McMurdo Area User Committee *(MAUC)*

Additional information, handouts, presentations
Annual meeting
17 July 2006

Analytical services draft report, 31 May 2006

Excerpts from the housing guidelines

Sample safety presentation

Dry Valleys Antarctic Specially Managed Area (DV ASMA) Management Group Report

Proposed guidelines for fuel chemical and liquid waste handling at Antarctic field sites

Lake Bonney Lab and Helicopter Pad

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Analytical services draft report, 31 May 2006

Meeting participants:

NSF	RPSC
Roberta Marinelli	Steve Kottmeier
Al Sutherland	Tracy Szela
Brian Stone	Nick Andrew
Berry Lyons	Cara Ferrier
John Priscu	Dave Nelson
Christine Foreman	Jessie Crain
Diane McKnight	Rob Edwards
Donal Manahan	Rick Fillmore

The meeting began with a general discussion regarding the history of analytical services in the Crary Lab and the current realities. The lab was started as a response to the need to analyze samples for environmental purposes, e.g. water quality monitoring, etc… As the sample processing capability grew, samples also were run for P.I.s. Eventually, RPSC had difficulty responding to the sheer numbers of sample processing requests and also had problems maintaining knowledgeable staff within the lab.

Current issues identified by grantees, NSF, and RPSC include the following:

1. The cost of running the lab is too high and NSF/RPSC cannot afford to support a full service facility
2. The state of readiness of instruments was/is problematic
3. The utility of the equipment is variable, i.e. some older equipment has not been used recently and is "taking up space". Other equipment is functional but not "ready to use" for the uninitiated. That is, it requires significant knowledge to operate and that knowledge is often not resident within the P.I.'s who would like the samples to be processed.
4. The newer community of researchers feels that analytical services does not support them to the extent that established P.I.'s have been supported (the reality is that it is not viable to support all of those who would like their samples run while in the field)
5. Private companies are expensive for some types of analyses, inexpensive for others. Funds are currently not built into grants for contracting out samples for processing.

Given the inability to support sample processing by an Analytical Tech in the lab, there was general agreement that P.I.'s should begin to assume ownership of their samples and sample processing needs, and that a transitional period is needed to implement this policy. Solutions include purchase of new, more "user friendly" instrumentation for Crary lab or, in some cases, purchase of instruments for P.I.'s at their home institutions (the latter would likely result from grant funds). Other possibilities include transfer of existing instrumentation to the P.I.'s that use it most (as with the LTER, see recommendations below). In the longer term, this should be accompanied by transfer of Ops funds to the science programs so that sample processing costs can be borne directly by awards to grantees.

There also was general agreement that some samples are time-critical and should be processed on the ice, while others can and should be analyzed stateside. This assumes that good shipping protocols are in place for samples as well as instruments (see below), and that policies are structured to easily deal with mishaps and avoid costly losses.

For samples to be processed on the ice, an important issue is how best to structure the lab given the technical expertise available to service USAP-owned instruments, the costs of shipping P.I.-owned instruments to the ice for P.I. use, the cost of insurance to cover possible damage to instruments, as well as the reality that damage may result in the instrument being unavailable to the P.I. when it is needed most. Possibilities for addressing problems for P.I.-shipped instruments include purchase of robust shipping containers (by USAP) for instruments, as well as purchase of adequate insurance, and providing grantee slots for persons to run the instruments.

For USAP-owned instruments that are dedicated "general use", service contracts should be maintained and instrument needs should be identified in advance by P.I.'s and instruments should be "ready to use". P.I.'s

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wishing to use instruments should demonstrate that they have the expertise in their field party to use the instrument properly. If the number of available instruments is pared down, then an RPSC person could be enlisted to oversee the general condition of general use instruments, given a moderate amount of training. Sample processing would be carried out by the grantee.

The disposition of the available instrumentation in the Crary Lab was discussed and the following was agreed to:

1) Agilent HPLC
   a) Keep at Crary Lab
   b) Need training for RPSC Instrument Tech
   c) PI's to provide trained technicians and columns to operate
2) Beckman Gold HPLC
   a) Retro, not usable
3) Agilent GC (x3)
   a) 1 at MSU, leave there permanently
   b) Store 1 in Punta Arenas, and store 1 in NZ?
   c) Allow grantees access to these before season begins to set up and get ready, then ship down to ice for use when needed
4) Shimadzu TOC-V
   a) LTER heavy use, make LTER specific instrument*
   b) Keep at Crary Lab
   c) Remove from list of equipment available to other groups
5) Lachat Nutrient Analyzer
   a) LTER heavy use, make LTER specific instrument*
   b) Keep at Crary Lab
   c) Remove from list of equipment available to other groups
   d) Consider shipping off-ice to run nutrient totals at end of season
6) Dionex IC
   a) LTER heavy use, make LTER specific instrument*
   b) Keep at Crary Lab
   c) Remove from list of equipment available to other groups
7) Thermo Finnigan Elemental Analyzer (formerly Carlo Erba)
   a) At MSU, leave there permanently and transfer responsibility for maintenance and parts to LTER
   b) Remove from list of equipment available to other groups
8) Dionex Automated Solvent Extractor
   a) For property disposal. Not used
9) Perkin Elmer AA
   a) Outdated and unused
   b) Announce availability for property transfer to science community
10) Turner Fluorometer
   a) Leave on ice
   b) LTER needs a dedicated one for their use
   c) Maintained by RPSC Instrument Tech, no training required
11) Scintillation Counters
   a) Remain in Crary inventory and continue to be maintained by subcontract

Other Points:
LTER-dedicated instruments would become the sole responsibility of the LTER group, including ordering of spare parts and supplies through the SIP. If there is a need for such instruments by a non-LTER group, this can be discussed with the LTER group to determine if LTER can run the samples (i.e. LTER has enough time, there are not too many samples requested, and samples are prepped appropriately.) or if there is time, space, capability, for the other grantee to step in and process the samples. This would be an LTER decision.

Specialized equipment needed by a science group will be evaluated by the NSF and a model of purchasing or "borrowing" equipment from a grantee's home institution for shipment and use on ice will be determined on a case by case basis. This will include costs of shipping, insurance, containers, etc… as discussed above.

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Analytical Services companies in NZ or Australia, might also be consulted for analysis of samples, if necessary, for specific group needs (review on an as needed basis)

RPSC Roles
RPSC will provide information on equipment availability and state in PolarIce and for ORW's. This will include changing wording in PolarIce and Requests for Proposals so that grantees and potential grantees know what specifically is available and in what condition, therefore what training they may need to operate equipment. In addition, there will be wording in PolarIce to let grantees know what individual supplies they need to bring to operate a particular instrument.

RPSC will determine, based on SIP requests for instrumentation, a scheduling plan for instrument use (modeled after current equipment allocation procedures).

RPSC will make clear to all parties that day to day operation of general use equipment will include basic user level maintenance, problem diagnosis, and problem solving by the user. RPSC will assist in getting instrument parts and repairs when problems arise.

Budgetary requirements for LTER and RPSC will have to be reanalyzed based on the changing responsibilities and shifting equipment ownership

In general, the Analytical Services Lab will remain an ongoing discussion topic with NSF, RPSC, and the grantee community (e.g. topic at upcoming MAUC meeting), to ensure the best possible service within the limits of the program, and to meet the needs of a changing scientific community

RPSC recommends the following:

Grantee Community
- Perform analysis for samples with applicable QA/QC
- Be responsible for scope and application of instrument for analysis being performed
- Perform user level maintenance of instruments and related equipment
- Be able to diagnose and troubleshoot the equipment to a field serviceable level (if parts are past this point, the equipment is handed over to RPSC to handle the factory repairs as needed)
- Provide lists of spare parts needed/used with consumables and supplies needed to RPSC for ordering

RPSC
- Order spare parts, consumables, and supplies as identified by the users of the instrument
- Arrange for repair of equipment as identified by the grantee community
- Assist in troubleshooting where possible
- RPSC cannot be responsible for knowing every component needed for different analysis on different instruments or being able to guarantee that the equipment will work the way the grantee community intends it to.

This would separate out the scope and application and upkeep of equipment in a way that works, and works well and to the advantage of all participants. The responsibility for keeping the instrument usable, troubleshooting application issues, and knowing what is needed to perform the work would fall on the grantee community.

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Excerpts from the housing guidelines

Revised 17 October 2005

Introduction

McMurdo Station is the gateway to the South Pole and many field camps in Antarctica. It is also the largest station on the continent. Most personnel coming to Antarctica via McMurdo stay at least one night, and there may be as many as 1,100 people in McMurdo at any one time during the austral summer.

The Housing Guidelines have been developed to coordinate the housing requirements of each Agency with assigned rooms and to fully utilize available bed space. However, our mission is to ensure maximum bed use, regardless of Agency designation.

These Guidelines have been established with the cooperation of all McMurdo agencies. Due to the extenuating and extreme circumstances of living in Antarctica, these Guidelines are subject to modification without notice. They serve as a working document, open to revisions as needed to fulfill the need of the mission.

If there are any questions regarding the Housing Guidelines, please contact the Housing Office or the RPSC Area Management Office.

McMurdo Agencies: Agencies/Groups typically residing in McMurdo one month or longer during the summer season:

- National Science Foundation (NSF)
- Raytheon Polar Services Company (RPSC)
- Petroleum Helicopters Incorporated (PHI)
- Aviation Technical Services (SPAWAR /ATS)
- New York Air National Guard/ 139th EAS
- Space Mark Incorporated (SMI) contracting to 139th
- Grantees whose workstation is McMurdo
- New Zealand Defense Forces (NZDF)
- Ken Borek Air (KBA)
- NANA Services, LLC
- Support Forces Antarctica (SFA) and attached military personnel

Agencies/Groups typically residing in McMurdo less than one month during the summer season:

- Coast Guard (USCG)
- NAVCHAPS
- Royal New Zealand Air Force (RNZAF)
- Italian Antarctic Program
- Russian Antarctic Program
- International Visitors
- Field camp, South Pole personnel, and grantees working at field camps

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Agency-Assigned Dorms and Numbers of Beds

STATUS	BUILDING #	Max #BEDS	COMMENT
Enlisted NZDF/Transient	155-1ST FLOOR	74	2-4 beds/room
Transient: RPSC/Grantee	155-2ND FL	175	2-4 beds/room
RPSC/Grantee	201	54	2 beds/room
139th EAS	202	54	2 beds/room
RPSC/Grantee	203A	54	2 beds/room
RPSC/Grantee	203B	50	2 beds/room
RPSC/Grantee	203C	54	2 beds/room
139th EAS	206	130	2 beds/room
ATS/SFA/PHI	207	129	2 beds/room
RPSC/KBA/Grantee (PI-Co-PI)	208	129	2 beds/room
RPSC/KBA/Grantee (PI-Co-PI)	209	129	2 beds/room
RPSC/Grantee	210	70	2 beds/room
RPSC/Grantee	211	78	2 beds/room
RPSC/Grantee	188 (MMI)	42	2 bed/room
RPSC/Grantee	166 (Hotel Cal.)	42	2 beds/room
Transient	166 (Hotel Cal.)	28	Bunkroom
NSF	125	6	
NSF	137	5	
	TOTAL	**1303**	

Housing Assignments

General
Each agency must provide RPSC Denver headquarters with an estimate of its weekly population numbers (including any technical events or visitors) during the pre-season planning phase. Technical event personnel will be housed in transient housing unless the Housing office is notified, prior to deployment, of longer stays which would warrant permanent housing.
The Housing office allocates housing assignments in McMurdo prior to Mainbody deployment based on information from each agency.
RPSC employees and Grantees, should submit a housing request form or worksheet to the Deployment Specialist Group (DSG) prior to deployment (See Appendix). Those employed by another agency, should forward any special housing requests to their agency's POC or representative. Requests for a specific room, floor, or view might not be honored. All housing, furniture, and rooms are the property of the USAP. Leaving personal property in a room is not justification for being assigned to a specific room.
The resident should notify Housing personnel or their agency's housing POC when temporarily leaving McMurdo. This is for emergency purposes and because the Housing office needs a daily count of occupants and bed availability. Depending on the length of time they will be out of town and each agency's housing procedures, their room may either be "held" or need to be vacated and inspected. Even "held" beds may be assigned in case of emergency or during peak season occupancy. If a resident's room needs to be vacated and they will be returning during the same season, secure storage will be made available through the Housing office.

Grantees
Regardless of length of stay in McMurdo, Principal Investigators (PIs) and Co-Principal Investigators (Co-PIs), as shown on the grant proposal submission, will have priority for a room assignment in Dorms 208 and 209. Non- PI or Co-PI Grantees who will be in McMurdo for **16** days or longer and whose primary workstation is

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McMurdo, will be assigned a bed in Dorms 210, 211 or 203ABC. Transient housing in Building 155 will be given to Grantees transiting to the South Pole or various field camps who will reside in McMurdo for **15** days or less. *PIs and Co-PIs may choose to reside with the other Grantees in their group in the Grantee designated dorms if they so desire.*

If there is a group in which field team members come and go from McMurdo throughout the season, arrangements can be made through the Housing office for a room -- if available -- for use during their stay in Antarctica. **We ask that all residents notify the Housing office every time they leave and return to McMurdo -- even if they will occupy the same room.** These rooms will be the responsibility of the full science group for cleaning at the time of redeployment.

Many Grantees move on to field camps, or the South Pole, for periods of two weeks or more throughout the season. At such time, if given a room in a permanent dorm, the resident will be required to pack up and clean their room and store belongings in a secure, designated storage area. Their bed will be assigned to another resident in their absence. Upon return to McMurdo, provided they will be staying on station **15** days or more, they will be reassigned permanent housing. If they are returning to the field in less than 2 weeks, their housing may be in transient housing (Building 155).

Grantees may room with RPSC employees in the RPSC/Grantee dorms. If the Grantee is a PI/Co-PI and wishes to room with a Raytheon employee, they may forfeit their priority housing in Dorm 208 or 209. If the Grantee is not a PI/Co-PI, and wishes to room with a Raytheon employee, they will be assigned to dorms designated for Grantee housing.

Check In
Unless arriving under unusual circumstances, the resident will receive their housing assignment at the conclusion of the arrival briefing in McMurdo. Military and ATS personnel will receive housing assignments from their on-station representative.

The resident will then be directed to their assigned room, where they should try the key, check the room for cleanliness and linens, and note any needed repairs or furniture discrepancies **before** picking up their luggage. Any problems, concerns or discrepancies in the assigned room should be directed to the Housing office for the RPSC and Grantee population and the on-station representative or POC for military and ATS personnel.

Housing Office Hours
Regular office hours are 7:30 AM to 5:30 PM, but housing personnel can be paged through the Firehouse (x. 2555) at any time.

Quiet Hours
Quiet hours for Dorms 201, 203ABC, 208-211, Hotel Cal (166), MMI (188) and B155 are as follows:

Every Day 8:00 AM - 6:00 PM and 10:00 PM - 6:00 AM

Dorms 202, 206 and 207 are designated as "quiet dorms" and *quiet is enforced 24 hours a day*. Disturbances should be reported to the Firehouse Help Desk (x. 2555). If the resident knows who is involved, they should tell the Firehouse, and the appropriate POC or supervisors will be notified.

Smoking Facilities
For the health and safety of all residents smoking is prohibited in all dormitory rooms. Smoking is permitted outside buildings, in the Southern Exposure club, and in the smoking lounges of Dorms 207, 209 and Building 155. Any personnel from any agency smoking in the dormitory rooms or any non-designated area will be reported to the RPSC McMurdo Area Manager, the NSF Station Manager, or the agency POC for disciplinary action.

Waste Management
McMurdo has an extensive recycling program. Residents are responsible for sorting trash in the appropriate bins, which are typically located at the end of each hall in all living facilities. Any unsorted trash left in a bin

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will be noted by Housing personnel, and if any identifying material is found, that trash will be returned to the resident or to the agency POC to be sorted properly.

TV/ DVD/ Refrigerator
Televisions and DVDs are in all dorm lounges and in some public areas. There are also a limited number of televisions available for dorm rooms. They will be distributed among the full-time agencies based on the current season's projected population and broken down by the percent of population that particular agency represents. Although the goal is to build an inventory that will allow for a TV in every room, there are currently insufficient quantities of televisions for distribution to each room. Television distribution is based on availability and the POC for each agency will decide how the TVs will be distributed. Residents identified as eligible to receive a television will be required to sign for the TV through the Housing office and must return it at least one day prior to redeployment. TVs may not be transferred to a friend or future occupant of the room the resident is vacating.

Refrigerators are not distributed by, signed out from or returned to the Housing office. Refrigerators are part of the room furniture inventory list of many of the dorms (See Appendix). There are also refrigerators in some dorm lounges.

Lock-Out Procedures
Residents should carry their room key at all times. Housing personnel are required to lock rooms following room inspections and routine or requested maintenance and repairs. If a resident is locked out of their room, they should contact the Housing office during business hours or the Firehouse (x. 2555) after hours. The resident should wait for housing personnel in the closest lounge area.

Room Inspections/ Check-Out Procedures
Room inspections are conducted at various times throughout the season in conjunction with safety, fire, inventory and maintenance issues. If any of the items listed below are noted during inspection, the residents of the room will be contacted by Housing personnel to dispose of them. If an incident, i.e. fire, occurs because of one of the items listed below, the RPSC or NSF Station Manager and/or agency POC will take appropriate action.

Unauthorized Items
The following items are not authorized at any time in rooms due to the high risk of fire:

- Hot plates or cooking appliances with open flame or exposed heating elements
- Hot oil popcorn poppers
- Toasters and toaster ovens
- Kerosene heaters
- Candles
- Incense
- Excessive number of items plugged into an outlet
- Homemade extension cords (extension cords can be purchased at the store)
- Any items utilizing an open flame

Check-Out Procedures – General
Every resident is responsible for ensuring the cleanliness of their room. **Housing will inspect all rooms prior to a resident vacating a room.** Residents of Dorms 202, 206, and 207 will be inspected by their agency's on-ice POC (Refer to the "Room Inspection Form" and "Redeployment Procedures" found in the Appendix.)

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Check-Out Procedures – Permanent Residents

A stringent check out procedure is enforced. Inspection Team members will begin inspections after 1300 and will end no later than 2100 on the day before the resident's scheduled flight. Required cleaning includes the following:

- Please return **TV** and **coaxial cable** to the housing office if the last resident in the room. (This does not apply to 208 & 209.)
- **Refrigerator:** If last resident: Empty, clean (interior and exterior), defrost, and leave unplugged, with door open. If not last resident: Clean (interior and exterior), defrost if necessary.
  To defrost, remove all food, then turn fridge off. Let fridge sit with door open for 45-60 minutes. Remove ice from freezer and clean fridge thoroughly (inside and out).
- Vacuum **floor**, including corners and under furniture. (Use the vacuum tools.)
- **Dust** all surfaces and sides of furniture.
- Clean **windowsill.**
- Clean **mirror(s**) - streak-free, please.
- Make sure ***every*** piece of **furniture assigned** to the room is in the room (check the back of the door or the intranet for list of assigned furniture). If **wardrobe doors** are off the hinges, reinstall doors.
- Place any **extra furniture** back in the assigned place. If unsure where it belongs, call Housing or ask a janitor. If all else fails, move extra piece(s) to the lounge. (**Do NOT leave extra furniture in the room or in the hallway**.)
- Un-bunk **beds** that are bunked (Beds in 155 can remain bunked, but the top bunk must be at least two rungs from the top). Separate beds if they are next to each other.
- Empty and wipe out **drawers and wardrobe**.
- Mail unwanted **personal items** home or deposit them in the **skua** bins. NOTE: **Skua** is for reusable items, **NOT** trash or junk.
- Remove all pictures, decals and other decorations from **walls, doors and ceiling**. (Remove decals and their adhesive.)
- Clean any marks off **walls.**
- Sort and dispose of trash properly. **Trash can(s)** must be empty and clean.

For 208 **&** 209**, scrub clean** sink, shower and toilet **with scrub brush and cleanser.**

Check-Out Procedures – Transient Housing

- If a transient's stay at McMurdo is 4 days or less, we ask that they clean the room before leaving.
- If a transient's stay at McMurdo is 5 days or more, their room will be inspected as per normal room inspection procedure.

Unsatisfactory Check-Out

If the room is left in unsatisfactory condition, this will be noted and reported by the Housing office to the RPSC McMurdo Area Manager, NSF Station Manger and/or applicable on-ice agency POC. If the resident is still on Station at the time of reporting, the Housing office will notify the POC, and the resident may be detained from their flight. The resident will then be responsible for ensuring that the room is in satisfactory condition before being re-manifested. If the resident has re-deployed, their name will be given to the RPSC McMurdo Area Manager, the NSF Station Manager, or their agency POC for follow up. This may include a cleaning charge, noting the room's condition in the resident's personnel file, or denying future deployment to the ice.

Medevacs and Other Extenuating Circumstances

Circumstances may arise preventing a proper checkout. These circumstances will be evaluated on a case-by-case basis and verified with the agency POC, RPSC Human Resources (if applicable), and the McMurdo Area Manager.

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Sample safety presentation

Raytheon
Polar Services

UNITED STATES ANTARCTIC PROGRAM

RPSC INITIATIVES TO ENSURE SAFE SHIPMENT OF TEMPERATURE SENSITIVE SAMPLES

Keith DePew

17 JULY, 2006

Raytheon

Improvements Being Implemented

- STANDARDIZATION OF:
  - Packing methods and materials
  - Shipping notification and communications
- TECHNOLOGICAL IMPROVEMENTS
  - Digital Temperature readout in shipment
- PROCEDURAL IMPROVEMENTS:
  - Review & Revision of ALL Sample Shipping Procedures
  - Rewrite of Freight Forwarder Procedures
  - Introduction of Electronic Sample Submission

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Revised 8/19/03

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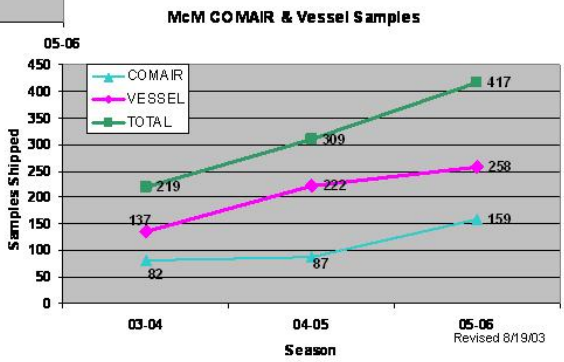
Raytheon

Trend Data



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Future Proposals

- INCREASED SAMPLE SECURITY AT McMURDO
- IMPROVED REFRIGERATED SHIPPING CONTAINERS

- "SAMPLE MANAGER" POSITION
- AVAILABILITY OF TEMPERATURE CONTROLLED FACILITIES AT LAX
- WEB ACCESS TO SHIPPING INFORMATION

Customer Success is Our Mission

Revised 8/19/03

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Dry Valleys Antarctic Specially Managed Area (DV ASMA) Management Group Report

McMurdo Dry Valleys Antarctic Specially Managed Area (ASMA No. 2) Management Group Report
Joint Information Paper submitted to the Committee for Environmental Protection (CEP) by Italy, New Zealand and the United States

Introduction

The McMurdo Dry Valleys Antarctic Specially Managed Area was formally adopted by ATCM XXVII as ASMA No. 2 in 2004. The Management Plan established a Management Group to oversee and coordinate activities in the ASMA. The goals of the Management Group are to ensure effective communication among those parties active in the Area, to provide a forum to resolve any potential conflicts in use, to minimize the duplication of activities, and to evaluate the effectiveness of management activities. This group meets annually to review past, existing, and future activities and to make recommendations on the implementation of this Management Plan.

McMurdo Dry Valleys Management Activities

The second meeting of the Management Group was held on 13 April 2006 in Christchurch (NZ) with representatives attending from the Consortium for the Italian Antarctic Program (PNRA), Antarctica New Zealand and the United States Antarctic Program. Highlights of the discussions follow.

Exchange of Information

Prior to each field season the three Parties share information on planned activities, including scientific, operational and visitor events. Detailed post-season reports of activities conducted, including the sites visited, number of personnel, samples taken, installation of equipment, etc. are shared. The US is currently developing a Geographic Information System (GIS) for the Dry Valleys. This GIS would be an ideal management tool for the ASMA, and could hold information on sites and zones described in the Management Plan. Additional layers could include: annual updates of planned activities, locations of scientific equipment, sites of former activities, helicopter landing sites, fuel depots, caches, etc. Information exchange, as well as education and outreach, will be facilitated through the development of a website. New Zealand plans to take the lead in website development in the coming year.

Education and Outreach

As much as possible, training material is developed as cooperative projects. A video training program is nearing completion for use during the 2006/2007 season and consists of 4 modules: (1) Introduction to the McMurdo Dry Valleys ASMA, (2) Living and working in a facility zone, (3) Tent camping in the ASMA, and (4) Science activities in the ASMA. These modules include information on waste management, use of fuels, spill kit locations, minimizing footprint, ASPAs, best practices, and issues related to scientific sampling. The goal is to ensure that all who travel to the ASMA will receive training using the same video modules.

A McMurdo Dry Valleys ASMA Manual is produced and updated each year. The manual consists of the entire plan, including the maps and appendices, as well as a brief message from the national programs. The manual is a spiral-bound booklet that measures 11 x 15 cm and was designed to fit into a coat pocket. Copies of the Manual are widely distributed to those working in the Dry Valleys. Additionally, poster sized versions of Maps A and B were produced for use at the stations and at field camps.

Special Features

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The category of Special Features was established to identify areas that are of particularly high scientific value and sensitive to human disturbance. Guidelines for Special Features include: (1) Minimizing sampling and research activities at or around Special Features, (2) All sampling at the Special Features, including type and quantity, should be recorded in group field reports and provided to the appropriate national program, and (3) Helicopters should land at least 50m away from each Special Feature. Each of the nine Special Features is identified by a geographic location, description, and additional special Guidelines.

In practice, managing activities around the Special Features has been problematic. The coordinates of some Special Features didn't precisely identify the part of the named area requiring special protection (e.g., Battleship Promontory). The Guidelines for the Special Features are quite brief and for some sites, provide insufficient information for those working at the site. The Management Group intends to further review the Special Features so that additional information and guidance can be provided in the future.

Inspections

Results of the inspection of the McMurdo Dry Valleys ASMA can be found in ATCM XXIX WP 34 entitled "Ross Sea Protected Area Inspections 2006" submitted by New Zealand, the United Kingdom and the United States. Key recommendations for the ASMA include (1) United States, New Zealand and Italy should compile a joint inventory of sites of past activity in the Dry Valleys, as a basis for coordinated clean up, (2) The maps in the McMurdo Dry Valleys ASMA management plan should be updated and improved and detailed maps for Special Features should be added, (3) Management measures for the Special Features in the Dry Valleys ASMA require further consideration and elaboration and (4) Consideration should be given to designating certain of the Dry Valleys ASMA Special Features as ASPAs.

Conclusions

Annual meetings of the Management Group have facilitated information exchange and discussion to ensure stewardship of the McMurdo Dry Valleys ASMA. The meetings also serve to review aspects of the management plan that would benefit from clarification and revision (e.g., maps, guidelines) during the five-year review of the ASMA which will occur in 2009. Increased coordination and progress in GIS and website development are goals throughout the upcoming year. By next year's meeting, the Management group hopes to be able to develop a more strategic approach to gathering and using shared information to better meet the purposes of the ASMA.

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Proposed guidelines for fuel chemical and liquid waste handling at Antarctic field sites

DRAFT V. 2 REVISED JULY 10 2006

Note to MAUC: The above guidelines are in a review/comment phase which ends July 28 2006. A final version will be generated prior to Winfly.

The guidelines will be distributed at McMurdo as part of the Environmental Education program. Questions about the guidelines should be directed to the RPSC Environmental Department, Mr. Nathan Biletnikoff (ext. 32225) or Ms. Kaneen Christensen (ext. 32457).

Comments about the guidelines are VERY welcome and a revised version of the guidelines will be generated for 07-08.

BACKGROUND
Guidelines clarifying how fuel, chemicals and waste should be handled in the field are proposed. The Guidelines were generated as a result of a joint NSF/RPSC Six Sigma project which was launched on February 28, 2006. The Guidelines were based on an in-depth analysis of how fuel, chemicals and waste are handled in a wide variety of scenarios for field activities outside McMurdo Station/South Pole Station footprints.

The purpose of the project is to more clearly define best management practices for handling fuel, chemicals and waste in Antarctica with particular attention to the use of SECONDARY CONTAINMENT. Guidelines have been benchmarked with US EPA regulations, and written with the intent to be achievable in Antarctica this coming season (06-07). If successful, the project will spawn similar Six Sigma efforts to craft similar guidelines that can be applied to stations, airfields, the Antarctic Peninsula and vessels.

1.0 STORAGE
1.1 All fuel, chemical and hazardous liquid waste storage areas should be established in secondary containment.

a) Use of secondary containment during transport of fuel, chemicals and hazardous liquid waste stores in Antarctica is considered separately. See Section 5.0, which addresses mobile situations.
b) Where it has been determined that secondary containment is not practical, best management practices should be employed. These practices should include regular inspections of all liquid stores, use of absorbent materials and drip pans, providing spill response capabilities, and other means to protect the environment from a release.
c) Fuel and chemical stores established by helicopter sling load onto sensitive areas, such as the lake ice in the Dry Valley ASMA, should be moved immediately onto containment. Secondary containment on Dry Valley lake ice surfaces should be rigid. Wood should be avoided as it can splinter and freeze into the lake. Fuel stores established by helicopter sling load for all other locations should be moved onto containment as quickly as possible.
d) This guideline does not apply to autonomous fuel or chemical stores placed in remote settings via fixed wing support (airdrop or on-the-ground off load), unless the cache is later maintained within the footprint of an established camp.
e) Caches that were established via airdrop and later incorporated into a field camp should be placed in secondary containment and maintained (cleared of snow and ice). The cache should be removed at the conclusion of the field presence, unless there are immediate plans to use the cache.

1.2 Containment must be of sufficient size to contain the contents of a single failure, allowing 1' for free board for bulk fuel storage (5,000 gallons or more).

1.3 Tanks of double-walled construction meet the requirements for secondary containment.

1.4 Primary storage containers should be of durable construction and sealed when not in use.

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2.0 TRANSFERS

2.1 Manual transfer of fuel, chemical and liquid waste should occur over containment. Transfer areas should be established within the camp footprint.

a) Transfers carried out in remote settings where containment is not available should use absorbents and best management practices, such as two persons attending the transfer, to prevent drips and over-fills.

3.0 EQUIPMENT AND VEHICLES

3.1 Fuel-using mechanical equipment (except for vehicles) should be contained where it is staged or stored outside buildings. Equipment and vehicles used on the Dry Valley lake ice surface should be contained wherever practical both during use and storage.

4.0 NON-HAZARDOUS LIQUID WASTE STORAGE

4.1 All liquid waste storage areas in the Dry Valleys and in ablation zones should have secondary containment.

5.0 MOBILE SITUATIONS INCLUDING TRAVERSES

5.1 Use of secondary containment should apply to mobile field events, if practicable. A determination of what is practicable must be considered on a case-by-case basis for each event as it is planned. The terrain, distances covered, types and quantities of liquid moved must be considered.

a) Primary single-walled fuel storage tanks for mobile situations in Antarctica should comply with all relevant over-the road shipping standards (e.g., 49 CFR Part 173, 49 CFR Part 180).

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Lake Bonney Lab and Helicopter Pad

Current Situation from Summer 05-06 – Helo Pad

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31 May 2006