

First Nations Liaison (Field Monitor) Weekly Report

Completed by: Austin Paul

Report covering the period from July 7th - July 8th 2015

Date: July 7th, 2015

Staff: Mark Gautreau, Austin Paul

Activities Conducted

Bathymetry work associated with the Mactaquac Generating Station (MGS): mapping the river bottom near the diversion spillway and main intake spillway (tailrace). This work was carried out in support of the Canadian Rivers Institute's Mactaquac Aquatic Environmental Study.

Pertinent Tasks

- In order to safely conduct the bathymetric work, the hydro-electric dam had to be powered down and all spillway gates shut. Detailed coordination and planning between MQ Operation, System Operations and CRI was required to allow this study to take place to ensure safety to all staff involved.
- Upon signing all required permits, one team launched a boat above the dam and the other launched downstream of the MGS. A side-scan sonar device was used to map the river bottom. This device was capable of scanning 20 meter swaths, meaning that the river had to be surveyed with the aid of a computerized grid overlaid onto the G.P.S. display screen, many passes were made to cover all of the areas of focus.
- Both teams worked in conjunction. For safety purposes, both teams focused on the same areas (one team on the head pond, one team below the dam, starting with the tailrace section and moving to the diversion spillway). Radio contact was maintained throughout the entire project.
- Upon completion of the bathymetry work, all permits were surrendered to the MGS control room operators and power generation was restored.

Interests and Potential Concerns from a First Nations Perspective

As work was being conducted near the tailrace and spillway, many salmon could be seen leaping from the water (a very welcomed sight). I was informed that over 100 Salmon were caught in the fish-way and transported above the MGS between July 6th and 7th, 2015.

Traditional resource sites: The study area is in close proximity to the Kingsclear First Nation and has been used for resource procurement for hundreds if not thousands of years. Various fish species are actively sought out by First Nations fishermen, eagles roost on the various large trees present on the river banks and the marshes and ponds flanking the river are used to

collect Calmus or Sweet Flag root- a traditional preventative medicine. **Note:** None of the traditional resource areas have been negatively impacted by the studies conducted.

Traditional Land Use Sites: The area below the MGS's diversion spillway is a popular fishing location as is the area immediately below the tailrace. None of the aforementioned areas were negatively impacted by the studies conducted. At least one K.F.N. community member has found an early historic clay pipe on the river bank below Keswick ridge. Archaeological sites are most likely present in the area; however our activities were restricted to the water and represent no threat to the potential archaeological sites.

Photographs



Above: Mark Gautreau initializing the sonar equipment.



Above: Main Spillway with all gates closed.



Above: Spillway gate under repair.

Date: July 8th, 2015

Staff: Tracey Germon, Kevin Beaty, Victoria Brewer

Activities Conducted: Seismic testing south of the MGS, river right (right-hand side while facing downstream). This work was carried out in support of studies conducted by AMEC Consulting.

Pertinent Tasks:

- A seismic array was set up on the access road leading to the area below the MGS diversion spillway.
- The array was set up using 5 meter spacing which would allow for subsurface testing up to 80-100 meters below the surface in order to determine bedrock depth and consistency.
- An impact testing machine was also used during the study. This machine was mounted to an all-terrain vehicle. A massive elastic band is used to build up resistance; this band propels a piston that impacts a steel plate (which is placed on the ground). The seismic array detects the impact and measures the rate of return signals which provides insight into the subsurface material present.
- There were complications regarding some of the equipment which required a significant amount of trouble shooting, as such, little testing was conducted on the 8th of July. Due to a series of unfortunate deaths in the community of Kingsclear, my presence was required in the community and I did not have the chance to monitor the rest of the work being conducted. From what I had seen, the work was carried out with diligence and respect.

Interests and Potential Concerns from a First Nations Perspective

- Traditional resource sites: Although I am unaware of the area being used to collect traditional medicines, the area is abundantly vegetated with small shrubs and flowers. St. John's wort, mullein, burdock, raspberry, goldenrod and jewelweed plants are currently growing in the area and may be of some use to practitioners of traditional medicines.
- Traditional Land Use Sites: Not applicable

Photographs



Above: Seismic sensor array with electrodes spaced at 5 meter intervals.



Above: Impact testing device (Propelled energy generator)