



Forest Appeals Commission

Fourth Floor, 747 Fort Street
Victoria BC V8W 3E9
Telephone: (250) 387-3464
Facsimile: (250) 356-9923

Mailing Address:
PO Box 9425 Stn Prov Govt
Victoria BC V8W 9V1

Website: www.fac.gov.bc.ca
Email: facinfo@gov.bc.ca

DECISION NO. 2018-WFA-002(a)

In the matter of an appeal under section 40(1) of the *Wildfire Act*, S.B.C. 2004, c. 31.

BETWEEN:	Canadian National Railway Company	APPELLANT
AND:	Government of British Columbia	RESPONDENT
BEFORE:	A Panel of the Forest Appeals Commission Norman E. Yates, Panel Chair Les Gyug, Member Lorne Borgal, Member ¹	
DATE:	April 1-5, 8-12, and May 9-10, 2019	
PLACE:	Vancouver, BC	
APPEARING:	For the Appellant:	Aidan Cameron, Counsel Patrick Williams, Counsel Jack Ruttle, Counsel
	For the Respondent:	Darcie Suntjens, Counsel Cory Bargaen, Counsel

APPEAL

[1] Canadian National Railway Company ("CN") appeals a determination issued on May 31, 2018, by the Fire Centre Manager (the "Manager"), Prince George Fire Centre, of the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (the "Ministry"). Under section 26 of the *Wildfire Act*, S.B.C. 2014, c. 31 (the "*Act*"), the Manager determined that CN had caused a wildfire in contravention of section 6(2) of the *Act*, and sections 6(2) and (3) of the *Wildfire Regulation*, 38/2005, B.C. Reg. 38/2005 (the "*Regulation*"). The wildfire, known as the Cisco Road Fire, was designated as wildfire K70122 (the "Fire"). The Fire burned a large area of Crown land, and the provincial government (the "Province") incurred significant costs to suppress it.

[2] Under section 27(1) of the *Act*, the Manager ordered CN to pay the following amounts: a \$75,000 administrative penalty for the contraventions; the Province's

¹ The Panel initially consisted of three members; however, during an adjournment between the conclusion of the evidence and the start of submissions, one Panel member, Mr. Borgal, died in an accident. The parties consented to the appeal continuing with a Panel of two.

costs to control the fire (\$7,073,317.07); the value of Crown timber, other forest resources, and grass land resources that were damaged or destroyed in the fire (\$8,971,289.75); and, the Province's costs for silviculture and reforestation (\$169,065.31) (the "Order").

[3] CN accepts responsibility for the contraventions and the administrative penalty. CN does not dispute the amounts in the Order for the value of damaged or destroyed Crown timber, and silviculture and reforestation. Pursuant to section 39 of the *Act*, CN appeals the amounts assessed for fire control costs, "other forest land resources" and "grass land resources" that were damaged or destroyed by the Fire.

[4] Under section 41(1)(b) of the *Act*, the Commission may either:

- (i) confirm, vary or rescind the order, or
- (ii) with or without directions, refer the matter back to the decision maker who made the order, for reconsideration.

[5] CN requests that the Commission reduce the amount for fire control costs to \$3,264,799.60, and the amount for damaged or destroyed "other forest land resources" and "grass land resources" to \$4,731,325.00.

BACKGROUND

Overview of the Fire

[6] The Fire started at approximately 11:30 am on June 11, 2015, adjacent to CN's railway tracks across the Fraser River and a short distance south of Lytton, BC. Initially, a grass fire was caused by sparks from rail cutting activities. The applicable Fire Danger Class for the area was rated at "extreme" and rail cutting was a "high risk activity" under the *Regulation*.

[7] The Fire was reported shortly after it ignited, and the BC Wildfire Service (the "Wildfire Service") dispatched a crew and began fighting the Fire almost immediately. The Wildfire Service attended to the Fire until September 3, 2015, and it was considered to be extinguished that October.

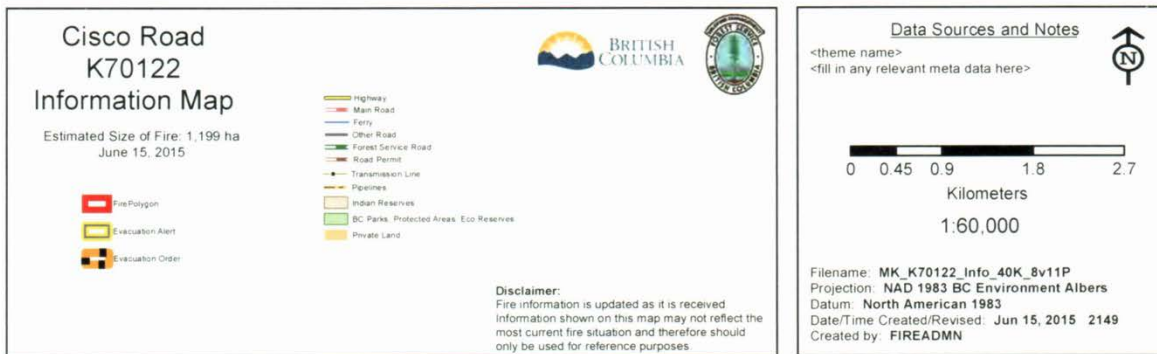
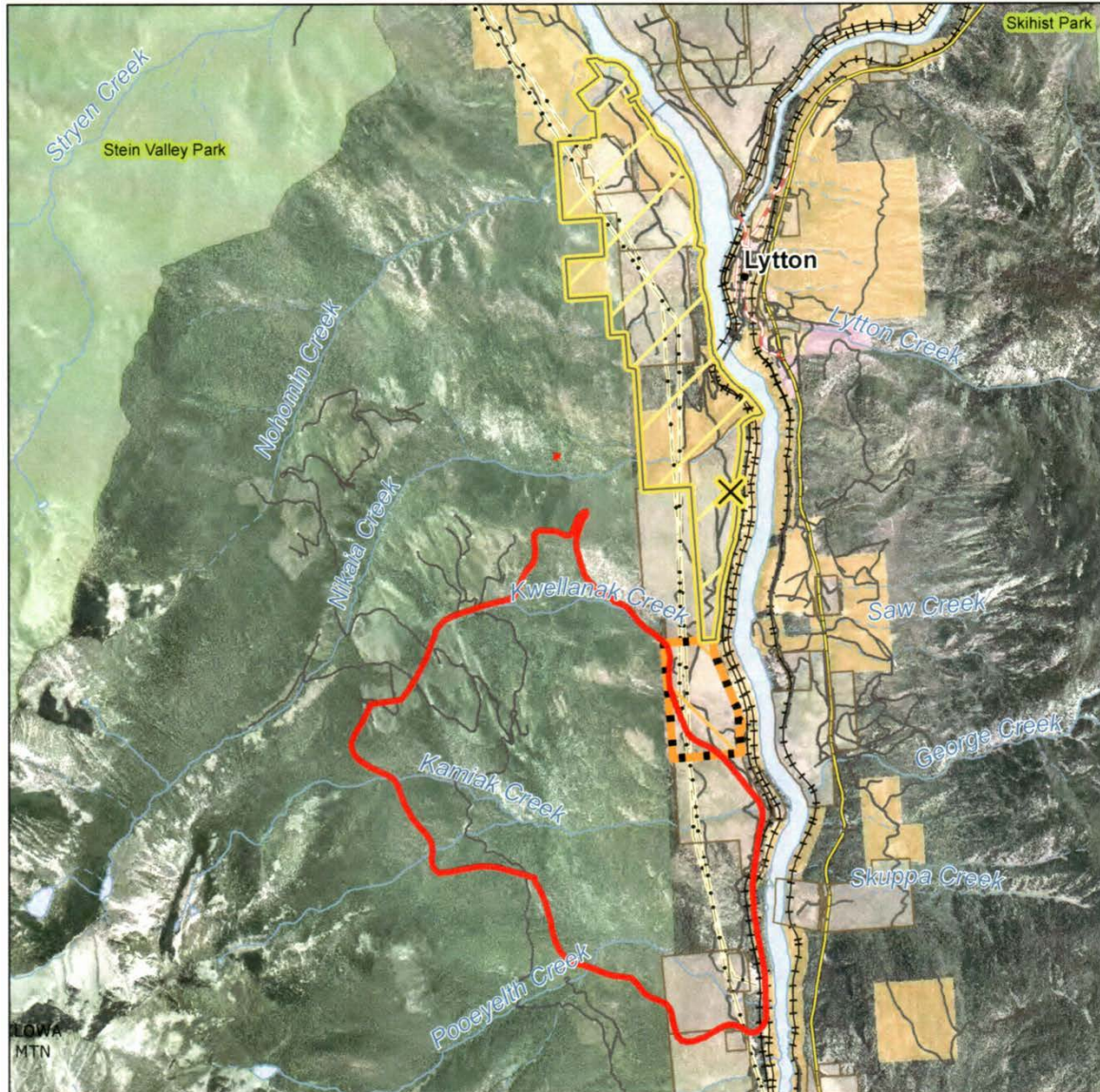
[8] On the first day, the Fire spread rapidly to the north and west due to dry fuel conditions, strong winds from the south, steep terrain, and limited ability to use air support. A First Nations community immediately north of where the Fire started was evacuated that afternoon, and Lytton was put on evacuation alert.

[9] Wildfire Service officials evaluated the situation the next morning. The Fire had settled down and some rain had fallen. The railway tracks, power lines and nearby homes on the Fire's east flank and to the north had been spared. The Fire perimeter was nearly 2 km along its eastern flank adjacent to the CN tracks and near the Fraser River, but had spread primarily to the west and north up the steep slopes west of the railroad tracks.

[10] Over the next few days, the Fire spread very little. By June 15, 2015, the area within the Fire's perimeter was estimated to be 1,199 hectares (see the map provided below); however, the Wildfire Service's Incident Management Team

prepared for the Fire to re-awaken: the forecast was for hot and windy conditions that would predictably dry out the forest fuels and send the fire hazard rating back to extreme within days. Plans were made to continue efforts to contain and fight the Fire using ground crews, heavy equipment and helicopter support. The focus was to anchor the Fire along its south, southwest and east flanks, and to limit its spread north where it could burn homes or impact an adjacent community watershed. Given the steep terrain, accessibility considerations, fuel and weather conditions, a “let burn” strategy was implemented to the west.

[11] The following description is included to assist the reader’s understanding of the Panel’s discussion of the Fire’s location and its various flanks. Working counter-clockwise from the southeast corner or “heel” of the Fire near where it started, the east flank extended northward about 4 km along and above the CN mainline west of the Fraser River approximately to Kwellanak Creek. The north flank extended westward from there about 4 km and on the divide between Kwellanak and Nikaia Creeks. The west flank then extended southward about 3 km within the drainage of Kamiak Creek to a point about halfway between Pooeyelth Creek and the south tributary of Kamiak Creek. The southwest flank extended about 2 km from there to the proximity of an unnamed tributary of Nahump Creek and the south flank extended roughly eastward from there about 1 km back to the heel at the southeast corner. Westface Road bisected the Fire’s perimeter about halfway up the mountain slope. Westface Road was overgrown and inaccessible to vehicles and machinery during the Fire.



Scan of Exhibit 1, Tab 29a (also Exhibit 2, Tab 3) showing the Fire's general location and perimeter (in red) on June 15, 2015. A portion of Nahump Creek (not named) is at the south end of the map.

[12] On June 15 and 16, the Wildfire Service conducted ignition operations (i.e., planned burns) using helitorches² along the north flank of the Fire to protect a community and a community watershed. A test burn was conducted on June 15, but the full ignition operation waited for better burning conditions anticipated on June 16. These operations were considered successful in containing the north flank of the Fire for the time-being.

[13] On June 17, the seventh day of the Fire, the Wildfire Service conducted an ignition operation using a helitorch to the south and southwest of the Fire's southwest flank to prevent the Fire from spreading south along the Fraser Canyon. Although this ignition operation apparently achieved its intended objectives, it significantly enlarged the area that was burned. No fire control efforts were made on the west flank until June 24, when the Wildfire Service conducted an ignition operation to control the Fire's spread towards the Nikaia Creek community watershed.

[14] Approximately two weeks after the Fire started, the Wildfire Service considered it to be contained but not extinguished. Crews and machinery were deployed to fight other wildfires in other parts of the Province. Most Fire control efforts after that point consisted of continuing to establish the perimeter control lines, cooling down any remaining hot spots within that perimeter, and then monitoring for flare-ups.

[15] The Fire subsequently flared up in a part of along the north flank on July 31, 2015, expanding in size and requiring about two weeks to re-establish control in that area. The Fire was allowed to eventually burn itself out into the rocky upper alpine slopes high above the valley floor where it started.

[16] The Province spent millions of dollars fighting the Fire. Almost all of the timber through which the Fire burned was killed, and virtually the entire area of 2,199.4 hectares of Crown land within its final perimeter was impacted. Most of the burned area is visible from the Trans-Canada Highway, which wends along the opposite side of the Fraser River, and is subject to a visual quality order under the *Government Actions Regulation*, BC Reg. 582/2004, related to its scenic value. Part of the burned area also includes a community watershed.

Legislative Framework

[17] The *Act* creates a regulatory scheme in which a person who contravenes the *Act* or the *Regulation* can be ordered to pay an administrative penalty not exceeding \$100,000, plus the costs of fire control incurred by government that are a direct or indirect result of a contravention, plus the value of certain Crown resources that are damaged or destroyed, directly or indirectly, as a result of the contravention.

² A helitorch is a type of driptorch consisting of a fuel barrel and an igniter that are suspended below a helicopter, which drops flaming fuel used to ignite materials on the ground.

[18] Section 9 of the *Act* authorizes the government to carry out fire control activities when wildfire endangers life or threatens forest land or grass land.

[19] Section 26 of the *Act* provides an opportunity to be heard for a person who is alleged to have contravened the *Act* or the *Regulation*.

[20] Under section 27(1) of the *Act*, if the minister (or the minister's delegate) determines that a person contravened the *Act* or the *Regulation*, the minister may order the person to pay: (a) an administrative penalty; (b) the government's fire control costs under section 9 "for a fire that resulted, directly or indirectly, from the contravention"; (c) the dollar value of any Crown timber, "other forest land resources", "grass land resources", and other property of the government that was "damaged or destroyed as a result, directly or indirectly, of the contravention"; and, (c.1) the costs incurred by the government to re-establish free growing stands and for silviculture treatments rendered ineffective as a direct or indirect result of the contravention.

[21] Section 27(1) also states that those amounts must be calculated "in the prescribed manner", which is provided in the *Regulation*. In particular, sections 30(c) and (d) of the *Regulation* provide that the amounts for "other forest land resources" and "grass land resources" are calculated by multiplying a fixed dollar value by the number of hectares of the kind of Crown resource that was damaged or destroyed. The dollar values per hectare are:

- \$5,000 per hectare for other forest land resources in a protected or designated area (including areas subject to an order under the *Government Actions Regulation*);
- \$1,000 per hectare for other forest land resources not in a protected or designated area; and
- \$500 per hectare for grass land resources;

[22] "Forest land" is defined in the *Act* as including "land that previously supported trees and is not in other use, but does not include land excluded from this definition by regulation". "Grass land" is defined in the *Act* as including "land that (a) previously supported grass and is not in other use, or (b) is in use for the production of forage or is lying fallow, have been previously used for the production of forage, but does not include land excluded from this definition by regulation". The *Regulation* contains no exclusions from these definitions.

[23] Section 31 of the *Regulation* provides the "prescribed manner" for calculating the government's fire control costs. First, the sum of certain costs, expenditures and charges attributable to the fire is ascertained. They are listed in subsection (1)(a) and include hourly and overtime wages of responding employees "including payroll loading costs", fuel and flight costs for air tankers and helicopters, costs for fire retardant and other fire suppressants, rent on use of equipment, and the costs of private goods and services contracted, rented or purchased, among other things. Next, under subsection (1)(b), the greater of either \$200 or 20% of the amount determined under (1)(a) is added.

The Determination and the Appeal

[24] On May 31, 2018, following an opportunity to be heard held on April 18, 2018, and supplemental written submissions, the Manager issued the determination containing the findings of contravention and the Order requiring CN to pay:

- \$52,189.75 for the value of mature Crown timber that was damaged or destroyed, directly or indirectly, by the Fire;
- \$8,971,289.75 for the value of “other forest land resources” and “grass land resources” that were damaged or destroyed, directly or indirectly, by the Fire;
- the government’s costs of \$7,073,317.91 to control the Fire; and
- a \$75,000 administrative penalty.

[25] CN appealed the amounts for fire control costs and “other forest land resources” and “grass land resources” that were damaged or destroyed by the Fire. CN’s primary argument is that it should not be held liable for the entire area that was burned—and associated fire control costs—because the Ministry sought to control the Fire in a manner that, arguably, caused it to increase in size. In addition, regardless of the outcome on that argument, CN argues that the Order miscalculates some of those amounts.

[26] The parties resolved a number of issues with respect to fire control costs before the hearing; however, the Panel was asked to reconsider the assessment for “payroll loading costs”. The parties filed an Agreed Statement of Facts, and an amended Agreed Statement of Facts with an explanatory letter dated September 18, 2019 (the “Amended ASF”), related to this outstanding issue of financial quantum.

ISSUES

[27] CN raised three distinct issues in this appeal:

1. What, if any, portion of the Fire did not result from CN’s contraventions, but rather from intervening events (such as fires set or decisions made by the Wildfire Service) and should not be included when calculating the area damaged or destroyed by the Fire and associated fire control costs?
2. How many hectares of forest land resources and grass land resources were damaged or destroyed by the Fire, and what amounts are payable by CN under the *Act* and the *Regulation*?
3. What is the amount of the government’s fire control costs attributable to the Fire, and can the Province recover “payroll loading costs” in accordance with section 31(1)(a)(i) of the *Regulation*?

[28] Issue 1 raises a question regarding the Commission’s jurisdiction to critique decisions made and strategies employed by the Wildfire Service. If CN is successful on Issue 1, the determinations of quantum in Issues 2 and 3 would be based on a smaller area of Crown land having been damaged or destroyed by the Fire (Issue 2) and reduced payroll costs (Issue 3).

SUMMARY OF THE PARTIES' POSITIONS

[29] Regarding Issue 1, CN argues that it should not be held responsible for the entire area within the Fire's final perimeter, because: (1) the Wildfire Service's approach to controlling the Fire increased the area that was burned; and (2) not all of the area within the perimeter was damaged or destroyed. Specifically, CN contends that with the resources that were available, the Fire could have been held within the perimeter that existed on June 16, 2015, making the June 17 and June 24 ignition operations unnecessary. CN maintains that any area burned outside the perimeter after June 16 is not its responsibility. In addition, CN asserts that the Fire could have been fully controlled by July 1, and any fire control costs after July 1 should not be CN's responsibility. CN argues that a significant area was damaged or destroyed by the flare-up at the end of July, and more area was simply allowed to burn rather than being contained and suppressed. In sum, CN asks the Panel to find that it has jurisdiction to address those questions related to how the Wildfire Service undertook to control the Fire, and to reduce the amounts for fire control costs and damaged or destroyed Crown resources that resulted from "decisions the Province made" rather than from the contravention.

[30] The Province counters that the Panel should not consider whether the Fire could have been fought differently, because the Manager's role in making the Order is limited by statute to determining costs and damages "calculated in the prescribed manner", without discretion to vary those amounts, and that the Manager "may require the person to pay those amounts determined". The Province further contends that even if the Wildfire Service's management of the Fire is a proper issue for the Panel to consider, it is inappropriate for the Panel to "second-guess" decisions made by well-intended, qualified Wildfire Service personnel in the heat of the moment while fighting a complex wildfire. In any case, the Province maintains that the Fire was appropriately controlled, and that CN should be responsible for all fire control costs and for Crown resources that were damaged or destroyed within the Fire's final perimeter.

[31] The Panel's findings on Issue 1 affect the discussion of the other two issues. If CN is successful on Issue 1, then the area to be considered as damaged or destroyed in Issue 2 will be reduced, as will the fire control costs, and that will impact payroll loading costs (Issue 3).

[32] If CN is unsuccessful on Issue 1, both parties agree on the final perimeter of the Fire for the purposes of Issue 2, but disagree on how many hectares were damaged or destroyed within the final perimeter. Alternatively, if CN's is successful on Issue 1, CN argues that the same considerations should apply to discern how many hectares were damaged or destroyed within the Fire's perimeter as of June 16, 2015.

[33] On Issue 3, CN argues that "payroll loading costs" attributed to wages paid to "responding employees" should not simply be an average percentage for all Provincial government employees over an annual period that gets added to wages paid in respect of the Fire. By extension, CN submits that the Province is not entitled to charge that amount as being attributable to the Fire. In response, the Province counters that its only method of calculating payroll loading costs is based

on records kept by central government as outlined above, and those costs should be applied in this case.

SUMMARY OF EVIDENCE

[34] The Panel heard evidence over 10 days, along with two days of submissions. CN presented evidence from two expert witnesses. Mr. Gregory Guyan provided evidence pertaining to Issue 1 about the manner in which the Wildfire Service dealt with the Fire. Mr. Michael Greig provided evidence pertaining to Issue 2 regarding dealing with how much area within the Fire's perimeter had only been "incidentally damaged".

[35] In regard to Issue 1, the Province offered testimony from four individuals who were involved in fighting the Fire; namely: Mr. Scott Rennick, Mr. James Richardson, Mr. Tim Ewart, and Mr. George Campbell. On Issue 2, the Province presented one expert witness, Mr. Dana Manhard, who addressed the question of how much of the burned area was not damaged or destroyed.

[36] The expert witnesses' qualifications, and the other witnesses' experience fighting wildfires in general and the Fire in particular, are discussed below.

[37] On Issue 3, the parties filed the Amended ASF, as noted above.

The Appellant's Witnesses

Gregory Guyan

[38] CN's first witness was Mr. Guyan, who testified as an expert in wildfire management and suppression strategies, systems and tactics. After 48 years working with wildland fires in the State of California, he retired in 2010 as a Hazardous Materials Specialist holding the rank of Battalion Chief, and continues to work as a fire control instructor. He is qualified as an Incident Commander under the same protocols and Incident Command System as is used by the Wildfire Service. Although he has never fought wildfires in BC, he has responded to over 1,000 wildfire incidents in the course of his career and has extensive experience with fires in hot, dry and windy conditions with similar terrain and vegetation to where the Fire occurred. He has conducted ignition operations, including the use of helitorches, as a wildfire suppression tactic. The focus of his testimony was that he thinks the Fire could have been attacked using different suppression tactics, and accordingly, considerably less area would have been impacted by the Fire.

[39] Mr. Guyan familiarized himself with the weather, wind and fuel conditions for the period during which the Fire burned. He reviewed records and documents provided to him regarding the Fire generally, including other expert reports prepared in relation to the Fire, and saw photos of the Fire and video posted on YouTube taken while the Fire was burning. Immediately prior to the hearing, he viewed the landscape from points along the Trans-Canada Highway, across the Fraser River from where the Fire had burned. His testimony supplemented a written report which was entered as evidence at the hearing.

[40] Mr. Guyan described the Incident Command System as being an effective wildfire management strategy for the efficient use of personnel, equipment, procedures and communications. He explained the basic methods by which wildfires are suppressed: "direct attack", which entails suppression efforts that are more or less adjacent to the burning fuel; "parallel attack", or building control lines as close to a fire as the fire or topography (or some feature, such as a road) permits; and "indirect attack", which is establishing a control line well ahead of the main fire, taking advantage of natural breaks and favourable terrain, and burning off the fuel back towards the approaching fire. He also described the generic types of fire lines: "planned" fire lines are also known as fire guards; "secondary" fire lines are constructed at a distance from the active fire perimeter; and "contingency" fire lines identify possible but unlikely alternatives within which a fire ought to be contained if it expands beyond planned or secondary fire lines. Mr. Guyan also defined the categories of wildfire: a "head fire" spreads the fastest and with greatest intensity, assisted by wind and slope; a "backing fire" burns against the wind or slope, generally more slowly (and with less intensity) than the main fire is spreading; and, a "flanking fire", which spreads at moderate speed at an angle to the wind or slope.

[41] Mr. Guyan testified that, based on the information he reviewed, the Fire had settled down overnight on June 12 due to a cold front that passed through the area, and rainfall (5.8 mm, measured at a Wildfire Service weather station at Splintlum 19 km from the Fire) fell in the early morning hours of June 12. In his opinion, this was sufficient to wet and significantly increase the relative humidity of the forest fuels to the point that the Fire's forward progress had essentially halted, and it was effectively under control. He testified that those conditions made the Fire amenable to containment by aggressive direct attack methods on all flanks.

[42] Mr. Guyan was generally critical of how the Wildfire Service dealt with the Fire from this point on. To summarize, his opinion was that efforts ought to have been made to establish a planned or secondary fire line along or near where the Fire's entire southern perimeter had established itself by June 12, rather than using the indirect attack approach that included a significant ignition operation to contain the southwest flank. Also, the Fire could and should have been contained to the west (upslope), rather than letting it eventually burn itself out when it reached the bare rock near the top of the mountainside. However, he otherwise approved of the approach taken to suppress and control the Fire, including the use of ignition operations until June 16.

[43] Mr. Guyan was particularly critical of the helitorch ignition operation conducted on June 17 to the south of the Fire's southwest flank, which he referred to as a "prescribed burn" done as a forest management practice to reduce forest fuels unrelated to suppressing the Fire. He said conditions—weather, wind, humidity—and the resultant fuel conditions were for "minimal predicted fire behaviour change" and did not lead him to conclude that the Fire would spread to the south. In his opinion, concerted direct methods of building fire lines would have effectively contained that flank of the Fire. He acknowledged that planned backfires and allowing the main fire to burn are accepted fire suppression tactics in appropriate circumstances, but he characterized this ignition operation as unnecessary. He characterized it as an opportunistic way to manage or reduce

future fire risk in the adjacent forest—a forest management tool that was distinct from using a back burn to help “box in” and contain the Fire.

[44] In contrast, Mr. Guyan’s opinion was that the ignition operation done within the Fire’s northern perimeter the day before, namely on June 16, supported with aircraft and fire retardant, was appropriate.

[45] Having viewed photographs of the June 17 ignition operation as it progressed, taken from across the river valley, Mr. Guyan concluded that the helitorching had sequentially progressed from downslope to upslope, rather than the accepted way of progressively lighting fires in a pattern beginning higher up and working downslope (the idea being that the planned fires burn in the direction in which they are sequentially lit, inferring that this back fire had not been directed to burn downslope and towards the Fire’s southwest flank). Mr. Guyan was also of the view that this ignition operation ought not to have been undertaken in the conditions that prevailed at that time of day on that slope, and that too much fuel had been used to start the fires. He described how the fire lit by the Wildfire Service consequently made “an uphill run” and became its own uncontrolled inferno that did not behave as it should have: it would have been too intense and ultimately did not accomplish the intended objectives. He said that outcome was predictable, and he would never have attacked the Fire in this manner: it was ill-advised, unnecessary and improperly done. It damaged or destroyed forest resources that would not have been otherwise impacted, and caused “complexities” in terms of ongoing efforts to control the Fire.

[46] In Mr. Guyan’s opinion, the June 17 ignition operation should be considered a separate fire. He estimated that the June 17 ignition operation—including the consequential areas burned upslope or incidentally to the west and northwest of the ignition operation—unnecessarily increased the burned area attributed to the Fire by approximately one-third. He believed the Fire’s June 12 perimeter could have been fully contained on relatively moderate terrain, with “defendable ridges” as secondary and contingency fire lines, using ground crews and aerial support. This would have been his approach as Incident Commander.

[47] Under cross-examination, Mr. Guyan agreed that the Wildfire Service had appropriate priorities and valid objectives for controlling the Fire that were ultimately met, including letting the Fire burn “in the middle” and “naturally upslope”. He also acknowledged that the wind would predictably blow from the north at times. He essentially agreed with the approach taken by Wildfire Service to suppress the Fire other than the June 17 ignition operation, suggesting that direct attack could have controlled that southwest flank. He was also critical of the “let burn” strategy and the decision not to attack the west flank at all. In response to the Panel’s questions, Mr. Guyan estimated that there would have been a 90% probability of controlling the Fire along Westface Road; i.e., his proposed “planned fire line” on the west flank. He identified helicopter bucketing as a temporary measure to hold the Fire, followed by direct ground attack once crews were available.

[48] Mr. Guyan testified that he would not have needed additional resources. He felt this was realistic based on what he referred to as the “100-hour rule” which relates to the impact that a significant rainfall has on forest fuels, i.e., after a

rainfall there is about 100 hours before the main fuels that carry a destructive wildfire will dry out and become combustible again. He felt there should have been heavy machinery onsite sooner, and there was a high probability of success if more effort had been made to directly attack and establish a fire line along the Fire's southwest flank. He did not feel that such an approach would have put the firefighters' safety at risk. He noted that although the June 17 ignition operation did not expand beyond the area it was planned for, it unnecessarily increased the burned area and added an estimated \$4,000,000 to firefighting costs. He recognized that his opinions were premised on potentially different facts and assumptions than those that the Incident Commander faced.

[49] Mr. Guyan characterized his retainer as an expert witness as a "review exercise" rather than an audit. He has done "10 or 12" reviews to the level he did for this one, but has never critiqued the manner in which an Incident Management Team has responded. Whether an audit or a review, or just reflecting on his own actions after fighting a wildfire, he says he always tries to identify which actions worked well and questions whether things could have been done differently. He stated that, reflecting on his own firefighting decisions after each fire he has been involved with, he has found at least some things he would have done differently "every time", although often those decisions were minor or equipment related.

Michael Greig

[50] Mr. Greig has over 37 years of experience as a professional forester in BC, and is the owner of Enfor Consultants Ltd. He specializes in forest resource planning and development, timber pricing and stumpage analysis, and land use issues. Mr. Greig testified as an expert in identifying visible damage caused by fire to forested areas. He did an assessment to determine whether there were forest resources within the Fire's perimeter—and ultimately, the approximate area—that had not been damaged or destroyed as a direct or indirect result of the Fire. He did a similar project and testified as an expert in a previous hearing before the Commission regarding another major wildfire (known as the Soda Creek Fire, see *Canadian National Railway Company v. Government of British Columbia*, Decision No. 2016-WFA-002(a), November 2, 2017 [CN 2016]). For the present appeal, Mr. Greig submitted an expert report dated January 2, 2019. In addition to his opinion on how many hectares of Crown land were damaged or destroyed by the Fire, he was retained to give an opinion as to how many hectares were classified in relation to the Vegetation Resources Inventory ("VRI") land cover classification system as being "treed" versus "vegetated" but not treed. He used a VRI classification that had not been updated since 2015, reflecting the "treed" or "non-treed" condition of the forest at the time of the Fire.

[51] The parties agreed that the Fire's final perimeter included 2,396.0 hectares total, but not that all 2,199.4 hectares of the Crown land within that perimeter had been damaged or destroyed. Mr. Greig did his assessment using high resolution orthophotos (an orthophoto is aerial image corrected for photographic and elevational distortion so that its scale is uniform, like a map) taken in July 2016, along with reports and photos provided to him by CN, information downloaded from a provincial government website dealing with resource values, and available VRI data.

[52] For the Opportunity to be Heard, Mr. Greig produced a map of the Fire boundaries that included a total area of 2,255.9 ha. It excluded some areas, which he referred to as polygons, that he thought should not have been classified as damaged or destroyed by the Fire. Subsequently, on November 7, 2018, he flew in a helicopter within the Fire's perimeter for approximately an hour, with the objective of verifying his interpretation of the images and other information he had reviewed. That resulted in the map of the fire's perimeter giving the final accepted area (2,396.0 ha) with most of his originally unburned or undamaged areas re-classified as "incidental damage", a classification he personally created for this appeal meaning less than 50% of the trees in a given polygon had scorched trunks. He contends that the flight gave him the ability to determine whether damage to vegetation was caused by the Fire—as compared to other causes—and whether certain areas within the Fire's perimeter had only received incidental damage or had not been damaged at all. He did not feel it was necessary to get out of the helicopter for closer scrutiny. He felt that his observations allowed him to both estimate the areas impacted, and quantify the apparent damage caused by the Fire. He found it difficult to delineate all of the areas that he would have categorized as unburned or with incidental damage. In his opinion, the smallest polygon that was not damaged or only incidentally damaged was "a couple hectares". Overall, he felt that his assessments and area estimates were conservative.

[53] Of note, Mr. Greig's evidence was premised on CN being responsible for the consequences of the Fire based on its final perimeter. He described the landscape where the Fire occurred as steep and rugged terrain to the west and north, bisected by a number of streams, with gullies and bluffs, and flattening out to the east. He took the Panel through numerous photographs that he had taken during his helicopter flight, referencing them back to an orthophoto that showed the polygons which he said had either no visually apparent damage or only "incidental damage". The photos were helpfully linked to his written report, and were marked as exhibits. He did not take photos that were representative of all of the polygons that he had delineated as having incidental or no damage. He made notes and took a continuous video during his helicopter flight. However, his notes were not provided during the appeal proceedings, and although the video was provided, it was not entered into evidence.

[54] Mr. Greig referred to the written report dated May 24, 2017, prepared by Mr. Manhard, a witness for the Province who flew in a helicopter and traversed the area on foot in an effort to identify burned and unburned areas within the Fire's perimeter. Overall, he said Mr. Manhard's impressions and comments did not change his views about whether some of the area within the Fire's perimeter had not been damaged by the Fire. That said, he did "not necessarily" know what Mr. Manhard was trying to illustrate with specific photos, and he did not seek clarification. In sum, he agreed with much of Mr. Manhard's evidence about areas that appeared to have been damaged versus undamaged or only incidentally damaged. He testified that it balanced out such that the overall area did not change, and nothing in Mr. Manhard's report changed the opinions he had previously expressed.

[55] Mr. Greig's area calculations were estimates based on his experience doing that sort of approximation. He used phrases such as "about 50 meters by 50

meters” and that it “might be a few hectares”. When the Panel asked what scale he had used in his mapping, he seemed surprised by the question and responded that he had determined the boundaries of his polygons using a geographic information system (“GIS”) with a 20-centimetre pixel background orthophoto. He explained that the polygons were determined by “eyeballing it”: areas that looked to be greater or less than 50% damaged—incidental damage meaning less than 50% damaged. When asked what confidence he had in the reliability and repeatability of the locations of the lines he had drawn, and the areas estimated, Mr. Greig replied that such an assessment would be beyond the scope of this exercise.

[56] He stated that even though he may have characterized a tree as “damaged” because there was visible charring on its trunk or the foliage had some indication of being impacted, he could not say whether or how it may have affected the tree’s overall health. Further, some of the area he observed led him to conclude that the wildfire had burned through the understory but there was “little” or no evidence of damage, and in some cases, he concluded that something other than the Fire may have caused the trees to appear unhealthy. He stated that the photos do not necessarily depict what the burned area looks like (under the canopy of green, seemingly healthy trees), and clarified for the Panel that if the forest floor has been apparently damaged by burning then he would consider it to be “damaged or destroyed”.

[57] At times during his testimony, when looking at a photo he had taken from the helicopter, Mr. Greig occasionally re-classified an area from how he had done so for his written report; e.g., by reference to the photos at pages 39, 40 and 41 of his report. At other times, he said a photo to which he was referring was looking in a given direction, but on reflection said he was (or might be) mistaken.

[58] Mr. Greig could not qualify how reliable the areas represented by his polygons were, or the general characterization of whether the forest resources within them were damaged or undamaged. Rather, based on his observations, the timber in those relatively sizable areas appeared to still be healthy and had not been “damaged or destroyed” by the Fire. He came up with the category of “incidental damage” based on his interpretation of photo imagery and the observations he made by helicopter. In his view, those areas should be excluded from the calculation of what area had been damaged or destroyed by the Fire. He disagreed with Mr. Manhard’s conclusion that any trees within the Fire’s perimeter that had been killed by insects prior to the Fire would have been burned up—inferring that a tree that had since died could have been killed by insects rather than by the Fire.

[59] After delineating polygons of “incidentally damaged” areas within the Fire perimeter, and some small, completely undamaged “holes” within the Fire perimeter (which were not included in the area estimates below), Mr. Greig calculated the areas of each polygon relative to its VRI classification. Mr. Greig stated that, within the Fire perimeter, the following areas of Crown land had been damaged or destroyed: 1,589.1 hectares classified as (formerly) “treed” and within areas subject to an order under the *Government Action Regulation*; 250.7 hectares classified as “treed” but not subject to an order; 138.6 hectares classified as “vegetated” but not “treed”; and, 54.9 hectares not classified as “vegetated”.

Referring to areas of “incidental damage” (i.e.; not damaged or destroyed), Mr. Greig testified that: 149.2 hectares of Crown land within the Fire perimeter were “treed” and within areas subject to an order under the *Government Action Regulation*; 0.4 hectares were “treed” but are not subject to an order; 16.3 hectares were “vegetated” but not classified as “treed”; and, 0.2 hectares were not classified as “vegetated”.

[60] When cross-examined, Mr. Greig did not have a definition for the term “forest land resources”, but his view was that it would essentially include trees and anything associated with growing trees, including the soil organic layer, and the undergrowth and root systems. When asked by the Panel, he acknowledged that the VRI classification system would classify a formerly treed site, such as a clearcut that was “not sufficiently restocked”, as “non-treed”.

The Province’s Witnesses

Dana Manhard

[61] Mr. Manhard testified as an expert in identifying visible damage caused by fire to forested areas. He has worked in the forest industry in BC for 28 years. His experience includes doing layout, timber cruising, silviculture, budgeting, pest management, and surveys. He has been the Timber Pricing Forester in the Kamloops Forest District since 2010, with responsibilities that include assessing damage and timber harvesting considerations for forests that have been impacted by fire. His testimony dealt with Issue 2, namely whether there were areas within the Fire’s perimeter that had not been damaged, in a similar context to Mr. Greig’s testimony.

[62] Mr. Manhard visited the site of the Fire twice and viewed the orthophotos that Mr. Greig used. His first field trip was in a helicopter on May 24, 2017, to ascertain if the Fire’s perimeter had been accurately mapped. It had been mapped by GPS-line during a helicopter flight sometime after the fire, and then refined by Mr. Manhard and Ms. Sasha Lee, Regional GIS analyst, using SPOT satellite imagery. During the May 24, 2017 flight the helicopter flew several passes over the burned area which helped him become familiar with the location. He made no changes to the fire perimeter based on this overflight. His second objective was to determine if fire had burned through areas with a high percentage of green crowns, and whether those trees were damaged. Based on this field visit, Mr. Manhard prepared an expert report dated May 24, 2017.

[63] Mr. Manhard also discussed his second visit, in September 2018, in a written report dated January 2, 2019. On that occasion, he walked a transect of the area primarily along Westface Road and viewed a selection of “the green islands or corridors” that were visible on the orthophoto images. Although he neither used the map that Mr. Greig prepared, nor reviewed all of Mr. Greig’s photos, nor made field observations of each of Mr. Greig’s polygons, Mr. Manhard viewed portions of many of the polygons that Mr. Greig identified as being unburned or only incidentally damaged. To summarize, Mr. Manhard found patches of green trees, but his impression was that there were both dead and live trees, and even those trees that looked generally healthy had been stressed by the Fire to some extent. In addition,

virtually the entire understory had been completely burned at ground level. The few pockets that had not been burned, that is, that were undamaged, comprised between 20 meters by 20 meters (0.04 ha) up to “0.125 hectares” and, in total, only added up to “a couple of hectares”. He did not discern the precise number of patches, or calculate the area that he would have categorized in that manner, but estimated that “the total number of trees of any size that had no evidence of damage is less than .01 percent” of the area within the Fire’s final perimeter.

[64] Mr. Manhard clarified that the term “incidental damage” is not typically used to assess damage caused by wildfire.

Scott Rennick

[65] Mr. Rennick has been fighting forest fires since 1994. In 2009, he became Base Operations Manager in Lytton, and is currently one rank below that of Incident Commander. His responsibilities include training personnel, facility and equipment management, community outreach, and project coordination. Mr. Rennick was involved in fighting the Fire for the first two weeks, and again after it flared up at the end of July. He testified about the initial attack efforts, tactics that were used to control the Fire, and the Fire’s behavior generally.

[66] Mr. Rennick was working in his office on June 11, 2015 when he received a telephone call reporting a wildfire. He could see smoke across the Fraser River, and drove to the site. The Fire was aggressively burning and, having jumped the railroad tracks and beyond the adjacent Cisco Road, was already four or five hectares in size and spreading out-of-control to the north and west, fanned by strong southerly winds. He surmised that it would likely turn into “something serious”. He dispatched initial attack crews to “anchor” the “heel” of the Fire, but conditions were too dangerous to attempt to do suppression even directly downwind. He called for heavy equipment and air support, but wind and terrain made it impractical to use water bombers, and it was going to take at least eight hours to get heavy equipment—bulldozers, excavators, and logging equipment—into position upslope and to the west. Local RCMP assisted by evacuating residents on the west side of the Fraser River, north of where the Fire was burning, and Lytton was put on evacuation notice. Additional firefighting crews from nearby communities arrived during the afternoon and put out spot fires that started near some homes. Although they managed to establish an anchor along the south flank, the Fire continued to burn upslope and out-of-control into the evening. Mr. Rennick kept crews working into the night, and more crews were dispatched to assist.

[67] During a reconnaissance flight the next morning, he saw that the Fire had diminished in intensity overnight but there were thousands of hot spots within its perimeter, including open flames. Some precipitation was forecast, and 5.8 cm of rain fell during that morning.

[68] He was part of the Incident Management Team that was in place on June 12. The Incident Management Team met every morning and evening to review the Incident Action Plans for the day. Amongst other things, they monitored and endeavoured to predict weather conditions and fire behavior.

[69] Mr. Rennick explained how available resources get allocated to contain and suppress a wildfire. The immediate plan in this case was to concentrate on assessing and dealing with unstable debris and danger trees that posed a hazard to ground crews, and the “human interface” (i.e., homes or other structures) to the north and east of what had become the Fire’s perimeter. Crews were also dispatched to try to contain the south and north flanks.

[70] Based on a reconnaissance overflight, it was estimated that 1,300 hectares burned during the first day, although that estimate was subsequently revised. After the first day, the Fire Analysis planning document, which provides the overall firefighting strategy to be implemented by the Incident Command Team, predicted the Fire could grow to 3,000 hectares with suppression costs estimated at \$9,500,000. Three strategic “Trigger Points” were established: one was a line to the south, another to the east, and the third to the northeast of the Fire. If the Fire expanded beyond those lines, then they would have to revise the Fire Analysis and strategy, and more evacuations would be imminent. The plan was to try to contain the Fire by constructing fire breaks near the Fire’s north, east and south flanks, and not to attempt to contain it to the west but rather to let the Fire burn itself out when it reached the upper slopes.

[71] Mr. Rennick provided an overview of several terms used in fighting forest fires: *burning out* is the objective of a planned ignition operation, reducing forest fuels with the use of strategically lit fire to contain and prevent a wildfire from spreading, such as was done on June 17; and *prescribed burning* is a generic term that covers a variety of situations where fire is used to burn forest fuels, for example, to reduce the risk and intensity of wildfires, and with associated ecological benefits such as enhancing wildlife and plant habitat.

[72] According to Mr. Rennick, the Fire was “waking up” and developing “more organized” flame by the end of the day on June 13, especially along the south, north and west flanks. The weather and wind were working in unison to make potentially explosive fire conditions, with a forecast for continued hot, dry and windy weather. The Incident Management Team began making plans to do an ignition operation beyond the southwest flank with a view to prevent the Fire from spreading to the south.

[73] Efforts were ongoing in the first several days to establish “control lines” near the Trigger Points, particularly near the heel of the Fire and along the east flank and to the northeast in the vicinity of the nearby community. However, the Fire continued to actively burn along the south and southwest flanks, and something more needed to be done to prevent it from spreading in that direction, particularly on the upper slopes. Mr. Rennick was of the view that the Incident Management Team maximized the usefulness of the crews, equipment, and helicopter support, including establishing fire containment lines and laying hose along the steep, rugged southeast perimeter to Westface Road approximately half-way up the hillside.

[74] The Incident Management Team wanted to guard against the potential for the Fire to spread to the south, given that the area predictably experienced strong northwesterly winds in July and August. To achieve this, the Incident Management Team conducted an ignition operation during the afternoon of June 17, south of the

Fire's southwest perimeter and upslope of Westface Road which was not accessible or drivable at the time of the Fire. Using a helitorch, the planned ignitions were progressively "stepped" down the slope in a manner designed to create a convection effect as the ignitions amalgamated and burned with increasing intensity towards the Fire. In turn, the Fire was drawn towards the strategically lit ignitions, thereby eliminating forest fuels and creating a sizable firebreak along the southwest flank. Mr. Rennick testified that, notwithstanding the prevailing south winds in the area, it was foreseeable and would have been problematic and potentially catastrophic if the Fire had escaped and spread to the south. The Incident Management Team considered the ignition operation a success (see Mr. Richardson's and Mr. Ewart's evidence below). The Panel notes that, in contrast, this is the ignition operation that Mr. Guyan criticized.

[75] After June 17, the Incident Management Team focused their suppression efforts on the Fire's north and northeast flanks. They did other ignition operations at other locations near and within the Fire's perimeter in order to help control the Fire.

[76] The Incident Management Team considered the Fire to be under control by June 23, 2015, and their approach to the Fire entered "monitor phase". Although it continued to burn within its perimeter, it had effectively stopped advancing in any direction other than upslope in the "modified response" area of the western flank (towards the alpine). The Incident Management Team and the majority of firefighting resources were subsequently deployed to other fires in what turned out to be a very active summer fire season. The Fire was the first aggressive wildfire in the region that year, and forest fuels were dry, but not yet as dry as they would predictably become.

[77] Based on his training and experience, and his hands-on role as Operations Chief for this Fire, Mr. Rennick was adamant that Mr. Guyan's plan to contain the Fire to the south and southwest and along the western flank, relative to where it had burned by June 12, was unrealistic: they would have been unable to "hold the fire" to that line even if they had fully committed all available resources. Mr. Rennick testified that there were spot fires burning beyond the southwest flank and there was no realistic potential to use heavy equipment below Westface Road, let alone for crews to work safely in that area. Specifically, crews would have had to work above the actively burning fire, and the timber in that area was relatively heavy. It would have been difficult and extremely dangerous for crews to build fire breaks and guards.

[78] Mr. Rennick found it difficult to estimate how long it would have taken to build an effective fire break to match the one suggested by Mr. Guyan, but doubted it would have been possible before the Fire re-intensified after June 13. When pressed, Mr. Rennick stated that it would have taken 13 to 20 days—in a best-case scenario, assuming no changes in fire behaviour from when they would have started on June 12 and using the resources on hand—to establish a fire control line consistent with what Mr. Guyan testified he would have attempted.

[79] Mr. Rennick explained that the Wildfire Service operates on the assumption that they have 72 hours after a significant precipitation event before forest fuels return to their previous state of combustibility. That said, he did not consider the

rainfall on June 12 to be significant. In any event, they actually had less time than that in this case: during a reconnaissance flight on June 13, he observed that the Fire was starting to get active again, with campfire-sized fires getting bigger and “spotting” to the southwest of what he considered to be the Fire’s perimeter. He became increasingly concerned when he flew over the Fire on June 14, and at the Incident Planning Meeting on the morning of June 15, the phrase he used to describe his observations was: “The fire is waking up”. Accordingly, the Incident Management Team made it their priority to concentrate resources on the south, northeast and east flanks during this phase of operations, rather than continuing to directly attack the Fire and establishing fire control lines further up the southwest slope.

[80] Mr. Rennick stated that nothing was done to control the Fire along its west flank (until the June 24, 2015, ignition operation) because the Incident Management Team had opted to let the Fire burn up to the alpine and rock to the west. The Panel asked Mr. Rennick to estimate the probability that a primary fire line on the western flank, as proposed by Mr. Guyan, would have been successful. In response, he stated the probability was low: “20 to 25% at the very best”. His estimate was based on the weather pattern, the distances helicopters would have had to haul water, the need for special helicopters, the steep slopes, and the risk associated with placing staff between the advancing fire and limited escape options due to steep terrain.

[81] Mr. Rennick said that the Fire became active again near its northwest flank on July 31, 2015, and aggressively advanced the next day through forest and terrain that made it difficult to build control lines. Three helicopters and a 20-person crew came to assist. They engaged in fire control activities where the fire had jumped the perimeter for “9 or 10 days”, after which the Incident Management Team considered the Fire to be controlled.

[82] Mr. Rennick testified that the Fire was between 1,200 and 1,300 hectares in size before the June 17 strategic burn, and was 1,885 hectares on June 18. He said the Incident Management Team had deemed it necessary to increase the size of the Fire by approximately 500 hectares as a result of the June 17 ignition operation in order to contain it to the southwest, after which it was left to burn itself out when it reached the alpine. Mr. Rennick emphasized that the June 17 ignition operation was not done as a resource management exercise to reduce forest fuels for reasons unrelated to controlling the Fire.

James Richardson

[83] Mr. Richardson is currently BC’s Wildfire Preparedness Officer. He has responded to hundreds of wildfires his career as a forest fire fighter since 1994. He has fought wildfires in different parts of North America and in Australia, but the majority of his experience has been in the Fraser Canyon area. He described the Fraser Canyon area “one of the most challenging and most complex places to fight fire” in BC and even across Canada, with challenges presented by the local winds and micro-climates from side valleys, the steep and rugged terrain, inaccessibility due to the Fraser River itself, and considerations such as the major transportation and hydro line corridors located in a confined, narrow area. Mr. Richardson was the

Deputy Incident Commander on the Fire (mentored by Mr. Tim Ewart, the Incident Commander) for the first week. He testified about the objectives and strategies used to contain and suppress the Fire, and commented on Mr. Guyan's views about how the Fire could have been contained sooner so that less area was impacted.

[84] Mr. Richardson first observed the Fire on June 11, 2015, from across the Fraser River while driving towards Lytton from Hope. Mr. Rennick briefed him on arrival. He had worked with Mr. Rennick on other wildfires, and had confidence in him and others who reported to him. After satisfying himself that Mr. Rennick had his priorities in order, he spent the afternoon working with members of the local community to arrange for resources to deal with what was likely to be a significant wildfire based on his observations, experience, briefings and predictive indices.

[85] Mr. Richardson explained that Trigger Point lines are approximations drawn on a map, and were as follows for the Fire: Trigger Point 1 was a line to the north and northeast of the Fire's perimeter after the first day, intended to protect the Nikaia Creek community watershed and a local First Nations community across the river to the east of Lytton; Trigger Point 2 was to the south and southwest of Lytton, along the railway tracks and an adjacent power line infrastructure; and, Trigger Point 3 was Nahump Creek, south of the heel and southern flank of Fire. He explained that the Incident Management Team was concerned about the significant logistical difficulties involved if the Fire managed to burn beyond Nahump Creek (to the south). His priorities were: protection of human safety generally; protection of the infrastructure and communities on the "valley floor" to the north and east; protection of the watershed and infrastructure in the watershed by preventing the Fire from spreading to the north; and, anchoring and containment of the Fire to the south.

[86] The Incident Management Team's overall plan was to use direct attack where possible, build contingency guards with machinery and retardant on the low slope areas, do parallel attack using ignition operations where possible on the south and north flanks, and to take a modified "let burn" approach allowing the Fire to burn itself out upslope to the west. One consideration was that crews engaged in building control lines would be working in potentially dangerous conditions, and needed to constantly keep a lookout for hazardous fire behaviour.

[87] Mr. Richardson joined Mr. Rennick in the reconnaissance flight on the morning of June 12. In his view, the rainfall that morning was not a significant factor in their efforts to suppress and contain the Fire, but it was enough to settle the Fire down and gave them a day to organize the resources they would need. The forecast and fire indices predicted that weather and fuel conditions would become increasingly hazardous in the coming days. The Prometheus Short Range Fire Growth Prediction model, another tool used to anticipate how the Fire would likely behave, predicted considerable growth in the coming days.

[88] Mr. Richardson testified that all wildfire fighting strategies must take into account the safety of firefighters and the financial impact to taxpayers. The Incident Management Team reviews and modifies operational decisions on a daily basis. A strategy similar to the one proposed by Mr. Guyan's was considered; however, tactical decisions are based on objectives that can realistically be achieved with available resources. He was adamant that Mr. Guyan's plan to maintain the Fire's

perimeter to approximately what it was on June 12 was unachievable. Although the Fire was not a fast-moving to the south and southwest, it was in difficult terrain, and the risk to firefighters who might end up working above the actively burning fire was untenable. For example, Mr. Richardson said they tried to use direct attack tactics along the north flank, and ended up having to evacuate people on an emergency basis.

[89] Recognizing that doing ignition operations to secure the Fire's south flank was not the first priority, Mr. Richardson clarified that the Incident Management Team needed to be confident that the Fire would not escape to the south beyond Trigger Point 3. Letting it burn without a plan to contain it was not an option. They decided it was necessary to strategically burn fuels in that area not only to contain that flank, but also so they could safely put crews on the ground. The Incident Management Team decided that the ignition operation undertaken on June 17 was the most viable option. It was planned and overseen by Mr. Vaughn McCaig, one of the Province's most experienced and respected wildfire specialists (since deceased).

[90] Mr. Richardson explained how the June 17 ignition operation worked. It was not a prescribed burn for fuel management purposes, but rather a high-intensity controlled burn. He testified that the June 17 ignition operation "went perfectly", in terms of how it was progressively lit and achieved the desired objective of helping to eliminate concerns that the Fire would spread further south. He acknowledged that it burned with more intensity and somewhat further to the northwest than was anticipated, principally due to wind conditions and because it ultimately continued to burn upslope. He stated that if they hadn't done that strategic burn, the Fire would have naturally continued to expand south of Trigger Point 3 through the predictably hot, dry summer months ahead, causing significant, foreseeable fire suppression challenges. He explained that at times during the summer months, the prevailing winds in the area shift and blow from the north. He further emphasized that their fire suppression efforts were "all about" fire control and containment: fuel management, apart from helping to suppress the Fire, was not an objective.

[91] The Panel notes that Mr. Richardson was excused during his testimony to try to locate notes and minutes from the June 17 Planning Meeting which had not been disclosed. It was determined that they were "missing" from the operations file. No explanation was offered, and there was no further mention of this potentially significant record being unavailable. However, Mr. Ewart, whose testimony is discussed below, recalled that meeting and testified that there was no regret or "second guessing" about the June 17 ignition operation.

Tim Ewart

[92] Mr. Ewart has been a forestry technician in one role or another since 1978, and has been certified as an Incident Commander with the Wildfire Service since 1996. Semi-retired since 2013, he has worked on many large wildfires in his career including acting as Incident Commander on approximately 20 similar in nature to this Fire—many of which have been in the Fraser Canyon. In addition to dealing with wildfires "hands-on", he also has significant experience in management roles. Mr. Ewart attended the Fire between June 11 and 25, 2015, initially to mentor Mr. Richardson and then as the de facto Incident Commander after Mr. Richardson left

on June 17. Although not qualified as an expert witness, he testified about his central role in strategic decision-making during the Fire.

[93] He observed that the fire hazard on June 11 was extreme, that the precipitation on June 12 had little real impact, and the fire hazard “rebounded” back to extreme “over the next couple of days”. He considers the Fraser Canyon to be the most dangerous area to fight wildfires in Canada (and possibly North America). In brief, the fire control objectives and related strategies for the Fire were to: protect the valley floor (specifically, the communities to the north and northeast of the Fire, the railway and hydro lines to the east); let the Fire burn itself out at high elevation to the west; and, make extensive use of strategic burning to help contain the Fire along the northerly and southerly flanks.

[94] Satisfied that Mr. Richardson and his team had put together a good Action Plan to suppress and contain the Fire, Mr. Ewart signed off on it as the Incident Commander. Mr. Ewart commented that Mr. Richardson’s handling of the Fire as Deputy Incident Commander justified his subsequent promotion to Incident Commander. He also had confidence in Mr. Rennick in his role as Operations Chief, and in the ignition specialists.

[95] Furthermore, Mr. Ewart had no apparent reservations when he signed off on the June 17 Ignition Plan. He subsequently observed the ignition operation from a vantage point on the other side of the valley, and described the operation as a “classic, well-conducted” burn that was done “according to plan”. Mr. Ewart explained that the ignition was done sequentially from upslope to downslope, created “a good convection column”, did not result in an “uncontrollable head fire” (as suggested by Mr. Guyan), and effectively burned the areas they meant to burn: it was anticipated that the Fire, including the parts they intentionally lit, would continue to burn upslope to the west and northwest, and would eventually go out. He congratulated everyone at the evening meeting on June 17. In Mr. Ewart’s view, it was an appropriate way to contain the Fire to the southwest, in order to avoid potentially consequential damage from northerly winds that the region occasionally experiences.

[96] Mr. Ewart testified that Mr. Guyan’s proposed Incident Action Plan was never a realistic option, because the Fire could not be controlled by direct attack tactics on all flanks. He explained that Mr. Guyan’s contingency plan and planned secondary fire line along or near what was, on June 12, the Fire’s southwest and west flank were also unrealistic, because the Fire exhibited extreme fire behaviour characteristics related to extremes in topography, fuels and weather. There were areas where it was simply not possible to have people or machinery actively doing fire control. He added that air tankers and helicopters are ineffective on their own, and it is not an efficient use of them unless they are coordinated with other suppression strategies. His firefighting experience in this geographical area was that they had often attempted to be too aggressive, resulting in “too many close calls”. In his opinion, if they had attempted to put in Mr. Guyan’s proposed control lines, they “would have lost them... those lines would have burned over. They... would not have been able to hold the fire under the conditions we had.” The goal in suppressing this Fire was containment and control, and then letting it burn itself out. Mr. Ewart further explained that although considered to be under control, it

was not practical or possible to have extinguished the Fire prior to June 25 (at which point most of the resources deployed to the Fire were dispatched elsewhere). In this area of BC, he would expect a wildfire such as this one to be extinguished by mid-September.

George Campbell

[97] Mr. Campbell has been fighting wildfires since 2006, mostly in forest cover and terrain similar to where the Fire occurred. He has since become an Ignition Specialist. He became a Zone Wildfire Coordinating Officer during the summer of 2015, and is currently an Operations Chief trainee supervising two initial attack crews. His testimony detailed his role in controlling the Fire, and his views on whether the Fire could have been controlled in the manner proposed by Mr. Guyan.

[98] Mr. Campbell testified that the Fire was visible from his office window in Lytton when it started, and he observed it spread rapidly to the south, north and northeast. He helped coordinate the June 11 evacuations and ultimately worked on the Fire until June 24, then returned in early July. He remained at the Fire after it flared up at the end of July. He kept comprehensive daily notes. Although not qualified as an expert witness, Mr. Campbell explained his understanding, based on his training, that it would have had to rain at least 10 mm on the morning of June 12 to make a significant difference to forest fuels. One of his roles was to monitor rain gauges in the area. The consensus of those on the Incident Management Team was that the Fire had merely “gone to sleep” as a result of the cooler weather and the amount of rain that fell. Based on that and the weather forecast, it was anticipated that the Fire would become active again.

[99] Mr. Campbell was a passenger on the June 12 reconnaissance flight with Mr. Rennick and others, and flew over the Fire many more times in the days and weeks to come. He participated in discussions as part of the Incident Management Team. The plan they adopted was to directly attack the heel of the Fire—its southeast corner—by fighting it as close to the flames and smoke as they could (as compared to using parallel attack strategies), and to armor the south flank with a strategic burn to keep the Fire from spreading in that direction. They made plans to deal with more active fire behavior as the Fire started to become more vigorous on June 13. It was burning in long, narrow “fingers” along the northern flanks, and a decision was made to “square off” its edges. It was also moving upslope into areas where they wouldn’t be able to fight it due to terrain and safety concerns. The Incident Management Team decided to let it burn on the western flank (towards the upper slopes).

[100] During a reconnaissance flight on June 14, Mr. Campbell saw that the forest fuels were becoming more susceptible to burning, and it was becoming increasingly difficult for ground crews to “hold their lines”. He saw spot fires to the south of what they had previously thought was the Fire’s southwest perimeter, in difficult terrain above Westface Road, which was not accessible or drivable. The Incident Management Team came up with a plan to “hem” the Fire in using strategic burning along its southwest flank and near the northwest perimeter. Mr. Campbell was assigned to work as an Ignition Specialist Trainee and was mentored by Mr. McCaig, who “taught the course” on ignition operations. Accordingly, Mr. Campbell helped

plan and was in the helicopter directing the helitorch for the June 17 ignition operation.

[101] Mr. Campbell testified that by June 15, the Fire had become “almost too aggressive to keep going direct” because the weather was becoming warmer, winds were from the south, and the forest fuels were getting drier. A test burn on the north flank (on June 15) led to the Incident Management Team’s decision to postpone the planned ignition operations, because the test burn did not have sufficient intensity. Conditions on June 16 were such that the Fire was becoming increasingly active. The ignition operation conducted on June 16 near the northwest corner “went well” and achieved its objectives.

[102] In his notes, Mr. Campbell recorded that temperatures on June 17 were starting to rise, relative humidity was dropping, winds were blowing from the south and northwesterly winds were forecast. The Incident Management Team finalized and embarked on their plan to do an ignition operation to the south of the Fire’s southwest flank. Using a helitorch, the drip-pattern sequence commenced high up the slope and progressed south-to-north and downhill towards Westface Road, igniting sequential strips of fire in a “half-moon pattern” about 50 meters apart. It was strategically coordinated with ground crews who used hand-held drip torches near Westface Road to burn off fuels upslope towards the fire being lit from the helicopter. This created what Mr. Campbell described as a “textbook” convection column and a successful burn-out of fuels across the hillside to the north, merging with what had been the Fire’s southwest perimeter (including three spot fires that had been burning outside of the main perimeter).

[103] Mr. Campbell explained that Mr. Guyan’s conclusion—that the ignition operation resulted in a “high intensity head fire” which burned out of control—was incorrect. Rather, the ignition operation was done as Mr. Campbell had explained, and worked “exactly” as the Incident Management Team had intended. It met their objectives of anchoring the Fire to the south and southwest, and enabling ground crews to work on the lower slopes in relative safety.

[104] Mr. Campbell explained that the Incident Management Team considered the option of trying to “hold” the Fire below Westface Road, and decided that was unrealistic given the terrain, weather, wind, and fuel conditions, plus the fact that they could not use air tankers and the road was decommissioned and not readily accessible to heavy equipment. (The Panel notes that this is the strategy Mr. Guyan testified he would have opted for, and was convinced would have been successful.) Mr. Campbell testified that he did not think it would have been achievable, at least not with the resources they had to work with.

[105] Mr. Campbell did a reconnaissance of the Fire in early July, and had to call in helicopters to drop water on some hot spots burning to the southwest, in the Nahump Creek drainage.

[106] When cross-examined, Mr. Campbell agreed that the Incident Management Team chose to use direct attack on the Fire’s south flank up to Westface Road, with some burn off between the Fire perimeter and the control line done by hand. They then chose to anchor and armor the Fire to the southwest by doing a strategic burn using helitorch ignitions above Westface Road to the alpine. They took a similar

approach to the north, burning off fuels to help contain the Fire and making it safer to deploy ground crews. Crews were kept busy using direct attack methods to construct fire lines adjacent to the south and east flanks. He stated that the June 17 ignition operation created an intense but managed fire, consistent with their objectives. It went well from the start and, once underway, they did not try to suppress it. He acknowledged that spot fires occurred to the west (upslope) of the June 17 burn, but they were anticipated. He agreed that the June 17 ignition operation would likely not have burned as much area if they had "laid down more retardant", but that the plan included letting it burn itself out when it reached the alpine, which it eventually did. In retrospect, he would not have done it any differently.

[107] When questioned about Mr. Guyan's planned fire lines on the southwest and west flanks near or along Westface Road, Mr. Campbell stated that he was familiar with the area, and "we didn't explore it as an option". He stated that he would never have put crews there to directly or indirectly attack the Fire, because crews would have been working on very steep rocky ground above the Fire, and would not have had a safe exit route or any support from heavy equipment because Westface Road was deactivated. His crews only used direct attack for a short distance (about 1 km) on the south flank of the Fire, parallel to and north of Nahump Creek and below Westface Road.

DISCUSSION AND ANALYSIS

- 1. What, if any, portion of the Fire did not result from CN's contraventions, but rather from intervening events (i.e., fires set or decisions made by the Wildfire Service) and should not be included when calculating the area damaged or destroyed by the Fire and associated fire control costs?**

Summary of the Parties' Submissions

[108] Although CN recognizes that there are different ways to go about fighting a wildfire, CN says that not all of the burned area or the government's fire control costs are logically and reasonably linked to the underlying contraventions. Specifically, CN says the Wildfire Service could have deployed more resources in a timely way to contain the Fire within an area approximating its June 12 perimeter. CN argues that the burned area that resulted from the June 17 strategic burning (and other ignition operations) plus the "let burn" strategy and the July 31 flare-up were all unnecessary.

[109] While recognizing that the Wildfire Service has discretion to control a wildfire as it sees fit, CN argues that the Panel is obliged to review how the Wildfire Service went about controlling the Fire, and the Province must prove that measures employed to control a wildfire must be necessary "to contain, extinguish or limit" its spread (tracking the definition of "fire control" in the *Act*). CN further argues that if a strategic burn off is deemed to be an appropriate fire control tactic but consequentially damages more land than necessary to control an existing wildfire, then the government should not expect to be fully compensated for all that was

burned and the associated fire control costs. CN argues that section 27 of the *Act* is intended to enable the government to recover only appropriate costs arising from fire control efforts, and those costs should be restricted to what was reasonably necessary in the circumstances—while acknowledging the government’s ability to recover fire control costs incurred “directly or indirectly from the contravention” (in section 27).

[110] CN asks the Panel to conclude that a different approach to fighting the Fire could have resulted in significantly less area impacted at a substantially reduced cost. This argument specifically relates to the areas burned in consequence of the June 17 ignition operation, the “let burn” strategy on the west flank, the June 24 ignition operation, and the July 31 flare-up.

[111] In support of those submissions, CN refers to *Robert Unger v. Government of British Columbia* (Decision No. 2012-WFA-002(b), December 29, 2014) [*Unger*], in which the Commission reasoned (at para. 52) that it had the ability to “order less than the full costs of fire control”; and, *Ralph Stevenson v. Government of British Columbia* (Decision No. 2015-WFA-003(a), July 8, 2016) [*Stevenson*], in which the Commission found (at para. 139) that it can “consider and ‘look behind’ [fire control cost] determinations.” Based on those findings in *Stevenson*, CN submits that the Commission has the jurisdiction to consider decisions that were made about how to control a wildfire—although the decision in *Stevenson* did not turn on that consideration. CN further interprets *Stevenson* as the primary basis for their argument that the actions of the government in fighting a wildfire must be proven to be necessary before it can recover costs or damages.

[112] CN also pointed to *R. v. Hay*, 2003 ABQB 1063 [*Hay*], in support of the argument that a person who starts a fire that subsequently flares up and causes in a wildfire is not necessarily responsible for all consequential damage nor all costs related to putting it out. Similar to the *Act* and the *Regulation*, the Alberta legislation made a person who caused a wildfire responsible for the government’s “costs and expenses in fighting or suppressing a fire”. The court concluded that Mr. Hay had unknowingly left a “holdover fire” smoldering in brush piles on property he had cleared, but had not caused and was not responsible for the resulting wildfire. Rather, the court concluded (at para. 21) that the wildfire was the unforeseeable result of “a combination of circumstances including the early snowfall, early dry conditions, hot weather and the wind.” The wildfire flared up from a fire that had been lawfully lit to burn brush piles several months earlier, and Mr. Hay was relieved of liability based on due diligence considerations.

[113] In context, CN submits that the legislative scheme calls for more than a simple bookkeeping exercise to determine the costs of fire control and damaged Crown resources. Among other things, CN says that such a narrow scope of review ignores the analysis in *Unger* and *Stevenson*.

[114] Further, CN distinguishes the *Act* from section 88 of the *Environmental Management Act*, S.B.C. 2003, c. 58, and section 16 of the *Health Care Costs Recovery Act*, S.B.C. 2008, c. 31. Both of those Acts provide that a certificate signed by the responsible minister is “conclusive” of the amount spent by the government. CN submits that the *Act* has no similar provision regarding the area damaged (or destroyed) by a wildfire or the government’s fire suppression costs

related to a contravention. Without such a provision, CN says the Province must justify and prove the costs it seeks to recover.

[115] In contrast, the Province points to sections 30 and 31 of the *Regulation* which prescribe a straight-forward calculation of adding-up the dollar value of the enumerated items. In support, the Province points to *Canadian National Railway v. Government of British Columbia* (Decision Nos. 2008-WFA-001(a) and 2008-WFA-002(a), June 27, 2011) [CN 2008] in which the Ministry decision-maker had decreased the amount for damage to mature Crown timber by 25% because there had been a delay in initial fire suppression efforts. On appeal, the Commission held (at para. 53) that the Ministry decision-maker had no jurisdiction to reduce that amount, because section 27(1)(c) of the *Act* states that it is to be “calculated in the prescribed manner”, and section 30 of the *Regulation* and related legislation prescribe a simple mathematical exercise, with no provisions to reduce the amount for the reasons described by the Ministry decision-maker.

[116] Based on the legislation, the Province argues that it is not the Panel’s role to second-guess decisions that were made and tactics that were employed, to contain and suppress the Fire. The Province further argues that section 27(1) of the *Act* expressly extends financial liability to the “indirect” consequences of a contravention.

[117] In any case, the Province argues that the Fire was controlled using available resources and appropriate strategies directed by qualified personnel. CN is properly held responsible for damage and costs related to the Wildfire Service’s use of strategic burning to contain the Fire, for resources damaged by the “let burn” strategy, and for the consequences of the July 31 flare-up that occurred in hot, dry, windy conditions when the Fire was not fully extinguished. The Province submits that decisions of the Commission and the courts have consistently held that there is typically more than one way to control a wildfire: see, for example, *Stevenson; British Columbia v. Canadian Forest Products*, 2002 BCCA 217 [Canfor 2002]; and *British Columbia v. Canadian Forest Products Ltd.*, 2016 BCSC 1261 [Canfor 2016], which was upheld in *British Columbia v. Canadian Forest Products Ltd.*, 2018 BCCA 124.

[118] In particular, the Province notes that the BC Supreme Court held (at para. 188) of *Canfor 2016* that Canfor had “not established the Province’s conduct in fighting the Fire constituted a substantial departure from the basic principles of firefighting.” In that case, Canfor made a claim of contributory negligence alleging that the Wildfire Service did not take sufficient action to suppress or extinguish a wildfire. Canfor relied on a report by Mr. Guyan which was critical of the government’s response to the fire. The Court held (at para. 187) that Mr. Guyan’s “opinion is hindsight and does not reflect the efforts taken by [Wildfire Service staff] to assess the Fire and how to attack it safely.”

The Panel’s Analysis and Findings

Jurisdiction

[119] The Panel has considered whether it has the statutory jurisdiction to review the manner in which the Wildfire Service sought to control the Fire, based on the

language in the relevant sections of the *Act* and the *Regulation*. The Panel also considered *CN 2008, Unger, Stevenson, and Hay*. However, the Panel is not bound by the Commission's previous decisions, or court decisions from other Provinces and Territories. Furthermore, as the Panel explains below, those decisions may be distinguished on their facts.

[120] The Panel finds that sections 27(1)(b) and (c) of the *Act*, respectively, provide the Commission with the jurisdiction to consider the amount of the government's costs of fire control "that resulted, directly or indirectly, from the contravention", and the dollar value of the specified Crown resources "damaged or destroyed as a result, directly or indirectly, of the contravention". Those sections require those amounts to be calculated "in the prescribed manner", which is found in sections 30 and 31 of the *Regulation*. In an appeal of an order made under section 27 of the *Act*, the Commission may consider the meaning of the words in section 27 of the *Act* and sections 30 and 31 of the *Regulation*, and whether the amounts assessed in the appealed order fit within the scope of those words.

[121] For example, the Commission may consider whether an amount for the government's fire control costs is within the scope of "fire control" as defined in section 1(2) of the *Regulation*. The Commission may also consider whether the fire control costs "resulted, directly or indirectly, from the contravention" as stated in section 27(1)(b) of the *Act*. Similarly, an appeal involving an amount for damaged or destroyed Crown resources may relate to questions about the meaning of "damaged" and "destroyed", or whether the contravention was the direct or indirect cause of the damage or destruction. Further, there may be situations where the Commission is asked to consider whether the amounts in an order should be apportioned when two wildfires merge but only one of those fires was caused by a contravention.

[122] However, the Commission's role is not to critique, with the benefit of hindsight, whether the Wildfire Service could have controlled a particular wildfire in a different manner that may have reduced the burnt area or resulted in lower associated fire control costs. Although it is an expert tribunal with broad jurisdiction to decide appeals under the *Act*, the Commission is only able to consider the particular decision under appeal. Making an order under section 27 of the *Act* involves determining the quantum of the relevant costs and Crown resource values in accordance with the *Act* and the *Regulation*. The authority to make an order under section 27 does not include reviewing the Wildfire Service's strategies for fighting a particular wildfire to determine, in retrospect, if a wildfire could have been contained to a smaller area, or extinguished sooner, or by deploying available resources differently. The scope of the Commission's inquiry in an appeal of such an order is similarly limited.

[123] The Commission's *CN 2008* decision supports the Panel's interpretation of the legislation. Although the issues in *CN 2008* were somewhat different than the present appeal, the Commission held that the Manager had no authority under section 27(1)(c) of the *Act* and section 30 of the *Regulation* to reduce the value of the damaged or destroyed Crown timber to account for the fact that Wildfire Service staff did not immediately halt trains which led to a two-hour delay in assessing the fire. Consequently, the Commission rejected CN's argument that the

Manager's reduction of the timber value properly reflected the Ministry's failure to mitigate the loss. *CN 2008* was upheld on appeal (see *British Columbia v. Canadian National Railway*, 2012 BCSC 1856; and, *British Columbia v. Canadian National Railway*, 2014 BCCA 171) although the Manager's lack of authority to reduce the timber value by 25% was not at issue in the courts' decisions.

[124] The Commission came to a somewhat different conclusion in *Unger*; however, this Panel finds that *Unger* is not persuasive. The statement in para. 52 of *Unger* that the Commission could "order less than the full amount of fire control costs" was *dicta*, a comment that the panel did not need to make, because the panel's findings on other issues had already decided the appeal. In addition, the panel in *Unger* provided limited reasons for that comment, simply stating that it could order less than the full amount of fire control costs "mainly as a common sense interpretation of the *Wildfire Regulation* based on the arguments put forward by the Forest Practices Board." Keeping in mind the relative importance of comity, the Panel finds that this comment is not persuasive without further explanation and analysis of the relevant legislation.

[125] In *Stevenson*, Mr. Stevenson challenged an order to reimburse the government's fire control costs based on his criticism of the Wildfire Service's approach to suppressing a wildfire he had caused. The Commission reasoned that it had jurisdiction to determine whether the disputed costs were actually "fire control costs" as defined in section 1(2) of the *Regulation*, but rejected the appellant's argument criticizing the fire suppression efforts for lack of evidence. Having dismissed that argument, the Commission confirmed the amount for fire control costs based on the evidence provided by the Wildfire Service, the definition of "fire control", and the types of fire control costs listed in section 31 of the *Regulation*.

[126] In this appeal, the Panel finds that the legislative scheme restricts the Commission's jurisdiction to determine whether the costs of fire control and the other assessments for damage were "directly or indirectly" the result of a contravention of the *Act* or *Regulation*. It is not the Commission's role to critique whether the Wildfire Service could have controlled the Fire in a more effective or more efficient manner.

[127] In a different case, determining fire control costs and damage to Crown resources might include whether something was done—or whether costs were incurred—under the guise of firefighting, but which were not sufficiently related to controlling a wildfire. In a similar context, both CN and the Province also raised the hypothetical situation addressed in *Unger*, namely whether the Commission could "look behind" fire control costs and consider how costs should be apportioned between two or more parties held responsible under sections 25 or 26 of the *Act* where two or more wildfires merge, or where such a wildfire merges with a managed fire started for reasons not related to wildfire control. The Panel is of the view that such an exercise would fall within the legislative scheme. It would not require the Commission to critique the firefighting actions of the Wildfire Service, instead only requiring a fair apportionment of damages and costs.

[128] The Panel also finds that the decision in *Hay* can be distinguished on its facts. Further, the Alberta legislation is different from the *Act*, and the decision, albeit well-reasoned, is not persuasive. In *Hay*, the court considered the meaning of

“caused the fire” in the context of section 12 of the *Forest and Prairie Protection Act*, R.S.A. 1980, c. F-14, which states that the government is entitled on demand to be reimbursed for fire suppression costs “by the person who caused the fire”. Mr. Hay was not charged with an offence under that legislation, and he burned brush piles at a time when no permit was needed. The court concluded that although Mr. Hay had ignited a fire that later escaped and became a wildfire, he did not “cause” the wildfire for purposes of liability under that *Act*. The court applied a due diligence analysis and held that Mr. Hay had used “all best practices” and in “normal circumstances” his fire would not have caused a wildfire. Paragraphs 20 and 21 of *Hay* state:

It is obvious in hindsight that Mr. Hay unknowingly left a holdover fire smouldering on his property. There was nothing to indicate the presence of a holdover fire to a reasonable person taking due care. In normal circumstances because of the precautions he had taken this fire would have caused no problems. The subsequent fire occurred because of a combination of weather conditions.

...

... There is a difference between starting the fire that Mr. Hay started and causing the subsequent conflagration. It could be said in this case that he did not “cause the fire” as required under section 12. The subsequent fire was caused by a combination of circumstances including the snowfall, early dry conditions, hot weather and the wind. In normal circumstances the fire would not have ignited as Mr. Hay used all best practices.

[129] In contrast, CN admits that it committed contraventions that caused a wildfire, and has not claimed the defence of due diligence. Further, unlike CN, Mr. Hay neither challenged the effectiveness of the government’s fire suppression efforts, nor claimed that they contributed to the growth of the wildfire.

[130] As for distinguishing the cost recovery scheme in the *Act* from those found in other BC legislation, the Panel finds that there is little, if any, difference between a ministerial “order” under section 27 of the *Act* to recover government money spent on controlling a wildfire, and a minister’s “certificate” under section 88 of the *Environmental Management Act* to recover government money spent on responding to an environmental emergency. In addition, section 88(4) of the *Environmental Management Act* provides the BC Supreme Court with authority to review and vary the amounts in a certificate if the government expenditures were “excessive” or “unnecessary”, notwithstanding section 88(2) which provides that a certificate “is conclusive as to the amount expended”. The scheme of the *Health Care Costs Recovery Act*, to which CN also referred, is similar. Thus, the Panel is not persuaded by CN’s argument that the Province needs to justify the costs it seeks to recover in an order under section 27 of the *Act*, but not those in a certificate under section 88 of the *Environmental Management Act*.

[131] Although the Panel has found that the Commission’s jurisdiction in this appeal is limited as explained above, the Panel heard and considered substantial evidence and submissions regarding the Wildfire Service’s decisions and strategies to control the Fire. Below are the Panel’s comments on that evidence. Although CN

argues that it should not be held responsible for burned areas and associated fire control costs that resulted from what it characterizes as “intervening events”, particularly the Wildfire Service’s decision to burn certain areas by helitorch and the flare-up that occurred in late July 2015, the Panel finds that those burned areas and associated fire control costs resulted “directly or indirectly” from the contravention, and fall within the scope of sections 27(1)(b) and (c) of the *Act*.

[132] More particularly, the Panel finds that the decision to deliberately burn certain areas was part of the Wildfire Service’s overall strategy to bring the Fire under control is an accepted fire control technique, and the burn offs were competently executed (see paragraphs 140 *et seq*, below, in this decision). The Wildfire Service would not have conducted those ignition activities but for the contraventions that started the Fire in the first place. Even if there was an ancillary benefit by removing combustible fuel in the adjacent area, the ignitions were done at that time for the purpose of controlling the Fire. The Province’s witnesses provided consistent testimony in this regard point. Similarly, the flare-up was part of the original Fire that ignited as a result of the contraventions, and there is no evidence of any intervening cause or that the Province was to blame for the flare-up.

[133] If the Panel has erred about the scope of its jurisdiction in this appeal, the Panel would have found against CN as to whether the Province should have taken a different approach to controlling the Fire. The Panel would have applied the approach stated in *Canfor 2016*, at para. 179:

... Considerable discretion must be granted to those experienced firefighters who are on the ground at the site of the fire in making decisions on how, when and where to fight the fire. Those decisions must take into account developing conditions of the ground, making assessments, developing the plan to fight the fire, having regard to the preeminent consideration of safety for the firefighters involved and having proper firefighting resources.

[134] The Panel finds that *Canfor 2016* is consistent with the principles stated in other judicial decisions regarding firefighters’ decisions when fighting a fire.

[135] For example, in *Hammond v. Wabana (Town Council) et al.* (1995), 113 Nfld & PEIR 116 [*Hammond*], Osborn J. observed that firefighters are expected to do their best to put a fire out, and stated (at para. 186):

A *bona fide* decision or action will not be open to question unless it causes the worsening of the fire and is a substantial departure from the basic principles of firefighting.

[136] The Newfoundland Court of Appeal affirmed this principle in dismissing the appeal (*Hammond v. Wabana (Town Council)* 1998, 170 Nfld & PEIR 97), leave to appeal to the Supreme Court of Canada dismissed with costs (Docket No. 27157, 1999-12-02).

[137] The Alberta Court of Queen’s Bench in *Killip’s Television Service v. Stony Plain (Town)*, 2000 ABQB 79 [*Killip’s Television Service*], observed that the proper standard to apply in relation to firefighting strategies is as follows (at para. 45):

Combining the concept of reasonableness with the particular circumstances of the Fire Department in question allows for the flexibility to enable the standard to serve the broad variety of circumstances which exist in Canada.

[138] The Panel notes that, while the above-mentioned decisions involved municipal volunteer firefighting, the general principle stated in *Killip's Television Service* was applied to forest firefighting in British Columbia by Greyell J. in *Canfor 2016* (at para. 184), in which the wording used in *Hammond* was adopted, namely:

While there are undoubtedly some actions, when viewed in hindsight, the Province may have done differently, in my view *Canfor* has not established the Province has breached the standard of care as set out in *Canfor #1*; that is, that the Province's efforts to suppress the Fire were a *substantial departure from the basic principles of firefighting*.

[emphasis added]

[139] Thus, had the Panel found that the Commission had jurisdiction to consider whether the Province should have taken a different approach to controlling the Fire, the question would not be whether less area could have been burned and the costs of firefighting might have been less if different strategies were used or resources were used differently. Rather, the question would be whether decisions about how to control the Fire were made by experienced firefighting personnel for legitimate reasons within a range of what would be considered appropriate in the circumstances.

June 17 Ignition Operation

[140] Based on the evidence, the Panel concludes that the June 17 ignition operation was not a "separate fire". Rather, the decision to conduct this operation was a direct or indirect result of the contraventions: it was part of the Wildfire Service's overall strategy to control the Fire. Crown resources that were damaged or destroyed, and associated fire control costs arising from this ignition operation resulted, directly or indirectly, from the contraventions.

[141] Mr. Guyan suggested that the June 17 ignition operation was not done for fire suppression, but rather was a prescribed burn done as a forest management strategy. The Panel finds that this is unfounded speculation, at best. Even if there was an ancillary benefit of removing combustible fuel in the area which would act as a preventative measure against future wildfires, this ignition operation was done for the specific purpose of controlling—in this case, containing—the Fire.

[142] On a balance of probabilities, the Panel finds that the evidence indicates the June 17 ignition operation was a textbook example of a carefully planned and well-executed wildfire control technique. The overwhelming evidence is that it was not feasible to build fire control lines using direct or parallel attack strategies along the Fire's southwest and west flanks, and there was a real concern about the foreseeable consequences if the Fire escaped to the south fanned by a predictable wind shift in the hot, dry summer months. The June 17 ignition operation suitably addressed that concern and achieved the intended objectives. It contributed to successful efforts to control the Fire. Mr. Guyan's contrary views about how the Fire

could have been contained were not consistent with the evidence from the witnesses who fought the fire.

[143] The Panel also finds that the approach taken was within the range of what was appropriate and justified in the circumstances, consistent with the basic principles of fighting wildfires. The decision to conduct the ignition operation was made by competent, qualified personnel for the purpose of controlling the Fire. Wildfires tend to be somewhat predictable in their behavior relative to weather, wind and available fuel, but it is hard to envisage a wildfire that burns in an entirely predictable manner. As Mr. Guyan said: it is easy to say in retrospect that a different approach may have been more effective or that something could have been done differently.

June 24 Ignition Operation

[144] During submissions, CN added the June 24 ignition operation to the list of fire control actions for which there was no evidence of necessity. The Province objected that it was not given prior notice of this point of appeal, and consequently had no opportunity to present evidence about that ignition operation.

[145] The Panel finds that if CN wished to make an issue of the June 24 ignition operation, it needed to notify the Province earlier in the appeal process. It would be procedurally unfair to address the merits of CN's arguments on this ignition operation. Additionally, there is insufficient evidence before the Panel about the June 24 ignition operation from which to draw a conclusion that the fire control costs and damage to Crown resources related to this ignition operation were not related to efforts to control the Fire as a direct or indirect result of the contraventions.

Limiting the Fire to the June 16 Perimeter

[146] Similarly, the Panel finds that taking a modified approach to controlling the Fire by letting it burn itself out along its west flank (towards the alpine) was a pragmatic strategy, and allowed firefighting resources to be allocated in the most effective manner while ensuring the safety of firefighters. Mr. Guyan testified that he would not have adopted a "let burn" strategy in this case; however, the Panel found the testimony of Mr. Rennick, Mr. Richardson, Mr. Ewart, and Mr. Campbell to be consistent and persuasive. They are experienced firefighters who were directly involved in determining and implementing strategies to control the Fire, and they all indicated that there was no reasonably realistic or safe way to use more active attack methods along Mr. Guyan's planned fire lines on the west flank.

[147] Even if the Panel had decided to limit CN's liability to something approximating the June 16 perimeter (and in keeping with Mr. Guyan's assertion that the Fire could have been controlled by July 1), the Panel finds that there is a lack of evidence as to the precise area that was "damaged or destroyed" to that point, as well as to the associated fire control costs. Mr. Greig's spatial analysis of damage did not address this hypothetical situation. Mr. Guyan told the Panel that he assumed somebody else was doing that spatial analysis, and so did not address it either.

The Flare-Up

[148] The Panel heard submissions, but little evidence, about the flare-up that occurred several weeks after the Fire was considered contained. The Fire was apparently considered to be under control by June 24 or 25, 2015. After that, most firefighting resources, except for a mop-up crew remaining to monitor the Fire and put out “hot spots”, were moved to other fires elsewhere around the Province. On or about July 31, 2015, the Fire reignited from within its June 25 perimeter and burned another substantial tract of land. The Province dispatched firefighting resources back to the Fire, and conducted fire control activities for two more weeks. Some firefighting personnel remained on the Fire until September 3, 2015. The Fire was not considered to be fully extinguished until October 2015.

[149] The Panel finds that the flare-up was a type of “holdover fire” and was part of the original Fire that was caused by the contraventions. Although the Fire was considered to be under control for several weeks before the flare-up, crews continued to monitor the Fire and suppress hot spots. The Panel accepts that the decision to move most of the firefighting resources elsewhere was justified: the Wildfire Service has finite resources, and by that time there were higher priorities elsewhere. There is insufficient evidence of any intervening cause, or that the Province was to blame, for the flare-up. There is also insufficient evidence that the flare-up could have been prevented—as compared to the criticism levelled in *Canfor 2002*, at para. 46.

Conclusions on Issue 1

[150] For the reasons provided above, the Panel concludes that:

1. The Commission’s role in this appeal is to determine whether the amounts in the Order for fire control costs and the value of damaged or destroyed Crown grass land and other forest land resources are, directly or indirectly, the result of CN’s contraventions of the *Act* and the *Regulation*. This may properly entail considering whether those amounts are within the scope of the legislation, but not examining whether the various decisions and activities that went into controlling the Fire ought to have been different in order to reduce the burned area and associated fire control costs.
2. Even if the Panel had authority to review how the Wildfire Service controlled the Fire, it would have found that the Wildfire Service’s decisions and tactics were within the range of accepted practices.
3. The June 17 ignition operation and the July 31 flare-up were part of the Fire, not separate fires, and did not unnecessarily damage or destroy areas that would not otherwise have been impacted if the contraventions had not occurred. The decision to undertake ignition operations, and the flare-up, were a direct or indirect result of CN’s contraventions.
4. CN’s contraventions were the cause, whether directly or indirectly, of the damage and destruction to Crown resources within the Fire’s final perimeter.
5. Pursuant to sections 27(1)(b) and(c) of the *Act*, CN is responsible for the value of all damaged or destroyed Crown grass land and other forest resources

within the Fire's final perimeter and all fire control costs associated with the Fire.

2. How many hectares of forest land resources and grass land resources were damaged or destroyed by the Fire, and what amounts are payable by CN under the *Act* and the *Regulation*?

Overview of the Evidence

[151] The Manager determined that the area within the Fire's final perimeter totaled 2,384.7 hectares, of which 2,177.2 hectares was Crown land, 196.8 hectares was Indian Reserve, and 10.7 hectares was privately-owned. The Crown land included:

- 1,921.4 hectares subject to Visual Quality Objectives, of which:
 - 1714.9 hectares were "other forest resources" in a protected area or subject to the *Government Actions Regulation* (\$5,000/hectare);
 - 149.6 hectares were grass land resources (\$500/hectare); and
 - 56.9 hectares were non-vegetated (\$0/hectare).
- 3.5 hectares were forest lands in a community watershed (\$5,000/hectare); and
- 252.3 hectares of "other forest resources" not in a protected area or subject to the *Government Actions Regulation* (\$1,000/hectare).

[152] In preparing his evidence for the appeal, Mr. Greig determined the area within the Fire's final perimeter to be 2,396.0 hectares, including 2,199.4 hectares of Crown land. For the purposes of this appeal, the parties agreed to use Mr. Greig's estimate of the Fire's perimeter and calculation of the area within.

[153] The Province produced two "Burn Severity Maps" with four categories differentiating the relative severity of the damage to tree crowns from the Fire based on Landsat 30-m pixel satellite imagery. However, both experts—Mr. Greig and Mr. Manhard—questioned the accuracy of these Burn Severity Maps, and rejected the categorization of the relative severity of damage depicted. As such, the parties did not rely on the Burn Severity Map other than for illustrative purposes.

[154] Mr. Greig explained his theory that some areas within the Fire's perimeter only had "incidental damage", which he estimated were less than 50% damaged from the Fire.

[155] In contrast, Mr. Manhard subsequently testified that the Fire would have completely burned the understory wherever it spread: the fact that pockets of timber remained alive with minimal or no visibly apparent damage is not to say the entire area was not damaged to some degree.

Summary of the Appellant's Submissions

[156] CN argues that the determination of dollar value for "other forest land resources" and "grass land resources" should be reduced for two reasons: (1) CN's argument on Issue 1; and (2) the areas that were only incidentally damaged should not be considered "damaged or destroyed" for the purposes of the *Act*.

[157] Having rejected CN's argument on Issue 1, the Panel has only addressed the second aspect of CN's argument on Issue 2.

[158] CN maintains that there must be visible evidence in order to be considered "damaged" by fire, and the Province can only assess on a per hectare basis if it can prove the entire hectare of land was fully damaged or destroyed. While accepting Mr. Manhard's opinion that fire burned through every hectare within the Fire's perimeter, CN says the relevant issue ought to be the extent of the damage to the polygons containing live timber that were mapped by Mr. Greig.

[159] CN rationalizes that if only part of a given hectare was damaged or destroyed, then it should be billed accordingly. For example: if only half a hectare was impacted (that is, only 50% of the hectare was visibly damaged, in keeping with Mr. Greig's definition of "incidental damage"), then the Province ought to only recover \$500, rather than \$1,000, for that hectare. Similarly, CN argues that it should only be billed for the aggregate number of hectares within a polygon which Mr. Greig delineated as having experienced only "incidental damage". In support of those submissions, CN points to the Commission's rationale in *CN 2016*, which dealt with the meaning of "damage" to merchantable Crown timber and stumpage valuation following a wildfire.

Summary of the Province's Submissions

[160] The Province submits that "forest land resources" include the whole ecosystem within an area that has (or had) trees, and that the damage to forest land should be calculated on a per hectare basis rather than tree-by-tree. The Province nonetheless agrees that visible damage is an appropriate "touchstone" to determine whether Crown resources were damaged by the Fire, and argues that Mr. Greig's polygons of "incidental damage" all have visible damage that exceeds his "eyeball" estimate. The Province points to Mr. Manhard's observation that the Fire effectively burned through the entire area, that all of the understory within Mr. Greig's polygons would have been completely burned, and that most (over 99%) of the trees that were not killed had visible charring. The Province does not accept Mr. Greig's characterization of "incidental damage" associated with polygons containing patches of live timber within the Fire boundary, and disagrees with the suggestion that Mr. Greig's characterization of incidental damage should lead to a reduction in the per hectare assessment for damage caused by the Fire.

The Panel's Findings

Preamble

[161] Having rejected CN's argument on Issue 1, the following analysis applies to the area within the Fire's final perimeter. Although it focuses on "other forest land resources", the discussion applies equally to "grass land resources".

[162] Section 30 of the *Regulation* prescribes the method used to determine the value of damaged or destroyed Crown resources. Subsections (a) and (b) address the value of mature and immature Crown timber, respectively, neither of which are at issue in this appeal. Valuing other forest land resources (that is, other than Crown timber) and grass land resources is addressed in subsections (b) and (c):

30 For the purposes of section 25(1)(b) and 27(1)(c) of the Act, the manner in which the dollar value of

...

(c) other forest land resources is to be calculated is by multiplying the number of hectares of other forest land resources damaged or destroyed,

(i) if in a protected area or an area that is the subject of an order under section 7, 8, 10, 12, 14 or 15 of the Government Actions Regulation, by \$5,000, or

(ii) if in any other area, by \$1,000

and then assigning the product obtained as the dollar value for those other forest land resources,

(d) grass land resources is to be calculated is by multiplying by \$500 the number of hectares of grass land damaged or destroyed and then assigning the product obtained as the dollar value for those grass land resources,

...

[163] That is the entire direction provided by the *Act* and the *Regulation* for determining the value of damaged or destroyed “other forest resources” and “grass land resources”. By comparison, subsections 30(a) and (b) provide a much more comprehensive scheme for calculating the value of damaged or destroyed Crown timber. It is, therefore, not surprising that two experts approached the interpretation of subsections 30 (c) and (d) differently.

[164] Three items in section 30(c) require some clarity before quantum can be assessed: (1) a definition of “other forest land resources”; (2) a definition of “damaged or destroyed”; and (3) a method for applying those definitions spatially to calculate number of hectares.

[165] Both experts agreed on the definition of “other forest land resources”, which includes vegetation (living or dead) other than trees that are considered to be timber (see below), the duff and soil layers, and any fauna—from large mammals to soil organisms—living there, plus intrinsic values related to soil stability, hydrology, photosynthesis, aesthetic and other intrinsic considerations. It includes the entirety of the ecosystem on any given forest land, but does not include the dollar value of mature and immature Crown timber. The Panel notes that “timber” is defined in section 1 of the *Forest Act*, R.S.B.C. 1996, c. 196, c. 57:

“timber” means trees, whether standing, fallen, living, dead, limbed, bucked or peeled.

[166] Although this definition is found in the *Forest Act* and not the *Act*, both apply to BC’s forest resources, and there is a general presumption of coherence between statutes that deal with similar subjects.

[167] Mr. Greig and Mr. Manhard also essentially agreed on the criteria they used to assess whether a particular location within the Fire perimeter had been

damaged: if there were visible signs of having been touched by fire (e.g., blackened or charred tree bark or shrubs, burned or charred logs or duff layer, tree and undergrowth mortality attributable to the Fire), then the area or thing was damaged. However, even using what appears to be relatively simple criteria for determining if a particular location had been burned (and showed signs of damage), the experts interpreted the extent of damage differently, as depicted in photographs of areas that either or both had visited or viewed from a helicopter.

[168] As an aside, the Panel notes that fire can be used as a forest management tool, and just because fire—even a wildfire—burns through a forest it does not necessarily equate to damage *per se*. That was not, however, part of what the Panel was asked to consider. For the purposes of this appeal, the Panel accepts the criteria of damage agreed upon by these experts.

[169] Further, Mr. Greig and Mr. Manhard disagreed on how these damage criteria should be applied spatially. Each used very different approaches to estimate the number of hectares that had been “damaged or destroyed”. For a wildfire that is over 2,000 hectares in size, both agreed it was not possible to physically inspect the entire area to quantify how much of every hectare was “damaged or destroyed”. One must, therefore, rely on a spatial ‘model’ to extrapolate from what one does know to the areas one did not visit. Both experts relied on different models at different scales to extrapolate the damage criteria to the aggregate areas delineated by Mr. Greig’s “incidental damage” polygons.

[170] The Panel notes that spatial modeling is used in forestry applications such as timber valuation, in the sense that point samples (cruise plots) are extrapolated to relatively large tracts of land. For example, the methods for doing so are specified in the Cruising Manual and the Coast and Interior Appraisal Manuals, and are designed to ensure unbiased accuracy and known precision in forest sampling. Remote sensing technology is another tool. Neither expert was aware of any such method they could apply to this particular case or to determine wildfire damage generally.

[171] The Panel examined each expert’s modeling approach for extrapolating damage estimates, and considered which method is the most reliable for determining the hectares that were damaged or destroyed.

Meaning of “Damaged or Destroyed” in the Context of the Act

[172] There is no disagreement that most of the forest resources within the Fire perimeter were damaged or destroyed. Mr. Manhard estimated that all but three hectares within the Fire’s perimeter had been either damaged or destroyed. Mr. Greig estimated that all but 7% of the total area within the Fire’s perimeter was essentially destroyed for the purposes of the *Act*, or showed greater than 50% damage. More specifically, he estimated 2,226.2 hectares of the total Fire area received greater than 50% damage, and 169.8 hectares was only incidentally damaged.

[173] The Panel adopts the modern principle of statutory interpretation stated by the Supreme Court of Canada in *Rizzo & Rizzo Shoes Ltd. (Re)*, [1998] 1 SCR 27 [*Rizzo*], at para. 21:

Today there is only one principle or approach, namely, the words of an *Act* are to be read in their entire context and in their grammatical and ordinary sense harmoniously with the scheme of the *Act*, the object of the *Act*, and the intention of Parliament.

[174] The approach to statutory interpretation in *Rizzo* was adopted and applied in *British Columbia v. Canadian Forest Products Ltd.*, 2018 BCCA 124, beginning at para. 68, which dealt with the interpretation of the *Regulation*. The Panel is guided by this approach.

[175] Given that the words “damage” and “destroy” are not defined in the *Act* or the *Regulation*, the Panel looked to dictionary definitions for guidance on the meaning of those words, bearing in mind that their statutory context relates to harm to, or loss of, Crown resources that was caused by a wildfire. The Oxford Dictionary defines “destroy” as: Verb [with object] 1. End the existence of (something) by damaging or attacking it. It defines “damage” as: Verb [with object] 1. Inflict physical harm on (something) so as to impair its value, usefulness or normal function, synonymous with (amongst other things) “injure, mar, blemish, scar, disfigure”.

[176] Accordingly, the Panel finds that—for the purposes of this appeal—“other forest resources” would be considered destroyed if all visible vegetation is killed, and they would be merely damaged if some vegetation or trees survived. The regulatory scheme does not qualify how much harm is required in order to be considered compensable damage. Further, as noted above, “other forest resources” in section 30 of the *Regulation* does not include Crown timber and grass land resources, but includes all other aspects of a forest ecosystem: flora, fauna, soil and water, replete with associated economic, visual, recreational, spiritual, and other intrinsic values.

[177] In *CN 2016*, the Commission considered the interpretation of “damage” in the *Act* but only in relation to the value of Crown timber. The Commission found (at para. 77) that there may be cases where the evidence would support a finding that trees were “damaged” by fire without showing any visible physical damage. However, such evidence was not provided to this Panel, and the value of Crown timber was not under appeal here. In this case, the Panel adopts the evidence on the criteria for “damage” that was agreed upon by the two experts, namely: whether there was visible charring on bark, or burned or singed foliage, shrubs, grass, duff layer, etc.

[178] As previously noted, in assessing damage, Mr. Greig looked for visual characteristics such as charred butts, singed or partially dead crowns, and charred or denuded understory or ground cover. Mr. Manhard looked for visible impacts such as dead stems, branches or crowns, singed foliage, charred bark, burned logs and roots, evidence of burned soil, litter and understory, etc. The Panel finds that both experts used essentially the same criteria to determine what constitutes visible indications of damage; however, they differed as to how they interpreted those criteria, which is crucial to consider because scaling up the definition of damage—from the single tree or plant to the area around the plant, and then to the hectare, and then to the entire Fire—is central to a reliable spatial modeling exercise used to estimate the number of hectares that were damaged or destroyed.

[179] If one considers a site to be the area encompassed within any single photograph (many of which were placed in evidence and discussed by both experts) then the Panel can compare how each expert applied their criteria of damage to any given site. For example, in taking the Panel through a series of photos, Mr. Greig stated that the Fire “may not have spread” into some places and that others may only have experienced “incidental damage”, or the Fire “may have missed part of this area”, or (consistent with Mr. Manhard’s views) that “occasional trees may have very light damage or may have missed getting any damage”. Further, many of Mr. Greig’s comments that are central to his opinion are prefaced by qualifying terms such as “could be”, “appears”, “may have”, “possibly from”, “looks to be” or “possibly substantiates my claim”. By comparison, having looked at the same photos, Mr. Manhard testified that virtually the entire site experienced fire damage: the Fire had burned through virtually the entire understory, even if it left some live trees standing.

Areas Experiencing “Incidental Damage”

[180] The term “incidental damage” requires further comment. Apparently, Mr. Greig did not use this term on his map at the Opportunity to be Heard, but came up with it after his helicopter tour during which he viewed the polygons of green timber that he had mapped from an orthophoto. The only change the Panel could ascertain, compared to his evidence at the Opportunity to be Heard, was that he had delineated some of the polygons (which he previously considered to be undamaged) as having received “incidental damage”. In doing so, Mr. Greig rationalized that any polygon representing a patch of timber with less than 50% dead crowns was only incidentally damaged by the Fire, and all of the area within that polygon should therefore *not* be categorized as having been damaged (or should be assessed at half the per hectare rate prescribed by the *Regulation*). This characterization was his own, and was not based on any previously established or accepted method of classifying fire damage. He expressed some frustration for not having come up with a better way to make his determinations.

[181] In contrast, Mr. Manhard testified that wherever he could see the ground (from an orthophoto or helicopter), it was readily apparent that the entire area had been burned. He verified this when he walked past or through patches of trees that had green crowns. For example, in relation to one polygon that had a high percentage of apparently health timber characterized by green crowns, he observed:

The fire ran through the entire gully of green trees and burnt out some of the roots, all of the understory trees, and burnt the bark and some of the stems... The damage in one form or another impacted every tree in this area.

[182] According to Mr. Manhard, a colleague on that same helicopter trip who walked through another patch of trees with green crowns reported to Mr. Manhard that “every tree had been burnt... scorching was evident on all of the stems.”

[183] While acknowledging that he did not specifically check the areas that Mr. Greig categorized as having “incidental damage”, Mr. Manhard said his objective was to view areas that had a high percentage of green crowns. He also stated that every patch of trees with green crowns that he looked at (from the ground) was

completely burned at ground level, except for one patch measuring approximately 20 meters by 20 meters (0.04 hectare) within Mr. Greig's polygon 'D'. The impact to the understory aside, Mr. Manhard estimated that "well under one percent" of the trees within the Fire's perimeter were undamaged.

[184] It was interesting how both experts used the same photos with such contrasting commentary: Mr. Greig to show that the damage was limited in nature; Mr. Manhard to illustrate that the damage was so extensive. The Panel carefully considered this testimony. The following examples exemplify how these witnesses differed in their conclusions.

[185] Two photos taken by Mr. Greig are titled 'Enfor1/PB070283' and 'Enfor1/PB070287' in Figure 1 of Mr. Greig's January 2, 2019 report. Mr. Greig explained how these photos show less than 10% to 25% damage, and noted:

These areas have limited burned tree butts, burned ground cover or burned tree canopies. Note that some dead trees in these photos could be the result of insect damage and not wildfire; given the extent of insect damage in the area, we did not assume that dead trees were the result of the wildfire.

[186] In examining the same photos, Mr. Manhard commented that his impressions were very different when he viewed the forest at ground level. He had taken another photo very close to where Mr. Greig's had been taken, to illustrate there was charring up the tree trunks, and that the site had been "burnt through" and was greater than 50% damaged. He also observed that a significant number of mature trees had been killed, and those still alive had charred bases (which could not be seen through the green canopy from above) meaning they had been damaged by the Fire. Further, Mr. Manhard expressed the view that trees that were damaged by insects prior to the Fire would have been consumed by the Fire and—based on his observations—any dead trees standing amidst the green patches, where the Fire had burned through, had been killed by the Fire.

[187] The Panel does not need to comment on all of the photos, or provide examples from each of Mr. Greig's polygons at issue in this appeal, in order to reject CN's assertion that the Fire did not damage every hectare that it burned through, or that the per hectare assessment should take "incidental damage" into account. The Panel accepts Mr. Manhard's evidence that when he was on the ground observing areas inside the perimeter of the Fire, he found no example that would validate Mr. Greig's model of what constitutes damage, or lack of damage, attributable to fire. In contrast, Mr. Greig did not observe the understory and trees from ground level. The Panel finds that ground observations were necessary in this case to validate aerial observations of the burned area (whether by photo interpretation or during a flight).

[188] Specifically, the Panel finds that the spatial modeling exercise Mr. Greig used to define his areas of incidental damage was flawed. Originally, based on orthophoto review, he delineated polygons as unburned for the Opportunity to be Heard. After his helicopter overflight, he came up with the concept of incidental damage for this appeal, without significantly altering the polygon boundaries. That is, he seems to have largely ignored his own observations of charred or minimally scorched or dead trees and evidence that the Fire had burned through the

understory—relevant *indicia* of fire damage—as an opportunity to adjust his model relative to assumptions he made and conclusions he drew from having delineated his polygons around patches of timber that had survived the Fire.

[189] The Panel finds that if the Fire burned through these polygons as an understory fire, then Mr. Greig ought to have taken steps to verify his modeling assumption that they only sustained incidental damage. For example, he should have looked at the understory and trees from ground level. In contrast, Mr. Manhard did not pre-judge the burn conditions within the Fire perimeter, but rather made some preliminary field observations upon which to base his assessment—then confirmed that assessment by a second ground visit. On balance, Mr. Manhard’s is a more reliable estimate. Mr. Greig’s conjecture did not account for the possibility—substantiated by Mr. Manhard’s evidence—that the Fire could have harmed the understory layers and charred the trunks of surviving trees while leaving the crowns relatively unaffected. Mr. Manhard’s ground-based observations refute Mr. Greig’s analysis.

[190] The Panel also finds that Mr. Greig’s use of the term “incidental damage” is vague and not helpful: at best, it is an imprecise estimate of damage caused by the Fire. When a wildfire burns through a forest in the manner the Panel understands this one did, it will likely have caused damage wherever it burned, notwithstanding that it may not have visibly damaged (let alone destroyed) all of the trees within a given hectare. Some measure of ground-truthing is required to reliably assess the extent of the damage caused by a wildfire. The Panel is not prepared to find that some areas escaped damage or were less than 50% damaged based on a “best guess” estimate. A “best guess” falls short of the standard of proof that CN must meet; i.e., whether CN has provided evidence that establishes, on a balance of probabilities, the facts that it asserts.

[191] In summary, the Panel finds that Mr. Manhard’s interpretation of post-fire photos and description of the extent of damage is more reliable than Mr. Greig’s. It is consistent with observations made on the ground, and consistent with the Panel’s observations when viewing the photos. Accordingly, the Panel concludes that the Fire destroyed or damaged just about everything (with the exception of a total of three hectares, previously noted) as it burned through the understory, notwithstanding these ‘islands’ of green trees left standing.

“Fully” damaged

[192] The Panel feels compelled to comment further regarding CN’s argument that the Province can only recover for “fully damaged” hectares. The Panel rejects CN’s suggestion that the word “fully” should be read into the *Act* and *Regulation* in terms of how to calculate how many hectares of forest land (or grass land) were damaged or destroyed by a wildfire. Based on the dictionary definitions and principles of statutory interpretation discussed above, the Panel finds that if everything were dead within a given hectare, then that hectare would presumably be “fully damaged” which would equate with “destroyed”. Using that analysis, the Panel does not agree with CN that the word “fully” should be read in to section 30(1)(c) of the *Regulation* to assist its interpretation of damage versus destruction.

[193] In written submissions, CN clarified that “fully” damaged should mean that 100% of a given area has been damaged, although not all vegetation or every tree has necessarily been killed, and that if part of the area remains unburned, then the Province should not be able to recover full value for undamaged areas. The Panel takes the view, however, that use of the word “fully” is unwarranted. A more logical interpretation is that if a particular area is unburned, then it cannot be part of the damage recovery. In this case, the Panel has accepted Mr. Manhard’s assessment of damage over Mr. Greig’s, and excluded the area that Mr. Manhard considered to be undamaged. Based on Mr. Manhard’s observation that virtually the entire understory was burned (with the exception of three hectares), even reading the word “fully” into the calculation of damaged area would not change the Panel’s conclusions. However, CN’s “fully” damaged argument alerted the Panel to the issue of how to reliably determine damage to “other forest resources”, more specifically, the scale at which damage can be reliably determined.

[194] When the Panel asked for clarification, Mr. Greig was not able to say what scale he used for his GIS model, and he did not attempt to determine what reliability or confidence he had in his area estimates. In contrast, Mr. Manhard said that during his walk-through, he viewed an area approximating 20 meters by 20 meters, or 0.04 hectares, and postulated that about 0.5 hectares (about 70 meters by 70 meters) is likely the smallest area that could be usefully and reliably delineated and mapped at the scale of this Fire. Mr. Manhard did not develop a map because, in his opinion, it was unnecessary to do so.

[195] Further, CN asked the Panel to consider the Commission’s findings in *CN 2016*, in which the word “damage” was considered in context of the value of mature Crown timber in the aftermath of a wildfire. The Panel notes that mature Crown timber is valued according to a methodology prescribed in subsection 30(a) of the *Regulation* and the *Forest Act*, which involves multiplying the timber’s stumpage value by the number of cubic metres of timber. An answer that quantifies damage should be possible if individual trees, or statistically representative samples, are examined to determine questions about a tree’s merchantability, or the stand’s merchantability. In this appeal, however, the issue is damage to “other forest land resources” and “grass land resources” valued on a per hectare basis, and not a timber volume or per tree basis. In *CN 2016*, the Commission briefly commented on the valuation of damaged “other forest land resources” and “grass land resources”, but those comments do not assist CN in this case. At para. 234, the Commission recognized that different methods applied for valuing mature Crown timber as opposed to “other forest land resources” and “grass land resources” damaged by wildfire, but the Commission did not consider the issue in detail because the area disputed by the parties was “very small” and it was “not possible to determine the figures with exact precision.”

[196] Accordingly, the Panel finds that 2,196.4 hectares of Crown land were damaged or destroyed as a direct or indirect result of the Fire. This area equates to the area that the parties agree is encompassed within the Fire’s perimeter (2,199.4 hectares) minus the three hectares that Mr. Manhard considered to be undamaged.

Forest Land versus Grass Land

[197] Mr. Greig provided three VRI classifications of lands within the Fire's final perimeter: "treed", "vegetated but non-treed", and "non-vegetated". While hearing evidence, the Panel did not follow-up on the question of how Mr. Greig's treed lands became "forest land" for the purpose of calculating the area, and thus the value, of the Crown forest land, grass land, and other forest resources that were damaged or destroyed (having been informed by CN's counsel that it was not going to be an issue). During submissions, however, it became apparent that CN's counsel had used Mr. Greig's definition of "treed" versus "non-treed" as equivalent to "forest land" and "grass land" in calculating the quantum for this appeal, without showing how this was consistent with the definitions in the *Act*. Consequently, the Panel raised this with both parties during submissions. The Province did not disagree with the Panel's suggested interpretation of the definitions, as set out below. CN countered that there had to be sufficient evidence before the Panel for the Panel to change any area from grass land to forest land and, failing that, no amount could be charged for any fire damage to those areas.

[198] The Panel has considered how to interpret the evidence based on the definitions of "forest land" and "grass land" provided in section 1 of the *Act*, which state as follows:

"forest land" includes land that previously supported trees and is not in other use, but does not include land excluded from this definition by regulation;

"grass land" includes land that

- (a) previously supported grass and is not in other use, or
- (b) is in use for the production of forage or is lying fallow, having previously been used for the production of forage...

but does not include land excluded from this definition by regulation;

...

[199] Based on a contextual reading of those definitions in accordance with *Rizzo*, the Panel finds that "forest land" includes areas within the Fire's perimeter that have previously been logged prior to a fire, and to stands that had been damaged or destroyed by a fire. The Panel finds the act of timber harvesting, logging or the consequences of a fire does not put the land into another use; the land is still part of the Crown forest, and as such fits the *Act's* definition of having "previously supported trees".

[200] Mr. Greig's report used the VRI system for classifying land. The system is a five-step, hierarchical land classification (see *A User's Guide to Vegetative Resources Inventory*, Mike Sandvoss, Bruce McClymont and Craig Farnden, March 31, 2005). At the first step, the system classifies whether an area of land (a polygon) is "vegetated" (meaning vegetation covers 5% or greater of the surface of a polygon) or "non-vegetated". For vegetated polygons, the second step classifies the land as "treed" (meaning trees of any height are 10% or greater crown closure) or else as "non-treed". The third to fifth classification steps further define any given polygon, although the results of those steps were not in evidence in this appeal.

[201] Looking to the definitions in the *Act*, land which—according to the VRI land cover classification system—is unvegetated (e.g., rock outcrops) fits neither of these definitions. Therefore, any land that Mr. Greig reported as unvegetated is not at issue here, and results in no quantum being assessed for any such area.

[202] Mr. Greig classified the vegetated VRI polygons within the Fire's burnt area as either treed or non-treed, as defined in the VRI land classification system, in keeping with his engagement letter. CN's counsel then equated those classifications with forest land and grass land under the *Act*, consistent with the definitions used in *CN 2016*. The Panel finds that this approach led to an analysis that is confusing and not helpful in this case. The difficulty with this approach is that the *Act* defines forest land differently than how the VRI classifies vegetated (and treed) land.

[203] Besides the land classification system, the VRI provides a separate set of stand characteristics for each polygon and a stand disturbance history for polygons where there has been a disturbance. For example, in Mr. Greig's report, some non-treed polygons are labelled NSR (which stands for "not satisfactorily restocked"), providing the logging dates of those stands (from 1986 to 1992), and one is a regenerating stand (with 28-year old trees). This evidence indicates a history of logging for these polygons. The Panel finds that such lands are classified as "forest land" under the *Act* for the reasons provided above. That definition is determinative in this appeal. A VRI polygon that has previously been logged, but has not yet regenerated to what the VRI would under its system classify as "treed", would still meet the definition of forest land under the *Act* (unless it had been converted to some other use). In the result, the Panel could find no compelling evidence for any of the vegetated polygons that are Crown land within the Fire's perimeter to be classified as grass land.

[204] With those considerations at hand, the Panel observes that in *CN 2016*, the Commission relied on the same VRI definitions used by Mr. Greig in this appeal and equated them to forest land and grass land under the *Act*. In *CN 2016*, however, the Commission noted (at para. 224) that large parts of the area in question were sparsely treed, and areas referred to as grass lands were true grass land, not old clearcuts (which is the case in this appeal). That Panel also had access to the full five-step VRI land classification system, which was not entered as evidence in the appeal before this Panel.

[205] Having considered the evidence in this appeal, and given the definitions in the *Act*, the Panel finds that there is sufficient evidence for the Panel to re-classify some areas categorized by Mr. Greig as grass land to forest land. Accordingly, the VRI polygons which indicate the land was previously logged are "forest land"; and further, there is no "grass land" within the Fire's perimeter.

[206] The Panel used Mr. Greig's summary data where possible, and re-assigned the sums of these polygons to what the Panel has interpreted as forest land under the *Act*. Based on the Panel's interpretation of the *Act*'s definitions of "forest land" and "grass land", eight VRI polygons classified by Mr. Greig on his Map 6 and one more in his Table 6 that were labelled as grass land, or "vegetated non-treed", are either NSR or as described below. They include polygons that were logged between 1986 and 1992, or disturbed by "N" (which Mr. Greig did not define, but which the Panel notes stands for "non-biological (abiotic) injuries", see *A User's Guide to*

Vegetative Resources Inventory, supra) between 1987 and 1993. These polygons are all in the area designated by the Visual Quality Order pursuant to the *Government Actions Regulation*. The total area of these VRI polygons, each of which the Panel finds meet the definition of forest land in the *Act*, is 90.2 hectares.

[207] The Panel also notes that two more VRI polygons totaling 13.1 hectares of Crown land within the Fire's perimeter are classified as NPBR ("non-productive brush"). The Panel notes that this classification does not fall within the definition of either forest land or grass land under the *Act*. Further, the Panel has insufficient information to draw any conclusion as to how another polygon designated as NPBR (51.5 hectares in size) should be classified as it, too, does not fall within the definition of either forest land or grass land. Before it burned (in 1987, according to the VRI label), it could have been non-productive forest (which would mean it is forest land) or non-productive brush (which would make it neither forest land nor grass land).

[208] The Panel observes that the definitions of "forest land" and "grass land" are not exhaustive because they begin with the word "includes" (see *CN 2016*, at para. 221); and further, the *Act* and the *Regulation* consistently impose fire prevention and control requirements in relation to "forest land" and "grass land" which would seem to imply that all Crown land to which the regulatory scheme refers is either "forest land" or "grass land". The question for the Panel is whether the Crown resources in the polygons classified as NPBR fall within the scope of either "grass land resources" or "other forest land resources". So noted, the total of these VRI polygons, for which the Panel finds there is insufficient evidence to know if they meet the *Act's* definitions of "forest land" or "grass land", is 64.6 ha. Given that the evidence is insufficient for the Panel to be able to classify those areas as either "grass land resources" or "other forest land resources", the Panel refers to those areas as "non-classified" in the remainder of this decision.

Summary of Hectares "Damaged or Destroyed"

[209] In calculating the number of hectares of Crown land that were damaged or destroyed, directly or indirectly, as a result of CN's contraventions, the Panel considered the areas determined in the Order, Mr. Greig's area calculations, and those VRI polygons which the Panel has found meet the definition of forest land versus grass land. The Panel used Mr. Greig's calculation of the area of Crown land within the Fire's perimeter, except for those areas which he labelled as grass land which were changed to forest land, and the areas he considered to be grass land that were re-labelled as non-classified. Further, the Panel has relied on Mr. Manhard's model of the number of hectares that were damaged or destroyed within the Fire's perimeter, and used it to determine the number of hectares that were damaged or destroyed (for the reasons previously outlined).

[210] The breakdown of areas that were damaged or destroyed is summarized in the following table.

Table 1. Comparative Summary of Grass Land and Other Forest Resources

Category	Area "damaged or destroyed" in Order (2018)	CN (Greig) Areas			Reclassified by Panel (from grass land)	Final Areas (Determined by Panel)
		Fire	Inci-dental	Total		
Other forest resources in an area subject to Visual Quality order (\$5,000/ha)	1714.9	1585.6	149.2	1734.8	90.2	1825.0
Other forest resources in a Community Watershed (\$5,000/ha)	3.5	3.5	0	3.5	0	3.5
Other forest resources not in a specified area (\$1,000/ha)	252.3	250.7	0.4	251.1	0	251.1
Grass land resources (\$500/ha)	149.6	138.6	16.3	154.9	0	0
Non-vegetated area (\$0/ha), or Non-classified Area in the final column.	56.9	54.9	0.2	55.1	64.6	119.7
Total Crown land	2177.2	2033.3	166.1	2199.4	154.8	2199.3*

*The Panel notes that the figures in Mr. Greig’s Table 6 gives a total of only 2,199.3 hectares (rather than 2,199.4) because of rounding errors; i.e., areas of polygons are only given to one decimal place in the table, whereas the column totals may add up to more than the sum of each cell in the column. The areas for individual polygons appear to have been calculated to more than one decimal place, which is not shown in the table. This only affects the non-classified areas, and so does not affect the quantum.

Assessment of the Value of Crown Resources Damaged or Destroyed by the Fire

[211] Using the foregoing rationale, and the number of hectares under the heading, "Final Areas (Determined by Panel)" presented in the preceding Table 1, the Panel has calculated the dollar value of Crown resources that were damaged or destroyed, directly or indirectly, as a result of the contraventions, as follows:

Table 2. Summary of Dollar Value Assessment

Classification in accordance with section 30 of the <i>Regulation</i>	Area (hectares)	Value per hectare	Total Value
Other forest land resources in an area subject to a <i>Government Actions Regulation</i> order	1825.5*	\$5,000	\$9,127,500
Other forest land resources not in the areas noted (NPBR)	251.1	\$1,000	\$251,100
Grass land	0	\$500	\$0
Other non-classified areas	119.7	\$0	\$0
Total	2199.3		\$9,378,600

*1,825.5 hectares is 1,825.0 + 3.5 hectares (from Table 1) minus the 3 hectares Mr. Manhard estimated to have escaped damage.

Conclusion on Issue 2

[212] As previously stated, the Panel adopts the fire damage model used by the Province's expert witness, Mr. Manhard. The model explained by CN's expert, Mr. Greig, was not accepted primarily because it was based on pre-determined assumptions (interpretations from imagery) that were not tested or validated, and were not substantiated by Mr. Manhard's on-the-ground observations. In particular, when viewing orthophotos, Mr. Greig assumed that a lack of visible damage in the areas he labelled as having suffered only incidental damage equated to incomplete burning of the understory, and that the timber in those patches had not been visibly damaged. However, even when he flew over the area as a passenger in a helicopter, he was not able to see the extent of the visible damage to the understory and to individual trees.

[213] Further, the Panel denies CN's appeal of the quantum of Crown resources damaged or destroyed, but has recalculated the dollar value of other forest land resources as described above, based on the evidence. The Panel has found that there are no "grass land resources" within the Fire's perimeter. The Panel finds that the value of other forest land resources is \$9,378,600 (increased from \$8,919,100 which was the amount in the Order). This increase is calculated in accordance with the manner prescribed by section 30(c) of the *Regulation*, and the information

reflected in Tables 1 and 2, above. The Panel hereby varies the Order, and directs CN to pay to the Province the full amount of \$9,378,600.00.

[214] The assessment made for stumpage in respect of damage to mature Crown timber was not appealed. That amount in the Order is \$52,189.75.

[215] Therefore, the total amount owing in relation to the value of mature Crown timber and "other forest land resources" is \$9,430,789.75.

3. What is the amount of the government's fire control costs attributable to the Fire, and can the Province recover "payroll loading costs" in accordance with section 31(1)(a)(i) of the *Regulation*?

Summary of the Evidence

[216] In deciding this issue, the Panel considered the evidence from the Amended ASF. As previously discussed, the Panel did not find in CN's favour on Issue 1. As such, the total fire control costs that the Panel considered under Issue 3 are those in the Amended ASF.

[217] According to the Amended ASF, the Provincial government charges its various agencies or organizational units, including the Wildfire Service, an amount equal to the wages paid to their employees plus something called the "benefits chargeback rate". This occurs automatically through the government's payroll and accounting system. According to the Amended ASF, the benefits chargeback rate is set each year by the Treasury Board "by dividing the estimated total benefits cost to the Province (for all of the Province's employees) by the estimated wages and salaries paid by the Province (for all of its employees)." The Amended ASF further states that the benefits chargeback rate "covers expenses such as employee pension, EI [Employment Insurance], CPP [Canada Pension Plan], extended health, dental, Worksafe BC [Workers' Compensation Board], and Medical Services Plan costs for Provincial employees." The benefit chargeback rate for the relevant fiscal year (2015-2016) was 24.8%. The Amended ASF discloses that the Province's payroll and central accounting system automatically charged the Wildfire Service \$344,694.45 in connection with the benefits chargeback rate associated with wages paid to employees who responded to the Fire.

[218] The Amended ASF states that the Province cannot determine actual payroll loading costs for any specific employee. For example, an employee who is paid \$1,000 in wages may or may not have cost the Province an additional \$248 (24.8%) in actual payroll loading costs. There are no separate journal vouchers or invoices from central government to the Wildlife Service for payroll loading costs. Payroll loading costs attributable to the Fire were calculated by multiplying 24.8% by the total of all wages, including overtime, paid to "responding employees".

[219] The Amended ASF provided amounts that correspond to sections 31(1)(a)(i) and (1)(b) of the *Regulation*. Those provisions read as follows:

- 31** (1) For the purposes of section 25(1)(a) and 27(1)(a) of the *Act*, the manner in which the amount of the government's fire control costs in respect of a particular fire is to be calculated is

(a) by ascertaining the sum of the following costs, expenditures and charges that are attributable to the fire:

(i) hourly wages and overtime wages of *responding employees, including payroll loading costs*;

(b) by adding to the sum ascertained under paragraph (a) for overhead an amount equal to the greater of

(i) \$200, and

(ii) 20% of the amount determined under paragraph (a)

to arrive at the total dollar amount of the government's fire control costs for the fire.

...

[*emphasis added*]

[220] Regarding section 31(1) of the *Regulation*, the Amended ASF states the total of wages (hourly and overtime) paid to employees who responded to the Fire was \$1,389,896.98, of which 24.8% is \$344,694.45. The amount in the Order in respect of section 31(1)(a), which included payroll loading costs, is \$1,740,281.44, being the \$1,389,896.98, in wages (hourly and overtime), \$344,694.45 in payroll loading costs (24.8% of the wages), plus \$4,016.25 in overtime meal allowance on which no payroll loading costs are claimed, and \$1,673.76 in standby amounts on which no payroll loading costs are claimed.

[221] The parties agree that fire control costs for the Fire calculated according to sections 31(1)(a)(i) through (xiv), including payroll but not including payroll loading costs, were \$5,441,326.82; and 20% of \$5,441,326.82, as prescribed by section 31(1)(b), equals \$1,088,265.36. The parties also agree that the total fire control costs, not including payroll loading costs, is the sum of those two figures; namely \$6,529,592.18.

Summary of the Parties' Submissions

[222] CN submits that the Province's payroll loading costs, in the form of the benefits chargeback, are not recoverable because they do not satisfy the statutory requirements. Specifically, CN argues that the Province must prove its actual costs, and then can only recover what it actually spent; and further, any costs recoverable under paragraph 31(1) must be for "responding employees" and "attributable to the fire".

[223] CN asserts that neither the *Act* nor the *Regulation* allow the Province to estimate what was spent, or rely on average costs based on other fires or relative to what other Crown agencies are charged. For example, CN says the Province cannot use the average cost of renting helicopters at other wildfires; rather, it must prove the actual costs of renting the helicopters used on a particular fire. CN says it logically follows that the Province's reliance on the benefits chargeback rate, which is an average for all government employees, is inadequate proof of payroll loading

costs because it does not appropriately reflect actual payroll loading costs relative to wages paid to employees who responded to the Fire.

[224] In any event, CN submits that the Province has not proven its claim, and therefore, is not entitled to recover payroll loading costs in any amount.

[225] The Province replies that the appropriate way of calculating payroll loading costs under the *Act*, as prescribed by the *Regulation*, is to use the actual amount that the Wildfire Service was billed by central government, and paid, as the benefits chargeback rate for employees in relation to a given fire. The Province maintains that this is the manner required by the legislation, and that it cannot determine the actual payroll loading costs for specific employees responding to the Fire (or any wildfire) and that doing so would be impractical. Further, the *Act* and *Regulation* do not require the specificity suggested by CN, and is contrary to the legislature's intention which is to provide a straight-forward, clear and efficient basis for the calculation and recovery of the government's fire control costs.

[226] The Province argues that the application of the benefit chargeback rate is the ongoing practice and the only feasible way for government to quantify payroll loading costs. There is no alternative method.

The Panel's Findings

[227] The Panel finds that the legislative scheme entitles the Province to recover payroll loading costs associated with wages paid to responding employees as part of the government's fire control costs in respect of any wildfire. This is part of the prescribed manner of determining fire control costs. However, the *Regulation* is silent as to the accounting method by which payroll loading costs are to be calculated.

[228] The parties did not provide evidence about the Province's method for calculating payroll loading costs in 2005 when the *Regulation* came into force. Having no evidence of what the accounting scheme was in 2005, the Panel must look to the wording of the *Regulation*, which provides "the prescribed manner" for calculating fire control costs for the purposes of section 27 of the *Act*. Nothing in the *Regulation* ties the phrase "payroll loading costs" to the term "benefit chargeback rate", however.

[229] The Panel then considered whether the Province is not entitled to reimbursement for payroll loading costs that cannot be precisely calculated for the employees who responded to the Fire.

[230] The Panel is guided by section 8 of the *Interpretation Act*, which states that "Every enactment must be construed as being remedial, and must be given such fair, large and liberal construction and interpretation as best ensures the attainment of its objects." The Panel is also guided by the findings in *Rizzo, supra*, regarding statutory interpretation.

[231] With those principles in mind, the Panel finds that CN's argument does not give effect to the objectives of section 31(1)(a) of the *Regulation*; namely, the inclusion of payroll loading costs as an integral part of "wages" within the prescribed manner of calculating the government's fire control costs. CN's

interpretation would frustrate the legislative intent rather than giving “fair, large and liberal interpretation” to the wording and intent of section 31(1)(a).

[232] The *Regulation* is clear that some amount is to be billed for payroll loading costs as part of the “hourly wages and overtime wages of responding employees”, and the Province has discretion to choose a method for determining the rates charged for “wages”, which includes payroll loading costs. With the only evidence of that amount being Treasury Board’s determination of the benefit chargeback rate charged to the Wildfire Service for its responding employees’ hourly wages, and no evidence on how the Panel might calculate a different amount for payroll loading costs, the Panel finds that the benefit chargeback rate should be used. Accordingly, the Panel confirms the Province’s amount for payroll loading costs as set out in the Amended ASF.

Conclusion on Issue 3

[233] The Panel denies CN’s appeal on Issue 3. Although the Panel is varying the amount that CN was billed in the Order for the government’s fire control costs, the Panel is doing so based on the Amended ASF, and not based on CN’s arguments for doing so. The total of the government’s fire control costs resulting directly or indirectly from the contravention, calculated in the prescribed manner, equal \$6,944,927.62, as stated in the Amended ASF. This properly includes \$344,694.45 for payroll loading costs. The Panel varies the total amount in the Order for government’s fire control costs in accordance with the total amount provided in the Amended ASF.

DECISION

[234] In making this decision, the Panel has considered all of the relevant evidence and arguments provided, whether or not they have been specifically reiterated here.

[235] For the reasons provided above, the Panel has rejected CN’s grounds of appeal, but has varied some of the amounts in the Order. The Panel orders CN to pay:

- \$169,065.31 for the Province’s costs for silviculture and reforestation, which was not appealed and is unchanged from the Order [see corrigendum below];
- a \$75,000.00 administrative penalty, which was not appealed and is unchanged from the Order;
- \$52,189.75 for the value of damaged or destroyed Crown timber, which was not appealed and is unchanged from the Order;
- \$9,378,600.00 for the value of damaged or destroyed “other forest land resources” and “grass land resources”, which varies the amount in the Order; and
- \$6,944,927.62 for the government’s fire control costs resulting directly or indirectly from the contravention, which varies the amount in the Order.

[236] Accordingly, CN's appeal is dismissed.

Dated this 12th day of March, 2020

A handwritten signature in black ink, appearing to be 'N. Yates', written over a horizontal line.

Norman E. Yates
Panel Chair
Forest Appeals Commission

A handwritten signature in black ink, appearing to be 'Les Gyug', written over a horizontal line.

Les Gyug
Panel Member
Forest Appeals Commission

CORRIGENDUM**Released: March 23, 2020**

An error has been found in paragraph 235 of the decision. The Panel inadvertently excluded the Province's silviculture and reforestation costs in its order.

This paragraph is amended to read as follows:

[235] For the reasons provided above, the Panel has rejected CN's grounds of appeal, but has varied some of the amounts in the Order. The Panel orders CN to pay:

- \$169,065.31 for the Province's costs for silviculture and reforestation, which was not appealed and is unchanged from the Order;
- a \$75,000.00 administrative penalty, which was not appealed and is unchanged from the Order;
- \$52,189.75 for the value of damaged or destroyed Crown timber, which was not appealed and is unchanged from the Order;
- \$9,378,600.00 for the value of damaged or destroyed "other forest land resources" and "grass land resources", which varies the amount in the Order; and
- \$6,944,927.62 for the government's fire control costs resulting directly or indirectly from the contravention, which varies the amount in the Order.

The remainder of the decision is affirmed.