Cook Inlet Energy Assessment **FY2008 Request: $260,000**
Reference No: 45256

AP/AL: Appropriation
Project Type: Renewal and Replacement
Category: Natural Resources
Location: Statewide
Contact: Leta Simons
House District: Statewide (HD 1-40)
Contact Phone: (907)465-2400
Estimated Project Dates: 07/01/2008 - 06/30/2011

Brief Summary and Statement of Need:
Cook Inlet basin has significant petroleum potential but critical aspects of its geology remain poorly understood. Compounding this problem is the fact that most existing data for the basin are proprietary. This request will help fund an effort to increase the database of relevant publicly available data on the remaining petroleum potential of Cook Inlet. Funding will be distributed across at least two sub-projects designed to result in published datasets and interpretations, and to increase exploration interest in Cook Inlet: 1) Reconstruction of Tertiary depositional systems in Cook Inlet, and 2) Petrophysical and petrographic studies of petroleum reservoir quality and seal potential in tertiary strata.

Funding:	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	Total
Gen Fund	$260,000						$260,000
Total:	$260,000	$0	$0	$0	$0	$0	$260,000

☐ State Match Required ☑ One-Time Project ☐ Phased - new ☐ Phased - underway ☐ On-Going
0% = Minimum State Match % Required ☐ Amendment ☐ Mental Health Bill

Operating & Maintenance Costs:

	Amount	Staff
Project Development:	0	0
Ongoing Operating:	0	0
One-Time Startup:	0	
Totals:	0	0

Additional Information / Prior Funding History:
New Project - No Prior Funding History

Project Description/Justification:
Critical aspects of the petroleum geology of Cook Inlet basin remain poorly understood despite nearly a century of exploration in the region. Two poorly understood aspects of the region's geology include a lack of information on the scale and geometry of potential reservoir sand bodies, and compositional factors affecting reservoir quality of sand bodies and the ability of enclosing mudstones to serve as effective reservoir seals. This project will help fund a major effort over three years to increase the collection, synthesis, and public availability of geologic data essential to improved understanding of these aspects of Cook Inlet's geology. This work will result in the timely release of geological data to support resource development in Cook Inlet, promote new exploration in the basin, attract new industry to south-central Alaska, and promote continued economic growth within the state of Alaska. This funding will be distributed across at least two sub-projects:

- **Reconstruction of tertiary depositional systems in Cook Inlet:** This sub-project will integrate new outcrop data with available well and seismic data to reconstruct depositional systems in tertiary rocks of Cook Inlet basin. The resulting data and interpretations will be prepared for timely release to the public. Most oil and gas production in Cook Inlet comes from tertiary reservoir rocks in structural traps and stratigraphic traps in the basin have not been pursued. While many producing fields associated with structures include stratigraphic components, little effort has been directed toward explicitly exploring for stratigraphic traps. The successful pursuit of

stratigraphically trapped hydrocarbons requires detailed knowledge of depositional systems and the ability to recognized key elements of these systems in subsurface datasets. Data and interpretations resulting from this sub-project will assist in recognizing depositional systems on subsurface datasets and promote exploration for stratigraphically trapped oil and gas.

? **Petrophysical and petrographic studies of petroleum reservoir quality and seal potential in tertiary rocks:** This sub-project will provide compositional, textural, porosity, and permeability data for potential reservoir sands, and provide compositional data and mercury capillary injection pressure data for fine-grained non-reservoir rocks. The resulting dataset will be used to evaluate reservoir quality and the ability of non-reservoir fine-grained rocks to form reservoir seals. Data and interpretations resulting from the sub-project will be useful in evaluating reservoir and seal risk in the basin.

This funding will leverage funds received from the private sector through a Division of Geological and Geophysical Surveys Cook Inlet industry sponsorship program.

Why is this Project Needed Now?:

Declining gas production forced the recent indefinite closure of the Agrium facility on the Kenai Peninsula and deliverability shortfalls are predicted for gas to the wider south-central Alaska market as soon as 2008. The region's economy is affected through the loss of many hundreds of high-quality jobs and tax revenue. Declining gas supplies contribute to higher energy costs shouldered by regional consumers of electric power, and consumers along the railbelt as far away as Fairbanks. Declining production also translates to lost royalty income for the state of Alaska. This situation is likely to grow worse over the next decade unless new production is brought online. Work funded by this CIP will promote new hydrocarbon exploration in the basin that, over the long term, will help ease looming supply shortfalls.

Specific Spending Detail:

LINE ITEM	DOLLAR AMOUNT	DESCRIPTION (text)
Personal Services	$ 60,000	University intern (1) and 2.4 months each for one Geologist II and one Geologist III.
Travel	$ 10,000	Travel between Fairbanks and Cook Inlet for field work and meetings in Anchorage; one trip out of state to present project results to industry.
Services	$ 190,000	Field logistics and sample analyses.

Project Support:

Gas consumers in South Central; oil and gas companies operating in Cook Inlet.

Project Opposition:

None anticipated.