

**PROJECT ANNEX #6a**

Between the: **GEOLOGICAL SURVEY OF CANADA** of the Earth Sciences Sector, Department of Natural Resources, Canada,

and the: **U.S. GEOLOGICAL SURVEY** of the Department of the Interior, United States of America, concerning:

**EXTENSION OF THE HYDRAULIC PROPERTIES OF THE SEDIMENTARY ROCK  
AQUIFER SYSTEM IN THE CARBONIFEROUS BASIN  
IN THE MARITIMES, CANADA - PHASE#2**  
(hereinafter referred to as the "Project")

**Authority:** This is a Project Annex extension, originally under Project Annex No. 6, to the Memorandum of Cooperation (MOC) signed on the 9th day of April, 1999, between the Earth Sciences Sector of the Department of Natural Resources, Canada, and the U.S. Geological Survey of the Department of the Interior of the United States of America, hereinafter referred to as the "parties". This Project is approved in accordance with Article VI of the MOU.

**Correspondents:** USGS: Roger H. Morin, PO Box 25046, MS 403, Denver, CO 80225, phone: (303) 236-5915, fax: (303) 236-5968, e-mail: [rhmorin@usgs.gov](mailto:rhmorin@usgs.gov).

GSC: Yves Michaud, 880 chemin Ste-Foy, C. P. 7500, Sainte-Foy, Qc, G1V 4C7, phone: (418) 654 2673, fax: (418) 654 2615, e-mail: [ymichaud@nrcan.gc.ca](mailto:ymichaud@nrcan.gc.ca).

**Responsible Senior Managers:** USGS: P. Patrick Leahy, Associate Director for Geology, phone: (703) 648-6600; GSC: Dr. Jan Boon, Director General SMGB GSC, phone: (613) 995-2340.

**Scope:** This extension will expand upon the collaboration between GSC and USGS carried out under Project Annex #6, the MGWI Project (Maritimes Groundwater Initiative). Last year's participation of Roger H. Morin to the characterization of the Maritimes Carboniferous Basin has been extremely useful. Dr. Morin would again conduct geophysical logging within numerous selected boreholes in different hydrogeologic formations (Boss Point, Richibucto and Hillsborough formations) where information is lacking, so this will enhance the understanding of the regional hydrogeology in the fractured sedimentary rock aquifers. His work allows the evaluation of hydraulic properties, complementary to pumping tests and drilling, for the development of a conceptual hydrogeological model of the Basin.

**Work Plan:** The work plan is similar to the one described in Project Annex#6. The USGS will provide the expertise of Dr. Roger H. Morin and one technician for the service of geophysical logging for a period of one week between mid-July and mid-August of 2002, and advice in log analysis and interpretation techniques. The GSC will provide complementary information on the geology and the stratigraphy of the Carboniferous Basin in order to identify and characterize the aquifer formations. The USGS will provide a report including field results from geophysical logging and their interpretation, in both digital and hard format.

The GSC will be responsible for ensuring that any permits and/or authorizations required for the entry of the geophysical logging equipment to Canada are processed.

**Funding Arrangements:** The GSC will provide funding for accommodations and for travel expenses incurred by Dr. Morin and one technician up to a maximum of US\$3500. The USGS shall submit to the GSC, to the attention of Dr. Yves Michaud, original invoices with the Canadian federal government claims for the verification of expenditures. The USGS's final invoice shall be marked "Final" and submitted to GSC not later than October 31<sup>st</sup> 2002.

**Intellectual Property:** As per the "Agreement on the Allocation of Intellectual Property Rights, Interests and Royalties for Intellectual Property Created or Furnished under Certain Scientific and Technological Cooperative Research Activities" between the Government of Canada and the Government of the United States of February 4, 1997, parties to this PA shall retain existing intellectual property that they bring to the project. Intellectual property arising as a result of this Project shall be owned in equal parts by the GSC and USGS.

**Duration and Termination:** Notwithstanding the date of execution of the Agreement, this Agreement shall be effective as of the 1<sup>st</sup> day of July 2002 and shall terminate upon the earlier of: (a) March 31, 2003, this being the anticipated completion date of the Project, unless extended by the mutual written agreement of the parties; or (b) one month subsequent to the receipt of written Notice of Intent to Terminate from one party to the other.

Either party may, by giving the other party thirty (30) days written notice, terminate this Agreement. Either party shall immediately upon termination, return the other party's papers, materials or other property held for the purpose of carrying out the Project. In the event of termination of this Agreement, any expenses and costs incurred by USGS in support of the Project and costs for non-cancelable commitments outstanding as of the date of termination shall be paid for by GSC-Q.

FOR THE U.S. GEOLOGICAL SURVEY  
OF THE DEPARTMENT OF THE INTERIOR  
OF THE UNITED STATES OF AMERICA:

FOR THE GEOLOGICAL SURVEY OF  
CANADA OF THE EARTH SCIENCES  
SECTOR OF THE DEPARTMENT OF  
NATURAL RESOURCES CANADA:

\_\_\_\_\_  
P. Patrick Leahy  
Associate Director for Geology  
United States Geological Survey  
Department of the Interior

\_\_\_\_\_  
Jan Boon  
Director General  
Sedimentary and Marine Geoscience Branch  
Geological Survey of Canada  
Earth Sciences Sector  
Natural Resources of Canada

Date

6/10/02

Date

200602



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|--|---------------------------------|
| Destinataire / <i>Sent to</i> :  | Mr. Pat Lloyd                   |
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| Date :   | April 20, 2004                  |
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Message :

Hello Pat,

Here are Annex #6 and Annex #7. Hope this helps.

Thank you very much in advance. Have a great day.

Christine