

Please review all of the following information, including the gear allocations and field team information, to ensure accuracy. This plan is an agreement between CH2M HILL Polar Services (CPS), formerly VECO Polar Resources, and your group, documenting the logistics support you will receive.

SECTION ONE: PROJECT INFORMATION

Lead Principal Investigator	Cameron Wake
Institute	University of New Hampshire, Department of Earth Sciences
Project Title / Grant #	Collaborative Research: Drillsite Reconnaissance and Snow Chemistry Survey in Denali National Park (0714004)
NSF Program and Manager	US\Federal\NSF\OD\OPP\ARC\ANS, Dr. William Wiseman
CPS Project Manager	Marin Kuizenga

Logistics Summary

<p>Researchers on this collaboration between Wake, UNH (0714004), and Kreutz, U Maine (0713974), will conduct a detailed site reconnaissance in Denali National Park (DNP) snow accumulation zones to select the best site for a future surface to bedrock ice core drilling effort. Scientists expect the work to contribute to understanding of snow chemistry variability as a proxy for climate reconstruction over the last several thousand years in the DNP.</p> <p>In May of 2008, investigators will conduct geophysical surveys and snow/ice sampling experiments at several sites in the DNP. After flying from Talkeetna to Kahiltna Base Camp the team of six will establish a base camp from which to work. Fieldwork is planned at four different sites within DNP: below Kahiltna Pass, at 14,200' Ranger Camp, Mt Capps, and at Peters Dome, on the NW side of the Denali Massif. The team will travel between the study areas and the base camp via skis and helicopter. Heavy equipment will be transported via man hauling and helicopter. At each location, they will conduct GPS grid surveys, ground-penetrating radar profiling, and snowpit and firn core sampling. They also plan to install two automatic weather stations on the mountain. Samples will be stored in Anchorage for frozen shipment to UNH; Polar Field Services staff in Alaska will assist with core shipment preparations when the time comes.</p> <p>CPS (formerly VPR) will provide fixed-wing and helicopter support for the put-in, take-out, and transfer between study areas, a tent camp (including fuel and food), communications/safety gear, and cargo to/from the field, including frozen shipment of snow and firn cores. ICDS will supply a 3" auger and UNAVCO will provide GPS equipment. The investigators will arrange and pay for all other logistics (including permits) through the grant.</p>
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For the complete CPS online project record for this grant, including science objectives, go to: http://www.vecopolar.com/arlss_reports/arlss_projectsdetail.asp?cbPropNum=0714004

SECTION TWO: SEASON FIELD PLANS

Outstanding Actions and Notes

Issue	Responsibility	Date Completed
Review support plan for accuracy and distribute to all field team members	PI	
Visit all hyperlinks and review all documents referred to in the support plan	Field Team Members	
Obtain all necessary permits for fieldwork	PI	
Complete Critical Success Factors	PI	

As the shipper of hazardous substances, you are legally responsible for declaring, documenting, and packaging hazardous materials in accordance with all applicable state and federal laws.	PI	
Please submit all receipts to CPS Fairbanks office for reimbursement	Wake	

Allocations and Services

Allocations from CH2M HILL Polar Services Inventory

Quant/Unit	Item	ID Number
1 ea	1kw Honda generator	
2 ea	Satellite phone	
1 ea	Cook tent, (M.H. Satellite)	
1 ea	Coleman stove	
2 ea	Air-to-ground radio	
1 ea	RMI medical kit and service	
3 ea	White tarps	

For more information on satellite phones, radios, manuals and other field communications support, please visit the CPS communications website at <http://vpr.sri.com>.

Other services

Quant/Unit	Item	Notes
1 lot	Freezer rental & core handling assistance in Anchorage	CPS staff will be in Anchorage to assist with cores. See Appendix 1: Ice Core Plan.
1 lot	Core shipment	Via Fed Ex ANC>BOS. See Appendix 1: Ice Core Plan.
1 lot	Freight reimbursement	
1 lot	Camp fuels reimbursement	
1 lot	Freezer truck rental reimbursement, for UNH	NTE \$2250
1 ea	3" auger	ICDS will provide.
1 lot	GPS equipment	UNAVCO will provide.

Accommodations

Quant/Unit	Item	Notes
180 ea	Remote user days	\$20/person/day, by gift card

Air Support

Type	Location	Date	Comment
Helicopter support	Talkeetna	May 5- May 26	CPS will reimburse costs for the NPS-contracted Lama helicopter through a cooperative agreement.
Fixed wing support	Talkeetna	May 3- 4	Reconnaissance flights, NTE 8 hours over 2 days of flying.
Fixed wing support	Talkeetna	May 5, May 26	Put in and take out of personnel and gear to Kahiltna Base Camp
Fixed wing support	Kahiltna > Anchorage	May 25	Direct flight to move cores and 1-2 team members to ANC (Merrill Field Airport)

Field Team Information

Name	Location	Date In	Date Out	Email
Karl Kreutz	Denali National Park	05/01/08	05/26/08	karl.kreutz@maine.edu
Eric Kelsey	Denali National Park	05/01/08	05/26/08	ekelsey@gust.sr.unh.edu
Seth Campbell	Denali National Park	05/01/08	05/26/08	Seth_Campbell@umit.maine.edu
Mike Waszkiewicz	Denali National Park	05/01/08	05/26/08	datnorth@primus.ca
Erich Osterberg	Denali National Park	05/01/08	05/26/08	erich.osterberg@maine.edu
Cameron Wake	Denali National Park	05/01/08	05/26/08	cameron.wake@unh.edu

Research Team

Role	Name	Email	Phone / Fax
Collaborator	Karl Kreutz	karl.kreutz@maine.edu	207.581.3011 / 207.581.3490
Principal Investigator	Cameron Wake	cameron.wake@unh.edu	603.862.2329 / 603.862.2124

Gear Shipping Address

Fairbanks office

SECTION THREE: CPS CONTACT INFORMATION
CPS Team Members

Contact for	Name	Email	Primary Phone(s)
Alaska operations	Marin Kuizenga	marin@polarfield.com	Fairbanks: 907.590.0755
Alaska operations	Naomi Whitty	naomi@polarfield.com	Fairbanks: 907.590.3954
Alaska operations	Matt Irinaga	matt@polarfield.com	Fairbanks: 907.978.0564
Alaska, field operations	Tracy Sheeley	sheeley@polarfield.com	Fairbanks: 907.388.2498 Talkeetna: 907.733.3791
Sat phones & comms	Roy Stehle	roy.stehle@sri.com	Menlo Park: 650.859.2552
RMI	Kyli Olson	kyli@polarfield.com	Denver: 303.489.2151
Denver operations	Jill Ferris	jill@polarfield.com	Denver: 720.320.6155

CPS Offices

Denver	Fairbanks
CH2M HILL Polar Services Western Office 8110 Shaffer Parkway, Suite150 Littleton, CO 80127 Tel: 303.984.1450/1439 Fax: 303.984.1445	CH2M HILL Polar Services Alaska Office 2325 King Road Fairbanks, AK 99709 Tel: 907.455.4214 Fax: 907.455.4126

Other

Organization	Name	Internet/Email	Phone
Remote Medical International		http://www.remotemedical.com	1.206.734.3430
Talkeetna Air Taxi	Paul Roderick	http://www.talkeetnaair.com	907.733.2218
Natl Park Service	Dave Kreutzer		907.733.2231
Federal Express, FDCC Temperature Controlled Services	Jennifer Cain		234-310-4090 x 5648
Sysco Alaska	Greg Hendrickson		Direct: 907-565-5581 Cell: 907-980-0745

SECTION FOUR: SAFETY, ENVIRONMENT, HEALTH and PERMITS

Permits

Researchers are responsible for all permits required to conduct fieldwork. Please visit <http://www.vecopolar.com> and navigate to Alaska > Permits for more information regarding this topic.

Remote Medical International (RMI) Support

If you need medical advice/assistance, don't hesitate to contact Remote Medical International (RMI) using the card included with the medical kit or the information below. Be sure that each team member knows where the kit is located and understands how to use the RMI service in the field. For further information on RMI, please visit our website <http://www.vecopolar.com/> and navigate to Medical>Remote Medical Services/Kits.

RMI contact information:
 Phone: 206.734.3430
 Member ID: CH2M HILL Polar Services

Critical Success Factors

Please list the support factors that are most important for the success of your science. We track these factors in order to measure the success of CPS' support. Examples might be the availability of the helicopter or camp gear.

Factors
Fixed wing and helicopter flights arranged and paid for
Shipment of frozen ice cores from Kahiltna Base Camp to Boston
All equipment (CPS provided and UNH/UMaine gear shipped to Fairbanks) available in good working order in Talkeetna upon team arrival
Assistance with shipping of all UNH/UMaine equipment back to UNH at end of field season

Government Performance and Reporting Act of 1993 (GPRA)

NSF/OPP requires your help in complying with the Government Performance and Reporting Act of 1993 (GPRA). One measure of CPS' performance is a "facility-performance metric" which counts the number of productive days your project has in the field while relying on CPS facilities or support. Please keep track of any "lost days" and report these to us at the end of the season.

Appendices

Appendix One: Ice Core Plan

As part of CPS support for Cameron Wake's drilling project on Denali in May 2008, we have devised a plan to ship the snow samples and ice cores from the Kahiltna base camp at 7000' directly to Anchorage via a chartered turbine otter (Talkeetna Air Taxi). One-two members of Wake's team will accompany the samples to Anchorage. CPS employee Tracy Sheeley will meet the aircraft upon arrival to transport the samples (with help from the Wake team members) to Sysco Food Services in South Anchorage for temporary storage. The samples will remain at the Sysco facility for several days at approximately -0.5° F.

Note: Sysco Food Services is closed Saturdays and cannot accept cargo. This needs to be considered when scheduling the flights to move the ice and snow samples into and out of Kahiltna base camp.

Once the samples have been secured at Sysco, Sheeley will contact FedEx per their 4-day lead time requirement for shipping an Envirotainer to Seattle where it will be loaded with dry ice and batteries, and then shipped overnight to Anchorage.

http://www.envirotainer.com/products/leaflets_050321/1185_rkn_leaflet.pdf

Upon arrival in Anchorage, FedEx will deliver the Envirotainer to Sysco Food Services where Sheeley, at least one field team member and Sysco personnel will load the samples. FedEx will pick up the Envirotainer for transport to Logan Airport in Boston. The Envirotainer needs to be in FedEx's system by 1100 hr.

- FedEx will arrange the drop off and pickup of the Envirotainer at Sysco Food Services with dry ice and D batteries
- Ship 8 boxes of snow and ice core samples from Ted Stevens International Airport in Anchorage, AK to Logan Airport in Boston, MA.
- Net weight of samples ~ 800 lbs.
- Samples must be kept frozen @ -0.5 ° F throughout entire route
- Service is "door to door" Anchorage to Boston
- Data loggers will monitor temperature of samples
- Wake will arrange the pickup of samples at Logan Airport

Timeline

May 22	Sheeley travels to Talkeetna Monitor field team progress through Talkeetna Air Taxi and NPS. Notify Sysco as early as possible of core delivery ETA.
~ May 25	TAT flies cores and 1-2 team members from Kahiltna Base Camp to ANC.
	Sheeley meets flight in ANC Transport cores and team members to Sysco Note: Sysco can accept cores between 7am-3:30pm M-F. After hour deliveries are possible excluding Saturdays.
	Sheeley calls FedEx to initiate Envirotainer delivery (4-day lead time.)
~ May 25-29	Ice cores remain in Sysco freezer
May 26	Memorial Day. Sysco operations are normal
~ May 29	Envirotainer arrives via overnight FedEx in ANC and is delivered to Sysco. Sheeley, field team and Sysco pack Envirotainer. FedEx (Sourdough Express) will pick up and deliver to FedEx by 11:00am for overnight delivery to Logan.
~ May 29	Sheeley travels to Fairbanks.
~ May 30	Envirotainer arrives to Logan Airport. Wake personnel pick up samples in freezer truck and transports to UNH.

This plan is subject to change due to weather delays, search and rescue events, mechanical breakdowns, or any other unforeseen setback. Sheeley is scheduled to be in Talkeetna prior to May 25th in anticipation of an earlier than expected finish. She will monitor the team's progress through Wake via satellite phone, the NPS and Talkeetna Air Taxi.