

MULTINATIONAL ANDEAN PROJECT

Canadian International Development Agency, Arrangement: 24846, RC/Project: 540/20080
Commitment: 189086, Supplier: G41000

REPORT #11 Part "A"



1998/99 Year End Activity Report Fourth Quarter Financial Report -1998/99

Geological Survey of Canada (GSC)
Vancouver, Canada

Servicio Geológico Minero Argentino (SEGEMAR)
Buenos Aires, Argentina

Servicio Nacional de Geología y Minería (SERGEOMIN)
La Paz, Bolivia

Servicio Nacional de Geología y Minería (SERNAGEOMIN)
Santiago de Chile, Chile

Instituto Geológico Minero y Metalúrgico (INGEMMET)
Lima, Peru

April 1, 1999

Prepared by:

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Report Summary

This document reports on the activities that took place during the fourth quarter of the 1998/99 fiscal year (January 1-March 31, 1999) and gives a summary of the work plans for 1998/99 fiscal year for the Multinational Andean Project (MAP). A revised budget forecast ending December 31, 2001 is also presented.

Start: Aug. 1996 **Finish:** Fiscal year 2001 (Dec. 31/2001) **Cost limitation:** ^{CDN}\$4,800,000.00

Accomplishments

The first quarter of the 1998/99 fiscal year saw:

- The creation of MAP NEWS Internal Newsletter. First three issues have been published.
- A considerable increase in the amount of traffic on the WEB page.
- Creation of MAP electronic conference room. Initial preparations for first MAP electronic conference were initiated.
- Initial preparations for Volcanology short course.
- C.J. Hickson attended the "Cordillera de los Andes" conference, held in Argentina June 3-5 and participated in a field visit in Chile.
- The final company joined the Puna Austral airborne survey.

The second quarter of the 1998/99 fiscal year saw:

- The completion of MAP NEWS Internal Newsletter issues 4-6.
- The Spanish version of MAP News (Boletín PMA) was created (commenced at v.1 - No.4)
- An increase in the amount of traffic on the WEB page.
- Initial contact with participants from Peru and Chile made and initial conference room testing completed.
- Volcanology short course (Part 1) completed successfully.
- The final flight for the Puna Austral airborne geophysical survey occurred on September 25.
- Initial testing of the electronic conferencing for the Cartographic Standards Committee has been conducted with Peru and Chile.

The third quarter of the 1998/99 fiscal year saw:

- The completion of MAP NEWS Internal Newsletter issues 7 to 9 in English and Spanish.
- The Executive Council Meetings took place in Buenos Aires, Argentina.
- Dr. Andre Panteleyev visited Peru and gave a short course and worked in the field.
- Dr. Art Soregaroli visited Bolivia to review its participation in MAP and their plans for 1999.
- Volcanology short course (Part II) was completed successfully.
- The second data distribution to participating companies in the Puna Austral Airborne Survey took place simultaneously in Buenos Aires and Vancouver on November 13, 1998.
- Dr. Carmel Lowe of GSC Pacific visited Chile to give a short course in geophysical modelling to SERNAGEOMIN scientists.
- Three member countries sent completed verifiable indicator questionnaires to MAP Administration.
- A Memorandum of Understanding between the Geological Survey of Canada (GSC) and the Instituto Geológico Minero Metalúrgico and the agency of the Ministry of Mines of the Republic of Perú (INGEMMET) was signed by the Minister of Natural Resources Canada and the Minister of Mines of Perú in Lima.
- The Secretariat of Industry, Trade and Mining of the Ministry of Economy, Public Works and Services of the Argentine Republic and the Minerals and Metals Sector of Natural Resources Canada signed a letter of intent in Buenos Aires on November 9, 1998.

The fourth quarter of the 1998/99 fiscal year saw:

- The completion of MAP NEWS Internal Newsletter issues 10 to 12 in English and Spanish.
- The Executive Council Meetings took place in Toronto, Canada (see minutes Annex C).
- Dr. Andre Panteleyev visited Peru and gave a short course in Metallogeny (see Annex D).
- Mr. Robert Cocking and Mr. Otto Krauth of GSC Vancouver visited INGEMMET (Peru) and SERGEOMIN (Bolivia) in January for initial contact with Cartographic Standards Committee (CSC) members and to review equipment donated to Bolivia under MAP (see Annex E).

- Two countries forwarded their WEB Page updates (see Annex F and Project WEB Page).
- Dr. Ramon Aravena and Dr. David Rudolph visited Chile to continue the Hydrogeology project with SERNAGEOMIN (see Annex H).
- A Memorandum of Understanding was signed in Toronto by Natural Resources Canada Assistant Deputy Minister Dr. M.D. Everell and the National Director of the Servicio Nacional de Geología y Minería de Chile Ing. Ricardo Troncoso on March 14, 1999.

Information Needs from Participating Countries

- Names of participants for the Mineral Deposits Field Trip Part II to be held in Argentina and Bolivia in the first two weeks of May, 1999.
- Names of participants from each country for the Executive Council meetings in La Paz, Bolivia August 21 to 23, 1999.
- Updated information for the individual country description section on the MAP WEB Page needs to be sent to Mr. Otto Krauth.
- Please send list of maps and publications from MAP area to Mr. Otto Krauth so they can be included on the MAP WEB Page.
- Names of participants to attend the first meetings of Cartographic Standards Committee (CSC) in Lima at the end of June as well as names of participants in the international Cartographic Association Congress in Ottawa - August 14 to 17, 1999.
- Lists of publications from the MAP area are to be forwarded to MAP administration as soon as possible to be included in the project WEB Page.
- Hard copy and where appropriate, digital versions, of maps and publications from the project region are to be forwarded to MAP Administration to be included in the shortly to be created "MAP Library".
- Sample processing update information needed.

Final Activity Report: April 01, 1998-March 31, 1999

As set out in the **Logical Framework** presented in Report #1, the project focuses on four purposes (given as A, B, C and D). These are given below and the activities planned to fulfil each of the purposes outlined. Activities started in the 1996/97 fiscal year are prefixed by "96", those started in fiscal year 1997/98 are prefixed by "97", those started in the 1998/99 fiscal year are prefixed "98". Activities are further indicated by country using a letter: Argentina "A", Bolivia "B", Chile "C", Peru "P", and activities on behalf of all countries by an "M", and finally PM for activities that are carried out by and for project management. Activities are numbered consecutively from the year of initiation. All of the initial detailed budget information by Country, Purpose and Sub-unit is presented in Annex A and B.

- Indicates initial work on the Activity.
- ◆ Indicates work completed on Activity in first quarter (April 1-June 31, 1998) or action required in the second quarter.
- Indicates work completed on Activity in the second quarter (July 1-September 30, 1998) or action items for the third quarter.
- ★ Indicates work completed on Activity in third quarter (October 1-December 31, 1998) or action items for the fourth quarter.
- ◇ Indicates the status of the Activity for the conclusion of the 1998/99 fiscal year.

Purpose A

Quarter	Summary of Activities	Budget changes	Current Budget
A	Geological work leading to more compatible geoscience data within the four National Geoscience Surveys		\$161,650.00
1 st Quarter	Budget change	-\$435.63	\$161,214.37
2 nd Quarter	Budget change (Correction & Change) see note***	-\$83764.33	\$77,450.00
3 rd Quarter	Budget change	-\$4,204.00	\$73,246.00
4 th Quarter	Final Expenditure		\$43,042.42

Note:*** Second quarter correction reflects an error made on budget change in first quarter plus a reduction of \$84,200.00 in the Budget. (\$435.67- \$84,200.00=-\$83764.33).

Budget changes reflect postponement of the following activities by both Argentina and Bolivia: A.96/A-2, A.96/A-3 A.98/A-1, A.98/A-2, A.98/B-1, A.96/P-4.

Details by Activities

A.96/A-1	Training in TM imaging, structural/alteration interpretation of imaging, alteration zones, digital data capture (FieldLog)	Argentina	0.00
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This activity will enhance the overall ability of SEGEMAR in an number of areas of digital data capture and manipulation, thus creating products with more uniform digital standards. Training over the five years of the project will focus on using satellite images (remote sensing) analysis to map geologic structure and zones of alteration, standardizing database structure and learning how to capture data digitally in the field. Emphasis will be placed on database structures and training in "FieldLog" and the palmtop computer based program "FieldWorker" to a help standardize data acquisition within each country and between the countries. FieldWorker will assist the Argentineans in digital capture of data while in the field and FieldLog will assist in producing maps using CAD software. Training has been carried out in each of the participating countries. There is some overlap in this activity with Purpose D (Institutional Strengthening).

In this fiscal year no specific activities are planned under this activity, but follow up may be necessary in FieldLog and manipulation of satellite images at a later date in another fiscal year.

First Quarter Action Items:

- None.

A.96/A-2	In-field training in regional mapping techniques, volcanology, and metallogeny	Argentina	\$18,500.00
1 st Quarter	Budget change	\$0.00	\$18,500.00
2 nd Quarter	Budget change	-\$10,000.00	\$8,500.00
3 rd Quarter	Budget change	\$2,364	\$10,864.00
4 th Quarter	Final Expenditure		\$3,629.36

This activity will enhance the ability of SEGEMAR in the interpretation of complex structure and volcanic stratigraphy and its relationship to alteration zones. In regional mapping it is important to standardize techniques and methodology. Additionally, understanding metallogeny of specific areas and incorporating that information into the regional context is extremely valuable, leading to enhanced products. Dating and geochemistry are important tools in regional mapping. Accurate data to build regional geochemical understanding of volcanic rocks is extremely important for regional correlations and interpretations and will lead to enhanced products, more usable to client groups. Dating is also critical to constrain geological interpretations built on field mapping, particularly in a regional context. This activity will enhance skills in all these areas in addition to contributing to high quality products. There is some overlap in this activity with Purpose D (Institutional Strengthening).

The in-field training done by Dr. Carol Evenchick (structure) and Dr. Andre Panteleyev (metallogeny) in 1996/97 was followed-up by field work done in 1997/98 fiscal year by Panteleyev and volcanology specialists Hickson and Edwards. In 1998/99 Panteleyev will do further metallogenic work with SEGEMAR scientific staff.

First Quarter Action Items:

- Set tentative dates for field work of Panteleyev.
- Panteleyev to begin work on updating the national mineral inventory data base using information available in Canada. It is anticipated this work would be concluded by the end of the first quarter (June 30).

Second Quarter Action Items:

- ◆ *The field work of Dr. Panteleyev in Argentina has been postponed until the 1999/2000 fiscal year.*
- ◆ *Panteleyev to begin preliminary mineral inventory data base work.*
- ◆ A \$10,000.00 reduction is shown in the budget because Dr. Panteleyev will not be travelling to Argentina for this activity, and there will be no field work in Argentina.

Third Quarter Action Items:

- ▶ Initial Contract has been let to Dr. Panteleyev and initial work has commenced on mineral inventory database.
- ▶ Budget increase to \$10,864.00 dollars to cover forecasted expenses up to year end..

Fourth Quarter Action Items:

- ★ **Dr. Panteleyev has begun work based on information provided by SEGEMAR.**

Final Status of Activity

- ◇ Dr. Panteleyev completed work on activity.

A.96/A-3	Interpretation and integration of satellite data	Argentina	\$5,000.00
1 st Quarter	Budget change	\$0.00	\$5,000.00
2 nd Quarter	Budget change	-\$5,000.00	\$0.00
3 rd Quarter	Budget change	\$0.00	\$0.00
4 th Quarter	Final Expenditure		\$0.00

This activity will enhance the overall ability of the Argentinean Survey to deal with digital satellite images in a

number of formats. Training over the five years of the project will focus on using satellite images (remote sensing) analysis to map geologic structure and zones of alteration. This activity will build on the expertise gained under the GLOBESar II project on PCI software, using images acquired under MAP. This training has also been made available to the Bolivians and Peruvians, thereby helping standardize the way each of the countries deals with satellite data.

In this fiscal year a radar module for either PCI or ER Mapper will be purchased.

First Quarter Action Items:

- Decide if module is necessary.

Second Quarter Action Items:

- ◆ *Activity postponed until 1999/2000 fiscal year.*
- ◆ *The following software is available at the University of Buenos Aires. The software was acquired through GLOBESar and it is to be shared with other institutions who may need it.*

Third Quarter Action Items:

- ▶ The budget has been reduced to zero as the software is not required.

A.98/A-1	Multiparameter geophysical and geochemical interpretation and integration	Argentina	\$8,000.00
1 st Quarter	Budget change	\$0.00	\$8,000.00
2 nd Quarter	Budget change	-\$8,000.00	\$0.00
3 rd Quarter	Budget change	\$0.00	\$0.00
4 th Quarter	Final Expenditure		\$0.00

Regional geophysical and geochemical information is extremely valuable for exploration work and regional mapping. Tools such as regional gravity, aeromagnetism and geochemistry are especially powerful when integrated and presented as a multi-parameter synthesis of data. This activity will provide training in specific geophysical and geochemical interpretative techniques and presentations as well as in how to carry out multi-parameter interpretations and products. There is some overlap in this activity with Purpose D (Institutional Strengthening).

In this fiscal year Mr. Jeff Harris (GSC Ottawa) has been requested to assist the Argentines with data interpretation after completion of the regional litho-geochemical analyses. Additional training in geophysical interpretation may also be required in this fiscal year.

First Quarter Action Items:

- Arrange for participation of Jeff Harris or alternative if he is unavailable.
- Finalize requirements regarding geophysical interpretation needs.

Second Quarter Action Items:

- ◆ *Activity postponed until 1999/2000 fiscal year.*

Third Quarter Action Items:

- ▶ This activity has been postponed and the budget therefore has been reduced to zero.

A.98/A-2	Geological, geophysical, geochemical data integration and digital data presentation (CD-ROM)	Argentina	\$6,700.00
1 st Quarter	Budget change	\$0.00	\$6,700.00
2 nd Quarter	Budget change	-\$6,700.00	\$0.00
3 rd Quarter	Budget change	\$181.00	\$181.00
4 th Quarter	Final Expenditure		\$210.49

Large quantities of digital data are the hallmark of modern multi-parameter geological field investigations. The integration, manipulation and presentation of these data presents a particular set of problems for the scientist

communicating with several different types of client groups. Exploration clients would like certain types of data presented in a particular way, which may be very different from the way a health specialist might wish to view the data when trying to establish environmental control factors in disease. Satisfying a wide range of client groups by presenting information in an understandable and easily accessible way is the goal of this project. Integral to this project is the establishment of digital and cartographic standards between the participating countries. This is addressed in the multi-country activity B.98/M-2.

First Quarter Action Items:

- Arrange time and duration of visit of Argentinean scientist to GSC Vancouver office.

Second Quarter Action Items:

- ◆ *Activity postponed until 1999/2000 fiscal year.*

Third Quarter Action Items:

- ▶ This activity has been postponed and therefore the budget has accordingly been reduced to zero.
- ▶ Budget increased to \$180.00 to cover forecasted expenditures up to year end.

A.96/B-3	Training in regional mapping, volcanology and metallogenic studies	Bolivia	\$15,500.00
1 st Quarter	Budget change	\$0.00	\$15,500.00
2 nd Quarter	Budget change	-\$15,500.00	\$0.00
3 rd Quarter	Budget change	\$0.00	\$0.00
4 th Quarter	Final Expenditure		\$0.00

The Bolivians are commencing work on regional mapping in the Western Cordillera (Cordillera Occidental). This is a region of highly prospective mineralization that is as yet poorly understood and studied. A great deal needs to be done to increase understanding of the regional context of volcanic activity and its link to mineralization. Work under this activity work will be done to assist the Bolivians in upgrading their field skills in regional mapping in volcanic terrain and gain increased abilities in the regional interpretation of metallogenic studies.

A field visit during 1997/98 by Dr. Glenn Woodsworth commenced work in this activity. During 1998/99 collaborative field work will be carried out by Hickson, specifically in volcanology. This will most likely take place in October or November.

First Quarter Action Items:

- Arrange dates and tentative schedule for field visit of Hickson in October or November.

Second Quarter Action Items:

- ◆ *Activity on hold pending financial status of Bolivian Survey.*

Third Quarter Action Items:

- ▶ Dr. C.J. Hickson has received an invitation to visit Bolivia in January or February.
- ▶ Hickson to discuss funding and staff issues with SERGEOMIN during Executive Council Meetings in Buenos Aires.
- ▶ Will need to re-budget if this activity is to go ahead.

Fourth Quarter Action Item:

- ★ **Dr. C.J. Hickson will not be travelling to Bolivia this quarter and therefore budget to remain at zero.**

A.97/B-1	Training in digital data capture in the field (FieldLog) and PC based GIS for map production	Bolivia	0.00
1 st Quarter	Budget change	-\$400.00	-\$400.00
2 nd Quarter	Budget change (Correction)	+\$400.00	\$0.00
3 rd Quarter	Budget change	\$451.00	\$451.00
4 th Quarter	Final Expenditure		\$451.00

This activity will enhance the ability of SERGEOMIN to capture digital data in the field and standardize their data. FieldLog will assist the Bolivians in digital capture of data while in the field and assist in producing maps using CAD programs (MapInfo/Vertical Mapper). This work will facilitate the rapid output of field maps upon completion of field work.

During 1997/98 fiscal year emphasis was placed on database structures and training in FieldLog to help standardize data acquisition within each country and between the countries. This fiscal year no specific activity is planned, although follow-up work may be requested.

First Quarter Action Items:

- None.

Second Quarter Completed and Third Quarter Action Items:

- ▶ Unforeseeable expense occurred during second quarter (Budget change in first quarter was incorrect, for good accounting a correction is reflected in third quarter).
- ▶ Budget increased to \$450.00 to cover forecasted expenditures up to year end.

A.98/B-1	Interpretation and integration of satellite data	Bolivia	\$21,900.00
1 st Quarter	Budget change	\$0.00	\$21,900.00
2 nd Quarter	Budget change	-\$21,900.00	\$0.00
3 rd Quarter	Budget change	\$0.00	\$0.00
4 th Quarter	Final Expenditure		\$0.00

This activity will enhance the overall ability of the Bolivian Survey to deal with digital satellite images in a number of formats. Training over the five years of the project will focus on using satellite images (remote sensing) analysis to map geologic structure and zones of alteration. This activity will build on the expertise gained under the GLOBESar II project on PCI software, using images acquired under MAP. This training has also been made available to the Argentines and Peruvians, thereby helping standardize the way each of the countries deals with satellite data.

In this fiscal year it is planned that a Bolivian scientist travel to GSC Vancouver and participate in training in satellite image interpretation (Advanced ER Mapper).

First Quarter Action Items:

- Arrange time for visit and training in GSC Vancouver office.
- Arrange for acquisition of two Radarsat images.

Second Quarter Action Items:

- ◆ *Activity postponed until 1999/2000 fiscal year.*

Third Quarter Action Items:

- ▶ This activity has been postponed and therefore there has been a budget reduction.

A.97/C-2	Field digital data capture (FieldLog) and PC based GIS for map production	Chile	0.00
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This activity will enhance the ability of SERNAGEOMIN to capture digital data in the field and standardize their data. Emphasis will be placed on database structures and training in FieldLog to assist standardization of data within each country and between the countries. FieldWorker will further aid the Chileans in digital capture of data while in the field and assist in producing maps using CAD software (MapInfo/Vertical Mapper).

During 1997/98 fiscal year emphasis was placed on database structures and training in FieldLog to help standardize data acquisition within each country and between the countries. This fiscal year no specific activity is planned, although follow-up work may be requested.

First Quarter Action Items:

- None.

A.97/C-3	Fission track studies to determine uplift and denudation and its relation to supergene processes	Chile	\$33,450.00
1 st Quarter	Budget change	\$0.00	\$33,450.00
2 nd Quarter	Budget change	\$0.00	\$33,450.00
3 rd Quarter	Budget change	- \$25,250.00	\$8,200.00
4 th Quarter	Final Expenditure		\$3,624.00

Uplift of the Andean Mountains is a significant event, not only in terms of the impact on physiography but also from the viewpoint of mineralization and denudation. In southern Chile it has been found that the structures on which uplift occurs may also be the loci for ore forming fluids. The erosion of the mountain belts is significant in revealing mineral resources that would otherwise be too deeply buried to extract profitably. By determining uplift rates, locus of uplift (faults), and separating blocks that may have been uplifted as a unit, mineral exploration will be more carefully focussed to those areas which are most favourable in terms of denudation and appropriate structures.

In 1997/98 Dr. Lisel Currie of GSC Calgary travelled to Chile and worked with SERNAGEOMIN staff collecting fission track samples.

In 1998/99 a Chilean scientist will travel to GSC Calgary to work with Dr. Lisel Currie. These two scientists will work collaboratively to analyse data collected by them in 1997/98 fiscal year.

First Quarter Action Items:

- Complete fission track analysis of samples collected in 1997/98.
- Arrange for a mutually agreeable time (after sample analyses) for the visit of the Chilean scientist to Canada.

Second Quarter Action Items:

- ◆ *Preliminary contact between Currie and SERNAGEOMIN initiated.*

Third Quarter Action Items:

- ▶ Work being planned for early 1999. Date to be set as soon as possible.
- ▶ Budget reduced to \$8,200.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Item:

- ★ **Chilean scientist's trip has been postponed until sample analyses are complete. It is expected that sample analyses will be complete before the end of the current fiscal year and Dr. Currie's next trip will take place in the 99/00 fiscal year.**

A.97/C-4	Training in petrography, petrogenesis, geochemistry, volcanic stratigraphy and mapping, field applications	Chile	\$0.00
1 st Quarter	Budget change	-\$35.63	-\$35.63
2 nd Quarter	Budget change (Correction)	+35.63	\$0.00
3 rd Quarter	Budget change	\$36.00	\$36.00
4 th Quarter	Final Expenditure		\$35.63

This activity has been superseded by the multinational activity under B.98/M-3.

Third Quarter Action Items:

- ▶ Unforeseeable expense occurred during second quarter (budget change in first quarter was incorrect, for good accounting a correction is reflected in second quarter).
- ▶ Budget increased to \$36.00 to cover forecasted expenditures up to year end.

A.96/P-4	Training in Paleozoic stratigraphy and regional mapping	Peru	\$14,000.00
1 st Quarter	Budget change	\$0.00	\$14,000.00
2 nd Quarter	Budget change	-\$10,500.00	\$3,500.00
3 rd Quarter	Budget change	-\$3,436.00	\$64.00
4 th Quarter	Final Expenditure		\$63.85

Accurate and systematic geological mapping requires experience and ability. Geologists must be able to unravel the stratigraphy in structurally complex regions that are sometimes poorly exposed. Additionally, the production of high quality regional maps requires accurate data (radiometric and fossil dating) for stratigraphic analyses and interpretation. The goal of this activity is to enhance the mapping skills of Peruvian scientists through collaborative work with a Canadian expert in Paleozoic stratigraphy.

Under this activity Dr. Steve Gordey has worked in the field with Peruvian geologists and been able to discuss the needs for Palaeontologic investigations and input into map products, evaluated the requirements for radiometric control for mapping and had made recommendations for future field work. In this fiscal year, Gordey will continue collaborative field work with Peruvian scientists.

First Quarter Action Items:

- Arrange best timing for field work of Gordey.

Second Quarter Action Items:

- ◆ *INGEMMET has been contacted and is organizing dates for Gordey's field work.*

Third Quarter Action Items:

- ▶ Dr. Gordey's trip and fieldwork postponed pending coordination with Bolivia.
- ▶ Budget revised to reflect postponement of joint Peru / Bolivia field work (reduced to \$64.00 to cover forecasted expenditures up to year end).

Fourth Quarter Action Item:

- ★ **Activity on hold pending discussions between INGEMMET and SERGEOMIN to coordinate joint work.**

A.97/P-5	Training in TM and RadarSat imaging and structural/alteration interpretation of imaging, alteration zones, digital data capture (FieldLog)	Peru	\$8,000.00
1 st Quarter	Budget change	\$0.00	\$8,000.00
2 nd Quarter	Budget change	\$0.00	\$8,000.00
3 rd Quarter	Budget change	\$0.00	\$8,000.00
4 th Quarter	Final Expenditure		\$156.14

This activity will enhance the ability of INGEMMET to capture digital data in the field and standardize their data collection using Fieldworker. Training in FieldLog will assist the Peruvians in producing maps using CAD or GIS software (ArcInfo, MapInfo/Vertical Mapper). This work will facilitate the rapid output of field maps upon completion of field work. In addition to the work on digital data capture and standardization, training over the five years of the project will focus on using satellite images (remote sensing) analysis to map geologic structure and zones of alteration. This activity will build on the expertise gained under the GLOBESar II project using PCI software, and images acquired under MAP. This is training that has also been made available to the Argentineans and Peruvians, thereby helping standardize the way each of the countries deals with satellite data. There is some overlap in this activity with Purpose D (Institutional Strengthening).

First Quarter Action Items:

- Determine area and timing of two additional Radar images requested.

Second Quarter Action Items:

- ◆ *Two satellite images were acquired for Peru. At the moment we are obtaining copies of the digital data and*

prints of the images. Upon their completion they will be sent to Peru.

Third Quarter Action Items:

- ▶ Images sent to Peru - activity complete.

A.97/P-6	Training in petrography, petrogenesis, geochemistry, volcanic stratigraphy and mapping, field applications	Peru	0.00
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This activity has been superceded by the multinational activity under B.98/M-3.

A.98/P-1	Metallogenic resource evaluation and mineral deposit modelling and applications	Peru	\$24,000.00
1 st Quarter	Budget change	\$0.00	\$24,000.00
2 nd Quarter	Budget change	\$0.00	\$24,000.00
3 rd Quarter	Budget change	\$21,450.00	\$45,450.00
4 th Quarter	Final Expenditure		\$34,871.95

This activity will enhance the ability of INGEMMET in the interpretation and understanding of alteration zones. Understanding metallogeny of specific areas and incorporating that information into a regional synthesis is extremely valuable and will lead to enhanced products. Dating and geochemistry are important tools in regional metallogenic projects which produce useful products. There is some overlap in this activity with Purpose D (Institutional Strengthening). The in-field training will commence in 1998/99 with a visit by Dr. Andre Panteleyev.

First Quarter Action Items:

- Set tentative dates for field work of Panteleyev.

Second Quarter Action Items:

- ◆ Tentative dates from mid-September to end of October for Panteleyev field work.

Third Quarter Action Items:

- ▶ Dr. Panteleyev has been contracted to go to Peru from October 19, 1998 through November 13, 1998.
- ▶ Dr. Panteleyev will give a 3 to 4 day short course in the geology of mineral deposits and metallogeny at INGEMMET.
- ▶ He will then travel to the field with INGEMMET geologists to conduct field work.
- ▶ Budget increased to \$45,450.00 to cover forecasted expenditures up to year end.

Final Status of Activity

- ◇ Short course complete (see Annex F).

Purpose B

Quarter	Summary of Activities	Budget changes	Current Budget
B	Increase cooperation between Geoscience institutions in all five countries (Horizontal Integration); geological work leading to more compatible geoscience data within the four National Geoscience Surveys.		\$154,500.00
1 st Quarter	Budget change	-\$3,890.16	\$150,609.84
2 nd Quarter	Budget change (Correction & Change) ***	-\$18,209.84	\$132,400.00
3 rd Quarter	Budget change		\$79,826.00
4 th Quarter	Final Expenditure		\$80,178.04

Note:*** Second quarter correction reflects an error made on budget change in first quarter minus a change of \$22,100.00 as a budget change (\$3,890.16-\$22,100.00=\$18,209.84).

Budget changes reflect completion of the following activity for the current fiscal year: B.97/M-2.

Budget change at the end of the third report reflects postponement of the mineral deposits field trip to May, 1999. Also activity B.98/M-1 has been curtailed, but B.98/M-3 is over budget.

Details by Activities

B.96/M-1	Collaboration on display and participation at a North American international geoscience conference held in Canada		\$19,600.00
1 st Quarter	Budget change	\$0.00	\$19,600.00
2 nd Quarter	Budget change	\$0.00	\$19,600.00
3 rd Quarter	Budget change	\$0.00	\$19,600.00
4 th Quarter	Final Expenditure		\$9,546.82

This activity will bring all the countries together to discuss problems of mutual concern. In both formal and informal meetings increased understanding of issues faced by each of the national surveys will be discussed. In addition, it is an excellent opportunity for the countries to display the products produced by the project to an international client group. There is considerable overlap with Purpose B (Enhanced Institutional Relationships). These meetings have provided a venue for the Executive Council meetings.

In 1996/97 MAP participated in the Prospectors and Developers Association of Canada Conference (PDAC) in Toronto and in 1997/98 the joint meeting of the Society of Economic Geologists and the BC & Yukon Chamber of Mines annual meeting was the venue. This fiscal year MAP participants will again meet at the Toronto based Prospectors and Developers Association conference.

First Quarter Action Items:

- Book booth space at the conference and a block of hotel rooms.

Second Quarter Action Items:

- ◆ 15 rooms booked at Crowne Plaza hotel from March 13-20, 1999.
- ◆ Book booth at PDAC and reserve meeting room.

Third Quarter Action Items:

- ▶ Booth and meeting room booked at PDAC.
- ▶ Display material needs to be identified for booth.
- ▶ Names of participants are required by MAP administrative staff.

Fourth Quarter Action Items:

- ★ Each country to forward to MAP Administration names of participants and arrival and departure dates.
- ★ Project Administrator to obtain PDAC passes for attendees.

Final Status of Activity

- ◇ Activity completed in fourth quarter. The Booth was popular and generated a significant number of questions and interest.

B.96/M-2	Discussions in Regional Metallogeny and Project goals relative to Regional synthesis and future project goals	all	0.00
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Metallogenic aspects of the project and production of products such as maps are the prime concern of the target client group - the mineral exploration community. These products and the project must continue to be reviewed to ensure the needs of this client community are met and project objectives fulfilled.

There has not been a meeting on this subject, since the meeting in Buenos Aires in 1996. As the countries progress

toward completion of regional mapping and the year 2000 deadline approaches, more thought will be put into this activity.

First Quarter Action Items:

- None.

B.97/M-1	Mineral Deposits field trip through portions of the four participating countries		\$41,800.00
1 st Quarter	Budget change	-\$714.32	\$41,085.68
2 nd Quarter	Budget change (corrections)	+\$714.32	\$41,800.00
3 rd Quarter	Budget change	-\$36,588.00	\$5,212.00
4 th Quarter	Final Expenditure		\$5,322.24

Metallogenic aspects of the project are the prime concern of the target client group - the mineral exploration community. This field trip will bring project geologists from each of the participating countries together to investigate known mineral deposits in the participating countries. By studying deposits of known type, in well understood geological settings, participants will gain enhanced understanding of ore forming processes. The lessons learned at these deposits will be used to better understand similar deposits within the project areas. This work can greatly enhance the ability of the geologists to put similar deposits in their own field areas into a regional context. This will enhance the overall understanding of the spatial and temporal position of ore deposits.

In fiscal year 1997/98 the first half of this trip was run. This fiscal year will see completion of the second half under a slightly different format. The trip organization and leadership will be in the hands of representatives from Argentina (Dr. Eduardo Zappettini) and Bolivia (Dr. Orlando Sanjines). Canadian technical experts will accompany the group to provide background and regional metallogenic and mineral deposit information.

First Quarter Action Items:

- Work with Zappettini and Sanjines to begin planning for the trip slated to run in October/November. Booking of transportation and letters to mine officials must start early.
- Sangster and Panteleyev to provide outline of teaching material they plan to provide to trip participants and planning for insertion of this information into the trip itinerary begins.
- Countries to provide list of participants.

Second Quarter Action Items:

- ◆ *SEGEMAR and SERGEOMIN have both identified a possible itinerary for their respective countries (however, Bolivia's financial ability to participate in this activity is presently in question and it is anticipated that SERGEOMIN management will soon inform MAP management of their situation and how it will effect Bolivia's participation for this and other joint activities this fiscal year).*
- ◆ *Both Sangster and Panteleyev have been compiling list of material to be used during the trip.*
- ◆ *Member countries have begun to provide lists of participants.*
- ◆ *Mines to be visited in Argentina have been identified. A letter to written and dates of visits to be confirmed.*
- ◆ *Booking of vans for travel and other logistic requirements need to be identified.*

Third Quarter Action Items:

- ▶ Trip has tentatively been postponed until January or February.
- ▶ Decision to be made at Executive Council Meetings in Buenos Aires.
- ▶ Second quarter correction reflects an error made on budget change in first quarter.
- ▶ Budget reduced to \$5,212.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **Activity postponed until 1999/2000 fiscal year (first two weeks of May). Budget has been adjusted accordingly.**
- ★ **Dr. Zappettini will be the coordinator for Argentina and Ing. Humberto Mallo will coordinate for Bolivia.**
- ★ **For budgetary reasons there will be only one Canadian mineral deposits expert on the mineral deposits trip.**

★ Activity to occur first and second week of May.

B.97/M-2	Use and application of in-field hand-held spectrometer (PIMA) for mineral deposit studies		\$26,000.00
1 st Quarter	Budget change	\$0.00	\$26,000.00
2 nd Quarter	Budget change	-\$22,100.00	\$3,900.00
3 rd Quarter	Budget change	-\$502.00	\$3,398.00
4 th Quarter	Final Expenditure		\$3,397.07

The PIMA short-wave infrared spectrometer is a fast and efficient method of determining the major alteration minerals present in samples. It will be used in-situ in the field, on core, and on hand samples in the office. The short-wave infrared (SWIR) technique can analyse alteration minerals such as clays, carbonates and selected sulphates, particularly alunite and jarosite. SWIR analysis is also sensitive to elemental substitution and crystallinity changes in minerals. Understanding the alteration mineralogy is an important tool for better understanding ore deposits. Using the instrument, an alteration halo can be determined around a mineralized area helping pinpoint the centre of alteration and assisting in modelling the alteration system. Using this instrument, the countries will be able to study alteration zone mineralization and mineral deposits in the field, greatly enhancing their overall understanding of mineral deposits in a region.

First Quarter Action Items:

- Organize training session giving introduction to PIMA technology and field use.

Second Quarter Action Items:

- ◆ Preliminary contact has been made with Spectra International to organize training early 1999.
- ◆ Panteleyev will take training and provide information on equipment to countries.

Third & Fourth Quarter Action Items:

- ▶ Dr. Panteleyev took three day training course from Spectra International. He will bring the PIMA with him on field work in Peru (October 1998) and begin demonstrating its capabilities.
- ▶ Budget reduced to \$3,398.00 to cover forecasted expenditures up to year end.

B.98/M-1	Development of rock and lithochemical standards		\$16,400.00
1 st Quarter	Budget change	\$0.00	\$16,400.00
2 nd Quarter	Budget change	\$0.00	\$16,400.00
3 rd Quarter	Budget change	-\$13,000.00	\$3,400.00
4 th Quarter	Final Expenditure		\$2,750.60

The analytical quality of geochemical data is a crucial factor for interpretation of geochemical trends, both spatially and temporally. Each of the countries has some in-house analytical capability, but in order for those analyses to be compared between laboratories and countries, standards must be run with the unknown samples to ensure accuracy and consistency of results. International samples are available but are very costly. By establishing two standards (one rock and one lithochemical standard) for each country the project will establish an excellent set of standards that will be interchanged between the countries. These standards are also a legacy for each country, their usefulness lasting beyond the end of the project. For this activity a database will also be developed to store sample information.

First Quarter Action Items:

- Identify appropriate material that can be collected in bulk and relatively easily from each country.
- Begin work on modification of existing database.

Second Quarter Action Items:

- ◆ This activity has been put on hold pending replacement of Dr. Edwards who finishes his work with the

GSC June 26, 1998.

- ◆ Hiring initiated for a replacement for Dr. Edwards. It is expected that hiring will be completed this quarter.

Third Quarter Action Items:

- ▶ Interviews were conducted for replacement for Dr. Edwards; however, none of the candidates proved suitable to the requirements of the position.
- ▶ The position will be reposted during the third quarter.
- ▶ Dr. Paul Metcalfe has been contracted in the interim to cover basic duties required by this activity.
- ▶ Budget reduced to \$3,400.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ Interviews to be conducted during first two weeks of January 1999 and position will hopefully be filled before the end of January.
- ★ Dr. Metcalfe has been contracted to give initial training to the successful candidate.
- ★ Budget has been adjusted to reflect the fact that the activity will only commence in the fourth quarter.

Final Status of Activity

- ◇ Dr. Jennifer Getsinger was hired and worked with Dr. K. Russell (UBC) to establish methodology for standards.

B.98/M-2	Development of cartographic standards for application to 1:500 000 geology and mineral resource map		\$10,200.00
1 st Quarter	Budget change	-\$362.00	\$9,838.00
2 nd Quarter	Budget change (correction)	+\$362.00	\$10,200.00
3 rd Quarter	Budget change	-\$8,100.00	\$2,100.00
4 th Quarter	Final Expenditure		\$4,694.95

Undertaking a multinational mapping project presents a number of difficult issues which must be addressed. One of these is producing maps that cross international boundaries. Often the mapping scale, expertise and age of mapping in adjacent map areas produces boundary "faults" even within a country. This problem is usually magnified when crossing country boundaries. Additionally, when dealing with digital data file compatibility, and other cartographic details must be consistent. This activity will seek to establish uniform cartographic standards and digital file transfers between the four countries in order to produce the 1:500 000 geology and mineral resources map.

First Quarter Action Items:

- Meeting of designated country representatives.
- Distribution of Geological Survey of Canada digital and cartographic standards.

Second Quarter Action Items:

- ◆ First meeting of the Cartographic Standards Committee will be held digitally via the MAP WEB Page virtual conference room during the second quarter (date yet to be decided). All countries have been informed and initial contact is being made with the designated committee members.
- ◆ The Geological Survey of Canada digital and cartographic standards have been printed, bound and sent to the committee members as well as the project leaders.

Third Quarter Action Items:

- ▶ Second quarter budget correction reflects an error made on budget change in first quarter.
- ▶ Initial contact has been made with designated people from Chile and Peru.
- ▶ Initial on-line testing also completed.
- ▶ Planning underway to hold first electronic conference during third quarter.
- ▶ Possibility to hold first meeting of committee at International Cartographic Association Conference in Ottawa in August 1999. (Decision to be made at BuenosAires Executive Council Meetings).
- ▶ Budget reduced to \$2,100.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ Due to technical incompatibilities it was not possible to hold the electronic conference.

- ★ **Mr. Robert Cocking of GSC Vancouver was named Coordinator for the Cartographic Standards Committee.**
- ★ **Each country agreed to send a brief synopsis of their software, hardware, and procedures to MAP Administration for review by Cocking. The information will be compiled into a report to be used at the first meeting of the Cartographic Standards Committee to be held during the 1999/2000 fiscal year.**
- ★ **Mr. Cocking and Mr. Krauth to travel to Peru and Bolivia in fourth quarter to meet with Cartographic Standards Committee members from each country and observe the systems in place at present.**

Final Status of Activity

- ◇ Increase in forecast expenditure over third quarter budget due to trip by Robert Cocking and Otto Krauth to Bolivia and Peru.
- ◇ Trip by Cocking and Krauth complete (See Annex E).

B.98/M-3	Volcanology field studies and workshops		\$40,500.00
1 st Quarter	Budget change	-\$3,890.16	\$36,609.84
2 nd Quarter	Budget change (Correction)	+\$3,890.16	\$40,500.00
3 rd Quarter	Budget change	\$5,616.00	\$46,116.00
4 th Quarter	Final Expenditure		\$54,466.36

The project regions cover a diverse geology. However, the most abundant rock type found in the map areas of all the countries are volcanic rocks. The processes responsible for the formation of the volcanic centres are often also associated with mineralization. The understanding of the temporal, geochemical and physical evolution of volcanic centres is often a key for establishing exploration targets in a region. This activity will enhance the skills of scientific staff in understanding, mapping and interpreting volcanic stratigraphy and data.

First Quarter Action Items:

- Make arrangements and set date for two week field studies course in Canada (August).

Second Quarter Action Items:

Field Course Trip Itinerary

- Aug. 09: Participants arrive in Vancouver.
- Aug. 10: Fly to Seattle Washington. Mt. Rainier - ice contact deposits, flows (overnight in Randall).
- Aug. 11: Mt. Rainier Osceola mud flow deposit (overnight in Castle Rock).
- Aug. 12: Mt. St. Helens east side (overnight in Paradise or Packwood).
- Aug. 13: Mt. St. Helens west side - avalanche debris, lahar deposits, surge deposits. Fly back to Vancouver (overnight at Delta Airport Inn).
- Aug. 14: Drive to Wells Gray area. Dr. Murray Journeay and field assistant join the group (overnight at Wells Gray Inn, camping).
- Aug. 15: Wells Gray - ice contact volcanism, subaqueous processes (overnight at the Wells Gray Inn, camping).
- Aug. 16: Wells Gray - ice contact volcanism, subaqueous processes. Drive to Lillooet (overnight in Lillooet - hotel not yet known).
- Aug. 17: Drive to Meager - Coast Plutonic Belt, volcanically triggered catastrophic flood deposits, welded "Merapi" style breccia (overnight at camp ground).
- Aug. 18: Drive to Whistler Mountain. Coast Plutonic Belt, volcanically triggered catastrophic flood deposits, welded "Merapi" style breccia (overnight at Whistler, camping).
- Aug. 19: Fly from Squamish to Mt. Cayley (dacitic complex) - overview of Garibaldi Belt, sample collection, stratigraphy, ice contact features and evidence of recent tectonism (overnight at Whistler, camping).
- Aug. 20: Fly from Whistler to Mt. Cayley (work as Aug. 19), (overnight at Whistler, camping).
- Aug. 21: Fly from Whistler to Mt. Cayley (work as Aug. 19). Drive to Vancouver (overnight Delta Airport Inn). Trip over.
- Aug. 22: Participants begin return trip home.

Third Quarter Action Items:

- ▶ Second quarter correction reflects an error made on budget change in first quarter.
- ▶ Volcanology Field Course (Part 1 in Canada) completed (see Annex C Report #9).
- ▶ Volcanology Field Course (Part 2 in Chile) plans underway: The dates have been chosen (November 23-30, 1998).
- ▶ Budget reduced to \$46,116.00 to cover forecasted expenditures up to year end.

Tentative Itinerary

- Monday 23: Theoretical course in Santiago, at SERNAGEOMIN facilities (9:00am-18:00pm).
- Tuesday 24: Travel Santiago - Calama - San Pedro de Atacama. Familiarization with surrounding in the evening.
- Wednesday 25, Thursday 26, Friday 27, Saturday 28: Field work.
- Sunday 29: return to Santiago.

Participants must arrive in Santiago no later than Sunday November 22. Chile is planning on sending 6 participants as well as Dr. Moyra Gardeweg as trip leader and Ing. Jorge Clavero who will be the coordinator and assistant. It is anticipated that each country (Peru, Bolivia, Argentina) will send 2 participants as well as Dr. Hickson from Canada and 4 drivers for a total of 19 people.

Fourth Quarter Action Items:

- ★ **Part II of Field Course Complete.**

Final Status of Activity

- ◇ **Over expenditure due to unforeseen logistic expenses during Part 1 and 2 of the Activity.**

Purpose C

Quarter	Summary of Activities	Budget changes	Current Budget
C	Enhance institutional relationships with Private Sector (mineral exploration and mining companies)		\$44,640.00
1 st Quarter	Budget change	-\$11,093.12	\$33,546.88
2 nd Quarter	Budget change (Correction)	\$11,093.12	\$44,640.00
3 rd Quarter	Budget change	\$14,679.00	\$59,319.00
4 th Quarter	Final Expenditure		\$60,782.20

Note: Second quarter correction reflects an error made on budget change in first quarter.

Note: Third quarter change is due to the addition of Activity C.98/P-1.

Details by Activities

C.96/M-1	Post "News Release" and other information for participants and Private Sector Companies through WEB Page		\$13,500.00
1 st Quarter	Budget change	-\$1,759.80	\$11,740.20
2 nd Quarter	Budget change (Correction)	+\$1,759.80	\$13,500.00
3 rd Quarter	Budget change	\$0.00	\$13,500.00
4 th Quarter	Final Expenditure		\$14,122.71

Purpose C is to enhance the institutional relationships of the National Geoscience agencies with the private sector. To facilitate transfer of information to the private sector, a web site was established in 1997/98. General information about the project is posted on the site, accessible to anyone with access to the web. An internal section, accessible only to project participants, is used for internal communications, posting of reports and a newsletter. It will also be used to help the project track rock samples and other types of information.

First Quarter Action Items:

- Update WEB Page with Report #7 in internal area.
- Develop a "What's New" section for public access.
- Create a newsletter for the internal users.

Second Quarter Action Items:

- ◆ *WEB Page updated.*
- ◆ *Monthly newsletter (MAP News) created, and three issues have been distributed.*
- ◆ *Monthly newsletter is published on the WEB Page.*

Third Quarter Action Items:

- ▶ Second quarter correction reflects an error made on budget change in first quarter.
- ▶ WEB Page has been updated
- ▶ Further updates required during third quarter to individual country descriptions.
- ▶ Newsletters #1 through #6 completed.
- ▶ Addition of Spanish version of Newsletter started at Vol.1 No.4.

Fourth Quarter Action Items:

- ★ **Newsletter #'s 7, 8 and 9 completed in English and Spanish during third quarter.**

Final Status of Activity

- ◇ Individual country descriptions on WEB Page to be updated by each country in February 1999.
- ◇ Newsletter #'s 10, 11 and 12 to be completed in fourth quarter.
- ◇ Budget over expenditure due to professional off-set printing of Newsletters #7 & #11 for distribution and Geological Congresses in Argentina and Toronto.

C.97/M-1	Technical Liaison Committee with Industry Representatives.		\$4,440.00
1 st Quarter	Budget change	\$0.00	\$4,440.00
2 nd Quarter	Budget change	\$0.00	\$4,440.00
3 rd Quarter	Budget change	\$3,000	\$7,440.00
4 th Quarter	Final Expenditure		\$1,613.20

In order to help the countries understand Canadian practices in terms of our relationship with the private sector, a "Technical Liaison Committee" made up of representatives from the private sector was implemented in 1997/98. This committee will review work done under the MAP project and make recommendations to the Geological Survey of Canada to assist the Project Manager in helping develop or modify activities so that they have maximum impact for the private sector. The goal is to provide feedback to the counties on the needs of the mineral exploration community and how project activities might best meet those needs.

In 1997/98 Dr. Art Soregaroli (Chief Scientist, TECK Corporation, Retired) agreed to be the technical advisor to the GSC for MAP.

First Quarter Action Items:

- Project Manager to meet with Dr. Art Soregaroli and review project work plans for 1998/99.

Second Quarter Action Items:

- ◆ *Meeting with Dr. Soregaroli set for July 16.*

Third Quarter Action Items:

- ▶ Project management met with Dr. Soregaroli three times during second quarter.
- ▶ Budget increased to \$3,000.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **Due to travel related time constraints, no meetings took place during the third quarter.**
- ★ **Meetings will resume in late January or early February.**

C.98/B-1	Technical review by Private Sector		\$10,700.00
1 st Quarter	Budget change	\$0.00	\$10,700.00
2 nd Quarter	Budget change	\$0.00	\$10,700.00

3 rd Quarter	Budget change	-\$1,196.00	\$9,504.00
4 th Quarter	Final Expenditure		\$11,725.13

High quality geoscience information is one of the goals of the project. In order to achieve this goal both internal and external reviews of products and practices are necessary. Peer reviews within the country are very important, but can sometimes be enhanced by an independent, external reviews. The goal of this activity is to provide the countries with help in the review process.

First Quarter Action Items:

- Formalize request from Bolivia for review.

Second Quarter Action Items:

- ◆ *Dr. Soregaroli's trip to Bolivia is on hold pending financial update from SERGEOMIN.*

Third Quarter Action Items:

- ▶ Dr. Soregaroli contracted to visit Bolivia.
- ▶ Dr. Soregaroli scheduled to visit Bolivia November 18 to 29, 1998.
- ▶ Budget reduced to \$9,504.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **Activity number changed from "C.98/M-1" to "C.98/B-1" to reflect that the activity is financed by Bolivia's allotment.**
- ★ **Dr. Soregaroli visited Bolivia in November.**
- ★ **Budget over- expenditure due to unforeseen expenses arising from Cocking's visit to La Paz.**

C.98/M-2	Project information and profile enhancement		\$16,000.00
1 st Quarter	Budget change	-\$9,333.32	\$6,666.68
2 nd Quarter	Budget change	+\$9,333.32	\$16,000.00
3 rd Quarter	Budget change	-\$4,225.00	\$11,775.00
4 th Quarter	Final Expenditure		\$12,504.11

In order to increase the profile of the National Geoscience agencies with the private sector, the work of the agencies must be better known. To enhance this exposure MAP scientists and managers will participate in meetings or conferences (such as those under activity C.96/M-1) where mineral industry representatives are present. It is very important that project information be distributed both formally and informally by project participants at these meetings and while participating in MAP activities, such as the mine tour (B.97/M-1). They will be assisted in this by providing written information in the form of brochures and notices to client groups. In this manner, project participants can represent the project and their organizations to a wide client group.

First Quarter Action Items:

- Update and correct English language brochure and create a Spanish language one.
- Provide material for an information package for presentation to mine officials, for mines tour.
- Hickson to participate in mineral industry organized Andean Conference and field trip (Mendoza, Argentina, June 3-8).

Second Quarter Action Items:

- ◆ *Project "three-fold" bilingual (English/Spanish) pamphlet has been created and is being sent to all member organizations for editing and approval.*
- ◆ *Material for Information package being compiled.*
- ◆ *Dr. Hickson participated in Andean Conference, Mendoza, Argentina (see report #8 Annex C).*

Third Quarter Action Items:

- ▶ Second quarter correction reflects an error made on budget change in first quarter.
- ▶ Project pamphlet completed and approved by all member countries.
- ▶ Multiple copies for general distribution to be made during third quarter.
- ▶ Budget reduced to \$11,775.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **MAP Brochure completed in second quarter to be charged to this activity.**

- ★ No further activity this quarter.
- ★ Printing of new brochure and distributed at PDAC.

C.98/P-1	Defining New Objectives for Post 2000 for INGEMMET (New Activity -3 rd Quarter)	Budget changes	\$0.00
1 st Quarter	Budget change	\$0.00	\$0.00
2 nd Quarter	Budget change	+\$35,000.00	\$35,000.00
3 rd Quarter	Budget change	-\$17,900.00	\$17,100.00
4 th Quarter	Final Expenditure		\$18,817.05

INGEMMET will have completed its institutional objective of creating a geological map of the country at a scale of 1:250 000 by the year 2000. At present they are working to define new objectives and have requested the participation of the GSC and other MAP participants to participate in the process.

Third Quarter Action Items:

- ▶ Create Activity and budget \$35,000.00 for 2 proposed trips by Dr.'s Hickson, Panteleyev, Soregaroli, and Mr. Krauth.

Fourth Quarter Action Items:

- ★ **Dr. Art Soregaroli and Dr. Andre Panteleyev to travel to Lima in January to participate in Round-table discussions. Based upon these discussions INGEMMET will write a proposal to be submitted to the Peruvian Ministry of Mines (Hickson will not participate).**
- ★ **Both Dr.'s may be called on to aid in other capacities in the creation of the final proposal from Canada.**

Final Status of Activity

- ◇ Soregaroli, Panteleyev, and Krauth travelled to Lima for the first meetings in January.
- ◇ No further activity was carried out in the fourth quarter as the second trip was cancelled.
- ◇ Budget reduced to \$17,100.00 to cover forecasted expenditures up to year end.
- ◇ Budget over- expenditures due to unforeseen travel expenses.

Purpose D

Quarter	Summary of Activities	Budget changes	Current Budget
D	Institutional strengthening		\$798,899.00
1 st Quarter	Budget change	-\$65,228.25	\$733,670.75
2 nd Quarter	Budget change (Correction & Change) Note:***	-\$105,634.75	\$628,036.00
3 rd Quarter	Budget change	-\$162,660.00	\$465,176.00
4 th Quarter	Final Expenditure		\$468,225.65

Note:*** Second quarter correction reflects error and change (\$65,228.25-\$170,863.00=\$105,634.75).

Second quarter correction reflects an error made on budget change in first quarter.

Budget changes reflect postponement and modification of the following activities by both Argentina and Bolivia: D.96/A-1, D.96/A-4, D.96/B-10, D.96/B-11.

Details by Activities

D.96/A-1	Geochemical Exploration techniques, sample handling and data analysis	Argentina	\$51,200.00
1 st Quarter	Budget change	\$0.00	\$51,200.00
2 nd Quarter	Budget change	-\$47,000.00	\$4,200.00
3 rd Quarter	Budget change	-\$1,400.00	\$2,800.00
4 th Quarter	Final Expenditure		\$4,457.43

The Argentinean Survey plans to re-analyse samples collected in the past under other projects. These samples were originally analysed for a very limited range of elements. The intent of re-analysis is to produce a larger suite of elements more pertinent to the needs of today's exploration community. This type of data is especially important to mineral exploration companies as it assists them in targeting exploration activity. When the analyses are complete, it is expected that a short course in the interpretation of regional geochemical analyses will be given. In addition, under this activity, the Argentinean geochemical laboratory will be upgraded by the purchase of a Tungsten carbide ring mill. The ring mill is an essential piece of equipment used to efficiently pulverize rock samples.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times.
- Ensure sufficient funds are available in the Standing Offer to complete anticipated number of analyses.
- Arrange timing of training in geochemical interpretation (Peter Friske).

Second Quarter Action Items:

- ◆ *SEGEMAR to forward sample delivery schedule to GSC Vancouver (MAP Admin).*

Third Quarter Action Items:

- ▶ Dr. Metcalfe has been contracted at GSC Vancouver to handle delivery schedule until replacement for Dr. Edwards is found.
- ▶ Samples not expected until February 1999, and analysis will not occur until the following fiscal year.
- ▶ Budget reduced to \$2,800.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **Samples to be sent during fourth quarter.**
- ★ **No samples received.**

D.96/A-2	Airborne geophysics acquisition and interpretation	Argentina	*\$244,000.00
1 st Quarter	Budget change	-\$62,731.75	\$231,268.25
2 nd Quarter	Budget change (Correction)	+\$62,731.75	\$244,000.00
3 rd Quarter	Budget change	-21,056.00	\$222,944.00
4 th Quarter	Final Expenditure		\$251,370.89

Airborne geophysics is an important tool used by exploration companies to assess and help define an exploration program in a new region. Airborne geophysics has been flown in other areas of the Puna but no regional airborne aeromagnetic data is available for the area of Multinational Andean Project. Under MAP, airborne geophysics, specifically aeromagnetic data and radiometric on SIAL Geophysics data will be flown. This airborne geophysics will be acquired through a multi-company-government consortium. This multi-company-government consortium will also enhance the relationship of SEGEMAR with the private sector. It is expected that the airborne geophysics and accompanying radiometrics will enhance exploration activity in the project area in a similar way to the acquisition of the regional geochemical data.

In fiscal year 1997/98 a contract was awarded to SIAL Geophysics for a combined regional airborne aeromagnetic and radiometric survey. In this fiscal year focus will be on completion of the survey and interpretation of survey results.

First Quarter Action Items:

- Continue the work of Dr. Dennis Teskey in final inspection of survey results.
- Prepare for interpretation of airborne aeromagnetic and radiometric survey.

Second Quarter Action Items:

- ◆ *One more company paid its contribution assuring the financial success of the survey.*
- ◆ *Co-operative agreement for data interpretation to be signed between GSC and SEGEMAR.*

***with the additional company contributing \$50,000.00, the original budget was reduced to \$244,000.00 for this activity.**

Third Quarter Action Items:

- ▶ Second quarter correction reflects an error made on budget change in first quarter.
- ▶ Flying completed on September 25, 1998.

- Compilation and interpretation of data to be completed in third quarter prior to distributing results to private sector participants.
- Preliminary Aeromagnetic paper maps released to participating companies (October 14, 1998).
- Budget reduced to \$222,944.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **Final data to be distributed to participating companies on January 08, 1999.**
- ★ **Activity complete.**
- ★ **SEGEMAR contributing 34K US (~53K Cdn) to project. Budget reduced.**
- ★ **Contract signed and money being transferred.**
- ★ **Budget over expenditure due to under estimation of geoscience services.**

D.96/A-3	Precision analytical whole rock analyses for major, trace and rare earth elements	Argentina	\$8,500.00
1 st Quarter	Budget change	\$0.00	\$8,500.00
2 nd Quarter	Budget change	\$0.00	\$8,500.00
3 rd Quarter	Budget change	\$15,177.00	\$23,677.00
4 th Quarter	Final Expenditure		\$15,772.71

In order to assist the exploration community in focussing their exploration efforts, it is imperative that an understanding of the geological evolution of a region is acquired. It is through understanding the regional geological evolution that focussed exploration can progress. Specific types of geological features may be associated with mineralization or provide a control on the distribution of ore bodies. Volcanoes can have differing chemical signatures and origins - some associated with ore forming fluids, others not. Within this project, acquisition of excellent analytical data on rocks (particularly analyses of volcanic rocks) contained within the project area is of prime importance in helping to elucidate the relationships between various volcanic strata and mineralization. Samples will be analysed for a complete suite of major, minor and trace elements. A subset of these samples will be analysed for rare earth elements. Assistance in interpretation of the results will be through the multi-country activity B.98/M.3 (Volcanic field studies and workshops). In addition some limited laboratory equipment has been acquired.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times.
- Set up new standing offer for petrogenetic quality geochemical analyses and ensure sufficient funds are available in the Standing Offer to complete anticipated number of analyses.

Second Quarter Action Items:

- ◆ *Samples being prepared to be sent for analysis.*
- ◆ *New Standing Offer is to be tendered.*

Third Quarter Action Items:

- Standing offer tendered and smaller bridging one in place for interim.
- Samples have been sent for analysis.
- Budget increased to \$23,677.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **No more samples to be sent this fiscal year.**
- ★ **Budget under expenditure (relative to 3rd quarter forecast) due to over estimation of number of samples to be processed.**

D.96/A-4	Precision dating by Ar-Ar or other techniques as applicable	Argentina	\$107,428.00
1 st Quarter	Budget change	-\$83.37	\$107,344.63
2 nd Quarter	Budget change (Correction & Change) Note:***	-\$46,916.64	\$60,428.00
3 rd Quarter	Budget change	-\$9,933.00	\$50,495.00
4 th Quarter	Final Expenditure		\$52,792.93

Note:*** Second quarter correction reflects an error made on budget change in first quarter minus a change (\$83.37-\$47,000.00=-\$46,916.64).

In addition to precise whole rock geochemical analyses, an understanding of the timing of geological events is critical to understanding the geological evolution of an area. The temporal elements of this project will be addressed using radiometric dating techniques.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times and type of dating required (K-Ar, Ar-Ar, U-Pb).
- Set up new standing offer for K-Ar analyses through Geochronology Laboratory, University of British Columbia and ensure sufficient funds are available in the Standing Offer to complete anticipated type and number of analyses.
- Provide Argentina with a schedule of when radiometric dates will be completed.

Second Quarter Action Items:

- ◆ *Some samples have been sent to Mike Villeneuve (GSC Ottawa) for dating. It is projected that these samples will be irradiated in July 1998 with sample analysis completed by September.*

Third Quarter Action Items:

- ▶ Second quarter correction reflects an error made on budget change in first quarter.
- ▶ Samples being processed at GSC Ottawa lab.
- ▶ New Standing Offer to be tendered for K-Ar analysis.
- ▶ UBC Geochron Lab still not operational. They hope to be online in a month or so.
- ▶ Ottawa Ar-Ar facility is down for six weeks due to a broken laser.
- ▶ Budget reduced to reflect processing of samples on hand.

Fourth Quarter Action Items:

- ★ **Samples received and to be processed this fiscal year.**
- ★ **Analysis done.**
- ★ **Budget over expenditure (relative to 3rd quarter forecast) due to under estimation of sample processing requirements at GSC Vancouver.**

Final Status of Activity

- ◇ Activity complete

D.97/A-1	Radiogenic isotope analysis (Nd, Sr, Os)	Argentina	0.00
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In order to assist the exploration community in focussing their exploration efforts, it is imperative that an understanding of the geological evolution of a region is acquired. Through many types of analytical work, such as radiometric dating and geochemistry, geologists will gain a greater understanding of the geological evolution of the region. These data sets will be enhanced by obtaining initial isotopic signatures of rocks. These data shed light on regional evolution and magmatic history. This enhanced information can lead to greater understanding of the spatial and temporal evolution of volcanic rocks hosting mineralization that in turn can enhance exploration efforts by helping to focus exploration on specific areas and times.

No activity is forecast for this fiscal year.

First Quarter Action Items:

- None.

D.97/A-2	Stable isotopic analysis for O, D	Argentina	0.00
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In order to assist the exploration community in focussing their exploration efforts, it is imperative that an understanding of the geological evolution of a region is acquired. Through many types of analytical work, such as radiometric dating and geochemistry, a greater understanding of the geological evolution is possible. These data sets will be enhanced through the additional information gained by stable isotopic analyses of mineralized material.

These analyses can give an indication of the type and timing of ore forming fluids and enhance understanding of the timing and type of mineralization. This information can in turn be used to enhance exploration efforts by helping to focus exploration on specific types of mineralization, mineralized areas and timing of mineralization.

First Quarter Action Items:

- No activity forecast.

D.98/A-1	Palaeontological training and age determination	Argentina	\$7,315.00
1 st Quarter	Budget change	\$0.00	\$7,315.00
2 nd Quarter	Budget change	\$0.00	\$7,315.00
3 rd Quarter	Budget change	-\$6,315.00	\$1,000.00
4 th Quarter	Final Expenditure		\$1,800.00

Age control is of paramount importance when producing geological maps. Many ore deposits are associated with rock of a specific type or age. In order to make these correlations, lithological, geochemical and age dating must be carried out simultaneously. In regions that contain igneous and volcanic rocks age determinations are obtained through radiometric dating techniques. In regions that contain significant amounts of sediments the most cost effective way to obtain age control is through Paleontological means. Under this activity samples containing microfossils will be analysed and training will be given in the interpretation and laboratory techniques employed to obtain microfossils.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times.

Second Quarter Action Items:

- ◆ *Samples have been submitted to GSC Palaeontology laboratory for analysis.*

Third Quarter Action Items:

- ▶ Samples being analysed at GSC Pacific Palaeontology lab.
- ▶ Budget reduced to \$1,000.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **Samples being processed at GSC Pacific Palaeontology lab.**
- ★ **Being processed.**

D.96/B-5	On-site assessment and training in laboratory techniques	Bolivia	0.00
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Good analytical technique is crucial for good analytical results. Under this activity, assistance will be given to SERGEOMIN to help them improve their analytical techniques.

No work is forecast in this activity this fiscal year.

First Quarter Action Items:

- None.

D.96/B-6	Precision analytical whole rock analyses for major, trace and rare earth elements	Bolivia	\$22,129.00
1 st Quarter	Budget change	\$0.00	\$22,129.00
2 nd Quarter	Budget change	\$0.00	\$22,129.00
3 rd Quarter	Budget change	-\$21,924.00	\$205.00
4 th Quarter	Final Expenditure		\$203.80

In order to assist the exploration community in focussing their exploration efforts, it is imperative that an

understanding of the geological evolution of a region is acquired. It is through understanding the geological evolution of a region that focussed exploration can progress. Specific types of geological features may be associated with mineralization or provide a control on the distribution of ore bodies. Volcanoes can have differing chemical signatures and origins - some associated with ore forming fluids, other not. Within this project, acquisition of excellent analytical data on rocks (particularly analyses of volcanic rocks) contained within the project area is of prime importance in helping to elucidate the relationships between various volcanic strata and mineralization. The Bolivians propose that a significant number of samples will be analysed for a complete suite of major, minor and trace elements. A sub-set of these samples will be analysed for rare earth elements. Assistance in interpretation of the results will be through the multi-country activity B.98/M-3 (Volcanic field studies and workshops).

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times.
- Set up new Standing Offer for petrogenetic quality geochemical analyses and ensure sufficient funds are available in the Standing Offer to complete anticipated number of analyses.

Second Quarter Action Items:

- ◆ *Activity on hold pending update on fiscal situation.*

Third Quarter Action Items:

- ▶ Activity on hold pending discussions with Project Leader for Bolivia at Executive Council Meetings in Buenos Aires.
- ▶ Budget reduced to \$205.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **No more samples to be processed this fiscal year.**

D.96/B-7	On-site training in fluid inclusion analyses	Bolivia	\$6,200.00
1 st Quarter	Budget change	\$0.00	\$6,200.00
2 nd Quarter	Budget change	\$0.00	\$6,200.00
3 rd Quarter	Budget change	-\$6,200.00	\$0.00
4 th Quarter	Final Expenditure		\$0.00

Fluid inclusions are small trapped pockets of fluids within minerals. Determining the fluids that are contained within these small trapped bubbles helps geologists understand the evolution of the minerals themselves. Understanding the evolution, or growth, of these minerals helps determine the evolution of potentially ore-bearing fluids. The analysis of these fluids provides critical clues to the understanding of the evolution of an ore deposit. To help the Bolivians increase their expertise in this area, fluid inclusion apparatus has been bought and a contract awarded for training in the use of the equipment. If necessary, follow-up courses or workshops will be held in upcoming fiscal years.

First Quarter Action Items:

- Arrange for training by J. Reynolds, Fluid Inc.

Second Quarter Action Items:

- ◆ *Activity on hold pending update on fiscal situation.*

Third Quarter Action Items:

- ▶ Activity on hold pending discussions with Project Leader for Bolivia at Executive Council Meetings in Buenos Aires.
- ▶ Budget reduced to \$0.00, no forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **No training to take place this fiscal year.**

D.96/B-8	Geochemical exploration techniques, sample handling and data analysis	Bolivia	\$14,950.00
1 st Quarter	Budget change	\$0.00	\$14,950.00
2 nd Quarter	Budget change	\$0.00	\$14,950.00

3 rd Quarter	Budget change	-\$13,353.00	\$1,597.00
4 th Quarter	Final Expenditure		\$2,138.49

The Bolivian Survey plans to analyse a total of 1500 samples over the course of the project. Regional geochemical surveys are one of the best ways to generate exploration interest in an area and help exploration companies focus exploration work. It is expected that a short course in the interpretation of regional geochemical analyses will be held sometime in the future. Additionally, the Bolivian geochemical expertise will be increased by training on the PIMA spectrometer (under activity B.97/M-2).

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times.
- Ensure sufficient funds are available in the Standing Offer to complete anticipated number of analyses.

Second Quarter Action Items:

- ◆ *Activity on hold pending update on fiscal situation.*

Third Quarter Action Items:

- ▶ Activity on hold pending discussions with Project Leader for Bolivia at Executive Council Meetings in Buenos Aires.
- ▶ Budget reduced to \$1,597.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action items:

- ★ **No more samples to be sent this year.**
- ★ **Change in budget for 3rd quarter due to unforeseen expenses for organizational work by Jennifer Getsinger.**

D.96/B-9	On-site training in petrographic techniques (binocular, reflected and transmitted)	Bolivia	\$11,300.00
1 st Quarter	Budget change	\$0.00	\$11,300.00
2 nd Quarter	Budget change	\$0.00	\$11,300.00
3 rd Quarter	Budget change	-\$11,300.00	\$0.00
4 th Quarter	Final Expenditure		\$0.00

In addition to detailed analyses and precise dating it is also necessary to have an understanding of the petrogenesis of rocks within the project area. In order to upgrade the petrographic capability of Bolivia training will be given in this fiscal year on petrographic techniques. No equipment funds remain to upgrade these facilities.

First Quarter Action Items:

- Arrange for on-site training at SERGEOMIN facilities.

Second Quarter Action Items:

- ◆ *Activity on hold pending update on fiscal situation.*

Third Quarter Action Items:

- ▶ Activity on hold pending discussions with Project Leader for Bolivia at Executive Council Meetings in Buenos Aires.
- ▶ Budget reduced to \$0.00, no forecasted expenditures up to year end.

Fourth Quarter Action items:

- ★ **No further action on this activity this fiscal year.**

D.96/B-10	Precision dating by Ar-Ar or other techniques as applicable	Bolivia	\$26,000.00
1 st Quarter	Budget change	-\$204.77	\$25,795.23
2 nd Quarter	Budget change (Correction & Change)Note:***	-\$23,795.23	\$2,000.00
3 rd Quarter	Budget change	-\$1,795.00	\$205.00
4 th Quarter	Final Expenditure		\$647.47

Note:*** Second quarter correction reflects an error made on budget change in first quarter minus a change

(\$204.77-\$24,000.00=-\$23,795.23).

In addition to precise whole rock geochemical analyses, an understanding of the timing of geological events is critical to understanding the geological evolution of an area. The temporal elements of this project will be addressed using radiometric dating techniques.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times and type of dating required (K-Ar, Ar-Ar, U-Pb).
- Provide Bolivians with update on samples submitted in past fiscal years.

Second Quarter Action Items:

- ◆ *Samples on hand will be submitted for K-Ar analysis. New submissions on hold pending update on fiscal situation.*

Third Quarter Action Items:

- ▶ Activity on hold pending discussions with Project Leader for Bolivia at Executive Council Meetings in Buenos Aires
- ▶ Samples at GSC Ottawa lab temporarily on hold, will not be done this fiscal year due to laser breakdown.
- ▶ Budget reduced to \$205.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **Samples will not be completed this fiscal year.**
- ★ **Small budget changes in 4th quarter due to unforeseen expenses for organizational work by Jennifer Getsinger.**

D.96/B-11	On-site training in digital manipulation, large format printing and map production	Bolivia	\$3,863.00
1 st Quarter	Budget change	\$0.00	\$3,863.00
2 nd Quarter	Budget change	-\$2,863.00	\$1,000.00
3 rd Quarter	Budget change	\$4,818.00	\$5,818.00
4 th Quarter	Final Expenditure		\$1,684.82

Digital manipulation of data is of prime importance in the production of new and updated geological maps. The ability of the Bolivians to handle digital data has been upgraded through the purchase of equipment and through specific training on the use of the equipment. Training through GLOBESar II project and acquisitions of software (PCI) started in fiscal year 1997/98. Two images of importance to MAP were obtained to work with under the GLOBESar project. This is training that is also being made available to the Argentineans and Peruvians.

First Quarter Action Items:

- Finalize details of work under this activity.

Second Quarter Action Items:

- ◆ *Activity on hold pending update on fiscal situation.*

Third Quarter Action Items:

- ▶ Activity on hold pending discussions with Project Leader for Bolivia at Executive Council Meetings in Buenos Aires.
- ▶ Budget increased to \$5,818.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **No further action on this activity this fiscal year.**
- ★ **Activity postponed, expenses arose from communications regarding repair of scanner and SGI equipment.**

D.98/B-1	Palaeontological training and age determination	Bolivia	\$7,315.00
1 st Quarter	Budget change	\$0.00	\$7,315.00
2 nd Quarter	Budget change	\$0.00	\$7,315.00

3 rd Quarter	Budget change	-\$7,315.00	\$0.00
4 th Quarter	Final Expenditure		\$0.00

Age control is of paramount importance when producing geological maps. Many ore deposits are associated with rock of a specific type or age. In order to make these correlations, lithological, geochemical and age dating must be carried out simultaneously. In regions that contain igneous and volcanic rocks age determinations are obtained through radiometric dating techniques. In regions that contain significant amounts of sediments the most cost effective way to obtain age control is through Palaeontological means. Under this activity samples containing microfossils will be analysed and training will be given in the interpretation and laboratory techniques employed to obtain microfossils.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times.

Second Quarter Action Items:

- ◆ *Activity on hold pending update on fiscal situation.*

Third Quarter Action Items:

- ▶ Activity on hold pending discussions with Project Leader for Bolivia at Executive Council Meetings in Buenos Aires.

Fourth Quarter Action Items:

- ★ **No samples to be sent this fiscal year.**

D.98/B-2	Radiogenic isotope analyses (Nd and Sr)	Bolivia	\$9,200.00
1 st Quarter	Budget change	\$0.00	\$9,200.00
2 nd Quarter	Budget change	\$0.00	\$9,200.00
3 rd Quarter	Budget change	-\$9,200.00	\$0.00
4 th Quarter	Final Expenditure		\$0.00

As with precise analytical whole-rock chemistry, the isotopic signature of rocks is of importance in understanding their tectonic evolution and the origin of the magmatic fluids. This enhanced information will lead to greater understanding of the spatial and temporal evolution of volcanic rocks hosting mineralization that in turn can enhance exploration efforts by helping to focus exploration on specific areas and rock formations.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times.

Second Quarter Action Items:

- ◆ *Activity on hold pending update on fiscal situation.*

Third Quarter Action Items:

- ▶ Activity on hold pending discussions with Project Leader for Bolivia at Executive Council Meetings in Buenos Aires.

Fourth Quarter Action Items:

- ★ **No samples to be sent this fiscal year.**

D.96/C-12	Radiogenic isotope analyses (Nd and Sr)	Chile	\$30,300.00
1 st Quarter	Budget change	\$0.00	\$30,300.00
2 nd Quarter	Budget change	\$0.00	\$30,300.00
3 rd Quarter	Budget change	-\$29,528.00	\$772.00
4 th Quarter	Final Expenditure		\$771.51

As with precise analytical whole-rock chemistry, the isotopic signature of rocks is of importance in understanding their tectonic evolution and the origin of the magmatic fluids. This enhanced information will lead to greater understanding of the spatial and temporal evolution of volcanic rocks hosting mineralization that in turn can

enhance exploration efforts by helping to focus exploration on specific areas and rock formations.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times.

Second Quarter Action Items:

- ◆ *No samples received to date*

Third Quarter Action Items:

- ▶ No samples received to date.
- ▶ Budget reduced to \$772.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **Samples to be sent in fourth quarter.**

D.96/C-13	Ar ⁴⁰ -Ar ³⁹ dating in GSC Ottawa	Chile	\$29,249.00
1 st Quarter	Budget change	\$0.00	\$29,249.00
2 nd Quarter	Budget change	\$0.00	\$29,249.00
3 rd Quarter	Budget change	-\$3,969.00	\$25,280.00
4 th Quarter	Final Expenditure		\$2,779.38

In addition to precise whole rock analytical data upon which to base petrogenetic interpretations, an understanding of the timing of geological events is critical. Timing is the basis of understanding the geological evolution of an area. The temporal element of this project will be addressed using radiometric dating techniques. Samples were submitted for precise dating using the Ar⁴⁰-Ar³⁸ method. Additional expertise, training or other assistance will be available as needed by the Chileans to help them establish an Ar⁴⁰-Ar³⁹ facility in Chile.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent.
- Make arrangement for Chilean scientist to work in GSC Ottawa Ar⁴⁰-Ar³⁹ facility.

Second Quarter Action Items:

- ◆ *Samples have arrived.*
- ◆ *Arrangements have been made for Carlos Perez de Arce to work at the Ar⁴⁰-Ar³⁹ facility in Ottawa from July 6 to July 18, 1998.*

Third Quarter Action Items:

- ▶ Perez de Arce worked at the GSC Ottawa Ar⁴⁰/Ar³⁹ facility with Mike Villeneuve in July 6-18, 1998.
- ▶ Budget reduced to \$25,280.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action items:

- ★ **Samples to be sent in fourth quarter.**
- ★ **Budget under expenditure due to samples not being analysed.**

D.96/C-14	Hydrogeology Project Development	Chile	\$30,950.00
1 st Quarter	Budget change	\$0.00	\$30,950.00
2 nd Quarter	Budget change	\$0.00	\$30,950.00
3 rd Quarter	Budget change	\$7,550.00	\$38,500.00
4 th Quarter	Final Expenditure		\$32,636.70

Once mineral deposits have been identified, exploration and mining companies are faced with the problem of finding an adequate source of water for exploration and mining operations. In the extremely arid Altiplano this is a significant impediment to mine development. The Chileans have identified a need for hydrogeological investigations in the project region to identify and constrain existing aquifers. Experts from the University of Waterloo Hydrogeology group will assist SERNAGEOMIN in establishing a ground water exploration program in the project area.

First Quarter Action Items:

- Arrange for additional fieldwork and workshops in hydrogeology.

Second Quarter Action Items:

- ◆ *Initial discussion of fieldwork to be carried Aravena and Rudolph has commenced.*

Third Quarter Action Items:

- ▶ Ing. Sergio Iriarte of SERNAGEOMIN was at the University of Waterloo Ontario facilities working with Dr. Ramon Aravena and Dr. David Rudolf as part of the Hydrogeology Project Development (see Annex E on Report #10).
- ▶ Plan fourth quarter activities.
- ▶ Budget increased to \$38,500.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **Dr. Aravena and Dr. Rudolph to travel to Chile in January for two weeks. They will give a course and then do field work.**
- ★ **Aravena and Rudolph completed work (see Annex H).**

D.96/C-15	Precision analytical whole rock analyses for major, trace and rare earth elements	Chile	\$1,600.00
1 st Quarter	Budget change	\$0.00	\$1,600.00
2 nd Quarter	Budget change	\$0.00	\$1,600.00
3 rd Quarter	Budget change	-\$1,600.00	\$0.00
4 th Quarter	Final Expenditure		\$0.00

In order to assist the exploration community in focussing their exploration efforts, it is imperative that an understanding of the geological evolution of a region is acquired. It is through understanding the geological evolution of a region that focussed exploration can progress. Specific types of geological features may be associated with mineralization or provide a control on the distribution of ore bodies. Volcanoes can have differing chemical signatures and origins - some associated with ore forming fluids, other not. Within this project, acquisition of excellent analytical data on rocks (particularly analyses of volcanic rocks) contained within the project area is of prime importance in helping to elucidate the relationships between various volcanic strata and mineralization. The Chileans have excellent analytical facilities and will be doing most of their own analyses.

First Quarter Action Items:

- None.

Second Quarter Action Items:

- ◆ *SERNAGEOMIN to verify if it will be sending samples.*

Third Quarter Action Items:

- ▶ Several samples are being analysed at present.
- ▶ Budget reduced to \$0.00, no forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **More samples will be sent for analysis during the fourth quarter.**

D.97/C-3	Zircon (U-Pb) or other types of radiometric dating	Chile	\$44,200.00
1 st Quarter	Budget change	-\$2,144.82	\$42,055.18
2 nd Quarter	Budget change (Correction)	+\$2,144.82	\$44,200.00
3 rd Quarter	Budget change	-\$23,951.00	\$20,249.00
4 th Quarter	Final Expenditure		\$28,332.09

An understanding of the timing of geological events is critical to understanding the geological evolution of an area. The temporal elements of this project will be addressed using radiometric dating techniques, mostly Ar⁴⁰-Ar³⁹ (activity D.96/C-13). Some critical stratigraphic units are beyond the age range for which Ar⁴⁰-Ar³⁹ dating techniques are useful. For these samples, dating will be done by U-Pb extraction of zircons or other techniques as

deemed most appropriate for the age and type of rock being dated.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times and type of dating required (e.g. Zircon).

Second Quarter Action Items:

- ◆ No activity this quarter

Third Quarter Action Items:

- ▶ Ten samples budgeted for, three received. Confirm additional sample to be sent.

Fourth Quarter Action Items:

- ★ **Samples to be processed this year.**
- ★ **Over expenditure due to under estimation of number samples to be processed.**
- ★ **Analysis complete (see sample report in Annex I).**
- ★ **Budget over expenditure due to under estimation in number of samples to be analysed.**

D.97/C-4	Geophysical training in 3-dimensional modelling or gravity and aeromagnetic using Magi XL and oasis (GeoSoft)	Chile	\$20,700.00
1 st Quarter	Budget change	\$0.00	\$20,700.00
2 nd Quarter	Budget change	\$0.00	\$20,700.00
3 rd Quarter	Budget change	-\$8,813.00	\$11,887.00
4 th Quarter	Final Expenditure		\$12,274.14

Geophysical data such as aeromagnetic, gravity and EM are tools that will be used to obtain a 3-dimensional understanding of the geology of a region. Training in use of off-the-shelf software will be provided as well as interpretation and training in synthesis of geophysical and geological data.

First Quarter Action Items:

- Arrange for a workshop to be given by a specialist in aeromagnetic and in gravity interpretations.
- Determine involvement of Lowe (timing and number of days).

Second Quarter Action Items:

- ◆ *It is projected that Dr. Dennis Teskey and Dr. Carmel Lowe will be giving the workshop at SERNAGEOMIN in October of 1998. Dates for workshop must be finalized this quarter.*

Third Quarter Action Items:

- ▶ Dr. Lowe will be travelling to give the short course (an introduction to geophysical modelling) from November 2 through 4, 1998.
- ▶ Dr. Teskey will provide support to Dr. Lowe, but will not participate in the training.
- ▶ Budget reduced to \$11,887.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **Dr. Lowe completed training during third quarter.**

D.97/C-5	Fluid inclusion training and equipment	Chile	\$0.00
1 st Quarter	Budget change	\$0.00	\$0.00
2 nd Quarter	Budget change	\$0.00	\$0.00
3 rd Quarter	Budget change	\$1,669.00	\$1,669.00
4 th Quarter	Final Expenditure		\$1,668.42

Fluid inclusions are small trapped pockets of fluids within minerals. Determining the fluids that are contained within these small trapped bubbles helps understand the evolution of the minerals themselves. Understanding the evolution, or growth, of these minerals helps determine the evolution of potentially ore-bearing fluids. The analysis of these fluids provides critical clues to the understanding of the evolution of an ore deposit. The Chileans already

have a high level of expertise in fluid inclusion work, and their facilities were upgraded in 1997/98. No additional work is anticipated under this activity in this fiscal year.

First Quarter Action Items:

- None.

Third Quarter Action Items:

- Budget increased to \$1,669.00 to cover forecasted courier expenses up to year end.

D.97/C-6	Laboratory Equipment	Chile	\$0.00
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SERNAGEOMIN laboratories operate at a high level of international standards. However, there are some shortcomings in their operational capacity and ability that will be addressed by the acquisition of specific analytical equipment and possibly additional training. Most of this equipment was purchased in 1997/98 fiscal year.

First Quarter Action Items:

- None.

D.96/P-16	Paleontological training and age determinations	Peru	\$8,000.00
1 st Quarter	Budget change	\$0.00	\$8,000.00
2 nd Quarter	Budget change	\$0.00	\$8,000.00
3 rd Quarter	Budget change	-\$8,000.00	\$0.00
4 th Quarter	Final Expenditure		\$0.00

When producing geological maps age control is of paramount importance. Many ore deposits are associated with rock of a specific type or age. In order to make these correlations, lithological, geochemical and age dating must be carried out simultaneously. In regions that contain igneous and volcanic rocks age determinations are obtained through radiometric dating techniques. In regions that contain significant amounts of sediments the most cost effective way to obtain age control is through Palaeontological means. Under this activity samples containing microfossils will be analysed and training will be given in the interpretation and laboratory techniques employed to obtain microfossils.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times and types of fossils.
- Dependent on fossil types to be sent, set up appropriate contracts.

Second Quarter Action Items:

- ◆ Obtain time schedule for receipt of samples.
- ◆ Dependent on fossil types to be sent, set up appropriate contracts.

Third Quarter Action Items:

- Sample receipt schedule not obtained.
- One conodont was found in a Peruvian sample analysed during the second quarter (a report will be sent).
- Budget reduced to \$0.00, no forecasted expenditures up to year end.

Fourth Quarter Action items:

- ★ Report sent to INGEMMET.
- ★ No further activity during fourth quarter.

D.96/P-17	On-site training in digital manipulation, large format printing and map production	Peru	\$200.00
1 st Quarter	Budget change	\$0.00	\$200.00
2 nd Quarter	Budget change	\$0.00	\$200.00
3 rd Quarter	Budget change	-\$200.00	\$0.00
4 th Quarter	Final Expenditure		\$0.00

Digital manipulation of data is a prime importance in the production of new and modern geological maps. The ability of the Peruvians to handle digital data will be upgraded through the purchase of equipment and through specific focussed training on the use of the equipment to be purchased.

First Quarter Action Items:

- None.

Second and Third Quarter action Items:

- Budget reduced to \$0.00, no forecasted expenditures up to year end.

D.96/P-18	Laboratory training and upgrading of laboratory (Hg environmental detection)	Peru	\$0.00
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The INGEMMET has indicated a need to upgrade their laboratory facilities in Lima, Peru. They have also expressed a desire to increase their ability to detect mercury. Mercury is a prime environmental contaminant. Initially assistance will be given in the interpretation of geochemical results.

First Quarter Action Items:

- None.

D.96/P-19	Precision dating by Zircon (U-Pb), Ar-Ar or other techniques as applicable	Peru	\$35,600.00
1 st Quarter	Budget change	-\$63.54	\$35,536.46
2 nd Quarter	Budget change (Correction)	+\$63.54	\$35,600.00
3 rd Quarter	Budget change	-\$35,522.00	\$78.00
4 th Quarter	Final Expenditure		\$77.04

In addition to precise whole rock geochemical analyses, an understanding of the timing of geological events is critical to understanding the geological evolution of an area. The temporal elements of this project will be addressed using radiometric dating techniques for crystalline rocks (dating of sedimentary rocks will be through fossils).

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times and type of dating required (K-Ar, Ar-Ar, Zircon).
- Set up new standing offer for K-Ar analyses through Geochronology Laboratory, University of British Columbia and ensure sufficient funds are available in the Standing Offer to complete anticipated type and number of analyses.

Second Quarter Action Items:

- ◆ *INGEMMET will have a better idea of numbers of samples and delivery schedule in the third quarter after field work of Dr. Panteleyev and INGEMMET geologists is completed.*

Third Quarter Action Items:

- Dr. Panteleyev scheduled to work in Peru from October 19 through November 13, 1998.
- Three U-Pb samples complete, and 15 Ar⁴⁰-Ar³⁹ being analysed.
- Laser in Ar⁴⁰-Ar³⁹ lab is down for at least six weeks.
- Budget reduced to \$78.00 to cover forecasted expenditures up to year end.

Fourth Quarter Action Items:

- ★ **Dr. Panteleyev completed duties in Peru.**
- ★ **Sample analysis to be completed in 1999/2000 fiscal year.**

D.96/P-20	Precision analytical whole rock analyses for major, trace and rare earth elements	Peru	\$5,500.00
1 st Quarter	Budget change	\$0.00	\$5,500.00
2 nd Quarter	Budget change	\$0.00	\$5,500.00

3 rd Quarter	Budget change	-\$5,500.00	\$0.00
4 th Quarter	Final Expenditure		\$398.06

In order to assist the exploration community in focussing their exploration efforts, it is imperative that an understanding of the geological evolution of a region is acquired. It is through understanding the geological evolution of a region that focussed exploration can progress. Specific types of geological features may be associated with mineralization or provide a control on the distribution of ore bodies. Volcanoes can have differing chemical signatures and origins - some associated with ore forming fluids, others not. Within this project, acquisition of excellent analytical data on rocks (particularly analyses of volcanic rocks) contained within the project area is of prime importance in helping to elucidate the relationships between various volcanic strata and mineralization. The Peruvians propose that over the next few years a significant number of samples will be analysed for a complete suite of major, minor and trace elements. Assistance in interpretation of the results will be through the multi-country activity B.98/M--3 (Volcanic field studies and workshops). In addition some limited laboratory equipment will be acquired.

First Quarter Action Items:

- Obtain time schedule for receipt of samples and estimate of numbers of samples to be sent at various times.
- Set up new standing offer for petrogenetic quality geochemical analyses and ensure sufficient funds are available in the Standing Offer to complete anticipated number of analyses.

Second Quarter Action Items:

- ◆ *INGEMMET will have a better idea of numbers of samples and delivery schedule in the third quarter after field work of Dr. Panteleyev.*

Third Quarter Action Items:

- ▶ Dr. Panteleyev scheduled to work in Peru from October 19 through November 13, 1998.

Fourth Quarter Action Items:

- ★ **Dr. Panteleyev completed duties in Peru and collected samples to be processed this year.**

Final Status of Activity

- ◇ Sample analysis to be completed in 1999/2000 fiscal year

D.98/P-1	Geophysical training in 3-dimensional modelling or gravity and aeromagnetic using Magi XL and oasis (GeoSoft)	Peru	\$23,200.00
1 st Quarter	Budget change	\$0.00	\$23,200.00
2 nd Quarter	Budget change	\$0.00	\$23,200.00
3 rd Quarter	Budget change	\$0.00	\$23,200.00
4 th Quarter	Final Expenditure		\$22,954.40

Geophysical data such as aeromagnetic, gravity and EM are tools that will be used to obtain a 3-dimensional understanding of the geology of a region. Training in use of off-the-shelf software will be provided as well as interpretation and training in synthesis of geophysical and geological data.

First Quarter Action Items:

- None.

Second Quarter Action Items:

- ◆ *Arrange for the procurement of requested software.*

Third Quarter Action Items:

- ▶ Preliminary discussions with INGEMMET on software procurement have been conducted.
- ▶ Software to be procured during the third quarter.

Fourth Quarter Action Items:

- ★ **Software Purchased and will be donated to Peru during 1999/2000 fiscal year.**

D.98/P-2	Fluid Inclusion & Training	Peru	\$35,000.00
1 st Quarter	Budget change	\$0.00	\$35,000.00
2 nd Quarter	Budget change	\$0.00	\$35,000.00
3 rd Quarter	Budget change	\$0.00	\$35,000.00
4 th Quarter	Final Expenditure		\$35,465.37

Fourth Quarter Action Items:

- ★ **Equipment purchased and will be donated to Peru during 1999/2000 fiscal year.**

Project Management

Quarter	Summary of Activities	Budget changes	Initial Budget
PM	Project Management		\$141,237.00
1 st Quarter	Budget change	-\$17,907.40	\$123,329.60
2 nd Quarter	Budget change (Correction & Change) ***	+\$15,907.40	\$139,237.00
3 rd Quarter	Budget change		\$148,158.00
4 th Quarter	Final Expenditure		\$160,964.59

Note:*** Correction and change to budget total (\$17,907.40-\$2,000.00=\$15,907.40).

Budget changes reflect completion of activity PM.98/M-1.

PM.98/M-1	Preparation of final report (1997/98) and 1st quarter forecast (1998/99)	Canada		\$6,600.00
1 st Quarter	Budget change		-\$13,051.89	-\$6,451.89
2 nd Quarter	Budget change (Correction & Change) ***		+\$11,051.89	\$4,600.00
3 rd Quarter	Budget change		-\$1,541.00	\$3,059.00
4 th Quarter	Final Expenditure			\$3,057.15

Note:*** Correction and change to budget total (\$13,051.89 - \$2,000.00=\$11,051.89).

PM.98/M-2	Preparation of 1st quarter financial report (April-June) and 2nd quarter forecast (July-Sept.)	Canada		\$1,600.00
1 st Quarter	Budget change		\$0.00	\$1,600.00
2 nd Quarter	Budget change		\$0.00	\$1,600.00
3 rd Quarter	Budget change (Complete)		\$832.00	\$2,432.00
4 th Quarter	Final Expenditure			\$2,253.00

PM.98/M-3	Preparation and attendance at mid-year Executive Council Meeting	Canada		\$14,458.00
1 st Quarter	Budget change		\$0.00	\$14,458.00
2 nd Quarter	Budget change		\$0.00	\$14,458.00
3 rd Quarter	Budget change		\$14,112.00	\$28,570.00
4 th Quarter	Final Expenditure			\$21,200.75

PM.98/M-4	Preparation of mid-year report and 2nd quarter financial report (July-Sept.) and 3rd quarter forecast (Oct.-Dec.)	Canada		\$1,900.00
1 st Quarter	Budget change		\$0.00	\$1,900.00
2 nd Quarter	Budget change		\$0.00	\$1,900.00
3 rd Quarter	Budget change		-\$159.00	\$1,741.00
4 th Quarter	Final Expenditure			\$340.33

PM.98/M-5	Preparation of 3rd quarter (Oct.-Dec.) financial report and 4th quarter forecast (Jan.-March)	Canada		\$2,600.00
1 st Quarter	Budget change		\$0.00	\$2,600.00
2 nd Quarter	Budget change		\$0.00	\$2,600.00

3 rd Quarter	Budget change		\$738.00	\$3,338.00
4 th Quarter	Final Expenditure			\$436.20

PM.98/M-6	Preparation and attendance at end-of-year Executive Council Meeting, preparation of Annual Work Plan (including 5-year budget projection)	Canada		\$8,800.00
1 st Quarter	Budget change		\$0.00	\$8,800.00
2 nd Quarter	Budget change		\$0.00	\$8,800.00
3 rd Quarter	Budget change		\$2,000.00	\$10,800.00
4 th Quarter	Final Expenditure			\$18,273.78

PM.98/M-7	Database management	Canada		\$9,500.00
1 st Quarter	Budget change		\$0.00	\$9,500.00
2 nd Quarter	Budget change		\$0.00	\$9,500.00
3 rd Quarter	Budget change		-\$6,500.00	\$3,000.00
4 th Quarter	Final Expenditure			\$1,350.00

PM.98/M-8	Annual Work Plan 1999-2000 (March 15, 1999) including financial forecasts for project	Canada		\$4,000.00
1 st Quarter	Budget change		\$0.00	\$4,000.00
2 nd Quarter	Budget change		\$0.00	\$4,000.00
3 rd Quarter	Budget change		\$0.00	\$4,000.00
4 th Quarter	Final Expenditure			\$702.20

PM.98/M-9	Project Administration and Management	Canada		\$91,779.00
1 st Quarter	Budget change		-\$4,855.51	\$86,923.49
2 nd Quarter	Budget change		+\$4,855.51	\$91,779.00
3 rd Quarter	Budget change		-\$561.00	\$91,218.00
4 th Quarter	Final Expenditure			\$113,351.18

Project management will be carried out by the Geological Survey of Canada under the direction of Project Manager, Dr. Catherine Hickson. The goal of project management will be to provide effective and efficient management. Under project management the various reports requested by CIDA will be completed in addition to keeping strict financial control over the project.

First Quarter Action Items:

- Year end report to be completed and 1998/99 workplans reviewed and project activities modified for new fiscal year.
- New database system to be implemented and training taken.

Second Quarter Action Items:

- ◆ Hire replacement for technical support position (PC-02).
- ◆ Coordinate backup during Mike Ellerbeck's absence. Rocio Lopez to be Acting Project Administrator July 13-August 17.
- ◆ Maintain and keep current financial database.

Third Quarter Action Items:

- ▶ Interviews conducted for PC-02 position; however, no suitable candidate was found. The position is to be reposted during the third quarter.
- ▶ MAP management to coordinate Executive Council Meetings in Buenos Aires in November 1998.
- ▶ Budget revised.

Fourth Quarter Action Items:

★ **Executive Council Meetings occurred in Buenos Aires in November. (See Minutes from Meetings Annex E Report #10).**

Final Status of Activity

- ◇ PC-02 Interviews to be conducted in January.
- ◇ MAP Administration to organize Executive Council Meetings at PDAC Toronto, Canada March 14-17, 1999.
- ◇ MAP Administration to update WEB Page. (See Annex F).
- ◇ MAP Administration to complete MAP News in English and Spanish issues 10-12.
- ◇ Dr. Jennifer Getsinger hired (PC-02).
- ◇ MAP Executive Council meetings completed (See Minutes Annex C).
- ◇ PDAC commitments completed.
- ◇ MAP booth set up at PDAC.

Multi-year Project Financial Profile (re-profiled to fiscal year 2001/2002)

	CIDA Initial Funding Profile	Total Expenditures 1996/97	Total Expenditures 1997/98	Total Expenditure 98/99	Total Expenditures to Date	1999/00 Expenditure Forecast	Expected Total Funds Remaining
Argentina							
Personel GSC (01)	\$195,000.00	\$14,789.06	\$26,611.79	\$42,077.73	\$83,478.58	\$19,750.00	\$91,771.42
Personnel Non-GSC (02)	\$200,000.00	\$41,755.05	\$113,033.54	\$67,457.56	\$222,246.15	\$17,500.00	(\$39,746.15)
Local Consultants (03)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Travel (04)	\$87,000.00	\$15,472.11	\$31,660.73	\$23,328.39	\$70,461.23	\$16,500.00	\$38.77
Geoscience Services (05)	\$390,000.00	\$47,887.22	\$200,167.61	\$197,170.13	\$445,224.96	\$40,500.00	(\$95,724.96)
Equipment & Software (06)	\$70,000.00	\$69,228.50	\$54,988.71	\$0.00	\$124,217.21	\$0.00	(\$54,217.21)
Other (07)	\$110,000.00	\$2,998.82	\$6,466.17	\$0.00	\$9,464.99	\$1,250.00	\$99,285.01
Total Argentina	\$1,052,000.00	\$192,130.76	\$432,928.55	\$330,033.81	\$955,093.12	\$95,500.00	\$1,406.88
Bolivia							
Personel GSC (01)	\$250,000.00	\$1,171.98	\$11,871.86	\$1,754.41	\$14,798.25	\$15,870.00	\$219,331.75
Personnel Non-GSC (02)	\$245,000.00	\$4,209.70	\$1,406.30	\$7,466.66	\$13,082.66	\$55,950.00	\$175,967.34
Local Consultants (03)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Travel (04)	\$87,000.00	\$0.00	\$8,444.05	\$5,525.39	\$13,969.44	\$15,360.00	\$57,670.56
Geoscience Services (05)	\$240,000.00	\$18,742.88	\$24,317.84	\$2,104.25	\$45,164.97	\$295,640.00	(\$100,804.97)
Equipment & Software (06)	\$120,000.00	\$157,500.98	\$13,976.54	\$0.00	\$171,477.52	\$0.00	(\$51,477.52)
Other (07)	\$110,000.00	\$1,250.01	\$1,968.79	\$0.00	\$3,218.80	\$10,970.00	\$95,811.20
Total Bolivia	\$1,052,000.00	\$182,875.55	\$61,985.38	\$16,850.71	\$261,711.64	\$393,790.00	\$396,498.36
Chile							
Personel GSC (01)	\$250,000.00	\$5,522.66	\$12,436.46	\$30,527.95	\$48,487.07	\$17,708.00	\$183,804.93
Personnel Non-GSC (02)	\$245,000.00	\$1,453.20	\$23,015.20	\$26,100.00	\$50,568.40	\$60,060.00	\$134,371.60
Local Consultants (03)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Travel (04)	\$87,000.00	\$3,924.27	\$12,829.51	\$8,057.76	\$24,811.54	\$31,084.00	\$31,104.46
Geoscience Services (05)	\$240,000.00	\$79.85	\$37,532.86	\$17,436.16	\$55,048.87	\$170,526.00	\$14,425.13
Equipment & Software (06)	\$120,000.00	\$14,613.85	\$90,181.22	\$0.00	\$104,795.07	\$3,500.00	\$11,704.93
Other (07)	\$110,000.00	\$710.15	\$1,422.34	\$0.00	\$2,132.49	\$1,438.00	\$106,429.51
Total Chile	\$1,052,000.00	\$26,303.98	\$177,417.59	\$82,121.87	\$285,843.44	\$284,316.00	\$481,840.56
Peru							
Personel GSC (01)	\$250,000.00	\$5,968.76	\$14,097.63	\$725.32	\$20,791.71	\$10,872.00	\$218,336.29
Personnel Non-GSC (02)	\$245,000.00	\$2,537.88	\$2,935.00	\$40,166.67	\$45,639.55	\$50,040.00	\$149,320.45
Local Consultants (03)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Travel (04)	\$87,000.00	\$7,263.29	2866.54	\$12,608.34	\$22,738.17	\$13,556.00	\$50,705.83
Geoscience Services (05)	\$240,000.00	\$99.08	\$22,484.93	\$863.76	\$23,447.77	\$182,684.00	\$33,868.23
Equipment & Software (06)	\$120,000.00	\$60,018.98	10990.51	\$58,419.77	\$129,429.26	\$0.00	(\$9,429.26)
Other (07)	\$110,000.00	\$1,489.32	\$951.69	\$20.00	\$2,461.01	\$542.00	\$106,996.99
Total Peru	\$1,052,000.00	\$77,377.31	\$54,326.30	\$112,803.86	\$244,507.47	\$257,694.00	\$549,798.53
Canada							
Personel GSC (01)	\$240,000.00	\$40,634.27	\$68,366.40	\$90,671.06	\$199,671.73	\$70,460.00	(\$30,131.73)
Personnel Non-GSC (02)	\$80,000.00	\$19,118.00	\$29,281.01	\$21,794.64	\$70,193.65	\$21,000.00	(\$11,193.65)
Local Consultants (03)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Travel (04)	\$15,000.00	\$21,774.05	\$13,121.12	\$27,016.38	\$61,911.55	\$20,600.00	(\$67,511.55)
Geoscience Services (05)	\$0.00	\$41.53	\$11,671.80	\$5,890.86	\$17,604.19	\$10,500.00	(\$28,104.19)
Equipment & Software (06)	\$0.00	\$4,963.38	\$210.00	\$0.00	\$5,173.38	\$0.00	(\$5,173.38)
Other (07)	\$0.00	\$3,162.26	\$18,068.88	\$15,591.65	\$36,822.79	\$15,333.00	(\$52,155.79)
Total Canada	\$335,000.00	\$89,693.49	\$140,719.21	\$160,964.59	\$391,377.29	\$137,893.00	(\$194,270.29)
Multi							
Personel GSC (01)	\$55,000.00	\$1,649.00	\$20,706.93	\$38,055.58	\$60,411.51	\$42,270.00	(\$47,681.51)
Personnel Non-GSC (02)	\$30,000.00	\$2,500.00	\$0.00	\$18,715.94	\$21,215.94	\$53,400.00	(\$44,615.94)
Local Consultants (03)	\$1,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,000.00
Travel (04)	\$151,000.00	\$18,000.00	\$53,403.25	\$42,253.69	\$113,656.94	\$45,500.00	(\$8,156.94)
Geoscience Services (05)	\$0.00	\$0.00	\$1,450.87	\$1,708.66	\$3,159.53	\$14,400.00	(\$17,559.53)
Equipment & Software (06)	\$0.00	\$0.00	\$45,906.80	\$0.00	\$45,906.80	\$0.00	(\$45,906.80)
Other (07)	\$20,000.00	\$1,000.00	\$4,053.70	\$9,684.19	\$14,737.89	\$12,700.00	(\$7,437.89)
Total Multi	\$257,000.00	\$23,149.00	\$125,521.55	\$110,418.06	\$259,088.61	\$168,270.00	(\$170,358.61)
	CIDA Initial Funding Profile	Total Expenditures 1996/97	Total Expenditures 1997/98	Total Expenditure 98/99	Total Expenditures to Date	1999/00 Expenditure Forecast	Expected Total Funds Remaining
Total Project	\$4,800,000.00	\$591,530.09	\$992,898.58	\$813,192.90	\$2,397,621.57	\$1,337,463.00	\$1,064,915.43
Project							
Personel GSC (01)	\$1,260,000.00	\$69,735.73	\$154,091.07	\$203,812.05	\$427,638.85	\$176,930.00	\$655,431.15
Personnel Non-GSC (02)	\$1,080,000.00	\$71,573.83	\$169,671.05	\$181,701.47	\$422,946.35	\$257,950.00	\$399,103.65
Local Consultants (03)	\$1,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,000.00
Travel (04)	\$479,000.00	\$66,433.72	\$122,325.20	\$118,789.95	\$307,548.87	\$142,600.00	\$28,851.13
Geoscience Services (05)	\$1,110,000.00	\$66,850.56	\$297,625.91	\$225,173.82	\$589,650.29	\$714,250.00	(\$193,900.29)
Equipment & Software (06)	\$430,000.00	\$306,325.69	\$216,253.78	\$58,419.77	\$580,999.24	\$3,500.00	(\$154,499.24)
Other (07)	\$440,000.00	\$10,610.56	\$32,931.57	\$25,295.84	\$68,837.97	\$42,233.00	\$328,929.03
Total	\$4,800,000.00	\$591,530.09	\$992,898.58	\$813,192.90	\$2,397,621.57	\$1,337,463.00	\$1,064,915.43

Annex A:
1998/99 Financial Summary & Detailed Transaction Report

Financial Summary - 1998/99

	Budget	Commit	Actual
Total Argentina	\$311,961.00	\$0.00	\$330,033.81
Total Bolivia	\$17,780.00	\$0.00	\$16,850.71
Total Canada	\$148,158.00	\$1,230.30	\$159,734.29
Total Chile	\$106,593.00	\$0.00	\$82,121.87
Total Multi	\$112,541.00	\$1,107.95	\$109,310.11
Total Peru	\$128,892.00	\$0.00	\$112,803.86
Gran Total	\$825,925.00	\$2,338.25	\$810,854.65

Detailed Transaction Reports - 1998/99

Activity A.96/A-1 Argentina Training in TM imaging, structural/alteration interpretation of imaging, alteration zones, digital data capture (Field log)

Date	Subunit	Budget	Commit	Actual	Obs.
Apr/1/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Apr/1/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Apr/1/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Apr/1/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Apr/1/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Apr/25/98	6 - Equipment	\$0.00	\$0.00	-\$417.00	Mastercard refund
Aug/6/98	6 - Equipment	\$0.00	\$0.00	\$417.00	Mastercard
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity A.96/A-2 Argentina In-field training in regional mapping techniques, volcanology and metallogeny.

Date	Subunit	Budget	Commit	Actual	Obs.
Apr/1/98	4 - Travel	\$2,314.00	\$0.00	\$0.00	Travel for Rubiolo and Sruga in Vancouver
Apr/1/98	5 - Geoscience Services	\$50.00	\$0.00	\$0.00	To cover Andre Panteleyev Photocopy
Jun/12/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Jun/26/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Jul/23/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$118.75	XDM Geological
Jul/23/98	5 - Geoscience Services	\$0.00	\$0.00	\$21.51	photocopying XDM Geological
Oct/5/98	4 - Travel	\$0.00	\$0.00	\$990.50	Rubiolo Accom.
Oct/5/98	4 - Travel	\$0.00	\$0.00	\$990.50	Sruga Accom.
Oct/5/98	4 - Travel	\$0.00	\$0.00	\$332.38	Accom. Rubiolo
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$8,500.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	

Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$50.72	XDM Geological / Consultation
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,125.00	Rocio Lopez
Total for this activity:		\$10,864.00	\$0.00	\$3,629.36	

Activity A.96/A-3 Argentina Interpretation and integration of satellite data.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity A.98/A-1 Argentina Multiparameter geophysical and geochemical interpretation and integration.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity A.98/A-2 Argentina Geological, geophysical, geochemical data archiving, integration and digital data presentation (CD-ROM).

Date	Subunit	Budget	Commit	Actual	Obs.
Sep/9/98	5 - Geoscience Services	\$0.00	\$0.00	\$23.50	Scan Conversion Services Inc.
Oct/16/98	5 - Geoscience Services	\$0.00	\$0.00	\$12.50	Quicksilver Courier
Nov/10/98	5 - Geoscience Services	\$0.00	\$0.00	\$177.98	Consolidated Freightways
Dec/4/98	5 - Geoscience Services	\$0.00	\$0.00	-\$70.89	Consolidated Freightways
Dec/7/98	5 - Geoscience Services	\$0.00	\$0.00	\$37.00	Federal Express
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$181.00	\$0.00	\$0.00	Budget change
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Feb/1/99	5 - Geoscience Services	\$0.00	\$0.00	\$12.16	Brokerage Jones & Jones
Feb/1/99	5 - Geoscience Services	\$0.00	\$0.00	\$18.24	Brokerage Jones & Jones
Total for this activity:		\$181.00	\$0.00	\$210.49	

Activity D.96/A-1 Argentina Geochemical Exploration techniques, samples handling and data analysis.

Date	Subunit	Budget	Commit	Actual	Obs.
Jul/9/98	5 - Geoscience Services	\$0.00	\$0.00	\$7.31	Quick Silver Courier
Aug/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$32.38	Quick Silver Courier
Aug/14/98	5 - Geoscience Services	\$0.00	\$0.00	\$74.27	DHL Courier
Jul/17/98	5 - Geoscience Services	\$0.00	\$0.00	\$113.02	DHL Courier
Sep/3/98	5 - Geoscience Services	\$0.00	\$0.00	\$570.00	Thin sections Vancouver Petrographics
Aug/5/98	5 - Geoscience Services	\$0.00	\$0.00	\$1,160.00	Actlabs
Jun/12/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	Vancouver Petrographics Ltd.
Jul/9/98	5 - Geoscience Services	\$0.00	\$0.00	\$250.00	XDR Analsis / Cominco
Jul/24/98	5 - Geoscience Services	\$0.00	\$0.00	\$198.00	Thin sections Vancouver Petrographics
Oct/14/98	5 - Geoscience Services	\$0.00	\$0.00	\$104.00	Chemex labs
Dec/20/98	1 - Personnel (GSC)	\$2,000.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$2,635.00	\$0.00	\$0.00	Posted on the wrong subunit // Moved from subunit 2 to 5

Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$200.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	1 - Personnel (GSC)	-\$2,000.00	\$0.00	\$0.00	Budget change
Dec/20/98	7 - Other	-\$200.00	\$0.00	\$0.00	Budget change
Feb/5/99	5 - Geoscience Services	\$165.00	\$0.00	\$0.00	Budget change
Feb/24/99	5 - Geoscience Services	\$0.00	\$0.00	\$164.25	DHL Courier
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,784.20	Getsinger
Total for this activity:		\$2,800.00	\$0.00	\$4,457.43	

Activity D.96/A-2 Argentina Airborne Geophysics acquisition and interpretation.

Date	Subunit	Budget	Commit	Actual	Obs.
Jun/26/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$600.00	Rodus
Jul/9/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$5,000.00	Teskey Professional Services
Sep/22/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$6,500.00	Teskey Professional Services
Aug/14/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$7,000.00	Teskey Professional Services
Jun/11/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$19,500.00	Airborne Survey Prof. Services
Jul/31/98	4 - Travel	\$0.00	\$0.00	\$589.86	Dennis Teskey / travel
Jun/5/98	4 - Travel	\$0.00	\$0.00	\$170.70	Dennis Teskey / travel
Jun/5/98	4 - Travel	\$0.00	\$0.00	\$170.70	Dennis Teskey / travel
Sep/15/98	4 - Travel	\$0.00	\$0.00	\$170.70	Dennis Teskey / travel
Sep/9/98	4 - Travel	\$0.00	\$0.00	\$170.70	Dennis Teskey / travel
Jul/31/98	4 - Travel	\$0.00	\$0.00	\$170.70	Dennis Teskey / travel
Jul/24/98	4 - Travel	\$0.00	\$0.00	\$170.70	Dennis Teskey / travel
Jul/9/98	4 - Travel	\$0.00	\$0.00	\$170.70	Dennis Teskey / travel
Jul/9/98	4 - Travel	\$0.00	\$0.00	\$170.70	Dennis Teskey / travel
Jun/19/98	4 - Travel	\$0.00	\$0.00	\$170.70	Dennis Teskey / travel
Jun/5/98	4 - Travel	\$0.00	\$0.00	\$170.70	Dennis Teskey / travel
Jun/5/98	4 - Travel	\$0.00	\$0.00	\$312.04	Dennis Teskey / travel
Jun/30/98	4 - Travel	\$0.00	\$0.00	\$315.21	Dennis Teskey / travel
Aug/14/98	4 - Travel	\$0.00	\$0.00	\$341.40	Dennis Teskey / travel
Aug/7/98	5 - Geoscience Services	\$0.00	\$0.00	\$633.99	Interest Adjustment Sial

Jun/19/98	4 - Travel	\$0.00	\$0.00	\$170.70	Dennis Teskey / travel
Oct/14/98	5 - Geoscience Services	\$0.00	\$0.00	\$69,504.00	Aeromag Survey Sial
Oct/16/98	4 - Travel	\$0.00	\$0.00	\$171.31	Dennis Teskey / travel
Oct/16/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$7,500.00	Teskey Professional Services
Nov/3/98	4 - Travel	\$0.00	\$0.00	\$462.09	Dennis Teskey / travel
Nov/3/98	4 - Travel	\$0.00	\$0.00	\$150.75	Dennis Teskey / travel
Nov/3/98	4 - Travel	\$0.00	\$0.00	\$150.75	Dennis Teskey / travel
Nov/10/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$3,000.00	Teskey Professional Services
Dec/20/98	1 - Personnel (GSC)	\$1,344.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$45,000.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$10,000.00	\$0.00	\$0.00	Travel
Dec/20/98	5 - Geoscience Services	\$136,000.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$1,000.00	\$0.00	\$0.00	
Dec/22/98	4 - Travel	\$0.00	\$0.00	\$3,615.80	Dennis Teskey / travel
Jan/12/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$6,000.00	Teskey Professional Services
Jan/12/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,058.66	Teskey Professional Services
Feb/5/99	2 - Personnel (non GSC)	\$11,159.00	\$0.00	\$0.00	Budget increase to accommodate
Feb/5/99	4 - Travel	\$19,441.00	\$0.00	\$0.00	Budget increase to account for charges
Feb/9/99	7 - Other	-\$1,000.00	\$0.00	\$0.00	Budget to go to 0
Feb/9/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$3,000.00	Teskey Professional Services
Feb/9/99	4 - Travel	\$0.00	\$0.00	\$152.17	Dennis Teskey / travel MTL
Feb/9/99	5 - Geoscience Services	\$0.00	\$0.00	\$52.79	DHL Courier
Feb/10/99	2 - Personnel (non GSC)	\$0.00	\$0.00	-\$5,429.77	Dennis Teskey / MTL
Feb/10/99	2 - Personnel (non GSC)	\$0.00	\$0.00	-\$3,615.80	Dennis Teskey / Buenos Aires
Feb/10/99	4 - Travel	\$0.00	\$0.00	\$3,615.80	Dennis Teskey / travel MTL
Feb/10/99	4 - Travel	\$0.00	\$0.00	\$5,429.77	Dennis Teskey / travel MTL
Feb/24/99	5 - Geoscience Services	\$0.00	\$0.00	\$160.01	DHL Courier
Feb/24/99	5 - Geoscience Services	\$0.00	\$0.00	\$107,487.60	Sial Geosciences Inc.
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$1,519.24	Ken Ford to Buenos Aires
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$1,091.23	Dennis Teskey / travel to Buenos Aires
Mar/3/99	4 - Travel	\$0.00	\$0.00	\$85.17	Hospitality Catherine Hickson
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,000.00	Dennis Teskey / Argentina
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$1,134.72	Dennis Teskey / travel
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,404.40	Cathie Hickson
Total for this activity:		\$222,944.00	\$0.00	\$251,370.89	

Activity D.96/A-3 Argentina Precision analytical whole rock analysis for major, trace and rare earth elements.

Date	Subunit	Budget	Commit	Actual	Obs.
Sep/28/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$3,850.00	Paul Metcalfe
Sep/9/98	5 - Geoscience Services	\$0.00	\$0.00	\$44.36	Quicksilver Courier
Oct/2/98	5 - Geoscience Services	\$0.00	\$0.00	\$143.25	DHL Courier
Sep/11/98	5 - Geoscience Services	\$0.00	\$0.00	\$160.00	Chemex Labs
Sep/15/98	5 - Geoscience Services	\$0.00	\$0.00	\$2,338.05	DHL Courier
Sep/28/98	2 - Personnel (non GSC)	\$3,850.00	\$0.00	\$0.00	Paul Metcalfe
Oct/19/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	Paul Metcalfe
Oct/30/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	Actlabs
Nov/3/98	5 - Geoscience Services	\$0.00	\$0.00	\$53.21	Chemex Labs
Nov/4/98	5 - Geoscience Services	\$0.00	\$0.00	\$243.20	Chemex Labs
Nov/10/98	5 - Geoscience Services	\$0.00	\$0.00	\$266.98	Consolidated Freightways
Nov/18/98	5 - Geoscience Services	\$0.00	\$0.00	\$200.01	DHL Courier
Dec/4/98	5 - Geoscience Services	\$0.00	\$0.00	-\$106.35	Consolidated Freightways
Dec/20/98	1 - Personnel (GSC)	\$1,000.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$7,500.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Feb/1/99	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	Activations Labs call up Includes GST (8,580+GST)
Feb/9/99	1 - Personnel (GSC)	-\$1,000.00	\$0.00	\$0.00	Budget to 0
Feb/9/99	5 - Geoscience Services	\$12,327.00	\$0.00	\$0.00	Budget change to cover expenses
Feb/9/99	5 - Geoscience Services	\$0.00	\$0.00	\$8,580.00	Activation Labs
Total for this activity:		\$23,677.00	\$0.00	\$15,772.71	

Activity D.96/A-4 Argentina Precision dating by Ar-Ar or other techniques as applicable.

Date	Subunit	Budget	Commit	Actual	Obs.
Oct/13/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$3,490.32	Mike Villeneuve 12 days
Jun/5/98	5 - Geoscience Services	\$0.00	\$0.00	\$83.37	DHL Courier
Sep/9/98	5 - Geoscience Services	\$0.00	\$0.00	\$27.60	DHL Courier
Jul/9/98	5 - Geoscience Services	\$0.00	\$0.00	\$231.39	DHL Courier
Oct/16/98	5 - Geoscience Services	\$0.00	\$0.00	\$164.31	DHL Courier
Oct/16/98	5 - Geoscience Services	\$0.00	\$0.00	\$8.13	Quicksilver Courier
Nov/4/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$4,900.00	Paul Metcalfe Mgn Service
Dec/8/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$4,900.00	Paul Metcalfe Mgn Service
Dec/20/98	1 - Personnel (GSC)	\$27,000.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$33,000.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Jan/6/99	5 - Geoscience Services	\$0.00	\$0.00	\$28.62	DHL Courier
Jan/13/99	5 - Geoscience Services	\$0.00	\$0.00	\$8.13	Quicksilver Enterprises
Feb/2/99	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	DHL International
Feb/3/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	BB/ Mike Villeneuve days & samples for Argentina
Feb/5/99	1 - Personnel (GSC)	\$10,991.00	\$0.00	\$0.00	Increase budget to cover
Feb/5/99	2 - Personnel (non GSC)	\$9,800.00	\$0.00	\$0.00	Budget change
Feb/5/99	5 - Geoscience Services	-\$30,555.00	\$0.00	\$0.00	Drop budget to cover
Feb/5/99	5 - Geoscience Services	\$259.00	\$0.00	\$0.00	budget increase to cover DHL charges
Feb/24/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,400.00	Paul Metcalfe
Feb/24/99	5 - Geoscience Services	\$0.00	\$0.00	\$2,152.25	DHL Courier
Mar/25/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$24,500.00	Mike Villeneuve U/PB
Mar/25/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$10,000.00	Mike Villeneuve U/PB Ar/Ar
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$898.81	Getsinger
Total for this activity:		\$50,495.00	\$0.00	\$52,792.93	

Activity D.97/A-1 Argentina Radiogenic isotope analysis (Nd,Sr,Os).

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity D.97/A-2 Argentina Stable isotopic analysis for O, D.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity D.98/A-1 Argentina Paleontological training and age determinations.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$2,000.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$5,000.00	\$0.00	\$0.00	

Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$315.00	\$0.00	\$0.00	
Dec/20/98	1 - Personnel (GSC)	-\$1,500.00	\$0.00	\$0.00	Drop budget to 500
Dec/20/98	5 - Geoscience Services	-\$4,500.00	\$0.00	\$0.00	Drop budget to 500
Dec/20/98	7 - Other	-\$315.00	\$0.00	\$0.00	Drop budget to 0
Mar/31/99	5 - Geoscience Services	\$0.00	\$0.00	\$1,800.00	Sample processing
Total for this activity:		\$1,000.00	\$0.00	\$1,800.00	

Activity A.96/B-3 Bolivia Training in regional mapping, volcanology and metallogenic studies

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity A.97/B-1 Bolivia Training in digital data capture in the field (Fieldlog) and PC-based GIS for map production.

Date	Subunit	Budget	Commit	Actual	Obs.
Jun/1/98	5 - Geoscience Services	\$0.00	\$0.00	\$51.00	DHL Courier
Jun/3/98	5 - Geoscience Services	\$0.00	\$0.00	\$400.00	Transportation Associated (APTI) / Shipping of Equipment
Jun/3/98	5 - Geoscience Services	\$451.00	\$0.00	\$0.00	Increase Budget to cover
Aug/6/98	6 - Equipment	\$0.00	\$0.00	-\$417.00	Mastercard refund
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	

Feb/25/99	6 - Equipment	\$0.00	\$0.00	\$417.00	Mastercard
Total for this activity:		\$451.00	\$0.00	\$451.00	

Activity A.98/B-1 Bolivia Interpretation and integration of satellite data.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity C.98/B-1 Bolivia Technical Review by Private Sector of Bolivian segment of program'

Date	Subunit	Budget	Commit	Actual	Obs.
Oct/23/98	5 - Geoscience Services	\$0.00	\$0.00	\$5.00	Superior Reproductions
Oct/23/98	5 - Geoscience Services	\$5.00	\$0.00	\$0.00	Increase budget to cover Superior Reproductions
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$2,499.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	Reduce from \$200 to \$0
Jan/12/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$7,000.00	Art Soregaroli
Feb/1/99	4 - Travel	\$0.00	\$0.00	\$0.00	Art Soregaroli travel expenses to La Paz, Bolivia
Feb/1/99	4 - Travel	\$0.00	\$0.00	\$0.00	
Feb/5/99	2 - Personnel (non GSC)	\$7,000.00	\$0.00	\$0.00	Move budget from su 1 to su 2
Feb/9/99	4 - Travel	\$0.00	\$0.00	\$2,357.22	Art Soregaroli to Bolivia
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$603.25	Robert Cocking to Bolivia
Mar/3/99	4 - Travel	\$0.00	\$0.00	\$12.83	Cocking photos petty cash Louise G Fox

Mar/3/99	4 - Travel	\$0.00	\$0.00	\$56.07	Robert Cocking Passport petty cash Louise G Fox
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$341.76	Robert Cocking
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$1,349.00	Rob Cocking LIMA Amex
Total for this activity:		\$9,504.00	\$0.00	\$11,725.13	

Activity D.96/B-10 Bolivia Precision Dating by Ar-Ar or other techniques as applicable.

Date	Subunit	Budget	Commit	Actual	Obs.
Jun/19/98	5 - Geoscience Services	\$205.00	\$0.00	\$204.77	DHL Courier / Increase Budget
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	Change from 1000 to 0
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	Change from 1000 to 0
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$442.70	Getsinger
Total for this activity:		\$205.00	\$0.00	\$647.47	

Activity D.96/B-11 Bolivia On-site training in digital manipulation, large format printing and map production.

Date	Subunit	Budget	Commit	Actual	Obs.
Nov/13/98	4 - Travel	\$0.00	\$0.00	\$283.02	Carlos Riera
Nov/13/98	4 - Travel	\$1,147.00	\$0.00	\$0.00	To cover Carlos Riera + Sheraton hotel expenses
Nov/13/98	4 - Travel	\$0.00	\$0.00	\$0.00	Rob Cocking 2/3 expenses
Dec/4/98	4 - Travel	\$0.00	\$0.00	\$864.00	Sheraton Centre
Dec/20/98	1 - Personnel (GSC)	\$1,500.00	\$0.00	\$0.00	Budget forecast
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$1,000.00	\$0.00	\$0.00	Possibly cover shipment
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Jan/12/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$71.14	Cocking 0.4 days

Feb/2/99	4 - Travel	\$644.00	\$0.00	\$0.00	Otto Krauth Travel Expenses Approx. to Lima/La Paz
Feb/2/99	1 - Personnel (GSC)	\$500.00	\$0.00	\$0.00	Increase to accommodate Rob Cocking trip
Feb/2/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	Rob Cocking trip 8 days
Feb/2/99	2 - Personnel (non GSC)	\$600.00	\$0.00	\$0.00	Rodus + possible followup
Feb/2/99	4 - Travel	\$427.00	\$0.00	\$0.00	Rob Cocking travel
Feb/25/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$466.66	Rodus Translation Lima / La Paz (inv 1105)
Total for this activity:		\$5,818.00	\$0.00	\$1,684.82	

Activity D.96/B-5 Bolivia On-site assessment and training in laboratory techniques.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity D.96/B-6 Bolivia Precision analytical whole rock analyses for major, trace and rare earth elements.

Date	Subunit	Budget	Commit	Actual	Obs.
Sep/9/98	5 - Geoscience Services	\$0.00	\$0.00	\$7.50	Quicksilver Courier
Aug/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$19.10	DHL Courier
Nov/3/98	5 - Geoscience Services	\$0.00	\$0.00	\$177.20	Chemex Labs
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	Change from 1000 to 0
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	Change from 500 to 0
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$205.00	\$0.00	\$0.00	Change from 1500 to 205 to cover expenses
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$205.00	\$0.00	\$203.80	

Activity D.96/B-7 Bolivia

On-site training in fluid inclusion analyses.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$5,000.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$1,000.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$200.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	-\$5,000.00	\$0.00	\$0.00	To bring Budget to 0
Dec/20/98	7 - Other	-\$200.00	\$0.00	\$0.00	To bring Budget to 0
Dec/20/98	5 - Geoscience Services	-\$1,000.00	\$0.00	\$0.00	To bring Budget to 0
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity D.96/B-8 Bolivia

Geochemical exploration techniques, sample handling and data analyses.

Date	Subunit	Budget	Commit	Actual	Obs.
Aug/7/98	5 - Geoscience Services	\$0.00	\$0.00	\$21.48	DHL Courier
Jun/12/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	Activation Labs
Sep/9/98	5 - Geoscience Services	\$0.00	\$0.00	\$1,113.00	Lithogeochem Activation labs
Oct/14/98	5 - Geoscience Services	\$0.00	\$0.00	\$105.20	Chemex Labs
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$357.00	\$0.00	\$0.00	Change from 1000 to 357
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$1,240.00	\$0.00	\$0.00	Change from 1500 to 1240
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	Change from 100 to 0
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$898.81	Getsinger
Total for this activity:		\$1,597.00	\$0.00	\$2,138.49	

Activity D.96/B-9 Bolivia

On-site training in petrographic techniques (binocular, reflected and transmitted)

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity D.98/B-1 Bolivia

Paleontological training and age determinations.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity D.98/B-2 Bolivia

Radiogenic isotope analyses (Nd and Sr).

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/20/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/20/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/20/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/20/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	

Dec/20/98	6 - Equipment	\$0.00	\$0.00	\$0.00
Dec/20/98	7 - Other	\$0.00	\$0.00	\$0.00
Total for this activity:		\$0.00	\$0.00	\$0.00

Activity PM.98/M-1 Canada Preparation of final report (97/98) and 1st quarter forecast (1998/99).

Date	Subunit	Budget	Commit	Actual	Obs.
Jul/10/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$335.82	Cathie Hickson
Jun/26/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$400.00	Rodus
Jun/16/98	5 - Geoscience Services	\$0.00	\$0.00	\$1,262.32	DHL Courier
Jun/12/98	7 - Other	\$0.00	\$0.00	\$1,059.01	Superior Reproductions
Dec/21/98	1 - Personnel (GSC)	\$336.00	\$0.00	\$0.00	Change budget
Dec/21/98	2 - Personnel (non GSC)	\$400.00	\$0.00	\$0.00	Change budget
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$1,263.00	\$0.00	\$0.00	change budget
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$1,060.00	\$0.00	\$0.00	Superior Reproductions
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	Change budget
Total for this activity:		\$3,059.00	\$0.00	\$3,057.15	

Activity PM.98/M-2 Canada Preparation of 1st quarter financial report (April-June) and 2nd quarter forecast (July to Sept.).

Date	Subunit	Budget	Commit	Actual	Obs.
Jul/24/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$325.00	Rodus
Oct/2/98	5 - Geoscience Services	\$0.00	\$0.00	\$283.13	DHL Courier
Aug/7/98	5 - Geoscience Services	\$0.00	\$0.00	\$479.89	DHL Courier
Oct/23/98	5 - Geoscience Services	\$0.00	\$0.00	\$211.16	DHL Courier
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	Change Budget
Dec/21/98	2 - Personnel (non GSC)	\$325.00	\$0.00	\$0.00	Budget Adjustment
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$2,107.00	\$0.00	\$0.00	Change Budget to cover

Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	Change Budget from 400 to 0
Jan/6/99	5 - Geoscience Services	\$0.00	\$0.00	\$308.12	DHL Courier
Jan/6/99	5 - Geoscience Services	\$0.00	\$0.00	\$52.79	DHL Courier
Feb/9/99	5 - Geoscience Services	\$0.00	\$0.00	\$105.58	DHL Courier
Mar/3/99	5 - Geoscience Services	\$0.00	\$0.00	\$487.33	DHL Courier
Total for this activity:		\$2,432.00	\$0.00	\$2,253.00	

Activity PM.98/M-3 Canada

Preparation and attendance at mid-year Executive Council Meeting.

Date	Subunit	Budget	Commit	Actual	Obs.
Nov/2/98	4 - Travel	\$0.00	\$0.00	\$0.00	Cathie Hickson to BA / Amex
Nov/10/98	5 - Geoscience Services	\$0.00	\$0.00	\$165.81	DHL
Nov/12/98	4 - Travel	\$0.00	\$0.00	\$0.00	Ticket // Mike Ellerbeck to BA
Nov/12/98	4 - Travel	\$1,845.00	\$0.00	\$0.00	Ticket // Mike Ellerbeck to BA
Dec/7/98	5 - Geoscience Services	\$0.00	\$0.00	\$31.00	Federal Express
Dec/10/98	7 - Other	\$0.00	\$0.00	\$192.38	Staples / Manso SA / Netrock
Dec/21/98	1 - Personnel (GSC)	\$6,045.00	\$0.00	\$0.00	Change Budget
Dec/21/98	2 - Personnel (non GSC)	\$833.00	\$0.00	\$0.00	Budget Adjustment
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$11,133.00	\$0.00	\$0.00	Change budget
Dec/21/98	5 - Geoscience Services	\$197.00	\$0.00	\$0.00	Change Budget
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$193.00	\$0.00	\$0.00	Budget Adjustment / XDM Geological
Dec/31/98	4 - Travel	\$2,725.00	\$0.00	\$2,724.40	C. Hickson Field trip Chile
Dec/31/98	4 - Travel	\$5,545.00	\$0.00	\$5,544.56	C. Hickson Field trip Chile
Dec/31/98	4 - Travel	\$54.00	\$0.00	\$53.73	C. Hickson Field trip Chile
Jan/12/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$6,044.76	Cathie Hickson
Jan/12/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$832.50	Rodus International Council meeting
Feb/8/99	4 - Travel	\$0.00	\$0.00	-\$2,724.40	Cathie Hickson Field Trip Chile
Feb/8/99	4 - Travel	\$0.00	\$0.00	-\$5,544.56	Cathie Hickson Field trip chile
Feb/9/99	4 - Travel	\$0.00	\$0.00	\$1,844.15	Ticket // Mike Ellerbeck to Buenos Aires
Feb/9/99	4 - Travel	\$0.00	\$0.00	\$6.00	Cathie Hickson extra Air fare
Feb/9/99	4 - Travel	\$0.00	\$0.00	\$3,150.15	Cathie Hickson Amex card
Feb/24/99	4 - Travel	\$0.00	\$0.00	\$4,388.13	Cathie Hickson to Argentina
Feb/24/99	4 - Travel	\$0.00	\$0.00	\$2,979.96	Otto Krauth to Argentina

Feb/25/99	4 - Travel	\$0.00	\$0.00	\$1,412.44	Mike Ellerbeck to Argentina
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$106.74	Cathie Hickson trip to Argentina
Feb/25/99	7 - Other	\$0.00	\$0.00	\$0.00	Netrock transfer / Visa
Feb/25/99	7 - Other	\$0.00	\$0.00	\$0.00	Manso SA - Power bar / Visa
Mar/8/99	7 - Other	\$0.00	\$0.00	\$0.46	VISA staples
Mar/8/99	7 - Other	\$0.00	\$0.00	-\$7.46	VISA staples
Total for this activity:		\$28,570.00	\$0.00	\$21,200.75	

Activity PM.98/M-4 Canada Preparation of mid-year report and 2nd quarter financial report (July-Sept) and 3rd quarter forecast (Oct-Dec).

Date	Subunit	Budget	Commit	Actual	Obs.
Nov/26/98	7 - Other	\$0.00	\$0.00	\$323.61	Superior Reproductions
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	Change to 0
Dec/21/98	2 - Personnel (non GSC)	\$1,400.00	\$0.00	\$0.00	Change budget from 300
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$17.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$324.00	\$0.00	\$0.00	
Jan/6/99	5 - Geoscience Services	\$0.00	\$0.00	\$16.72	DHL Courier
Total for this activity:		\$1,741.00	\$0.00	\$340.33	

Activity PM.98/M-5 Canada Preparation of 3rd quarter (Oct-Dec) financial report and 4th quarter forecast (Jan-March).

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$2,015.00	\$0.00	\$0.00	BB/ Cathie
Dec/21/98	2 - Personnel (non GSC)	\$923.00	\$0.00	\$0.00	BB/ Next Invoice
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$400.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Feb/9/99	5 - Geoscience Services	\$0.00	\$0.00	\$436.20	Superior Reproductions
Total for this activity:		\$3,338.00	\$0.00	\$436.20	

Activity PM.98/M-6 Canada

Preparation and attendance at end-of-year Executive Council Meeting, preparation of Annual Work Plan (Including 4 year budget projection).

Date	Subunit	Budget	Commit	Actual	Obs.
Nov/24/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,400.00	Rodus
Dec/21/98	1 - Personnel (GSC)	\$3,500.00	\$0.00	\$0.00	Budget: Minimum 6 days
Dec/21/98	2 - Personnel (non GSC)	\$1,400.00	\$0.00	\$0.00	Rodus trip to PDAC
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$5,000.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$400.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$500.00	\$0.00	\$0.00	
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$250.00	Jennifer Getsinger
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$1,500.00	Cathie Hickson
Mar/23/99	4 - Travel	\$0.00	\$0.00	-\$1,500.00	Cathie Hickson
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$313.42	Cathie Hickson
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$729.75	Cathie Hickson/ hotel
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$875.70	Mike Ellerbeck / hotel
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$492.54	Mike Ellerbeck / Toronto
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$583.80	Gardeweg
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$729.75	Rivera
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$729.75	Page
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$729.75	Troncoso
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$94.34	Troncoso
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$729.75	Riera
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$729.75	Mallo
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$729.75	Zappettini
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$48.82	Moyra Gardeweg
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$583.80	Mpodozis
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$68.87	Stationery
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$200.00	Page
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$200.00	Riera
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$200.00	Rivera Hugo
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$200.00	Troncoso
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$200.00	Zappettini
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$200.00	Moyra Gardeweg
Mar/23/99	4 - Travel	\$0.00	\$0.00	\$200.00	Lamberto Mallo

Mar/23/99	4 - Travel	\$0.00	\$0.00	\$200.00	Mpodozis
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$3,511.00	Cathie Hickson
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$200.00	Zappettini
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$200.00	Troncoso
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$199.50	Hugo Rivera
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$200.00	Riera
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$6.20	Mpodozis
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$193.80	Mpodozis
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$200.00	Page
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$0.50	Hugo Rivera
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$200.00	Humberto Mallo
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$6.20	Moyra Gardeweg
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$193.80	Moyra Gardeweg
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$188.68	Ricardo Troncoso
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$188.68	Eduardo Zappettini
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$188.21	Hugo Rivera
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$194.53	Carlos Riera
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$182.83	Mpodozis
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$189.15	Roberto Page
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$194.53	Humberto Mallo
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$182.83	Moyra Gardeweg
Mar/31/99	4 - Travel	\$0.00	\$0.00	-\$250.00	Getsinger
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$271.04	Getsinger
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$307.74	Ellerbeck
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$66.04	Ellerbeck
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$84.91	Ellerbeck
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$132.08	Ellerbeck
Mar/31/99	7 - Other	\$0.00	\$0.00	\$32.15	Stationery / MOUs
Mar/31/99	7 - Other	\$0.00	\$0.00	\$1,050.02	Meeting room hotel rental
Mar/31/99	7 - Other	\$0.00	\$0.00	\$46.92	Report covers
Mar/31/99	4 - Travel	\$0.00	\$410.10	\$0.00	Ellerbeck Toronto Amex
Mar/31/99	4 - Travel	\$0.00	\$410.10	\$0.00	Getsinger Toronto Amex
Mar/31/99	4 - Travel	\$0.00	\$410.10	\$0.00	Cathie Hickson Toronto Amex
Mar/31/99	7 - Other	\$0.00	\$0.00	\$129.40	Livingston Brokerage Emergency call
Mar/31/99	7 - Other	\$0.00	\$0.00	\$253.60	Livingston Brokerage
Mar/31/99	7 - Other	\$0.00	\$0.00	\$60.00	Livingston Brokerage Wharfage
Mar/31/99	7 - Other	\$0.00	\$0.00	\$19.60	Livingston Brokerage Paying charge

Total for this activity: \$10,800.00 \$1,230.30 \$17,043.48

Activity PM.98/M-7 Canada Database Management

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$500.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$2,000.00	\$0.00	\$0.00	Job Nagel / Kustos Database Management
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$500.00	\$0.00	\$0.00	
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,350.00	Kustos Database Management
Total for this activity:		\$3,000.00	\$0.00	\$1,350.00	

Activity PM.98/M-8 Canada Annual Work plan 1999/00 (March 15, 1999) including forecasts for and revised forecasts for project.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$2,600.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$500.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$400.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$500.00	\$0.00	\$0.00	
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$702.20	Cathie Hickson
Total for this activity:		\$4,000.00	\$0.00	\$702.20	

Activity PM.98/M-9 Canada

Project Administration & management

Date	Subunit	Budget	Commit	Actual	Obs.
Jun/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$28.50	BC Tel
Jun/10/98	5 - Geoscience Services	\$0.00	\$0.00	\$28.50	BC Tel
Jun/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$31.55	BC Tel
Jun/10/98	5 - Geoscience Services	\$0.00	\$0.00	\$31.55	BC Tel
Jun/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$33.05	BC Tel
Jun/10/98	5 - Geoscience Services	\$0.00	\$0.00	\$33.05	BC Tel
May/8/98	1 - Personnel (GSC)	\$0.00	\$0.00	-\$1,330.65	Ellerbeck payroll
Sep/29/98	1 - Personnel (GSC)	\$0.00	\$0.00	-\$1,182.80	Ellerbeck reversal
Aug/12/98	1 - Personnel (GSC)	\$0.00	\$0.00	-\$1,034.95	Ellerbeck reversal
Jul/27/98	1 - Personnel (GSC)	\$0.00	\$0.00	-\$591.40	Ellerbeck pay accrual
May/8/98	1 - Personnel (GSC)	\$0.00	\$0.00	-\$564.59	Ellerbeck payroll
Jun/26/98	1 - Personnel (GSC)	\$0.00	\$0.00	-\$295.70	Ellerbeck reversal
May/26/98	1 - Personnel (GSC)	\$0.00	\$0.00	-\$147.85	Ellerbeck reversal
Oct/9/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$118.67	Irwin - 3.5 hours
May/8/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$147.85	Ellerbeck pay accrual
May/15/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$564.59	Ellerbeck payroll
Jun/26/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$591.40	Ellerbeck pay accraul
Jul/10/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$640.83	Despins 4.67 days
Jul/10/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$649.46	Dong 4.67 days
Jul/27/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,034.95	Ellerbeck pay accrua
Aug/31/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,182.80	Ellerbeck pay accrual
Oct/9/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,480.80	Dong -10 days
Oct/13/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,014.92	Hickson
Oct/9/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,014.92	Hickson - 6 days
May/15/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,062.92	Ellerbeck payroll
May/8/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,372.58	Ellerbeck payroll
May/26/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,957.00	Ellerbeck payroll
Jun/26/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,957.00	Ellerbeck payroll
Jul/27/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,957.00	Ellerbeck payroll
Aug/31/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,957.00	Ellerbeck payroll
Oct/5/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$3,873.67	Ellerbeck payroll 20%
Sep/29/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$4,435.50	Ellerbeck payroll
Oct/5/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,890.36	Cordy (5,780.72 half for Volcanology field trip)

Oct/9/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$570.64	Vanlier- 4 days
Jul/10/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$183.51	Stanley 1 day
Oct/6/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$207.99	Chiu- 1.5 days
Jul/10/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$277.32	Chiu 2 days
May/26/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$295.70	Ellerbeck payroll accrual
Oct/5/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$560.68	Despins
Aug/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$110.00	Rodus
Sep/1/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$856.25	Lopez
Jun/26/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$900.00	Rodus
Aug/1/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$962.50	Lopez
Aug/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,293.75	Lopez
Jul/2/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,600.00	Lopez
Jul/24/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$200.00	Rodus
Sep/15/98	5 - Geoscience Services	\$0.00	\$0.00	\$27.00	BC Tel
Jul/17/98	5 - Geoscience Services	\$0.00	\$0.00	\$29.45	BC tel
Jun/10/98	5 - Geoscience Services	\$0.00	\$0.00	\$31.55	BC Tel
Jul/17/98	5 - Geoscience Services	\$0.00	\$0.00	\$32.50	BC tel
Jun/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$33.05	BC Tel
Aug/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$33.05	BC Tel
Jul/17/98	5 - Geoscience Services	\$0.00	\$0.00	\$33.05	BC Tel
Apr/29/98	5 - Geoscience Services	\$0.00	\$0.00	\$33.05	BC Tel
Aug/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$33.45	BC Tel
Sep/15/98	5 - Geoscience Services	\$0.00	\$0.00	\$34.00	BC Tel
Sep/15/98	5 - Geoscience Services	\$0.00	\$0.00	\$38.30	BC Tel
Aug/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$78.85	BC Tel
Jan/12/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,014.92	Hickson 6 days
Jan/12/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,774.20	Ellerbeck 20%
Apr/29/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	BC Tel / 666-0183
Apr/29/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	BC Tel / 666-2997
Apr/29/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	BC Tel / 666-0528
Jul/23/98	5 - Geoscience Services	\$0.00	\$0.00	\$600.00	XDM Geological
Oct/14/98	5 - Geoscience Services	\$0.00	\$0.00	\$27.00	BC tel
Oct/23/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$112.50	Rodus
Oct/23/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$162.50	Rodus
Nov/3/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,957.00	Mike Ellerbeck
Nov/3/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$295.70	Mike Ellerbeck
Nov/3/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$316.50	Rodus
Nov/10/98	5 - Geoscience Services	\$0.00	\$0.00	\$32.50	BC tel

Nov/10/98	5 - Geoscience Services	\$0.00	\$0.00	\$33.05	BC tel
Nov/10/98	5 - Geoscience Services	\$0.00	\$0.00	\$27.00	BC tel
Nov/24/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$662.64	Rodus
Nov/27/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,957.00	Mike Ellerbeck
Nov/27/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$443.55	Mike Ellerbeck
Nov/27/98	1 - Personnel (GSC)	\$0.00	\$0.00	-\$295.70	Mike Ellerbeck
Dec/8/98	7 - Other	\$0.00	\$0.00	\$46.95	Cell phone
Dec/8/98	7 - Other	\$0.00	\$0.00	\$46.95	Cell phone
Dec/14/98	5 - Geoscience Services	\$0.00	\$0.00	\$39.74	BC tel
Dec/14/98	5 - Geoscience Services	\$0.00	\$0.00	\$27.00	BC tel
Dec/21/98	1 - Personnel (GSC)	\$57,461.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$30,000.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$218.00	\$0.00	\$0.00	Budget Adjustment
Dec/21/98	5 - Geoscience Services	\$3,000.00	\$0.00	\$0.00	BC Tel
Dec/21/98	6 - Equipment	\$100.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$1,000.00	\$0.00	\$0.00	
Dec/21/98	1 - Personnel (GSC)	\$9,539.00	\$0.00	\$0.00	Budget increase to account for Mike Ellerbeck salary
Dec/21/98	6 - Equipment	-\$100.00	\$0.00	\$0.00	To drop to 0
Dec/23/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,957.00	Mike Ellerbeck
Dec/23/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$887.10	Mike Ellerbeck / Salary accrual
Dec/23/98	1 - Personnel (GSC)	\$0.00	\$0.00	-\$443.55	Mike Ellerbeck / reversal for entry EP116758
Jan/6/99	7 - Other	\$0.00	\$0.00	\$54.45	Cantel Cellular phone
Jan/6/99	7 - Other	\$0.00	\$0.00	\$19.36	Cantel Cellular phone
Jan/12/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$151.29	Chiu
Jan/12/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,120.77	Despins
Jan/12/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$3,145.80	Dong
Jan/12/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$427.98	Vanlier
Jan/12/99	5 - Geoscience Services	\$0.00	\$0.00	\$31.55	BC Tel / 666-0183
Jan/12/99	5 - Geoscience Services	\$0.00	\$0.00	\$33.05	BC Tel / 666-0528
Jan/12/99	5 - Geoscience Services	\$0.00	\$0.00	\$27.00	BC Tel / 666-2997
Jan/13/99	5 - Geoscience Services	\$0.00	\$0.00	\$52.79	DHL Courier
Feb/1/99	5 - Geoscience Services	\$3,000.00	\$0.00	\$0.00	Budget increase
Feb/1/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$5,059.46	Mike Ellerbeck salary
Feb/1/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$725.63	Mike Ellerbeck salary
Feb/1/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,201.39	Mike Ellerbeck salary
Feb/1/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,100.66	Mike Ellerbeck salary
Feb/1/99	1 - Personnel (GSC)	\$0.00	\$0.00	-\$887.10	Mike Ellerbeck salary
Feb/3/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$65.40	Chiu

Feb/3/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$199.01	Claire Despins
Feb/3/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$293.20	Dong
Feb/3/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,605.12	Cathie Hickson
Feb/5/99	2 - Personnel (non GSC)	-\$13,000.00	\$0.00	\$0.00	Budget change reduced to 17000
Feb/9/99	5 - Geoscience Services	\$0.00	\$0.00	\$31.55	BC tel 666-0183
Feb/9/99	5 - Geoscience Services	\$0.00	\$0.00	\$33.05	BC tel 666-0528
Feb/9/99	5 - Geoscience Services	\$0.00	\$0.00	\$27.00	BC tel 666-2997
Feb/9/99	7 - Other	\$0.00	\$0.00	\$54.45	Cell Phone
Feb/9/99	7 - Other	\$0.00	\$0.00	\$23.50	Cell Phone
Feb/24/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,200.00	Rodus / Consulting
Feb/24/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,600.00	Rocio Lopez
Feb/24/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,562.50	Rocio Lopez
Feb/24/99	7 - Other	\$0.00	\$0.00	\$338.68	Cell Phone
Feb/24/99	7 - Other	\$0.00	\$0.00	\$338.68	Cell Phone
Feb/24/99	7 - Other	\$0.00	\$0.00	\$74.77	Cell Phone
Feb/24/99	7 - Other	\$0.00	\$0.00	\$74.77	Cell Phone
Feb/25/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$922.50	Rodus
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$528.00	Accom. Crowne Plaza
Mar/3/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$3,287.88	Mike Ellerbeck Salary
Mar/3/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,150.76	Mike Ellerbeck Salary / Pay accrual
Mar/3/99	1 - Personnel (GSC)	\$0.00	\$0.00	-\$1,100.66	Mike Ellerbeck Salary / Pay accrual Reversal
Mar/3/99	7 - Other	\$0.00	\$0.00	\$54.45	Cantel phone
Mar/3/99	7 - Other	\$0.00	\$0.00	\$23.50	Cantel phone
Mar/4/99	4 - Travel	\$0.00	\$0.00	\$290.99	Mark Shore Travel exp.
Mar/12/99	5 - Geoscience Services	\$0.00	\$0.00	\$61.33	BC tel 666-0183
Mar/12/99	5 - Geoscience Services	\$0.00	\$0.00	\$33.05	BC tel 666-0528
Mar/12/99	5 - Geoscience Services	\$0.00	\$0.00	\$27.00	BC tel 666-2997
Mar/12/99	5 - Geoscience Services	\$0.00	\$0.00	\$192.05	Publications
Mar/13/99	7 - Other	\$0.00	\$0.00	\$99.00	Publications
Mar/15/99	7 - Other	\$0.00	\$0.00	\$2,000.00	International Long Distance
Mar/15/99	7 - Other	\$0.00	\$0.00	\$72.00	Phone message system 666-0183
Mar/15/99	7 - Other	\$0.00	\$0.00	\$72.00	Phone message system 666-0528
Mar/15/99	7 - Other	\$0.00	\$0.00	\$500.00	Photocopies
Mar/15/99	7 - Other	\$0.00	\$0.00	\$300.00	Board Room rental
Mar/15/99	7 - Other	\$0.00	\$0.00	\$600.00	Computer rental
Mar/15/99	7 - Other	\$0.00	\$0.00	\$1,800.00	Computer rental / Rocio
Mar/15/99	7 - Other	\$0.00	\$0.00	\$1,035.00	Fax machine lease
Mar/15/99	7 - Other	\$0.00	\$0.00	\$1,100.00	Stationery charges

Mar/15/99	7 - Other	\$0.00	\$0.00	\$72.00	Phone message system 666-2997
Mar/19/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,437.50	Rocio
Mar/19/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$550.00	Rocio
Mar/29/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$375.50	Rocio Lopez
Mar/29/99	4 - Travel	\$0.00	\$0.00	\$485.00	Shore Vancouver
Mar/29/99	7 - Other	\$0.00	\$0.00	\$54.45	Cell phone 805-3311
Mar/29/99	7 - Other	\$0.00	\$0.00	\$23.50	Cell phone 805-5330
Mar/30/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$4,931.82	Mike Ellerbeck Salary payroll
Mar/30/99	1 - Personnel (GSC)	\$0.00	\$0.00	-\$1,150.76	Mike Ellerbeck Salary payroll
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$3,237.20	Dong salary
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$713.30	Vanlier salary
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$577.17	Claire Despins Salary
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$467.60	Chiu salary
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,400.00	Rodus
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$3,041.24	Mike Ellerbeck
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,313.78	Getsinger
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$700.00	Rodus
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$400.00	Rocio Lopez
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$162.50	Rocio Lopez
Mar/31/99	7 - Other	\$0.00	\$0.00	\$78.50	Buss card printing
Mar/31/99	7 - Other	\$0.00	\$0.00	\$375.00	Slide scanner
Mar/31/99	7 - Other	\$0.00	\$0.00	\$100.00	GIS plotter
Mar/31/99	7 - Other	\$0.00	\$0.00	\$3,000.00	LCD projector
Mar/31/99	5 - Geoscience Services	\$0.00	\$0.00	\$31.55	BC Tel / 666-0183
Mar/31/99	5 - Geoscience Services	\$0.00	\$0.00	\$33.05	BC Tel / 666-0528
Mar/31/99	5 - Geoscience Services	\$0.00	\$0.00	\$27.00	BC Tel / 666-2997
Total for this activity:		\$91,218.00	\$0.00	\$113,351.18	

Activity A.97/C-2 Chile

Field digital data capture (Fieldlog) and PC-based GIS for map production.

Date	Subunit	Budget	Commit	Actual	Obs.
Aug/6/98	6 - Equipment	\$0.00	\$0.00	-\$417.00	Mastercard
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	

Dec/21/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Feb/25/99	6 - Equipment	\$0.00	\$0.00	\$417.00	Mastercard
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity A.97/C-3 Chile Fission track studies to determine uplift and denudation and its relationship to supergene processes.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$7,500.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$1,250.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$24,500.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$200.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	-\$1,250.00	\$0.00	\$0.00	drop budget
Dec/21/98	5 - Geoscience Services	-\$16,800.00	\$0.00	\$0.00	drop budget
Dec/21/98	7 - Other	-\$200.00	\$0.00	\$0.00	drop budget
Feb/5/99	1 - Personnel (GSC)	-\$7,000.00	\$0.00	\$0.00	drop budget
Mar/31/99	5 - Geoscience Services	\$0.00	\$0.00	\$3,624.00	Dalhousie University
Total for this activity:		\$8,200.00	\$0.00	\$3,624.00	

Activity A.97/C-4 Chile Training in Petrography, petrogenesis, geochemistry, volcanic stratigraphy, and mapping, field applications.

Date	Subunit	Budget	Commit	Actual	Obs.
Jun/1/98	5 - Geoscience Services	\$0.00	\$0.00	\$35.63	DHL Courier
Jun/1/98	5 - Geoscience Services	\$36.00	\$0.00	\$0.00	Budget increase to cover
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	

Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00
Total for this activity:		\$36.00	\$0.00	\$35.63

Activity D.96/C-12 Chile Radiogenic isotope analyses (Nd and Sr).

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$30,000.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$300.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	1 - Personnel (GSC)	-\$30,000.00	\$0.00	\$0.00	Drop budget to adjust balance to 0
Dec/21/98	5 - Geoscience Services	\$472.00	\$0.00	\$0.00	
Feb/24/99	5 - Geoscience Services	\$0.00	\$0.00	\$771.51	DHL Couier
Total for this activity:		\$772.00	\$0.00	\$771.51	

Activity D.96/C-13 Chile Ar-Ar dating in Ottawa.

Date	Subunit	Budget	Commit	Actual	Obs.
Oct/13/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$1,454.30	Mike Villeneuve 5 days
Jul/9/98	5 - Geoscience Services	\$0.00	\$0.00	\$119.94	DHL
Jul/9/98	4 - Travel	\$0.00	\$0.00	\$650.00	Carlos Perez to Ottawa
Jul/17/98	4 - Travel	\$0.00	\$0.00	-\$132.55	Carlos Perez to Ottawa
Jul/22/98	4 - Travel	\$0.00	\$0.00	\$716.98	Carlos Perez to Ottawa / Room charge
Aug/18/98	4 - Travel	\$0.00	\$0.00	-\$517.45	Carlos Perez to Ottawa
Aug/18/98	4 - Travel	\$0.00	\$0.00	\$488.16	Carlos Perez to Ottawa
Dec/21/98	1 - Personnel (GSC)	\$23,000.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$2,250.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$2,200.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	

Dec/21/98	7 - Other	\$1,799.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	-\$1,045.00	\$0.00	\$0.00	Budget to cover
Dec/21/98	5 - Geoscience Services	-\$2,080.00	\$0.00	\$0.00	Decrease busget
Dec/21/98	7 - Other	-\$1,799.00	\$0.00	\$0.00	Budget decrease to 0
Feb/3/99	1 - Personnel (GSC)	\$955.00	\$0.00	\$0.00	Budget increase to cover
Total for this activity:		\$25,280.00	\$0.00	\$2,779.38	

Activity D.96/C-14 Chile Hydrogeology Project Development.

Date	Subunit	Budget	Commit	Actual	Obs.
Oct/14/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$900.00	David Rudolph
Sep/15/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,200.00	Ramon Aravena
Jul/31/98	4 - Travel	\$0.00	\$0.00	\$639.72	Iriarte in Waterloo
Aug/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$22.95	Purolator
Jun/1/98	5 - Geoscience Services	\$0.00	\$0.00	\$3,877.76	Isotope Lab.
Dec/8/98	5 - Geoscience Services	\$0.00	\$0.00	\$1,256.97	University of Waterloo
Dec/8/98	5 - Geoscience Services	-\$4,800.00	\$0.00	\$0.00	Drop budget
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$14,750.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$6,000.00	\$0.00	\$0.00	Air fare
Dec/21/98	5 - Geoscience Services	\$10,000.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$200.00	\$0.00	\$0.00	
Feb/1/99	2 - Personnel (non GSC)	\$12,350.00	\$0.00	\$0.00	Budget increase
Mar/3/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$10,500.00	Hydrogeology Ramon Aravena
Mar/4/99	4 - Travel	\$0.00	\$0.00	\$1,885.60	Ramon Aravena Travel
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$10,500.00	David Rudoph
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$1,853.70	David Rudoph travel
Total for this activity:		\$38,500.00	\$0.00	\$32,636.70	

Activity D.96/C-15 Chile

Precision analytical whole rock analyses for major, trace and rare earth elements.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$1,600.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	-\$1,600.00	\$0.00	\$0.00	Drop budget to 0
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity D.97/C-3 Chile

Zircon or other types of radiometric dating.

Date	Subunit	Budget	Commit	Actual	Obs.
Jun/11/98	5 - Geoscience Services	\$0.00	\$0.00	\$851.40	Fedex
Jun/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$1,293.42	DHL
Jun/11/98	5 - Geoscience Services	\$2,406.00	\$0.00	\$0.00	Budget increase to cover
Apr/30/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	Salary Forecast
Dec/21/98	1 - Personnel (GSC)	\$42,000.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$2,200.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Dec/21/98	1 - Personnel (GSC)	-\$26,357.00	\$0.00	\$0.00	Budget change
Jan/13/99	5 - Geoscience Services	\$0.00	\$0.00	\$61.94	DHL Courier
Feb/24/99	5 - Geoscience Services	\$0.00	\$0.00	\$2,399.22	DHL Courier
Feb/25/99	5 - Geoscience Services	\$0.00	\$0.00	\$1,005.75	DHL Courier
Mar/25/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$22,500.00	Mike Villeneuve U/PB Chile Analyses
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$220.36	Getsinger

Total for this activity: \$20,249.00 \$0.00 \$28,332.09

Activity D.97/C-4 Chile

Geophysical training in 3 dimensional modelling or gravity and aeromagnetic using Magi xi and Oasis (GeoSoft).

Date	Subunit	Budget	Commit	Actual	Obs.
Sep/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$3,000.00	Teskey
Oct/19/98	4 - Travel	\$0.00	\$0.00	\$0.00	Carmel Lowe to Chile / Amex
Nov/12/98	5 - Geoscience Services	\$0.00	\$0.00	\$390.25	Draft Service / Island Blue Print
Dec/14/98	5 - Geoscience Services	\$0.00	\$0.00	\$57.00	Elena Jenner
Dec/21/98	1 - Personnel (GSC)	\$4,000.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$10,000.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$6,000.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$200.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$500.00	\$0.00	\$0.00	
Dec/21/98	1 - Personnel (GSC)	\$2,353.00	\$0.00	\$0.00	Increase budget
Dec/21/98	2 - Personnel (non GSC)	-\$7,000.00	\$0.00	\$0.00	decrease budget
Dec/21/98	4 - Travel	-\$3,914.00	\$0.00	\$0.00	decrease budget
Dec/21/98	5 - Geoscience Services	\$248.00	\$0.00	\$0.00	Budget increase
Dec/21/98	7 - Other	-\$500.00	\$0.00	\$0.00	Budget to 0
Jan/12/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$6,076.83	Lowe 23 days
Jan/29/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$276.46	Lowe
Feb/9/99	4 - Travel	\$0.00	\$0.00	\$2,085.67	Carmel Lowe to Chile / Amex
Mar/3/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$387.93	Carmel Lowe Chile
Mar/15/99	1 - Personnel (GSC)	\$0.00	\$0.00	-\$387.93	Transfer to SU4
Mar/15/99	4 - Travel	\$0.00	\$0.00	\$387.93	Airfare Chile
Total for this activity:		\$11,887.00	\$0.00	\$12,274.14	

Activity D.97/C-5 Chile

Fluid Inclusion training and equipment.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$1,669.00	\$0.00	\$0.00	Increase to cover
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Jan/6/99	5 - Geoscience Services	\$0.00	\$0.00	\$1,668.42	DHL Courier
Total for this activity:		\$1,669.00	\$0.00	\$1,668.42	

Activity D.97/C-6 Chile

Laboratory Equipment.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity B.96/M-1 Multi

Collaboration on display and participation at a North American international geoscience conference held in Canada.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$1,500.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$14,000.00	\$0.00	\$0.00	

Dec/21/98	5 - Geoscience Services	\$600.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$3,500.00	\$0.00	\$0.00	
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$577.17	Claire Despins Salary
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,614.00	Rodus
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$56.96	Robert Cocking
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$510.90	Williams
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$351.10	Cathie Hickson
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$881.44	Getsinger
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$897.88	Rodus
Mar/31/99	7 - Other	\$0.00	\$0.00	\$144.00	Rental of lighting PDAC
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$3,040.00	PDAC registration
Mar/31/99	7 - Other	\$0.00	\$0.00	\$365.42	Audiovisual rental PDAC
Mar/31/99	7 - Other	\$0.00	\$1,107.95	\$0.00	Booth space rental PDAC
Total for this activity:		\$19,600.00	\$1,107.95	\$8,438.87	

Activity B.96/M-2 Multi

Discussions in regional metallogeny and project goals relative to regional syntheses and future goals.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity B.97/M-1 Multi

Mineral deposits field trip through portions of the four participating countries.

Date	Subunit	Budget	Commit	Actual	Obs.
Jul/10/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$714.31	Sangster 2 days
Oct/9/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$4,285.87	Sangster-12days
Aug/4/98	5 - Geoscience Services	\$0.00	\$0.00	\$211.88	DHL
Dec/21/98	1 - Personnel (GSC)	\$5,000.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$500.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	-\$288.00	\$0.00	\$0.00	Budget decrease to cover
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$110.18	Getsinger
Total for this activity:		\$5,212.00	\$0.00	\$5,322.24	

Activity B.97/M-2 Multi

Use and application of in-field handheld spectrometer (PIMA) to mineral deposit studies.

Date	Subunit	Budget	Commit	Actual	Obs.
Sep/22/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$64.20	PetraScience Consultants Inc.
Jul/19/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,500.00	PetraScience Consultants Inc.
Nov/10/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$332.87	XDM Geological / PIMA training
Nov/10/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,500.00	XDM Geological / PIMA training
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$1,500.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$2,000.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$400.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$1,898.00	\$0.00	\$0.00	Budget to cover
Dec/21/98	5 - Geoscience Services	-\$2,000.00	\$0.00	\$0.00	Budget to 0
Dec/21/98	7 - Other	-\$400.00	\$0.00	\$0.00	Budget to 0

Total for this activity: \$3,398.00 \$0.00 \$3,397.07

Activity B.98/M-1 Multi Development of rock and lithochemical standards.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$2,000.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$6,000.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	-\$4,600.00	\$0.00	\$0.00	Decrease so budget left is 3400
Mar/9/99	7 - Other	\$0.00	\$0.00	\$1,869.16	PDAC Booth
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$881.44	Getsinger
Total for this activity:		\$3,400.00	\$0.00	\$2,750.60	

Activity B.98/M-2 Multi Development of cartographic standards for application to 1:500,000 geology and mineral resources map.

Date	Subunit	Budget	Commit	Actual	Obs.
Jul/10/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$71.14	Cocking 0.4 days
Aug/10/98	5 - Geoscience Services	\$0.00	\$0.00	\$665.78	Superior / cartographic stand. manual
Dec/21/98	1 - Personnel (GSC)	\$2,000.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$2,000.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$200.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$200.00	\$0.00	\$0.00	
Dec/21/98	1 - Personnel (GSC)	-\$1,300.00	\$0.00	\$0.00	Budget change to 700
Dec/21/98	2 - Personnel (non GSC)	-\$1,000.00	\$0.00	\$0.00	Budget change to 1000
Feb/25/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$466.67	Rodus Translation Lima / La paz(inv 1105)
Feb/25/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$800.00	Rodus Translation Lima /La Paz (inv 1106)
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,691.36	Robert Cocking
Total for this activity:		\$2,100.00	\$0.00	\$4,694.95	

Activity B.98/M-3 Multi

Volcanology short course, fieldwork and theory.

Date	Subunit	Budget	Commit	Actual	Obs.
Jul/10/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,686.56	Hickson 8 days
Oct/9/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$13,432.80	Hickson 40 days
Jul/10/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$290.87	Hickson Misc.
Oct/8/98	4 - Travel	\$0.00	\$0.00	-\$990.50	Accom. Executive
Oct/5/98	4 - Travel	\$0.00	\$0.00	-\$990.50	Accom. Executive
Oct/8/98	4 - Travel	\$0.00	\$0.00	-\$926.50	Rubiolo travel
Oct/8/98	4 - Travel	\$0.00	\$0.00	-\$736.05	Sruoga travel
Sep/28/98	4 - Travel	\$0.00	\$0.00	-\$425.00	Cordy travel
Oct/5/98	4 - Travel	\$0.00	\$0.00	-\$332.38	Rubiolo Accom
Oct/8/98	4 - Travel	\$0.00	\$0.00	-\$15.95	Sruoga travel
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$5.24	Russel travel
Sep/15/98	4 - Travel	\$0.00	\$0.00	\$11.56	Hickson travel
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$28.40	Paul Adams
Sep/15/98	4 - Travel	\$0.00	\$0.00	\$33.70	Hickson
Sep/15/98	4 - Travel	\$0.00	\$0.00	\$72.51	Hickson travel
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$76.99	Russell travel
Oct/5/98	4 - Travel	\$0.00	\$0.00	\$97.20	Sruoga accom
Oct/5/98	4 - Travel	\$0.00	\$0.00	\$97.20	Rubiolo
Jul/31/98	4 - Travel	\$0.00	\$0.00	\$120.00	Tenting Kanata
Oct/10/98	4 - Travel	\$0.00	\$0.00	\$123.87	Paul Adam
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$144.15	Glen Helmlinger
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$151.00	Patrick Pringle
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$151.00	Leslie Pringle
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$156.60	Valencia travel
Sep/28/98	4 - Travel	\$0.00	\$0.00	\$170.09	Cordy travel
Jul/31/98	4 - Travel	\$0.00	\$0.00	\$571.59	Mt. St. Helens accom.
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$573.40	Rubiolo travel
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$700.00	Daniel Rubiolo
Aug/11/98	4 - Travel	\$0.00	\$0.00	\$1,000.00	Hickson travel
Jul/31/98	4 - Travel	\$0.00	\$0.00	\$1,720.29	Hickson planning
Jul/31/98	4 - Travel	\$0.00	\$0.00	\$1,981.00	Accom executive
Sep/15/98	4 - Travel	\$0.00	\$0.00	\$2,474.94	Hickson travel
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$173.44	Valencia travel

Oct/8/98	4 - Travel	\$0.00	\$0.00	\$173.44	Travel
Oct/10/98	4 - Travel	\$0.00	\$0.00	\$184.72	Kelly Russell
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$188.49	Coira travel
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$190.38	Sruoga travel
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$190.38	Rubiolo travel
Sep/15/98	4 - Travel	\$0.00	\$0.00	\$191.57	Hickson travel
Aug/11/98	4 - Travel	\$0.00	\$0.00	\$200.00	Paul Cordy
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$203.87	Sruoga travel
Aug/11/98	4 - Travel	\$0.00	\$0.00	\$225.00	Cordy travel
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$226.50	Rubiolo travel
Sep/15/98	4 - Travel	\$0.00	\$0.00	\$233.33	Hickson travel
Oct/5/98	4 - Travel	\$0.00	\$0.00	\$253.80	Coira accom
Jul/31/98	4 - Travel	\$0.00	\$0.00	\$270.00	Jaygee motel
Jul/31/98	4 - Travel	\$0.00	\$0.00	\$270.00	Randle Motel
Sep/28/98	4 - Travel	\$0.00	\$0.00	\$286.65	Cordy travel
Oct/10/98	4 - Travel	\$0.00	\$0.00	\$300.14	Betty Coira
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$300.14	Jorge Clavero
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$302.00	Volcanology / Betty Coira
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$318.15	Michael Valencia Munoz
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$318.15	Sruoga travel
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$318.15	Rubiolo travel
Sep/3/98	4 - Travel	\$0.00	\$0.00	\$332.38	Rubiolo accom
Oct/5/98	4 - Travel	\$0.00	\$0.00	\$351.00	Clavero hotel
Aug/11/98	4 - Travel	\$0.00	\$0.00	\$450.00	Hickson travel
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$450.00	Patricia Sruoga
Aug/7/98	5 - Geoscience Services	\$0.00	\$0.00	\$14.00	Superior Reproductions
Aug/4/98	5 - Geoscience Services	\$0.00	\$0.00	\$99.83	DHL
Aug/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$263.95	DHL
Jul/31/98	7 - Other	\$0.00	\$0.00	\$35.00	Health, Hickson
Oct/2/98	7 - Other	\$0.00	\$0.00	\$46.95	Cell phone
Oct/2/98	7 - Other	\$0.00	\$0.00	\$60.87	Cell phone
Aug/17/98	7 - Other	\$0.00	\$0.00	\$124.50	Dominion Bue
Sep/9/98	7 - Other	\$0.00	\$0.00	\$192.00	Films
Oct/8/98	4 - Travel	\$0.00	\$0.00	\$0.00	Sruoga travel
Oct/5/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,890.36	Cordy (5,780.72 half for Volcanology field trip)
Jul/31/98	4 - Travel	\$0.00	\$0.00	\$1,291.42	The Shoestring Lodge
Aug/11/98	4 - Travel	\$0.00	\$0.00	\$200.00	Volcanology / Paul Cordy
Sep/15/98	4 - Travel	\$0.00	\$0.00	\$2,189.17	Cathie Hickson / Volcanology trip

Sep/15/98	4 - Travel	\$0.00	\$0.00	-\$1,450.00	Hickson Washington & BC
Oct/2/98	7 - Other	\$0.00	\$0.00	\$46.95	Cantel
Oct/5/98	4 - Travel	\$0.00	\$0.00	-\$1,291.42	The Shoestring Lodge
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$200.00	Volcanology Jorge Clavero
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$302.00	Volcanology
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$200.00	Volcanology / Michael Valencia
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$302.00	Volcanology / Sruoga
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$200.00	Volcanology / Betty Coira
Oct/7/98	4 - Travel	\$0.00	\$0.00	\$302.00	Volcanology / Michael Val
Oct/8/98	4 - Travel	\$0.00	\$0.00	-\$200.00	Russell - BC
Oct/8/98	4 - Travel	\$0.00	\$0.00	-\$502.00	Volcanology Jorge Clavero
Oct/8/98	4 - Travel	\$0.00	\$0.00	-\$502.00	Volcanology / Michael Valencia
Oct/8/98	4 - Travel	\$0.00	\$0.00	-\$502.00	Volcanology / Betty Coira
Oct/16/98	4 - Travel	\$0.00	\$0.00	\$6,768.00	Helicopter / Westair investments
Oct/16/98	4 - Travel	\$0.00	\$0.00	\$846.00	Helicopter / Westair investments
Nov/2/98	4 - Travel	\$0.00	\$0.00	\$0.00	Cathie Hickson to BA / Amex
Nov/13/98	4 - Travel	\$0.00	\$0.00	\$9,240.00	Cathie Hickson / Washington & BC / Split between 3 activities
Nov/23/98	4 - Travel	\$0.00	\$0.00	\$258.00	Airfare PDC / Cordy Paul
Nov/23/98	4 - Travel	\$0.00	\$0.00	\$327.00	Airfare PDC / Cathie Hickson
Nov/23/98	4 - Travel	\$0.00	\$0.00	\$258.00	Airfare PDC / Betty Coira
Nov/23/98	4 - Travel	\$0.00	\$0.00	\$258.00	Airfare PDC / Rubiolo, Daniel
Nov/23/98	4 - Travel	\$0.00	\$0.00	\$258.00	Airfare PDC / Munoz, Michael
Nov/23/98	4 - Travel	\$0.00	\$0.00	\$258.00	Airfare PDC / Sruoga, Patricia
Nov/23/98	4 - Travel	\$0.00	\$0.00	\$327.00	Airfare PDC / Russell, Kelly
Nov/23/98	4 - Travel	\$0.00	\$0.00	\$258.00	Airfare PDC / Clavero, Jorge
Nov/26/98	7 - Other	\$0.00	\$0.00	\$10.68	Petty cash / Louise Fox
Nov/26/98	7 - Other	\$0.00	\$0.00	\$42.27	Petty cash
Nov/26/98	7 - Other	\$9.00	\$0.00	\$0.00	Budget increase to cover
Dec/21/98	1 - Personnel (GSC)	\$23,500.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$28,000.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$500.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$550.00	\$0.00	\$0.00	
Dec/21/98	1 - Personnel (GSC)	-\$4,067.00	\$0.00	\$0.00	Drop budget to cover
Dec/31/98	4 - Travel	\$0.00	\$0.00	-\$9,240.00	C. Hickson Trip to Argentina/Chile
Jan/12/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$3,022.38	Cathie Hickson

Feb/5/99	4 - Travel	-\$2,254.00	\$0.00	\$0.00	Drop budget to cover
Feb/5/99	5 - Geoscience Services	-\$122.00	\$0.00	\$0.00	Dorp budget to cover
Feb/8/99	4 - Travel	\$0.00	\$0.00	\$2,035.38	Cathie Hickson Field trip Chile
Feb/8/99	4 - Travel	\$0.00	\$0.00	\$5,544.56	Cathie Hickson Field trip chile
Feb/25/99	5 - Geoscience Services	\$0.00	\$0.00	\$125.75	DHL Courier
Total for this activity:		\$46,116.00	\$0.00	\$54,466.36	

Activity C.96/M-1 Multi

Post "news releases" and other information for participants and Private Sector companies through Web page.

Date	Subunit	Budget	Commit	Actual	Obs.
Aug/20/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$729.60	Rodus
Jun/26/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,746.55	Rodus
Sep/30/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$507.75	Rodus
Jun/11/98	5 - Geoscience Services	\$0.00	\$0.00	\$13.25	Fedex Courier
Aug/4/98	5 - Geoscience Services	\$0.00	\$0.00	\$211.88	DHL Courier
Jun/16/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$2,056.25	Lopez
Jun/11/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	Rodus / Consulting S.
Oct/23/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,084.20	Rodus
Nov/2/98	5 - Geoscience Services	\$0.00	\$0.00	\$49.04	Federal Express
Nov/3/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$789.95	Rodus
Dec/21/98	1 - Personnel (GSC)	\$2,000.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$8,000.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$500.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$3,000.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	Budget change
Jan/12/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$819.40	Rodus International
Feb/24/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$791.75	Rodus Newsletter & WEB
Feb/25/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,011.25	Rodus
Mar/15/99	7 - Other	\$0.00	\$0.00	\$96.00	Meter postage rental
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,288.30	Rodus
Mar/31/99	7 - Other	\$0.00	\$0.00	\$1,695.00	Samco printers (newsleter and brochure)
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$351.10	Cathie Hickson
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$881.44	Getsinger

Total for this activity: \$13,500.00 \$0.00 \$14,122.71

Activity C.97/M-1 Multi Technical Liason Committee with Industry representatives.

Date	Subunit	Budget	Commit	Actual	Obs.
Aug/12/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	Dr. Art Soregaroli
Nov/2/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	Dr. Art Soregaroli invoice
Nov/24/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$713.20	Rodus
Dec/21/98	1 - Personnel (GSC)	\$1,340.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$3,000.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$100.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$3,000.00	\$0.00	\$0.00	Increase budget to 6000
Jan/12/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$900.00	Art Soregaroli
Total for this activity:		\$7,440.00	\$0.00	\$1,613.20	

Activity C.98/M-1 Multi Technical Review by Private Sector.

Date	Subunit	Budget	Commit	Actual	Obs.
Mar/31/99	7 - Other	\$0.00	\$0.00	\$2,000.00	Meeting room rental 16th floor
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Mar/31/99	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$0.00	
Mar/31/99	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Mar/31/99	6 - Equipment	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$2,000.00	

Activity C.98/M-2 Multi

Project information and profile enhancement.

Date	Subunit	Budget	Commit	Actual	Obs.
Jul/10/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$2,686.56	Cathie Hickson 8 days
Jul/17/98	4 - Travel	\$0.00	\$0.00	-\$1,450.00	Hickson
Jun/29/98	4 - Travel	\$0.00	\$0.00	-\$240.00	Hickson Dinners
Jul/17/98	4 - Travel	\$0.00	\$0.00	\$53.83	Hickson gifts
Jun/12/98	4 - Travel	\$0.00	\$0.00	\$72.31	Hickson
Jun/3/98	4 - Travel	\$0.00	\$0.00	\$1,450.00	Hickson Arg/Chile
Jul/17/98	4 - Travel	\$0.00	\$0.00	\$1,707.44	Hickson
Jun/23/98	4 - Travel	\$0.00	\$0.00	\$4,652.82	Hickson Airfare
Jun/3/98	4 - Travel	\$0.00	\$0.00	\$195.65	Hickson Ottawa
Jun/3/98	4 - Travel	\$0.00	\$0.00	\$383.60	Magic Tours
Jul/17/98	4 - Travel	\$0.00	\$0.00	\$409.52	Hickson
Jun/3/98	5 - Geoscience Services	\$0.00	\$0.00	\$19.10	DHL Courier
Jun/18/98	7 - Other	\$0.00	\$0.00	\$34.00	Lens and Shutter
Oct/14/98	5 - Geoscience Services	\$0.00	\$0.00	\$22.95	Purolator Courier
Nov/10/98	7 - Other	\$0.00	\$0.00	\$1,765.00	Samco Printing
Nov/26/98	5 - Geoscience Services	\$0.00	\$0.00	\$11.25	Louise G Fox V.9
Nov/26/98	5 - Geoscience Services	\$54.00	\$0.00	\$0.00	Increase budget to cover
Dec/21/98	1 - Personnel (GSC)	\$6,000.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$5,000.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$5,000.00	\$0.00	\$0.00	
Dec/21/98	1 - Personnel (GSC)	-\$3,313.00	\$0.00	\$0.00	Budget to 0
Dec/21/98	4 - Travel	\$2,235.00	\$0.00	\$0.00	Budget to cover
Dec/21/98	7 - Other	-\$3,201.00	\$0.00	\$0.00	Decrease budget to cover
Mar/12/99	7 - Other	\$0.00	\$0.00	\$26.75	Mike Ellerbeck Visa
Mar/15/99	7 - Other	\$0.00	\$0.00	\$21.69	Quicksilver courier
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$351.10	Cathie Hickson
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$330.54	Getsinger
Total for this activity:		\$11,775.00	\$0.00	\$12,504.11	

Activity A.96/P-4 Peru

Training in Paleozoic stratigraphy and regional mapping.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$1,500.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$300.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$200.00	\$0.00	\$0.00	
Dec/21/98	1 - Personnel (GSC)	-\$1,500.00	\$0.00	\$0.00	Budget to 0
Dec/21/98	7 - Other	-\$200.00	\$0.00	\$0.00	Budget to 0
Feb/2/99	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	DHL International Courier
Feb/2/99	5 - Geoscience Services	-\$236.00	\$0.00	\$0.00	To cover budget
Feb/24/99	5 - Geoscience Services	\$0.00	\$0.00	\$63.85	DHL Courier
Total for this activity:		\$64.00	\$0.00	\$63.85	

Activity A.97/P-5 Peru

Training in TM and RadarSat imaging and structural/alteration interpretation of imaging, alteration zones, digital data capture (Fieldlog).

Date	Subunit	Budget	Commit	Actual	Obs.
Oct/9/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$23.12	Rob Cocking 1 hour
Aug/10/98	7 - Other	\$0.00	\$0.00	\$20.00	CD-ROM disks by Visa
Aug/6/98	6 - Equipment	\$0.00	\$0.00	-\$417.00	Mastercard Refund
Oct/16/98	5 - Geoscience Services	\$0.00	\$0.00	\$113.02	DHL Courier
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$8,000.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Feb/25/99	6 - Equipment	\$0.00	\$0.00	\$417.00	Mastercard
Total for this activity:		\$8,000.00	\$0.00	\$156.14	

Activity A.97/P-6 Peru

Training in petrography, petrogenesis, geochemistry, volcanic stratigraphy and mapping & field applications.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity A.98/P-1 Peru

Metallogenic resource evaluation and mineral deposit modelling and applications.

Date	Subunit	Budget	Commit	Actual	Obs.
Nov/2/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	XDM Geological
Nov/2/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$3,248.00	XDM Geological
Nov/12/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$63.54	XDM Geological
Nov/16/98	5 - Geoscience Services	\$0.00	\$0.00	\$9.48	Loomis Courier
Nov/17/98	5 - Geoscience Services	\$0.00	\$0.00	\$9.31	Quicksilver Courier
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$20,000.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$3,500.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$300.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$2,000.00	\$0.00	\$0.00	
Feb/3/99	2 - Personnel (non GSC)	\$19,650.00	\$0.00	\$0.00	Increase budget to cover
Feb/25/99	2 - Personnel (non GSC)	\$0.00	\$0.00	-\$3,311.54	Map Training XDM Geological
Feb/25/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$18,150.00	XDM Geological / Peru
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$3,311.54	XDM Geological / Peru
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$773.21	XDM Geological / Peru
Mar/30/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$9,750.00	XDM Geological / Andre panteleyev
Mar/30/99	4 - Travel	\$0.00	\$0.00	\$1,728.20	XDM travel Andre Panteleyev to Peru

Mar/30/99	5 - Geoscience Services	\$0.00	\$0.00	\$140.21	XDM Geological / Andre Panteleyev
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,000.00	XDM Geological
Total for this activity:		\$45,450.00	\$0.00	\$34,871.95	

Activity C.98/P-1 Peru Review of project participation and planning for post 2000 work of INGEMMET

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$3,500.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$25,000.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$6,000.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$400.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$100.00	\$0.00	\$0.00	
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	Cathie Hickson 2 days
Dec/21/98	1 - Personnel (GSC)	-\$2,828.00	\$0.00	\$0.00	Drop budget to cover
Dec/21/98	2 - Personnel (non GSC)	-\$14,000.00	\$0.00	\$0.00	Drop Budget to 11,000
Jan/12/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$1,300.00	Art Soregaroli
Feb/2/99	4 - Travel	-\$1,072.00	\$0.00	\$0.00	Decrease budget to cover
Feb/25/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$466.67	Rodus Translation Lima / La Paz (inv 1105)
Feb/25/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$3,500.00	XDM Geological / Peru trip
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$659.00	Mike Ellerbeck to Lima
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$572.47	Mike Ellerbeck to Peru
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$1,887.19	Otto Krauth to Lima
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$1,121.98	Art Soregaroli to Peru
Feb/25/99	4 - Travel	\$0.00	\$0.00	\$1,404.75	XDM Geological to Peru
Mar/17/99	5 - Geoscience Services	\$0.00	\$0.00	\$52.79	DHL courier
Mar/31/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$702.20	Cathie Hickson
Mar/31/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$6,000.00	Art Soregaroli
Mar/31/99	4 - Travel	\$0.00	\$0.00	\$1,150.00	Airfare to Peru / Mike Ellerbeck
Total for this activity:		\$17,100.00	\$0.00	\$18,817.05	

Activity D.96/P-16 Peru

Paleontologic training and age determination.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$3,000.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$5,000.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Dec/21/98	1 - Personnel (GSC)	-\$3,000.00	\$0.00	\$0.00	Drop budget to 0
Dec/21/98	5 - Geoscience Services	-\$5,000.00	\$0.00	\$0.00	Drop budget to 0
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity D.96/P-17 Peru

On-site training in Digital manipulation, large format printing and map production.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$200.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	-\$200.00	\$0.00	\$0.00	Drop budget to 0
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity D.96/P-18 Peru

Laboratory training and upgrading of laboratory (Hg environmental detection).

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Total for this activity:		\$0.00	\$0.00	\$0.00	

Activity D.96/P-19 Peru

Precision dating by Zircon, Ar-Ar or other techniques as applicable.

Date	Subunit	Budget	Commit	Actual	Obs.
Jun/19/98	5 - Geoscience Services	\$0.00	\$0.00	\$63.54	DHL Courier
Dec/16/98	5 - Geoscience Services	\$0.00	\$0.00	\$13.50	Quicksilver Courier
Dec/21/98	1 - Personnel (GSC)	\$32,000.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$3,600.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Dec/21/98	1 - Personnel (GSC)	-\$32,000.00	\$0.00	\$0.00	Drop budget to 0
Dec/21/98	5 - Geoscience Services	-\$3,522.00	\$0.00	\$0.00	Drop budget to cover
Total for this activity:		\$78.00	\$0.00	\$77.04	

Activity D.96/P-20 Peru

Precision analytical whole rock analyses for major, trace and rare earth elements.

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$500.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$0.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$100.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	-\$500.00	\$0.00	\$0.00	Budget to 0
Dec/21/98	7 - Other	-\$100.00	\$0.00	\$0.00	Budget to 0
Feb/25/99	5 - Geoscience Services	\$0.00	\$0.00	\$398.06	DHL Courier
Total for this activity:		\$0.00	\$0.00	\$398.06	

Activity D.98/P-1 Peru

Geophysical training in 3 dimensional modelling or gravity and aeromagnetic using Magi xi and Oasis (GeoSoft).

Date	Subunit	Budget	Commit	Actual	Obs.
Dec/21/98	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Dec/21/98	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Dec/21/98	4 - Travel	\$0.00	\$0.00	\$0.00	
Dec/21/98	5 - Geoscience Services	\$200.00	\$0.00	\$0.00	
Dec/21/98	6 - Equipment	\$23,000.00	\$0.00	\$0.00	
Dec/21/98	7 - Other	\$0.00	\$0.00	\$0.00	
Mar/31/99	6 - Equipment	\$0.00	\$0.00	\$22,954.40	Geosoft software
Total for this activity:		\$23,200.00	\$0.00	\$22,954.40	

Activity D.98/P-2 Peru

Fluid Inclusion equipment

Date	Subunit	Budget	Commit	Actual	Obs.
Feb/11/98	6 - Equipment	\$35,000.00	\$0.00	\$0.00	Fluid inclusion for Peru
Feb/11/99	1 - Personnel (GSC)	\$0.00	\$0.00	\$0.00	
Feb/11/99	2 - Personnel (non GSC)	\$0.00	\$0.00	\$0.00	
Feb/11/99	3 - Local Consultants	\$0.00	\$0.00	\$0.00	
Feb/11/99	4 - Travel	\$0.00	\$0.00	\$0.00	
Feb/11/99	5 - Geoscience Services	\$0.00	\$0.00	\$0.00	
Feb/11/99	7 - Other	\$0.00	\$0.00	\$0.00	
Mar/31/99	6 - Equipment	\$0.00	\$0.00	\$35,465.37	Fluid inclusion for Peru
Total for this activity:		\$35,000.00	\$0.00	\$35,465.37	

Gran Total - Budget: \$825,925.00

Total CIDA Payments: \$790,777.68

Gran Total - Commit: \$2,338.25

Gran Total - Actual: \$810,854.65

Balance: -\$22,415.22 ** Negative amount represents over expenditure

Annex B:
Report on Questionnaires for MAP Activities for 1998/99

Conference Evaluation
International Symposium on the Andean Cordillera. (C.98/M-2)

Attendee

Country: Canada

Place: Mendoza, Argentina

Dates conference took place: June 2, 1999

Your name and title: Dr. Catherine Hickson, MAP - Project Manager

1. Was the conference structured in a way that helped you add to your knowledge?

Yes, the conference was well structured and the presentations by and large, were excellent.

2. Were you given time to connect and build networks with colleagues from other countries for the purpose of sharing knowledge in the future?

There were excellent opportunities to converse with other participants, especially during the field trip portion.

3. Do you now have more ideas on how to connect and build a network of colleagues within your own country/area?

Yes, I met many Canadian representatives working in South America.

4. Additional comments:

Field trip worked very well to provide an opportunity to get to know fellow participants.

Workshop/Seminar Evaluation
GEOPHYSICAL MODELLING (D.97/C-4)

Trainer/Instructor

Country: CHILE

Dates workshop/seminar took place: November 2-4 1998

Trainer : Carmel Lowe

1. Based on your expectations, how prepared were the participants?

Participants were prepared in the sense that they were keen and eager to learn. No formal pre-course preparation was required.

2. What degree of preparation had been done on the site?

All necessary preparation was complete. A room was reserved with the requested audio-visual aids. All participants were advised of course dates and times.

3. What was the level of knowledge of the participants?

The participants were more familiar with and knowledgeable about short course topics than I had expected.

4. Were the participants able to pass on the knowledge gained to others?

Too early to assess.

5. What were your expectations? On a scale of 1-5 (one being way below expectations and five surpassing all hopes) 1 2 3 4 5

As mentioned above, participants were more knowledgeable than expected, course materials were consequently covered faster than expected and this allowed more time for analysis and discussion of Chilean case histories than expected - benefitting both myself and participants greatly.

Workshop/Seminar Evaluation
METALLOGENIC FIELD WORK (A.98/P-1)

Trainer/Instructor

Country: PERU

Dates workshop/seminar took place: Oct 26-Nov 10, 1998

Trainer : André Panteleyev

1. Based on your expectations, how prepared were the participants?
Well prepared and organized. Schedule reasonable and managed as intended.
2. What degree of preparation had been done on the site?
Itinerary well established. Hand-out material and information was available.
3. What was the level of knowledge of the participants?
Senior staff were highly knowledgeable ; for junior staff fieldwork- was a learning experience akin to a field seminar.
4. Were the participants able to pass on the knowledge gained to others?
Presumably yes. IF collected samples are processed petrochemical and radiometric dating data should be useful in the long-term.
5. What were your expectations? On a scale of 1-5 (one being way below expectations and five surpassing all hopes): 1 2 3 4 5

Expectation: 3

Result: 4

METALLOGENIC IN-HOUSE WORKSHOP (A.98/P-1) Part 1

Post Training Evaluation - Workshop/Seminar

Trainer/Instructor

Country: PERU

Dates workshop/seminar took place: Oct 20-23, 1998

Trainer : André Panteleyev

1. Based on your expectations, how prepared were the participants?
Sept 21 Conference call with INGEMMET Management establish translation of 4 hour lectures/day format for "workshop". Staff regarded lectures as "drop-in" forum. Staff participation was voluntary and at their convenience. There was no translation and 4-hour sessions were too long to hold to hold their attention.
2. What degree of preparation had been done on the site?
Lectures at INGEMMET are convenient - right in the middle of INGEMMET in a good facility. No preparation prior to my arrival evident. Staff seemed largely unaware beforehand that this event was forthcoming.
3. What was the level of knowledge of the participants?
Difficult to judge- Seemingly widely ranging from highly knowledgeable to rudimentary.
4. Were the participants able to pass on the knowledge gained to others?
Who knows? They seem to want more of this type of presentation.
5. What were your expectations? On a scale of 1-5 (one being way below expectations and five surpassing all hopes) 1 2 3 4 5
*Expectations of myself: 5 Results: 4
Expectations of INGEMMET staff: 2 Results: 3
Comments: Participants ranged from 45 to 15; median~ 25 people.
Also, PIMA demonstration Oct 22-23 well received and highly successful.*

METALLOGENY IN-HOUSE COURSE (A.98/P-1) Part 2

Post Session Questionnaire

Project Leader of Peru

Dates Training took place : March 2-12, 1999

Trainer: André Panteleyev

1. On a scale of one to five (one being low five being high) based on the report from the participant were your expectations met for this training session?

1 2 3 4 5

The topics that were discussed have caused an interest in deepening the knowledge acquired during the course.

2. Were your expectations met for the overall M.A.P.?

Yes.

How?

It fulfills the objectives related to the transfer of technology and the training of the professionals from our Institute.

3. Were your expectations met for the Overall Geoscience Program?

Yes.

How?

A program of Minerals Inventory will be initiated and will indicate points for the development of the studies.

4. Were the participants able to share knowledge easily with their colleagues?

Yes, they were able to share their opinions. Especially the ?? (illegible word) that come to work under MAP

5. Do you have any comments for the trainer?

He is very knowledgeable about the topics he covered. His didactical skills enabled him to transmit his knowledge and experience.

Completed by: Manuel Paz Maidana

METALLOGENIC IN-HOUSE WORKSHOP (A.98/P-1) Part 2

Post Training Evaluation - Workshop/Seminar

Trainer/Instructor

Country: PERU

Dates workshop/seminar took place: March 1-12, 1999

Trainer : André Panteleyev

1. Based on your expectations, how prepared were the participants?
They have been informed of course schedule and time was set aside for the course.
2. What degree of preparation had been done on the site?
Previous comments/recommendations (from November 98) had been acted on - a translator was provided. The lecture facilities at INGEMMET are appropriate and of good quality.
3. What was the level of knowledge of the participants?
Variable - some highly knowledgeable, others had only rudimentary background.
4. Were the participants able to pass on the knowledge gained to others?
Presumably yes. All technical staff at INGEMMET were expected to (and did) attend this course.
5. What were your expectations? On a scale of 1-5 (one being way below expectations and five surpassing all hopes) 1 2 3 4 5
*Expectations: 4 of myself Reality: 5
 3 of audience. Reality: 4*

General observation: Short courses should be scheduled as morning sessions

SHORT COURSE IN VOLCANOLOGY (B.98/M-3)

Post Training Evaluation - *Project Leader from Peru*

Dates workshop/seminar took place: August 10-21 1998

Trainer: Catherine Hickson

1. Describe how you will be using the knowledge/skills learned from this session(course) when you return to your work site.
 - the training that Ing. M. Valencia received is important for the Program for updating the geological map of southern Peru, which has an abundance of outcrops of not well differentiated volcanic rocks.
2. What were the most significant parts of this session(course)?
 - The practical part , because he had the opportunity to do various field trips with good demonstrations.
3. According to you, what were the least significant parts of this course?
 - The complementary visits to Mount St. Helens and Mt. Rainier.
4. How did your instructor contribute to your learning ?
 - According to report of the course, the didactics for the course were very efficient.
5. What could you recommend that the instructor do differently?
 - The duration could be longer in order to acquire new concepts related to Volcanology.

6. How much time for preparation were you given before the course began?
 - There was not much time available for the participant to read the specialized literature.
7. What additional information could be included in this session that would be beneficial to you?
8. Were you encouraged to participate in both discussion and hands on training?
9. Were you able to interpret the knowledge gained in the session to your work responsibilities?

(Manuel Paz Maidana)

VOLCANOLOGY SHORT COURSE 1 (B.98/M-3)

Post Training Evaluation - *Participant*

SUMMARY FROM ARGENTINA AND PERU

Country workshop took place: Canada

Dates workshop took place: August 10-21 1998

Trainer: Catherine Hickson

1. Describe how you will be using the knowledge/skills learned from this session(course) when you return to your work site.
 - the knowledge that was acquired will be used immediately in the program of the Survey for the Geological map of Argentina.
 - INGEMMET is currently finishing the geological cartography of all the territory of Peru. Most of these zones consist of sequential (secuencias) volcanic rocks, like the ones found in the bordering areas between Chile and Peru. In the short term, there are proposals to map in 1: 50000 of these highly volcanic areas. In order to do this, there has been a preliminary examination of the bordering areas by SERNAGEOMIN (Chile) and INGEMMET (Peru) in which this new knowledge has been applied.

2. What were the most significant parts of this session(course)?
 - visiting Mt St-Helens and the environmental impact of the eruption in 1980
 - subglacial volcanism in Wells Gray Park
 - Block and Ash at Mount Meager
 - the most significant one was the demonstration and the lithologic description done at Mt Cayley where knowledge and skill to gather good demonstration were combined. It was like a measurement of the knowledge over the lithological description, in the style of a field evaluation.

3. According to you, what were the least significant parts of this course?
 - nothing. All aspects of the course were very meaningful.
 - the least significant part was the complementary visits done at the

Visitor Centres at St-Helens and Mt. Rainier. These Centres were for the general public who had limited knowledge in geology.

4. How did your instructor contribute to your learning?
 - in organizing the event in an excellent way and in inviting specialists of the area
also the excellent disposition dealing with doubts and worries.
 - She contributed in a clear and didactic way and with examples to support her explanations. Punctuality, discipline and order were contributing factors too.

5. What could you recommend that the instructor do differently?
 - nothing.
 - I would have like to have more field notes including the discussions and the outlines. Also, the field trip explanations should be accompanied with graphics and more examples.

6. How much time for preparation were you given before the course began?
 - one month.

7. What additional information could be included in this session that would be beneficial to you?
 - considering the time that we had for the field trip, we visited interesting volcanic sites and the schedule was perfect.
 - there are important themes that should be linked with this course: petrology of volcanic rocks and the volcanogenetic deposits. (Yacimientos volcanolgeneticos)

8. Were you encouraged to participate in both discussion and hands on training?
 - the short course was very interactive and all of us participated

9. Were you able to interpret the knowledge gained in the session to your work responsibilities?

- the acquired knowledge will be applied to my daily tasks at work.
- Really, in the frame of the objectives of the Project which are to promote the regional integration, a preliminary field examination has been done involving Sernageomin and Ingemmet in the bordering areas of Tacna (Peru) and Arica (Chile) aiming to do a more detailed geological map of these areas. In these highly volcanic areas, the acquired knowledge and skills of this short course will applied and be very useful.

Note: these answers are based on 2 questionnaires from Argentina and one from Peru

VOLCANOLOGY FIELD COURSE PART 1 (B.98/M-3)

Workshop/Seminar
Post Training Evaluation

Trainer/Instructor

Country: CANADA

Dates workshop/seminar took place: August 10-21, 1998

Trainer : Catherine Hickson

1. Based on your expectations, how prepared were the participants?
Most were very well prepared
2. What degree of preparation had been done on the site?
Everything was organized and in place
3. What was the level of knowledge of the participants?
Introductory to very advanced.
4. Were the participants able to pass on the knowledge gained to others?
Hopefully
5. What were your expectations? On a scale of 1-5 (one being way below expectations and five surpassing all hopes) 1 2 3 4 5

VOLCANOLOGY FIELD COURSE PART 2 (B.98/M-3)

Post Training Evaluation - *Participant* SUMMARY

Dates workshop/seminar took place: November 23-30, 1998

Trainer: Moyra Gardeweg and Jorge Clavero

1. Describe how you will be using the knowledge/skills learned from this session(course) when you return to your work site.
 - it will be useful in identifying, describing, and interpret rocks and deposits similar to the ones in my area of study
 - it will be used as an important support material for the interpretation of the volcanic processes within the study of the Ibanez group (Jurassic Medium-Superior) in the region of Aysen.
 - it will be immediately used in the interpretation of volcanic units in the geological maps.
 - it will be used in the description and interpretation of the volcanic grounds in the Survey Program of the Geological/Economical sheets.

2. What were the most significant parts of this session(course)?
 - the observation and characterization of specific pyroclastic deposits with distinctive range of consolidation and distinct facies.
 - in general, all descriptive aspects of the terrane that is the observation and description of pyroclastic flow, lava, domes, structure, etc...
 - the most important | think was the field work as such, revising distinctive volcanic units and deposits.
 - visiting the pyroclastic deposits (unreadable word) ..of 1993 in the Lascar. The iron deposit of Laco.

3. According to you, what were the least significant parts of this course?

- not enough time which resulted in lack of time for the discussion regarding the interpretation of some of the deposits.
- the theoretical part, the emphasis should have been focused on the observation and identification in the field.
- there were none. (4)

4. How did your instructor contribute to your learning?

- in showing us the distinctive characteristics that allow us to differentiate the deposits
- very good selection of points of observation and review of related topics.
the instructor was very strong when it came to the description of units and the interpretation of these.
- in a meaningful way, explaining clearly and by putting emphasis on certain aspect and also diagnostic of known deposits.
- mainly in showing and demonstrate in the field the theoretical knowledge and have discussion regarding the possible processes of formation of the reviewed deposits.
- in various ways: ability to share the knowledge, choice of site of volcanic interest, and organization skills.

5. What could you recommend that the instructor do differently?

- that we would have time for describing and interpreting individually the deposit for further discussions with the group and instructor.
- prepare a field guide (booklet)
- regarding the field work, I think that it's a good idea to develop the course. We need to improve the logistics, to improve the choice about the lodging and consider more trucks for the transportation of participants.
- more vehicle to transport the participants and don't change the itinerary suddenly.
- possibly spending more time at each stop could result in a better goal evaluation of the visit.
- spend more time at each chosen outcrop. This would be a total contribution to the course.

6. How much time for preparation were you given before the course began?
- more or less 2 weeks of notice (3)
 - 1 day
 - 1 week of notice
 - one week
 - 3 days
7. What additional information could be included in this session that would be beneficial to you?
- what was missing was the theoretical part on calderas and how they are formed in spite of the fact that in the field we observed various ignimbrite associated to calderas.
 - maybe see with more details volcanic-sedimentary deposits in volcanic environments, their spatial and geometric relations.
 - better petrogenetic information when available
 - maybe improve the written summary of the theoretical part (i.e. make it more complete)
 - I believe that the course could be longer and it would be interesting to see the relation between the structure in volcanism.(2)
8. Were you encouraged to participate in both discussion and hands on training?
- yes, our participation was always solicited whether it was to discuss about something or to describe the rocks in the field. (6)
 - personally, I think it was very valuable for us to participate in the description about deposits, petrography, etc..
 - in both, however, the level of my understanding in some cases was limited due to the interpretation of the trainer.
9. Were you able to interpret the knowledge gained in the session to your work responsibilities?

VOLCANOLOGY SHORT COURSE -Part 2 (B.98/M-3)

Post Training Questionnaire

Trainer

Country: CHILE

Dates Training took place: November 23-30 1998

Trainer: Moyra Gardeweg and Jorge Clavero

1. On a scale of one to five (one being low five being high) based on the report from the participant were your expectations met for this training session?
1 2 3 4 5 Please give details.

It is difficult for me to give my opinion because the reports from the participants are confidential.

2. Did the courseworkshop/fieldwork meet your expectations for the overall M.A.P.?

Yes, in general.

If yes, how?

There was enough interest (most of them) from the participants that is why they should have taken advantage of learning physical volcanology.

3. Did the training/workshop/fieldwork fit into your Institute's overall Geoscience Program?

Yes.

If yes, how ?

Yes because the opportunity was given to 8 professionals in the field of physical volcanology, in a country with an abundance of volcanic rocks.

4. Were the participants able to share knowledge easily with their colleagues?

Yes, there was a lot of sharing of opinions and interesting discussions

5. Do you have any comments for the trainer ?

There should have been more time to prepare the theoretical part of this course.

(Jorge Clavero)

Note: The trainer completed the Leader's Project form.

Annex C:
Minutes from MAP Executive Council Meeting
Toronto, Canada
March 15 to 17, 1999

Executive Council Meeting - Multinational Andean Project
Argentina - Bolivia - Chile - Peru - Canada
Toronto, Canada
March 15, 16 and 17, 1999
Minutes



Attendees

Argentina

Lic. Roberto Page - Executive Secretary - MAP
Secretario Ejecutivo - SEGEMAR
Dr. Eduardo Zappettini - National Coordinator

Bolivia

Ing. Carlos Riera-Kilibarda - Jefe del Departamento de Información Geológico - Minera - SERGEOMIN
Ing. Humberto Mallo - Project Leader

Chile

Ing. Ricardo Troncoso - Director Nacional - SERNAGEOMIN
Dr. Constantino Mpodozis - Technical Advisor MAP
Dr. Moyra Gardeweg - Project Leader

Peru


Ing. Hugo Rivera - Director Técnico - INGEMMET

Canada

Dr. Catherine Hickson - Project Manager - GSC
Ing. Jean-Claude Lauzier - Policy, Strategic Planning and Operations - CIDA
Ms. Barbara Karpinski - CIDA Project Manager - CIDA
Mr. Mike Ellerbeck - Project Administrator - GSC
Mr. Otto Krauth - Rodus Int. Corp.
Dr. Jennifer Getsinger - GSC

Multinational Andean Project
Argentina - Bolivia - Chile - Perú - Canada

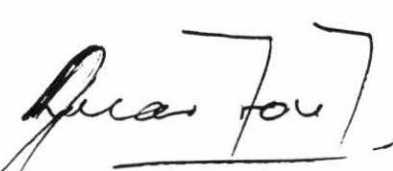
Executive Council Meeting
Toronto, Canada - March 15, 16 and 17, 1999
Approval of Minutes of the Meeting



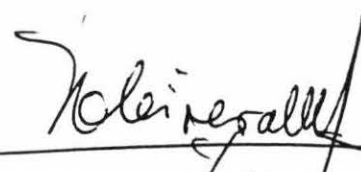
Lic. Roberto Page
Secretario Ejecutivo, SEGEMAR, Argentina



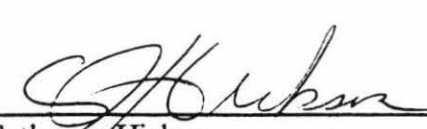
Ing. Carlos Riera-Kilibarda
Jefe del Departamento de Información Geológico - Minera, SERGEOMIN, Bolivia



Ing. Ricardo Troncoso S.M.
Director Nacional, SERNAGEOMIN, Chile



Ing. Hugo Rivera
Director Técnico, INGEMMET, Peru



Dr. Catherine Hickson
Project Manager, Multinational Andean Project, GSC, Canada

Executive Council Meeting - Multinational Andean Project
Argentina - Bolivia - Chile - Peru - Canada
Toronto, Canada - March 15, 16, and 17, 1999
Minutes

Day 1

Crowne Plaza Hotel - Caledon Room
8:30am - 12:30pm, Monday, March 15

Chair: Lic. Roberto Page, Executive Secretary, MAP

- 1) Welcome and opening comments by Project Manager Dr. Catherine J. Hickson.
- 2) Introduction of project participants Ing. Carlos Riera, SERGEOMIN, Bolivia (representing Ing. Marcelo Claire, Bolivia) and Dr. Jennifer Getsinger, GSC.
- 3) Welcome and introduction of observers Ms. Barbara Karpinski - CIDA Project Manager for MAP (observer) and Dr. Sandy Colvine - Director, GSC Pacific Division.
- 4) A letter from Ing. Claire stating his intention to resign as Executive Secretary of MAP was read to the council. Hickson was asked to outline the duties of the Executive Secretary. These duties were outlined in the Inception Report for the project. A general discussion followed as to the duties of the Executive Secretary. These duties were agreed to in the Inception Report, signed May 17, 1996, page 15, clause 8.2. In this report the duties of the Executive Secretary were established as:

This individual will be a Director of one of the Geoscience Surveys (Argentina, Bolivia, Chile [or] Peru) and will be selected by vote by the Executive Council. The functions of the Executive Secretary are to:

1. *Assist in formulating and coordinating a work plan and the initiation of the Project which will be based on the needs and national goals of the participating countries.*
2. *Coordinate the horizontal integration of the countries and facilities the progress of the Multinational Andean Project.*
3. *Establish and maintain communication with the Project Manager regarding jointly funded activities on behalf of the entire Project with the assistance of the Project Administrator.*
4. *Ensure that the decisions of the Executive council are carried out.*

Additionally the Executive Secretary chairs the meetings of the Executive Council and assists MAP Administration in setting up the agenda for forth coming meetings of the Council. Lic. Roberto Page was nominated for the position and a general discussion followed.

Decision: It was unanimously decided that the new Executive Secretary will be Lic. Roberto Page.

Page proceeded to chair the meeting. The agenda and itinerary for the following three days was reviewed and agreed upon.

5) **Previous Minutes' Action Items:** The council reviewed action items arising from the Buenos Aires, Argentina Executive Council meetings (numbers correspond to meeting minutes Nov. 13 to 15, 1998 found in Report #10).

3.1 *Response from Ecuador on participation in MAP.* Riera reported that no response had been received from Ecuador to the letter sent to them following the Council meeting in Buenos Aires. Comments were heard from Peru as to the feasibility of this item, but as this proposal has come late in the project, Council agreed not to pursue the issue further.

3.3 *Submission of verifiable indicators.* It was reported that three countries had sent the required information. When all the information is received it will be posted on the page.

3.5 *List of publications from each country to be posted on the Web page.* Each country reported on the publications that had been produced as part of the MAP project. A list was compiled and this will be posted on the Web page.

Decision: It was agreed that all countries should have access to all the products produced by each country and MAP be acknowledged in the publication (either by inclusion of the logo or by written text).

Action:

- Each country to submit 5 copies of their MAP publications to Ellerbeck for distribution to each participating country's library through the Project Leaders.
- Publications received at GSC Vancouver will be catalogued and made available through the GSC Vancouver Cordilleran Geoscience Library.
- Interested countries to investigate the feasibility of selling MAP publications at GSC Vancouver's Information and Sales Office.
- When new publications are released, the country is to contact MAP administration immediately so the information can be posted on the Web page and put in the monthly Newsletter.

3.6 *Evaluation of impact of FieldLog training and possible future training.* Countries will include training in work plans.

4. *Add new activity number for Bolivia to investigate the feasibility of an airborne geophysical survey.* Done, activity number is C98/B-1. See items numbered 11 and 17.

5.4 *Cartographic Standards Committee members from Peru to be confirmed.* Done, revised list of names appear in Report #10 in the minutes of the November meeting.

5.5 *Exchange of existing digital and cartographic standards.* See agenda item #7 for further discussion and the accompanying report (Annex A).

6.1 *Hickson to discuss Cartographic Standards Committee with Cocking and a brief synopsis of Country standards to be sent by December 15.* Cocking has agreed to head the Cartographic Standards Committee. Standards were received from Peru, Bolivia and Argentina. Chile and Argentina had given their standards at the January, 1998, Executive Council meeting (Vancouver). See item #7 for further discussion and the accompanying report (Annex A).

7. *Financial forecast to be updated and sent to CIDA.* Done.

- 8.4 *Updates to country budgets and activities.* Done, included in Report #10.
10. *Information on booth space and display guidelines for PDAC meeting.* Done, information included in Newsletter #8, and in individual correspondence to countries.
12. *Web page material to be reviewed and updated information sent to MAP administration.* Bolivia and Argentina have sent updates. When Peru and Chile have finished reviewing their Institutional web pages they will send updated information to Krauth.
13. *Multicountry fellowship fund proposal to be discussed with CIDA and brief synopsis to be provided on training opportunities within and for each country.* Discussions with CIDA were held. See item #6. Synopses received from Argentina.
14. *1999/2000 Work plans from each country.* Work plans for Argentina received. Work plans to be discussed Tuesday and Wednesday.
- 6) **Fellowship Proposal:** Karpinski reported that CIDA would be open to such a proposal from the project. She indicated it would be important for CIDA that an in-kind contribution by the country also be made. A general discussion followed as to the details of such a fellowship and how it would be administered.
- Decision:** It was agreed that the fellowship would be limited to \$5,000.00US/year/country and the Terms of Reference agreed to are attached to the minutes as a separate document (Annex B).
- 7) **Cartographic Standards:** A report was prepared by Mr. Robert Cocking (Annex A). In the report he outlines a number of technical issues that need to be addressed. These issues were discussed and it was agreed that most of them need to be addressed by the Cartographic Standards Committee. It was also recognized that this is an extremely important issue as it has a significant bearing on the project reaching its goal of having a product to display at the special MAP symposium to be held as part of the Chilean Geological Congress, August 2-4, 2000, and at the IGC Rio meeting to follow (Aug. 6-17) as agreed to during the mid year Executive Council meeting (Buenos Aires). To progress on the Geological and Mineral Resources Map of the border regions between Argentina, Bolivia, Chile and Peru north of 34° (1:1 000 000) it is necessary for the Committee to meet as soon as possible to discuss these issues surrounding production of the map. It was proposed that a meeting be held in Peru as soon as possible. It was also agreed that it would be of value for as many Committee members as possible to attend the International Cartographic Association meeting in Ottawa, Aug 14-21, 1999.
- Decision:** It was agreed that the Geological and Mineral Resources Map of the border regions between Argentina, Bolivia, Chile and Peru north of 34° (1:1 000 000) would be created using Canadian cartographic standards and that it would be produced by a small working group spending one month in Canada during April, 2000.
- Action:**
- First meeting Cartographic Standards Committee to be held in Peru at the end of June. MAP Administration to help Peru organize 2 day meeting to be held before July 15, 1999.
 - List of participants in the International Cartographic Association meeting in Ottawa, August 14-17, 1999 to be sent to MAP Administration as soon as possible. Reduced registration fees end April 15.

- 8) **Update on Mineral Deposits Tour:** Zappettini and Mallo distributed an itinerary and the number of participants from each country was agreed to. The trip will start May 2 when the participants gather in La Paz to start on the field trip the morning of May 3. The trip will visit the following mines and deposits in Bolivia: Kori Kollo, Bolivar, San Bernardino, Potosi, Pulacayo, Uyuni, and San Cristobal. In Argentina, Pirquitas, Aguilar, Fenix, Tincalayu, La Alumbreira, and Agua Rica. In addition to the mines and deposits, a ground based, regional overview of the geology will be given.

Action:

- Project Leaders from Bolivia and Argentina to work with MAP Administration to finalize the details of the trip.
 - Country Project Leaders to immediately forward a list of names, addresses, passport number, special needs (e.g. diet) and other pertinent information to MAP administration.
- 9) **Update on Sample Processing:** Hickson introduced Dr. Jennifer Getsinger who was recently employed by the GSC as a Research Assistant for Hickson. As part of her duties at the GSC Getsinger will be responsible for control of sample processing and data acquisition for MAP. A report on the current state of samples was distributed (Annex C) for review. A discussion was held as to the state of the K-Ar samples being analysed at the University of British Columbia. Hickson explained that she had had repeated assurances that the lab would be up and running over the past two years. Last year she came very close to sending the samples to another lab but was again assured it would be "just a matter of weeks" before the lab was operational. Getsinger has had discussions with the lab and they now claim they are within days of being operational. Chile offered to analyse the samples very quickly if the lab was not operational soon. Hickson agreed that if UBC was not functioning in one month, the samples would be sent to Chile for analyses. Until the UBC lab is functional, it was agreed that all new samples for K-Ar be sent to Chile for analyses. There is no other K-Ar facility in Canada. The process for submission of samples was discussed. It was stressed that all samples submitted for analysis in Canada must first be approved by the country's Project Leader. Getsinger will ensure that approval has been obtained by the Project Leader before proceeding with any analytical work. Many samples are missing information such as location, rock type etc. It is extremely important for the project that all samples have complete information for each sample. One of Getsinger's tasks will be to obtain this information for the project's archives. She will be sending data sheets to all Projects Leaders where there is missing information. When this information is complete, more formal reports will be issued for all analyses. These reports will be numbered in series. Mr. Mike Villeneuve will be completing formal reports for all Ar-Ar and U-Pb analyses done in Ottawa. These reports will be available with Report #11.

Decision: Until the UBC lab is operational, all samples for K-Ar dating will be sent to the Chilean lab.

Action:

- Project Leaders to review sample list (Annex B) and send missing or incomplete information to Getsinger
- Getsinger to confirm with Project Leaders in each country the number and type of analyses before proceeding with submission of samples for analytic work.
- Formal reports will be distributed when they are available. Project leaders are requested to send missing information as soon as possible.

10) **Creating of National Standards for Geochemistry:** A short report outlining the criteria for establishing standards and some of the details was distributed (Annex C). The issues raised in the report were discussed and it was agreed that the Project Leaders would meet separately to discuss these issues and provide the answers for the following questions.

1. Do we wish to establish geochemical standards for metallogenic studies?
It was agreed that it was not feasible to embark on development of this type of standard at this time.
2. Do we wish to establish a standard for radiometric dating?
Chile and Argentina are interested in establishing a geochronological standard. More information is required from dating experts as to how to go about establishing this type of standard before collection can proceed.
3. Should standards be developed for lithochemical (sediment) samples used for regional geochemical studies?
It was agreed that this type of standard would be important for the project. Argentina agreed to supply a sample after details of how to develop the standard were discussed with Peter Friske, GSC (Ottawa).
4. How many samples should be collected for petrological standards?
It was agreed that each of the countries would be assigned a specific rock type. They are to collect 100 kilos of sample from at least four separate, prospective sample locations. A moderate sized sample (3-4 kilos in size) is to be sent to MAP Administration for processing. Extra sample is to be kept to await the results of the preliminary testing of the material. From these prospective samples, one will be chosen from which a standard will be produced for each of the five (5) rock types. Argentina will supply samples of basaltic composition, Bolivia will supply dacite, Chile a high and a low silica andesite and Peru, rhyolite. Processing will start as soon as samples reach Vancouver. Assistance in collecting is available.
5. Who will collect the samples?
These samples will be collected by field crews as soon as possible. The geochemist of each institution should be involved in collecting the samples. Assistance in collecting is available from MAP Administration. The following names were given as the contact from each country:
Argentina: Luis Ferpozzi
Bolivia: Hernan Uribe
Chile: Carmen Espejo
Peru: Alberto Aranda
6. When will samples be collected?

Samples will be collected as soon as feasibly possible, but not later than December, 1999. Sample processing will start as soon as any samples are received in Vancouver.

- 11) **Airborne Geophysical Surveys:** The Argentineans presented their view of the pros and cons of running these sorts of surveys. They stressed the importance of having staff who can help interpret the maps and to be trained in geophysics. These staff members represent a long term increase in the capacity of the survey. Chile echoed this view, and pointed out that without a staff geophysicist much of the value of having and acquiring geophysical data is lost, continuity is jeopardized and both the institution as well as the clients lose out. It was also pointed out that these surveys take a significant amount of planning and organization. Dr. Dennis Teskey was asked to participate in this part of the meeting and he pointed out that the maps could be used by non-geophysicists and were of value in regional mapping. Insufficient funds exist within the project or the institutions to fully fund the proposal. It was agreed that Dr. Dennis Teskey would be contracted to approach private sector companies to gauge their interest in the project and use this meeting as a venue to talk to companies.

Decision: Peru and Bolivia to identify a staff member to receive geophysical training and with the assistance of Teskey, to determine the interest of the private sector in supporting such a survey.

- 12) **Training Offered:** Information was distributed on a training course in prospecting proposed by FaciliTech International and Horwath Consulting. Hickson explained that in British Columbia this type of course is sponsored by the British Columbia and Yukon Chamber of Mines. The course pays for itself by charging a registration fee. A mineral deposits course outline was also distributed from Dr. Andre Panteleyev. Rivera stated that the course had been very successful in Peru. There were over 45 participants. Several of the other countries expressed an interest in the course and have included it in their work plans. Training in use of the Pima (infrared spectrometer) was also discussed and it has also been included in the work plans from the countries.

Day 2
Crowne Plaza Hotel - Caledon Room
8:30am - 12:30pm, Tuesday, March 16

Chair: Lic. Roberto Page, Executive Secretary, MAP

- 13) **Argentina:** Argentina presented a review of their project activities to date. The release of the regional geochemistry data has been very successful. Part of their work plan for 1999/2000 is to complete similar sample analyses for map sheets to the north. A second major accomplishment was the completion of the Austral-Puna airborne survey. Details of the activities for the next fiscal year can be found in the work plans, Annex E.
- 14) **Joint Argentina - Chile Airborne Geophysical Survey:** Following Argentina's project overview, they presented a proposal to extend the southern limit of the Project area to 32°30'S. This extension would facilitate joint work they propose to do with Chile. Specifically Chile and Argentina have proposed to fly a joint airborne survey in this area. There has already been a significant expression of interest in flying such a survey by the private sector. This survey would be funded by Chile, Argentina and the private sector.
Decision: The Executive Council agreed with the extension of the project area to the south to facilitate joint work between Chile and Argentina.
- 15) **Bolivia:** Bolivia has now been restructured and is a much smaller survey. They have refocused their activities on the western side of the Salar de Uyuni and will have a field campaign to start 1:100 000 mapping in this area in addition to more detailed studies of some deposits. Bolivia is proposing an airborne survey to be flown in the western Cordillera. Detailed work plans for 1999/2000 can be found in Annex F.
- 16) **Peru:** Peru has successfully completed and released the maps and bulletins covering the MAP project area to the north of Lake Titicaca. They had two very successful short courses in mineral deposits given by Dr. Andre Panteleyev. This also included field work. Dr. Panteleyev and Dr. Art Soregaroli participated in a meeting to help Peru establish INGEMMET's working objectives for the years 2000-2005. Peru will now be refocusing its activities on more specific mineral deposit studies. Peru is also proposing an airborne survey. Detailed work plans for 1999/2000 and a review of this year's accomplishments can be found in Annex G.
- 17) **Joint Airborne Geophysical Survey between Bolivia, Peru and Chile:** Discussions on how best to proceed with the survey proposals were held between Peru and Bolivia and included Hickson, Mpodozis, and Teskey. The suggestion was made to fly a survey along the western Cordillera from the latitude of 15°30'S degrees to 21°S degrees in Peru, including parts of Chile. It was agreed that this was a good proposal that would have the added strength of increasing the horizontal cooperation between the countries. Additionally, rather than having separate areas in the two countries that would compete for funding from the private sector it would be better to present a single proposal. It was agreed that both Peru and Bolivia would take this proposal back to their institutions for approval. In the meantime Teskey was instructed to begin approaching companies to gauge the interest in such a survey.

Day 3

Crowne Plaza Hotel - Caledon Room
8:30am - 11:00am, Wednesday, March 17

Chair: Lic. Roberto Page, Executive Secretary, MAP

- 18) **Chile:** Chile presented a very thorough review of all the project activities being carried out in their country. They also outlined in detail the work that is being proposed for 1999/2000. They have had excellent success in a number of areas, including the pilot Hydrogeology Project. There have been a number of publications released and several more are very near to completion. Detailed work plans for 1999/2000 and a review of this years accomplishments can be found in Annex H.
- 19) **Upcoming Executive Council Meetings:** At the invitation of the Bolivians, the next Executive Council meeting will be held in La Paz, Aug. 21, 22 and 23, 1999. A general discussion was held on where the following meeting would be held. It was proposed that an appropriate venue might be to hold them in conjunction with the Cordilleran Exploration Roundup in Vancouver, the week of January 25, 2000.
- Decision:** The January 2000 Executive Council meetings will be held in Vancouver, Canada, the week of January 25, 2000.

8:00pm. The meeting was reconvened for the signing of minutes.

Annex D:
Report on the Short Course in Metallogeny given by Dr. Andre Panteleyev

Short course on Mineral Deposits Classification, Genetic Modeling and Metallogeny - Perú

During the first 2 weeks of March 1998 Dr. Andre Panteleyev, XDM Geological Consultants, conducted a short course for INGEMMET professional staff in Lima. The course was a continuation of the seminar presented in October 1998, which served as an introduction to metallogeny, mineral deposit modeling, and metallogenetic mapping. This recent course reviewed "Mineral Deposits Classification and Genetic Modeling: Their Application to Metallogenetic and Mineral Potential Studies". The following topics were discussed:

- Mineral deposit models: their philosophy, construction, use and abuse.
- Deposit model applications to metallogenetic studies and regional mineral potential studies.
- Specific genetic model discussions:
 - Continental margin basins – sedimentary-hosted 'Sedex' Pb-Zn-barite and Au 'Carlin-type' deposits.
 - Submarine volcanic settings – volcanogenic massive sulphide deposits (VMS).
 - Veins – general epithermal/mesothermal overview and intrusion-related veins in magmatic arcs.
 - Skarns – general overview with focus on gold-bearing skarns.
- Porphyry copper deposits – characteristics, with discussion of supergene processes and interpretation of limonite cappings.
- High-level and subvolcanic environments – epithermal deposits and hydrothermal alteration.
 - Transitions from porphyry to epithermal and hot spring environments.

The course was attended by 30 INGEMMET scientists and 6 Practicantes; able translation was provided throughout by Mr. Rolando Cruzado Moreno. Certificates were presented to attendees at the conclusion. The practical application of mineral deposits modeling for metallogenetic purposes and regional mineral potential assessments will be major considerations during future geological fieldwork. This type of work is scheduled to begin as early as May 1999 as a precursor to a proposed National Mineral Inventory Program that will lead towards preparation of a National Metallogenetic Map.

Annex E:
Report on visit of Cartographic Standards Committee (CSC) Coordinator
Mr. Rob Cocking's visit to Peru and Bolivia

Recommendations For Cartographic Standards – PMA-MAP
By Robert Cocking, March 1999, and revised by Jennifer Getsinger, April 1999

It was agreed at the Multinational Andean Project Executive Council Meetings in Toronto, March 1999, that the Geological and Mineral Resources Map of the border regions between Argentina, Bolivia, Chile, and Peru north of 34° (1:1 000 000) would be created using Canadian cartographic standards. It is to be produced by a small working group spending one month in Canada during April, 2000. The first meeting of the CSC is to be held near the end of June in Peru. A list of participants in the International Cartographic Association meeting in Ottawa, August 14-17, 1999 shall be sent to MAP Administration as soon as possible. It is hoped that the Geological and Mineral Resources Map of the border regions will be ready to present at the special MAP symposium to be held as part of the Chilean Geological Congress, August 2-4, 2000, and at the IGC Rio meeting to follow (August 6-17).

The needs of the Multinational Andean Project Cartographic Standards Committee (CSC) need to be addressed by all of the countries involved, so that standards for making the Geological and Mineral Resources Map of the border regions (also known as the Metallogenic Map) can be agreed upon. Robert Cocking of the Geological Survey of Canada, the chair of the committee, raised many points of discussion and consideration, covered in this report, as well as made requests of the countries for information.

Considering the most appropriate type of layout, and whether or not it could be printed on one sheet that would be manageable in the field, Robert Cocking suggested a scale of 1:2 000 000 rather than the 1:1 000 000 previously discussed. The final publication scale needs to be one of the first items settled, as this affects many other cartographic decisions.

1. Topographic Base

It is necessary to determine whether there is a different 1:1 000 000 topographic base used in each country. Unfortunately, there is no good digital dataset currently available. The Digital Chart of the World (ESRI) is a reasonable product; however, there are large gaps in the coverage of the MAP area (Fig. 1). The drainage layer is quite good, but the contour layer is less than adequate.

It is possible that the “holes” could be filled by digitizing from the original source of the DCW (ONC navigational charts, assuming the data exists on those charts). Alternatively, the GTOPO30 data could be used, either as a Digital Elevation Model, on which the geology is draped (similar to GeoMap Vancouver), or new contours could be generated from this dataset. GTOPO30 is a free 30 arc-second dataset available from the USGS at: <http://edcwww.cr.usgs.gov/dsprod/prod.html>. It is detailed enough for our uses.

Additionally, the Program Proposal January 31, 1995 document has a number of maps by Agra Earth & Environmental Ltd at a scale of 1:2 000 000 that might be appropriate, if we can get access to those files in a GIS format. We should find out where they got the data (they may have digitized it themselves).

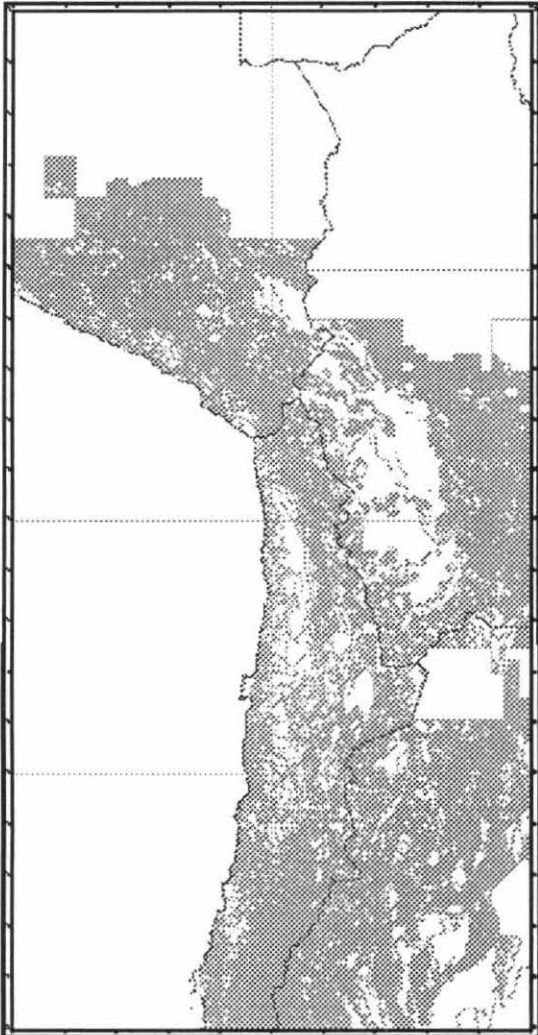


Figure 1 – DCW contour coverage.

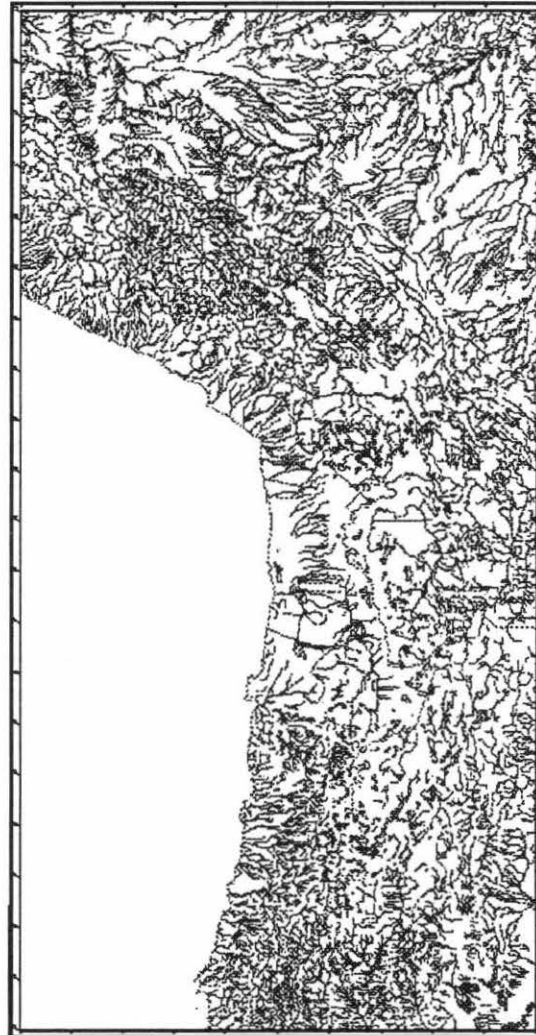


Figure 2 – DCW drainage coverage.

2. Projection/Datum

Certain projections are more appropriate for certain area shapes and/or locations. UTM, the most commonly used projection by all countries, is not appropriate since the map area covers multiple UTM zones. Presumably with a map such as this, it is more important to preserve scale and direction than area and shape. The MAP area is generally long in the north/south direction at near-Equatorial latitudes, so a Transverse Mercator projection, using a central meridian, is recommended.

Properties of the Transverse Mercator Projection

Shape	Conformal. Small shapes are maintained. Shapes of larger regions are increasingly distorted away from the central meridian.
Area	Distortion increases with distance from the central meridian.
Direction	Local angles are accurate everywhere.
Distance	Accurate scale along the central meridian if the scale factor is 1.0. If the it is less than 1.0, then there are two straight lines having an accurate scale, equidistant from and on each side of the central meridian.

3. Database Specifications

A simple database is recommended, as long as this product remains a paper-only product. For more complex digital products, the database could be upgraded.

4. Common Symbology

This is probably the largest issue due to the differing symbology used. As most topographic and geologic symbology is relatively standard, our discussions will apply mostly to the metallogenic symbology. It will also be necessary to agree on how many levels of data are necessary in order to depict the information we have agreed on.

5. Country Logos

Each country should be limited to one (two) logo(s), one for the organization (i.e. GSC logo), one for the country (i.e. Canada wordmark). This limitation will ensure fairness and lack of clutter on the map. Size limitations must also be considered. +CCRS? +Globesar? +Radarsat?

6. Legend

The legend typically comes in three parts:

- i) polygon legend – this is the legend for the geological units; the GSC has simplified this process significantly in GEMS.
- ii) line legend – this is the legend for the contact/fault/structural lines; the GSC has simplified this process significantly in GEMS.
- iii) point legend – this is the legend for the metallogenic point symbols, best expressed as a table.

7. Standard Map Elements

- **Magnetic Declination**
Larry Newitt at Geophysics recommends that an inset map showing the magnetic variance across the map area would be best since the magnetic declination varies almost 15 degrees across the map. Larry has kindly offered to generate a map and aid us in this component of the map.
- **Data Sources**
This would be an inset map of the MAP project area that would delineate the contributors to the map.
- **Title**

- Fonts

Additional Map Elements to be Discussed

- *Satellite image inset*
This might be a nice touch, if we can assemble a dataset for a small inset map.
- *MAP info*
The map should include a general background blurb on the MAP project, possibly in a delineated (gray shaded background) box.
- *Deposit Table*
This could get quite large, but is information users might like.
- *Stratigraphic column*
We should include a stratigraphic column as part of the polygon legend.
- *Scale*
Settle on a scale design (metric only), preferably one that is already programmed as a macro in a GIS.
- *Notes*
The notes should include:
 - ★ Geological notes
 - ★ Authors named for each country and dates of research
 - ★ Cartographers named for each country
 - ★ Possible magnetic declination blurb (w/ source of mag dec data)
 - ★ Blurb giving credit for topography (DCW, GTOPO30, etc.)
 - ★ Possibly a blurb on where to purchase the map
 - ★ Note on contour interval and units
 - ★ Any other notes
- *Locator Map*
This inset map should be a map of South America, with the MAP project area highlighted in an appropriate colour.
- *UTM lines?*
This option could look strange as the MAP area functionally straddles three UTM zones, but it might be useful on an inset map.
- *Allowance for folding*
The map layout could be designed such that the map can be pre-folded rather than sold flat. The map could allow a space for a "title area" which would show when folded (see Bolivian Cochabamba maps).
- *Spanish/English?*
The opportunity exists to make this a Spanish/English product. A precedent has been set in some publications of SERGEOMIN such as the Thematic Maps of the Mineral Resources of Bolivia series.
- *Printing Issues*
 - ★ Printing or plotting? The number of copies when printing becomes profitable is 500. Should each country be responsible for printing and supplying its own country, or should all copies be plotted/printed from a single source to ensure uniformity of appearance?
 - ★ How many copies to be produced?

- ★ What is the final cost to be? This price should be roughly the same in all countries, fluctuating currency rates notwithstanding. Who has the authority to determine this? Typically the cost for a standard OF map in Canada is \$12.00, but the production cost on the new HP plotters using waterproof paper and UV resistant inks is about \$1.60.

For a map that is 6 colours and is 34" X 36" the cost for printing 500 would be \$3,388.50 for printing and \$1,200.00 for negs and proof, including folding. The printed copies include better paper and ink.

Total: \$4,588.50

For the same map, 500 copies on a HP plotter it would cost around \$9.00 a plot for a total of \$4,500.00 and another \$500.00 for folding.

Total: \$5,000.00

So the cost is similar, the reason we will be going to on-demand plotting eventually is because we will not be printing 500 copies anymore.

Robert Cocking has already initiated communications with Eduardo Zappetini, and has outlined the following process for him and others on the CSC to comment on.

We have many mapping issues to resolve in the next few months. It is proposed that we try to work through email with the various cartographic representatives to try to resolve these issues such as map projection, datum, database, topographic base, symbology, legend, layout, logos and any other cartographic issues anyone thinks of.

Robert Cocking will send an email to all representatives introducing himself with a list of topics we need to discuss. Informal resumes from all representatives should be sent in so we all know a little about each other. Representatives should add any new topics to the topic list. This gives us an agenda of cartographic standards issues. We could then try to solve them one issue at a time in email.

Cartographic Committee Representatives

Argentina

?Asato - ?@ secind.mecon.ar
Graciela Marin - gmarin@secind.mecon.ar

Bolivia

Edwin Jurado and Vitaliano Miranda - sergeomi@caoba.entelnet.bo

Chile

Renate Wall - rwall@sernageomin.cl
Paulina Gana - pgana@sernageomin.cl

Peru

Robert Monge - rmonge@ingemmet.gob.pe
Williams Martinez - martinez@ingemmet.gob.pe

Canada

Robert Cocking - rcocking@gsc.nrcan.gc.ca

International Cartographic Association meeting in August 14 to 21, 1999

The ICA meeting offers us a prime opportunity for representatives of all countries to meet face-to-face and discuss the myriad issues and define the goals relating to the 1:1 000 000 or 1:2 000 000 Metallogenic Map (also known as the Geological and Mineral Resources Map of the border regions). The Conference will allow representatives to see other examples of ground-breaking cartography. Areas of focus will include all of the issues discussed previously.

Summary of Requests

Certain types of information are required by all participating countries in order to accomplish the goals set by the Cartographic Standards Committee. Some of this information has already been provided by some of the countries. Please check that the following information has been sent to the committee chair:

- Examples of topographic and metallogenic maps from each country.
- Cartographic specifications in use as standards for each country.
- Updated coordinates of MAP area in each country to be sent to Robert Cocking to be used to create a new digital map identifying the project area.
- Digital files of Map project areas, with the data available in DXF, IGDS or E00 formats.
- Information on 1:1 000 000 topographic base map data for each country.
- Standard topographic, geologic, and metallogenic symbology for each country.
- Examples of country logos.
- List of contributors to information to be put on the map, and MAP participants.
- Generalized Stratigraphic columns for a map of that scale.

- Information on magnetic declination in each region.
- Resumes of the members of the Cartographic Standards Committee.
- Comments about Cartographic Standards issues raised in this report or in discussion.

Please feel free to contact Robert Cocking by email at rcocking@gsc.nrcan.gc.ca or by telephone at (604) 666-1128.

Proposed Timeline

	Organization	Production	Editing
Mar-99			
Apr-99	April 15 - Last day for cheapest ICA registration		
May-99			
Jun-99			
Jul-99			
Aug-99	August 14-21 - ICA in Ottawa, a chance for cartographic reps to discuss/finalize standards		
Sep-99			
Oct-99			
Nov-99			
Dec-99			
Jan-00			
Feb-00			
Mar-00		Assuming geology complete, all cartographic reps gather to put together the map	Note: the geologists should have met to resolve border geology and consistency issues
Apr-00			
May-00			
Jun-00			
Jul-00			
Aug-00		August 4 - Draft version of map due	
Sep-00			Post-Review edits
Oct-00			Post-Review edits
Nov-00			
Dec-00			

Annex F:
WEB Page update by Web-Master Mr. Otto Krauth

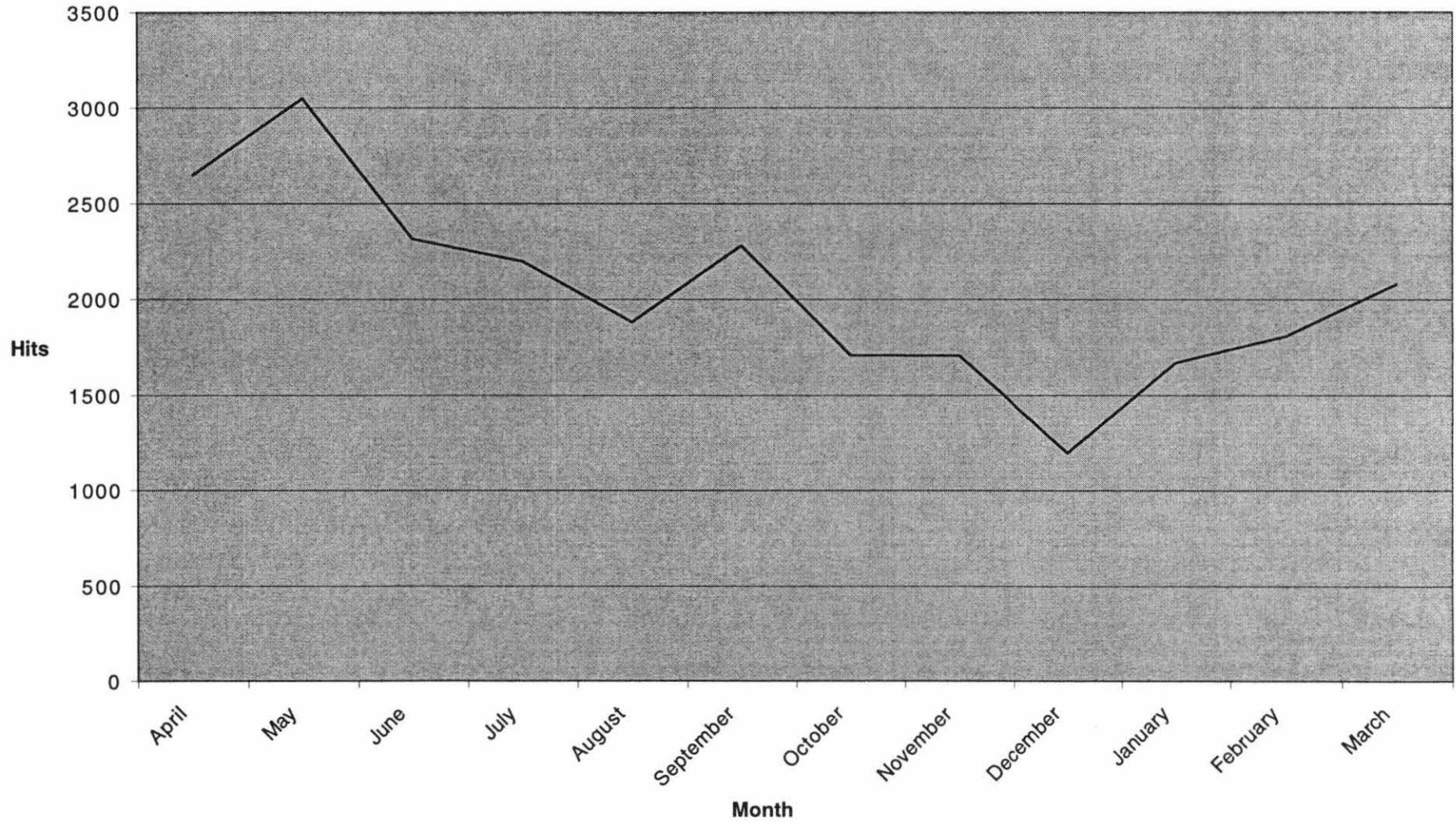
During 1998/99 fiscal year the Multinational Andean Project Web page received a record number of hits (24,532) which represents approximately 6,000 page viewings. The areas of greatest interest for visitors have been the Newsletter and Country's Project sections. The site now contains every issue of the MAP NEWS newsletter both in English and Spanish in text and PDF format. The exposure of the web site has truly been international with visits from more than 30 countries and both the English and Spanish sections have enjoyed their share of the traffic. For 1999/00 Fiscal year we have scheduled a number of changes to the web page. We look forward to compiled a list of MAP products and publication from the member countries and information and contacts for ordering. We are also expanding the secure area to facilitate members to get in contact with each other from anywhere in the internet.

Statistic from 1998/99

April	2,648 hits
May	3,048 hits
June	2,315 hits
July	2,197 hits
Aug	1,882 hits
Sept	2,279 hits
Oct	1,710 hits
Nov	1,707 hits
Dec	1,193 hits
Jan	1,667 hits
Feb	1,807 hits
March	2,079 hits

Total: 24,532 hits

WEB Site Traffic
April 1998 - March 1999




Annex G:
MAP Fellowship Fund Terms of Reference
(Spanish Only)

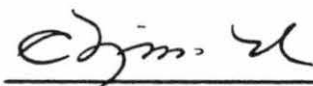
Multinational Andean Project
Argentina - Bolivia - Chile - Perú - Canada

Executive Council Meeting
Toronto, Canada - March 17, 1999

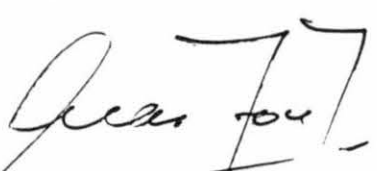
Aprobación de los Terminas de Referencia - Fondo de Beca MAP



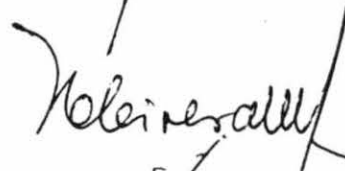
Lic. Roberto Page
Secretario Ejecutivo, SEGEMAR, Argentina



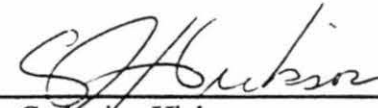
Ing. Carlos Riera-Kilibarda
Jefe del Departamento de Información Geológico - Minera, SERGEOMIN, Bolivia



Ing. Ricardo Troncoso S.M.
Director Nacional, SERNAGEOMIN, Chile



Ing. Hugo Rivera
Director Técnico, INGEMMET, Peru



Dr. Catherine Hickson
Project Manager, Multinational Andean Project, GSC, Canada

BECA MAP

Proyecto Multinacional Andino

Términos de Referencia para el Fondo de Becas MAP

17 marzo, 1999

1. Uno de los objetivos del Proyecto MAP es incrementar la cooperación y la integración horizontal entre los países participantes en el Proyecto a través de la realización de actividades de entrenamiento y visitas de trabajo comunes.
2. A objeto de facilitar y promover el logro de dicha meta, el Consejo Ejecutivo del Proyecto, en reunión efectuada en Toronto entre los días 15 y 17 de Marzo de 1999, acuerda establecer un Fondo de Becas, destinado a financiar, en forma total o parcial, la asistencia a cursos de entrenamiento, visitas al campo, congresos y/o estadías de trabajo, a efectuarse preferentemente, dentro del marco del Proyecto MAP, en Argentina, Bolivia, Chile y Perú. A estas becas podrán postular los profesionales de los Servicios Geológicos, de los países participantes en el Proyecto.
3. Para estos efectos, cada país podrá utilizar el equivalente de US\$ 5.000 anuales del total de los fondos aportados por CIDA al Proyecto. Dichos fondos serán administrados directamente por el Gerente del Proyecto.
4. Los fondos indicados en el Punto 3 serán utilizados para financiar, total o en parte, gastos de pasajes, inscripciones a cursos y viáticos en un monto variable entre US\$ 500 hasta, cuando corresponda, US\$ 1.000, por persona.
5. Si un país solicitare la asistencia de un experto de otro país, en el marco de la cooperación horizontal del Proyecto, los costos de dicho experto podrán ser cubiertos con cargo a la suma que el país requeriente tiene a su disposición, dentro del Fondo de Becas.
6. Quedan específicamente excluidas de las actividades susceptibles de ser financiadas por el Fondo de Becas, la asistencia a las reuniones del Consejo Ejecutivo, visitas de trabajo a Canadá, participación en cursos universitarios regulares y la asistencia a Congresos y reuniones científicas especializadas que se realicen fuera del continente sudamericano.
7. Para optar a una Beca MAP, el Líder Nacional del Proyecto enviará, por escrito, al Gerente de este, una propuesta, visada por el Director del Servicio Geológico del país involucrado, o su representante autorizado, y que deberá incluir:
 - 1 El nombre del candidato y su curriculum vitae.
 - 2 Los objetivos y justificación del viaje y/o actividad, indicando su significado y relevancia para el Proyecto.

- 3 Una estimación justificada y realista de los costos estimados de pasajes y viáticos y, cuando corresponda, de los gastos de inscripción a seminarios, congresos y excursiones de campo.
8. La documentación indicada deberá ser enviada al Gerente del Proyecto, a lo menos, con un mes de anterioridad a la fecha de inicio de la actividad señalada en la propuesta.
9. La decisión final acerca de la adjudicación de la Beca será tomada en conjunto entre el Gerente y el Asesor Científico del Proyecto. El Gerente se reservará el derecho de efectuar modificaciones al presupuesto presentado, si es que existieran motivos fundados para ello.
10. Una vez efectuada una actividad financiada, total o en parte a través del Fondo de Becas MAP, el responsable directo de ella deberá enviar, al Gerente del Proyecto, un informe escrito, visado por el Líder Nacional, en el cual se detallen los resultados de dicha acción. La no presentación de este informe invalidará futuras presentaciones al Fondo de Becas por parte del país involucrado, hasta que dicho requisito no sea debidamente cumplido.

**Annex H:
Project Report**

**Multinational Andean Project
Canadian International Development Agency**

*Summary of Activities Associated with
Project Site Visit*

**SERNAGEOMIN
Santiago, Chile
December 26, 1998 to January 17, 1999**

Participants:

**Dr. Ramon Aravena and Dr. David Rudolph
Hydrogeological Consultants and
Short Course Instructors**

Introduction

As part of the continuing collaboration between scientists at SERNAGEOMIN and Canadian hydrogeological consultants, within the Multinational Andean Project sponsored by the Canadian International Development Agency, Drs. Ramon Aravena and David Rudolph participated in a site visit to Chile during the first two weeks of January, 99. The main objectives of this trip were developed based on the previous year's site visit by Drs. Aravena and Rudolph and a subsequent visit of Mr. Sergio Iriarte of SERNAGEOMIN to the University of Waterloo in August, 98. The main goals included:

- 1). Presentation of a technical short course on Hydrology to scientific personnel at SERNAGEOMIN.
- 2). Transfer field and analytical technology to SERNAGEOMIN for immediate use in the Multinational Andean Project (MAP).
- 3). Visit one of the primary field sites within the MAP and conduct specific field investigations designed to demonstrate appropriate technologies and advance the project to a subsequent phase.
- 4). Discuss future strategies for continued collaboration within the MAP.

The preparation for the short course and field trip began during the last week of December 1998 and the field visit occurred from January 2 – 17, 1999. This report is intended to provide a summary of activities associated with the four main objectives listed above. Each of these is discussed below.

Technical Short Course

During the initial field visit to Santiago by Drs. Aravena and Rudolph in 1998, SERNAGEOMIN personnel expressed an interest in receiving a technical short course on topics related to practical hydrology. They invited Aravena and Rudolph to propose a draft of a course outline for their review. The details of this course were finalized during the visit of Mr. Iriarte to Waterloo in August, 98. The course outline included two main areas. The first involved hydrogeologic field investigation including detailed site investigation, construction of groundwater monitoring wells, laboratory and field determination of relevant hydraulic parameters and basic soil physics relevant to recharge estimates. The second section involved the use of environmental isotopes and geochemistry in regional hydrologic assessment. Specifically on the evaluation of recharge areas, groundwater residence time and groundwater-surface water interaction.

Organization for the course involved the preparation of course notes, visual material for presentations including overhead slides and photographic slides and materials for classroom demonstrations. This preliminary work occurred in Canada during the last week of December, 98.

The course was conducted during the days of January 4-6 at the SERNAGEOMIN offices in Santiago, Chile. The course outline is attached at the end of this report as a reference. SERNAGEOMIN personnel decided to open the course to outside professionals working in the area of hydrogeology within the government and private sectors. As a result approximately 25 people attended the lectures over the three days period and 10 participants were from the SERNAGEOMIN office. The attendees were provided with copies of all materials presented during the course as a set of course notes. Ample

time was provided for discussion of topics of interest within the group. This proved to be an extremely valuable component of the course.

By all indications the course was well received by all the participants. One of the unanticipated benefits to the course was the interaction and networking that occurred between Chilean hydrogeologists. Bringing this group together over a few days provided the opportunity for dialogue between the community of professionals working in this area. Plans were discussed to initiate a monthly seminar series between the group and potential collaborative associations were formed. The Director of SERNAGEOMIN met briefly with Drs. Aravena and Rudolph to express gratitude for their efforts with respect to the course. A copy of the letter received from the Director is attached to this report.

Field and Analytical Technology Transfer

As part of the previous site visit in 1998, it was determined that the field monitoring capabilities of the SERNAGEOMIN group would benefit from the addition of several new field techniques that had recently been developed in Canada. Specifically, this involved shallow monitoring well installation techniques involving portable equipment, and groundwater sampling methods. To this end, a series of stainless steel drive point monitoring wells were constructed in Canada and transported to the field site at the Laguna Negro Francisco where SERNAGEOMIN personnel are conducting detailed investigations of a terminal saline lake. Along with the drive points, installation tools were also brought to Chile in order to expedite the installation of the monitoring wells. The techniques required the purchase of additional materials in Chile, which proved to be a straightforward exercise.

Several portable groundwater-sampling devices were also brought to the field site. These included practical Waterra pumps that are designed and sold in Canada, and vacuum pumps that can be used in small diameter monitoring wells. These techniques proved to be extremely useful as documented below. All of the equipment was left in Santiago with the SERNAGEOMIN personnel.

In addition to the field equipment, a series of 7 computer software packages purchased by the MAP project were delivered to the SERNAGEOMIN group for use in hydrogeological investigations. All of the software came from a Canadian company, Waterloo Hydrogeologic Inc. (WHI) and included computer simulators of groundwater flow, hydraulic test analysis packages and programs for display and presentation of hydrogeologic data. Each of the programs was supplied with a detailed manual and there are plans for a demonstration course by WHI in Santiago in February. WHI now has an office in Santiago.

Visit to Field Site in the Altiplano Region

The research team from SERNAGEOMIN, along with Drs. Aravena and Rudolph, traveled to one of the active field sites north east of the city of Copiapo, Chile on January 8, 1999 for a period of one week. The site was the El Negro Francisco Basin, that is part of a National Park managed by the Corporacion Nacional Forestal. As part of the activities during the 1998 visit, reconnaissance sampling and mapping of the Negro Francisco Basin, indicated that several unique phenomena were occurring in the vicinity of the terminal lake. The lake was decreasing in size at an alarming rate, the salt concentrations in the lake were also increasing and the demand for groundwater by surrounding mining activities is increasing continuously. As a result, a detailed study of the hydrology, hydrogeology and geochemistry of the basin was initiated through SERNAGEOMIN and involved a graduate student from Santiago, Ms. Marcela Vargas. The project has involved climatic measurements to assist in water balance calculations, the installation of shallow groundwater monitoring wells and the sampling and mapping of streams, springs and precipitation within the basin.

The fieldwork carried out during the current visit began with the installation of the portable drive-point wells at strategic locations throughout the Negro Francisco Basin. This was followed by the sampling of all the monitoring wells in the network for major ion geochemistry and isotopic composition. The hydraulic head values in the wells were also measured to determine groundwater flow directions. During the course of the field program, a drilling company from Santiago arrived to conduct exploratory drilling to greater depths within the basin than could be reached by the portable equipment. This drilling was done to refine the geological information obtained using geophysical methods and in order to fully understand the hydrogeologic conditions in the vicinity of the Negro Francisco saline lake. By the time the team left the site on January 15, 1999, the drill rig had reached a depth of 20 m and the information had already provided necessary additional insight into the hydrogeology of the basin. The deep drill will prove to be a very important component of the project.

An evaluation of the geochemical and isotopic data collected during the first field trip was performed and a preliminary conceptual model was postulated for the formation of the saline lake. The groundwater samples collected during January, 1999 field trip will be analyzed for major anions and cations and trace elements at the SERNAGEOMIN laboratory and for environmental isotopes at the University of Waterloo, Canada.

Future Directions

The instrumentation available at the study site is sufficient for the evaluation of the groundwater flow system and the geochemical evolution of the saline lake. Field activities, including hydrological and geochemical measurements, will continue at the site during the summer and fall, 1999. As part of the SERNAGEOMIN personnel, Ms. Marcela Vargas and Mr. Igor Aguirre will participate in the field school course organized by the Department of Earth Sciences, University of Waterloo as part of their graduate program. During this visit, some activities will focus in the analysis of hydrological and geochemical data collected at the Negro Francisco Basin. One goal is to use geochemical models to simulate the geochemical evolution of the saline lake. It is our intention to continue the collaboration with SERNAGEOMIN personnel, possible through graduate work at M.Sc and Ph.D level.

Annex I:
Report on MAP Samples by Dr. Jennifer Getsinger

Multinational Andean Project – Sample Processing Update
Summary as of March 14, 1999
Jennifer Getsinger and Catherine Hickson

- **Sample processing continues, although some laboratory facilities (K-Ar and Ar-Ar) have experienced delays due to equipment and/or backlog.**
- **New results have come in for 90 samples from Argentina, in major element geochemistry, trace element geochemistry, and REE geochemistry, dated January 22, 1999.**
- **Radiometric dating using U-Pb and Ar-Ar methods at the Geological Survey of Canada laboratory in Ottawa is nearly complete. Mike Villeneuve has forwarded a few preliminary results in graphical form for U-Pb dates from Argentina, Bolivia, and Chile, as well as Ar-Ar dates for Argentina and Chile. Formal, detailed reports will be forthcoming in the next few weeks.**
- **In terms of K-Ar dating at the University of British Columbia's Geochronology Lab, a new Argon line has been successfully installed, and should be up and running soon. Fifteen samples from Argentina and seventeen samples from Bolivia, for which the potassium (K) has already been measured, are in a priority position for argon (Ar) analysis. Results will be announced as soon as they are received.**
- **Although cutbacks have reduced the number of active radiocarbon dating facilities in Canada, we are investigating the available labs in terms of cost and turnaround time. Many Canadian researchers are now using commercial radiocarbon dating services in the United States, most of which are listed online.**
- **A new work plan outlining steps toward the establishment of a Standard Samples program has been designed with the needs of the Multinational Andean Project in mind.**
- **Formal reports for all analyses will be sent to Project Leaders as well as the requesting scientist. Vancouver will work on Geochemical results; Mike Villeneuve will produce reports for radiometric dating done in Ottawa; Steve Irwin will produce paleontological reports.**

Argentina

<u>Fiscal Year</u>	<u>Company/Lab</u>	<u>Report No.</u>	<u># of</u> <u>Samples</u>	<u>in Vancouver</u>	<u>Received</u> <u>Sent to Lab</u>	<u>Results</u>	<u>Remarks</u>
Major Element Geochemistry							
1997-98	Activation Labs	14648	34	Fall 97	Winter 97	February 2, 1998	
1998-99	Activation Labs	16489D	90	Fall 98	Fall 98	January 22, 1999	includes replicates
Trace Element Geochemistry							
1997-98	Activation Labs	14648	34	Fall 97	Winter 97	February 2, 1998	
1998-99	Activation Labs	16489	90	Fall 98	Fall 98	January 22, 1999	includes replicates
REE Geochemistry							
1997-98	Activation Labs	14648	34	Fall 97	Winter 97	February 2, 1998	
1998-99	Activation Labs	16489	90	Fall 98	Fall 98	January 22, 1999	includes replicates
Thin Sections							
1998-99	Vancouver Petrographics	(n.a.)	59	Summer 98	Fall 98	September 1998	sent to Dr. Rubiolo and 2nd set to Edwards
Paleontological analysis							
1998-99	GSC Calgary	preliminary	11	Summer 98	Fall 98	Fall 1998	Formal report still to be sent
Lithochemistry							
1996-97	Activation Labs	12832	2143	Spring 97	Winter 97	March 22, 1997	
1997-98	Activation Labs	15095/15166	1494	Spring 98	Winter 97	March 30, 1998	
1998-99	Activation Labs	No activity					
U-Pb dating							
1997-98	UBC Geochronology	preliminary sent	1	Spring 97	(n.a.)	Spring 98	Formal report still to be sent

1998-99	GSC Ottawa	preliminary sent	4	Spring 98	Summer 98	In progress	3 preliminary dates (1999 March 09), report pending
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Ar-Ar dating

1997-98	GSC Ottawa (MV)	preliminary sent in progress	5	Spring 97	Spring 97	Spring 98	Formal report still to be sent
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1998-99	GSC Ottawa (MV)	preliminary sent	13	Fall 97	Spring 98	In progress	8 preliminary results (1999 March 09), report pending
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K-Ar dating

1997-98	UBC Geochronology	in progress	12	Spring 97	Spring 97	in progress	K done, awaiting Ar
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Bolivia

<u>Fiscal Year</u>	<u>Company/Lab</u>	<u>Report No.</u>	<u># of Samples</u>	<u>Received</u>		<u>Results</u>
				<u>in Vancouver</u>	<u>Sent to Lab</u>	
Major Element Geochemistry						
1996-97	CHEMEX Labs	A9716596	78	Winter 96		March 27, 1997
1997-98	Activation Labs	14648	75	20 Nov. 1997		February 2, 1998
1998-99			98			on hold pending receipt of location information and other details
Trace Element Geochemistry						
1996-97	CHEMEX Labs	A9716596	78	Winter 96		March 27, 1997
1997-98	Activation Labs	14648	75	20 Nov. 1997		February 2, 1998
1998-99			98			on hold pending receipt of location information and other details
REE Geochemistry						
1996-97	CHEMEX Labs	A9716596	46	Winter 96		March 27, 1997
1997-98	Activation Labs	14648	75	20 Nov. 1997		February 2, 1998
1998-99			98			on hold pending receipt of location information and other details
Litho geochemistry						
1996-97	Activation Labs	12831	699	Spring 97		March 25, 1997
1997-98	Activation Labs	15073	127	Winter 97	Aug. 98	March 30, 1998
1998-99	Activation Labs	15884/15834	53		Aug. 98	August 19, 1998 Duplicate of reports given March 99
U-Pb dating						
1997-98	UBC Geochronology	preliminary sent	1	Spring 97	July 97	Spring 98 Formal report in progress
1998-99	GSC Ottawa (MV)	in progress	1	July 97	July 97	in progress Preliminary date (1999 March 09), report pending

Ar-Ar dating

1997-98	GSC Ottawa (MV)		15	spring 97	July 97 (10) Aug 97 (5)	on hold, pending location information and other details
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K-Ar dating

1996-97	UBC Geochronology	in progress	17	January 97	February 97	K done, awaiting Ar
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Chile

<u>Fiscal Year</u>	<u>Company/Lab</u>	<u>Report No.</u>	<u># of Samples</u>	<u>Received</u>		<u>Results</u>	<u>Remarks</u>
				<u>in Vancouver</u>	<u>Sent to Lab</u>		
<u>U-Pb dating</u>							
1997-98	GSC Ottawa	preliminary sent	5	(n.a.)	Spring 97	Winter 97-98	Formal report to be sent
1998-99	GSC Ottawa	preliminary sent	3	(n.a.)	Fall 98	In progress	1 preliminary date (1999 March 09), report pending
<u>Ar-Ar dating</u>							
1997-98	GSC Ottawa	preliminary sent	19	Spring 97		16 complete	1 unsuitable; 4 preliminary dates (1999 March 09), Formal report pending
<u>Fission Track dating</u>							
1997-98	GSC Calgary		10?	Spring 98	Feb. 1999 (2nd set)		Separates done in Chile, all samples now received, will be processed next fiscal year

Peru

<u>Fiscal Year</u>	<u>Company/Lab</u>	<u>Report No.</u>	<u># of Samples</u>	<u>Received</u>		<u>Results</u>	<u>Remarks</u>
				<u>in Vancouver</u>	<u>Sent to Lab</u>		
U-Pb dating							
1997-98	GSC Ottawa	preliminary sent	3	Spring 97		Complete	Formal report to be sent
Ar-Ar dating ??							
1997-98	GSC Ottawa		15	Spring 97		Petrographically examined	Thin sections were received but no samples and no additional information - what was to be done with these samples?
Paleontological / Palynological dating							
1997-98	GSC Calgary		14	Winter 96?		Spring 97	

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