

The Environmental Challenge Program

...a competition for university students

THE PROBLEM – 2008

September 24-26 – Anchorage, AK

“Environmental Success in the Pacific Northwest”

The Purpose

The Environmental Challenge gives student teams the opportunity to develop solutions to a mock environmental problem and have the experience of presenting their solution to a panel of environmental professionals. We do not give you a lot of numbers to crunch. We are more interested to hear about the issues involved, how you interpreted the problem, how you got to your conclusions, and how well you can communicate your thoughts. We want you to have fun! This exercise gives us all a chance to participate and gets the professionals of tomorrow to interact with the professionals of today.

The Problem

Energy independence and security is a critical concern for the United States and will be on the political agenda during the 2008 Presidential Election. Offshore exploration and developmental drilling in the Outer Continental Shelf (OCS) is an important component of this national energy strategy and is in the public eye.

In July 2007, a large section of offshore land was opened for oil exploration in Alaska in an effort to alleviate high oil prices and help solve the nation's energy problems in the future. One region that was released for lease was the Beaufort Sea located north of the Alaska National Wildlife Refuge (ANWR).

Immediately following the release of these lease blocks, Al Exploration and Oil Corp. (Al Exploration) began exploratory drilling in three contiguous lease blocks (see Attachment A) located 6 miles offshore and to the far east of the Beaufort Sea lease area. Al Exploration is proposing to develop the reservoir located in its Megaload prospect into a producing well, an oil reservoir it had previously delineated during its 2006 exploratory drilling season. While there is a large amount of excitement throughout the industry and the United States energy sector, a large amount of concerns have arisen from several environmental non-governmental organizations (eNGO). The local Alaska Native community response to the continued exploration and proposed development has been mixed; however, all community members generally agree that these activities should not interfere with whale hunting and other subsistence activities as they are paramount to the communities continued health and well being.

Located along the Beaufort Sea in ANWR is the town of Pnwisataq. The Pnwisataq community has lived in the region for thousands of years and has a deep connection to

the ocean and land within and immediately surrounding Pnwisataq. Community members have expressed their concern regarding offshore drilling;

“Our survival as a people depends on our ability to participate in the same rituals and subsistence activities of our ancestors. Hunting is a part of who we are and we want to continue this tradition for many years to come. We cannot separate ourselves from these traditions or the land and ocean on which we sustain ourselves. We believe everything is connected and that what happens to the animals happens to us.

Ever since the introduction of the petroleum industry, our people have seen an increase in respiratory illnesses, especially among our children. We were promised jobs, and have never seen them. Our young people leave because there are no jobs for us. Where we once were able to see for miles, now we are often limited by the smog that surrounds our village.”

-Savour Laands, Pnwisataq Elder

“Our people have lived here for thousands of years and have adapted to the many changes that have occurred in and around Pnwisataq. Our perseverance and adaptability are our strengths. We can appreciate the value the oil and gas industry can bring to our community, but do not want to be disconnected from our traditional way of life as a result of this development. We want to secure a future for our community and want Al Exploration to work with Pnwisataq to hire locally and train our people.”

-Hunter Nafiitchuq, Pnwisataq Native

Savour, among others, is very worried about the environmental implications (i.e. noise, wildlife impacts, etc.) that will affect their native land and are objecting the drilling in the Beaufort Sea. Conversely, Hunter is optimistic that the oil and gas industry can inject a much needed vitality and economic security into Pnwisataq, where energy costs comprise a majority of the average resident’s monthly and annual budget.

“The oil and gas industry can help alleviate these prohibitive energy costs, but only if the oil and gas companies work with the community and hire locally.”

-Hunter Nafiitchuq, Pnwisataq Native

Hunter supports the oil and gas industry in general, as a fifth generation whaling captain, he understands the importance whaling to Pnwisataq’s survival and does not want to compromise this tradition.

While the Natives and eNGOs are very pessimistic in regards to the promises of Al Exploration, they are energized with the recent re-designation of ANWR to a national

park, but there is still concern that this Class I area will be highly impacted by the new offshore oil production.

With all these concerns, Al Exploration stands by their outstanding environmental record in the Alaskan Arctic region.

“We are proud of what we do at Al Exploration. We continually strive to minimize our social and environmental impacts while meeting the challenges as we go into new markets and communities. We have a responsibility to meet the energy needs of today and tomorrow.”

-Al Dril, CEO Al Exploration and Oil Corp.

In this problem your team represents a group of consultants who have been hired by Al Exploration and Oil Corp. to put into practice the most economical and practicable air pollution control technologies that meet or exceed regulatory requirements for the offshore oil production platform located in the Beaufort Sea near Alaska Wildlife Refuge National Park. Further, you must address the concerns of all the Alaska Natives and the environmental non-governmental organizations that are doing what ever they can to stop this project from going forward. This includes, but is not limited to; noise, wildlife impacts, and health concerns. It is important to hear all stakeholders' opinions and engage each person, rather than assuming groups of persons forming a union hold all of the same beliefs. Al Exploration has put a lot of money into the exploration of the area and is very confident that the Megaload prospect will solve the future energy needs of the United States.

Your team might all be engineers and scientists in real life but in this Problem you morph into whatever and whoever you think that you need to “win” the competition. Also realize that air and community relations are only part of the problem, you should think about hazardous materials usage, environmental impacts on wildlife and water, and potential upgrades or changes to the facility based on the owner's request and how all these activities and concerns impact Pnwisataq's annual whale hunt and local animal population. There are a handful of threatened and endangered species in the area.

Your Assignment

Al Exploration and Oil, Corp., has hired you to investigate the necessary air pollution technology controls necessary to meet current regulations based on equipment specified (see Attachment B) and the location of the site (see Attachment A) as well as to communicate to the general public and the local community the vital need for energy independence and the minimal environmental impact the facility will have on the subsistence culture, local wildlife, and community health and well-being. As hired consultants, you must demonstrate an understanding of the process and provide solutions to any and all potential environmental issues. While air quality is important to Al Exploration there are a lot of other environmental concerns that must be addressed. While Al Exploration is not looking for specific costs at this time, it is important to understand that there are limitations and spending less is always better.

The Expectation

Numbers are not what is most important – logic train, process, conceptualizations, and creativity are the most important considerations for your **proposal** and **presentation** (described below) composition. You will be expected to present your thoughts in a public forum. Remember you can come up with assumptions, but they will need to pass the “straight-face” test. This is like the real world!

The Proposal (submit first day of conference at registration – September 24)

The proposal should outline the team members by name and the role they will have in the project (ie “Nilly Willy” is going to be engineer and will address waste issues, “Jim Beam” is going to be your air expert, “Justin Timberlake” is going to be our ‘architect’, and “Martha Stewart” is going to be your shaman etc, - you put in the disciplines that you think you need). The proposal should also illustrate the technologies and strategies your team has identified along with a clear approach of how you will be implementing them. The proposal should be in summary form and limited to two pages (this does not include title page or diagrams). Each proposal will be judged and given points as a factor in the competition.

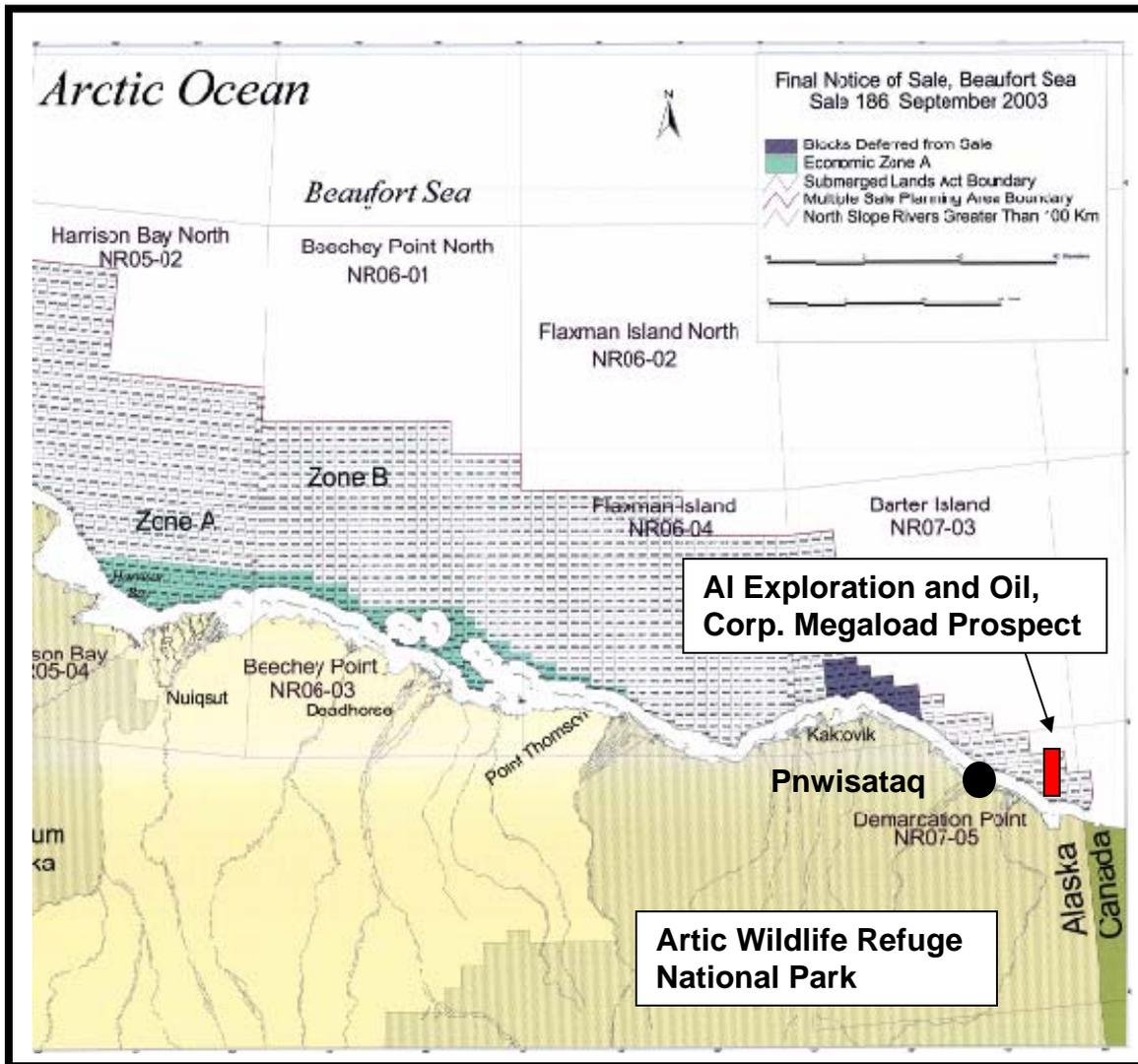
The Tweak

No matter how much you do and know, in real life unexpected events and expectations can and do occur. To this end, you should expect (when you pick up your registration package) some late breaking information that might alter your approach and/or require your plan to evolve. The problem and the tweak will require that you find and talk to “experts” and attend technical sessions, during the conference, for answers and important information. Remember, those who are most successful in the “real world” are those that can identify what resources they have and use them. You are at a professional conference, what resources do you have?

The Presentation

Your team will need to demonstrate your understanding of the issues that you addressed in your proposal. You must include not only your key elements from your proposal, but also demonstrate your adaptive management in dealing with the “Tweak.” Sustainable approaches for these and other site issues are of great interest to the owners. The winning team presentation will be strong in approach, logic, clarity, application, and creativity. Each team will present their problem solution on Friday morning the 26th of September as part of the technical session program that day. When we know how many schools will be presenting we will develop a schedule, but plan on presentations beginning at 8:30 AM and conclude an hour before the Awards Luncheon. PNWIS will have a projector and a laptop (w/Microsoft Power Point). Please bring a data stick or disk burner so we transfer your presentation to the laptop. **Plan for on no more than 15-minute presentation followed by 5 minutes of questions and answers.**

ATTACHMENT A



ATTACHMENT B

Oil Production Platform Initial Design - Megaload Prospect Well

Lease Blocks: #6325, 6275 and 6225 (Future expansion #6125 and 6175)

Proponent: Al Exploration and Oil Corp.

Exploration Date: July 2006

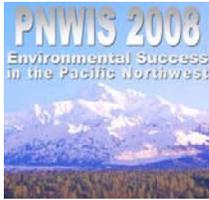
Estimated Quantity in Well: **CONFIDENTIAL**

Platform Equipment:

- 2 - 30 MW Simple Cycle Solar Gas Fired Turbines (electrical generation)
- 6 - Oil Fired 2000hp Reciprocating Engines; circa 2000 (Oil/water pumping and gas compression)
- 1 - Incinerator (combust onsite waste)

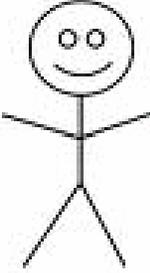
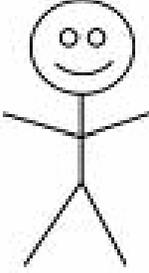
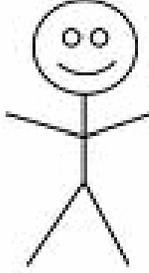
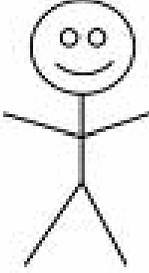
Applicable Regulations: Unknown

Air Pollution Control Technology: TBD



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<p>THE PLAYERS</p> <p>In order to grasp a complete understanding of the project, your team must acknowledge that there is a large amount of interest in this project, positive and negative, public and private. Meeting and exceeding regulatory requirements, cost-effective approaches to the solution and the protection of Native lands and communities are of great interest to the potential success of this project. “Winning” will hinge on approach, clarity and creativity.</p>	<p>Al Exploration and Oil Corp.</p>	
	<p>Al Dril</p> 	
<p>U.S. EPA - Regulator</p>	<p>Pnwisataq Native</p>	<p>Pnwisataq Native</p>
<p>Lotsa Regs</p>	<p>Savour Laands</p>	<p>Hunter Nafiitchug</p>
		
<p>Environment Now and for the Future (ENUF)</p>	<p>Alaska State Senator (Vice Presidential Candidate)</p>	
<p>Clair Now</p>	<p>Sarah Moil</p>	
