FY12 INVITATION
PROPOSAL SUMMARY PAGE

Project Title: Long-term monitoring: Environmental Drivers component - Long-term Monitoring of Oceanographic Conditions in the Alaska Coastal Current from Hydrographic Station GAK 1.

Project Period: October 1, 2011 – September 30, 2016

Primary Investigator(s): Thomas Weingartner, Principal Investigator, (weingart@ims.uaf.edu)

Study Location: Gulf of Alaska

Abstract: This project is a component of the integrated Long-term Monitoring of Marine Conditions and Injured Resources and Services submitted by McCammon et. al.

This program continues a 40-year time series of temperature and salinity measurements at hydrographic station GAK 1. The data set, which began in 1970, now consists of monthly CTDs and a mooring with 6 temperature/conductivity recorders throughout the water column, a fluorometer and nitrate sensor at 20 m depth and a nitrate sensor at 150 m depth. The project monitors four important Alaska Coastal Current ecosystem parameters that will quantify and help understand interannual and longer period variability in:

1. Temperature and salinity throughout the 250 m deep water column,
2. Near surface stratification,
3. Near and subsurface nitrate supply on the inner shelf,
4. Fluorescence as an index of phytoplankton biomass, and

In aggregate these variables are basic descriptors of the Alaska Coastal Current, an important habitat and migratory corridor for organisms inhabiting the northern Gulf of Alaska, including Prince William Sound.

Estimated Budget:
EVOSTC Funding Requested: including the 9% GA
FY12: $109,495, FY13:$112,538, FY14: $115,721, FY15: $119,051, FY16: $122,539, TOTAL: $579,343

Non-EVOSTC Funds to be used:
none

Date: May 31, 2011

(NOT TO EXCEED ONE PAGE)

PROJECT PLAN

I. NEED FOR THE PROJECT

A. Statement of Problem

Justification

The purpose of this proposal is to provide long-term monitoring data on the physical oceanography of the Alaska Coastal Current and the northern GoA shelf. The Alaska Coastal Current (ACC) is the most prominent feature of the Gulf of Alaska's shelf circulation. It is a narrow (~40 km), swift, year-round flow maintained by the integrated forcing of winds and coastal freshwater discharge. That forcing is variable and reflected in ACC properties. The current originates on the British Columbian shelf and leaves the Gulf for the Bering Sea through Unimak Pass. Substantial portions of the ACC circulate through Prince William Sound and feed lower Cook Inlet and Kachemak Bay before flowing southwestward through Shelikof Strait. The current controls water exchange and transmits its properties into the fjords and bays between Prince William Sound and the Alaskan Peninsula. The monitoring proposed herein quantifies variability of the Gulf's shelf environment. ACC monitoring provides the broader-scale context for understanding variability in adjacent marine ecosystems and its affect on particular species (e.g., herring, salmon, forage fish). The ACC's variability is transmitted to nearshore habitats around the gulf.

Measurements at GAK 1 (Figure 4), at the mouth of Resurrection Bay, began in 1970. Initially the sampling was opportunistic, became more regular in the 1980s and 1990s, and systematic beginning in 1997 with EVOSTC support. Since then it involves involves monthly conductivity-temperature versus depth (CTD) casts and hourly temperature and salinity measurements at 6 depths distributed over the water column. GAK 1 is *the only station* in the GoA that measures both salinity and temperature over the 250 m deep water column.

The 40-year GAK 1 time series has documented:

1. The large interannual differences associated with El Nino and La Nina events, including substantial differences in the spring bloom between these phenomena (Weingartner et al., 2003, Childers et al., 2005).

2. The intimate connection between coastal freshwater discharge and the depth-varying evolution of winter and spring temperatures over the shelf (Janout et al., 2010; Janout 2009).

3. That GAK 1 is a reliable index of ACC transports of mass, heat, and freshwater (Weingartner et al., 2005).

4. That GAK 1 near-surface salinities are correlated with coastal freshwater discharge from around the Gulf (Weingartner et al., 2005).

5. Variations in mixed-layer depth in the northern Gulf, which affects primary production (Sakar et al., 2006)

6. Decadal scale trends in salinity and temperature, (Royer, 2005; Royer and Grosch, 2006; Weingartner et al., 2005, and Janout et al., 2010).

7. The relationships between temperature and salinity variations and the Pacific Decadal Oscillation and the strength and position of the Aleutian Low (Royer, 2005; Weingartner et al., 2005, and Janout et al., 2010)

8. That the record can guide understanding the variability in iron concentrations, a potentially limiting micro-nutrient required by many phytoplankton. Preliminary efforts indicate that iron and surface salinity are correlated at least in certain seasons (Wu, et al., 2008).

As shown by Meuter et al., (1994), Meuter (2004), and Spies (2009), these issues affect ecosystem processes on both the shelf and within Prince William Sound and Lower Cook Inlet/Kachemak Bay.

B. Relevance to 1994 Restoration Plan Goals and Scientific Priorities

Please see pages 2-4 of the integrated proposal titled "Long-Term Monitoring of Marine Conditions and Injured Resources and Services," and submited by McCammon et. al

II. PROJECT DESIGN

A. Objectives

<u>Project Objectives:</u>

The fundamental goal of this program is to provide a high quality, long-term data to quantify and understand monthly, seasonal, interannual and longer period variability of the GoA shelf. This measurement provides the broader scale spatial perspective discussed on pages 1 -5. Specifically we will measure:

1. Temperature and salinity throughout the water column,
2. Near surface stratification since this affects phytoplankton bloom dynamics,
3. Near and subsurface nitrate supply on the inner shelf, since this important nutrient affects phytoplankton production,

<u>Project Integration</u>

Integration with other PIs and components of the monitoring, herring and lingering oil efforts were outlined on pages 1 – 5. In addition, we note that the GAK 1 effort has assisted others with their research. For example, in 2001-02 it provided a test bed for prototype halibut tags (developed by USGS-BRD scientists), which were then used to study halibut migrations in the GoA and Bering Sea. The data are being used by herring biologists to assess energetic costs of overwintering herring (Heintz, pers. comm), and it has been used studies of king crab (Bechtol, 2009), spiny dogfish Tribuzio (2009), the community structure of rocky coasts (Ingolfsson, 2005), and salmon (Boldt and Haldorson, 2002). We have recently had requests from Steve Moffit (ADF&G salmon biologist) to use this data as an aid in salmon forecasts and we are aware of several Gulf fishermen who routinely access this data set. After processing, the data will be posted to the GAK 1 website (http://www.ims.uaf.edu/gak1/) and submitted to the data management team for archiving.

Leveraging

We are collaborating at no cost to this proposal with National Park Service scientists at Glacier Bay who are sampling in Glacier Bay using CTD sampling and analysis protocols identical to those at GAK 1. Since southeast Alaska waters contribute to the ACC, the 15 year Glacier Bay time series provides the opportunity to assess variability in the northeast and northwest Gulf and to understand how these regions co-vary and how the ACC evolves as if flows westward toward Prince William Sound. The GAK 1 mooring includes a nitrate sensor that was provided by the Alaska Ocean Observing System (AOOS) to this project.

B. Procedural and Scientific Methods

Following past protocols, we propose monthly CTD measurements and year-long, continuous measurements from a subsurface mooring with temperature and conductivity (T/C) recorders placed at nominal depths of 20, 30, 60, 100, 150, 200, and 250 m. A (Wetlabs, Inc.) fluorometer is included at 20 m, to determine timing and duration of the spring and summer blooms. The fluorometer emits an illuminated beam of light (at 470 nm) that stimulates chlorophyll in the beam path. The absorbed light excites the chlorophyll molecules, which emit light (fluoresce) at a 695 nm. The emitted light is detected by the fluorometer and the intensity of the fluorescence is proportional to chlorophyll biomass. (Note that fluorescence is only a relative measure of chlorophyll concentration. We also include 1 - 2 ISUS (*In Situ* Ultraviolet Sensor) sensors at 20 m and at 150 m depth. These instruments optically determine nitrate based on the nitrate UV-absorption spectrum. This spectrum is unique for nitrate and it is resolved by the 256-channel ISUS spectrometer and interpreted by an algorithm developed by the Monterey Bay Aquarium Research Institute. The 20 m ISUS is within the euphotic zone and complements the fluorometer data. The 150 m ISUS will gauge the annual re-supply of nitrate to this shelf (and also Prince William Sound) through the annual exchange between deep shelf and slope waters. The deep water (and nitrate) is mixed to the surface in winter and is thereby available to phytoplankton at the onset of the spring bloom. ISUS sensors appear to provide sufficiently reliable data ($\pm$ 2 μM) for a whole year. The ISUS sensors are provided at no cost to this project because they were provided (and will be maintained) with support from the Alaska Ocean Observing System.

The moored instruments and monthly CTD sampling schemes are complementary; one provides high vertical resolution at monthly time scales and the other provides high temporal resolution, but at coarser vertical spacing. The monthly CTDs provide redundancy in the event an instrument fails on the mooring. The GAK 1 monthly temperature and salinity are statistically significant predictors of monthly anomalies of the alongshelf baroclinic transport in the ACC (from November – August) so ACC transport anomalies are monitored indirectly from the GAK 1 data.

The moored T/C recorders are Microcats (at depths greater than 20 m) and a SeaCat (at 20 m depth to incorporate the fluorometer) both manufactured by Seabird, Inc. Seabird performs pre- and post-calibrations upon which we determine sensor drift (typically ~0.01^{o}C -yr^{-1} and ~0.03, or better, Practical Salinity Unit yr^{-1}). The monthly CTD casts are collected from a chartered fishing vessel resident in Seward using a portable CTD (Seabird SBE-25). The SBE 25 has an accuracy ~0.01 or better for salinity and .005^{o}C for temperature. Bio-fouling will gradually degrade the signal quality of the fluorometer so we strive to deploy the mooring in March or early April (depending upon weather) in order to minimize fouling potential prior to the spring bloom in April or May. Temperature and salinity data are sampled at 15-minute intervals except at 20 m depth where power supply considerations for the fluorometer and ISUS dictate hourly sampling.

The GAK 1 sampling approach will be identical to that supported by EVOSTC in the recent past: monthly CTDs and maintenance of the year-round oceanographic mooring. Sampling is cost-effectively serviced from Seward using local charters or small boats operated by the Seward Marine Center.

C. Data Analysis and Statistical Methods

The temperature and salinity data analyses are straightforward. We will compute standard statistical estimates for each month and depth and compare these with historical data since the thrust of this effort is to quantify interannual variability. We continue to incorporate an integrated discharge time series and air-sea heat fluxes derived from National Center for Environmental Prediction (NCEP) in our analyses of salinity and temperature variability. We have generated the historical heat flux calculations which show that winter heat losses (from the ocean to the atmosphere) are more variable both interannually and at longer periods than summer heat gains. For example, winter heat loss has decreased by nearly 20% since the mid-1970s and this change was reflected in the warming at GAK 1 through 2005. Since that time winter heat loss has increased substantially and returned to values that occurred in the early 1970s. Winter heat loss, in conjunction, with runoff, affects the ocean temperature distribution through spring when many young larvae are emerging to feed (*Janout et al*., 2010). On the other hand summer heat gains appear to be relatively consistent from year to year because this is primarily a function of cloud cover. *Royer et al*. (2006) contend that summer surface temperatures over the shelf and in Prince William Sound are primarily a function of the stratification. They suggest that stronger stratification traps heat in the surface layer and elevates surface temperatures, whereas weaker stratification allows the solar energy to diffuse to greater depths. Within the ACC, stratification is primarily a function of the vertical salinity gradients that we are measuring at GAK 1.

We will also quantify spring and summer phytoplankton blooms in relation to changes in stratification, runoff, and winds. Stratification estimates will be made from the 3 uppermost instruments and the monthly CTD surveys. The fluorescence data will provide an estimate of the number of blooms and bloom duration observed in spring and summer. This approach is necessarily subjective since a bloom event is defined with reference to a base line, which may drift over time because of bio-fouling. However, when present, biofouling develops after the spring bloom, so our qualitative descriptions are primarily valuable in describing year-to-year variability of the spring bloom. GLOBEC measurements, as well as those by *Eslinger et al.* (2001) from Prince William Sound, indicate that the timing of the spring bloom varies considerably from year-to-year perhaps by as much as several weeks. *Weingartner et al*. (2003) show that the onset of the spring bloom on the Gulf of Alaska shelf is tied to the quantity and phasing of winter and early spring runoff because freshwater is the principal stratifying agent in the ACC in both seasons. For example, the spring bloom in the ACC was delayed until May in 2007 and 2008 because of the weak stratification; in contrast it occurred between early to mid-April during the GLOBEC years when winters were wetter and warmer.

D. Description of Study Area

The fieldwork will be conducted at Station GAK1 at the mouth of Resurrection Bay. The station is at ~59^{o} 51'N, 149^{o} 28'W, and is located on the inner edge of the ACC midway between Prince William Sound and Cook Inlet in approximately 265 m water depth.

E. Coordination and Collaboration with Other Efforts

All data sets will be available on the GAK 1 website (http://www.ims.uaf.edu/gak1/). The GAK 1 data will thus be available to other scientists in the Long-Term Monitoring program as well as other interested scientists outside of the program. As discussed above this project is being supplemented by the Alaska Ocean Observing System (AOOS), which is providing the ISUS nitrate samplers (with each sampler costing $30,000). We have assisted the National Park Service in establishing a similar monthly sampling and data processing protocol in Glacier Bay National Park. That data will be made available to this project. The sampling in Glacier Bay therefore provides a complementary data set that is made upstream (in terms of the general circulation characteristics of the GOA shelf. Collectively, the Glacier Bay and GAK1 data sets provide a broad-scale perspective of the GOA shelf environment.

III. SCHEDULE

A. Project Milestones

Objective 1. Monthly CTDs will be updated quarterly and placed on the website and the moored measurements will be made available by March-April following the year that the mooring is recovered. This allows time for the instruments to be calibrated (at the manufacturer and the post-calibrations applied to the data set.

Objective 2. Determine seasonal changes in near surface stratification since this affects phytoplankton bloom dynamics. Updated annually in accordance with the processing of the mooring data.

Objective 3. Determine near and subsurface nitrate supply on the inner shelf, since this important nutrient affects phytoplankton production. Updated annually in accordance with the processing of the mooring data.

B. Measurable Project Tasks

FFY 11, 2nd quarter (January 1, 2011-March 31, 2011)
February: *Project funding approved by Trustee Council*

FFY 11, 3rd quarter (April 1, 2011-June 30, 2011)
April, May, June Monthly CTD surveys

FFY 11, 4th quarter (July 1, 2011-September 30, 2011)
August, September: Monthly CTD surveys

FFY 12, 1st quarter (October 1, 2011-December 31, 2011)
October, November, December: Monthly CTD surveys *Begin analysis and report writing*

FFY 12, 2nd quarter (January 1, 2012-March 31, 2012)
January 18: *Annual Marine Science Symposium*
January, February, March: Monthly CTD surveys
March: re-deploy GAK 1 mooring

FFY 12, 3rd quarter (April 1, 2012-June 30, 2012)
April 15 *Submit final report.*
April, May: Monthly CTD surveys

UAF GAK component:

Statement of Work

The University of Alaska will perform the following tasks under this project:

1. Arrange logistics and occupy hydrographic station GAK 1 8 – 12 times/year at approximately monthly intervals. The number of occupations will depend on vessel charter costs.
2. Perform annual maintenance of the GAK 1 mooring to include fabrication, deployment and recovery of the mooring, and acquisition of new equipment if needed.
3. Calibrate all instruments and quality control all data.
4. Post data online at http://www.ims.uaf.edu/gak1/ and transmit for archival to the Data Coordination Center.
5. Participate in meetings with other PIs and prepare annual reports.

Budget Justification

Salary support

Dr. Thomas Weingartner is the project PI and is responsible for project management. He will devote 0.5 months per year to the project. Mr. Seth Danielson is a physical oceanographer who has worked on both the GLOBEC and EVOSTC GAK 1 projects for several years and coordinates with the Glacier Bay NPS in their ocean monitoring program. He is responsible for data processing, analyses, and maintenance of the project web page. We request support for 1.0 month/year of his time. Mr. David Leech is the Seward based mooring and marine technician responsible for the design, fabrication, deployment and recovery of the mooring and maintenance of all of the instruments. He also conducts the monthly CTD sampling. He will spend 1.0 month/year on the project collecting CTDs and 1 month/year fabricating the mooring and conducting the mooring turnaround. His overtime covers the days he is at sea working on this project. All members of this research team are affiliated with the University of Alaska.

Benefits

Staff benefits are applied according to UAF's fixed benefit rates for FY11 with the Office of Naval Research (ONR). A copy of the negotiated rate proposal is available at: http://www.alaska.edu/cost-analysis/negotiation-agreements.

Travel

Funds for one person to travel (round-trip Fairbanks – Seward) with 4 days per diem to participate in the mooring turnaround.

Ten percent has been added to airfare, car rental and taxi travel beginning in year 2 to accommodate anticipated price increases. Per diem (food, lodging and mileage) have not been increased. We reserve the right to travel to other domestic locations as may be necessary to fulfill the requirements of the proposal.

Services

The service request includes funds for instrument calibrations ($1,520 per year) and the shipping ($800 per year) of these to and from Seabird in Seattle. Additional funds ($12,000 per year) are needed to cover the costs for 8 days for the monthly CTD sampling periods. (Two months will be covered by the annual Seward Line cruises and an additional sampling period will be covered by the mooring cruise.) The mooring recovery/deployment must be done from a larger vessel and we are requesting funds ($4,000 per year) to charter a Seward-based fishing vessel to accomplish this task.

Supplies
No supplies are requested

Equipment ($10,015 per year)
We request funds to purchase one MicroCat per year equipped with a strain gauge pressure sensor. These instruments will gradually retire those that have been dedicated to this project and which are now nearing 10 years old. Additional funds are requested for assembling the mooring.

Indirect Costs
Facilities and Administrative (F&A) Costs are negotiated with the State of Alaska and the rate for research is calculated at 25% of the Modified Total Direct Costs (MTDC). MTDC includes Total Direct Costs minus tuition, scholarships, subaward amounts over $25,000, and equipment. A copy of the agreement is available at: http://www.alaska.edu/cost-analysis/negotiation-agreements.

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 12-FY16

Budget Category:	Proposed FY 12	Proposed FY 13	Proposed FY 14	Proposed FY 15	Proposed FY 16	TOTAL PROPOSED
Personnel	$52.7	$55.1	$57.5	$60.1	$62.8	$288.2
Travel	$1.4	$1.5	$1.5	$1.6	$1.7	$7.8
Contractual	$22.9	$22.9	$22.9	$22.9	$22.9	$114.6
Commodities	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Equipment	$10.0	$10.0	$10.0	$10.0	$10.0	$50.1
Indirect Costs (*will vary by proposer*)	$13.4	$13.8	$14.2	$14.5	$14.9	$70.8
SUBTOTAL	$100.5	$103.2	$106.2	$109.2	$112.4	$531.5
General Administration (9% of subtotal)	$9.0	$9.3	$9.6	$9.8	$10.1	$47.8
PROJECT TOTAL	$109.5	$112.5	$115.7	$119.1	$122.5	$579.3
Other Resources (Cost Share Funds)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0

COMMENTS:

FY12-16

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3A
NON-TRUSTEE AGENCY
SUMMARY

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Personnel Costs:		Months	Monthly		Personnel
Name	Project Title	Budgeted	Costs	Overtime	Sum
T. Weingartner	PI	0.5	12.624		6.312
Technician 1		2.0	10.549	12.712	33.810
Technician 2		1.0	12.563		12.563
		Subtotal	35.7	12.7	
				Personnel Total	$52.7

Travel Costs:	Ticket	Round	Total	Daily	Travel
Description	Price	Trips	Days	Per Diem	Sum
Fairbanks to Seward (for cruise)	0.350	1	4	0.262	1.4
				Travel Total	$1.4

FY12

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
PERSONNEL & TRAVEL DETAIL

EXXON VALDEZ **OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Contractual Costs: Description	Contract Sum
vessel charter for CTDs (8 1-day trips, $1500/day)	12.000
vessel charter for morrings (1 2-day trip, $2000/day)	4.000
MicroCat and SeaCat calibrations (6 @ $600, 1 @ $1000)	4.600
SEBE-25 calibration	1.520
shipping	0.800
If a component of the project will be performed under contract, the 4A and 4B forms are required. **Contractual Total**	$22.9

Commodities Costs: Description	Commodities Sum
project supplies	0.000
Commodities Total	$0.0

FY12

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
CONTRACTUAL &
COMMODITIES DETAIL

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

New Equipment Purchases: Description	Number of Units	Unit Price	Equipment Sum
Seabird 37SMP Microcat with pressure	1.0	4.565	4.565
miscellaneous mooring hardware	1.0	5.450	5.450
		New Equipment Total	$10.0

Existing Equipment Usage: Descriptior	Number of Units	Inventory Agency

FY12

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
EQUIPMENT DETAIL

EXXON VALDEZ **OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Personnel Costs:		Months	Monthly		Personnel
Name	Project Title	Budgeted	Costs	Overtime	Sum
T. Weingartner	PI	0.5	13.194		6.597
Technician 1		2.0	11.024	13.284	35.332
Technician 2		1.0	13.129		13.129
		Subtotal	37.3	13.3	
				Personnel Total	$55.1

Travel Costs:	Ticket	Round	Total	Daily	Travel
Description	Price	Trips	Days	Per Diem	Sum
Fairbanks to Seward (for cruise)	0.385	1	4	0.271	1.5
				Travel Total	$1.5

FY13

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
PERSONNEL & TRAVEL
DETAIL

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Contractual Costs: Description		Contract Sum
vessel charter for CTDs (8 1-day trips, $1500/day)		12.000
vessel charter for morrings (1 2-day trip, $2000/day)		4.000
MicroCat and SeaCat calibrations (6 @ $600, 1 @ $1000)		4.600
SEBE-25 calibration		1.520
shipping		0.800
If a component of the project will be performed under contract, the 4A and 4B forms are required.	**Contractual Total**	$22.9

Commodities Costs: Description		Commodities Sum
Project Supplies		0.0
	Commodities Total	$0.0

FY13

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
CONTRACTUAL &
COMMODITIES DETAIL

EXXON VALDEZ **OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

New Equipment Purchases: Description	Number of Units	Unit Price	Equipment Sum
Seabird 37SMP Microcat with pressure	1.0	4.565	4.565
miscellaneous mooring hardware	1.0	5.450	5.450
		New Equipment Total	$10.0

Existing Equipment Usage: Descriptior	Number of Units	Inventory Agency

FY13

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
EQUIPMENT DETAIL

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 12-FY16

Personnel Costs:		Months	Monthly		Personnel
Name	Project Title	Budgeted	Costs	Overtime	Sum
T. Weingartner	PI	0.5	13.786		6.893
Technician 1		2.0	11.520	13.883	36.923
Technician 2		1.0	13.719		13.719
		Subtotal	39.0	13.9	
				Personnel Total	$57.5

Travel Costs:	Ticket	Round	Total	Daily	Travel
Description	Price	Trips	Days	Per Diem	Sum
Fairbanks to Seward (for cruise)	0.424	1	4	0.281	1.548
				Travel Total	$1.5

FY14

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
PERSONNEL & TRAVEL DETAIL

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Contractual Costs: Description		Contract Sum
vessel charter for CTDs (8 1-day trips, $1500/day)		12.000
vessel charter for morrings (1 2-day trip, $2000/day)		4.000
MicroCat and SeaCat calibrations (6 @ $600, 1 @ $1000)		4.600
SEBE-25 calibration		1.520
shipping		0.800
If a component of the project will be performed under contract, the 4A and 4B forms are required.	**Contractual Total**	$22.9

Commodities Costs: Description	Commodities Sum
Project Supplies	0.0
Commodities Total	$0.0

FY14

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
CONTRACTUAL &
COMMODITIES DETAIL

EXXON VALDEZ **OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

New Equipment Purchases: Description	Number of Units	Unit Price	Equipment Sum
Seabird 37SMP Microcat with pressure	1.0	4.565	4.565
miscellaneous mooring hardware	1.0	5.450	5.450
		New Equipment Total	$10.0

Existing Equipment Usage: Descriptior	Number of Units	Inventory Agency

FY14

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
EQUIPMENT DETAIL

EXXON VALDEZ **OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Personnel Costs:		Months	Monthly		Personnel
Name	Project Title	Budgeted	Costs	Overtime	Sum
T. Weingartner	PI	0.5	14.408		7.204
Technician 1		2.0	12.038	14.508	38.584
Technician 2		1.0	14.336		14.336
		Subtotal	40.8	14.5	
				Personnel Total	$60.1

Travel Costs:	Ticket	Round	Total	Daily	Travel
Description	Price	Trips	Days	Per Diem	Sum
Fairbanks to Seward (for cruise)	0.466	1	4	0.291	1.630
				Travel Total	$1.6

FY15

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
PERSONNEL & TRAVEL DETAIL

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Contractual Costs: Description	Contract Sum
vessel charter for CTDs (8 1-day trips, $1500/day)	12.000
vessel charter for morrings (1 2-day trip, $2000/day)	4.000
MicroCat and SeaCat calibrations (6 @ $600, 1 @ $1000)	4.600
SEBE-25 calibration	1.520
shipping	0.800
If a component of the project will be performed under contract, the 4A and 4B forms are required. **Contractual Total**	$22.9

Commodities Costs: Description	Commodities Sum
Project Supplies	0.0
Commodities Total	$0.0

FY15

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
CONTRACTUAL &
COMMODITIES DETAIL

EXXON VALDEZ **OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

New Equipment Purchases: Description	Number of Units	Unit Price	Equipment Sum
Seabird 37SMP Microcat with pressure	1.0	4.565	4.565
miscellaneous mooring hardware	1.0	5.450	5.450
		New Equipment Total	$10.0

Existing Equipment Usage: Descriptior	Number of Units	Inventory Agency

FY15

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
EQUIPMENT DETAIL

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Personnel Costs:		Months	Monthly		Personnel
Name	Project Title	Budgeted	Costs	Overtime	Sum
T. Weingartner	PI	0.5	15.056		7.528
Technician 1		2.0	12.580	15.161	40.321
Technician 2		1.0	14.981		14.981
		Subtotal	42.6	15.2	
				Personnel Total	$62.8

Travel Costs:	Ticket	Round	Total	Daily	Travel
Description	Price	Trips	Days	Per Diem	Sum
Fairbanks to Seward (for cruise)	0.512	1	4	0.303	1.724
				Travel Total	$1.7

FY16

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
PERSONNEL & TRAVEL
DETAIL

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Contractual Costs: Description		Contract Sum
vessel charter for CTDs (8 1-day trips, $1500/day)		12.000
vessel charter for morrings (1 2-day trip, $2000/day)		4.000
MicroCat and SeaCat calibrations (6 @ $600, 1 @ $1000)		4.600
SEBE-25 calibration		1.520
shipping		0.800
If a component of the project will be performed under contract, the 4A and 4B forms are required.	**Contractual Total**	$22.9

Commodities Costs: Description		Commodities Sum
Project Supplies		0.0
	Commodities Total	$0.0

FY16

Program Title: GAK Component
Team Leader: T. Weingartner

FORM 3B
CONTRACTUAL &
COMMODITIES DETAIL

EXXON VALDEZ **OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

New Equipment Purchases: Description	Number of Units	Unit Price	Equipment Sum
Seabird 37SMP Microcat with pressure	1.0	4.565	4.565
miscellaneous mooring hardware	1.0	5.450	5.450
		New Equipment Total	$10.0

Existing Equipment Usage: Descriptior	Number of Units	Inventory Agency

FY16

Program Title:
Team Leader:

FORM 3B
EQUIPMENT DETAIL