

FILE NO.: SCT-2007-11
CITATION: 2016 SCTC 9
DATE: 20160520

OFFICIAL TRANSLATION

SPECIFIC CLAIMS TRIBUNAL
TRIBUNAL DES REVENDICATIONS PARTICULIÈRES

BETWEEN:)
)
ATIKAMEKW D’OPITCIWAN FIRST) Paul Dionne and Marie-Ève Dumont, for the
NATION) Claimant
)
)
Claimant)
)
– and –)
)
HER MAJESTY THE QUEEN IN RIGHT)
OF CANADA)
As represented by the Minister of Indian) Éric Gingras, Dah Yoon Min and Ann Snow,
Affairs and Northern Development) for the Respondent
)
)
Respondent)
)
) **HEARD:** From September 9 to 12, 2013,
) from January 13 to 24, 2014, from May 20 to
) 23, 2014, from March 17 to 26, 2015, from
) March 30 to April 1, 2015, from April 23 to
) 30, 2015, and May 11, 2015.

REASONS FOR DECISION

Honourable Johanne Mainville

NOTE: This document is subject to editorial revision before its reproduction in final form.

Cases Cited:

Wewaykum Indian Band v Canada, 2002 SCC 79, [2002] 4 SCR 245; *R v Mohan*, [1994] 2 SCR 9, 114 DLR (4th) 419; *Samson Indian Nation and Band v Canada*, 199 FTR 125, [2001] 2 CNLR 353; *R v Marquard*, [1993] 4 SCR 223, 108 DLR (4th) 47; *R v Howard*, [1989] 1 SCR 1337; *Guerin v R*, [1984] 2 SCR 335, 13 DLR (4th) 321.

Statutes and Regulations Cited:

Specific Claims Tribunal Act, SC 2008, c 22, s 22.

The Constitution Act, 1867, 30 & 31 Vict, c 3, s 91.

Indian Act, RSC 1927, c 98, ss 4, 34, 39, 48, 51.

Indian Act, RSC 1952, c 149, ss 18, 30, 31, 35, 37 to 41.

Headnote:

This claim involves the repeated flooding of the Opitciwan Reserve following the raising of the crest of the Gouin dam in 1942 and in 1955–56 by the Commission for the Management of Running Waters in Quebec (also known as the Quebec Streams Commission (the “QSC”)) and the damage and inconvenience suffered by the Atikamekw of Opitciwan as a result of this event.

The Claimant alleges that the federal Crown breached its legal and fiduciary duties before and after the QSC’s project to increase the Gouin reservoir’s storage capacity by failing to take any concrete steps, before or during the surveying of the reserve or after its creation, to protect the rights and interests of the Atikamekw of Opitciwan.

As a consequence of the alleged breaches, the Claimant is seeking the following in particular: (1) compensation for the damage and inconvenience suffered by the Atikamekw of Opitciwan as a result of the flooding of the Opitciwan Reserve following the raising of the crest of the Gouin dam authorized in 1942, particularly the inconvenience related to the contamination of the water and the resulting illnesses; (2) compensation for the value of the lands inundated by the flooding of part of the reserve; and (3) compensation for the loss of use of these lands.

The Claimant alleges that the damage and inconvenience suffered by the Atikamekw of Opitciwan as a result of the repeated flooding of the Opitciwan Reserve starting in 1942 were due to the fault of the federal Crown.

The Respondent challenges and denies the validity of this claim on the grounds that (1) there exists no binding legal obligation on the federal Crown that could arise from the facts of this case; and (2) there is no binding legal obligation on the federal Crown to compensate the Claimant in any way in connection with the facts set out in the record.

The Respondent also submits that the raising of the crest of the spillway was entirely initiated and controlled by the Government of Quebec.

Held: The Respondent's objection seeking to have the expert report and testimony of the Claimant's expert, Claude Marche, declared inadmissible is dismissed. The evidence establishes that Dr. Marche's training and experience as a hydraulic engineer have given him sufficient expertise to testify about the flooded area of the reserve. As for the issue of water quality, Dr. Marche is qualified to explain the behaviour of the water in the reservoir and the impact of the water level fluctuations resulting from the operation of the reservoir, but not to testify about the characterization and chemical interactions of different elements and their consequences for the health of individuals. Therefore, the parts of his report dealing with the chemical process that occurs in the reservoir and its impact on the health of the Atikamekw of Opitciwan will not be taken into consideration.

The issues raised in this dispute involve the flooding of part of the lands of the Opitciwan Reserve before and after its creation.

As held in decision 2016 SCTC 6 in File No. SCT-2004-11, the federal Crown was bound by legal and fiduciary duties to the Atikamekw of Opitciwan to ensure the implementation of the process of creating the Opitciwan Reserve. The issue of the flooding of the lands of the "provisional reserve" goes to the heart of the reserve creation process.

The federal Crown was therefore bound by basic obligations of loyalty in the discharge of its mandate, providing full disclosure appropriate to the subject matter and acting with ordinary

prudence with a view to the best interest of the Aboriginal beneficiaries of the obligation when making decisions about the creation of the reserve.

In this case, the federal Crown had control over a cognizable Aboriginal interest and it had sufficient discretion to render the Atikamekw of Opitciwan vulnerable to the exercise of that control. It had an obligation to protect their rights of use and enjoyment of the provisional reserve. However, in the context of the creation of the Opitciwan Reserve, the federal Crown allowed for it to be surveyed in 1943, when it knew or ought to have known that the reserve would be flooded again. In fact, on February 18, 1942, at least one month before the official survey of the reserve, the Government of Quebec had authorized the QSC to raise the crest of the Gouin dam by raising the full reservoir level from 1,325 feet to 1,328 feet. The federal Crown took no measures to protect the interest of the Atikamekw of Opitciwan.

After the reserve was created in January 1944, the federal Crown had a duty to preserve the band's quasi-proprietary interest. However, after being created, the reserve was partially flooded multiple times. Furthermore, in 1955–56, the Province of Quebec authorized a further raising of the crest of the spillway, bringing the full reservoir level to 1,329 feet. Once again, the federal Crown knew or should have known that this second increase would lead to the flooding of part of the reserve. Again, it did nothing.

After its creation, the flooding of part of the Opitciwan Reserve constituted a form of use of the reserve that should have been the subject of a consultation of the Atikamekw of Opitciwan and authorizations required by the *Indian Act*.

The evidence clearly demonstrates that the federal Crown breached its legal and fiduciary duties during the process of creating the reserve and after its creation.

The evidence as a whole demonstrates that there was a significant encroachment, that no additional parcel of land was surveyed and that the Atikamekw of Opitciwan were deprived of certain parts of their reserve.

In light of all the circumstances, the Tribunal accepts Dr. Marche's numbers and finds that permanent submergence caused a loss of some 109 acres of reserve lands. However, the

Tribunal will accept additional evidence in the form of a land survey to be produced at the second stage in order to confirm exactly what area of the reserve was flooded.

As for the issue of water quality, the Tribunal accepts the testimony of the Respondent's expert Christian Gagnon to the effect that humic substances are not toxic in and of themselves and do not constitute a contaminant. However, a high concentration of humic substances in a closed environment diminishes the water quality, and the presence of animal carcasses or droppings may cause bacterial contamination.

The evidence also shows that the reservoir is subject to significant annual water level fluctuations and picks up natural waste such as the eggs and droppings of the animals living on the shore. The water level fluctuations also result in a high animal mortality rate. The movement of water over the shoreline carries all of these elements into various parts of the reservoir, along the shoreline and into the bays and wetlands of the reservoir.

Dr. Gagnon confirmed that the suspension and decay of the eggs of fish and other animals and droppings from birds and other animals are a source of bacterial contamination and that, if these substances are dissolved in drinking water, they constitute a health hazard.

The elders stated that the Atikamekw became ill after drinking the reservoir water, and the documentary evidence demonstrates that the reservoir water and well water were unfit to drink. The evidence also establishes that the presence of humic substances in the reservoir water caused much inconvenience to the Atikamekw of Opitciwan. The Crown was negligent in its failure to act promptly to solve these problems.

The evidence shows that after 1942, the Atikamekw of Opitciwan continued to suffer inconvenience as a result of the poor water quality. If the health problems were sometimes mitigated by the fact that the Atikamekw boiled their water, they were not completely eliminated. In addition to the health problems, the evidence establishes that the raising of the water levels caused a great deal of inconvenience to the Atikamekw of Opitciwan.

Because of the federal Crown's breaches of its legal and fiduciary duties, the Claimant is entitled to receive (1) compensation for the value of the loss of use and enjoyment of

approximately 109 acres of reserve lands resulting from the flooding caused by the work performed to raise the crest of the spillway of the Gouin dam authorized in 1942 and in 1955–56; and (2) compensation for the damage and inconvenience suffered by the Atikamekw of Opitciwan as a result of the consumption and use of unclean water caused by the raising of the water levels relating to (i) the health of the Atikamekw; and (ii) the inconvenience caused to the Atikamekw of Opitciwan, especially the destruction of the wells or water points dug by the Atikamekw, the delays in supplying wells and the difficulties in securing a water supply.

The provincial Crown is partly liable for this damage and inconvenience. The apportionment of liability between the federal and provincial Crowns is to be determined during the second stage.

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I. INTRODUCTION

[1] This claim involves the repeated flooding of the Opitciwan Reserve following the raising of the crest of the Gouin dam in 1942 and 1955–56 by the Commission for the Management of Running Waters in Quebec (also known as the Quebec Streams Commission (the “QSC”)) and the damage and inconvenience suffered by the Atikamekw of Opitciwan as a result of this event.

[2] On October 16, 2008, the Claimant filed a claim with the federal Minister of Indian Affairs. In a letter dated September 30, 2011, the Senior Assistant Deputy Minister informed the Claimant of the Minister’s refusal to negotiate this specific claim. On March 21, 2012, it filed a Declaration of Claim with the Specific Claims Tribunal (the “Tribunal” or “SCT”).

[3] At paragraphs 35 to 37 of its Further Amended Declaration of Claim, the Claimant alleges the following:

[TRANSLATION]

35. . . . the Crown breached its fiduciary and statutory legal obligations prior to the QSC’s work to increase the storage capacity of the Gouin dam

- a. by failing to take any concrete actions, prior to or at the time of the surveying of the reserve, to obtain assurances from Quebec that the surveyed lands would not be flooded as a result of the raising of the crest of the Gouin dam, or to ensure that the surveyor had added replacement lands to the reserve to offset the possibility of flooding; and
- b. by allowing this situation of uncertainty to continue even after learning that further work to raise the crest of the dam would be performed.

36. The breach is made all the more serious by the fact that the Crown was aware that the Atikamekw of Opitciwan had already been flooded at the time of the impoundment of the Gouin reservoir, and that, in the words of the DIA [Department of Indian Affairs], they had been “seriously inconvenienced”.

37. The Crown also breached its fiduciary and statutory legal obligations after the QSC’s work to increase the storage capacity of the Gouin reservoir

- a. by not immediately sending a surveyor and inspectors to the site to check the area of the flooded lands and make an inventory of the Indians’ material and other losses, as it normally did with Indian reserves in the same circumstances;

- b. by taking no steps to add to the reserve an area equivalent to that covered by the rise in water levels of the reservoir;
- c. by taking no steps to compensate the damage and inconvenience suffered by the Atikamekw of Opitciwan despite the recommendation of its agent; and
- d. by taking no steps to prevent repeated flooding, especially in light of the powers stipulated under the *Navigable Waters Protection Act*.

[4] As a consequence of these alleged breaches, the Claimant is seeking the following in particular:

[TRANSLATION]

- (a) compensation for the damage and inconvenience suffered by the Atikamekw of Opitciwan as a result of the flooding . . . of the Opitciwan Reserve following the raising of the crest of the Gouin dam authorized in 1942, particularly the inconvenience related to the contamination of the water and the resulting illnesses;
- (b) compensation for the value of the lands . . . inundated by the flooding . . . of the reserve; and
- (c) compensation for the loss of use of these lands; . . . [Emphasis in original; Further Amended Declaration of Claim, at para 38]

[5] The Claimant alleges that the damage and inconvenience suffered by the Atikamekw of Opitciwan as a result of the repeated flooding of the Opitciwan Reserve starting in 1942 were due to the fault of the federal Crown.

[6] The Respondent challenges and denies the validity of this claim for two reasons:

- (a) there exists no binding legal obligation on the federal Crown that could arise from the facts of this case; and
- (b) there is no binding legal obligation on the federal Crown to compensate the Claimant in any way in connection with the facts set out in the record.

[7] The Respondent also submits that the raising of the crest of the spillway was entirely initiated and controlled by the Government of Quebec.

[8] The Respondent also argues that the Claimant has failed to meet its burden of proof, having submitted no evidence of the total area of the reserve that was flooded, the effects of the raising of the waters on the reserve in question and the losses and damage suffered.

[9] In a notice dated June 22, 2012, in accordance with subsection 22(1) of the *Specific Claims Tribunal Act*, SC 2008, c 22, the Tribunal informed the Attorney General of Quebec that it was of the view that the decision it would render in this file might significantly affect the interests of Quebec. The latter declined the opportunity to intervene or participate in the debate.

[10] The claim was severed. This decision deals with the liability, if any, of the federal Crown. The claims for compensation will only be addressed for the purpose of establishing the existence of a remedy, if applicable, and whether the Claimant is entitled to it, as decided in decision 2016 SCTC 6 in File No. SCT-2004-11.

[11] The evidence for this claim was filed jointly with that for File Nos. SCT-2004-11, SCT-2005-11 and SCT-2006-11.

[12] The facts, law and other questions useful to this file have been described and analyzed in decision 2016 SCTC 6 in File No. SCT-2004-11. They will be referred to for the purposes of this decision.

[13] In decision 2016 SCTC 6 of File No. SCT-2004-11, I reached the following conclusions:

- (a) There were enough similarities between the reserve creation processes in British Columbia and Quebec for Opitciwan to be characterized as a “provisional reserve” for the period from 1914 to 1944.
- (b) The legislative package made up of the 1850 and 1851 Acts and the 1853 Order in Council, considered in light of subsection 91(24) of the *Constitution Act, 1867*, 30 & 31 Vict, c 3, formed the framework for the federal Crown’s legal obligation to create reserves.
- (c) The adoption of the 1853 Order in Council arising under the 1851 Act and approving the 1853 Schedule distributing the 230,000 acres of lands gave rise to an obligation

on the part of the Crown to create reserves for the bands identified therein, since the areas mentioned in the Schedule had been “set apart” and “appropriated” to and for their use.

- (d) This legal duty arose out of the launching of the reserve creation process.
- (e) As for the Opitciwan Reserve, the process for its creation was launched in 1853 with the designation in the Schedule of the Atikamekw as beneficiaries of certain acres for the purposes of creating a reserve and the positive response from the Department of Indian Affairs (the “DIA”), further developed in 1908 and in 1912 with the application from Chief Awashish, crystallized in 1914 with the survey by Mr. White and completed with the creation of the reserve in January 1944.
- (f) Therefore, (1) by no later than 1914, the Atikamekw of Opitciwan had a cognizable and acknowledged Aboriginal interest in the Opitciwan lands forming the provisional reserve, and (2) the federal Crown had a discretionary power to ensure that the reserve creation process was implemented.
- (g) These facts gave rise to a fiduciary obligation on the part of the federal Crown to the Atikamekw of Opitciwan. The evidence also demonstrates that the DIA constituted itself as the exclusive intermediary for the Atikamekw of Opitciwan with the Province of Quebec with respect to the lands from which their reserve was to be created.
- (h) In accordance with the jurisprudence of the Supreme Court of Canada (*Wewaykum Indian Band v Canada*, 2002 SCC 79 at paras 86, 89, 94, 97, [2002] 4 SCR 245 [*Wewaykum*]), prior to the date of creation of the Opitciwan Reserve, so before January 14, 1944, the federal Crown’s fiduciary duty included the basic obligations of loyalty, good faith in the discharge of its mandate, providing full disclosure appropriate to the subject matter and acting with ordinary prudence with a view to the best interest of the beneficiaries of the obligation.
- (i) The evidence establishes that the Crown failed to honour these obligations.

- (j) As part of a reserve creation process, the acts performed by the federal Crown with respect to the lands occupied by the Atikamekw of Opitciwan in the “provisional reserve” were governed by the fiduciary relationship between them and the Crown.
- (k) After the reserve was created, the scope of the Crown’s fiduciary obligation expanded to include the protection and preservation of the band’s “quasi-proprietary” interest in the reserve from exploitation.

[14] Furthermore, in decision SCT-2005-11, I held that the Opitciwan Reserve was created on January 14, 1944.

II. FACTS

[15] Certain facts, most of which were described in decision 2016 SCTC 6 in File No. SCT-2004-11, would be useful to note here.

[16] The evidence establishes that in 1914, the surveyor, Mr. White, performed a survey of the Opitciwan Reserve and that part of the surveyed lands were flooded in 1919.

[17] Several years went by with no advancement in the reserve creation process.

[18] In 1929, Chief Gabriel Awashish questioned the HBC representative about the boundaries of the reserve. His questions were forwarded to officials from Quebec’s Department of Lands and Forests (“DLF”) and the DIA on August 14, 1929 (Joint Book of Documents (“JBD”), at tab 282).

[19] On January 31, 1930, in response to a letter from Deputy Minister Mercier of the DLF, Assistant Deputy Minister MacKenzie of the DIA informed him that it would be advisable to consult the Atikamekw of Opitciwan before selecting the lands to be added to the reserve and that he would be sending one of his surveyors to select a reserve of 2,270 acres (the parties agree that this is an error and that it should instead read 2,290 acres). He added that the area of the old reserve found above the level of 1,325 feet was 1,728 acres, to which 542 acres would have to be added to complete it (JBD, at tab 284). The file was suspended to enable the DIA to proceed with the consultation (JBD, at tab 303), which ultimately never took place (JBD, at tabs 302 and 303).

[20] On July 6, 1939, Surveyor General Peters of the DIA sent his instructions in writing to the surveyor Mr. Rinfret. He noted that, in 1914, Mr. White had delimited an area of 2,290 acres in Opitciwan and that, in 1917, the water levels had been raised and 542 acres of the lands selected by Mr. White had been flooded. He asked Mr. Rinfret to survey in Opitciwan a reserve of 2,290 acres that included the Indian village and to find the boundaries traced by Mr. White so that Mr. Rinfret could join up his own survey with them. He added that, in 1920, the QSC had undertaken to recommend to the Government of Quebec that the reserve be enlarged by an area equal to the flooded area (JBD, at tab 307).

[21] The same day, on July 6, Mr. Peters sent Deputy Minister Bédard of the DLF a copy of his instructions and asked him to approve them, adding that “[t]he national topographic map compiled from aerial photographs taken in 1932 indicates that considerably more than this area [542 acres] has been flooded. According to an agreement approved by the Quebec Streams Commission dated May 12th, 1920, the new reserve is to have the original area” (emphasis added; JBD, at tab 307).

[22] The survey planned for 1939 was not performed, for unknown reasons.

[23] In 1941 and the years that followed, Agent Larivière of the DIA reported to his DIA superiors that the lake levels were rising and falling continually in accordance with the QSC’s needs and complained about the damage that this was causing on the Opitciwan Reserve.

[24] On February 18, 1942, the Government of Quebec authorized the QSC to raise the crest of the spillway of the Gouin dam by increasing the water storage from 1,325 feet to 1,328 feet (JBD, at tab 315).

[25] On February 9, 1943, Deputy Minister Bédard of the DLF informed the DIA that the DLF was prepared to recommend to the Executive Council the recognition of the Opitciwan Reserve. He noted that, in 1914, Mr. White had surveyed 2,290 acres, 542 of which had allegedly been flooded, and that, in 1939, the DIA had asked Mr. Rinfret to add those 542 acres. However, Mr. Bédard did not consider it necessary to make a tract of land of 2,290 acres available to the Atikamekw (JBD, at tab 326).

[26] On March 31, 1943, a draft letter within the DIA to Deputy Minister Bédard indicated that the DIA was now prepared to proceed with the survey in accordance with the instructions given to Mr. Rinfret in 1939, on the condition that the QSC did not intend to raise the levels beyond those recently maintained (JBD, at tabs 333 and 334).

[27] On June 22, 1943, in a letter, Deputy Minister Campbell informed his counterpart, Deputy Minister Bédard, that the DIA would be satisfied if it could obtain from the DLF the equivalent of the original 2,290 acres, as long as they were located above the high water mark:

If therefore we could obtain from you the equivalent of the original 2290 acres located above the ultimate high water mark contemplated as the future flood limit caused by the power development we would rest content. [Emphasis added; JBD, at tab 335]

[28] This letter, as well as the draft letter that circulated within the DIA, appear to demonstrate the DIA's concern regarding the southern limit of the Opitciwan Reserve, as it wanted the limit to be located above the ultimate high water mark.

[29] On August 14, 1943, Mr. Rinfret received his instructions from Surveyor General Peters of the DIA to establish the boundaries of a 2,290-acre reserve in Opitciwan. They included the following excerpt:

A study of the aerial pictures and Mr. White's plan of a survey made in this area in 1914 indicate that an east and west line would make a suitable north boundary of the proposed reserve, but in this connection you will use your own judgment in the matter of the selection of the boundaries.

In connection with the survey of the exterior boundaries an accurate traverse of the mean highwater mark of the Gouin Reserve fronting on the proposed reserve will be required. You should therefore take with you such necessary drafting equipment as you will require so that you can plot your survey while in the field. [Emphasis added, JBD, at tab 337]

[30] It should be noted that the DIA gave Mr. Rinfret a degree of latitude in establishing the boundary, which the latter denounced when he wrote to Mr. Peters of the DIA:

Personally I think that the Indian Affairs Branch should assume their responsibility which includes the location of the proposed reserve even if in so doing it inconveniences an Indian Agent. I would be prepared to assume the responsibility that the survey will be legal, accurate and executed to the satisfaction of the Quebec authorities. [JBD, at tab 336]

[31] The Respondent's expert Éric Groulx, a land surveyor, acknowledged that it was not common practice to leave it up to the surveyor to determine the precise location where a reserve would be situated (transcript of the hearing, January 24, 2014, at p 68).

[32] Mr. Peters also included the following in his instructions to Mr. Rinfret:

The Indian Affairs files indicate that there is the possibility that the waters in the Gouin Reservoir may be raised still higher than its present level. Should you find out from the provincial authorities that such a project is to be carried out within a few years it would appear advisable that an additional area equal to the area that will be inundated, should now be included within the block, so as to avoid the necessity of running revised boundary lines thereafter. [Emphasis added; JBD, at tab 337]

[33] In his instructions, Mr. Peters also informed Mr. Rinfret that the survey would have to be conducted in accordance with provincial regulations, that the instructions had to be approved by Quebec and that, “[s]hould any matter of paramount importance arise out of your interview with the provincial authorities in connection with this proposed survey, you should advise this office immediately and await our reply before proceeding to the field” (JBD, at tab 337).

[34] On August 19, 1943, the Province approved the instructions given by Mr. Peters to Mr. Rinfret and issued its own general instructions (JBD, at tab 338). However, as for the precise placement of the Opitciwan Reserve, Quebec deferred to the instructions from the DIA, a fact also acknowledged by Mr. Groulx (transcript of the hearing, January 24, 2014, at p 72).

[35] Mr. Rinfret surveyed the reserve from August 21 to September 7, 1943.

[36] On August 29, 1943, while conducting his survey work in Opitciwan, Mr. Rinfret informed his superiors that on August 17, he had met with Mr. Boisvert of the DLF in the absence of Deputy Minister Bédard. Mr. Boisvert told him that only 2,000 acres had been planned for Opitciwan, a figure to which Mr. Rinfret objected. The next day, accompanied by Mr. Boisvert, he met with Deputy Minister Bédard, “who willingly agreed on the 2290 acres area for the reserve after I explained that we were striving to give 60 acres per family residing at the reserve”. Mr. Rinfret added, “As to the question of a further area to be flooded by the raising of water in the Gouin Reservoir, Mr. Boisvert called the Streams Commission and was informed that it was contemplated to raise the water 3 inches only above the highest point at which the

water stood in 1942. The area involved was considered negligible and they refused to discuss the matter any further” (emphasis added; JBD, at tab 339).

[37] In 1955 and 1956, through three orders in council, the Province of Quebec authorized repairs and modifications to the Gouin dam likely to increase the storage capacity of the reservoir to 1,329 feet (JBD, at tabs 374, 375 and 378).

[38] Graphs of the daily levels of the Gouin reservoir produced by Indian and Northern Affairs Canada (JBD, at tab 397), show that

- (a) from 1920 to 1939, the reservoir reached a level of 1,326 feet and its minimum and maximum levels varied by a range of about 23 feet;
- (b) from 1940 to 1959, the level of the reservoir reached or exceeded 1,328 feet, and the minimum and maximum levels varied by about 18 feet during that period; and
- (c) from 1960 to 2001, the level of the reservoir reached or exceeded 1,329 feet, and the minimum and maximum levels varied by about 18 feet during that period.

[39] In addition to the documentary evidence, there was testimony from elders, including that of David and Jérémie Chachai, who saw the waters rise in the 1950s. Jérémie Chachai testified that the water had inundated the point of the territory and the drinking water points dug by the Atikamekw of Opitciwan.

III. EXPERT EVIDENCE

A. Claude Marche

[40] The Respondent is challenging the admissibility of Dr. Marche’s report and testimony and seeking to have them rejected, which it claims would have a significant impact on File No. SCT-2007-11 and by extension on File No. SCT-2004-11.

[41] The objection is based on Dr. Marche’s lack of qualifications in the fields of surveying and geochemistry (water quality). The Respondent also submits that his expertise is entirely

unreliable. The Tribunal took the objection under advisement, allowed Dr. Marche's testimony and qualified him as an expert in dam hydraulics.

1. Qualifications

[42] Dr. Marche has been a civil engineer since 1969. He earned a Master of Science in Geotechnical Engineering and Transportation in 1971 and a PhD in Hydraulics in 1974. Since completing his studies, he has undergone complementary training in digital cartography and aerial photograph interpretation.

[43] Dr. Marche was a tenured professor and researcher at the Montréal Polytechnic School from 1984 to 2009, when he retired from teaching. Over the years, he has also acted as a hydraulic engineering consultant for various companies, including Hydro-Québec. He was responsible for scale-model testing of the spillway and the design and verification of the Outardes-2 development; scale-model testing of the outlet channel for the underground powerhouse of the LG-2 development; the verification of the structure serving as a spillway and flow regulator for the Cabonga-Dozois reservoir; the numerical study of the flow regimes under the many variations of the Nottaway-Broadback-Rupert development; management of the hydroelectric reservoirs of the Mauricie, etc.

[44] He has also participated in or been responsible for failure studies relating to several different dams, bank stability studies for Lake Temiskaming and the Ottawa River, etc., and several environmental impact assessments, particularly with respect to changes to the saline regime of the La Grande estuary caused by hydroelectric management and studies of contaminant migration in rivers.

[45] In addition, he analyzed, developed, implemented and tested new mathematical models applicable to the calculation of estuarine flows, and applied these models to the estuaries of the Outardes River, the La Grande River and the Great Whale River to determine the flow regimes, sedimentological or thermal evolution regimes and saline stratification.

[46] He has taught fluid mechanics, hydraulics, maritime hydraulics, numerical methods in hydraulics, hydrology, hydraulic and maritime structures, dam failure and emergency preparedness and sediment transport.

[47] He has participated in the writing of two books, published more than 80 journal articles and spoken at several conferences.

[48] He has also acted as an expert witness in court cases.

2. Expert opinion

[49] In early 2013, Dr. Marche was given the following mandate:

- (1) to assess the impact of the creation and management of the Gouin reservoir on the area of the lands set apart for the Atikamekw of Opitciwan Band; and
- (2) to establish whether there was a link between the operation of the reservoir and the notable decrease in the quality of the water from the reservoir and the onshore wells consumed by the band for several years.

[50] More specifically, he describes the nature of his mandate as follows (Exhibit P-10, at p 74):

[TRANSLATION]

The mandate I was given had five objectives in the context of File Nos. SCT-2004-11 and SCT-2007-11:

(a) File No. SCT-2004-11:

- (i) Establish whether there had been permanent submergence of a certain area of the reserve surveyed at Opitciwan in August 1914 following the impoundment of the Gouin reservoir. If so, identify the submerged area.
- (ii) Establish whether there could have been recurrent inundation of certain areas of the reserve between the impoundment of the reservoir and the final survey of 1943. Specify the cause or causes of this flooding and identify the inundated areas.

(b) File No. SCT-2007-11:

- (i) Establish whether there had been permanent submergence of a certain area of the reserve of 2,290 acres surveyed at Opitciwan in August and September 1943. If so, specify when it occurred and its causes. Identify the submerged area.
- (ii) Establish whether recurrent inundation of additional areas of the reserve surveyed in 1943 could have taken place between then and now. Identify the inundated areas.

(c) File Nos. SCT-2004-11 and SCT-2007-11:

Establish whether the quality of the water used or consumed on the reserve could have been affected by hydrological causes and/or causes relating to the operations of the Gouin reservoir.

[51] Dr. Marche produced a report in 2013 entitled *Sur la réduction de la superficie des terres réservées aux Atikamekw du réservoir Gouin, et la contamination de leur eau de consommation* (Exhibit P-10), a summary of his report (Exhibit P-11) and a PowerPoint presentation on re-examination (Exhibit P-20).

(a) The decrease in area

[52] With respect to the first aspect, involving the decrease in area of the lands set apart for the Atikamekw, Dr. Marche summarized his process and findings as follows:

[TRANSLATION]

For reasons unknown to me, the territory staked in 1914 measured 1,430 acres and covered only the eastern part of the point. But the area was recorded in the survey as being 2,290 acres. The survey plan was not recognized as valid by Quebec. The water in the reservoir was impounded in 1918, resulting in significant flooding of the banks of all of the lakes and watercourses upstream of the dam. From that point on, those constituted the Gouin reservoir. Steps to make the reserve official remained in suspension for many years and resumed in about 1943, when the reserve status was confirmed following a second survey indicating that the reserve had an area of 2,290 acres. It allocated to the reserve the entirety of the point included between the bank situated at an elevation not indicated in the survey (but close to the maximum operating level of 1,325 feet) and the northern boundary of the reserve, which had been previously established in 1914.

The reserve, as previously delimited, included a stretch of shoreline rendered unusable by recurrent inundation caused by three factors: the slope of the reservoir, which leads to much higher levels upstream when the maximum operating level is attained at the dam; the effect of the winds, which can increase the effect of the slope; and the effect of the several-foot-high waves that the winds can create in a reservoir of that size.

Excluding from the area delimited by the second surveyor in 1943 any areas subject to flooding once every 20 years, the reserve had only 2,195 acres remaining of usable area. It therefore had 95 acres less than what was indicated on the 1943 survey.

In 1942, the Government authorized an initial increase of the dam by three feet, and the corresponding increase in the maximum operating level to 1,328 feet exacerbated the flooding: the reserve lost a further 81 acres from its riparian buffer. The same phenomenon was again observed at the time of a second increase in 1955, with the loss of a further 28 acres.

The reserve was therefore officially recorded in the 1940s as having an area of 2,290 acres, but today measures 2,086 acres. Solely as a result of the management and development of the Gouin reservoir, the reserve has seen the amputation of almost 10% of its area. [Exhibit P-10, at pp 5–6]

[53] With respect to the data used, Dr. Marche specified the following:

[TRANSLATION]

My calculations relate to the area of the reserve at different periods of time, from the first survey in 1914—prior to the creation of the reservoir—to today. They are based on the surveys from those periods, precise topographical and bathymetric maps and aerial photographs of the territory. These allow for an analysis of series of the lake's daily levels measured at the dam over the course of more than 80 years. [Exhibit P-10, at p 7]

[54] In his report, in addition to concluding that the area surveyed by federal surveyor Mr. White in 1914 was 1,430 acres, for the purposes of his calculations, Dr. Marche oriented the survey plan based on true north rather than magnetic north and noted that it did not have the proper scale.

[55] During his testimony, Dr. Marche clarified his position in response to the calculation methods used by the Respondent's expert, Éric Groulx, who concluded that despite the fact that Mr. White's survey plan indicated 2,290 acres, Mr. White had actually surveyed an area of 2,760 acres. Dr. Marche agreed with Mr. Groulx's methods and findings in this respect.

[56] Dr. Marche explained his error by the fact that he did not have access to Mr. White's survey book or to the original documents, but to a working copy only. On the copy, the graphic scale indicated on the survey plan was incompatible with the area indicated by Mr. White. He had to try to reconcile this area by seeking complementary data, such as the bathymetric maps of

the reservoir, the shoreline level on these maps (1,323.8 feet), the increase in water levels (28 feet), the average high water marks recorded by Mr. White, the location of the first village and the Hudson's Bay Company (the "HBC") post, and the distances indicated in the text accompanying the document, while giving less weight to the scale and orientation indicated in the survey plan.

[57] Dr. Marche then performed calculations starting from the northern boundary of the reserve delimited by Mr. Rinfret, which was known, and took into consideration the allocated area of 2,290 acres. However, because the water mark used by Mr. Rinfret to delimit the southern part of the reserve was unknown, he performed mathematical calculations to retrace it.

[58] Taking into account graphs describing the historical evolution of the water levels of the reservoir, which indicated water levels at the dam ranging from 1,323.7 to 1,323.9 feet between August 21 and September 7, 1943, the period during which Mr. Rinfret was in Opitciwan to conduct his survey, Dr. Marche concluded that the shoreline surveyed by Mr. Rinfret and serving as a boundary to the area of 2,290 acres must have been at a little over 1,324 feet. He therefore established the altitude of the shoreline at 1,324.69 feet. He concluded that in basing his work on a shoreline altitude of 1,324.69 feet and delimiting 2,290 acres, Mr. Rinfret failed to take into account a provision for future flooding as the federal government's Surveyor General Peters had suggested in the instructions he had issued in 1943.

[59] To determine the extent to which the area of the land set apart had been reduced as a result of the flooding, Dr. Marche indicated that the official shoreline was located at 1,297 feet in 1914 and at 1,325 feet in 1943. He deduced from this that each raising of the dam allowed for an increase in the maximum operating level, thereby raising the permanent flood level on the reserved lands and reducing the usable area to the same extent. Therefore, any shoreline area located below the maximum operating level was in a floodplain, rendering it unusable. What he needed to quantify was what he called the permanent submergence.

[60] He then used a mathematical formula to perform his calculations. He established a relationship between the water levels and the flooded territory of the Opitciwan Reserve with the help of current bathymetric and topographical maps to establish the surface area at elevation

curves of 1,328.7 feet and 1,345.1 feet. He then validated his results using an aerial photograph taken on July 1, 1964, for which date statements from Hydro-Québec indicate a water level of 1,327.5 feet at the dam, enabling him to establish a flood curve. Based on that relationship, explained in Figure 6 of his report, he drew the conclusion that the reserve would lose 27.26 acres of usable surface area for each one-foot increase in water levels.

[61] Dr. Marche added that the result of a calculation using a mathematical formula may be inaccurate if factors used in the formula are uncertain. However, in this case, he explained that the margin of error is plausible and that the result to take into account is that which is most plausible. He concluded that the permanent submergence rate of 27.26 acres per foot of increased retention was the most plausible rate and had to be used. He estimated the area affected by permanent submergence to be approximately 109 acres.

[62] Therefore, he proposed, any increase in water levels above 1,325 feet results in the inundation of part of the reserved territory. Pursuing his analysis and calculations, he estimated that an area of 110 acres could be affected by this flooding at any time, that it had occurred 47 times in 60 years and that it had lasted more than 20 years cumulatively (Exhibit P-20). He considered these to be the minimum figures, as other temporary factors could significantly increase the dimensions. This is what he referred to as recurrent inundation.

[63] According to Dr. Marche, recurrent inundation occurs when the operation shows that the maximum legal level has been exceeded, which was the case during periods of varying duration. Those periods, which recur, are unpredictable and depend on the winds, waves and currents. However, in a reservoir as indented as the Gouin reservoir, he estimated that the winds and waves were not as influential as the currents. He therefore used a model to calculate the effects of the currents.

[64] In Dr. Marche's view, it would be an error to believe that water remains immobile in the reservoir and that the level measured at the dam is a precise indicator of the water levels throughout the reservoir and in the village of Opitciwan in particular. A slope often arises in the reservoir that allows the water to flow towards the dam; this slope can change direction during periods when the reservoir is being filled rapidly.

[65] To illustrate, he referred to a letter dated July 16, 1953, from Jules D'Auray, a QSC inspector, which demonstrates the difference in levels that can develop between the dam and the Opitciwan Reserve. In that letter, Mr. D'Auray noted that the floor of the sawmill in Opitciwan was partly flooded, despite its elevation of 1,327.42 feet, while the gauge at the dam indicated that the water level was 1,326.82 feet. Mr. D'Auray's letter is therefore evidence of a discrepancy of 0.60 feet between the level at the dam and that in the village, despite the fact that July is not the month when the reservoir has its highest flow rate (Exhibit P-10, at p 22).

[66] Dr. Marche concluded that energy losses due to slope also had to be taken into account, with the slope between two points of a runoff being calculated using the Manning formula, a recognized formula used in watercourse hydraulics.

[67] After producing estimates and analyses based on a variety of methods, he concluded that there was recurrent inundation every seven years of, on average, one (1) foot above the maximum operating level and of 1.4 feet every 20 years. Taking into account the effects of the waves and the wind, an analysis of the water-level data showed him, for example, that for the period from 1957 to 2001, the maximum flooding level exceeded 1,331.4 feet.

[68] Having explained the basis for his calculations, Dr. Marche reached the following conclusions:

[TRANSLATION]

From the initial planning of the reservoir (1912) to its complete impoundment (1920), one notes a difference of 1 ft between the planned maximum operating level of 1,324 ft and the actual maximum operating level of 1,325 ft. This resulted in a loss of 28 acres in area. Dam increases authorized in 1942 and 1955 further reduced the useful area by 81 acres and 28 acres respectively. The present useful area of the reserve is 2,086 acres.

If one takes as the basis for the visualization the area sought by the DIA in 1914, the band's territory was reduced by a total of 993 acres, or 32% of its initial area. If one takes the initial area of the reserve established in 1943 (2,288–2,290 acres), the flooded areas and floodplains represent losses of 204 acres or 9% of the initial area. [Exhibit P-10, at p 29]

[69] He also added that the water rises to a given level and stays there for several weeks. Because of infiltration and capillary action, the ground may be soft and damp up to two feet

higher than the maximum water level. This area, estimated to cover 54 acres, is not suitable for building either and should accordingly be subtracted from the area of the reserve.

[70] According to Dr. Marche, the precision of the maps, surveys and aerial photographs he used enabled an accurate calculation of the flooded areas of the reserve at the various levels of the reservoir. His results are valid and consistent with the practices of the water development industry. He used the same approach as that used by dam operators to construct the surface area–elevation curves for their reservoirs. His results are relevant and meet the accuracy requirements of the mandate he was given.

[71] Dr. Marche admitted that his approach could result in some uncertainty, but noted that the flooded area he had determined represented an order of magnitude. While the unknown factors may affect the precise area, they do not affect the order of magnitude.

(b) The water quality

[72] The second aspect of his mandate involves the impact of the creation and operation of the reservoir on the quality of the water in Opitciwan.

[73] Dr. Marche indicated that this part of his report explained the possible reasons for the deterioration of the water resources on the territory of the Opitciwan community. He provided an overview of the length of time during which the Opitciwan band was inconvenienced. He emphasized the lack of support for the band in its efforts to quickly find new sources of drinking water and an exploitable body of water that would not represent a health hazard (Exhibit P-10, at p 34).

[74] He began by specifying that when the Atikamekw had settled on the shores of Lake Kikendatch, they lived on a powerful, well-oxygenated river, while the forest cover on the natural shoreline protected the soil against erosion and surface runoff (Exhibit P-10, at p 35).

[75] After the first filling in 1918–19, the feeds to the reservoir were largely blocked at the dam. Given the volume of storage, the average flow of the feeds to the reservoir and the dilution mechanisms involved, the time necessary to flush out widespread contamination increased

considerably. During this lengthy period, the waters stopped benefitting from the aeration and oxygenation provided by the rapids. Instead, they picked up products used in the flooding of the surrounding area (Exhibit P-10, at p 35).

[76] Right from the start of the flooding, the waters collected organic matter from the shores, bays and wetlands. Stirred by waves and moved by the winds and filling currents, the organic matter and old woody debris invaded all parts of the reservoir (Exhibit P-10, at p 36).

[77] A marked deterioration of water quality has been observed in all artificial reservoirs established in a forest setting. Upstream from the Gouin dam, the surface water in the reservoir became turbid, lost much of its dissolved oxygen and no doubt became more acidic. It also became toxic, contaminated by the methylmercury derived from the inorganic mercury transformed by the bacteria present in the bottom debris and sediments. Methylmercury is dangerous and tends to become more concentrated as it moves up the food chain (Exhibit P-10, at pp 36–37).

[78] The deepest waters were subject to the same degradations, only more extensively.

[79] By picking up particles resulting from erosion and decaying organic debris, all of these waters became increasingly turbid.

[80] Based on the documents consulted, Dr. Marche noted that the trees had not been cleared before the Gouin reservoir was impounded and that the DIA had been informed that the Atikamekw had fallen ill as a result of the poor water quality.

[81] According to Dr. Marche, contamination by mercury and its derivatives affected the water and wildlife.

[82] Dr. Marche also explained the following (transcript of the hearing, January 21, 2014, at pp 17–18):

[TRANSLATION]

This reservoir has annual water level fluctuations. For somebody familiar with wildlife, this means that birds and animals living on the shore tend to settle at the water's edge because they need a stable water level, I'm talking about ducks, I'm

talking about beavers, I'm talking about all those animals that live in the wetlands of the reservoir, they can't guess when the energy producer will decide to conduct draining or filling operations.

All they know perhaps, after a certain amount of time, is that the water level is never stable. How will they build their huts? How will they store their food, build their tunnels, etc.? They have no way of knowing.

This explains the high level of mortality among these animals, among their eggs, among everything left in the foreshore and all of the natural waste that the foreshore receives.

A flock of geese stopping down at the reservoir will leave a non-negligible quantity of droppings in the foreshore. . . .

Then, all of these organic types of contamination are washed out by rain water and naturally run down into the reservoir water, then are put back in suspension when the reservoir rises, falling again with the reservoir waters when the annual fluctuations cause the water levels to fall. In other words, all the factors are in place for the washing of the shoreline and the movement of the waters to bring every contaminant imaginable from around the reservoir back into the reservoir and to mix them all together.

And to all this must be added the problem of turbidity, which is still a factor.

[83] Therefore, according to Dr. Marche, the process of successively draining and filling the reservoir contaminates the water, the groundwater and the wells. Turbid water is more likely to cause microbial diseases. With respect to this conclusion, he has relied in particular on an excerpt from a report published on Health Canada's website entitled *Drinking Water Quality and Health Care Utilization for Gastrointestinal Illness in Greater Vancouver* (J. Aramini et al, 2013, Exhibit P-13).

[84] This study, which was about treated water in urban networks, demonstrates a link between water turbidity and gastroenteritis. According to Dr. Marche, the link would be even more obvious with a population drinking untreated water.

[85] Citing another Health Canada study from 1995 (Exhibit P-19), a supporting document for establishing criteria for drinking water quality, he also concluded that even with filtering, this kind of water is harder to render drinkable, as the turbidity diminishes the effects of the treatments.

[86] He added that the annual water level fluctuations observed at the Gouin reservoir were greater than for the James Bay reservoirs, compounding the dissemination of contaminants throughout the reservoir and leaving no zone protected.

[87] He summarized his conclusions regarding both aspects as follows (Exhibit P-11, at p 12):

[TRANSLATION]

- (a) The waters of the new Gouin reservoir had become stagnant, contained humic substances, organic waste and particles washed in from the river banks, often in raw form. The existing wells were regularly contaminated.
- (b) The most recent increases of the maximum operating level reduced the area of the reserve by more than 200 acres, by a conservative estimate.
- (c) All of the techniques used to reach these conclusions were familiar to the engineers and technical staff responding to requests from the DIA or the governments.

B. Michel Leclerc

1. Qualifications

[88] Dr. Leclerc was called by the Respondent as an expert witness. He was qualified by the Tribunal as an engineer with expertise in hydrology and hydraulics.

[89] Dr. Leclerc holds a Bachelor's degree in Engineering from Laval University received in 1968 and a Master's degree in Civil Engineering and Hydraulics, obtained from the same university in 1970. He was a professor at the National Institute for Scientific Research (INRS) in Québec from 1970 to 2007, which led him to work in several scientific disciplines. He also obtained a PhD from the University of Technology of Compiègne in France in 1985, where he studied hydrodynamic modelling and numerical methods.

[90] Dr. Leclerc is retired. An Honorary Professor at INRS since 2007, he still has an office there and has access to several of that institution's resources. He now spends about 30% of his time doing freelance consulting and part of his time volunteering with the Organisme de bassins versants Charlevoix-Montmorency [Charlevoix-Montmorency watershed organization], on which he serves as the founding president, and in a few research projects with INRS.

[91] During his career, he wrote many articles and several book chapters. From 1988 to 2011, he taught the environmental application course in fluvial hydrodynamics at INRS. He also gave courses on tides, currents and water levels at the Maurice Lamontagne Institute and the Institut maritime du Québec, primarily intended for hydrography technicians, and courses in physical limnology and modelling processes in aquatic environments.

[92] In the early 1970s, he worked on the Manicouagan-5 reservoir when it was being filled. His work consisted of measuring the vertical profile of the water temperatures and determining the various layers. He also worked on the La Grande hydroelectric project to calculate the likely high water levels based on deterministic hydrology with statistical meteorology given the design of the spillways.

[93] In 1996, he received a mandate from the Nicolet Commission to work under the coordination of one of the Commission's members, to act as a project manager / team leader for a team whose mandate was to simulate the flooding of the Chicoutimi River and the Aux Sables River.

[94] He has been awarded various distinctions, including a research excellence award from INRS for his contribution to multidisciplinary work. Over the course of his 25-year career, he has worked on all kinds of bodies of water, including reservoirs and environments describable by mathematical models. In cooperation with scientists from other disciplines, he developed software for simulating environments to conduct environmental studies, so he has expertise in modelling.

[95] This was Dr. Leclerc's first experience appearing as an expert in court.

2. Opposing expert opinion

[96] Dr. Leclerc's mandate was to validate the conclusions put forth by Dr. Marche in his report.

[97] Dr. Leclerc stated that he agreed with Dr. Marche's logic. However, he was harshly critical of the latter's methods and the reliability of his conclusions, going so far as to describe himself as [TRANSLATION] "shocked" by the opinions expressed by Dr. Marche.

[98] Dr. Leclerc summarized his conclusions as follows (Exhibit D-38, at pp 7–9):

- (a) He agrees with the nominal values for the maximum operating height of the Gouin reservoir reported by Dr. Marche and relating to the successive, authorized increases.
- (b) However, he is of the view that the determination of the land-water limit based on the water levels at the village of Opitciwan (shoreline) remains wide open to interpretation and constitutes such a challenging exercise in precision that only a specialist in surveying and geodesy is equipped to attempt to solve it, given the great topographical inaccuracy of the various maps available.
- (c) He disagrees with the taking into account of a surge in Opitciwan over and above the maximum operating height resulting from an upstream slope of the water body caused by the net flow of water towards the dam, or by some other random cause (for example, winds).
- (d) He does not deny that such a slope can exist for different flow rates, but adds that this is minimal in fluvial lakes. However, because of the great depths of the Gouin reservoir, current speeds are so reduced as to be practically negligible, accounting for his view that the slope should be considered negligible.
- (e) The communicating vessels principle (the quasi-horizontality of the body of water) therefore prevails in a first approximation, and the calculations relating to the slope of the body of water, in his view, serve no purpose *a priori*.
- (f) He disagrees with the method used by Dr. Marche to demonstrate the existence of a slope, on the basis of the following:
 - the mathematical model, the Manning equation or a variation used by Dr. Marche;

- several transgressions of the hypotheses underlying this model that make it unsuitable for the highly complex hydrodynamic context of the Gouin reservoir;
- the almost complete absence of relevant data and/or detailed information (parameters, geometry, discretization) that would enable an evaluation of the accuracy of the modelling; and
- the lack of discussion of the appropriateness of the model and the lack of discussion or conclusions with respect to the margins of error inherent in the model.

(g) As for the wind factor, in his view, it affects the waves and a slope of the body of water opposed to its dominant direction, the value of which depends on its force and direction, factors heavily modulated by orography (islands, the irregular shoreline of the reservoir). This effect, which he considers difficult to analyze, is random and does not correlate with the maximum operating levels. He specifies that living with the influence of the winds is a necessary part of living on a large body of water.

(h) He challenged Dr. Marche's statement to the effect that the water levels associated with the 20-year flood (a flow rate exceeded on average once every 20 years) could be used to define land ownership. In his view, this statement by Dr. Marche was a loose interpretation of Quebec's *Protection Policy for Lakeshores, Riverbanks, Littoral Zones and Floodplains* ("Policy"), which was merely intended to protect sensitive river environments and limit the risk of flood damage without affecting ownership. In other words, he said, Dr. Marche's choice was inappropriate and irrelevant, since the 20-year flood elevation standard is based on governance rules designed for other purposes (development, emergency preparedness).

[99] Dr. Leclerc reached the following conclusions (Exhibit D-38, at p 9):

(a) Despite a few known or generally accepted facts regarding the maximum operating height, Dr. Marche's report on hydrology and the movement of water, and on the

- longitudinal slope of the body of water in particular, is based on inappropriate premises and an unsuitable theoretical model.
- (b) According to his own expertise in fluvial lakes, the communicating vessels principle is applicable in a first approximation, meaning that the maximum operating height should apply throughout the reservoir to establish the corresponding shoreline.
 - (c) Determining the relationship between water levels and relief (shoreline) is a geodesic challenge in its own right and is only as accurate as the topographical maps; this analysis must therefore be performed by specialists in the field (of surveying and geodesy).
 - (d) Although he considers it small, Dr. Marche has nevertheless given this slope a significant value by using an inappropriate numerical model that leads to confusion. Moreover, the report says almost nothing about the premises, hypotheses and computational elements essential for understanding it; nor does it say anything about the margins of uncertainty that are nevertheless required in a decision-making context.
 - (e) Dr. Marche's expert report would probably not be selected for publication in a serious, peer-reviewed scientific medium (such as a journal or conference), even with substantial revisions.

[100] During his examination on May 20 and 21, 2014, Dr. Leclerc produced a PowerPoint document entitled *Contre-expertise du rapport de M. Claude Marche intitulé : "Sur la réduction de la superficie des terres réservées aux Atikamekw du réservoir Gouin, et la contamination de leur eau de consommation"* (Exhibit D-39). At page 8 of that document, he indicated the margins of error that preclude the Tribunal from accepting Figure A6 of Dr. Marche's report, which relates to the relationship between the water level and the flooded territory in the Opitciwan Reserve. According to Dr. Leclerc, this relationship could not be relied upon for quantifying the amount of flooding in the territory in light of the margins of error with respect to the data used to establish this relationship; he described the margins of error as follows:

1. inaccuracies (random or systematic) inherent in the TrakMaps applicable to pleasure crafts. Order 2 accuracy standard, i.e., +/-1.0 m;
2. systematic errors (bias) relating to scale, orientation and positioning in the documents in a georeferenced landmark;
3. inaccuracies relating to plane or elevation in maps at a scale of 1:20,000 or 1:50,000 (xx, yy plane, zz elevation);
4. inaccuracies relating to non-orthorectified aerial photographs;
5. inaccuracies relating to the transfer of levels measured at the dam towards Opitciwan; and
6. measurement inaccuracies relating to the contour plot and scale of the map used.

C. Éric Groulx

1. Qualifications

[101] Éric Groulx was qualified by the Tribunal as an expert surveyor and Canada lands surveyor.

[102] Mr. Groulx was called as an expert witness by the Respondent. He is a surveyor with a Bachelor's degree in Geomatics (1993) and graduate-level credits in remote sensing (1995) from Laval University. He is a member of the Ordre des arpenteurs-géomètres du Québec and the Association of Canada Lands Surveyors.

[103] Mr. Groulx has worked for the Surveyor General Branch since 1997. He has worked in the field of geomatics since 1995. In 2006, he became manager of the Quebec Regional Office of the Surveyor General Branch at Natural Resources Canada.

[104] His expertise in surveying relates primarily to Indian reserves. As part of his work, he has dealt with several files involving the creation of Indian reserves in Quebec, additions to reserve lands, specific and comprehensive land claims and other territorial issues. He has been called

upon to assist with or participate in land claims negotiations to issue opinions for both parties when they could not reach an agreement, notably by preparing the first map of the disputed territory for the purpose of the negotiations.

[105] He specializes in the analysis of land titles and historical documents, the production of maps and field notes, including land surveys, the production of digital cartographic and orthophotographic maps, area calculation, the integration of multi-source numerical data, land registers and the provision of advice and opinions.

[106] In addition to ordinary management tasks such as supervising staff and budgets, he also prepares and issues survey instructions on behalf of the Surveyor General for Canada lands in Quebec.

[107] In this respect, Mr. Groulx testified as follows:

[TRANSLATION]

Therefore, we often act at the request of the federal government, which asks us to participate, but in our role as surveyor, Canada lands surveyor, well, we are somewhat neutral; what we reproduce is, say, what emerges from the survey of the facts, . . . [Transcript of the hearing, January 21, 2014, at pp 240–41]

[108] Cross-examined on what he meant by [TRANSLATION] “somewhat neutral”, Mr. Groulx corrected himself and stated that he was not somewhat neutral, he was simply neutral. When a reserve area is to be selected, he issues a survey opinion and is neutral (transcript of the hearing, January 22, 2014, at pp 12–13).

[109] On June 6, 2013, Mr. Groulx received an email from André Cadieux of the Department of Indian Affairs asking him to act as an expert witness on surveying for the Respondent in this claim. On June 17, 2013, a meeting was held between Crown counsel and representatives from the Department of Indian Affairs to discuss his mandate, a mandate that he accepted following the meeting.

2. Opposing expert opinion

[110] In his report, entitled *Contre-expertise en arpentage et en géomatique* (Exhibit D-18), Éric Groulx describes his mandate as aiming to validate the elements of Dr. Marche's expert report on surveying and geomatics. To do so, he adopted the following approach:

1. review the relevant documentation in the record and perform any necessary additional research;
2. evaluate and comment on the methods and conclusions presented in Dr. Marche's report; and
3. present his expert opinion on what surveying and geomatics methods should have been used.

[111] Mr. Groulx stated that his mandate was not to perform land surveys, calculate the present area of the reserve, resurvey it or evaluate the area calculations already performed. His mandate was limited to reviewing the methods and principles applied by Dr. Marche in his expert report and to giving his opinion of them in light of generally accepted surveying and geomatics practices (transcript of the hearing, January 21, 2014, at pp 253–54).

[112] However, during his voir dire, Éric Groulx also described his mandate as follows:

[TRANSLATION]

Well, the mandate I would say the first questions asked in the context of that mandate were: can one locate the Indian reserve and can one describe its official boundaries and what it contains? Therefore, to describe or demonstrate the area. Those were the first questions.

Then we were asked to provide an opposing expert opinion with respect to the work of Mr. Claude Marche, providing an opposing opinion in relation to anything to do with surveying and geomatics. [Transcript of the hearing, January 21, 2014, at pp 250–51]

[113] When questioned as to why his mandate did not include conducting land surveys or determining the area of the Opitciwan Reserve, Mr. Groulx replied as follows:

[TRANSLATION]

Well, it's mainly because there is the issue of the cost of conducting land surveys that is a factor. The other thing was . . . we were not being asked, as experts, to provide numbers, we were being asked to validate numbers, so we did not need to conduct land surveys, as such. [Transcript of the hearing, January 21, 2014, at p 254]

[114] Also, when asked whether the first two points (whether one could locate the Indian reserve and evaluate its area) could be found in his report, Mr. Groulx replied in the affirmative, stating that they had been answered indirectly with the statement that Mr. Rinfret's survey was consistent, accurate and properly scaled. Therefore, he was able to say, by referring to the statutes and orders in council, that the current Indian reserve was Block A of Toussaint Township, as surveyed by Mr. Rinfret. By relying in addition on his general knowledge of the territory and his field observations, he could locate the reserve. He added that this was free information available online to anyone. With respect to the area of the Opitciwan Reserve, he had the following to say:

[TRANSLATION]

As I was explaining, the present area of the reserve is based on the orders in council, all that, which is Block A of Toussaint Township, as surveyed by surveyor Claude Rinfret. In his survey plans, the area was two thousand two hundred ninety acres (2,290 a). [Transcript of the hearing, January 22, 2014, at p 35]

[115] In his report, Mr. Groulx began by reviewing the lands history of the Opitciwan Indian Reserve in order to situate it. He then analyzed the work of Canada land surveyors White and Rinfret. Next, he considered the methods of the sources of data used in Dr. Marche's report in connection with his specialization to calculate the areas affected by the raising of the reservoir. Finally, he addressed the concepts of high water mark and slope of the reservoir. His report is the work of a multidisciplinary team, but the names of his collaborators are not indicated.

[116] Mr. Groulx's initial conclusion is that Dr. Marche has committed at least three major errors in his analysis of Mr. White's survey:

1. He confuses magnetic north, as surveyed by Mr. White, with true north, thereby creating an orientation error when he superimposes Mr. White's survey plan over the topographic or bathymetric maps.

2. He alters the scale of the survey plan and distorts the representation of the shore to make it consistent with the bathymetric curves.
3. Starting from two mistaken premises, he calculates and presents an area based on Mr. White's survey work that is far from reality.

[117] Mr. Groulx added that, in any case, Dr. Marche's efforts to demonstrate that the area calculated by Mr. White was 1,430 acres were incorrect. He concluded instead that the actual area of the reserve calculated by Mr. White was 2,760 acres, despite the fact that 2,290 acres was recorded on the survey plan, but that that plan could not be relied upon regardless because it had been nullified in 1943.

[118] As for Mr. Rinfret's survey, Mr. Groulx noted that, according to Dr. Marche, some parts of Mr. Rinfret's work were inconsistent with the instructions he had been issued.

[119] Mr. Groulx explained, however, that Mr. Rinfret had carried out the instructions he had received, which were to calculate the southern boundary based on the high water mark and not based on the shoreline as Dr. Marche has done. He added that the location of the reserve boundary on the reservoir side was essential to an accurate calculation of the area of the reserve, and to the calculation that would then lead to the determination of how much territory was lost from the reserve (Exhibit D-18, at p 8).

[120] Therefore, he argued, a survey of the average high water mark had been conducted by Mr. Rinfret, and the area of 2,290 acres had been respected. The survey plan was produced and filed with the DLF and approved by the relevant provincial authorities. Mr. Rinfret did not base his work on Mr. White's. It was therefore an error to use Mr. White's plan as Dr. Marche did to calculate the loss of reserve territory.

[121] Mr. Groulx stated that one of the major errors committed by Dr. Marche was to allege that Mr. Rinfret had set the shoreline at a little bit above the level of 1,324 feet, specifically, at 1,324.69 feet.

[122] In his view, there was a distinction to be made between the water level on the day of the survey, also known as the shoreline, and the high water mark. Mr. Rinfret also distinguished these in his notebook (Exhibit D-18, Figure 7, at p 28). According to Mr. Groulx, the average high water mark defines the property line and translates into the highest high water level, without overflow or flooding. It is a line marked at ground level by a visible change in vegetation. It develops with time by the effects of the waves and the water level (transcript of the hearing, January 23, 2014, at pp 17–19); it takes several years to form (about 15 to 20 years) and several years to change. Exceptional flooding will not modify the high water mark, nor does it change when the waters recede. It is therefore a physical boundary in the soil observable by the surveyor regardless of the water level on the day the land survey is conducted. However, it is a line that evolves over time.

[123] Mr. Groulx therefore concluded that Dr. Marche's claims to the effect that Mr. Rinfret used the shoreline to set the boundaries of the reserve and calculate its area were therefore unfounded. Similarly, all of his analyses of the area or of the loss of territory based on those claims were incorrect.

[124] Mr. Groulx also argued that, based on the incorrect assumption that Mr. Rinfret had surveyed the shoreline, Dr. Marche had noted that Mr. Rinfret had not taken into account a provision for future flooding. According to Mr. Groulx, the letter of August 29, 1943, from Mr. Rinfret to Mr. Peters showed that Mr. Rinfret took the necessary measures to validate the impact of a future flood by speaking directly to representatives of the provincial government (JBD, at tab 339).

[125] He concluded that Dr. Marche had started with basic premises that were incorrect and that, accordingly, the latter's findings regarding the loss of reserve territory were inaccurate and unsustainable, even if it were accepted that his hydric forecasting method had been appropriate, a method he was not authorized to use.

[126] Mr. Groulx was of the view that in his evaluation of the calculation of the area and loss of territory, Dr. Marche had failed to take into account basic concepts relating to the determination

of boundaries of public and private lands in hydrous environments that could affect the area of the reserve over time.

[127] He added that the accuracy of the data as well as the concepts, rules and tables to be applied for the purposes of delimiting the reserve and calculating the area, any encroachment on it and any resulting loss of territory was of the utmost importance. However, he argues, the data used by Dr. Marche were not sufficiently reliable to determine the loss of territory accurately, fairly and reliably, even if the other premises regarding surveying were correct, which he did not believe to be the case.

[128] In addition, he was of the view that Dr. Marche could not use a 20-year recurrence interval to calculate the area of the reserve and any encroachment on it. It was the high water mark that had to be used. This factor alone, according to Mr. Groulx, invalidated Dr. Marche's conclusions.

[129] According to Mr. Groulx, to calculate a loss of territory, Dr. Marche had engaged in a theoretical exercise with data that lacked the accuracy required for such an analysis. He had also referred to the Policy, which, Mr. Groulx argued, did not involve boundary delimitation or constraint in connection with property law. The high water mark defined in the Policy and that defined in article 919 of the *Civil Code of Québec* (the "CCQ") differ. The first was established for environmental reasons and implies an overflow, while the definition in article 119 of the CCQ was established for land purposes and does not involve any overflow. As for the 20-year flood or recurrence interval, the Policy uses it to define the floodplain. In his view, Dr. Marche had used several concepts that were not appropriate to a discussion about territorial delimitation.

[130] According to Mr. Groulx, [TRANSLATION] "accurate field survey measurements would be required to confirm beyond any doubt that the water level near the reserve is higher than that near the dam. That would allow for the validation or invalidation of Mr. Marche's claims to that effect and, if necessary, measure their amplitude".

D. Christian Gagnon

1. Qualifications

[131] Dr. Christian Gagnon was called as an expert witness by the Respondent and was qualified by the Tribunal as an expert in geochemistry.

[132] Dr. Gagnon holds a PhD in geochemical oceanography. He has also pursued post-doctoral studies in marine sciences at the State University of New York. He has more than 20 years' experience in environmental chemistry. He works as a scientific researcher at Environment Canada on various issues involving chemical contamination. Over the course of his career, he has received several distinctions and grants and has written extensively, alone or in collaboration with other scientists.

[133] In October 2013, he received from the Litigation Management and Resolution Branch, in collaboration with Justice Canada, the mandate to validate Dr. Marche's methods, statements and conclusions with respect to the issue of water contamination.

2. Opposing expert opinion

[134] In November 2013, in response to Dr. Marche's expert report dealing with water quality, he produced a report entitled *Contre-expertise en géochimie* (Exhibit D-41).

[135] In his report, he stated the following:

- (a) An increased concentration of the end product of decaying organic matter, primarily humic substances, could not in and of itself, have made the reservoir waters unfit for consumption (Exhibit D-41, at p 6).
- (b) Despite the potential impact of hydrological changes on natural processes, the air-water exchange at the surface allows for the oxygenation of the reservoir water, like in any other large lake system (Exhibit D-41, at p 6).
- (c) The decrease in the rate of renewal does not prevent the evacuation of the so-called [TRANSLATION] "generalized" contamination (Exhibit D-41, at p 7).

- (d) Land clearing, a little-known technique at the time, but recommended today, would have been a way to minimize the environmental problems associated with the decomposition of large quantities of organic matter, if applicable (Exhibit D-41, at p 7).
- (e) An acidification of the waters at that time cannot be confirmed without the existence of factual data demonstrating an inability to neutralize the acidification of that aquatic system. This information was absent from Dr. Marche's report. Such a finding can therefore not be confirmed without the appropriate factual data (Exhibit D-41, at p 7).
- (f) An increase in the end products of decaying organic matter, primarily humic substances, does not represent a risk of chemical contamination for human consumption or for the environment (Exhibit D-41, at p 8).
- (g) The increase in turbidity is not necessarily automatically associated with greater exposure to heavy metals and other contaminants that may be absorbed in the solid phase. Particles in suspension may favour the elimination of metals from the water column (Exhibit D-41, at p 8).
- (h) Despite the significant resuspension of fluvio-glacial matter as a result of shoreline erosion, there is nothing to indicate that a particular contaminant contained in the eroded material was disseminated (Exhibit D-41, at p 8).
- (i) The addition of humic substances to the groundwater is a natural process, and these substances, partly retained by the soil, are not toxic (Exhibit D-41, at p 9).
- (j) The flow of reservoir waters towards the water table probably could have been observed, but this addition of natural organic matter does not in itself represent a toxicological risk (Exhibit D-41, at p 9).
- (k) The mere consumption of the water cannot be a source of mercury exposure. The consumption of fish might instead be the cause. Again, however, there is a factual vacuum on this point (Exhibit D-41, at p 10).

IV. ANALYSIS

A. Admissibility of Dr. Marche's expert report and testimony

1. The Respondent's application

[136] In its memorandum, the Respondent sought to have sections 4, 5, 6, 7 and 8 of Dr. Marche's report and the related portions of his testimony struck on the ground that they deal with subjects in the exclusive domain of land surveyors. It also sought to have sections 9, 10 and 11 of Dr. Marche's report and his testimony struck on the ground that he lacks the qualifications necessary to reach conclusions about the chemical processes of the waters that do or do not contribute to their contamination.

[137] During the oral arguments, the Respondent broadened its application. It sought the rejection of the report as a whole, further arguing that it was unreliable. Finally, it submitted that if the report were held to be admissible, the evidentiary weight of the information submitted would be very slight.

[138] The Respondent submitted that to fulfill his mandate, Dr. Marche had used surveying techniques to calculate areas on the basis of survey plans and other maps he had gathered. He had commented on the survey plans of Messrs. White and Rinfret, located the boundaries in space, and on that basis, calculated the area of ownership, without having the proper qualifications.

[139] Furthermore, the Respondent submitted that in determining the accuracy of the survey plans of Messrs. White and Rinfret, Dr. Marche had performed a professional act that infringed on the exclusive domain of land surveyors, thereby contravening sections 34, 42 and 43 of the *Land Surveyors Act*, RSQ, c A-23.

[140] On the basis of the testimony of Dr. Leclerc and Mr. Groulx, the Respondent argued that, to achieve his ends, Dr. Marche had used an inappropriate concept, an inappropriate method, and incomplete and inaccurate data and had committed a number of errors. Moreover, according to the Respondent, he mixed up the concepts by confusing "capacity", "volume" and "area" and

demonstrated his lack of understanding of land boundaries. The Respondent added that, at best, Dr. Marche had provided hypotheses, but that these had no basis in reality. According to the Respondent, all of this evidence was merely misleading to the Tribunal.

[141] Finally, the Respondent argued that the issue of whether the water was fit to drink was an issue relating to geochemistry and toxicology, fields in which Dr. Marche had no qualifications. In its view, the issue was not the presence of turbidity, but rather whether the water was contaminated and unfit to drink.

[142] The objections having been taken under advisement, they must now be decided.

2. Analysis

[143] In *R v Mohan*, [1994] 2 SCR 9 at para 17, 114 DLR (4th) 419 [*Mohan*], the Supreme Court of Canada recalled that the admissibility of expert evidence is based on the following factors: relevance, whether the trier of fact requires assistance, the absence of exclusionary rules, and whether the expert has the necessary qualifications.

[144] Logically relevant evidence may be excluded if its probative value is overborne by its prejudicial effect, if the time required is not commensurate with its value or if it is misleading in the sense that its effect on the trier of fact is out of proportion to its reliability (*Mohan*, at p 21; *Samson Indian Nation and Band v Canada*, 199 FTR 125 at para 18, [2001] 2 CNLR 353).

[145] Again in *Mohan*, the Supreme Court of Canada noted that the evidence must be given by a witness who is shown to have acquired special or peculiar knowledge through study or experience in respect of the matters on which he or she undertakes to testify (*Mohan*, at para 27).

[146] During his voir dire, Dr. Marche stated that his training had led him to work in the field of dams, a multidisciplinary area requiring knowledge of hydraulics, dam structures, hydrology for the water supply, and concern for, with respect to the environment surrounding the dam, the quality of the impounded water and the safety of the downstream populations. Hydraulic engineers must also define and map flood risks to populations likely to be affected, and, where

required, develop emergency measures plans with the stakeholders in response to the identified risks.

[147] As for the cartographic work, Dr. Marche explained that hydraulic engineers work on flows and water bodies. To perform hydraulic calculations, they need to know the bathymetry and depths of the reservoirs and runoffs. When the water level changes because of a modified flow rate resulting from management of the reservoir, the hydraulic engineer must understand precisely how the topography evolves in the zone in which the level changes. Cartography is therefore necessary. The work consists of the transcription of field data onto plans and drawings and the geolocation or georeferencing of the plans. Hydraulic engineers must gather all of the data required for their calculations. Surveying is the final step, completing the work if necessary.

[148] Thus, he added, the survey conducted by a surveyor is one method among others used by dam hydraulic engineers to obtain data. It is one of the most precise methods, but it is the final step when all other available means, such as maps, aerial photographs and photogrammetry have been judged as constituting a reliable whole. Most of the time, the hydraulic engineer requests a survey to validate with precision the work carried out, and to verify in the field the image provided by the cartography work.

[149] Dr. Marche added that as a civil engineer, like all civil engineers, he had received survey training. He had attended surveying courses and a camp and had applied for several internships in that field. This is complementary training to that of a hydraulic engineer, which does not, however, qualify one as a surveyor within the meaning of the *Land Surveyors Act*, RSQ, c A-23.

[150] Dr. Marche admitted that he was not a chemist and that, when working on water quality issues, he worked with other professionals.

[151] The evidence shows that Dr. Marche is an engineer specialized in dam hydraulics. As part of his practice, he has been asked to perform calculations to define surfaces using all available means, including maps, aerial photographs and photogrammetry.

[152] Surveyors do not have a monopoly on area measurement technology, and engineers are also qualified to use these techniques, particularly the photogrammetric and planimetric methods,

to calculate area (transcript of the hearing, January 20, 2014, at pp 21–22, 186–87; transcript of the hearing, May 22, 2014, at p 223). Surveyor Éric Groulx admitted that photogrammetry is a technique belonging to the field of geomatics; in the sense that it is not used as part of a survey mandate (transcript of the hearing, January 21, 2014, at pp 251–52). The evidence establishes that Dr. Marche is qualified to deal with and perform geomatics calculations.

[153] Dr. Marche performed calculations to determine the altitude of the shoreline on Mr. Rinfret’s survey plan because the latter had failed to include it, and it was an important variable. This work falls under his mandate as a hydraulic engineer. He did not draw up a survey plan. He provided an opinion on the accuracy of the survey plans of Messrs. White and Rinfret for a purpose related to his mandate as a hydraulic engineer and not as part of a surveying mandate.

[154] In *R v Marquard*, [1993] 4 SCR 223 at p 244, 108 DLR (4th) 47, the Supreme Court of Canada, in a judgment penned by Justice McLachlin, wrote:

Important as the initial qualification of an expert witness may be, it would be overly technical to reject expert evidence simply because the witness ventures an opinion beyond the area of expertise in which he or she has been qualified.

[155] I am of the view that Dr. Marche’s training and his experience in hydraulics have provided him with sufficient expertise to testify about the flooded area of the reserve.

[156] As for the issue of water quality, Dr. Marche is definitely qualified to explain the behaviour of the water following the filling of the reservoir and the impact of the water level fluctuations resulting from the operation of the reservoir.

[157] However, I do not find that he is qualified to testify about the characterization and chemical interactions of different elements and their impact on human health.

[158] That said, there is no reason to declare Dr. Marche’s report inadmissible. In fact, in several respects, it deals with the physical effects of the filling and the water level fluctuations of the reservoir, which he is qualified to discuss. However, I will disregard his conclusions about the chemical process that occurs in the reservoir and its impact on the health of the Atikamekw. I will also disregard his conclusions about the potential contamination due to problems relating to

methylmercury. Moreover, it has not been established on a balance of probabilities that the health problems of the Atikamekw are related to their fish consumption.

[159] However, I note that Dr. Marche's statements about the connections between the water quality and the health problems of the Atikamekw of Opitciwan are more nuanced, as appears from his testimony at the hearing, in which he stated the following:

[TRANSLATION]

My reasoning is clear, I am not a physician who can declare that people will suffer from illnesses related to the water; I am an engineer and I think like a hydraulic engineer, the type of water I have in this reservoir, I should warn the population not to drink it. That is the only conclusion that I can reach. [Transcript of the hearing, January 21, 2014, at p 33]

[160] As for the issue of the unreliability of the information provided by Dr. Marche, it must be reviewed in light of the testimony and opposing expert opinions of the experts called by the Respondent. I will review all of these in the section dealing with the alleged breaches of the fiduciary duty.

B. Is the Crown bound by a legal and fiduciary duty?

[161] The issues raised in this dispute involve the flooding of part of the lands of the Opitciwan Reserve before and after its creation.

[162] For the reasons set out in decision 2016 SCTC 6 in File No. SCT-2004-11 and those that follow, I find that the federal Crown is subject to a legal and fiduciary duty in this respect.

[163] The federal Crown was bound by an enforceable legal and fiduciary duty to the Atikamekw of Opitciwan to ensure that the process for creating the Opitciwan Reserve was implemented. When making decisions concerning the creation of the reserve, it was bound by the basic obligations of loyalty in the discharge of its mandate, providing full disclosure appropriate to the subject matter and acting with ordinary prudence with a view to the best interest of the Aboriginal beneficiaries.

[164] In this case, the federal Crown had control over a cognizable Aboriginal interest and it had sufficient discretion to render the Atikamekw of Opitciwan vulnerable to the exercise of that

control. It had an obligation to protect their rights of use and enjoyment. However, in the context of the creation of the Opitciwan Reserve, the federal Crown allowed for it to be surveyed in 1943, when it knew or ought to have known that the reserve would be flooded again. In fact, on February 18, 1942, at least one month before the survey, the Government of Quebec had authorized the QSC to elevate the crest of the Gouin dam by raising the full reservoir level from 1,325 feet to 1,328 feet.

[165] Besides the fact that the evidence does not show that this increase had received a prior authorization from the Governor in Council, when it made arrangements with the DLF to establish the area and location of the Opitciwan Reserve for the purpose of the final survey, the federal Crown had a duty to act with great prudence with a view to the best interest of the Atikamekw of Opitciwan, considering that the provisional reserve had already been flooded in 1918–19. Although it had been informed multiple times of the flooding problems affecting a portion of the reserve, especially by its own Agent Larivière, even before the raising of the crest of the reservoir, it took no measures to protect the reserve and preserve the interests of the Atikamekw. I will discuss the federal Crown’s failures further below.

[166] After the reserve was created in January 1944, the federal Crown had a duty to preserve the band’s quasi-proprietary interest. However, after being created, the reserve was partially flooded multiple times. Furthermore, in 1955–56, the Province of Quebec authorized a further raising of the crest of the spillway, bringing the full reservoir level to 1,329 feet. Once again, the federal Crown knew or ought to have known that this second increase would lead to the flooding of the reserve surveyed by Mr. Rinfret, and it did nothing.

[167] After its creation, the flooding of part of the Opitciwan Reserve constituted a form of use of the reserve that should have been the subject of a consultation of the Atikamekw of Opitciwan and authorizations required by the *Indian Act*.

[168] The applicable provisions of the *Indian Act* bear mentioning in this respect.

[169] In the *Indian Act*, RSC 1927, c 98 (the “1927 Act”), the relevant provisions read as follows:

34. No person, or Indian other than an Indian of the band, shall without the authority of the Superintendent General, reside or hunt upon, occupy or use any land or marsh, or reside upon or occupy any road, or allowance for road, running through any reserve belonging to or occupied by such band.

2. All deeds, leases, contracts, agreements or instruments of whatsoever kind made, entered into, or consented to by any Indian, purporting to permit persons or Indians other than Indians of the band to reside or hunt upon such reserve, or to occupy or use any portion thereof, shall be void.

39. If the possession of any lands reserved or claimed to be reserved for the Indians, or of any lands of which the Indians or any Indian or any band or tribe of Indians claim the possession or any right of possession, is withheld, or if any such lands are adversely occupied or claimed by any person, or if any trespass is committed thereon, the possession may be recovered for the Indians or Indian or band or tribe of Indians, or the conflicting claims may be adjudged and determined or damages may be recovered in an action at the suit of His Majesty on behalf of the Indians or Indian or of the band or tribe of Indians entitled to or claiming the possession or right of possession or entitled to or claiming the declaration, relief or damages.

2. The Exchequer Court of Canada shall have jurisdiction to hear and determine any such action.

3. Any such action may be instituted by information of the Attorney General of Canada upon the instructions of the Superintendent General of Indian Affairs.

4. Nothing in this section shall impair, abridge or in anywise affect any existing remedy or mode of procedure provided for cases, or any of them, to which this section applies.

48. No portion of any reserve shall be taken for the purpose of any railway, road, public work, or work designed for any public utility without the consent of the Governor in Council, but any company or municipal or local authority having statutory power, either Dominion or provincial, for taking or using lands or any interest in lands without the consent of the owner may, with the consent of the Governor in Council as aforesaid, and subject to the terms and conditions imposed by such consent, exercise such statutory power with respect to any reserve or portion of a reserve.

2. In any such case compensation shall be made therefor to the Indians of the band, and the exercise of such power, and the taking of the lands or interest therein and the determination and payment of the compensation shall, unless otherwise provided by the order in council evidencing the consent of the Governor in Council, be governed by the requirements applicable to the like proceedings by such company, municipal or local authority in ordinary cases.

3. The Superintendent General shall, in any case in which an arbitration is had, name the arbitrator on behalf of the Indians, and shall act for them in any matter relating to the settlement of such compensation.

4. The amount awarded in any case shall be paid to the Minister of Finance for the use of the band of Indians for whose benefit the reserve is held, and for the benefit of any Indian who has improvements taken or injured.

51. Except as in this Part otherwise provided, no release or surrender of a reserve, or a portion of a reserve, held for the use of the Indians of any band, or of any individual Indian, shall be valid or binding, unless the release or surrender shall be assented to by a majority of the male members of the band of the full age of twenty-one years, at a meeting or council thereof summoned for that purpose, according to the rules of the band, and held in the presence of the Superintendent General, or of any officer duly authorized to attend such council, by the Governor in Council or by the Superintendent General.

...

3. The fact that such release or surrender has been assented to by the band at such council or meeting shall be certified on oath by the Superintendent General, or by the officer authorized by him to attend such council or meeting, and by some of the chiefs or principal men present thereat . . .

4. When such assent has been so certified, as aforesaid, such release or surrender shall be submitted to the Governor in Council for acceptance or refusal.

[170] The 1927 Act was consolidated, and its provisions were amended by the *Indian Act*, RSC 1952, c 149 (the “1952 Act”).

[171] The content of section 36 of the 1927 Act is found, somewhat modified, in sections 30 and 31 of the 1952 Act, which read as follows:

30. A person who trespasses on a reserve is guilty of an offence and is liable on summary conviction to a fine not exceeding fifty dollars or to imprisonment for a term not exceeding one month or to both fine and imprisonment.

31. (1) Without prejudice to section 30, where an Indian or a band alleges that persons other than Indians are or have been

- (a) unlawfully in occupation or possession of,
- (b) claiming adversely the right to occupation or possession of, or
- (c) trespassing upon

a reserve or part of a reserve, the Attorney General of Canada may exhibit an Information in the Exchequer Court of Canada claiming, on behalf of the Indian or the band, the relief or remedy sought.

(2) An Information exhibited under subsection (1) shall, for all purposes of the *Exchequer Court Act*, be deemed to be an action or suit by the Crown within the meaning of paragraph (d) of section 29 of that Act.

(3) Nothing in this section shall be construed to impair, abridge or otherwise affect any right or remedy that, but for this section, would be available to Her Majesty or to an Indian or a band.

[172] The content of section 48 of the 1927 Act is found, somewhat modified, in section 35 of the 1952 Act:

35. (1) Where by an Act of the Parliament of Canada or a provincial legislature Her Majesty in right of a province, a municipal or local authority or a corporation is empowered to take or to use lands or any interest therein without the consent of the owner, the power may, with the consent of the Governor in Council and subject to any terms that may be prescribed by the Governor in Council, be exercised in relation to lands in a reserve or any interest therein.

(2) Unless the Governor in Council otherwise directs, all matters relating to compulsory taking or using of lands in a reserve under subsection (1) shall be governed by the statute by which the powers are conferred.

(3) Whenever the Governor in Council has consented to the exercise by a province, authority or corporation of the powers referred to in subsection (1), the Governor in Council may, in lieu of the province, authority or corporation taking or using the lands without the consent of the owner, authorize a transfer or grant of such lands to the province, authority or corporation, subject to any terms that may be prescribed by the Governor in Council.

(4) Any amount that is agreed upon or awarded in respect of the compulsory taking or using of land under this section or that is paid for a transfer or grant of land pursuant to this section shall be paid to the Receiver General of Canada for the use and benefit of the band or for the use and benefit of any Indian who is entitled to compensation or payment as a result of the exercise of the powers referred to in subsection (1).

[173] The content of section 51 of the 1927 Act is found, somewhat modified, in sections 37 to 41 of the 1952 Act:

37. Except where this Act otherwise provides, lands in a reserve shall not be sold, alienated, leased or otherwise disposed of until they have been surrendered to Her Majesty by the band for whose use and benefit in common the reserve was set apart.

38. (1) A band may surrender to Her Majesty any right or interest of the band and its members in a reserve.

(2) A surrender may be absolute or qualified, conditional or unconditional.

39. (1) A surrender is void unless

- (a) it is made to Her Majesty,
- (b) it is assented to by a majority of the electors of the band at
 - (i) a general meeting of the band called by the council of the band, or
 - (ii) a special meeting of the band called by the Minister for the purpose of considering a proposed surrender, and
- (c) it is accepted by the Governor in Council.

(2) Where a majority of the electors of a band did not vote at a meeting called pursuant to subsection (1) of this section or pursuant to section 51 of the *Indian Act*, chapter 98 of the Revised Statutes of Canada, 1927, the Minister may, if the proposed surrender was assented to by a majority of the electors who did vote, call another meeting by giving thirty days' notice thereof.

(3) Where a meeting is called pursuant to subsection (2) and the proposed surrender is assented to at the meeting by a majority of the members voting, the surrender shall be deemed, for the purpose of this section, to have been assented to by a majority of the electors of the band.

(4) The Minister may, at the request of the council of the band or whenever he considers it advisable, order that a vote at any meeting under this section shall be by secret ballot.

(5) Every meeting under this section shall be held in the presence of the superintendent or some other officer of the Department designated by the Minister.

40. When a proposed surrender has been assented to by the band in accordance with section 39, it shall be certified on oath by the superintendent or other officer who attended the meeting and by the chief or a member of the council of the band, and shall then be submitted to the Governor in Council for acceptance or refusal.

41. A surrender shall be deemed to confer all rights that are necessary to enable Her Majesty to carry out the terms of the surrender.

[174] In short, these reasons and the provisions of the *Indian Act* show that the federal Crown was bound by legal and fiduciary duties flowing from the power it exercised in the reserve creation process and the obligations that arose when the reserve was created.

C. Did the federal Crown breach its fiduciary duties?

1. The reduction in area of the reserve

(a) The evidence relating to the flooding of part of the reserve

[175] I will now focus on the probative value to be assigned to each of the expert reports.

[176] Experts assist the Tribunal by applying a particular scientific skill to a set of facts and expressing an opinion as to what conclusions may be drawn as a result (*R v Howard*, [1989] 1 SCR 1337 at para 19). However, the opposing opinions and testimony of Mr. Groulx and Dr. Leclerc are primarily assessments of the opinions provided by Dr. Marche, judging the reliability of the information he provided and the methods he used. They do not address the main issue.

[177] To some extent, the approach adopted by Mr. Groulx and Dr. Leclerc intrudes on the role of the Tribunal, which is to decide among diverging expert opinions on the issue.

[178] That said, despite certain weaknesses revealed by Dr. Leclerc and Mr. Groulx in Dr. Marche's report, particularly with respect to the accuracy of certain data, they have not persuaded me that his data, methods and conclusions are so unreliable that his report and testimony must be rejected in their entirety.

[179] On the contrary, I consider Dr. Marche's work to be useful, relevant and reliable. He testified without dodging a single question. His explanations were understandable and credible.

[180] As for Dr. Leclerc, I understand that this was his first time testifying before a court as an expert witness. However, he does not seem to have fully understood the role of an expert witness called to testify before the court.

[181] Thus, it was difficult to obtain from him clear answers to questions that were quite straightforward and, above all, relevant; he argued with the Claimant's counsel (transcript of the hearing, May 21, 2014, at pp 45–49, 59, 88); he considered a question irrelevant (transcript of the hearing, May 21, 2014, at p 88, lines 15 and 16); he was on the defensive, insisting that people were trying to force him to say things he had not said (transcript of the hearing, May 21, 2014, at pp 60–62); he felt attacked: [TRANSLATION] "Let's see what you want to make me say next" (transcript of the hearing, May 21, 2014, at p 32); he digressed (see especially the transcript of the hearing, May 21, 2014, at pp 20–31), he answered questions reluctantly or refused to answer them (transcript of the hearing, May 21, 2014, at pp 63–64, 66, 68–71, 75–76, 91–101); he made statements only to deny them subsequently. That was the case, for example,

with the questions relating to the flooding of the reserve (transcript of the hearing, May 20, 2014, at p 139, lines 19–22, at p 140, lines 20–25, and transcript of the hearing, May 21, 2014, at p 34, lines 11–13, at p 35, lines 7–16 and at pp 36–39) and those relating to the difference between a model and a rule (transcript of the hearing, May 21, 2014, at p 29, lines 18–19 and at p 30, lines 7–10); his responses are laboured, especially his responses to questions about the confidence interval (transcript of the hearing, May 21, 2014, at pp 75–90); the difficulty was such that the Tribunal had to intervene on a few occasions and the hearing was suspended to allow counsel to speak with his expert (transcript of the hearing, May 21, 2014, at p 66).

[182] That is not all: Dr. Leclerc echoed Mr. Groulx’s criticisms and conclusions (transcript of the hearing, May 21, 2014, at pp 112–17, transcript of the hearing, May 20, 2014, at p 118, lines 23–25 and at p 119, lines 1–4) and corrected his testimony by adjusting it based on instructions from his counsel (on the Policy, transcript of the hearing, May 21, 2014, at pp 214–15, 255–56).

[183] Experts must serve the Tribunal and be impartial. In Dr. Leclerc’s case, it is clear that he was biased in this case and that in some instances, he took on the role of a party rather than that of an expert. In many respects, his testimony fell short of the degree of impartiality that is the hallmark of an expert opinion. All of the above-noted deficiencies affect the probative value of his testimony and detract from its reliability.

[184] As for Mr. Groulx, he sometimes hesitated to answer questions clearly, particularly those regarding the status of Mr. White’s survey plan or whether Mr. Rinfret had or had not correctly carried out his duties by accepting Mr. Boisvert’s answer to the effect that the maximum increase planned was only three inches. However, the limited scope of Mr. Groulx’s mandate will be taken into account in the analysis.

[185] That said, in general, his opposing opinion and testimony are useful and relevant. Despite everything, I cannot find that there was no encroachment. My reasons follow.

[186] First, the evidence shows that, until 1942, the water level authorized at the crest of the spillway was 1,325 feet. In 1942, it was raised to 1,328 feet and, in 1955, raised again to 1,329 feet. There has been no new survey or verification of the area of the reserve since 1943.

[187] The difficulty in the file stems from the fact that in 1943, Mr. Rinfret specified neither the high water mark used, nor the altitude.

[188] Relying on a technique used by dam operators, Dr. Marche established a reserve level vs surface area relationship (using five planimetered surface areas, namely, a TrakMaps map, a map at a scale of 1:50,000, an aerial photograph, and two maps at a scale of 1:20,000). This technique enabled him to determine the level of the water line used by Mr. Rinfret, which was necessary to determine a level of 1,324.69 feet for the reserve. He therefore concluded that any increase in the water levels above 1,324.69 feet would flood part of the reserve delimited by Mr. Rinfret and reduce its usable area.

[189] He specified that the regression coefficient R^2 indicates the quality of the rule used. The value of $R^2 = 0.9992$ indicates that he can apply this rule and therefore a flooding rate of 27.26 acres per foot without fear of introducing additional uncertainty. In his view, the flooding rate of 27.26 acres for each foot the reservoir was raised is the most likely rate and must be applied. The rate is not necessarily perfect, but it is plausible.

[190] Based on his calculations, Dr. Marche concluded that the increases in 1942 and 1955 of the maximum operating levels led to the flooding of part of the reserve delimited by Mr. Rinfret and reduced its usable area. Because the water in the spillway could rise as high as 1,325 feet at the dam, the DIA therefore accepted in 1943 that part of the area of the reserve would be located in the first foot of the floodplain.

[191] Mr. Groulx and Dr. Leclerc disagreed with Dr. Marche's data and values.

[192] Mr. Groulx identified the location of the reserve using a 1943 map. He stated several times that he had not been given a mandate to calculate the high water mark used by Mr. Rinfret, and concluded that Mr. Rinfret's survey plan was accurate, properly scaled and consistent with his instructions.

[193] In his view, the area of the reserve had remained unchanged since 1943 for the following reason:

[TRANSLATION]

The area of the reserve has not changed, in the sense that a concession was made . . . there is a concession, Block A, that area is fixed and when . . . so, like I said, there is no need to recalculate the . . . recalculating the area was not part of the mandate.

. . .

It's that the mandate did not instruct us to find out: *Was the area, was the boundary surveyed by Rinfret in the water . . . not in the water?* . . . [Italics in the original; Transcript of the hearing, January 22, 2014, at p 36, lines 7–14 and 18–21]

[194] What I take from this is that, as he himself states, he did not verify the size of the reserve as it exists today.

[195] While he admits that, as a result of the increase in the operating level of the reservoir, it is reasonable to suspect that part of the reserve territory has been lost, Mr. Groulx states that to be able to determine [TRANSLATION] “whether or not the surveyed limits are physically underwater, a land survey is necessary; it is the only way” (transcript of the hearing, January 22, 2014, at p 37).

[196] However, despite affirming that he did not know what Mr. Rinfret had used as the high water mark, he stated that in 1943, all of the territory surveyed by Mr. Rinfret had been located on dry land, out of the water.

[197] It is difficult to understand how Mr. Groulx could make such a statement while claiming not to know the height of the high water mark at the time Mr. Rinfret surveyed the reserve. I will revisit this point.

[198] According to Mr. Groulx, to know whether the area was truly reduced by the raising of the dam's operating level, the present high water mark must be determined and compared with that used by Mr. Rinfret to calculate the surveyed area.

[199] Mr. Groulx explained that the high water mark is determined *in situ* by physical marks left on the ground. It is the result of various elements that modify the shoreline, such as topsoil and heavy growth, which are indicators of the high water mark. The line appears as a result of the repeated action of the water over the course of a number of years. We are talking about 10, 15 or 20 years. It is the regular effects along the shoreline that modify it, and it is not affected by overflows. An event that occurs once a year will not affect the high water mark.

[200] The evidence shows that the average annual water level of the reservoir in 1943, the year of Mr. Rinfret's survey, was about 1,321.5 feet, while it was 1,320 feet when it was impounded in 1920. These levels were measured at the dam. The solid black line in the table of annual levels of the Gouin reservoir between 1920 and 2001 (the "Table") records the average annual water levels and shows a smooth curve. In 1920, the average annual water level was 1,320 feet, and, over the years, it climbed steadily, reaching 1,325 feet in 2001 (JBD, at tab 397).

[201] Despite all of this, when asked on cross-examination whether it was accurate to state that at the time of Mr. Rinfret's survey in 1943, the average water level or high water mark could not have been 1,328 feet, Mr. Groulx responded that he was unable to answer the question, since Mr. Rinfret had not supplied the altitude:

[TRANSLATION]

. . . If Rinfret had given us a number, an altitude, then I could answer that with, "In his work, he put the mark up here, but he says that the water was at this height or he says . . ." some other information. Then, I could make a connection between a number designating an elevation level and the physical mark.

And that's the trouble with the expert opinion, we don't have that information, which means that it is hard to make a statement about, to connect the two. [Transcript of the hearing, January 24, 2014, at pp 130–31].

[202] Confronted with the fact that the maximum level reached at the dam from the time of the impoundment in 1920 to 1943 was 1,327.72 feet, that the size of the reserve is known (2,290 acres) and that Mr. Rinfret's northern boundary is also known and clearly specified, Mr. Groulx eventually admitted that it was possible to determine the shoreline surveyed by Mr. Rinfret by performing calculations and then doing verifications on location:

. . . My northern boundary is known from the survey, I . . . then I would have to calculate the coordinates of each point on the shoreline and then, go to the site and check this coordinate here, at what altitude it is located. That would be the approach. [Transcript of the hearing, January 24, 2014, at p 134, see also pp 176–77].

[203] However, Mr. Groulx did not do this exercise, as he did not consider it part of his mandate.

[204] Also, based on the red line in the Table, which represents the maximum level reached, it can be deduced that Mr. Rinfret did not establish his shoreline any higher than 1,325 feet, as the reservoir had almost never exceeded that maximum prior to 1943. Logically, if we adopt the explanations provided by Mr. Groulx, we must conclude that it is more than likely that in 1943, the heavy growth indicating the high water mark could not have been located above 1,325 feet.

[205] All of the evidence tends to corroborate Dr. Marche's statement that Mr. Rinfret would have surveyed the reserve starting at an altitude of 1,324.69 feet.

[206] After explaining his approach and his calculations, Dr. Marche determined that the portion of the reserve that was permanently submerged was about 109 acres. He explained that permanent submergence means that the lands upstream of a dam can be affected at any time by water up to the maximum level authorized.

[207] According to Dr. Leclerc, Dr. Marche's claim that the flooding was permanent was false, since permanence must be defined in temporal terms, in other words, at all times.

[208] Dr. Leclerc also stated that the flooding, or, more precisely, the increase to the level of 1,329 feet, for example, was not permanent, since the water only reaches that level once every 12 years.

[209] After making several attempts to obtain clear answers to his questions, counsel for the Claimant again reformulated his question and asked Dr. Leclerc whether or not he agreed with the statement that the lands upstream of the dam could be affected at any time by the water up to the maximum level authorized. Dr. Leclerc replied as follows:

[TRANSLATION]

A That's obvious.

Q Okay. Period. That's all. Thank you.

A It's obvious.

Q Thank you. Thank you.

A It's obvious just like it's obvious that . . .

Q Thank you, I didn't . . .

A May I finish?

Q Thank you.

A I allowed you to finish your question, may I finish my answer? There are also lots of other things that are permanent.

The existence of the land is permanent.

The existence of the topography is permanent.

Everything is permanent.

Q That is not the question, Dr. Leclerc.

A And when we are in an interaction like that, when we live next to a watercourse, we are permanently vulnerable to the unexpected with a river. [Transcript of the hearing, May 21, 2014, at pp 65–66].

[210] It was a long debate to produce an obvious answer to a simple question.

[211] As for Dr. Leclerc's other criticisms of the technique used and values selected by Dr. Marche, for the reasons provided at the beginning of this section of the decision, the explanations provided by Dr. Marche are more persuasive.

[212] The Respondent submitted that, as appears from the Table, the maximum annual water level authorized and the annual average showed that there was no flooding, or at least no permanent submergence (JBD, at tab 397).

[213] However, the red line marking the maximum water level reached was above 1,325 feet during more than 45 years between 1944, the year the reserve was created, and 2001. For each

year that the maximum level exceeded the level of 1,325 feet, it is likely that this occurred more than once within the year. This evidence does not establish that the reserve was flooded at all times, but that it was vulnerable to flooding at any time up to the maximum operating limit, which was increased from 1,325 feet to 1,328 feet and later 1,329 feet. This has happened frequently, according to the Table, which also shows that the maximum operating limit of 1,329 feet has been exceeded.

[214] Second, according to Dr. Marche, the history of the operating levels reached shows that, for several reasons that might or might not have depended on the will of the dam operator, the maximum legal limit was exceeded for periods of varying length. Thus, three temporary factors may amplify the flooding, namely, the wind, the waves and the current. This is known as recurrent inundation, which adds to the permanent submergence.

[215] According to Dr. Marche, because the Gouin reservoir has such an irregular shoreline, the winds and waves are less of an influence on the flooding than the currents. He therefore used an energy model to evaluate the effect of the currents on the flooding, while allowing for what he considered a reasonable margin to account for the other factors. To quantify the potential change in elevation between the dam and the reserve resulting from the internal flow of the reservoir, he determined the reservoir's intake and discharge flow rates and its flow paths.

[216] In this way, Dr. Marche calculated the slope between two flow points, evaluating it with the use of the Manning formula (resistance to flow). In his view, the lake's layout of water bodies connected by narrow channels made it well suited for the application of the Manning formula and its hypotheses. For the flow rate, for the purposes of his calculations, he chose a 20-year recurrence interval. After he applied all of the resulting data, his calculations gave him an estimate of about 95 acres of additional lost usable area due to recurrent inundation.

[217] Dr. Leclerc recognized the existence of a gravitational slope in the Gouin reservoir, although he refused to use the word [TRANSLATION] "slope", insisting on characterizing the concept as a [TRANSLATION] "difference in level". However, he added, its value had to be calculated as a function of flow rate. In his view, the value of the Manning coefficient used by

Dr. Marche as well as the values of the geometric parameters used in the equation were inaccurate, as there was not enough information to determine them.

[218] As for the flooding of the sawmill that occurred on the reserve in 1953, which was the subject of a complaint from Agent Larivière, Dr. Leclerc merely considered it a one-time event of little significance.

[219] Mr. Groulx stated that he was not qualified to state that, if there were a slope, the waters would be higher at Opitciwan, even though the reserve is located upstream of the dam. However, he acknowledged that if the terrain were flat, the average level measured at the dam would be the same as that in Opitciwan [transcript of the hearing, January 24, 2014, at pp 123–26).

[220] On cross-examination, he admitted that it was possible for a surveyor to verify whether there was a slope by conducting land surveys at the high water mark, near the reserve, near the dam and in other locations around the reservoir. He had not done the exercise, as it had not been part of his mandate (transcript of the hearing, January 24, 2014, at p 177).

[221] In his opposing expert opinion, Mr. Groulx wrote:

[TRANSLATION]

Therefore, in my view, only accurate survey measurements on the ground would allow for confirmation beyond any doubt that the water level near the reserve is higher than that at the dam. This could validate or invalidate Mr. Marche's claims to this effect and, above all, could quantify the degree of the slope if necessary. [Exhibit D-18, at p 36]

[222] In this case, I do not have to decide based on a standard of proof beyond any doubt, but rather based on a balance of probabilities.

[223] Furthermore, Mr. Groulx admitted that the waves, the increased volume of water and the slope, if the concept were to be accepted, would affect the high water mark.

[224] Again, the evidence points to the plausibility and likelihood of Dr. Marche's conclusions regarding the existence of recurrent inundation of the reserve.

[225] Taking into account all of the circumstances, I find that the explanations provided by Dr. Marche in support of the calculations and conclusions in his report and in response to the criticisms of Dr. Leclerc and Mr. Groulx are persuasive, reasonable and probable, and for the reasons provided at the beginning of this section about the probative value of the testimony, I accept Dr. Marche's explanations.

[226] Third, during his voir dire, Mr. Groulx stated that the Department of Indian Affairs had received an application from the Chief of the Atikamekw of Opitciwan for a new survey of the reserve. He explained that his client was the Department of Indian Affairs, which was the manager of the lands. When the department receives an application for a new survey, its representatives come to his department for a consultation to determine whether it would be appropriate. If he or a representative of his department decides that the existing survey plan is still satisfactory, the application is rejected.

[227] In response to the Chief's application, Mr. Groulx travelled to the Opitciwan Reserve to evaluate the land boundaries and verify whether the markers were still present and whether it would be appropriate to recommend or suggest that the DIA order a completely new survey of the reserve. He testified as follows:

[TRANSLATION]

Q Have you ever been to the reserve of the Atikamekw of Opitciwan?

A Yes, I have gone there a few times, the first few, I can't remember the years, but to do the cartography, so to situate the control points, I went twice for that, and I returned there recently to go . . . well, to go in response to the Chief's application for a new survey of the reserve. We went to check the state of the boundaries, we also went to check the accuracy of our cartography, and at the same time, because we were at the site, we took advantage of that to validate certain points of our opposing expert opinion, to ensure that what we were going to present, well we validated the information before presenting it. [Emphasis added; transcript of the hearing, January 21, 2014, at p 245]

[228] Mr. Groulx next explained that he had verified the markers for the northern boundary of the reserve, since it was documented; he referred to it as an artificial boundary. As for the southern boundary, he submitted that he did not need to verify it, since it was a natural boundary, the high water mark (transcript of the hearing, January 21, 2014, at p 247). He therefore concluded that only the northern boundary needed to be surveyed again (transcript of the

hearing, January 22, 2014, at p 26). It is difficult for the Tribunal to understand how Mr. Groulx could have thought this given the known increase in the dam's operating network several years after Mr. Rinfret's survey. The Tribunal finds his conclusion perplexing.

[229] When cross-examined on his reasons for not suggesting a new survey of the southern boundary, Mr. Groulx replied that, normally, in his practice, he did not conduct new surveys of natural boundaries. He did admit, however, that following an application from the members of the Kitigan Zibi Algonquin First Nation and an analysis of the situation, he concluded that a survey of the natural shoreline might be necessary.

[230] On re-examination, Mr. Groulx distanced himself from his testimony and stated that the chief had not really applied for a new survey of the reserve.

[231] Fourth, the Respondent argues that despite Mr. Groulx's contention that a full survey based on the high water mark conducted with the proper instruments would be required to determine whether the reserve had lost part of its area since the raising of the crest in 1943 and again in 1955, it was not for the Respondent to establish this, since the burden of proof lay with the Claimant. The Respondent also submits that such an action would be [TRANSLATION] "extremely expensive", without, however, establishing how much it would cost.

[232] With respect, I am of the view that experts have a duty to inform the Tribunal and must not be called to defend a party's position. In this case, the problem is straightforward, but it gave rise to a long, technical and highly complex debate drawn out over several days. If, as Mr. Groulx claims, a simple method exists, namely, travelling to the site to conduct a survey, it seems to me that this should have been done, as the evidence would certainly have been useful to the debate and would have helped inform the Tribunal. This is all the more true and relevant given Mr. Groulx's testimony that he suspects that a loss of territory has resulted from the raising of the crest of the spillway.

[233] As for the supposedly extravagant costs of such an approach, there is no evidence of this. On the other hand, in response to a question from the Tribunal about how much time such field work would require, Mr. Groulx replied as follows:

[TRANSLATION]

How much time? We are talking about seventeen kilometres (17 km) of shoreline, a land survey to prepare, maybe one (1) week give or take of land survey, to be certain, for setting up. That's a job of . . . I don't know, it could range from two (2), three (3) weeks if . . . say that one works on nothing but that, it could be something like that. [Transcript of the hearing, January 23, 2014, at pp 102–03]

[234] In contrast, during his voir dire, Mr. Groulx stated that the research, analysis and validation for the purposes of his expert opinion for the SCT required about 25 days of work. A further seven days were spent travelling to Opitciwan and preparing the site and the equipment to measure the northern boundary. Writing the report required five to seven days, and preparing his testimony required three to four days. There were also the days on which he appeared at the SCT hearings, at least four days, plus travel time.

[235] Therefore, just to convince the Tribunal of the lack of reliability of Dr. Marche's methods, data and conclusions, the expert opinion of Mr. Groulx, a surveyor, and his team required at a minimum nearly a month and a half of work, even though common sense dictates that the raising of the dam's operating level resulted in the flooding of part of the reserve.

[236] Fifth, even if there is doubt about the reliability of the degree of accuracy of the numbers, maps or other elements used by Dr. Marche, he testified that the flooded area he ended up calculating fell within a reliable order of magnitude. His explanations in response to Mr. Groulx's criticisms regarding the inaccuracy of the boundaries of the reserve established from maps, survey plans and aerial photographs are credible.

[237] Dr. Marche testified that working from maps is a method used by engineers, that he has experience with planimetry, a technique commonly used in engineering, and that he was confident about the mathematical relationship he established based on his planimetry. As for the rule curve (surface area vs elevation), it is the first technique used by hydraulic engineers in developing their strategy for operating a dam. Dr. Marche explained that the work of the engineer is based on this kind of curve and that the entire hydraulics industry works from maps in this way. I accept his testimony.

[238] Dr. Marche also testified about the methods used to determine the shoreline drawn by Mr. Rinfret. He used two methods: (1) planimetry on the basis of the northern boundary, and (2) a mathematical relationship. In both cases, he obtained a figure of 1,324.69 feet. His explanations are coherent and I also consider them reliable.

[239] Dr. Leclerc insisted at length that Figure 6 of Dr. Marche's table was incomplete, as there were no margins of error, which he called the confidence interval. According to Dr. Marche, hydraulic engineers no longer qualify the accuracy of the factors used by the uncertainty and confidence interval method. Dr. Marche submits that this method is no longer applied and no longer found in engineering reports. Given Dr. Leclerc's laboured testimony on the issue of confidence intervals, I accept Dr. Marche's testimony.

[240] In short, I find that Dr. Marche's approach, methods and calculations are logical, credible and reasonable. In addition, his conclusion that there has been a significant amount of flooding is corroborated by the documentary evidence and the testimony of the elders. I will return to this point.

(b) The evidence relating to the additional area

[241] The evidence shows that Mr. Rinfret failed to survey any additional area.

[242] However, in his instructions to Mr. Rinfret, Surveyor General Peters had instructed him to inform the DIA if the Government of Quebec intended to raise the water level "still higher than its present level . . . within a few years" (JBD, at tab 337).

[243] Mr. Groulx stated that there was no basis for concluding that Mr. Rinfret had failed to follow the instructions given by Mr. Peters. In his view, despite the adoption of the 1942 order in council authorizing that the level be raised to 1,328 feet, there was no evidence that the government had intended to raise the level as early as 1943. Mr. Groulx specified that the order in council stated that the level [TRANSLATION] "may be raised", but nothing indicated when the QSC would do this. In fact, it was not until 1958 that the water level reached 1,328 feet.

[244] The Respondent added that Mr. Rinfret had reported that Mr. Boisvert had told him that “it was contemplated to raise the water 3 inches only above the highest point at which the water stood in 1942”, which Mr. Boisvert had called insignificant (JBD, at tab 339).

[245] However, the order in council had already been in existence for a year and a half when Mr. Peters gave his instructions to Mr. Rinfret. Therefore, for a year and a half, the provincial government’s intention to raise the water level to 1,328 feet had been known.

[246] The order in council specifically sets out the government’s intention to produce electricity for the war industry. It is a matter of judicial notice that the Second World War ended in 1945, so in 1942, when the order in council was adopted, the war was in full swing, as it continued to be in 1943.

[247] Moreover, in July 1942, the water level was at 1,327.8 feet (JBD, at tab 368). Three more inches would bring the level to 1,328 feet. Another obvious point.

[248] From these facts we can deduce that the provincial government intended to raise the water level to 1,328 feet as soon as weather conditions allowed and that Mr. Rinfret should have taken this into account and followed the instructions from Mr. Peters. He should have communicated with his superiors before travelling to Opitciwan and surveyed an area equivalent to that which was to be flooded.

(c) The documentary evidence and the testimony of the elders

[249] The evidence shows that, a few years before Mr. Rinfret’s survey, Agent Larivière of the DIA confirmed that the reserve was being flooded periodically and even went so far as to alert his superiors.

[250] On July 31, 1941, Agent Larivière of the DIA complained to the secretary of the DIA about the fact that the level of the lake was constantly rising and falling according to the needs of the QSC, denouncing the fact that the reservoir’s operations were resulting in significant damage to the Atikamekw of Opitciwan (JBD, at tab 312).

[251] On February 18, 1942, the Government of Quebec authorized the QSC to raise the crest of the Gouin spillway by increasing the level of the reservoir from 1,325 feet to 1,328 feet (JBD, at tab 315).

[252] The QSC's 32nd annual report indicates that on April 17, 1942, the Gouin reservoir was at 1,322.60 feet, while on April 24, 1943, it was at 1,315.90 feet, a 6.7 foot decrease. Table II (readings from the hydrometric gauge upstream from the dam), attached to the annual report, indicates that the reservoir is full when it reaches a level of 1,328 feet, and that the level of the dam was between 1,323.65 and 1,323.95 feet between August 21 and September 7, 1943, when Mr. Rinfret conducted his survey of the reserve (JBD, at tab 325).

[253] On July 3, 1942, Agent Larivière of the DIA informed the secretary of the DIA that Chief Méguish of Opitciwan, his council and other members of the band had informed him on June 26, 1942, that "the Gouin Reservoir level had been raised again, this approximately some 6', comparing with previous season, this new high level, is affecting hunting grounds, fur bearing animals, increasing the risk of travelling, also caused other direct damages to their hunting lands, flooding also cleared land last summer for seeding purpose". For Agent Larivière, the situation was such that he recommended that the DIA put the matter before the Government of Quebec to find out the upper limit of the anticipated elevation of the water level and, if necessary, make a claim for the damage caused to the Atikamekw of Opitciwan (JBD, at tab 318).

[254] However, as was seen previously, the letter dated June 27, 1953, from the Chief Engineer of the QSC, indicated that in July 1942, the reservoir was at 1,327.8 feet (JBD, at tab 368), which was three inches below the level of 1,328 feet, so it was not even at full capacity.

[255] Given the situation on the reserve, on June 22, 1943, Deputy Minister Campbell asked Deputy Minister Bédard of the DLF, "[i]f therefore we could obtain from you the equivalent of the original 2290 acres located above the ultimate high water mark contemplated as the future flood limit caused by the power development we would rest content" (emphasis added; JBD, at tab 335).

[256] Despite this request from Deputy Minister Campbell, on August 14, 1943, Mr. Peters, the DIA's Surveyor General, gave surveying instructions to Mr. Rinfret, and instead of telling him to draw the shoreline at the potential operating level, he asked him to draw it at the high water mark. However, Mr. Peters did advise Mr. Rinfret to look into the possibility of an increase in the water levels by the Government of Quebec, in which case he was of the view that an additional parcel of land should be surveyed. He also added, "[s]hould any matter of paramount importance arise out of your interview with the provincial authorities in connection with the proposed survey, you should advise this office immediately and await our reply before proceeding to the field" (JBD, at tab 337).

[257] It appears, however, that Mr. Rinfret was satisfied with Mr. Boisvert's reply that the increase would be of only three inches, as he did not report back to Mr. Peters for additional instructions before travelling to Opitciwan. In fact, the documentary evidence shows that Mr. Rinfret informed his superior of his discussion with Mr. Boisvert once he was already in the field conducting his survey (JBD, at tab 339).

[258] If Mr. Rinfret had taken the trouble to verify the information provided by Mr. Boisvert, who obtained it from the QSC, he would have realized that the increase was substantial, since, a year earlier, the operating level had been raised by three feet, from 1,325 to 1,328 feet. However, it seems that nobody from the DIA went to the trouble of checking this.

[259] After the reserve was created, the situation remained the same.

[260] On May 1, 1945, Agent Larivière of the DIA explained in an information note to the DIA that the water level of the Gouin reservoir had been increased by 40 to 50 feet and generally varied between 5 and 8 feet. He indicated that the previous year, the reservoir had dropped 13 feet (JBD, at tab 350).

[261] On June 1, 1953, in a telegram sent to the QSC, Agent Larivière of the DIA asked for an inspector to be sent to Opitciwan because the water level of the reservoir was so high that the sawmill on the reserve was practically inoperable. He added that this high level had the potential to cause serious damage (JBD, at tab 365).

[262] On June 3, 1953, the Chief Engineer of the QSC replied that the Gouin reservoir was at a level of 1,327.5 feet, while the possible and authorized level was 1,328 feet (JBD, at tab 366).

[263] On June 4, 1953, Agent Larivière of the DIA again asked Chief Engineer Chagnon of the QSC for a QSC officer to be sent to Opitciwan to take note of the rising waters of the Gouin reservoir, which had never been so high, and of how they were affected by the strong and steady winds that were often present around the reserve (JBD, at tab 367).

[264] On June 27, 1953, Mr. Chagnon replied to Agent Larivière, explaining that in June and July 1942, the water level was maintained in the Gouin reservoir at 1,327.8 feet, that it had been maintained between the levels of 1,327.5 and 1,328 feet in June, July and August 1947, and that it had not yet returned to the 1947 level. He informed him of the QSC's intention to increase the reservoir level to 1,329 feet and recommended that the DIA establish the camps at Opitciwan two or three feet above the level of 1,329 feet. He announced that a meteorological inspector, J. D'Auray, would be travelling to Opitciwan to look into the situation and identify certain contour points at the level of 1,329 feet (JBD, at tab 368).

[265] On July 16, 1953, J. D'Auray submitted his report and noted that the sawmill floor was under water, that the level of the reservoir was 1,326.82 feet on that date and that the sawmill was at 1,327.42 feet, so below the full reservoir level of 1,328 feet. He also noted that he had staked out a few points on the reserve, marking 1,332 feet as the level beyond which the property of the Atikamekw would be safe (JBD, at tab 372).

[266] In 1955 and 1956, through three orders in council, the Province of Quebec authorized repairs and modifications to the Gouin dam that were likely to increase the water storage capacity of the reservoir to 1,329 feet (JBD, at tabs 374, 375 and 378).

[267] On March 26, 1956, Chief Engineer Chagnon of the QSC informed Deputy Minister Dussault of Quebec's Department of Hydraulic Resources that the act of raising the maximum storage level of the Gouin dam from 1,325 feet to 1,329 feet had the effect of increasing the possible flooding upstream from the dam by an area of 51,200 acres. Furthermore, he added, the

vegetation would be affected by the infiltration of two or three feet above the full reservoir level (JBD, at tab 376).

[268] In addition to the documentary evidence, there is the testimony of the elders, including that of Jérémie and David Chachai, who describe the rising of the waters and the flooding of the reserve.

(d) Conclusions about the flooding of the reserve

[269] Dr. Marche's approach and conclusions, analyzed in light of all the evidence, persuade me that there was a significant encroachment, that no additional parcel of land was surveyed and that the Atikamekw of Opitciwan were deprived of certain parts of their reserve.

[270] Even if Dr. Marche's quantification of the exact number of acres encroached upon is not perfect, it provides an order of magnitude. However, given all of the circumstances, I accept Dr. Marche's numbers and find with respect to the permanent submergence, based on the area of 2,290 acres established in 1943, a loss of 109 acres from the initial reserve. However, I would allow additional evidence in the form of a land survey to be produced at the second stage in order to confirm exactly what area of the reserve was flooded.

[271] Although the evidence shows that there may have been further flooding of part of the reserve resulting in part from what Dr. Marche calls recurrent inundation and in part from the infiltration and capillary action of the water, I will not take these losses into account, as I am of the view that they represent the inevitable flipside of the benefits of living on the waterfront.

2. The federal Crown's duties

[272] The federal Crown may become bound by a fiduciary duty even if it chooses not to act. As we have seen in decision 2016 SCTC 6 in File No. SCT-2004-11, at the reserve creation stage, the fiduciary duty requires the fiduciary to act with the ordinary prudence of a reasonable person managing his or her own affairs (*Wewaykum*, at paras 86, 93–94). Such a duty necessarily includes making reasonable efforts to protect the rights of use and enjoyment of the Atikamekw in the reserve.

[273] Also, once a reserve is created, the Crown has a fiduciary duty to protect and preserve “the band’s quasi-proprietary interest in the reserve from exploitation”. The Crown is bound by this duty and has no choice but to act (*Wewaykum*, at paras 86, 97, 100, 104).

[274] Despite Mr. Peters’ request that Mr. Rinfret verify whether the Government of Quebec intended to raise the water level and that he act accordingly, no concrete steps were taken before or after the 1943 survey. Nor did anybody verify whether Mr. Rinfret had indeed added replacement lands to the reserve to mitigate the foreseeable possibility of flooding.

[275] Given its fiduciary duty, the DIA could have taken measures to try to place the reserve above the planned maximum operating limit. At the very least, it should have surveyed an additional area in case the water levels rose. These precautions were made all the more necessary by the fact that the federal Crown knew that the Atikamekw of Opitciwan had already been subjected to major flooding when the Gouin reservoir was impounded in 1918. It was aware of the damage and inconvenience caused to the Atikamekw by the rising water levels. The DIA even recognized that the Atikamekw had been “seriously inconvenienced”. In 1943, when it provided Mr. Rinfret with his instructions, the federal Crown knew or ought to have known that the increase in the elevation of the spillway would have an impact on the reserve lands.

[276] The Crown also breached its legal and fiduciary duties after the QSC carried out its plans to increase the storage capacity of the Gouin reservoir, as it did not see fit to send a surveyor and inspectors to Opitciwan to verify the area of the flooded lands and inventory the material and other losses of the Atikamekw. Yet, as indicated in decision 2016 SCTC 6 in File No. SCT-2004-11, while there was no established policy in place, the federal Crown had taken such steps when other Indian reserves, such as the Pointe-Bleue Reserve, had been flooded.

[277] After the floods resulting from the raising of the crest in 1942 and 1955–56, the federal Crown took no steps and initiated no discussions with the Government of Quebec to add to the reserve an area equivalent to that invaded by the rising reservoir waters or to ensure that the damage and inconvenience suffered by the Atikamekw of Opitciwan was compensated, despite the recommendation of its Agent Larivière in 1942.

[278] As seen in the previous section, the flooding of the reserve after its creation constituted a form of use of the reserve. This encroachment should have led to a surrender of the land after consultation with the members of the Opitciwan band in accordance with the provisions of the *Indian Act* (1927 Act, s 51, and 1952 Act, ss 37 to 41) or, alternatively, the portion of the reserve subject to flooding should have been expropriated (1927 Act, s 48, and 1952 Act, s 35). Either way, the Atikamekw of Opitciwan would have received compensation.

[279] Because the Atikamekw of Opitciwan did not surrender the parts of their reserve that were subject to flooding and these were not expropriated, the flooding of the reserve since the time of its creation constitutes an illegal encroachment prohibited by the *Indian Act* (1927 Act, ss 34 and 39, and 1952 Act, s 31).

[280] After the creation of the Opitciwan Reserve, certain legislative provisions imposed legal obligations on the federal Crown to the Atikamekw of Opitciwan, their lands and their chattels, including the following:

- (a) section 4 of the 1927 Act, which stipulated that the minister appointed for that purpose by the Governor in Council was to be the Superintendent of Indian Affairs and would, as such, have the control and management of the lands and property of the Indians in Canada;
- (b) section 18 of the 1952 Act, which stipulated that the federal Crown held the Indian reserves “for the use and benefit” of the bands concerned, and that the Governor in Council could determine whether any purpose for which lands in a reserve were to be used was for the use and benefit of the band; and
- (c) sections 34 to 39 of the 1927 Act and sections 30 and 31 of the 1952 Act, which authorized the Crown to bring an action or take other measures to bring to an end any encroachment on an Indian reserve.

[281] With respect to section 18 of the *Indian Act*, in *Guerin v R*, [1984] 2 SCR 335 at pp 348–51, 13 DLR (4th) 321, Justice Wilson wrote the following:

While I am in agreement that s. 18 does not *per se* create a fiduciary obligation in the Crown with respect to Indian reserves, I believe that it recognizes the existence of such an obligation. The obligation has its roots in the aboriginal title of Canada's Indians

I think that when s. 18 mandates that reserves be held by the Crown for the use and benefit of the Bands for which they are set apart, this is more than just an administrative direction to the Crown. I think it is the acknowledgment of a historic reality, namely that Indian Bands have a beneficial interest in their reserves and that the Crown has a responsibility to protect that interest and make sure that any purpose to which reserve land is put will not interfere with it. . . . But it is an interest which cannot be derogated from or interfered with by the Crown's utilization of the land for purposes incompatible with the Indian title unless, of course, the Indians agree. I believe that in this sense the Crown has a fiduciary obligation to the Indian Bands with respect to the uses to which reserve land may be put and that s. 18 is a statutory acknowledgment of that obligation. It is my view, therefore, that while the Crown does not hold reserve land under s. 18 of the Act in trust for the Bands because the Bands' interests are limited by the nature of Indian title, it does hold the lands subject to a fiduciary obligation to protect and preserve the Bands' interests from invasion or destruction.

. . .

With respect, while I agree with the learned justice that s. 18 does not go so far as to create a trust of reserve lands for the reasons I have given, it does not in my opinion exclude the equitable jurisdiction of the courts. The discretion conferred on the Governor in Council is not an unfettered one to decide the use to which reserve lands may be put. It is to decide whether any use to which they are proposed to be put is "for the use and benefit of the band". This discretionary power must be exercised on proper principles and not in an arbitrary fashion. It is not, in my opinion, open to the Governor in Council to determine that a use of the land which defeats Indian title and affords the Band nothing in return is a "purpose" which could be "for the use and benefit of the band". To so interpret the concluding part of s. 18 is to deprive the opening part of any substance. [Emphasis added]

[282] Justice Binnie wrote the following in *Wewaykum* on this point:

100. . . . Wilson J.'s comments should be taken to mean that ordinary diligence must be used by the Crown to avoid invasion or destruction of the band's quasi-property interest by an exploitative bargain with third parties or, indeed, exploitation by the Crown itself. (Of course, there will also be cases dealing with the ordinary accountability by the Crown, as fiduciary, for its administrative control over the reserve and band assets.) [Emphasis added]

[283] That said, the Claimant does not have the burden of proving that the Government of Quebec would have agreed to calculate the shoreline at the highest potential operating level or to survey an additional parcel of land. The Respondent would have had to ask for this, and to

inform the Atikamekw of Opitciwan of any refusal. The fiduciary obligation to act for the benefit of the Indians is an equitable obligation, which holds the Crown to the fiduciary's strict standard of conduct (*Guerin*, at pp 376, 384, 389; *Wewaykum*, at para 94).

[284] In any case, it was unlikely that the QSC would have refused to compensate the Atikamekw of Opitciwan if the federal Crown had asked it to do so. In fact, there is no evidence in the record to support such a finding. Besides, in the event of a refusal, the DIA had the option of submitting a sworn information to the Attorney General of Canada, who could exhibit it in the Exchequer Court, as set out in paragraph 31(1)(a) of the 1952 Act:

31. (1) Without prejudice to section 30, where an Indian or a band alleges that persons other than Indians are or have been

(a) unlawfully in occupation or possession of,

(b) . . .

(c) . . .

a reserve or part of a reserve, the Attorney General of Canada may exhibit an Information in the Exchequer Court of Canada claiming, on behalf of the Indian or the band, the relief or remedy sought.

[285] In conclusion, I find that the evidence clearly establishes that the increase in the reservoir's operating level resulted in the flooding of part of the lands of the Opitciwan Reserve. This encroachment resulted in a loss of use and enjoyment for the Atikamekw of Opitciwan of about 109 acres of their reserve, for which they were never compensated, despite the fact that the federal Crown was aware of the situation before and after the creation of the reserve. The federal Crown knew or ought to have known that the reserve would be flooded, and yet it did nothing despite the legal arsenal at its disposal.

3. The water quality

[286] In the second part of his expert opinion, Dr. Marche explained in detail the effect of the creation and operation of the reservoir on the quality of the water in Opitciwan. In particular, he noted that because the reservoir was not cleared before being filled, woody debris and organic matter on the shores, in the bays and in the wetlands were stirred up and moved by the winds and the filling currents.

[287] Dr. Marche explained that upstream from the Gouin dam, the reservoir's surface water had become turbid, while the deeper water had been depleted of oxygen and had likely acidified.

[288] Dr. Marche stated that the reservoir was subject to significant annual water level fluctuations and picked up natural waste such as the eggs and droppings of the animals living on the shore. The water level fluctuations also resulted in a high animal mortality rate. The movement of the water over the shoreline carried all of these elements throughout the reservoir.

[289] Dr. Marche added that the reservoir's recurrent fluctuations and exceptional amplitude had caused the contamination to extend throughout the entire reservoir, into the old wells and through the gravel and sand of the foreshore, to the water table, rendering the water from the reservoir and the wells dug in the village unfit for consumption.

[290] Much of the Respondent's evidence was filed in support of its argument that humic substances are neither contaminants nor toxic substances in and of themselves.

[291] According to the Respondent's expert, Dr. Gagnon, the symptoms described by the elders in their testimony did not correspond to illnesses caused by the consumption of water containing the type of humic substances contained in the Gouin reservoir. According to him, there were no contamination problems connected to the presence of humic substances in the Gouin reservoir, and the reservoir waters were well oxygenated.

[292] Dr. Gagnon argued that, in the case of the Gouin reservoir, because it was a big lake, the air-water exchange was sufficient for its oxygenation. Moreover, the water was cold, which helped the process. However, on cross-examination, he admitted that there could be more isolated areas, or areas in which humic substances could accumulate, created by abandoned wood tangled together or ensnared in vegetation. Such accumulations could lead to oxygen depletion in those areas, resulting in water of lesser quality (transcript of the hearing, May 22, 2014, at pp 154–56):

[TRANSLATION]

I have not hidden my suspicion that, when they built the dam, there were certain zones where the chemical and biological oxygen demand was so great that they ended up with systems low in oxygen, and those were closed systems, so there was little intake of oxygen-rich water. And not only closed, but also where

detritus or vegetation could become trapped, and then you get a lot of decaying matter in those confined . . . waters.

. . .

. . . with more closed systems, one ends up with an accumulation of all sorts of vegetable matter and other detritus subject to decay, which means one does not get favourable conditions for maintaining good water quality. That's my answer with respect to whether there could be specific areas where . . . the water quality would even be mediocre. I say this in all honesty.

[293] Dr. Gagnon stated that a humic substance could be a vector for contamination, in other words, a carrier for certain contaminants (transcript of the hearing, May 22, 2014, at pp 114–15). As an example, he cited a dead fish: the humic substance could carry a fish protein (transcript of the hearing, May 22, 2014, at p 116). He then specified that humic substances could become associated with a contaminant, but that it must be a toxic contaminant. However, he added, the decomposition of dead animals and fish does not generate toxic contamination.

[294] As to whether the suspension and decay in the water of the eggs of fish and other animals, animal carcasses or droppings from birds and other animals, have the potential to be dangerous to humans if the water is consumed, Dr. Gagnon replied as follows (transcript of the hearing, May 22, 2014, at p 128):

[TRANSLATION]

Well now, the consumption or carrying of this detritus, well, it is a source of bacterial contamination. That is what I can tell you, and I won't talk any more about substances, because I've told you that there are no toxic organic substances resulting from the decay of this detritus, and I'll say it again now. However, we can talk about bacterial contamination.

[295] In this respect, he stated that humic substances do not carry bacterial contaminants, specifying that a bacterium is not a toxic organic substance. He does, however, admit that bacteria may be harmful to an organism if consumed. He also admitted that if fish eggs, animal detritus or droppings were consumed by absorption of the water in which the substances were dissolved, or if they were found in the percolated water, they would constitute a health risk, as that would be a bacterial contaminant. He added, however, that humic substances are generally considered to be highly resistant to bacterial action.

[296] On examination, Dr. Gagnon concluded that a 10-metre rise in water levels was not a problem because the reservoir water that eventually reached the wells would be filtered. When cross-examined about the possibility that an amplitude of about seven to eight feet in the space of a few days could alter his conclusions, Dr. Gagnon replied as follows (transcript of the hearing, May 22, 2014, at pp 196–97):

[TRANSLATION]

A I would say yes, though a rise like that would be an exceptional phenomenon. Certainly if we have a scenario like that, I admit that the equilibrium between the soil, the soil constituents and what we want to keep out, in this case the humic substances, there's no doubt that there will be a little bit more direct transfer.

Q Right, you have the words that I lack . . .

A Yes.

Q . . . direct transfer is really . . .

A At that point we are talking about contamination of the shallow wells. You know, when there is a flood, don't go and draw water from a well, there's a problem, O.K., because . . . And I mean the problem is everywhere, because the problem is coming from everywhere. It could be the contamination, for example, of a septic tank that was flooded nearby, and then everything gets mixed together and the well becomes contaminated as well.

That's why I'm telling you, as soon as we are talking a significant increase in the water level, if it's too much, because I thought . . . this morning I was talking more about an equilibrium that becomes established, one that is higher than the other, it balances out. But if it is a more spectacular event, a rapid rise, it's a bit like a flood. . . .

What I was talking about earlier, I was talking about a state of equilibrium in which the soil has a role to play in making sure that what is in the lake and what is in the well are not the same thing.

[297] Dr. Gagnon was cross-examined on Health Canada's 1995 study (Exhibit P-19), in which the authors concluded that "a safety factor of approximately 100 [mg/L of a low ash preparation of soil fulvic acid] would apply to the human consumption of drinking water containing 2.5 mg of humic acid per litre". Dr. Gagnon explained that this recommendation was little more than a safety precaution given the unknown reliability of the research conducted on the issue, but this does not mean that there is a problem. He himself did not consider the number 2.5 realistic, even if it might be safe.

[298] He was then cross-examined about the study authored by Aramini (Exhibit P-13), who identified a link between water turbidity and gastroenteritis. More specifically, the author concluded that the probability of gastrointestinal disease increased as turbidity increased.

[299] According to Dr. Gagnon, this was a poorly conducted study. However, he acknowledged that turbid water full of matter in suspension was of lower quality than pure water and that low-quality raw water could probably lead to certain problems such as gastroenteritis, but it all depended on what had been carried into the water. The Aramini study merely says (transcript of the hearing, May 22, 2014, at pp 149–50):

[TRANSLATION]

“ . . . if you already have very turbid water, don’t waste too much time treating it, go find a different source of raw water”, since the turbidity is already an indication . . . I’m saying, it’s a direct relationship, chances are high that your water will be difficult to treat because it is draining all kinds of things, particles in suspension, but also all kinds of microbial life, hence problems with gastroenteritis.

[300] Dr. Gagnon testified that humic substances result in colouring; the water is coloured by the presence of humic substances resulting from the decay of trees left standing. The problem is aesthetic but has no effect on health (transcript of the hearing, May 22, 2014, at pp 36–37).

[301] When asked by the Tribunal whether he would drink water directly from the Gouin reservoir, Dr. Gagnon answered in the affirmative, but added the following (transcript of the hearing, May 22, 2014, at p 38):

[TRANSLATION]

Well, it probably wouldn’t be very nice to drink, but would it have harmed me?
No, no harm. Humic substances in those amounts do not cause harm. Those are scientific facts.

[302] However, he admitted that coloured water may have an odour. He acknowledged that this was an inconvenience and that sulphurous water was unpleasant, adding that, while it posed no risk to health, it could not be denied that the taste of water containing humic substances was not comparable to that of pure water.

[303] While Dr. Gagnon did not deny the possible existence of a mercury methylation problem that might have contaminated the food chain, he could not comment on the level of human contamination, as he did not know the types or quantities of fish consumed at the time.

[304] That said, I accept Dr. Gagnon's testimony to the effect that humic substances are not toxic in and of themselves and do not constitute a contaminant. However, a high concentration of humic substances in a closed environment diminishes the water quality, and the presence of animal carcasses or droppings may cause bacterial contamination.

[305] In addition, while the phenomenon of methylmercury in uncleared reservoirs and its impact on the food chain are now understood, there is no evidence to support a connection between the health problems suffered by the elders, namely the stomach pains, and their consumption of fish in relation to the existence of methylmercury.

[306] However, in this case, we are dealing not only with mercury and humic substances in the water, but also decaying animal carcasses and fish eggs and animal and bird droppings, so bacteriological contaminants, and a reservoir with significant annual water level fluctuations.

[307] Dr. Gagnon admitted that bacteriological contamination could result from the breakdown of these elements in the water and that this could lead to health problems and gastroenteritis.

[308] The documentary evidence analyzed in decision 2016 SCTC 6 in File No. SCT-2004-11 relating to the events that occurred after the initial flooding and the testimony of the elders establish that certain individuals suffered from stomach pains after consuming water from the reservoir and that some of them died. This evidence also establishes that in addition to the health problems resulting from the unsafe water, the damage suffered by the Atikamekw of Opitciwan also included inconvenience due to water containing humic substances.

[309] Given the content of the expert reports of Drs. Marche and Gagnon, the testimony of the elders and the documentary evidence regarding the increases in water levels in the reservoir need to be analyzed.

[310] That evidence shows that the Atikamekw of Opitciwan faced recurring problems with water that was unfit for consumption, percolating water and wells affected by the varying water levels in the reservoir, as demonstrated by the following correspondence:

- (a) In a memorandum dated July 31, 1941, addressed to the Indian Affairs Branch of the Department of Mines and Resources, Agent Larivière of the DIA reported the problems with the wells. He also indicated that the Atikamekw of Opitciwan were boiling their water for 20 minutes when they should have been boiling it for 30 minutes, but that “[n]o sickness has developed from this so far”. He added: “Water from Lake appears to be seeping through ground together with surface water. This might be the reason why well water is unsafe” (emphasis added; JBD, at tab 312).
- (b) In another memorandum dated September 3, 1941, addressed to the same department, Agent Larivière wrote: “Analysis of water at Obijuan, Que., revealed the water supply from lake as well as your wells was unsafe, since this was found, your Post Manager as well as the Indians were advised to take necessary precautions”. Agent Larivière asked that the wells be disinfected and that the cost be assumed by the DIA (emphasis added; JBD, at tab 313).
- (c) On March 12, 1944, in an internal memorandum, J.M. Wardle, Director of the Surveys and Engineering Branch of the Department of Mines and Resources, reported on the well construction situation in Opitciwan (JBD, at tab 345).
- (d) On November 30, 1944, Agent Larivière again addressed the Indian Affairs Branch of the Department of Mines and Resources, writing: “Due to the number of sick persons every summer, difficulties to secure water, the Gouin Reservoir levels affecting much, etc., I consider very important to reduce medical cost and relief, that this Reserve be provided at least with a good well, this if humanly possible for next summer . . .; a good well, on this Reserve, I think, would pay itself in one summer”. The following statement appears in a footnote: “according to the analysis this water is unsafe” (emphasis added; JBD, at tab 347).

- (e) On December 11, 1944, the Acting Director of the DIA replied to Agent Larivière's letter of November 30, writing: "According to the analysis of water which you sent in with your letter of November 30, the water is unsafe and I would ask you to advise the Indians that all water used for drinking purposes should be boiled" (emphasis added; JBD, at tab 348).
- (f) An information note prepared using information provided by Agent Larivière and dated May 1, 1945, includes the following statement: "Then reservoir was completed – trees were flooded and water is not good for domestic use" (emphasis added; JBD, at tab 350).
- (g) In a memorandum dated March 12, 1946, J.W. Wardle wrote the following about the wells at Opitciwan: "As the wells were drilled to serve a camping area a test of the quality of the water if taken this coming Spring or early Summer might not be conclusive evidence of the quality of the water at the time water was obtained, as contamination from the surface might have occurred subsequently" (emphasis added; JBD, at tab 354).
- (h) In November 1946, Agent Larivière, in a memorandum addressed to the Indian Affairs Branch of the Department of Mines and Resources, recommended that only one of the wells be paid for, since the other two were not satisfactory (JBD, at tab 355, see also tabs 345 and 357).

[311] In light of the documentary evidence in decision 2016 SCTC 6 in File No. SCT-2004-11, I note that the problems relating to water quality began after the reservoir was filled in 1918–20 and had yet to be resolved in 1946. It is clear that the water was still unfit for consumption after the increase authorized in 1942.

[312] The evidence shows that after 1942, the Atikamekw of Opitciwan continued to suffer inconvenience as a result of the poor water quality. If the health problems were sometimes mitigated by the fact that the Atikamekw boiled their water, as confirmed by Agent Larivière's letter, they were not completely eliminated, as appears from Agent Larivière's 1944 letter.

[313] As I mentioned in decision 2016 SCTC 6 in File No. SCT-2004-11, in addition to the health problems, the elders also testified about the inconvenience related to the poor water quality; they said that they had to use coloured, foul-smelling water for washing and cooking; that they had to clear a path in the forest to find another drinking water supply; that they had to walk long distances in the forest with buckets to bring drinking water back to Opitciwan; and that they themselves had to dig wells or water points in the village in order to have access to water closer to where they lived. They also described the rising of the water levels following the second increase and the contamination of the wells resulting from the rising reservoir waters.

[314] According to Jérémie Chachai, after the first flood in 1920, following the construction of the houses with the materials provided by the QSC, wishing to put an end to their long walks in the forest to collect drinking water, the Atikamekw dug four wells or water points in the village at a depth of about 20 feet. These wells solved the problem until the second rise in water levels. The reservoir waters then submerged the wells and polluted the well water. He himself witnessed the water submerging the wells when he was a child. The other elders testified about the construction of these wells by the Atikamekw and the fact that they were submerged by the rise in water levels.

[315] The testimony of the elders and the documentary evidence demonstrate that the problems with the drinking water supply lasted for many years and continued after the creation of the reserve, thereby affecting the rights of use and enjoyment of the Atikamekw in the Opitciwan Reserve.

[316] Therefore, it appears from the evidence that these inconveniences were directly related to the encroachment by the waters of the Gouin Reservoir on part of the Opitciwan Reserve.

[317] The evidence shows that although it had been made aware of the problems experienced by the Atikamekw of Opitciwan, the DIA failed to intervene quickly to find solutions. The DIA therefore breached its legal and fiduciary duties, namely, its obligations of loyalty, providing full disclosure appropriate to the subject matter, and acting with ordinary prudence with a view to the best interest of the Atikamekw of Opitciwan. After the reserve was created, it breached its duty to protect and preserve their common law interests.

D. Which losses can be compensated at the second stage?

[318] Because of the federal Crown's breaches of its legal and fiduciary obligations, I recognize the Claimant's rights to receive the following:

- (a) compensation for the value of the loss of use and enjoyment of approximately 109 acres of reserve lands resulting from the flooding caused by the work to raise the crest of the spillway of the Gouin dam authorized in 1942 and in 1955–56; and
- (b) compensation for the damage and inconvenience suffered by the Atikamekw of Opitciwan as a result of the consumption and use of unclean water caused by the raising of the water levels relating to
 - the health of the Atikamekw; and
 - the inconvenience caused to the Atikamekw of Opitciwan, especially the destruction of the wells or water points dug by the Atikamekw, the delays in supplying wells and the difficulties in securing a water supply.

[319] For the reasons set out in decision 2016 SCTC 6 in File No. SCT-2004-11, I do not recognize the damage suffered by the Atikamekw of Opitciwan outside of the reserve, as this falls outside the Tribunal's jurisdiction. Unlike with the 1918 Flood, the agreement entered into in 1920 with the QSC does not apply to damage resulting from the flooding caused by the raising of the crest of the spillway in 1942 and in 1955–56.

[320] I am persuaded by the evidence that there exists a direct link between the wrongs that the Claimant is complaining of and the fiduciary relationship and fiduciary duties of the federal Crown. I find, however, that the damage and inconvenience suffered by the Atikamekw of Opitciwan also resulted from the negligence of the Province of Quebec and the QSC in the execution of their obligations to the band.

[321] In the absence of sufficient evidence to enable me to apportion liability between the federal and provincial Crowns, this debate will have to take place during the second stage.

V. DECISION

[322] As indicated in decision 2016 SCTC 6 in File No. SCT-2004-11, and for the reasons given in this decision, I dismiss the Respondent's objection seeking to have Claude Marche's expert report and testimony declared inadmissible.

[323] For all of the reasons above, I find that the federal Crown breached its legal and fiduciary duties during the process of creating the reserve and after its creation.

[324] These breaches resulted in losses to the Claimant that should be compensated.

[325] I accept the losses enumerated at paragraph 318 of this decision. They will be quantified during the second stage.

[326] The provincial Crown is partly liable. The apportionment of liability between the federal and provincial Crowns will be considered during the second stage.

JOHANNE MAINVILLE

Honourable Johanne Mainville

Certified translation
Francie Gow

SPECIFIC CLAIMS TRIBUNAL
TRIBUNAL DES REVENDICATIONS PARTICULIÈRES

Date: 20160520

File No.: SCT-2007-11

OTTAWA, ONTARIO, May 20, 2016

PRESENT: Honourable Johanne Mainville

BETWEEN:

ATIKAMEKW D'OPITCIWAN FIRST NATION

Claimant

and

HER MAJESTY THE QUEEN IN RIGHT OF CANADA
As represented by the Minister of Indian Affairs and Northern Development

Respondent

COUNSEL SHEET

TO: Counsel for the Claimant
As represented by Paul Dionne and Marie-Ève Dumont

AND TO: Counsel for the Respondent
As represented by Éric Gingras, Dah Yoon Min and Ann Snow