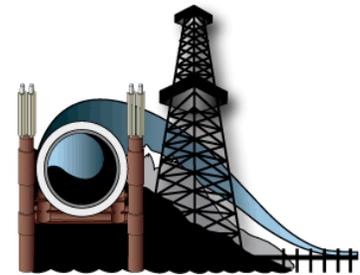


**Meeting Minutes**  
**State of Alaska Oil & Gas Infrastructure Risk Assessment**



*\*\*This document is intended to be a summary of the meeting discussion for use by the project team in developing the risk assessment methodology and is not intended to be an official transcript.*

<b>Topic:</b>	<b>Barrow Public Stakeholder Consultation Meeting</b>
<b>Date:</b>	<b>October 22, 2008</b>
<b>Time:</b>	<b>6:30 PM – 8:30 PM</b>
<b>Purpose:</b>	The intent of this meeting was to solicit Barrow area public input as a stakeholder with interests in existing Alaska oil and gas industry infrastructure. Input provided at this meeting will help the expert firm design the risk assessment methodology.
<b>Attendees:</b>	Howard Hill, Shell Oil Linda Worman, NSB Ben Greene, NSB Jonny Jemming, NSB Law Dept. Kent Grinage, NSB Allison Iversen, PSIO/DNR Anne Jensen, UIC Sciences JoAnn Grady, Grady & Associates Ira Rosen, ADEC Brad Chastain, EMERALD Gretchen Grekowicz, EMERALD

Agenda Item	Decisions/Actions
<p><b>1. Introductions</b></p> <p>The meeting began with introductions of those in attendance. A total of 11 individuals were present including members of the public and representatives from the North Slope Borough (NSB), UIC Sciences, Grady and Associates, Petroleum Systems Integrity Office (PSIO), and the Alaska Department of Environmental Conservation (ADEC). The meeting was facilitated by Brad Chastain (EMERALD Stakeholder Facilitator), and scribed by Gretchen Grekowicz of EMERALD. Ira Rosen, the ADEC Project Manager, represented the State of Alaska.</p>	
<p><b>2. Project Objectives, Background, and Scope</b></p> <p>The ADEC Project Manager provided a brief introduction of the project, which was followed by a detailed overview by the EMERALD Stakeholder Facilitator outlining project team organization, objectives, scope, and</p>	

**Meeting Minutes**  
**State of Alaska Oil & Gas Infrastructure Risk Assessment**

Agenda Item	Decisions/Actions
<p>timeline.</p>	
<p><b>2.1 <u>Project Team</u></b>- The project team is comprised of the ADEC, lead agency for the project; the State Agency Oversight Team (SAOT) which encompasses representatives from multiple State agencies and provides oversight and guidance for the project; EMERALD, the lead contractor for the State; and ABS Consulting, EMERALD’s subcontractor. EMERALD, an independently run subsidiary of Doyon Limited, Inc. is a professional services consulting firm with a core focus on process safety and risk management. EMERALD will provide local Alaska infrastructure expertise and will manage the project. ABS Consulting, will supplement the technical effort and contribute large-scale technical risk assessment experience and an international perspective.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>2.2 <u>Project Goal</u></b>- The goal of the project is to conduct a system-wide risk assessment of oil and gas infrastructure in Alaska. This will involve taking a system of systems approach and evaluating the interrelations among components of the infrastructure. Although many risk assessments of individual infrastructure components have been executed in the past, this type of system-wide assessment has never been conducted in Alaska.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>2.3 <u>Stakeholder Consultation Objectives</u></b>- The objectives and structure of the stakeholder consultation process were explained by the EMERALD Stakeholder Facilitator. Six regional meeting areas along the infrastructure corridor are planned including Fairbanks, Kenai, Anchorage, Valdez, Barrow, and possibly Juneau. Individual meetings with key stakeholders, as well as public meetings, will be held in each location. The goal of the meetings is to solicit stakeholder input on significant concerns relating to existing oil and gas infrastructure in Alaska.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>2.4 <u>Project Background</u></b>- A background of the project was provided. Alaska’s infrastructure is aging and many of its components have exceeded their original design life. In 2006, North Slope oil production was halted by failure of one component of the system (pipeline corrosion leak). The governor announced this risk assessment project in May 2007 in response to that incident.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>2.5 <u>Expected Outcome</u></b>- The outcome of the project will be a “snapshot” of the current state of the infrastructure and will highlight components with the highest relative risk. Results of the Risk Assessment will be summarized in the form of a risk profile. The SAOT will use this risk profile to develop appropriate mitigation measures. This project has been integrally linked with the Petroleum Systems Integrity Office (PSIO) since its inception. The mission of PSIO is to evaluate gaps and overlaps in regulatory oversight of the oil and gas infrastructure. PSIO will use results of the risk assessment to prioritize gaps and make recommendations to the State with regard to regulatory oversight decisions.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>2.6 <u>Risk Assessment Standards</u></b>- A brief explanation of standard risk assessment methodology was provided. The risk assessment process is an organized and systematic effort to identify and analyze hazardous scenarios. Risk assessment asks three questions: 1) what can go wrong? 2) how likely is it? and 3) how damaging would the event be if it were to occur? Rankings are assigned for both probability and consequence and are combined to form an overall risk ranking for each</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>

**Meeting Minutes**  
**State of Alaska Oil & Gas Infrastructure Risk Assessment**

Agenda Item	Decisions/Actions
potential event.	
<p><b>2.7 Project Scope-</b> The scope of the project was described in terms of geography, infrastructure components, and other factors and considerations. The project includes the North Slope, Trans-Alaska Pipeline System (TAPS), and Cook Inlet infrastructure. Future developments such as exploration are excluded from the scope of the project. All “inside the fence” components of the infrastructure are included in the scope. Excluded components are transportation (including marine), reservoir maintenance and impacts to the reservoir, and refineries and distribution facilities not integral to operating the infrastructure. The team will consider design/operating life, the natural aging process, operating procedures and standards, maintenance and management, regulatory oversight, changes in oil composition, and natural hazards when conducting the study. Market conditions, such as commodity pricing which would make operations non-economical, and man-made hazards such as sabotage will not be considered in the study.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>2.8 Project Timeline-</b> The project is broken into three phases. Phase 1 started in July 2008 and will run approximately thirteen months. The first task of Phase 1, development of the Project Plan, was completed and approved by the SAOT. The next step, Stakeholder Consultation, is currently underway. The team will use input from this consultation as well as best practices to develop a draft risk assessment methodology, which will be complete in February 2009. At that time the project team will come back out to the regions to solicit stakeholder input on the methodology. The methodology will also be reviewed by an independent peer review entity. Phase 2 will take about 6-months and will begin in August 2009. Phase 2 involves implementation of the methodology by working with industry to visit facilities and collect infrastructure information and data. Phase 3 is the last phase of the project and will be complete by the end of May 2010. It involves analyzing the data collected during implementation and developing a risk profile which will be summarized in the final report that will be presented to the State.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>3. Questions and Comments from Attendees on the Project Overview</b></p> <p>Questions and comments were taken both throughout the presentation and following the presentation. This section includes questions, answers, and general comments and suggestions relating to the scope, timeline, and management of the project.</p>	
<p><b>Q:</b> What is the difference between this type of risk assessment and an environmental assessment?</p> <p><b>A:</b> This project is an engineering-based risk assessment and will focus on evaluating events that could affect the existing infrastructure. An Environmental Impact Statement (EIS) generally focuses on evaluating potential outcomes of certain actions and outlines alternatives to those actions. Both assessments consider environmental impacts, but are different in intent and scope.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>Q:</b> Will the public have an opportunity to comment on the draft methodology and the final report?</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>

**Meeting Minutes**  
**State of Alaska Oil & Gas Infrastructure Risk Assessment**

Agenda Item	Decisions/Actions
<p><b>A:</b> Input at this meeting is focused on gathering input to be used for methodology development. In early spring the proposed methodology will be available for public review and comment. The final report, including the risk profile, will not undergo public review and comment. The project approach is to develop the methodology soundly and with input from stakeholders, and then implement the methodology resulting in analysis and creation of the risk profile.</p> <p><b>Q:</b> If the process is limited to quantitative analysis, the concerns of the public may not be captured. What if the results are not accepted by the public? People are comfortable with the NEPA process and appreciate the opportunity to comment on the draft results. If they don't see a similar track, they may not accept it.</p> <p><b>A:</b> This risk assessment is a objective and qualitative analysis of existing infrastructure. The project plan is not designed to mirror the NEPA process for public input.</p> <p><b>C:</b> The public will be interested in the outcome of the project and how the results are handled by the State. The public will want to have input into the risk management decision-making process. Also, it is important that the public be a part of some sort of review. This may raise issues of proprietary information and burden of proof.</p>	
<p><b>Q:</b> Have there been questions or concerns about the methodology? It seems very technical for the general public.</p> <p><b>A:</b> The methodology may not be easily understood for people who do not have a background in risk assessment, but the questions on which we are seeking Stakeholder input are designed to be understandable by the general public.</p> <p><b>Q:</b> Do you have a predetermined process for conducting this risk assessment?</p> <p><b>A:</b> A standard risk assessment approach will be used, but the methodology will be customized and will consider a wide array of stakeholder concerns from around the State, as well as best available practices. The methodology has not been developed yet.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>Q:</b> You stated that the scope of the project includes Cook Inlet infrastructure, but that marine transportation is excluded. Some of the facilities in Cook Inlet are offshore. If those facilities are considered in scope, why are offshore facilities on the North Slope out?</p> <p><b>A:</b> Some offshore North Slope developments are out of scope because they are not currently in production and are considered future developments.</p> <p><b>C:</b> The risk profile of offshore facilities in Cook Inlet could possibly be used as a knowledge base for application to North Slope offshore operations in the future.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>

**Meeting Minutes**  
**State of Alaska Oil & Gas Infrastructure Risk Assessment**

Agenda Item	Decisions/Actions
<p><b>Q:</b> Will nonpublic entities like the North Slope Borough be able to review the draft report?</p> <p><b>A:</b> EMERALD’s scope of work is limited to completing the draft report for submittal to the State. The State will determine who reviews the report.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>Q:</b> Will this study be a baseline for future studies and work?</p> <p><b>A:</b> Yes, this assessment will be a baseline risk profile for existing oil and gas infrastructure. The State may choose to execute this type of assessment on an ongoing process.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>C:</b> It would be beneficial to identify portions of the infrastructure that are problematic and put the focus on the operator that is responsible.</p> <p><b>Q:</b> Is the team able to evaluate risks resulting from operations that are planned and within regulations, or are you legally constrained to only look at unplanned and noncompliant risks (e.g., flaring near a community may be a risk)?</p> <p><b>A:</b> This project assumes that the goal is for industry to operate as designed and permitted. This does not necessarily mean that all individuals agree with the approved designs or regulation of industry. The team will not examine the adequacy of existing regulations, or consider risks from planned operations.</p> <p><b>C:</b> I am concerned that the pipeline was not designed with sufficient safety measures to prevent a blow-up. What checks and balances are in place to prevent impacts to the environment? What are the high volume areas that need to be monitored?</p> <p><b>A:</b> The design, operation, and existing safeguards present within the infrastructure will be considered.</p> <p><b>Q:</b> Much of the pipeline is buried in Nuiqsut. I do not understand why the same was not done elsewhere on the North Slope. This would make it easier for the Porcupine caribou herd to migrate and would make the area accessible to harvesting for subsistence.</p> <p><b>A:</b> The intent of the project is to assess the current infrastructure, not to evaluate the risks presented by approved and permitted design.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>C:</b> The majority of NSB concerns are related to how the results of the assessment are implemented, whether the State takes the findings seriously, and the potential need for additional legislation, regulations, or lease language/stipulations.</p> <p><b>A:</b> PSIO was created to evaluate quality management systems within the oil and gas industry and conduct a gap analysis of regulatory oversight. PSIO will use results of this assessment to match up areas of high risk with gaps in regulatory oversight, and will also look at low risk areas with extensive oversight to reduce duplicative efforts. To date, PSIO has discovered that gaps exist primarily in the enforcement of existing regulations rather than jurisdiction. Additional legislation does not necessarily mean reduction of risk or enforcement of regulations in the field. There will be a significant amount of</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>

**Meeting Minutes**  
**State of Alaska Oil & Gas Infrastructure Risk Assessment**

Agenda Item	Decisions/Actions
public input, including local government input, into PSIO projects.	
<b>3. Stakeholder Input on Focus of the Risk Assessment</b>	
<p>The EMERALD Stakeholder Facilitator outlined specific input to be solicited from stakeholders including portions of the infrastructure the public feels warrants project team attention. Components of the infrastructure in the scope of the project include production wells, gathering lines, facility piping, crude oil pipelines, gas and water injection systems, gas transport pipelines integral to the operating infrastructure, oil and gas processing and treatment, waste management and disposal (re-injection), storage tanks, terminals, marine loading facilities, and support systems.</p>	
<b>3.1</b> No input was provided on specific components of the infrastructure that warrant the attention of the project team.	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>4. Stakeholder Input on Initiating Events</b>	
<p>Input was solicited on initiating events that have the potential to cause catastrophes relating to the infrastructure in the Barrow region.</p>	
<b>4.1</b> No input was provided relating to initiating events.	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>5. Stakeholder Input on Priorities for Preventing Unplanned Events Related to Oil &amp; Gas Infrastructure in Terms of Reliability, Safety, &amp; Environment</b>	
<p>The three consequence categories that will be used to evaluate risks for the project were described. Safety refers to both public safety and safety of industry workers. Environment refers to any consequences to the natural resources of the State including waterways, wildlife, and other resources. Reliability refers to events that disrupt the flow of oil and subsequently have the potential to impact State revenue. The public was asked for their concerns of significance within the scope of the project.</p>	
<b>5.1</b> <u>Safety of Spill Response Personnel</u> -The impact of spills on the safety of response personnel was raised as a concern. Historically, some release sites had conditions that posed potential health risks to humans even though they had been classified as safe to work in. The commenter also noted that they had doubts that response personnel are always provided with adequate personal protective equipment (PPE).	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>5.2</b> <u>Preservation and Protection of Cultural Resources</u> - Concerns were expressed regarding the preservation and protection of cultural resource sites. It was noted that environmental standards for identification of cultural resources have improved since the 1970's. Areas once considered inconsequential now may be classified as strong candidates for having cultural resources that must be protected and preserved. It is possible that undiscovered cultural resource sites are located in close proximity to the infrastructure, and could be inadvertently damaged by response personnel. Additionally, oil can damage or destroy cultural artifacts and prevent them from being carbon dated. Advance identification of probable failure points could mitigate the potential for damage. Cultural resources are an important part of a people's history and are now legally protected.	<ul style="list-style-type: none"> <li>• None</li> </ul>

**Meeting Minutes**  
**State of Alaska Oil & Gas Infrastructure Risk Assessment**

Agenda Item	Decisions/Actions
<p><b>5.3 Health/Socioeconomic Factors-</b> One commenter expressed concern that the oil and gas infrastructure is a contributor to chronic health issues. It was stated that a health risk baseline could be useful into the future for identifying high-risk communities and indicators for early monitoring. The project team noted that the methodology will include an evaluation of safety consequences based on proximity; however, this study is not a human health impact assessment, and long-term chronic health impacts are not within the scope of the project. The study will examine specific events and impacts that could occur.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>5.4 Environmental Impact on Subsistence Lifestyle –</b> Commenters were concerned about the impact of the infrastructure on subsistence lifestyles. Potential conditions that could negatively impact a subsistence lifestyle were stated to include habitat fragmentation, restriction of hunting around the pipeline, and impacts to calving caribou that will not cross pipelines or roads. It was noted that subsistence and offshore issues should be included as part of the study for the North Slope because it is an integral part of the culture. Results of these studies could benefit the community and help mitigate or prevent future mistakes.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>5.5 Safety–</b> A concern was expressed that infrastructure near communities increases the risk of accidents (e.g., a hunter could inadvertently shoot the pipeline and create damage to the pipeline and environment).</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>6. Stakeholder Input on Other Specific Concerns or Priorities</b>  Stakeholders were asked to identify other concerns and priorities to the project team for consideration.</p>	
<p><b>6.1 Strategic Planning for Future Development-</b> One commenter felt the scope of the project should be broadened to include strategic scenario planning of future infrastructure. Currently, much of the "spider web" expansion of the oil field occurs without planning. Critical ecosystems should be evaluated to determine where infrastructure hubs and corridors should be located and identify the areas that should remain intact.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<p><b>7. Best Risk Management Practices, Guidelines, and Standards; existing Risk Assessments, Studies, Reports, or Other Data/Information Relevant to Alaska Oil &amp; Gas Infrastructure</b>  Participants were asked for suggestions for best risk management practices or data sources.</p>	
<p><b>7.1</b> No suggestions for best risk management practices or data sources were suggested by the public.</p>	<ul style="list-style-type: none"> <li>• None</li> </ul>

<p><b>Attachments:</b></p>	<p>Presentation  Stakeholder Information Packet</p>
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