "Could KIC get your seismic data?" A: TN replied, "We can look into that."
13.	Q: CE asked, "Will this meeting be online?" A: TN replied, "The information will be public."
14.	Q: CG asked, "You are going as far as Point Lay? Will you go down further?" A: TN replied, "I don't know."
GENERAL OBSERVATIONS:	
The meeting was brief, as they had a budget meeting. The majority of the board members attended the meeting.	



TGS Project
 Kikiktagruk Inupiat Corporation (KIC) – KIC Boardroom
 December 7, 2012 12:00 PM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) Inunteq Stotts	AES			
2) CHARLIE R GREGG	KIC			
3) Allen Jess Sr	KIC			
4) Harold Lambert	KIC		hd Lambert@otz.net	
5) Cheryl Edenshaw	KIC		cedenshaw@nwarctic.org	
6) COLE SCHOFFE	KIC	907 412-1122	cschoffe@KIKIKTAGRUK.COM	
7) ERNEST R BALLST	KIC		clballst@otz.net	
8) MISS SNELETA	AES/SES			



TGS Project
Kikiktagruk Iñupiat Corporation (KIC) – KIC Boardroom
December 7, 2012 12:00 PM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
9) Troy Nelson	TGS			
10)				
11)				
12)				
13)				
14)				
15)				
16)				

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Northwest Arctic Borough (NWAB) Mayor Leadership Meeting		
Meeting Location	Kotzebue, Alaska		
Meeting Facility	Northwest Arctic Borough Building		
Date and Time of Meeting:	December 7, 2012 (1:30 pm – 2:30 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Reggie Joule (RJ)	NWAB
Mari Smultea (MS)	AES/SES	Wendie Schaffer (WS)	NWAB
Inuuteq Stotts (IS)	AES	Kenny Graham (KG)	NWAB
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, MS, & IS	45 mins
2.	Question and Answer Period	WS & RJ	15 mins
Item	Action Item	Action By	Follow-up Deadline
1.	TBD	TBD	TBD
KEY ISSUES:			
1.	Project design/description: What is the difference between 2D and 3D seismic? Why are you doing this work?		
2.	Environmental effects: How impactful is the noise pollution? Are the bowhead whales moving quicker? Do the animals memorize these seismic activities? Are the marine mammals sensitive to the seismic sound?		
DISCUSSION ITEMS:			
1.	Comment (C): WS commented, "If we could get the borough planning commission to meet with TGS, that would be great."		
2.	Question (Q): WS asked, "What is the difference between the grey and red lines?" Answer (A): TN replied, "The grey lines are the older surveys."		
3.	Q: RJ asked, "What do the white grid lines represent?" A: TN replied, "They represent our survey lines."		
4.	Q: RJ asked, "What is the difference between 2D and 3D seismic?" A: TN replied, "2D seismic surveys a geologic slice of the area. 3D seismic is more detailed."		
5.	Q: RJ asked, "So, when operators do seismic do they keep the information proprietary?" A: TN replied, "That is correct."		
6.	Q: RJ asked, "So does ASRC own TGS?" A: TN replied, "No, TGS is a publically owned company."		
7.	Q: RJ asked, "You are doing this work why?" A: TN replied, "The data is interpreted by oil and gas companies. The data is used to determine if there are oil gas reserves."		
8.	Q: RJ asked, "Where is the furthest US line on the map?" A: TN replied, "It is right here."		
9.	Q: RJ asked, "Is this bathometry done so NOAA or others don't have to do it again?" A: TN replied, "Yes, our seismic source penetrates the sea floor to find oil and gas reserves."		
10.	Q: RJ asked, "How impactful is noise pollution?" A: MS replied, "It depends on what the animals are doing. It depends on the loudness of the sound."		
11.	Q: RJ asked, "Are the bowhead whales moving quicker?" A: MS replied, "It is similar to predator avoidance. There are short-term behavioral changes."		
DISCUSSION ITEMS:			

**NORTHWEST ARCTIC BOROUGH LEADERSHIP MEETING
December 7, 2012**

12.	Q: RJ asked, "Do the animals memorize these seismic activities?" A: MS replied, "There is still so little known about marine mammals. They are difficult to study. We know that they communicate in long distances underwater." C: TN commented, "There is a possibility we may assist Fairweather Science with expanding their research on marine mammal migration."
13.	Q: RJ asked, "Are the marine mammals sensitive to the seismic sound?" A: MS replied, "I don't know. They have glands. Nobody knows yet."
14.	C: RJ commented, "Is there anything that secretes from marine mammals in subsurface that trigger or is picked up from other marine mammals?" A: MS replied, "When sperm whales get afraid, they defecate."
15.	C: RJ commented, "There is a theory up here. When cruise ships come up here, there is a lot of discharge. The discharge gets absorbed pretty quickly. At least that is the theory."
GENERAL OBSERVATIONS:	
The meeting was brief. Mayor Reggie Joule attended the meeting.	



TGS Project
Northwest Arctic Borough (NWAB) – NWAB Office
December 7, 2012 1:30 PM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) MARI SIMULTEA	AES/SES			
2) Inuuteq Stotts	AES			
3) Troy Nelson	TGS			
4) Wendie Schaffer	NAB	442 - 2500 x 103	wschaffer @nwabor.org	Box 1110 Kotzebue, AK 99752
5) Kenny Gallahan	NAB	ext. 106	K Gallahan @nwabor.org	" "
6) Reggie Joule	NAB	442-2500 101	rjoule@nwabor.org	" "
7)				
8)				

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Cully Corporation Leadership Meeting		
Meeting Location	Anchorage, Alaska		
Meeting Facility	Cully Corporation Building		
Date and Time of Meeting:	December 13, 2012 (4:00 pm – 5:00 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Steve Whidden (SW)	TGS	Martha Awalina (MA)	Cully Corporation
Elizabeth Benson (EB)	AES	Betty Swan (BS)	Cully Corporation
Inuuteq Stotts (IS)	AES		
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	SW, EB, & IS	45 mins
2.	Question and Answer Period	MA & BS	15 mins
Item	Action Item	Action By	Follow-up Deadline
1.	"I was wondering if that is the line ICAS always talks about. Is that the federal water act? The water act with the indigenous people. Where people cannot go in and do exploration."	MA	Before the POC meetings
2.	"We can check more information on public studies. I will get back to you on that and what animals are endangered species."	EB	Before POC meetings
KEY ISSUES:			
1.	Local content – General question: I was wondering if that is the line ICAS always talks about. Is that the federal water act? The water act with the indigenous people. Where people cannot go in and do exploration.		
2.	Local content – General question: Would the data be useful for a Point Lay water port?		
3.	Local content – Contracting opportunities general: How can Cully Corporation benefit from this? What kind of vessel do you need?		
4.	Project design/description – General question: How do you deal with the information?		
5.	Project design/description – General question: You have the information on water depth?		
6.	Project design/description – General question: If there is subsistence activity, will you continue to do your activities?		
7.	Project design/description – General question: We want to push this issue for Point Lay. We want more presence in Point Lay for oil response.		
8.	Stakeholder engagement – General question: What was the consent with Point Lay?		
9.	Project location – Staging location: We are the closest community. We have the most impact. It would be beneficial to have infrastructure development in our community. It is an ideal place for staging.		
DISCUSSION ITEMS:			
1.	Question (Q): MA asked, "What is TGS?" Answer (A): SW replied, "It is a seismic data company."		
2.	Q: MA asked, "Do you do both land and ocean seismic?" A: SW replied, "We do mostly offshore."		
DISCUSSION ITEMS:			

**CULLY CORPORATION LEADERSHIP MEETING
DECEMBER 13, 2012**

3.	Q: MA asked, "You are close to the ice cap?" A: SW replied, "Yes, we will be."
4.	Q: MA asked, "So you are not an oil and gas company?" A: SW replied, "That is correct. We are strictly seismic."
5.	Q: MA asked, "So you will be 55 miles away?" A: SW replied, "That is correct."
6.	Q: MA asked, "So you are starting this summer?" A: SW replied, "That is correct. We plan to begin in July or August. Our operation is completely ice-free."
7.	Q: MA asked, "So these are the lease blocks?" A: SW replied, "Yes. We anticipate ending at mid-September."
8.	Q: MA asked, "Have you been to NPR-A?" A: SW replied, "No."
9.	Q: MA asked, "I was wondering if that is the line ICAS always talks about. Is that the federal water act? The water act with the indigenous people. Where people cannot go in and do exploration." A: IS replied, "I am not aware of it. The Native Village of Point Lay did not bring it up." A: SW replied, "We will look into that." C: EB commented, "It is similar to the exclusion zone. We should check into the name of that."
10.	C: MA said, "You should try to contact George Edwardson." A: IS replied, "I have attempted to contact him through their alternate, the Tribal Operations Director, Helen Simmonds. He received our information and has my contact information. He hasn't contacted me." A: MA replied, "The federal agencies get into workshops with them."
11.	Q: MA asked, "How do you deal with the information?" A: SW replied, "We sell our data to whoever wants it. It is available for oil and gas companies."
12.	Q: MA asked, "Are you together with ASRC?" A: EB replied, "AES is assisting with the stakeholder outreach and regulatory permitting."
13.	Q: MA asked, "You have the information on water depth?" A: SW replied, "Yes, we do."
14.	Q: MA asked, "Would the data be useful for a Point Lay water port?" A: SW replied, "I don't know it would be applicable to that."
15.	Q: BS asked, "If there is subsistence activity, will you continue to do your activities?" A: SW replied, "No; there is a Conflict Avoidance Agreement we are looking into."
16.	Q: BS asked, "What about the walrus in the Hanna Shoal?" A: SW replied, "In our mitigation plan, we have procedures in how we deal with marine mammals. If there are marine mammals nearby, TGS stops operations."
17.	Q: MA asked, "Your intent is to finish when?" A: SW replied, "We hope to start July and end in September."
18.	Q: MA asked, "Is there more leases sold?" A: SW replied, "I don't know."
19.	Q: MA asked, "How much space is between the grid lines?" A: SW replied, "About 30 miles."
20.	Q: MA asked, "What was the consent with Point Lay?" A: IS replied, "The Native Village of Point Lay told us about their beluga harvest. They said the beluga harvest ends around the end of June or early July."
21.	Q: MA asked, "How can Cully Corporation benefit from this?" A: SW replied, "This is an important question. Residents can get training through the PSO program. We are looking for a potential scout vessel that we contract. We are looking at different options with that. We are looking to different village corporations." Comment (C): EB commented, "TGS would contract to a vessel they could use." A: MA replied, "That is good; we have some boat builders that approached us as well."

**CULLY CORPORATION LEADERSHIP MEETING
DECEMBER 13, 2012**

DISCUSSION ITEMS:	
22.	Q: MA asked, "What kind of vessel do you need?" A: SW replied, "We plan to use a 90-foot boat with the ability to travel offshore. The vessel needs good communication. It doesn't need an icebreaker. We have been consulting with village corporations."
23.	Q: MA asked, "Is the operations for this year?" A: SW replied, "Yes."
24.	C: MA commented, "Cully Corporation Logistics is a company that was created to get involved with the recent activities in the North Slope."
25.	C: BS commented, "With the bearded seal, it is under radar for the endangered species." A: SW replied, "We have a monitoring plan and have calculated a mitigation process." A: EB replied, "We have to address the bearded seal when we do the Incidental Harassment Authorization (IHA). It is for whales and seals. We had to estimate the number of non-lethal takes. We do have to address the bearded seal take estimates." C: EB commented, "We can check more information on public studies. I will get back to you on that and what animals are endangered species."
26.	Q: MA asked, "How do you plan on using the scouting vessel?" A: SW replied, "The scout will be up front zigzagging to monitor for marine mammals. The survey vessel will be in communication with the scout vessel."
27.	Q: BS asked, "What is the employee count when you ship out and ship in?" A: SW replied, "Roughly 35 to 40 people on board the ship."
28.	Q: MA asked, "When you do the change-up are they planning to stay and overnight?" A: SW replied, "Most likely they will need to spend the night before the crew change. Yes, but not long."
29.	Q: MA asked, "Where is your location based?" A: SW replied, "Probably coming out of Anchorage."
30.	Q: MA asked, "Are you planning on doing a multiyear program?" A: SW replied, "I anticipate after this operation we will take a year off to analyze the data."
31.	Q: MA asked, "Do you have an idea what type of rock is down there?" A: SW replied, "The seismic acquisition is more about the structures rather than the type of rock."
32.	Q: MA asked, "What does it look like down there?" A: SW replied, "It looks promising."
33.	Q: MA asked, "Do you have data from the 1970s and 1980s?" A: SW replied, "I believe we have data from the 1980s. The old data doesn't show the best indicators."
34.	C: MA commented, "Cully Corporation has been aiming at Cape Sabine. That is why I was asking about water depth. There is established infrastructure in that area from our purchase from the federal government and US Navy."
35.	C: BS commented, "We are the closest community. We have the most impact. It would be beneficial to have infrastructure development in our community. It is an ideal place for staging."
36.	Q: MA asked, "How many people do you plan on employing?" A: SW replied, "At most for PSOs eight to nine. One or two will be out-of-state." C: EB commented, "It will be a combination of Iñupiat and scientist PSOs."
37.	C: MA commented, "We want to push this issue for Point Lay. We want more presence in Point Lay for oil response."
GENERAL OBSERVATIONS:	
The meeting went well. President Awalin briefly mentioned about an indigenous water act through ICAS.	



TGS Project
Cully Corporation – Cully Corporation Building
December 13, 2012 4:00 PM

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) Hunter Stotts	AES			
2) Steve Whidden	TGS	403 8526115	st.pur.whidden @TGS.COM	
3) Elizabeth Benson	AES	907 331-5477	elizabeth. benson@aesrc energy.com	
4) Marty Analin	Cully Corp	569-2705	mawalin@ CullyCorp.com	
5) Betty Swar	Cully Corp	569-2705	bswar@CullyCorp. com	
6)				
7)				
8)				

Appendix C
Plan of Cooperation Invitation Letters

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January 7, 2013

John Hopson, Jr., Commissioner
Alaska Eskimo Whaling Commission - Wainwright
P.O. Box 9
Wainwright, AK 99782

Re: Invitation to the Wainwright Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Hopson, Jr.:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Community Center in Wainwright, Alaska, on January 28, 2013, from 7:00 pm to 9:00 pm. The POC meeting will provide you with an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

Announcements will be made on the radio and flyers will be posted around town before the POC meeting, to inform the community. If you have any questions, please don't hesitate to contact me at steve.whidden@tgs.com, Inuuteq Stotts with ASRC Energy Services (AES) at 907-334-1563 or inuuteq.stotts@asrcenergy.com, or Elizabeth Benson with ASRC Energy Services (AES) at 907-339-5477 or via e-mail at Elizabeth.benson@asrcenergy.com.

Thank you for your time and have a wonderful day.

Sincerely,

A handwritten signature in black ink that reads 'Steve Whidden'.

Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

A handwritten signature in black ink that reads 'Troy Nelson'.

Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Enoch Oktolik, Mayor
City of Wainwright
P.O. Box 9
Wainwright, AK 99782
wainwrightcity@gmail.com

Re: Invitation to the Wainwright Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Oktolik:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Joe Ahmaogak
Eskimo Walrus Commission
P.O. Box 27
Wainwright, AK 99782
Joe.ahm@starband.net

Re: Invitation to the Wainwright Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Ahmaogak:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Community Center in Wainwright, Alaska, on January 28, 2013, from 7:00 pm to 9:00 pm. The POC meeting will provide you with an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Ronnie Morales, Member
Inupiat Community of the Arctic Slope - Wainwright
P.O. Box 704
Wainwright, AK 99782
wainwright@inupiatgov.com

Re: Invitation to the Wainwright Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Ms. Morales:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Community Center in Wainwright, Alaska, on January 28, 2013, from 7:00 pm to 9:00 pm. The POC meeting will provide you with an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Howard Patkotak, President
Olgoonik Corporation
P.O. Box 29
Wainwright, AK 99782
Virginia@ain.olgoonik.com

Re: Invitation to the Wainwright Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Patkotak:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Blair Patkotak, President
Wainwright Traditional Council
P.O. Box 143
Wainwright, AK 99782
wainwright@inupiatgov.com

Re: Invitation to the Wainwright Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Patkotak:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Walter Nayakik, Jr., President
Wainwright Whaling Captain's Association
General Delivery
Wainwright, AK 99782

Re: Invitation to the Wainwright Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Nayakik, Jr.:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Johnny Aiken, Executive Director
Alaska Eskimo Whaling Commission
P.O. Box 570
Barrow, AK 99723
Aewcdir1@gci.net

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Aiken:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Rex Rock, Sr., President/CEO
Arctic Slope Regional Corporation
P.O. Box 129
Barrow, AK 99723
rrock@asrc.com

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear President Rock:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Iñupiat Heritage Center in Barrow, Alaska, on January 29, 2013, from 7:00 pm to 9:00 pm. The POC meeting will provide you with an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

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TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Eugene Brower, President
Barrow Whaling Captains' Association
P.O. Box 570
Barrow, AK 99723
ebrower@asrc.com

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Brower:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Bob Harcharek, Mayor
City of Barrow
P.O. Box 629
Barrow, AK 99723
Bob.harcharek@cityofbarrow.org

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mayor Harcharek:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Inupiat Heritage Center in Barrow, Alaska, on January 29, 2013, from 7:00 pm to 9:00 pm. The POC meeting will provide you with an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Joseph Sage
Eskimo Walrus Commission
P.O. Box 1130
Barrow, AK 99723
jsage@nvbarrow.net

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Sage:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

George Edwardson, President
Iñupiat Community of the Arctic Slope
P.O. Box 934
Barrow, AK 99723
George.edwardson@hotmail.com

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Edwardson:

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Thank you for your time and have a wonderful day.

Sincerely,

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Mike Pederson, Executive Manager
Ice Seal Committee Leadership
P.O. Box 69
Barrow, AK 99723
Mike.Pederson@noth-slope.org

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Pederson:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Iñupiat Heritage Center in Barrow, Alaska, on January 29, 2013, from 7:00 pm to 9:00 pm. The POC meeting will provide you with an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Charles Brower, Chair
Alaska Nanuuq Commission
P.O. Box 946
Nome, AK 99746

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Brower:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Harry Brower, Jr., Deputy Director
North Slope Borough, Department of Wildlife Management
P.O. Box 69
Barrow, AK 99723
Harry.brower@north-slope.org

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Brower:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Taqulik Hepa, Director
North Slope Borough, Department of Wildlife Management
P.O. Box 69
Barrow, AK 99723
Taqulik.hepa@north-slope.org

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Ms. Hepa:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Iñupiat Heritage Center in Barrow, Alaska, on January 29, 2013, from 7:00 pm to 9:00 pm. The POC meeting will provide you with an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Robert Suydam, Senior Wildlife Biologist
North Slope Borough, Department of Wildlife Management
P.O. Box 69
Barrow, AK 99723
Robert.suydam@noth-slope.org

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Suydam:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Charlotte Brower, Mayor
North Slope Borough
P.O. Box 69
Barrow, AK 99723
Charlotte.brower@north-slope.org

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mayor Brower:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Thomas Olemaun, President
Native Village of Barrow
P.O. Box 1130
Barrow, AK 99723
tolemaun@nvbarrow.net

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Olemaun:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Anthony Edwardson, President
Ukpeaġvik Iñupiat Corporation
P.O. Box 890
Barrow, AK 99723
skaleak@ukpik.com

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Edwardson:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Willie Goodwin, Jr., Chair
Alaska Beluga Whale Committee
P.O. Box 334
Kotzebue, AK 99752

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Goodwin:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Nathan Kotch, Mayor
City of Kotzebue
P.O. Box 46
Kotzebue, AK 99752
nkotch@maniilaq.org

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mayor Kotch:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Clement Richards, Vice-Mayor
City of Kotzebue
P.O. Box 46
Kotzebue, AK 99752
crichards@maniilaq.org

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Richards:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Vera Metcalf, Executive Director
Eskimo Walrus Commission
P.O. Box 948
Barrow, AK 99723

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Ms. Metcalf:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Wilfred Lane, Sr.
Eskimo Walrus Commission
P.O. Box 176
Kotzebue, AK 99752

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Lane:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Harold Lambert, Chair
Kikiktagruk Inupiat Corporation
373A Second Avenue
P.O. Box 1050
Kotzebue, AK 99752
info@kikiktagruk.com

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Lambert:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Cole Schaeffer, President/CEO
Kikiktagruk Inupiat Corporation
373A Second Avenue
P.O. Box 1050
Kotzebue, AK 99752
cschaeffer@kikiktagruk.com

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Schaeffer:

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Marie Greene, President/CEO
NANA Corporation
P.O. Box 49
Kotzebue, AK 99752
info@nana.com

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear President Greene:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Walter Sampson, Vice President
NANA Corporation
P.O. Box 49
Kotzebue, AK 99752
walter.sampson@nana.com

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Sampson:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Announcements will be made on the radio and flyers will be posted around town before the POC meeting, to inform the community. If you have any questions, please don't hesitate to contact me at steve.whidden@tgs.com, Inuuteq Stotts with ASRC Energy Services (AES) at 907-334-1563 or inuuteq.stotts@asrcenergy.com, or Elizabeth Benson with ASRC Energy Services (AES) at 907-339-5477 or via e-mail at Elizabeth.benson@asrcenergy.com.

Thank you for your time and have a wonderful day.

Sincerely,

A handwritten signature in black ink, appearing to read 'Steve Whidden'.

Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

A handwritten signature in black ink, appearing to read 'Troy Nelson'.

Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Jack Omelak, Executive Director
Alaska Nanuuq Commission
P.O. Box 946
Nome, AK 99762

Re: Invitation to the Barrow Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Omelak:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Iñupiat Heritage Center in Barrow, Alaska, on January 29, 2013, from 7:00 pm to 9:00 pm. The POC meeting will provide you with an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

Announcements will be made on the radio and flyers will be posted around town before the POC meeting, to inform the community. If you have any questions, please don't hesitate to contact me at steve.whidden@tgs.com, Inuuteq Stotts with ASRC Energy Services (AES) at 907-334-1563 or inuuteq.stotts@asrcenergy.com, or Elizabeth Benson with ASRC Energy Services (AES) at 907-339-5477 or via e-mail at Elizabeth.benson@asrcenergy.com.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Guy Adams, Chair
Native Village of Kotzebue
P.O. Box 296
Kotzebue, AK 99752
gadams@nwiha.com

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Adams:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Katimmavik Meeting Room (Nullagvik Hotel) in Kotzebue, Alaska, on January 31, 2013, from 7:00 pm to 9:00 pm. The POC meeting will provide you an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Danny Thomas, Jr., Elder Representative
Native Village of Kotzebue
P.O. Box 64
Kotzebue, AK 99752
danniegak@yahoo.com

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Thomas, Jr.:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Katimmavik Meeting Room (Nullagvik Hotel) in Kotzebue, Alaska, on January 31, 2013, from 7:00 pm to 9:00 pm. The POC meeting will provide you an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

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Thank you for your time and have a wonderful day.

Sincerely,

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

A handwritten signature in black ink that reads 'Troy Nelson'.

Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Dennis Tiepelman, Executive Director
Native Village of Kotzebue
P.O. Box 296
Kotzebue, AK 99752

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Tiepelman:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Reggie Joule, Mayor
Northwest Arctic Borough
P.O. Box 1110
Kotzebue, AK 99752
mwhiting@nwabor.org

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mayor Joule:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 10, 2013

Victor Karmun, Member
Northwest Arctic Subsistence Regional Advisory Council
Office of Subsistence Management
U.S. Fish and Wildlife Service
1011 E. Tudor Toad, Mail Stop 121
Anchorage, AK 997503

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Karmun:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 10, 2013

Michael Kramer, Member
Northwest Arctic Subsistence Regional Advisory Council
Office of Subsistence Management
U.S. Fish and Wildlife Service
1011 E. Tudor Toad, Mail Stop 121
Anchorage, AK 997503

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Kramer:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 10, 2013

Enoch Shiedt, Sr., Member
Northwest Arctic Subsistence Regional Advisory Council
Office of Subsistence Management
U.S. Fish and Wildlife Service
1011 E. Tudor Toad, Mail Stop 121
Anchorage, AK 997503

Re: Invitation to the Kotzebue Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Shiedt, Sr.:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical



January 7, 2013

Julius Rexford, Commissioner
Alaska Eskimo Whaling Commission - Point Lay
P.O. Box 59031
Point Lay, AK 99759
Julius.rexford@north-slope.org

Re: Invitation to the Point Lay Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Rexford:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Community Center in Point Lay, Alaska, on February 1, 2013, from 7:00 pm to 9:00. The POC meeting will provide you an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

James Tazruk
Eskimo Walrus Commission
P.O. Box 59071
Point Lay, AK 99759

Re: Invitation to the Point Lay Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Tazruk:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

The TGS team invites you to a Plan of Cooperation (POC) community meeting to be held at the Community Center in Point Lay, Alaska, on February 1, 2013, from 7:00 pm to 9:00. The POC meeting will provide you an opportunity to learn about the project and the more importantly, share your questions and concerns with the TGS team. In preparation for the meeting, please see attached draft Plan of Cooperation for your review.

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Thank you for your time and have a wonderful day.

Sincerely,

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Henry Sophie, Member
Inupiat Community of the Arctic Slope - Point Lay
P.O. Box 59087
Point Lay, AK 99759
frontierchic@hotmail.com

Re: Invitation to the Point Lay Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Ms. Sophie:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Jacob Stalker, Jr., Commissioner
Alaska Nanuuq Commission - Point Lay
General Delivery
Point Lay, AK 99759
Inupiaq_2@yahoo.com

Re: Invitation to the Point Lay Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Stalker:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Willard Neakok, President
Native Village of Point Lay
P.O. Box 59031
Point Lay, AK 99759
pointlay@inupiatgov.com

Re: Invitation to the Point Lay Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Neakok:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:



January 7, 2013

Thomas Nukapigak, President
Point Lay Whaling Captain's Association
P.O. Box 59101
Point Lay, AK 99759
Tom_nukapigak@yahoo.com

Re: Invitation to the Point Lay Plan of Cooperation Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Nukapigak:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013, through October 2013.

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TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

cc:

February 21, 2013

Margaret Frankson, Executive Director
Native Village of Point Hope
P.O. Box 109
Point Hope, AK 99766

Re: Rescheduling the Point Hope Plan of Cooperation Community Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Ms. Frankson:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013 through October 2013.

Originally, we had scheduled the Plan of Cooperation (POC) community meeting to be held at the Qalgi Center in Point Hope, Alaska, on February 22, 2013. However, because of the basketball game (the rescheduled school event occurring on the same day), we feel rescheduling our meeting to February 28, 2013 would be better for attendance at the POC meeting. We apologize for the inconvenience. We look forward to meeting with you.

Announcements will be made on the radio, and flyers will be posted around town before the POC meeting, to inform the community. If you have any questions, please don't hesitate to contact steve.whidden@tgs.com, Inuuteq Stotts with ASRC Energy Services (AES) at 907-334-1563 or inuuteq.stotts@asrcenergy.com, or Elizabeth Benson with AES at 907-339-5477 or via e-mail at elizabeth.benson@asrcenergy.com.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

February 21, 2013

Herbert Kinneeveauk, Jr., President
Point Hope Whaling Captains Association
Point Hope, AK 99766
pkinne@tikigaq.com

Re: Rescheduling the Point Hope Plan of Cooperation Community Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Kinneeveauk, Jr.:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013 through October 2013.

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TGS Geophysical

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Regulatory & Compliance
TGS Geophysical

February 21, 2013

Jack Schaefer, President
Native Village of Point Hope
P.O. Box 109
Point Hope, AK 99766
jschaefer@tikigaq.com

Re: Rescheduling the Point Hope Plan of Cooperation Community Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Schaefer:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013 through October 2013.

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Thank you for your time and have a wonderful day.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Whidden".

Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

A handwritten signature in black ink, appearing to read "Troy Nelson".

Troy Nelson
Regulatory & Compliance
TGS Geophysical

February 21, 2013

Herbert Kinneeveauk, Jr., President
Tikigaq Corporation
P.O. Box 9
Point Hope, AK 99766
pkinne@tikigaq.com

Re: Rescheduling the Point Hope Plan of Cooperation Community Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Kinneeveauk, Jr.:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013 through October 2013.

Originally, we had scheduled the Plan of Cooperation (POC) community meeting to be held at the Qalgi Center in Point Hope, Alaska, on February 22, 2013. However, because of the basketball game (the rescheduled school event occurring on the same day), we feel rescheduling our meeting to February 28, 2013 would be better for attendance at the POC meeting. We apologize for the inconvenience. We look forward to meeting with you.

Announcements will be made on the radio, and flyers will be posted around town before the POC meeting, to inform the community. If you have any questions, please don't hesitate to contact steve.whidden@tgs.com, Inuuteq Stotts with ASRC Energy Services (AES) at 907-334-1563 or inuuteq.stotts@ascenergy.com, or Elizabeth Benson with AES at 907-339-5477 or via e-mail at elizabeth.benson@ascenergy.com.

Thank you for your time and have a wonderful day.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

February 21, 2013

Clark Lane, Sr., Vice-President
Tikigaq Corporation
P.O. Box 9
Point Hope, AK 99766
clane@tkigaq.com

Re: Rescheduling the Point Hope Plan of Cooperation Community Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Lane, Sr.:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013 through October 2013.

Originally, we had scheduled the Plan of Cooperation (POC) community meeting to be held at the Qalgi Center in Point Hope, Alaska, on February 22, 2013. However, because of the basketball game (the rescheduled school event occurring on the same day), we feel rescheduling our meeting to February 28, 2013 would be better for attendance at the POC meeting. We apologize for the inconvenience. We look forward to meeting with you.

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Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

February 21, 2013

Alzred Oomittuk, Mayor
City of Point Hope
P.O. Box 169
Point Hope, AK 99766
steve_oomittuk@yahoo.com

Re: Rescheduling the Point Hope Plan of Cooperation Community Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Oomittuk:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013 through October 2013.

Originally, we had scheduled the Plan of Cooperation (POC) community meeting to be held at the Qalgi Center in Point Hope, Alaska, on February 22, 2013. However, because of the basketball game (the rescheduled school event occurring on the same day), we feel rescheduling our meeting to February 28, 2013 would be better for attendance at the POC meeting. We apologize for the inconvenience. We look forward to meeting with you.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

February 21, 2013

Ronald Oviok, Commissioner
Eskimo Walrus Commission
P.O. Box 134
Point Hope, AK 99766

Re: Rescheduling the Point Hope Plan of Cooperation Community Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Oviok:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013 through October 2013.

Originally, we had scheduled the Plan of Cooperation (POC) community meeting to be held at the Qalgi Center in Point Hope, Alaska, on February 22, 2013. However, because of the basketball game (the rescheduled school event occurring on the same day), we feel rescheduling our meeting to February 28, 2013 would be better for attendance at the POC meeting. We apologize for the inconvenience. We look forward to meeting with you.

Announcements will be made on the radio, and flyers will be posted around town before the POC meeting, to inform the community. If you have any questions, please don't hesitate to contact steve.whidden@tgs.com, Inuuteq Stotts with ASRC Energy Services (AES) at 907-334-1563 or inuuteq.stotts@asrcenergy.com, or Elizabeth Benson with AES at 907-339-5477 or via e-mail at elizabeth.benson@asrcenergy.com.

Thank you for your time and have a wonderful day.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

February 21, 2013

Rex Rock, Sr., Commissioner
AEWC - Point Hope
Point Hope, AK 99766
rrock@asrc.com

Re: Rescheduling the Point Hope Plan of Cooperation Community Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Rock, Sr.:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013 through October 2013.

Originally, we had scheduled the Plan of Cooperation (POC) community meeting to be held at the Qalgi Center in Point Hope, Alaska, on February 22, 2013. However, because of the basketball game (the rescheduled school event occurring on the same day), we feel rescheduling our meeting to February 28, 2013 would be better for attendance at the POC meeting. We apologize for the inconvenience. We look forward to meeting with you.

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Thank you for your time and have a wonderful day.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

February 21, 2013

Enoch Tooyak, Sergeant at Arms
Alaska Nanuuq Commission
Point Hope, AK 99766
enochtooyak@hotmail.com

Re: Rescheduling the Point Hope Plan of Cooperation Community Meeting
TGS 2013 Chukchi Sea 2D Seismic Program

Dear Mr. Tooyak:

TGS is proposing to conduct a two-dimensional (2D) seismic survey program in the Chukchi Sea, Alaska. The proposed program operations are planned for July 15, 2013 through October 2013.

Originally, we had scheduled the Plan of Cooperation (POC) community meeting to be held at the Qalgi Center in Point Hope, Alaska, on February 22, 2013. However, because of the basketball game (the rescheduled school event occurring on the same day), we feel rescheduling our meeting to February 28, 2013 would be better for attendance at the POC meeting. We apologize for the inconvenience. We look forward to meeting with you.

Announcements will be made on the radio, and flyers will be posted around town before the POC meeting, to inform the community. If you have any questions, please don't hesitate to contact steve.whidden@tgs.com, Inuuteq Stotts with ASRC Energy Services (AES) at 907-334-1563 or inuuteq.stotts@asrcenergy.com, or Elizabeth Benson with AES at 907-339-5477 or via e-mail at elizabeth.benson@asrcenergy.com.

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Steve Whidden, P. Gphys.
Program Manager
TGS Geophysical

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Troy Nelson
Regulatory & Compliance
TGS Geophysical

Appendix D
2013 Plan of Cooperation Community Meeting Announcements, Flyers, Sign-In Sheets, Meeting Minutes, and Comments

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Radio Public Service Announcement (PSA)

TO: KBRW

FROM: Inuuteq Stotts – ASRC Energy Services – RTS

RE: Public Service Announcements to be broadcast on KBRW

Wainwright – TGS Geophysical invites you to join us at our Plan of Cooperation Community Meeting on Monday, January 28, 2013, at the Wainwright Community Center from 7:00 PM to 9:00 PM in Wainwright, Alaska.

TGS will present their proposed Chukchi Sea 2D Seismic Survey Program. Refreshments and door prizes, will be provided. For more information contact Inuuteq Stotts at 907-339-1563.

DATES TO AIR WAINWRIGHT ANNOUNCEMENT:

Start Date: January 24, 2013

Kill Date: January 28, 2013

Quyanaqpak!



Barrow – TGS Geophysical invites you to join us at our Plan of Cooperation Community Meeting on Tuesday, January 29, 2013, at the Iñupiat Heritage Center from 7:00 PM to 9:00 PM in Barrow, Alaska.

TGS will present their proposed Chukchi Sea 2D Seismic Survey Program. Refreshments and door prizes, will be provided. For more information contact Inuuteq Stotts at 907-339-1563.

DATES TO AIR BARROW ANNOUNCEMENT:

Start Date: January 25, 2013.

Kill Date: January 29, 2013

-more -

Quyanaqpak!



Kotzebue – TGS Geophysical invites you to join us at our Plan of Cooperation Community Meeting on Thursday, January 31, 2013, at the Nullagvik Hotel Katimmavik Meeting Room from 7:00 PM to 9:00 PM in Kotzebue, Alaska.

TGS will present their proposed Chukchi Sea 2D Seismic Survey Program. Refreshments and door prizes, will be provided. For more information contact Inuuteq Stotts at 907-339-1563.

DATES TO AIR KOTZEBUE ANNOUNCEMENT:

Start Date: January 27, 2013

Kill Date: January 31, 2013

Quyanaqqak!



Point Lay – TGS Geophysical invites you to join us at our Plan of Cooperation Community Meeting on Friday, February 1, 2013, at the Community Center from 7:00 PM to 9:00 PM in Point Lay, Alaska.

TGS will present their proposed Chukchi Sea 2D Seismic Survey Program. Refreshments and door prizes, will be provided. For more information contact Inuuteq Stotts at 907-339-1563.

DATES TO AIR POINT LAY ANNOUNCEMENT:

Start Date: January 28, 2013

Kill Date: February 1, 2013

Quyanaqqak!



Radio Public Service Announcement (PSA)

TO: KBRW

FROM: Inuuteq Stotts – ASRC Energy Services – RTS

RE: Public Service Announcement to be broadcast on KBRW

Point Hope – TGS invites you to join us at our Plan of Cooperation Community Meeting on Thursday, February 28, 2013, at the Qalgi Center from 7:00 PM to 9:00 PM in Point Hope, Alaska.

TGS will present their proposed Chukchi Sea 2D Seismic Survey Program. Refreshments and door prizes will be provided. For more information, contact Inuuteq Stotts at 907-339-1563.

DATES TO AIR POINT HOPE ANNOUNCEMENT:

Start Date: February 25, 2013

Kill Date: February 28, 2013

Quyanaqpak!



Plan of Cooperation Meeting for Proposed 2013 2D Seismic Survey Chukchi Sea

Who: TGS Geophysical Company (TGS)

What: To introduce TGS Plan of Cooperation and obtain feedback

**When: Monday, January 28, 2013
from 7:00 pm–9:00 pm**

**Where: Community Center
Wainwright, Alaska**

Refreshments and Door Prizes

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Wainwright Plan of Cooperation Community Meeting		
Meeting Location	Wainwright, Alaska		
Meeting Facility	City of Wainwright Community Meeting		
Date and Time of Meeting:	January 28, 2013 (7:00 pm – 7:40 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Martha Segevan	
Zig Doborzynski	TGS	Kenneth Anashugak	
Mari Smultea (MS)	AES/SES	Fritz Nashookpuk	
Megan Blees	AES	Byrna Panik	
Robin Demoski	AES	Joshua Okpowruk	
Inuuteq Stotts	AES	Will Akpik	
Marjorie Anashugak		Cynthia Ekak	
Ellen Tunik		Rebecca Ekak	
Mary Ekak		Ada Tazruk	
Dennis Aveoganna		Kelly Hopson	
Abbey Ungudruk		Isabel Nashookpuk	
John Segevan		Dorcas Chuitt	
Jim Aveoganna Jr.		Evelyn Nashoalook	
Neil Paskewitz	North Slope Borough Police	Anthony Chuitt	
Walda Kippi		Bonnie Spencer	
Raymond Aguvluk (RA)	City of Wainwright	Fredericka Ahmaogak	
Simon Ekak		Eugene Bodfish	
Harry Patkotak		Lolo Driggs	
Alexander Patkotak		Max Akpik	
Wesley Patkotak		Susie Aguvluk	
Rossmann Peetook		Moses Nayakik	
Roy Ekak		John Hopson Jr. (JH)	Alaska Eskimo Whaling Commission
Roselyn Swan		Alice Nashookpuk	
David Ningeok Jr.		Manuya Nashookpuk	
Della Drigg		Geraldine Ningeok	
Roberta Bodfish		Cora Driggs	
Ariel Bodfish		Isaac Panik	
Jack Tazruk		Phoebe Negovanna	
Carolyn Akpik		Dale Ungudruk	
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN & MS	30 mins
2.	Question and Answer Period	Community	10 mins

WAINWRIGHT PLAN OF COOPERATION COMMUNITY MEETING JANUARY 28, 2013

<u>Item</u>	<u>Action Item</u>	<u>Action By</u>	<u>Follow up Deadline</u>
1.	TBD	TBD	TBD
KEY ISSUES:			
1.	Environmental effects – Seismic impacts: How does seismic affect the subsistence migration? Has there been affects to the whales?		
2.	Project schedule – Alaska survey: Will the Alaska survey section take 35 days?		
3.	Project design/description – Seismic sound: How much time is there between how louder the sound is?		
DISCUSSION ITEMS:			
1.	Question (Q): RA asked, “Are you doing 2D or 3D seismic?” Answer (A): TN replied, “TGS is doing 2D seismic.”		
2.	Q: Man asked, “How does seismic affect the subsistence migration? Has there been affects to the whales?” A: MS replied, “There have been some studies that show up in the Beaufort Sea that when they are exposed to drilling sounds and some seismic, in some years the whales will go around the sound and some whales don’t. It does happen sometimes. It depends where the sound is. When they did that other study they had the sound in the middle of the migration corridor and then the whales went around it.”		
3.	Q: Man asked, “Are you monitoring where the whales go? Are they coming into shore or are they going further out in their migration?” A: MS replied, “The different companies monitor in different ways. Everybody is getting together to study whales in different areas in different ways. Whenever someone does seismic out here they are required to also study the impacts on the animals and they require Iñupiat and biologists on the boat to make sure no whales are close to the boat.”		
4.	Q: RA asked, “We hunt walrus between July and August. Will the Alaska survey section take 35 days?” A: TN replied, “Yes 35 days.”		
5.	Q: JH asked, “What is the closest you’ll be to shore?” A: MS replied, “58 miles” Q: MS asked, “How far do local hunters go out?” A: JH replied, “No more than 30.”		
6.	Q: Man asked, “How much time do you have before you start on your next sound?” A: MS replied, “What they usually do is watch for 30 minutes before any sound is on. Then another 30 to 30 minutes before they keep adding the sound a little louder till it gets to its maximum. When they go along the line they travel four or five knots. When they get to the end of the line they bring the sound down so there is only one air gun operating. It takes four to five hours to travel to the next line. When they get to the next line they start the process again.”		
GENERAL OBSERVATIONS:			
A Wainwright elder, Rossman Peetook, did a prayer before the meeting started.			



ATTENDANCE SIGN-IN SHEET
WAINWRIGHT, ALASKA
January 28, 2013

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) Marjorie Angashuk	Marjorie Angashuk	⊕	⊕	Box 51 AIN AK 99782
2) ELLEN TUMIK	Ellen Tumik	⊕	⊕	Box 78 AIN AK 99782
3) Mary Ekak	Mary Ekak			" 78 " "
4) Dennis Avesjans				P.O. Box 82 AIN
5) Abbey Ungudruk	Self	⊕	⊕	Box 74 AIN AK 99782
6) John Sogeven	my self			Box 145 AIN 99782
7) Jim Avcoyann ^{J2}	Self	⊕		Gen-Del wain - AK
8) NEIL PASKWITZ	Police			



ATTENDANCE SIGN-IN SHEET
 WAINWRIGHT, ALASKA
 January 28, 2013

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
9) Walda Kyppi	Myself			
10) Raymond Aguluk	City of Anchorage	602-7385	aguluk@ktm.net	Box 35 99752
11) Simon Elak		763-6778	elak53@netnet.com	Box 87
12) Harry Patluk		763 0151	HP4242-2000 @yash.com	Box 116 Wainwright, AK 99782
13) Alexander Patluk		763 0151	u	↓
14) Chelsey Patluk		763 0151	↓	↓
15) Rossman-E, PEETBOK	Self	763-4774	→	Box 43
16) Royce Elak	Self	763-6728		Box 87



**ATTENDANCE SIGN-IN SHEET
WAINWRIGHT, ALASKA
January 28, 2013**

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
17) <i>Franklin Chik</i>		—	—	PO Box 78
18) <i>Rossellen Swan</i>		763 5209	rossellen Swan	DU Box 186
19) <i>David NINGEOK Jr</i>		763-0054	.	Box 186
20) <i>Della R Drigg</i>				Box 102
21) <i>Roberta Bodfish</i>		925-1281		Box 165 AIN
22) <i>Ariel Bodfish</i>				
23) <i>Jack Tzerwe</i>		763 0299		Box 05 Ain
24) <i>Carolyn AKPIK</i>		763-0004		Box 126



**ATTENDANCE SIGN-IN SHEET
WAINWRIGHT, ALASKA
January 28, 2013**

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
25) Martha Segevum	Self			Box 33
26) Kenneth Anashuggak	self			Box 84
27) Isaac Paik	none			Box 14
28) GENE Aguvuk	Self			P.O. Box 122 Wainwright AK 99742
29) Nellie Bester	Self			P.O. Box 161 Wainwright
30) Myrtle	self			P.O. Box 148
31) Phoebe Negovanna	Self			
32) Dale Ungvadac	self			P.O. Box 134



**ATTENDANCE SIGN-IN SHEET
WAINWRIGHT, ALASKA
January 28, 2013**

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
33) <i>Howard P</i>	<i>UC</i>			<i>box 29 Wainwright AK 99782</i>
34) <i>Fritz Nabhisipuk</i>				<i>P.O. Box 104 Wainwright, AK 99782</i>
35) <i>Byrna Panik</i>	<i>Self</i>			<i>PO Box 147 Wainwright, AK 99782</i>
36) <i>Joshua Okpowuk</i>	<i>self</i>			<i>Box 186 Wainwright AK 99782</i>
37)				
38)				
39)				
40)				



ATTENDANCE SIGN-IN SHEET
WAINWRIGHT, ALASKA
 January 28, 2013

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
49) Willie Akrok		907763 6025	willieakrok @hotmail	P.O. Box 88
50) Cynthia Akrok		763-6728		P.O. Box 87
51) Rebecca L. Akrok		9251119		PO Box 185
52) adatarok		925-1083	ada-tarok-96@ hotmail.com	P.O. Box 5
53) Kelly Hopson	-	925-1552	Piquuq - Akugluk @hotmail.com	P.O. Box
54) Isabel Nashokuk		763-2245	nashokuk@ hotmail.com	Box 81 AIN AK 99782
55) Dorcas Amitt		763-2486	draechmitt@ gmail.com	Box 61 AINAK 99782
56) Evelyn Nashokuk				Box 83 Ain AK



**ATTENDANCE SIGN-IN SHEET
WAINWRIGHT, ALASKA
January 28, 2013**

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
57) Anthony Chuit		(907) 763-2486	fcbacll@gmail	P.O. 61 AIN AK 99782
58) Bonnie Spencer		925-1644	none	Box 87 AIN AK 99782
59) Frederica Amago		925-1276	none	Box 71 AIN AK 99782
60) Eugene Boulton		925-1314	x/o	Box 34 AIN AK 99782
61) Lolo Briggs		763-2277	lolo_411@aol.com	P.O. 102 AIN AK 99782
62) MAXAK LS		925-1472		PO Box 55 99782 Wainwright AK
63) Susie Aguluk		763-0033	susie.aguluk24@ hotmail.com	Po Box 148 Wainwright AK
64) Moses Nayakik		763-2918		P.O. Box 56 Wainwright AK



ATTENDANCE SIGN-IN SHEET
 WAINWRIGHT, ALASKA
 January 28, 2013

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
65) John Hopson Jr	Self			
66) ALICE NASHODGUK	Self			P.O. Box 107 AIN - 99782
67) Manuya Nashodguk	Self			
68) Geraldine Ningsok	self.		geraldie.ningsok@north-slope.org.	Box 144 Wainwright AK 99782
69) WALTER NASHOK	self			Box 4 AIN
70) CORA DRIGGS	self			
71)				
72)				



Plan of Cooperation Meeting for Proposed 2013 2D Seismic Survey Chukchi Sea

Who: TGS Geophysical Company (TGS)

**What: To introduce TGS Plan of Cooperation and
obtain feedback**

**When: Tuesday, January 29, 2013
from 7:00 pm–9:00 pm**

**Where: Iñupiat Heritage Center
Barrow, Alaska**

Refreshments and Door Prizes

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Barrow Plan of Cooperation Community Meeting		
Meeting Location	Barrow, Alaska		
Meeting Facility	Inupiat Heritage Center		
Date and Time of Meeting:	January 29, 2013 (7:00 pm – 8:40 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Ron Ningeok	
Zig Doborzynski (ZD)	TGS	David Saganna	
Mari Smultea (MS)	AES/SES	Lucia Benson	
Megan Blees	AES	Emma Hutchinson	
Robin Demoski	AES	Rose Okpeaha	
Inuuteq Stotts	AES	Jason Sielak	
Etta Fournier		Ronald Simmonds	
David Hopson		Josephine Hopson	
John Ningeok		Mary Brower	
Pauline Ningeok		Rita Okpeaha	
Bruce Redford		Charmaine Kaleak	
Rick Rice		Fred Ahmaogak	
Grier Sanders		Frederick Tukle, Sr.	
Ron Saganna		Ruth Adams	
John Brower		Patricia Marie Aveoganna	
Trenton Sovalik		James Lee Tuckfield	
Jasmine Tuckfield		Olive Hutchinson	
Johnson Jim Mascheena		Charlotte Ahsogeak	
Robert Edwardson, Sr. (RE)		Lloyd Ahkivgak	
Kunnaan Stackhouse		George Itta	
David Thompson		Lucy Anashugak	
Nancy Ahsogeak		Miranda Rexford Brown	
William Aguvluk		Miranda Brown	
Doreen Anashugak		Chalmer Sovalik	
Elleak Leavitt		Rubylynn Patkotak	
Glenn Sielak		Max Adams	
Rebecca Brower		Dora Brower	
Kate Brower		Steven Hopson	
Mary Jo Brower		Susan Hope (SH)	
Deano Olemaun (DO)	Ukpeagvik Inupiat Corporation		
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, ZB, & MS	1 hr 20 mins
2.	Question and Answer Period	Community	20 mins

BARROW PLAN OF COOPERATION COMMUNITY MEETING

JANUARY 29, 2013

<u>Item</u>	<u>Action Item</u>	<u>Action By</u>	<u>Follow up Deadline</u>
1.	Final TGS report requested..	Susan Hope	
KEY ISSUES:			
1.	Project design/description – general question: Are you doing 2D or 3D?		
2.	Project design/description – general question: Why are you doing seismic surveys? We have done seismic activities in the past.		
3.	Project design/description – general question: Are you commissioned by oil and gas companies? Is this a spec job or for oil and gas companies?		
4.	Stakeholder engagement – other industry: I feel all the oil, gas, and seismic companies need to work together.		
5.	Environmental effects – seismic: Is seismic harmful to the environment?		
6.	Environmental effects – seismic: Have you done any hearing tests on any whales?		
7.	Environmental effects – seismic: Are walrus affected by seismic in their gatherings?		
8.	Project design/description – marine mammal mitigation: Will you have a monitor vessel to look for marine mammals? Will your monitors be on 24/7?		
9.	Project design/description – general question: How often is the ship emitting the seismic sound?		
10.	Project schedule – general question: How was the schedule organized?		
11.	Project design/description – general question: Do you have arctic experienced captains?		
12.	Stakeholder engagement – other industry: How well are you working with the other entities?		
13.	Stakeholder engagement – other entities: Are you working with U.S. Fish and Wildlife Service?		
14.	Project design/description – general question: Will there be a report after TGS is finished with their survey program?		
15.	Environmental effects – health: In your experience have you seen marine mammals with rashes?		
16.	Project design/description – general question: How often do seismic vessels go under inspection?		
17.	Stakeholder engagement – general question: How can stakeholders assist with the program?		
18.	Environmental effects – socio-cultural impacts: We have dealt with many different operators and our experience is that they can cause us some serious impacts. Living through and watching our community in Nuiqsut go through this process and the losses they have sustained from the industry it's very devastating when we don't have resources in our ice cellars to return to. There are also concerns about the impacts to our fishing. If you impact a whale you may impact a whaling crew and also a whole village. You don't just impact us for a day you impact us for a whole season. This affects our cultural practices and social values.		
19.	Project design/description – general comment: My biggest concern is that we do a better sound system to do seismic. I would recommend that TGS try to find some other source of sound.		

BARROW PLAN OF COOPERATION COMMUNITY MEETING

JANUARY 29, 2013

DISCUSSION ITEMS:	
1.	<p>Question (Q): Lady asked, "Are you doing 2D or 3D?"</p> <p>Answer (A): TN replied, "2D seismic captures a regional slice. It's not as specific as 3D seismic. We will get into more detail later in one of our slides."</p>
2.	<p>Q: Lady asked, "Why are you doing seismic surveys? We have done seismic activities in the past."</p> <p>A: TN replied, "The technologies have changed. The way acquiring data has changed. Some of the older data back in the 80's was not collected well. Technology in terms of how they process the data is more advanced and they can do more with it."</p>
3.	<p>Q: Man asked, "Are you commissioned by oil and gas companies?"</p> <p>A: TN replied, "No."</p>
4.	<p>Q: Man asked, "Is this a spec job or for oil and gas companies?"</p> <p>A: TN replied, "This is a spec seismic acquisition. We can license the data to our clients."</p>
5.	<p>Comment (C): Man commented, "I feel all the oil, gas, and seismic companies need to work together."</p> <p>C: Man commented, "I second that."</p>
6.	<p>C: Man commented, "You guys are just passing through. We live here. You guys are just passing through."</p>
7.	<p>Q: Man asked, "Is seismic harmful to the environment?"</p> <p>A: ZD replied, "There hasn't been a record of harm to the environment. We are trying not to harm wildlife."</p>
8.	<p>Q: Lady asked, "Have you done any hearing tests on any whales?"</p> <p>A: TN replied, "We haven't done any. We are talking with National Marine Fisheries Service. We have talked to Robert Suydam with the North Slope Borough Wildlife Management Department. We are looking at options to help with research in terms of different acoustics. We are looking into how we can contribute in that way."</p>
9.	<p>Q: Lady asked, "There have been concerns with animals grounding. Is there anything you have done with your process to make sure that doesn't happen?"</p> <p>A: MS replied, "The groundings you are talking about I believe are the strandings. That has been associated with sonar sounds. Sonar sounds are very different from seismic. The Navy sonar sounds are high pitched. The seismic is very low. There haven't been any documented deaths from whales from seismic. There have been studies in the Beaufort that have shown that when the whales are migrating by some of them do move out of that way from the sound. That's why the National Marine Fisheries Service requires all the seismic operators to do measures to try to avoid those impacts. I will go over those measures in a later slide."</p>
10.	<p>Q: SH asked, "Do you have studies on affects to whales and fish?"</p> <p>A: MS replied, "There have been some studies in captivity with small fish that were exposed to the sound. In general they move away. There are local affects that cause fish to move away."</p>
11.	<p>Q: Lady asked, "Are walrus affected by seismic in their gatherings?"</p> <p>A: MS replied, "I'm not aware of any studies of how seismic affects walrus gatherings. If you are aware of any studies, let us know. As far as I know, I am not aware of any studies. They are frightened by noise."</p>

BARROW PLAN OF COOPERATION COMMUNITY MEETING JANUARY 29, 2013

DISCUSSION ITEMS:	
12.	<p>C: Man commented, In the late 80's and 90's I've seen the bowhead whales displaced 30-50 miles. The whales in the vicinity of your seismic activity, they will become very agitated. At one point, we also seen Canadian birds in the vicinity of Cross Island, crossed international waters because they were deflected. Animals also ran into the buoys above the water.</p> <p>A: TN, Thank you for that, that is what we came here for, to listen to information like that. The 80's and 90's used different equipment, I will explain in a few slides what we plan to use.</p> <p>C: RE commented, "You guys need to work with Western Geco and other entities. We have seen these surveys and they are getting bigger." If you guys are going to do something, you need to work with other companies to work together.</p> <p>C: RE commented, "We are going to need some kind of assurances, because if anything happens we will be coming after you. You are the source."</p> <p>C: Man, stated "I second him."</p>
13.	<p>Q: Man asked, "Will you have a monitor vessel to look for marine mammals?"</p> <p>A: TN replied, "Yes we will have a scout monitoring vessel. Yes, we will have a total of six (6) Protected Species Observers (PSOs) on the vessels."</p>
14.	<p>C: Man commented, "I believe the seismic sound is bad."</p>
15.	<p>Q: Lady asked, "Will your monitors be on 24/7?"</p> <p>A: ZD replied, "It is 24 hours a day. There will be two (2) people on 12 hour shifts. They will be observing for two hours with a two hour break."</p>
16.	<p>Q: SH asked, "How often is the ship emitting the seismic sound?"</p> <p>A: ZD replied, "There is an 11 second gap between one shot."</p>
17.	<p>Q: Man asked, "We hunt these whales. They can communicate with other whales to move. They can communicate long ways. Are you aware of that?"</p> <p>A: MS replied, "Yes. There is a recent study that showed the bowhead whales when they are making calls in the Beaufort Sea when there is drilling they stop calling. They continue to migrate by but they stop calling."</p>
18.	<p>C: Man commented, "You should do seismic in ANWR."</p>
19.	<p>Q: Lady asked, "How was the schedule organized?"</p> <p>A: MS replied, "It came from a number of the communities. It came from the North Slope Borough Wildlife Management Department with Robert Suydam. They asked TGS to avoid the beluga hunt in July. They suggested the best time for the work to occur in Alaskan waters was in the summer. When the whales migrate back in the fall they suggested that TGS be as far offshore as they can from the migration. TGS has been gathering information for the last few months. They have also attended the AEWG meeting in December to get information. If you have any other suggestions how they can avoid and minimize their impacts, let us know."</p>
20.	<p>Q: Man asked, "I'm looking at the international water schedule. Have you considered how the ice will move in?"</p> <p>A: TN replied, "Yes we are contracting our work to Canatech. They do weather and ice monitoring work. We realize in the international waters there is a good chance that some of those lines we will not be able to acquire because the ice will move in. We have accepted that as part of our program."</p>
21.	<p>Q: Man asked, "Do you have arctic experienced captains?"</p> <p>A: TN replied, "We want a capable crew that has arctic experience. TGS contracted many ships and has done work in Greenland, Eastern Canada, and in the North Sea off of Norway."</p> <p>A: ZD replied, "I just wanted to mention this is an open water survey. If we see ice we will stop surveying."</p>

BARROW PLAN OF COOPERATION COMMUNITY MEETING JANUARY 29, 2013

DISCUSSION ITEMS:	
22.	<p>Q: Lady asked, "On the location of your activities, there are other entities in your area. How well are you working with the other entities?"</p> <p>A: TN replied, "We have talked to the Bureau of Ocean Energy and Management we will be the only seismic program, as far as I know, in the Chukchi in 2013. We are required, we are regulated to work with the different operators out there. There will be open communication with the different operators."</p>
23.	<p>Q: Lady asked, "Are you working with U.S. Fish and Wildlife Service?"</p> <p>A: TN replied, "We do have a meeting with U.S. Fish and Wildlife in Anchorage next week. We do have to submit a Letter of Authorization to them as part of our permitting process."</p> <p>A: MS replied, "My understanding is that the AEWC meetings next week that the National Marine Fisheries Services is making a map that will show the community where all the different activities are planned for 2013 in the Chukchi Sea."</p> <p>C: Lady commented, "it is disheartening to see all the activities out there because a lot of the food we depend on is from what we hunt."</p>
24.	<p>Q: SH asked, "Will there be a report after TGS is finished with their survey program?"</p> <p>A: TN replied, "Yes there will once it's sent to National Marine Fisheries Services they will have a peer review panel that reviews. It will be made public on their website. If you want more direct information from AES we can email that information to you."</p>
25.	<p>C: DO commented, "Thank you and welcome. To Emma's concern she is right, there is an awful lot of traffic going on out there but I think everybody needs to understand that the only regulated vessels out there are those with the industry. There are about 40 vessels that are registered to do activity out there currently. On record this last year in the open water season there were over, and don't quote me on this, I can't remember the exact number, but I believe there were 140 vessels out there. The only ones that were regulated were the ones that filed for permits with the federal agencies, and remember where they are operating, its international waters. We have to make sure that when we talk about the industry that we also need to worry about those that are not regulated."</p>
26.	<p>Q: Man asked, "In your experience have you seen marine mammals with rashes?"</p> <p>A: MS replied, "No I haven't had that experience."</p> <p>C: MAN commented, "we've seen them on seals and walrus."</p> <p>A: MS asked, "have you told the NSB wildlife? We have biologist onboard but we are not allowed to capture animals to see if they have rashes."</p>
27.	<p>Q: Man asked, "What does TGS stand for?"</p> <p>A: TN replied, "Tomlinson Geophysical Services."</p>
28.	<p>C: DO asked, "Consultation with the stakeholders, what do you see the primary objective of this mission? In recent news, I suggest more caution. I know seismic is different from drilling but it paves the way to drilling."</p> <p>Q: DO asked, "How often do seismic vessels go under inspection?"</p> <p>A: ZD replied, "The vessels will come into Dutch Harbor and be inspected there. TGS will also carry out safety inspections."</p>
29.	<p>Q: DO asked, "How can stakeholders assist with the program?"</p> <p>A: ZD replied, "When we come here we are looking for people who can provide us guidance, warnings, and advice in terms of what we do. Our intention is to return this information back to you. After the program we will come back here and report what the PSOs have observed. If someone wants to bring us information that we can act on we will gladly do that."</p>

BARROW PLAN OF COOPERATION COMMUNITY MEETING

JANUARY 29, 2013

DISCUSSION ITEMS:	
30.	<p>C: Lady commented, "We have dealt with many different operators and our experience is that they can cause us some serious impacts. Living through and watching our community in Nuiqsut go through this process, and the losses they have sustained from the industry, it's very devastating when we don't have resources in our ice cellars to return to. With the increase in activities happening around Barrow, there have been a lot of communication and flight activities that impacts hunting and harvesting. There are also concerns about the impacts to our fishing. There are also concerns about the impacts on what's happening out there and the health of our waters, lands and us because all of these things come into us. But when you cause us to have the loss of a whale you may impact a whaling crew and also a whole village. You don't just impact us for a day, you impact us for a whole season. There are many activities that are associated with this when this does not happen, when we do not have a successful whaling harvest. The sharing, the giving of the knowledge from our elders, to our young people. The story telling, the traditional uses of generations, all of these are impacted when you have generations that are impacted when you are changing these stories and add the conflict with the changes in climate. All these things we are unsure of what's happening, but we know that if we have unsuccessful harvesting. The sharing, families are impacted. It is so important, for the health of our bodies, for the health of our babies, for the health of our future generations, to continue being l̄n̄upiat in our land and water. And that's what we want to be in spite of the changes you are going to bring to us because you will bring changes. You will cause changes to harvest, we've had young people who don't want to hunt anymore, because they know the conflict that is already occurring and that they are going to have difficulty in harvesting. Those are very difficult stories when we don't have our animals to teach the young people to cut up our foods in a traditional manner. Or we don't have our special foods to give during our feasting or during our potlucks when we feed our families. These are very important. We have elders who depend on the fish when they are sick, sometimes it's the only food they can eat. We can't have you continue to take these foods away from us, we've seen it already happen. We've seen multiple species taken away from us from seismic activity. We've got impacts onshore as well, you can deflect caribou, you can deflect birds, you can deflect many of the animals that we needed to feed our families. So these are very important things, and its not just a one generation that's impacted. As we tell these stories to our younger ones and other generations that are impacted by these things. We've seen that the animals can become very agitated from the process. The risk for our whalers while they are out in the boats, we saw damages to our boats in Nuiqsut. We saw the loss of a whaling vessel and people getting off the boat at the very last seconds. I don't want to see that happen here in Barrow. I don't want to see or hear the stories of people who lose their tradition and culture and the hardships that come from not being able to feed their families. These are serious concerns. And this is our daily lives that we are facing every day."</p>
31.	<p>C: RE commented, "My concern is you being a new entity coming into our ocean, even though you guys are from the eastern part of the ice pack, we all have been devastated by the industry. I was 17 when I started working for the oil field and now I am 62 and that's how long we've been putting up with the companies. My biggest concern is that we do a better sound system to do seismic. The devastation that these dbs occur, I would recommend that TGS try to find some other source of sound. The dbs are very devastating, I know, I was on a vessel for 3 months and we shot every 6 seconds. We only revved up once and shut down once. I was on a Chinese vessel called the Discovery. 190 – 220 dbs in very devastating, I don't know how else to explain it. It makes a big boom and shakes your vessel. I was on a 230 foot vessel and it shakes your rails. I recommend TGS finds another source of sound."</p>
GENERAL OBSERVATIONS:	
<p>A Barrow elder, Mary Brower, did a prayer before the meeting started. The Barrow interpreter, Etta Fournier, translated the meeting.</p>	



**ATTENDANCE SIGN-IN SHEET
BARROW, ALASKA
January 29, 2013**

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) DAVID P. HOPSON	Self	367-9312	N/A	Bx 753 Barrow, AK.
2) Johnny Ningsok	"	#852-6916 367-3276	N/A	Box 103 Barrow AK 99723
3) Pauline Ningsok	Self	367-4452 852-7034	N/A	Box 1717 BRW, AK ☺
4) BRUCE REFORD	Self	367-3614	refordbruce@ yahoo.com	Box 2341 BRW AK 99723
5) RICK L RICE	Self	852-7647	—	PO 1230
6) Grier Sanders	Self	367-4701	grier-sanders24 @hotmail.com	Box 1903
7) Ron Saganna	Self	852-0422	w.f.t.m@hot mail.com	Box 224
8) John I. Brower		852-7945		Box 2103 BRW, AK



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 BARROW, ALASKA
 January 29, 2013

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11) Johnson Jim Maschena	Self	855-1095		Box 1918
12) Robert Edwardsen Jr	Self	852 6357		Box 996
13) Kunnan Stackhouse	3 Kids + ne	852-2360	1stackhouse@asrc.com	Box 574
14) David Thompson	Goof	6179		1631
15) Nancy Alsosack	Self	5265		791, BRW
16) William Aguilera	Self	575 3688		1337 BRW, AK



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18) Durt Heber Heber	Self			1888 Barrow. AK
19) Edward Edward				
20) Glenn Sielak	self	8523624		Box 1532
21) Rebecca Brower	Self	2-4478		Box 625
22) Kate Brower	Self	8523624		Box 1532 BRWAK 99723
23) Deano Olemann	Self	227-0284		Po Box 526
24) MARYJO Brower	SELF	227-7961		Box 526



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50) DA Shelley	self	907-50550		PO Box 1630
51) David Sagama	self	852-6960		PO Box 729
52) Perry TE Koon	Self	852-6960 367-4214		PO Box 282
53) Lucy Benson	Self	852-6877		Box 357 Barrow 99723
54) Rosemary Anderson	self	2133		PO 2843 Barrow
55) Emma Huntsman	self	852-3347		1534 Barrow AK 99723
56) Rose Ojeara	Self	367-6547		281 Barrow, AK 99723



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57) Jason Sielek	self	855 0920		PO BOX 198 BRW, AK 99723
58) Brent Hutchison		855-1284	Hutchison@Tegnaul	P.O. BOX 1033 BRW AK 99723
59) Ronald E. Simms	self	878-1948	N A	Box 863 Barrow
60) Josephine H	self	8522930		Box 2093 BRW, AK
61) Mary Brower	self	852-7945	-	Box 61 Barrow, AK 9972
62) Rita Grace Okpala	Self	367-6646	-	Box 431 BRW, AK 99723
63) Charmaine Keleak	Self	852-7867		Box 74 BRW, AK 99723
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65) FRED Ahmaogak		367-6410		99723 Po Box 1538 Barrow AK
66) Frederick Tule Sr	self	N/A	FrederickTuleSr@hotmail.com	Gen del Barrow AK 99723
67) Ruth Adams	Self	852-7761	N/A	BX 347 Barrow AK 99723
68) Patricia Marie Aveoganna	self	367-6189	N/A	Barrow AK, -99723-
69) James LEE Tuckfield	Self	367-3344	N/A	Barrow AK 99723
70) Olive Hutchison		852-6671 878 6671	olivehutchison@gmail.com	PO Box 1033 Barrow
71) Charlotte Ahsoycah		852-7383	N	Box 2044
72) Klop Ahkiyaa	self	852-8749		Box 1442



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 BARROW, ALASKA
 January 29, 2013

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73) George Iteka	Seniors	750 0552		Barrow, AK 99723
74) Lucy Anashugak	self	878-8920	atqaan anashugak@gmail.com	Box 531
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76) Miranda Rexford Brown	age 51	4058	brownies eight@	Box 1295 Barrow
77) Miranda Brown	age 6	4058	hotmail. COM	same
78) Chalmer Sorahiz		878-1007		P.O. Box 1896 Barrow, AK
79) Rubylynn Pathstah		855-0646		P.O. Box 1264 Barrow
80) MAX ADAMS		855-0643		P.O. Box 26 Barrow, AK



ATTENDANCE SIGN-IN SHEET
 BARROW, ALASKA
 January 29, 2013

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
81) Donat Browal		852-7624		
82) Steven Hays		855-1526		
83)				
84)		,		
85)				
86)				
87)				
88)				

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Native Village of Kotzebue Leadership Meeting		
Meeting Location	Kotzebue, Alaska		
Meeting Facility	Nullagvik Hotel (Private Cafeteria Room)		
Date and Time of Meeting:	January 30, 2013 (5:00 pm – 6:30 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Inuuteq Stotts (IS)	AES
Zig Doborzynski (ZD)	TGS	Dennis Tiepelman (DTI)	Native Village of Kotzebue
Mari Smultea (MS)	AES/SES	Daniel Thomas (DTH)	Native Village of Kotzebue
Megan Blees (MB)	AES	Jennifer Snider (JS)	Native Village of Kotzebue
Robin Demoski (RD)	AES		
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, ZB, MS, MB, IS. & RD	1 hr
2.	Question and Answer Period	Native Village of Kotzebue	30 mins
Item	Action Item	Action By	Follow up Deadline
1.	TBD	TBD	TBD
KEY ISSUES:			
1.	Project design/description – general question: Will you use one or two vessels?		
2.	Stakeholder engagement – North Slope Borough: How was the response from the North Slope Borough?		
3.	Project design/description – general question: This project is ice free?		
4.	Project design/description – general question: Who has ownership of the data?		
5.	Project design/description – general question: You can control the depth of the hydrophones?		
6.	Project design/description – logistics: Where will this vessel be registered? These vessels will go hand in hand?		
7.	Project design/description – logistics: So your vessels will have enough fuel for going back and forth?		
8.	Project design/description – seismic: Does the sound only go down and up? Can it come back down?		
9.	Project design/description – general question: How many years has TGS done this kind of work?		
10.	Stakeholder engagement – environmental NGOs: Is the Open Water meeting the big one?		
DISCUSSION ITEMS:			
1.	Question (Q): DTI asked, “How is AES affiliated with TGS?” Answer (A): TN replied, “TGS has contracted work to AES with permitting and stakeholder outreach.”		
2.	Q: DTI asked, “Are you surveying the vertical or horizontal area?” A: ZD replied, “Both. We are surveying the white lines.”		
3.	Q: DTI asked, “Will you use one or two vessels?” A: ZD replied, “Two vessels.”		

**NATIVE VILLAGE OF KOTZEBUE LEADERSHIP MEETING
JANUARY 30, 2013**

DISCUSSION ITEMS:	
4.	Q: DTI asked, "How was the response from the North Slope Borough?" A: TN replied, "Good, the questions were varied. John Hopson from the Alaska Eskimo Whaling Commissioner from Wainwright asked questions on distance from the project area."
5.	Q: DTI asked, "You are using one line?" A: TN replied, "Yes."
6.	Q: DTI asked, "This project is ice free?" A: TN replied, "Yes."
7.	Q: DTI asked, "Who has ownership of the data?" A: ZD replied, "TGS owns it then we license it to interested companies."
8.	Q: DTH asked, "You can control the depth of the hydrophones?" A: ZD replied, "Yes, the hydrophones movement range is 10 meters."
9.	Q: DTI asked, "3D seismic is more specific?" A: ZD replied, "Yes."
10.	Comment (C): DTI commented, "Statoil has been here with the Native Village of Kotzebue. They have given us an update this past summer."
11.	Q: DTI asked, "Where will this vessel be registered?" A: TN replied, "All the vessels will have to come into Dutch Harbor and be inspected by the Coast Guard and pass the federally regulated inspections."
12.	Q: DTI asked, "These vessels will go hand in hand?" A: TN replied, "Yes the vessel will be a couple out in front. Protected Species Observers (PSOs) will be onboard looking for marine mammals to help us with our mitigation for operations." A: ZD replied, "3D seismic vessels require more support vessels. We are doing 2D seismic and will have one vessel."
13.	Q: DTI asked, "So you are in the mercy of the sea?" A: ZD replied, "Yes. We can operate in 3-4 meter seas."
14.	Q: DTH asked, "So your vessels will have enough fuel for going back and forth?" A: TN replied, "We are still working on those logistics. In 30-35 days we will do a crew change and then do a refuel. We will do it once. We are still trying to figure out if it will be at Wainwright."
15.	Q: DTI asked, "So once you are there you are there for the duration?" A: TN replied, "That is right."
16.	Q: DTI asked, "Is there facilities to help you on the Russian side as far as ports?" A: ZD replied, "There are ports out there but no."
17.	C: DTH commented, "The sound varies in depth." A: MS replied, "Yes it does."
18.	Q: DTH asked, "Does the sound only go down and up? Can it come back down?" A: ZD replied, "There are a variety of different modes. One of them is that the sound can come up and hit surface of the water. The other way is that the sound can hit the seabed and reflect up or it can travel along the seabed for a distance then be reflected up. So essentially there are different ways sound can be transmitted back into the cone."
19.	Q: TN asked, "Where are the belugas located? Across the sound?" A: DTI replied, "It's the main coast going north to Kivalina and Point Hope. Where the spit is." A: JS replied, "You can also seem that Sisualik." A: DTH replied, "In the shallow waters is where they give birth."
20.	Q: ZD asked, "The belugas come through here in late June early July is that right?" A: DTI replied, "Somewhere around there." Q: JS replied, "It varies on when the ice breaks up."
21.	Q: DTH asked, "How many years has TGS done this kind of work?" A: TN replied, "For 30 years but it is our first time in Alaska."
22.	Q: DTI asked, "On page 12, will TGS be funding the Communication Center?" A: TN replied, "Yes, the location will be dictated by AEWC, NSB, and other players. The location will most likely be in Point Lay."

NATIVE VILLAGE OF KOTZEBUE LEADERSHIP MEETING
JANUARY 30, 2013

DISCUSSION ITEMS:	
22.	Q: DTI asked, "Is the Open Water meeting the big one? And is it open to the public?" A: MB replied, "It is primarily the National Marine Fisheries Service puts it on then industry entities do presentations. A lot of communities are represented and non-governmental organizations that have concerns with activity. It is all recorded and documented."
23.	Q: IS asked, "When we attempt to make a meeting with the Kotzebue Tri-Lateral committee should we contact the Native Village of Kotzebue or the City of Kotzebue?" A: DTI replied, "Either way. The City is taking the leading role. You can contact us as well and we will exchange information with the other entities. The City has more bodies to coordinate information."
24.	Q: RD asked, "The Kotzebue Tri-Lateral committee meetings are quarterly?" A: DTI replied, "They are quarterly and are subject to availability."
GENERAL OBSERVATIONS:	



ATTENDANCE SIGN-IN SHEET
KOTZEBUE, ALASKA (Native Village of Kotzebue)
January 30, 2013

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) Innuveg Stotts	AES			
2) Troy Nelson	TGS			
3) Robin Demoski	AES			
4) Mari SMULTEA	SES			
5) Zig Doborzynski	TGS			
6) Megan Brees	AES			
7) Daniel Thomas Jr	IRA Kotzebue Native Village			
8) Dennis Trepelman	IRA Native Village of Kotzebue	472- 3467	dennis.trepelman@ira.org	P.O. Box 296 Kotzebue 99752



ATTENDANCE SIGN-IN SHEET
KOTZEBUE, ALASKA (Native Village of Kotzebue)
 January 30, 2013

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
9) Jennifer Snider	IRA	442-3467	Jennifer.Snider@ira.org	Po box 276 Kotzebue Alaska 99752
10)				
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14)				
15)				
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Plan of Cooperation Meeting for Proposed 2013 2D Seismic Survey Chukchi Sea

- Who:** TGS Geophysical Company (TGS)
- What:** To introduce TGS Plan of Cooperation and obtain feedback
- When:** Thursday, January 31, 2013
from 7:00 pm–9:00 pm
- Where:** Katimmavik Meeting Room
Nullagvik Hotel
Kotzebue, Alaska

Refreshments and Door Prizes

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Kotzebue Plan of Cooperation Community Meeting		
Meeting Location	Kotzebue, Alaska		
Meeting Facility	Nullagvik Hotel (Katimmavik Conference Room)		
Date and Time of Meeting:	January 31, 2013 (7:00 pm – 8:50 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Brianne Atoruk	
Zig Doborzynski (ZD)	TGS	Lydia Killbear	
Mari Smultea (MS)	AES/SES	Gordon Killbear, Sr. (GK)	
Megan Blees (MB)	AES	Janet Mills	
Robin Demoski	AES	Danny Thomas, Jr. (DT)	Native Village of Kotzebue
Inuuteq Stotts	AES	Abe Snyder	NANA
Jennifer Thomas		Helen Barter	
Ruthie Thomas		Noah Naylor	Northwest Arctic Borough
Cyrus Harris		Lorena Williams (LW)	
Etta Tall		Whittier Williams	
Alison Ralston		Ken Stein	
Margaret Ferreira		Ukallaysaaq Okleasik	
Dianne Okleasik		Yiyuk Henry	
Ester Davidovics		Cora Downey	
Dan Henry, Sr.		Colleen Sheldon	
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, ZB, & MS	1 hr 30 mins
2.	Question and Answer Period	Community	20 mins
Item	Action Item	Action By	Follow up Deadline
1.	Meeting minutes requested.	Abraham Snyder	TBD
KEY ISSUES:			
1.	Project design/description – general question: Is this program 2D or 3D?		
2.	Project design/description – general question: The line is surveyed once?		
3.	Project design/description – general question: Will you study the environment and marine mammals after your seismic activity?		
4.	Project design/description – marine mammal mitigation: How far away are you from the marine mammals?		
5.	Environmental effects – seismic: You mentioned the db sounds. What are the affects to fish?		
6.	Project design/description – general question: How many miles do the sounds affect?		
7.	Environmental effects – seismic: How about the marine mammals' food source?		
8.	Environmental effects – seismic: Have they done studies on the affects to the animals between the seismic surveys?		

KOTZEBUE PLAN OF COOPERATION COMMUNITY MEETING JANUARY 31, 2013

KEY ISSUES:	
9.	Environmental effects – seismic: How have the seismic sounds affect the whale migrations?
10.	Project design/description – general question: You said seismic sound travels a certain distance?
11.	Project design/description – general question: Can you please explain how seismic travels?
12.	Environmental effects – seismic: I've heard whales have been beached in Point Hope. Does seismic do that?
13.	Project schedule – general question: Is this a multi-year program?
14.	Project design/description – project data: What happens to your data after the survey program?
15.	Stakeholder engagement: general question: How far are you from Kivalina? Do you guys plan to visit Kivalina?
16.	Project schedule – fuel exchange: Can you mention the fuel exchange in your schedule?
17.	Environmental effects – spill prevention and response: What happens with oil spills?
18.	Project design/description – general question: Will you be drilling?
DISCUSSION ITEMS:	
1.	Question (Q): DT asked, "Is this program 2D or 3D seismic?" Answer (A): TN replied, "The program is 2D."
2.	Q: DT asked, "The line is surveyed once?" A: TN replied, "That is correct. Thank you for mentioning that."
3.	Q: Man asked, "Will you study the environment and marine mammals after your seismic activity? How far away are you from the marine mammals?" A: MS replied, "In order to apply for this we have to write a report that reviews all the literature. TGS submits it to the National Marine Fisheries Service. That goes on public online and we meet with the biologists like Robert Suydam for the North Slope Borough and other biologists that review it. The National Marine Fisheries Service put it online to make it available to everyone. In a later slide we will go over the marine mammal mitigation."
4.	Q: Man asked, "You mentioned the db sounds. What are the affects to fish?" A: MS replied, "There have been studies on fish in captivity. Like the whales they move away from the sound. There haven't been any studies that I know of in the wild. The National Marine Fisheries Services recognizes those affects and that's why they make them regulate here. They have also done studies of crab larvae in captivity too. Those too will move out of the way. Some of them that are right next to the sound source can die."
5.	Q: Man asked, "How many miles do the sounds affect?" A: MS replied, "It depends on how loud the sound is. TGS is required to estimate how big that area is. In this permit application we had to estimate in square kilometers. I don't have those numbers with me but I can show you in my book after the meeting."
6.	Q: Man asked, "How about the marine mammals' food source?" A: MS replied, "Studies have shown fish to move away. We don't know how far. We only know from studies in captivity."
7.	Q: Man asked, "Have they done studies on the affects to the animals between the seismic surveys?" A: MB replied, "There has been what is called the Chukchi Sea Environmental Studies Program. The study was around the lease block areas where they did 3D seismic. The report has baseline information. They do benthic and fish and they are looking and examining the ecosystem in the area. There are 12 elements of surveying they are doing including benthic and fish. This report is available online. I can give you website if you are interested in that."

KOTZEBUE PLAN OF COOPERATION COMMUNITY MEETING

JANUARY 31, 2013

DISCUSSION ITEMS:	
8.	<p>Q: Man asked, "A couple years ago some dead animals were washed up. Do you know anything about that from seismic surveying?"</p> <p>A: MB replied, "It is important to examine what is washed up. I know from experience on seismic vessels that everyone time we encounter a dead animal we have to shut down all activity and examine the animal. We can't touch the animal but what we can do is look at the animal and try to identify whether it was a freshly dead animal and if there was any indication that the injury could have been caused by seismic activity such as blood coming out of ears or something to that nature. Those are things we look for."</p>
9.	<p>Q: Man asked, "How do you determine the animal is not affected by seismic sound?"</p> <p>A: MB replied, "Many of the times the animal is not fresh they are very decayed. You can assume it did not happen from the current presence of the vessel. Most of my experience has been that."</p> <p>Comment (C): MS commented, "The other thing is on vessels there is always an Iñupiaq onboard. The National Marine Fisheries Service requires that the operators assume that it could be from the seismic that is why they make them stop. The operators have to describe the condition of the body and they have to take pictures of the body. I have done a seismic survey in which we had to shut down for two weeks until they examined the animals."</p>
10.	<p>Q: Man asked, "How have the seismic sounds affect the whale migrations?"</p> <p>A: MS replied, "That is a good point because there are studies that show that they change their movement patterns. That is why Megan and I are helping TGS with how they can operate away from the whale migration corridors. For example, when the study begins in July or August they start after the bowhead and beluga subsistence hunts are done. In the fall they move over 200 miles offshore into international waters when the bowhead and belugas move back through. TGS is doing what they can to avoid the migrations. We have these meetings to ask you guys to tell TGS what it is they can do to avoid interfering with any of the subsistence hunts and migratory pathways."</p>
11.	<p>Q: Man asked, "Will the seismic activity affect the fishing?"</p> <p>A: MS replied, "I can confidently say no. They are operating so far offshore and they will not have any affects in the near shore area. Any affects would be localized near the ship and they would be way offshore."</p>
12.	<p>Q: Man asked, "You said seismic sound travels a certain distance?"</p> <p>A: ZD replied, "Think of air sound. It travels a certain distance and as it travels through the air it gets weaker and weaker. The same thing happens to a seismic sound. A half a mile from the vessel the seismic sound goes down to 190 db. There is a 60 db difference between air and water sound. For example 130 db in air is 190 db seismic."</p>
13.	<p>C: Man commented, "I lived in Point Lay and beluga whales were studied to see where they would go. They found out some of them went almost to the pole. They also traveled to this area. Then they come back to shore."</p> <p>A: MS replied, "That is true. Recent satellite tagging with the bowhead, seals, and belugas show that some of those animals way off to Russia. Those animals will hear the sound but they predict depending on the animal and the sound they will clear out in different levels. That is why the company has to estimate how many of those animals will hear the sound."</p>
14.	<p>C: GK commented, "Back in the 60's there was seismic going on when I was living in Barter Island. I remember when they used real explosives. I hope now that they are doing it here it isn't as destructive."</p> <p>A: MS replied, "No it is a different sound. Your right, explosions close to an animal can kill an animal. Were they using dynamite?"</p> <p>A: GK commented, "Yeah."</p> <p>A: MS replied, "This is a very different sound."</p> <p>A: ZD replied, "The airgun came out shortly after the war. Originally it was intended to make sounds. The industry has been required to stop using dynamite. The airgun became the alternative. The airgun uses high pressure air that is pushed out of a steel cylinder and creates an air bubble and pushes the water."</p>

KOTZEBUE PLAN OF COOPERATION COMMUNITY MEETING JANUARY 31, 2013

DISCUSSION ITEMS:	
15.	<p>Q: DT asked, "Can you please explain how seismic travels?"</p> <p>A: ZD replied, "If you create a sound in water it will not come into the air. Water is a good reflector. In seismic we create a pulse and the reflection coming off the water creates a sound that adds together with the original pulse to create a strong signal. The signal travels down through the water into the ground."</p>
16.	<p>Q: Man asked, "I've heard whales have been beached in Point Hope. Does seismic do that?"</p> <p>A: MS replied, "There definitely has been beaching of whales that have been associated with Navy sonar. I would be interested to see your study on seismic. As far as I know there is nothing that has shown seismic to do that."</p>
17.	<p>C: Man commented, "You had mentioned the db sounds. The seismic sound will affect the marine mammals when they move away. When they hear the sound they will remember it and move away. Each time they hear it throughout their life they will move away. That is similar to people when we do something we go to it again."</p> <p>A: MS replied, "There are studies that show that. They will avoid the area at different distances. I will let Troy discuss that in a few slides. If you have any concerns let us know more about that."</p>
18.	<p>Q: Lady asked, "Is this a multi-year program?"</p> <p>A: TN replied, "This program is just for 2013."</p>
19.	<p>Q: Man asked, "What happens to your data after the survey program?"</p> <p>A: TN replied, "It comes back to TGS. We have a processing division which process the data, clean it up, and take the noise out of it. The data is put into our library and we do license it to oil and gas companies. It will help the oil and gas companies make better decisions in where to drill their wells."</p>
20.	<p>Q: Man asked, "How far are you from Kivalina? Do you guys plan to visit Kivalina?"</p> <p>A: TN replied, "Through our stakeholder outreach with AES, who is identifying communities, Kivalina is not one of communities we are consulting with. No."</p>
21.	<p>Q: DT asked, "Can you mention the fuel exchange in your schedule?"</p> <p>A: TN replied, "The vessels will acquire the first part of the program. Within 35 days we may look into Wainwright as an option for fuel exchange. We will have to refuel once. TGS will do a crew during that time with a landing craft. We have been talking to Olgoonik Corporation for options in that as well. We will do that once and once only."</p>
22.	<p>Q: DT asked, "What happens with oil spills?"</p> <p>A: TN replied, "We will be held under stringent environmental regulations. We have procedures put in place to make sure that doesn't happen. It is heavily regulated."</p>
23.	C: Most comments were about the effects of seismic activities, not oil.
24.	<p>Q: LW asked, "Will there be more exploration? Will you be drilling?"</p> <p>A: TN replied, "TGS does not know. TGS does only seismic exploration, we do not drill."</p>
25.	C: Man commented, "NWAB does have a planning commission, TGS should meet with them. They meet quarterly."
26.	<p>Q: Man asked, "PSOs will be hired by whom?"</p> <p>A: TN replied, "ASRC Energy Services will select PSOs."</p>
GENERAL OBSERVATIONS:	
The Kotzebue interpreter, Whittier Williams, did a prayer before the meeting. Whittier and Lorena Williams translated the meeting. Gordon Killbear, Sr. turned in a comment card.	



**ATTENDANCE SIGN-IN SHEET
KOTZEBUE, ALASKA
January 31, 2013**

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
25) Jennifer Thomas	self	412-0739	jennifer.thomas@manilaq.org	P.O. Box 64 Kotzebue, AK 99752
26) Ruthie Thomas	self	412-1360	ruthiethomas@yahoo.com	P.O. Box 64 Kotzebue, AK 99752
27) Cyrus Harris	self	412-3027	charris@manilaq.org	Box 755 Kotz. AK 99752
28) Etha Tall	self	434-2035	tallshortwoman@kotzebue.ak.us	2027 Vine AK 99762
29) Alison Ralston	self	412-0418	alralston@manilaq.org beep+beep5@yahoo.com	P.O. Box 1443 Kotzebue, AK
30) Margaret Ferreira	self	442-3583		Box 114 Kotzebue, AK
31) Dianne Olesik	self	442-3963		Box 849 Kotzebue AK 99752
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**ATTENDANCE SIGN-IN SHEET
KOTZEBUE, ALASKA
January 31, 2013**

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35) Calvin Stein		442-4150		P.O. Box 113 99752
36) Lydia Kullber		442-2796		Box 916 Kotz.
37) Gordon Kullber		442-2790		Kotz
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**ATTENDANCE SIGN-IN SHEET
KOTZEBUE, ALASKA
January 31, 2013**

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67) Helen Barter	self	4600		222
68) Gladys Neeson	Self	442.4905		Box 233 OTZAK
69) August Neeson Sr	Self	442-6002		Box 225 Kotzebue AK
70) North Naylor	NAB	442-2500		
71) Lorena Williams	Translating Myself	412-1125		Box 742 Kotzebue AK 99752
72) Whit Williams	Translator Self	412-1428		"



ATTENDANCE SIGN-IN SHEET
 KOTZEBUE, ALASKA
 January 31, 2013

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
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74) Ukallay 5229 outessik	self			849 / 99752
75) Yivuk Henry	self	505 205 7737		35 / 99752
76) Kierstan	self	442-2004		Po Box 242 Kotzebue AK 99752
77) Cora Downey	self	442-4522		
78) Colleen Sheldon	Kobuk	998-2190		Box 51059 99754
79) Ewen Wesley	Noatak			
80)				



2013 Chukchi Sea 2D Seismic Survey

Comment Card

We appreciate your comments!

Please fill out the areas below:

Name: GORDON W. KILLBEAR SR.

Address: P.O. BOX 916
KOTzebue, Alaska

Email: 99752

Phone: 442-2790

*Thanks for keeping
us informed*
G Killbear

THANK-YOU —
IN THE END IF WE
STILL HAVE OUR NATURAL
LIFE, WE WILL BE HAPPY
FISH-GAME-BIRDS
THANK-YOU AGAIN!



Plan of Cooperation Meeting for Proposed 2013 2D Seismic Survey Chukchi Sea

Who: TGS Geophysical Company (TGS)

**What: To introduce TGS Plan of Cooperation and
obtain feedback**

**When: Friday, February 1, 2013
from 7:00 pm–9:00 pm**

**Where: Community Center
Point Lay, Alaska**

Refreshments and Door Prizes

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Point Lay Plan of Cooperation Community Meeting		
Meeting Location	Point Lay, Alaska		
Meeting Facility	Kali School (Library Room)		
Date and Time of Meeting:	February 1, 2013 (7:00 pm – 9:00 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Misty Plymale	NVPL
Zig Doborzynski (ZD)	TGS	Cyrus Nukapigak	
Mari Smultea (MS)	AES/SES	Lily Anniskett	NVPL
Megan Blees (MB)	AES	Eva Anniskett	
Robin Demoski	AES	Maniksaq Nukapigak	
Inuuteq Stotts	AES	Calvin Lane (CL)	North Slope Borough (NSB) Fuel
Marty Awalín (MA)	Cully Corporation	Lucy Neakok	Arctic Slope Regional Corporation
Betsy Stalker		Ella Mae Stalker	
Esther Tuckfield		Warren Lampe, Sr.	NSB Wildlife Management
William Stalker		Alora Sampson	
Matthew Lisbourne		Cilia Attungowrak	
Dorothy Pikok		Gertrude Curtis	
Willard Neakok (WN)	Native Village of Point Lay (NVPL)	Patrick Tukrook	
Harry Tukrook		Mary Curtis	
Robert Lisbourne		Danny Pikok III	
Martha B. Tazruk	NVPL	Joanne Neakok	
Rhoda Rexford		Daniel Pikok	
Susie Neakok		Nathan Henry, Sr.	
Jack Henry		Cheryl Everett	
Jacob Stalker, Jr.		Kimberly Neakok	
Fred Tuckfield		Mary Ann Neakok	
Shannon Lisbourne			
Item	Agenda Item	Representative	Duration
1.	TGS Presentation	TN, ZB, & MS	1 hr 30 mins
2.	Question and Answer Period	Community	30 mins
Item	Action Item	Action By	Follow up Deadline
1.	I would like to know the sound of the airguns.	WN	
2.	We have been trying to figure out our depth. Do you have that information?	MA	
3.	Can you give us sea ice information?	MA	

POINT LAY PLAN OF COOPERATION COMMUNITY MEETING
February 1, 2013

KEY ISSUES:	
1.	Project design/description – general question: What does seismic acquisition mean?
2.	Project design/description – general question: Has TGS been successful in other areas?
3.	Project location – general question: Where is the ice cap on the map?
4.	Project schedule – general question: When do you plan to start?
5.	Project schedule – general question: How long is this program?
6.	Project design/description – general question: With the information do you sell it to the highest bidder?
7.	Project design/description – general question: Do you do seismic?
8.	Project design/description – general question: How well do you handle the storms?
9.	Project design/description – seismic sound: Do you have a sound of seismic?
10.	Project design/description – seismic sound: How loud is the seismic sound?
11.	Project design/description – general question: How long have you done seismic and are you successful in finding data?
12.	Project design/description – seismic sound: How deep does the seismic go?
13.	Environmental effects – seismic sound: In your 30 years of operations have animals started washing up on the beach?
14.	Environmental effects – seismic sound: Has seismic affected the whales?
15.	Project design/description – general question: Will there be a communication center?
16.	Project design/description – general question: Will you be on a straight line? Do the currents affect the survey?
17.	Project design/description – general question: We have been trying to figure out our depth. Do you have that information?
18.	Project design/description – general question: Does the ice make sounds in your recorder? Does it affect the reading?
19.	Project design/description – general question: Can you give us sea ice information?
20.	Project design/description – regulatory: When you go to international waters will you comply with the same rules?
21.	Project design/description – marine mammal mitigation: How many local Marine Mammal Observers (MMOs) will you have on each boat?
22.	Project location – general question: You guys will have more tracts in the Chukchi Sea than the Beaufort Sea?
23.	Project design/description – marine mammal mitigation: It is safe to say if we see animals dead on the coast during your schedule it is from you?
24.	Stakeholder engagement: seismic sound: Did you send a sound to the stakeholders?
25.	Project schedule – general question: Your program is one season?
26.	Project design/description – regulatory: Will you start training MMOs?
27.	Stakeholder engagement – general question: Could you give us information on when, where, how many walrus there were? A report please?
28.	Environmental effects – waste management: Will there be greywater issues?

POINT LAY PLAN OF COOPERATION COMMUNITY MEETING

February 1, 2013

KEY ISSUES:	
29.	Environmental effects – seismic sound: Have you looked at how you may affect the bottom feeders?
30.	Project design/description – general question: Who are they?
DISCUSSION ITEMS:	
1.	Comment (C): WN commented, “Not only beluga whales but other animals and migrations.” Answer (A): TN replied, “Yes, later in our slide we will talk about our operations and that is one of the main focuses to make sure we haven’t start till the migrations have passed.”
2.	Question (Q): Man asked, “What does seismic acquisition mean?” A: TN replied, “In later slides I will get into that.”
3.	Q: MA asked, “Has TGS been successful in other areas?” A: TN replied, “Yes.”
4.	Q: MA asked, “How deep is it in those Russian waters where they found oil and gas?” A: ZD replied, “Along the Norwegian shelf it is probably 700 feet.”
5.	Q: MA asked, “Where is the ice cap on the map?” A: TN replied, “It is higher up.”
6.	Q: Man asked, “When do you plan to start?” A: TN replied, “We are hoping to start in the middle of July or beginning of August.”
7.	Q: Man asked, “How many more years will they do seismic activities out in the ocean?” A: TN replied, “Companies will do it to identify and pinpoint locations where they might want to acquire leases or drill their wells. It does help them make better decisions and more exact decisions. How much longer? I’m not sure.”
8.	Q: Man asked, “How long is this program?” A: TN replied, “This program is for one year, 2013.”
9.	Q: Man asked, “Who has authority in international waters?” A: ZD replied, “There is no authority except for United Nations. The United Nations is making an effort to have the international waters to be put into their command.”
10.	Q: MA asked, “If you find something in international waters how does that play with the government?” A: TN replied, “When we submit our documents, permits, and applications to the National Marine Fisheries Service. They regulate our whole program. Not just within the U.S. waters but extending out of U.S. waters.” A: MB replied, “When we had conversations with the representatives of the National Marine Fisheries Service and what they said they are interested in the populations and not where the animals are necessarily. The animals that are in Alaskan waters don’t see that boundary line they can cross it. They apply the same regulations in the U.S. waters to the international waters. So the mitigation and monitoring program that we will have onboard the vessels will apply in the international waters as well.”
11.	Q: MA asked, “Are we the only country that does studies with marine mammals?” A: MB replied, “No, we are not the only country that does studies.”
12.	Q: Man asked, “So the U.S. could abide to the United Nation rules?” A: ZD replied, “They having been negotiating the Law of the Sea. It is trying to determine who is responsible for the different areas of the sea. They have been struggling with the international waters area.”
13.	Q: CL asked, “With the information do you sell it to the highest bidder?” A: TN replied, “No, they can all buy it.”
14.	Q: CL asked, “Do you get a piece of the pie from oil and gas companies?” A: TN replied, “No they don’t do that with us. We sell seismic data, we have people who interpret the data for various companies, and we have scientists that help them make decisions. When they discover oil they don’t give TGS anything.”
15.	Q: CL asked, “Do you do seismic?” A: TN replied, “No, TGS contracts everything. We don’t own any marine equipment.”

POINT LAY PLAN OF COOPERATION COMMUNITY MEETING
February 1, 2013

DISCUSSION ITEMS:	
16.	<p>Q: MA asked, "How well do you handle the storms?"</p> <p>A: TN replied, "The vessels can handle decent seas. About a 10-foot swells."</p> <p>A: ZD replied, "We can handle about 15-foot seas. If the seas get worse we shut down and ride out the storm."</p>
17.	<p>Q: Man asked, "When you're done with one line you go to the next one yes?"</p> <p>A: TN replied, "Yes."</p>
18.	<p>Q: WN asked, "Do you have a sound of seismic?"</p> <p>A: TN replied, "We will get you that information. We are still working on it."</p> <p>A: WN replied, "I keep hearing about it. I would like to know the sound of the airguns."</p>
19.	<p>Q: Man asked, "How loud is the seismic sound?"</p> <p>A: TN replied, "Right at the source it is 240 db. As soon it moves away it begins to dissipate. We have some good tables later on in our slides. We turn off the vessel when we see marine mammals. It is part of our marine mammal mitigation and monitoring plan. We are regulated to do this."</p>
20.	<p>Q: MA asked, "How long have you done seismic and are you successful in finding data?"</p> <p>A: TN replied, "30 plus years. We have been successful."</p> <p>A: ZD replied, "TGS shares are worth about \$56 a share. We made good profit this year."</p>
21.	<p>Q: MA asked, "How deep does the seismic go?"</p> <p>A: ZD replied, "For this type of survey we go about 6 to 8 miles down into the rock."</p>
22.	<p>Q: Man asked, "In your 30 years of operations have animals started washing up on the beach?"</p> <p>A: TN replied, "Not to my knowledge. Mari can speak more on this."</p> <p>A: MS replied, "The Navy sonar is the one when whales have been washed ashore. Sonar is a really high pitch sound. It is really loud. The whales have shown to their ears bleeding. Seismic is really low frequency. There hasn't been any wash ups that are related to seismic. Only to the sonar."</p> <p>A: MB replied, "There is no way to know why some animals strand. Some do it because they are sick. Some do it for other reasons. Sometimes animals just strand."</p>
23.	<p>Q: Man asked, "So the Navy has done it before?"</p> <p>A: ZD replied, "The one recorded example was a North Atlantic Treaty Organization (NATO) exercise where there were a number of ships that were searching for a stealth submarine. There wasn't just one sonar system there were 15 of them trying to locate this submarine. Some animals got crossed between these beams. That is what happened there was a big report on it. The Navy is not allowed to use these sonar systems anywhere near land."</p> <p>A: MS replied, "The whales that have been washed up are a specific kind of whale. A beak whale."</p>
24.	<p>Q: MA asked, "Has seismic affected the whales?"</p> <p>A: MS replied, "The whales have shown to move away from the sound."</p>
25.	<p>Q: MA asked, "Will there be a communication center?"</p> <p>A: TN replied, "We are attending the Alaska Eskimo Whaling Convention (AEWC) next week. We plan on having a communication center in Point Lay."</p>
26.	<p>Q: CL asked, "Will you be on a straight line? Do the currents affect the survey?"</p> <p>A: TN replied, "They will stay on line. They will adjust their navigation systems."</p> <p>A: ZD replied, "We don't know the currents. We have compasses in the streamer every 900 feet. We also have a GPS unit on the tail buoy. We have two GPS units on the source array and the vessel GPS. The streamer can bend quite a ways."</p>
27.	<p>Q: CL asked, "Have you studied the currents out there?"</p> <p>A: ZD replied, "We have past maps but we know they change. From year to year they change all the time."</p>
28.	<p>Q: Man asked, "Is that how deep our water is?"</p> <p>A: MS replied, "Yes. It goes deeper in international waters."</p> <p>C: ZD commented, "In international waters it goes about two and a half miles down."</p>
29.	<p>C: MA commented, "We have been trying to figure out our depth. Do you have that information?"</p> <p>A: TN replied, "I can get that information for you."</p>

POINT LAY PLAN OF COOPERATION COMMUNITY MEETING
February 1, 2013

DISCUSSION ITEMS:	
30.	Q: Man asked, "Does the ice make sounds in your recorder? Does it affect the reading?" A: TN replied, "Yes, the recorders will pick up the sound."
31.	Q: Man asked, "How about high wind?" A: TN replied, "Not so much because the cable is underwater." C: ZD commented, "When the wind blows here you create waves and they crash down on the ground which transmit sound in there. An ice flow or sea ice that cracks creates a sound almost as strong as of a seismic vessel. When you hear you see a jagged spike in the data. Its useless data we can't use it. That is why it is best to stay away from the ice."
32.	Q: MA asked, "Can you give us sea ice information?" A: TN replied, "Yes I use a website. It shows the extent of the sea ice. We have contracted a company name Canatech in Canada which will be assisting us in our weather and ice monitoring throughout our operations. They have looked at past years and showed us the models where past ice has been. We understand it changes from year to year." C: MS commented, "There is studies program." C: MB commented, "The study is named the Chukchi Sea Environmental Studies Program. The study has been funded by the different entities Shell, Conoco, and Statoil that have all worked in the Chukchi Sea in the last recent years. It is research vessels that go out and study 12 different disciplines. This data is publically available in their website. I can get it to you as well."
33.	Q: MA asked, "When you go to international waters will you comply with the same rules?" A: MS replied, "Yes, we have to."
34.	Q: MA asked, "How many local MMOs will you have on each boat?" A: MB replied, "Two to three MMOs."
35.	Q: CL asked, "You guys will have more tracts in the Chukchi Sea than the Beaufort Sea?" A: TN replied, "TGS is not operating and has never operated in the Beaufort Sea."
36.	Q: Man asked, "It is safe to say if we see animals dead on the coast during your schedule it is from you?" A: MS replied, "TGS has to agree to a law if anybody sees any harm or dead animals they have to stop all their operations until they determine how the animal died. They don't expect it to happen because it has never been documented."
37.	Q: Man asked, "So TGS is owned by ASRC?" A: TN replied, "No we have contracted ASRC Energy Services to help us with our permitting documents and our stakeholder outreach. There is no joint venture."
38.	Q: WN asked, "Did you send a sound to the stakeholders?" A: TN replied, "Not yet we are still working on it."
39.	Q: MA asked, "Your program is one season?" A: TN replied, "Yes."
40.	Q: WN asked, "Will you start training MMOs?" A: TN replied, "Next week we will have more discussions with AEWG and figure out our options from there. ASRC is going to assist us with training for all the MMOs onboard. We can update you regularly." C: WN commented, "We have three to four MMOs that have been trained already."
41.	Q: Man asked, "Could you give us information on when, where, how many walrus there were? A report please?" A: MB replied, "At the end of each season every company that works in these waters is required to produce a report of everything they have sited and mitigation action they have taken. Those will be available publically after 90 days. Once the survey is done, three months later those reports will be written and in those we will have the positions, locations, and all the sightings that have occurred. We can provide that information for you."
42.	Q: Man asked, "Will there be greywater issues?" A: ZD replied, "Grey water is supposed to be stored in tanks." A: TN replied, "They will be stored onboard."

POINT LAY PLAN OF COOPERATION COMMUNITY MEETING
February 1, 2013

DISCUSSION ITEMS:	
43.	Q: MA asked, "Have you looked at how you may affect the bottom feeders?" A: MS replied, "They have done some studies with crustaceans close to the seismic sound. If they are close they can die. Other than that, they haven't found that it would kill them in large amounts. In the last five years they go out and do bottom samples and they are starting to put that study together to see what is happening."
44.	Q: MA asked, "Who is 'they'?" A: MB replied, "It is the study I was talking about earlier that is supported by Shell, Conoco, and Statoil." A: TN replied, "The website is named Chukchiscience.com."
GENERAL OBSERVATIONS:	
A Point Lay elder, Esther Tuckfield, did a prayer before the meeting.	



**ATTENDANCE SIGN-IN SHEET
POINT LAY, ALASKA
February 1, 2013**

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
1) Martha Awalin	Cully Corp	569-2705	mawalin@cullycorp.com	5001 Eagle St. unit B Anchorage AK 99503
2) Mari Smulter	EE			
3) Betsy Stalker		907-833-0188	betsy_ella@hotmail.com	
4) Esther Tickford		907-833-2082	Esther Tickford	
5) William Stalker		907-833-1462	williamstalker21@yahoo.com	P.O. Box 59054 Pt. Lay AK 99759
6) Matthew Osborne		907-833-3663	matthew.osborne@hotmail.com	P.O. Box 59064 Point Lay AK 99759
7) Rhoda Rexford Rae Anne (Baby)				PO Box 59084 P12 99759
8) Dorothy Pikeok				



ATTENDANCE SIGN-IN SHEET
POINT LAY, ALASKA
February 1, 2013

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9) Willard P. Neakok	NUPL	350-9756	wneakok@yahoo.com	P.O. Box 59074 Point Lay, AK 99759
10) Harry Tuguvok		833 1349		Point Lay AK
11) Robert Lisbourne		833-4592		P.O. Box 59076 99759
12) Morde B. Tuguvok	NUPL	833-2028		Po Box 59078 Pt Lay AK 99759
13) SUSIE NEAKOK	self	unlisted		PO Box 93 Pt Lay, AK 99759
14) Jack V. Henry	self	833-2028		Box 59078 PT. LAY 99759
15) [Signature]	self	833-0130	inapiay2@yahoo.com	P.O. Box 59113 Point Lay, AK 99759
16) Fred [Signature]	Self	—	Full-blooded.inapiay@yahoo.com	P.O. Box 59037 Pt Lay, AK



**ATTENDANCE SIGN-IN SHEET
POINT LAY, ALASKA
February 1, 2013**

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17) Shawn Lisbourn		(907) 833-1469		Point Lay AK P.O. Box 59037
18) Misty Plymale	NUPL IRA Council	833-2575	pointlay@mupiat.gov .com	P.O. Box 59031 PIZ AK 99759
19) Cyrus Nukapigak	Self	/	/	P.O. Box 59081 PIZ AK 99759
20) Lily Anniskett	NUPL IRA Council	833-0023	/	P.O. Box 59011 PIZ AK 99759
21) Eva Anniskett	Self	833-0180		P.O. Box 59003 Pt Lay AK 99759
22) Maniksaq Nukapigak	Self	480-0297		P.O. Box 59117 Pt Lay, AK 99759
23) Calvin Lane	NSB Fuel hazmat specialist	833-0057		Box 59108 Pt. Lay, AK 99759
24) Lucy Neakok	ASRC	833-2005	lneakok@asrc.com	Box 59041 99759



**ATTENDANCE SIGN-IN SHEET
POINT LAY, ALASKA
February 1, 2013**

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
25) Ella Mae Stalker	self	(907) 599-0651	ella-mae-stalker@hotmail.com	P.O. Box 59117 Point Lay, AK 99759
26) Warren Lampese	USF wildlife mgmt. Point Lay Rep.	(907) 903-7986	whlampes@gmail.com	P.O. Box 59068 Point Lay, AK 99759
27) Alora Sumpsa		miss. cell (907) 833-0125		P.O. Box 59107 Point Lay, AK 99759
28) Cilia Atlungowrak		(907) 833-1542		P.O. Box 59058 Point Lay AK 99759
29) Bertrude Curtis		(907) 833-0007		P.O. Box 59095 Point Lay, AK 99759
30) Patrick Tukrook		907 833-0007		P.O. Box 59075 Point Lay, AK 99759
31) Mary Curtis		833-2015		PO Box 59103 POINT LAY, AK 99759
32) DANNY PIKOKIT		833-2616	danni boi3@hotmail.com	P.O. Box 59058 POINT LAY AK 99759



**ATTENDANCE SIGN-IN SHEET
POINT LAY, ALASKA
February 1, 2013**

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
33) JuAnne Neakok	Member	833-7854	alaalik2000@yahoo.com	Box 56034 Pt. Lay AK 99759
34) Daniel Pitok		833-2616	daniel_pitok@hotmail.com	PO BOX 5915
35) NATHAN HENRY JR		833-2041	natecher@yahoo.com	59095 Pt Lay AK 99759
36) Cheryl R. Henry		" " "	natecher@yahoo.com	59095 Pt Lay AK 99759
37) Carmalita A. Everett		907-833-0124		59018 Point Lay AK 99759
38) Kimberly Neakok		907-833-1606		Pobox 59065
39) Mary Ann Neakok		907-833-1609		Pobox 59065
40)				7



Plan of Cooperation Meeting for Proposed 2013 2D Seismic Survey, Chukchi Sea

Who: TGS

**What: To introduce TGS Plan of Cooperation and
obtain feedback**

**When: Thursday, February 28, 2013
from 7:00 pm–9:00 pm**

**Where: Qalgi Center
Point Hope, Alaska**

Refreshments and Door Prizes

www.tgs.com

Project Name:	TGS Geophysical Project Chukchi Sea 2D Seismic Survey		
Type of Meeting:	Point Hope Plan of Cooperation Community Meeting		
Meeting Location	Point Hope, Alaska		
Meeting Facility	Qalgi Center		
Date and Time of Meeting:	February 28, 2013 (7:00 pm – 8:50 pm)		
ATTENDED BY:	ORGANIZATION:	ATTENDED BY:	ORGANIZATION:
Troy Nelson (TN)	TGS	Ronald Oviok, Sr.	City of Point Hope
Mari Smultea (MS)	AES/SES	Dolly Oktollik	
Inuuteq Stotts	AES	Raymond Frankson	
Raquel Colvin	AES	Pete Lisbourne	
Joe Frankson		Roy File	
Steve Oomittuk (SO)	City of Point Hope	Amber Downey	
Luke Koonuk, Sr.		Nina Frankson	
Isaac Killigvuk		Ricky Nashookpuk	
Diana Oktollik		Enoch Tooyak	Native Village of Point Hope
Edna Nashookpuk		Phyllis Frankson	
Daniel Sage		Robert Kingik	
Andrew Oktollik		Aggie Attungana	
May J. Attungana		Sherrell Tooyak	
Henrietta Attungana		Andrew Nashookpuk	
Nina Oviok		Aileen Frankson	
Raymond Attungana		Morris Nashookpuk	
Shanna Nash		Maureen Nashookpuk	
Irma Hunnicutt		Billy Stone, Sr.	
Mike Dirk, Sr.		Nancy Stone	
Henry Attungana III		Dorcus Rock	
Ashley Kowunna		Martin Oktollik, Sr.	
Caroline Cannon (CC)		Sally Killigvuk	
Robert Dirk, Jr.		Roy Oviok	
Rose Stone		Pat Frankson	
Florence Oktollik		Macky Sage	
Gordon Oviok		Jan Vincent	
Marilyn Foxglove		Minnie Johnson	
Zach Lane		Bertha Long	
Tillie Teayoumeak		Bessie Kowunna	
George Kingik (GK)		Rex Tuzroyluk	
Katherine Tingook		Mae Hank (MH)	
Eric Nashookpuk		Rufus Johnson	
Ned Weber, Sr.		Aggie Kowunna	
Annie Attungana		Jake Timothy	
Rose Omnik		Ella Lisbourne	

POINT HOPE PLAN OF COOPERATION COMMUNITY MEETING
FEBRUARY 28, 2013

<u>Item</u>	<u>Agenda Item</u>	<u>Representative</u>	<u>Duration</u>
1.	TGS Presentation	TN & MS	1 hr 30 mins
2.	Question and Answer Period	Community	20 mins
<u>Item</u>	<u>Action Item</u>	<u>Action By</u>	<u>Follow up Deadline</u>
1.	NONE		
KEY ISSUES:			
1.	Project design/description – general question: What is the difference between the Kulluk and your vessel?		
2.	Project design/description – general question: How many people does the vessel hold?		
3.	Project design/description – seismic: How many db will you be doing on your vessel?		
4.	Environmental effects – fish: What kinds of impact will that have on the fish? Do you have people watching the fish?		
5.	Project design/description – traditional knowledge: What about Traditional Knowledge (TK). Are you using it? I hear you have biologists. We have always expressed to use the local traditional knowledge. There is traditional knowledge that we utilize that can be of help.		
6.	Project design/description – marine mammal mitigation: You will hire Marine Mammal Observers (MMOs)? Is it through ASRC?		
7.	Project design/description – general question: You get the seismic data yourself and you sell it to the oil companies?		
8.	Project design/description – general question: You are not an oil and gas company?		
9.	Project design/description – general question: I noticed you were comparing with the sound table. What is your vessel seismic sound?		
10.	Project design/description – general question: Can you please reiterate about the Plan of Cooperation (POC)?		
DISCUSSION ITEMS:			
1.	Question (Q): CC asked, “What is the difference between the Kulluk and your vessel?” Answer (A): TN replied, “The vessel is for seismic acquisition and not for drilling. We are not doing oil and gas drilling. It is just for seismic acquisition.”		
2.	Q: CC asked, “How many people does the vessel hold?” A: TN replied, “About 50 people.”		
3.	Q: MH asked, “How many db will you be doing on your vessel?” A: TN replied, “Right at the source it will be 220. There are a certain radii that we have to monitor for the marine mammal mitigation.”		
4.	Q: MH asked, “What kinds of impact will that have on the fish? Do you have people watching the fish?” A: MS replied, “The studies have shown in captivity that it does make fish move away if they are close to the sound source. It is similar to the whales. They have done studies on fish eggs near the sound source and some of the eggs didn’t hatch. They don’t know much yet about the effects on fish.”		
5.	Comment (C): MH commented, “I don’t see the TGS db sound. I was asking if they have any fish finders to locate the schools of fish while they are doing their seismic. If there are fish finders they can use those too to monitor.”		

POINT HOPE PLAN OF COOPERATION COMMUNITY MEETING
FEBRUARY 28, 2013

DISCUSSION ITEMS:	
6.	<p>Q: CC asked, "What about TK. Are you using it? I hear you have biologists. We have always expressed to use the local TK. There is TK that we utilize that can be of help."</p> <p>A: MS replied, "Absolutely, I agree, anything else you want to add please write down and TGS will take it into consideration. TGS is new to the area, that is why they are here to listen to you. I can't talk for what all the other companies have done. We hope you will share your knowledge with TGS."</p>
7.	<p>Q: SO asked, "You will hire MMOs? Is it through ASRC?"</p> <p>A: TN replied, "Yes ASRC Energy Services is assisting us with the MMO training program. We are looking to hire from the local communities."</p>
8.	<p>Q: SO asked, "You get the seismic data yourself and you sell it to the oil companies?"</p> <p>A: TN replied, "That is right, that is our business. That is what we do."</p>
9.	<p>Q: SO asked, "You are not an oil and gas company?"</p> <p>A: TN replied, "No, we are not an oil and gas company."</p>
10.	<p>Q: SO asked, "I see you do 2D. You are only towing one cable right?"</p> <p>A: TN replied, "That is right. We do not have the multiple cables like a 3D program."</p>
11.	<p>Q: SO asked, "I noticed you were comparing with the sound table. What is your vessel seismic sound?"</p> <p>A: TN replied, "Right at the source it is just over 200. As soon as the sound moves away from location it weakens."</p>
12.	<p>Q: CC asked, "What does TGS mean?"</p> <p>A: TN replied, "Tomlinson Geophysical Services."</p> <p>C: CC commented, "I would like it if you said it in the introduction."</p>
13.	<p>Q: MH asked, "Can you please reiterate about the POC? After that what do you do? Do you tell the State and Federal Government that you did come here and notify the communities what you are doing? In the past when Shell was doing their seismic testing the tomcods were fewer. We don't seem to have tomcods for a couple years then they will come back. This time they were smaller and skinnier. These were right after the seismic testing. We love our food. You need to put that into consideration. We rely on the food. We are not rich like Barrow. We are a poor community."</p> <p>A: TN replied, "Thank you, this is the kind of information we are gathering. We want to gather the TK so we can go forward, have better strategies and how seismic can be done in the ocean."</p>
14.	<p>C: Man commented, "I think Mae made a good point. Let's say we don't see bowhead anymore. Let's say we don't see belugas. Or maybe walrus is gone too. I guess my point here is that there is a food chain. Belugas eat shrimp the bowhead eat krill. The food chain. She made a good point. We need a food chain for the animals."</p> <p>A: TN replied, "Yeah I agree. This is the information we want. It is important to know how the activities impact the different resources in the ocean. That is what we are here to learn and gather as much information as we can."</p>
15.	<p>C: MH commented, "I just want to say I know you say to the State and the Federal that you came here and you did the POC with the communities and I'm saying no don't do anymore seismic testing out there. That's what I want. No seismic testing out there."</p>
16.	<p>C: CC commented, "Could I have you and him hunt whale with me this spring? That way you know what we are talking about."</p> <p>A: TN replied, "I would be honored but I don't think I'm legally allowed. I would be honored."</p>

POINT HOPE PLAN OF COOPERATION COMMUNITY MEETING
FEBRUARY 28, 2013

DISCUSSION ITEMS:	
17.	<p>C: MH commented, "I have a question on phytoplankton. There are whale migratory routes and other marine mammals. I would appreciate more studies on the changing environment. I'm a little nervous. What about air traffic and sound pollution? What about caribous? There are caribou migratory routes. We haven't seen caribou for a while since the seismic began. The food from the air, water, and land. It is crucial to our lifestyle. Thank you for listening."</p> <p>A: TN replied, "Thank you for your comments. This is the information we want. These are the kind of comments that are valuable to us. One part of our program is to try to lessen social impacts. We do not want to be close the coastline. We will try to incorporate the TK and participate in research programs."</p>
18.	<p>C: GK commented, "I see in your presentation you may do social investment. Would Tikigaq Education Foundation be an example? An example is our dancers. I think they should get a piece of that pie too."</p> <p>A: TN replied, "That is right. Yes we are looking into that. We talked to the Mayor today and mentioned some of those programs. These are the kind of ideas that our company is looking at."</p>
GENERAL OBSERVATIONS:	
<p>The Point Hope interpreter, Dorcus Rock, did a prayer before the meeting. Dorcus Rock translated the meeting. Caroline Cannon urged incorporating TK to the seismic program. She suggested Isaac Killigvuk as advisor for TK. Isaac Killigvuk is a whaling captain.</p>	



ATTENDANCE SIGN-IN SHEET
 POINT HOPE, ALASKA
 February 28, 2013

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
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2) Steve Oomittuk	City of Pt Hope	368-0007	Steve_oomittuk@yahoo.com	
3) Luke Korum Sr.				
4) Israel Kium Chap		368-2021		
5) Diana Oletd'ide	NSD SP	368-3300	@	@
6) Ethan N				
7) Emma G.		—		
8) Daniel S.				



ATTENDANCE SIGN-IN SHEET
 POINT HOPE, ALASKA
 February 28, 2013

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
9) Andrew OKfolk				
10) Mary J. Attergare				
11) Skuritten Attergare				
12) Urdh				
13) Nina Ovik				
14) Ronal Ovik				
15) Rully Snygg				
16) K. K. King				



**ATTENDANCE SIGN-IN SHEET
POINT HOPE, ALASKA
February 28, 2013**

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
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Dolly Oktolik 18) Dolly Portell				
Raymond Frankson 19) Ray Frankson				
20) Peter Ziboune				
21) Amber Downers				
22) Rene Frankson				
23) Rick Nashookpuk				
24) Ernie Tagak	NVPHO			



ATTENDANCE SIGN-IN SHEET
POINT HOPE, ALASKA
February 28, 2013

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25) Phyllis Frankson				Bx 380 PHO AK 99706
26) Robert Kinsick				Box 3 PHO AK 99766
27) Aggie A.				P.O. Box 133 PHO, AK 99766
28) Sherrill Toyda				P.O. Box 1211 PHO AK 99766
29) Andrew T. Washooki-puck				P.O. Box 153 PHO
30) Allen Frankson				
31) Raymond Atkinson				P.O. Box 133
32) Shanna Nash				Box 206



**ATTENDANCE SIGN-IN SHEET
POINT HOPE, ALASKA
February 28, 2013**

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33) Irma Hunnick		368-1309		PH Hope
34) MIKE DIRKS SR		0156		PHO, AK
35) Harry Attaway III		0138		PHO, AK
36) Ashley Koukuna		1612		PHO AK
37) Caroline P. Conn		3005		Pt. Hope, AK
38) Robert W. Dirks Jr.		0010		Pt. Hope, AK
39) Ron Stora				
40) Morris Nashookluk		0037		Pt. Hope AK



**ATTENDANCE SIGN-IN SHEET
POINT HOPE, ALASKA
February 28, 2013**

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42)				
43)				
44)				
45)				
46)				
47)				
48)				



**ATTENDANCE SIGN-IN SHEET
POINT HOPE, ALASKA
February 28, 2013**

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49) Billy Stone				
50) Nancy Stone				
51) Darcus Rode		368- 2229	NA	PO. Box 68 Pt. Hope 99766
52) Martin Oxtollins		368- 3466	NA	PO. Box Pt. Hope, 99766
53) Sally Kitch		907-3680212		
54) Roy Oviok		907-368-2227		PO Box 253 PT Hope AK
55) Pat Johnson		907-368-2054		Box 48 Pt Hope, AK
56) Florence Oxtollins		368-2103		PO Box 289 PHO Ale 99766



ATTENDANCE SIGN-IN SHEET
POINT HOPE, ALASKA
 February 28, 2013

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58) Deobone				Box 11 PHO
59) Marilyn Arough		368-4481		
60) Paul n Gane		~		Box 73
61) Hilto Lapierre		368-2076		
62) Macky Gage		830-6513		Box 52
63) Jim Vincent		368-5685		Box 126
64) Minn Johnson		368-1633		Box 171



ATTENDANCE SIGN-IN SHEET
 POINT HOPE, ALASKA
 February 28, 2013

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65) Bernthalong		907 368-2101	⊙	PO BOX 204 Pt Hope, Alaska 99766
66) Dessu Kowmaa				
67) 		368 1284		
68) Rep Tuarlor		368 2667	—○	Box 36 Pt. Hope, AK 99766
69) Kathareen Tingiale		368 0240	ktingiale@yahoo.com	Box 12 PTO, AK 99766
Mia Hue			Maevana@yahoo.com	POB 183 PTO 99766
71) Eric Narkookruk		368-1613	ericnarkookruk	PO BOX 213
72) Zach Lane		907 268 9421 26 26		P.O. Box 237



**ATTENDANCE SIGN-IN SHEET
POINT HOPE, ALASKA
February 28, 2013**

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74)				
75)				
76)				
77)				
78)				
79)				
80)				



ATTENDANCE SIGN-IN SHEET
 POINT HOPE, ALASKA
 February 28, 2013

Name (Please Print)	Representing	Phone No.	E-Mail	Mailing Address
81) Ned Weber Sr				Box 106 Point Hope AK 99766
82) Annie Atkinson				P.O. Box 31 PH, AK 99766
83) Rose Omnik				Box 115 Pt. Hope
84) Aggie Kawanna				P.O. Box 21 Pt. Hope
85) JAK ESTIM other				
86)	!			
87)				
88)				

Appendix E
2013 Plan of Cooperation Meeting Power Point Presentation

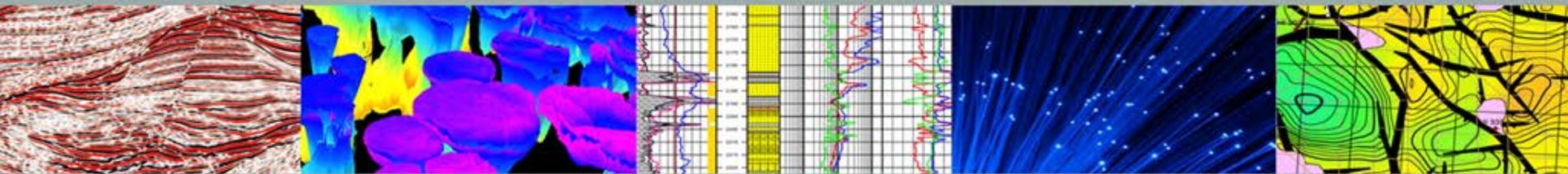
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2013 Chukchi Sea 2D Seismic Program

Plan of Cooperation Community Meetings

January 28 – February 2, 2013: Barrow, Wainwright, Point Lay, Kotzebue

February 22, 2013: Point Hope



Introductions

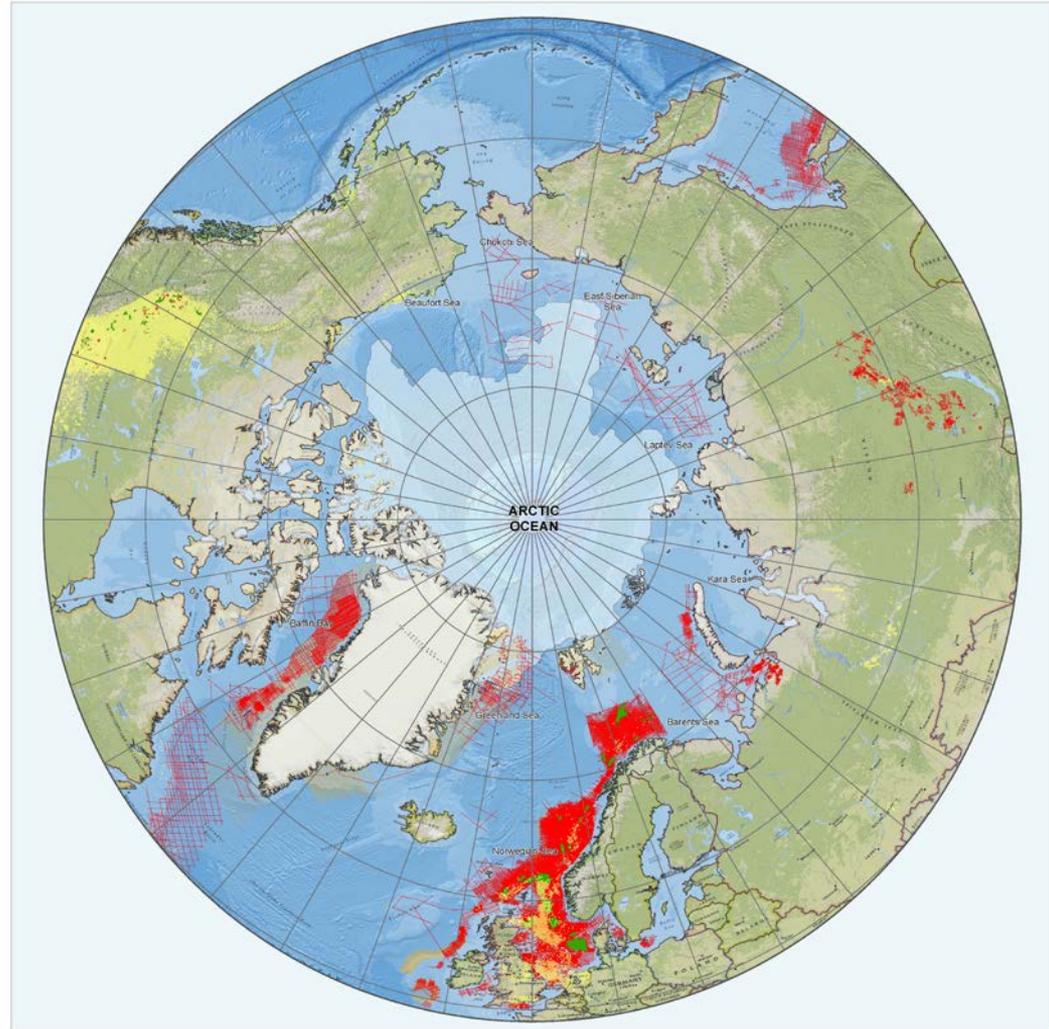
- Troy Nelson, TGS, Regulatory & Compliance Specialist
- Zig Doborzynski, TGS, Consultant-Offshore Permitting
- Mari Smultea, Smultea Environmental Sciences, Marine Scientist
- Megan Blee, ASRC Energy Services, Marine Scientist
- Inuuteq Stotts, ASRC Energy Services, Stakeholder Coordinator
- Robin Demoski, ASRC Energy Services, Stakeholder Coordinator
- Raquel Colvin, ASRC Energy Services, Stakeholder Coordinator

Our purpose here today

- To describe our company and proposed seismic activities in the Chukchi Sea during open water 2013.
- To describe measures we have taken, or will take, to avoid interfering with subsistence activities.
- To describe our plan to continue to meet with your community and resolve conflict.

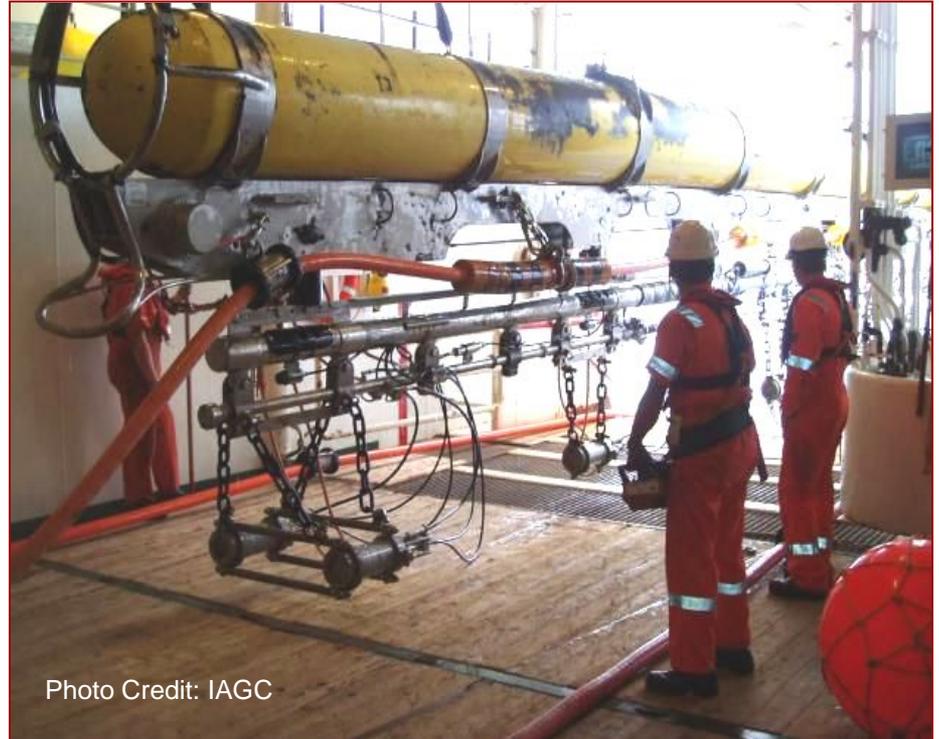
TGS, a geoscience company

- Seismic acquisition, not an oil & gas company.
- Maintains data libraries.
- Licenses data to multiple oil and gas clients.
- 30+ years Arctic experience:
 - Canada, Greenland, Russia, North Sea

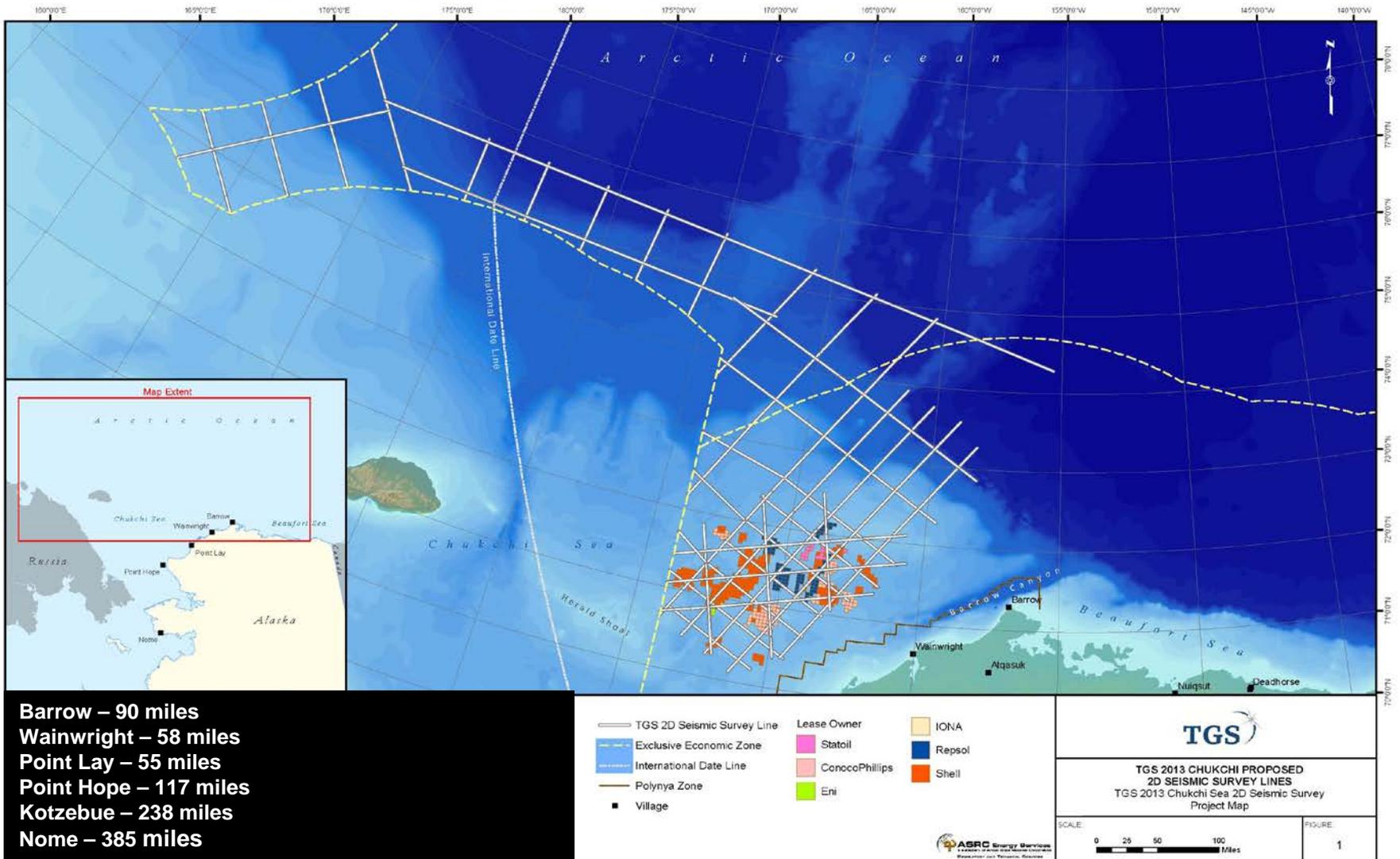


TGS 2013 2D Seismic Survey

- Survey location
- 2D seismic vs. 3D seismic
- Seismic survey vessels
- Sound source radii
- Sound level comparisons
- Survey schedule
- Monitoring and mitigation measures to reduce impact
- Consultations with stakeholders



2013 Survey Location



Barrow – 90 miles
 Wainwright – 58 miles
 Point Lay – 55 miles
 Point Hope – 117 miles
 Kotzebue – 238 miles
 Nome – 385 miles

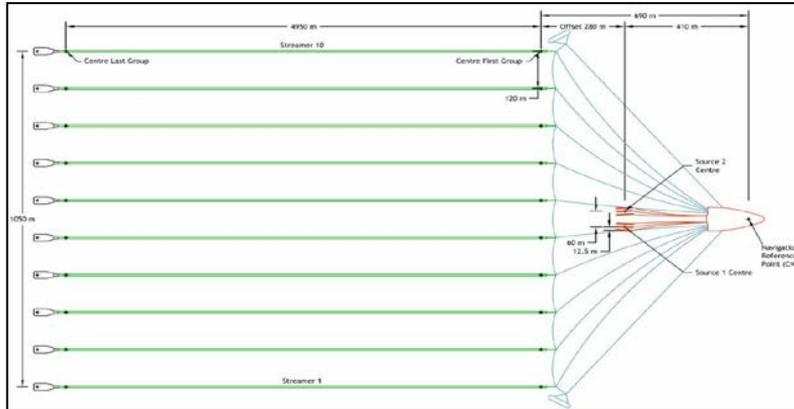
NAD83, Alaska Albers Equal Area

RES-RTS: 12-135-003.mxd 11/29/12

What is 2D vs. 3D Seismic?

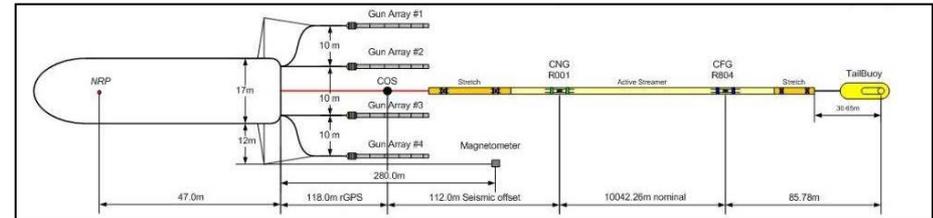
3D Seismic Array

Multiple towed hydrophone receivers



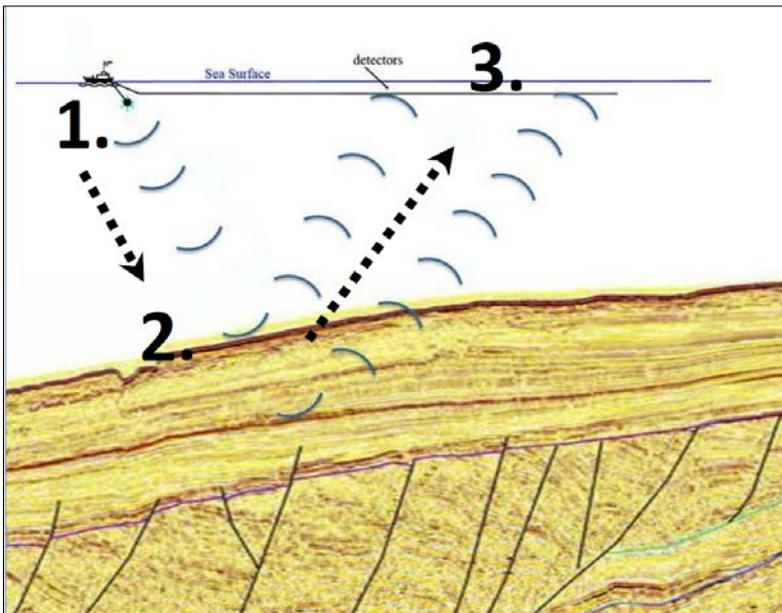
2D Seismic Array

Single hydrophone receivers



How 2D Seismic Sound Travels

1. Seismic source emits sound.
2. Sound travels through water to penetrating seafloor.
3. Sound reflects back to surface. Recorded by hydrophone streamer.



Seismic Survey Vessels

- Survey Vessel: *Aquila Explorer* (or similar)
 - 5 mile (8 km) seismic receiver cable
 - 2.4 ft³ (4,100 in³) seismic source



- Scout / Monitoring Vessel (TBD)
 - Operate in advance of survey vessel
 - Assist for emergency / equipment failure

Sound Source Radii

- JASCO modeled mitigation zones for 3 water depths
- Includes 10% buffer

Root Mean Square (dB re 1 μ Pa)	NMFS Regulated Mitigation Radii in miles (mi)		
	Depth in feet		
	56-131	131-328	328
190	0.5 mi	0.4 mi	0.3 mi
180	1.5 mi	1.6 mi	1.5 mi
160	6.0 mi	7.5 mi	11.2 mi
120 dB regulated for continuous sounds			
120	105.6 mi	96.3 mi	105.6 mi

Sound Level Comparisons

Underwater Sound Levels in decibels (dB)*	Sound Source
206-225	Beluga Echolocation Clicks
193	Icebreaking
190	NMFS monitoring criteria for polar bear & seals
183-189	Snapping shrimp
128-189	Bowhead whale moans, songs
155-189	Fin whale calls
142-185	Gray whale moans
180	NMFS monitoring criteria for whales & Pacific walrus
162	Chainsaw
160	NMFS monitoring criteria for large groups of whales
151	Fishing vessel
122	Normal human conversation
60	Ambient noise, sea state zero (0)

*
dB re 1 μ Pa [rms]

Sources:
Richardson et al. 1995, Richardson 2005, Tervo et al. 2012
<http://www.acousticecology.org/oavalidtocompareairwater.html>
<http://www.dosits.org/science/soundsinthesea/commonsounds/>
<http://www.arc.id.au/SoundLevels.html>

Survey Schedule

Alaska Waters

- Start between mid July and mid August
- Seismic: 35 days
- Operational period: 45-60 days
- Complete Alaska survey lines first
- Survey the lines closest to shore first
(July – August)

International Waters

- Start mid to late September or early October
- Seismic: up to 33 days
- Greater than 200 nautical miles from Alaska coastline

Monitoring and Mitigation

Vessel-based Protected Species Observers (PSOs)

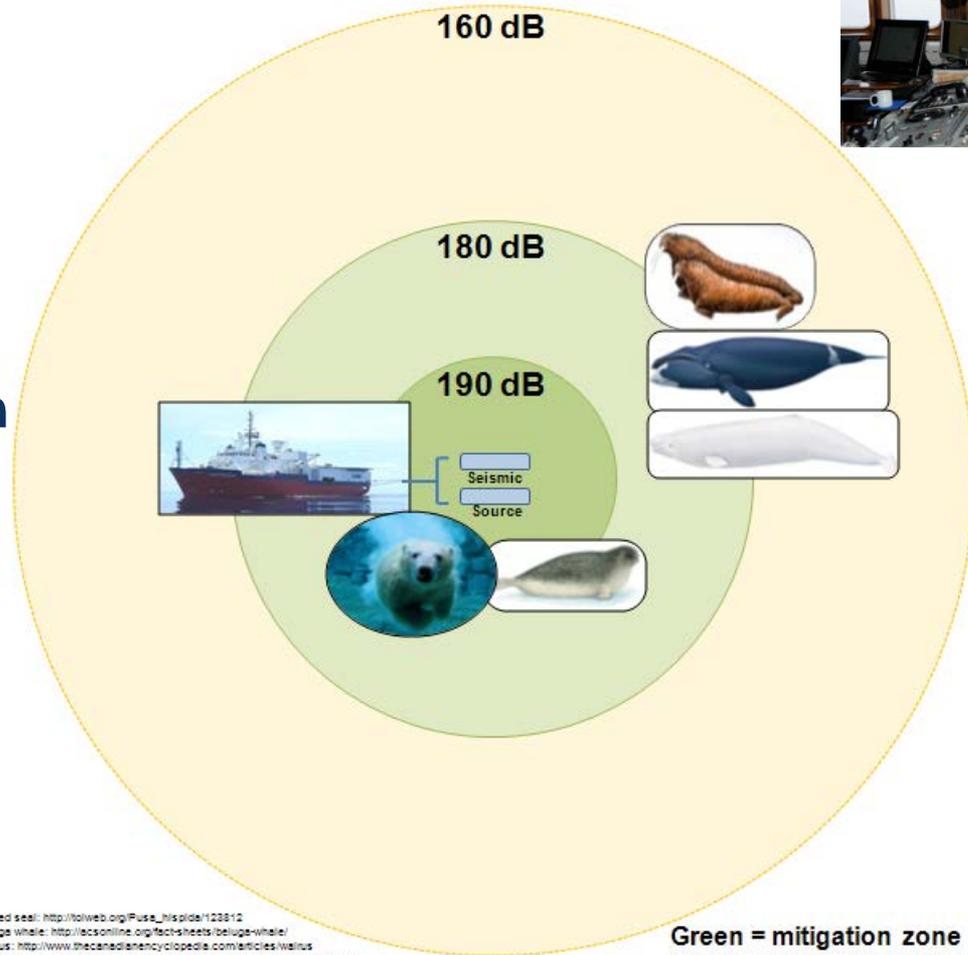
- On both vessels
- Scientific and Inupiat PSOs
- Big-eye binoculars
- Night-Vision Devices

Sound source verification

- Power-down, ramp-up & shut-down procedures
- Speed and course alterations

Communication Center

- Participate in 2013 program



Ringed seal: http://oiweb.org/Fusa_hispidus/1235/2
Beluga whale: <http://ecsonline.org/tech-sheets/beluga-whale/>
Walrus: <http://www.thebritishencyclopedia.com/articles/walrus>
Bowhead Whale: http://www.bbc.co.uk/news/10340277/bowhead_Whale
Polar bear: <http://www.animals.com/wallpaper/Polarbear-Swimming-under-Water.r>

Green = mitigation zone
Orange = monitoring zone



Consultation with Stakeholders

- NSB Planning Commission
 - Introduce TGS project – October 25, 2012
 - Ongoing communication with Planning Commission in 2013
- Village Leadership Meetings – December 3-7, 2012
- AEWC
 - 4th Quarter Meeting – December 14, 2012
 - Convention – February 7-8, 2013
- Plan of Cooperation with Communities
 - Barrow, Wainwright, Point Lay, Point Hope, Kotzebue
 - January and February 2013
 - Include co-management organizations
 - Post-season presentation – Winter 2013 – 2014
- NMFS Open-Water Meeting – March 5 – 7, 2013

Comments or Questions?

Quyanaqpak

If there are questions, please contact Mr. Troy Nelson,
Regulatory & Stakeholder Outreach at tnelson@arcis.com
or Mr. Steve Whidden, Program Manager at
Steve.Whidden@tgs.com

Appendix F
2013 Photographs

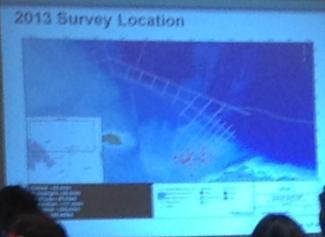
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ROBERT - JAMES

COMMUNITY CENTER



EXIT









NULLAGVIK HOTEL





2013 Survey Location



Timing of JIG's project relative to Subsistence Activities







2D Marine Seismic

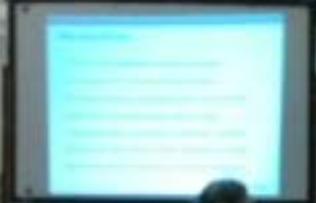
Timing of TGS Project Relative to Subsistence Activities

Marine Mammal Monitoring & Mitigation

Information for Parents



Welcome
to the
City of Point Hope







PULLTAB AVE

Distribution

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