BRITISH COLUMBIA

Ministry of Justice
Coroners Service
Province of British Columbia

File No. 2012:0612:0002

VERDICT AT CORONER'S INQUEST

FINDINGS AND RECOMMENDATIONS AS A RESULT OF THE CORONER'S INQUEST PURSUANT TO SECTION 38 OF THE CORONERS ACT, [SBC 2007] C 15, INTO THE DEATH OF

SURNAME	GIVEN NAMES
CHARLIE	**Carl Rodney**

An Inquest was held at Island Gospel Fellowship Hall, in the municipality of Burns Lake, BC

in the Province of British Columbia, on the following dates July 13-31, 2015

before: T.E. Chico Newell, Presiding Coroner.

into the death of CHARLIE (Last Name) Carl (First Name) Rodney (Middle Name) 42 (Age) ☒ Male ☐ Female

The following findings were made:

Date and Time of Death: January 20, 2012 20:07 hours

Place of Death: Babine Forest Products millsite (Location) East of Burns Lake, BC (Municipality/Province)

Medical Cause of Death:

(1) Immediate Cause of Death: a) Exposure to Explosion and Fire

Due to or as a consequence of

Antecedent Cause if any: b) none

Due to or as a consequence of

Giving rise to the immediate cause (a) above, stating underlying cause last. c)

(2) Other Significant Conditions Contributing to Death: none

Classification of Death: ☒ Accidental ☐ Homicide ☐ Natural ☐ Suicide ☐ Undetermined

The above verdict certified by the Jury on the 31st day of July AD, 2015

T.E. Chico Newell
Presiding Coroner's Printed Name

Presiding Coroner's Signature

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PARTIES INVOLVED IN THE INQUEST:

Presiding Coroner:	T.E. Chico Newell
Inquest Counsel:	John M. Orr, Q.C., Alexander J. Dutton
Court Reporting/Recording Agency:	Verbatim Words West
Participants/Counsel:	Babine Forest Products Ltd./William B. Smart, Q.C. United Steel Workers District 3/Craig Bavis, Diane Irvine WorkSafeBC/Ben Parkin, Jordan Bank

The Sheriff took charge of the jury and recorded 13 exhibits. 53 witnesses were duly sworn and testified.

PRESIDING CORONER'S COMMENTS:

The following is a brief summary of the circumstances of the death as set out in the evidence presented to the jury at the inquest. The following summary of the evidence as presented at the inquest is to assist the reader to more fully understand the Findings and Recommendations of the jury. This summary is not intended to be considered evidence nor is it intended in any way to replace the jury's Findings and Recommendations.

It was heard that on Friday, January 20, 2012 at approximately 8:07pm there was a catastrophic explosion and fire at the Babine Forest Products Ltd. sawmill in the vicinity of Burns Lake, BC. There had been 33 people working in the mill that evening. Robert Francis Luggi, 45 and Carl Rodney Charlie, 42 lost their lives in the incident. Both men were residents of Burns Lake. There were 19 workers physically and emotionally injured. For many, disabilities are ongoing.

Testimony revealed that Carl Rodney Charlie was a dedicated family man who enjoyed his life at Burns Lake. He played sports as a kid, enjoyed mechanics and loved music, singing and traditional dancing. Mr. Charlie worked at Babine Forest Products for more than 18 years. He started doing clean-up work, went on to the green chain and most recently was a cut-off saw operator. He was supposed to be off work the day of the explosion but decided to work a weekend shift to earn some extra money for his daughter's high school graduation.

The inquest heard that Babine Forest Products Ltd. was jointly owned by Burns Lake Native Development Corporation who held 11% of the shares and Hampton Affiliates who owned the remaining 89%. The sawmill is situated on First Nations lands and had been the community's largest employer.

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Testimony described that five conditions are jointly required for a wood dust explosion. These include fuel (wood dust), dispersion (a means of spreading fuel over an area, such as airborne dispersal or by a conveyor belt), confinement (a relatively enclosed space), oxygen (breathable air) and a source of ignition (e.g. normal operation of electrical equipment, electrical circuitry, or lighting assembly.

WorkSafeBC conducted a detailed investigation into this incident. Their investigation identified the point of origin being in the basement in a V-belt assembly connecting a motor to a gear reducer for a conveyor belt. This was located on the mill's east side in the vicinity of a transfer point for two conveyors. The area was below the eliminator table where rough cut lumber is further processed or rejected. The V-belt assembly was covered by a metal guard. It was usual for sawdust to accumulate at this location and to compact under the guard.

The moving V-belt created friction against the compacted sawdust and began a smouldering fire that developed into a flash fire. There was a resulting pressure wave that caused sawdust to become airborne. That condition led to a deflagration that moved through the mill mostly along the northern wall and from east to west at a rate just below the speed of sound. This involved a tremendous pressure wave followed by a continual explosion. The operating level floor was lifted. The mill's roof and north and east walls were blown out.

It was heard that Mr. Charlie was working in a 'shack'; a separate building situated outside the north side of the mill from where he cut logs to length that were then fed into the operation for processing. The shack collapsed with the force of the blast. It was the only one of the four shacks that had not been upgraded to metal walls. Mr. Charlie was found deceased near his shack.

The jury heard that the sawmill had ongoing challenges with managing the increase in sawdust accumulations attributed to relatively dry beetle killed pine wood it had been milling. This type of sawdust was seen to be finer than that from greener wood. It was reportedly appreciated primarily as a risk for combustion but not as an element of an explosion. At the time of the explosion, the mill was operating in extreme winter conditions.

There was a five person graveyard clean-up crew that cleaned areas of the mill that were not in operation during its weekday 3:30am to noon shift. A weekend clean-up crew also operated under a contractor, but they usually did not access the basement for cleanup.

It was reported that the mill had been processing green wood on the day of the explosion and the day previously. Beetle-killed pine had been processed over the three days prior to that.

The BC Safety Authority also investigated the incident. It found that all of the conditions required for a wood dust explosion were present in the sawmill. Wood dust was determined to have fuelled the explosion. A sole ignition source was not determined. It was found there were two primarily possible sources for ignition identified in electrical equipment (a light assembly and a motor control centre) that had not been engineered for use in the environmental conditions present at the time. It was acknowledged that there may have been other factors involved that were outside the scope of their investigation. The core causal finding was that the hazards of wood dust explosions were effectively neither managed nor recognized. In light of the wood dust conditions, some of the electrical systems were considered a contributing cause. Also, the dry and cold conditions were similarly considered contributory. A leak or release of ethylene glycol, propane, natural gas, or thermal fluid was ruled out as having contributed to the explosion. An area near a motor control centre below a bandsaw in the basement of the sawmill was identified as a possible area for the explosion.

Some areas of the basement where the explosion occurred were considered to have been hazardous locations because of the wood dust in the air and accumulated on surfaces. The electrical equipment in use there was not installed, configured or certified for use in those environmental conditions.

The inquest heard that some workers were not aware of minutes of health and safety meetings, inspection reports, or workplace notices. No witness recollected any worker refusing unsafe work.

Testimony revealed that the explosive nature of sawdust was known as early as 2008; however that information reportedly had not been shared across Hampton Affiliate operations.

It was heard in worker testimony there was thought to be an underrepresentation of First Nations people in the mill's management and supervisory roles. This was felt to be contributory to a perceived communication gap. Efforts had been undertaken towards establishing a relationship accord between the Burns Lake Native Development Corporation and Babine Forest Products Limited.

The inquest heard that regular fire safety inspections by a fire department did not occur as the B.C. Fire Code did not apply to the sawmill as it was on First Nations lands.

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Pursuant to Section 38 of the Coroners Act, the following recommendations are forwarded to the Chief Coroner of the Province of British Columbia for distribution to the appropriate agency:

JURY RECOMMENDATIONS:

To Babine Forest Products Ltd. and the Manufacturers' Advisory Group:

1. Ensure that all plants have proper outdoor lighting, a fire pumping system, a stand-alone first aid facility and well identified muster stations. All of these installations should be serviced by a fully functional automatic emergency power system.

Background to the Recommendation: Worker testimony showed that it was dark outside after the explosion as power had been cut off during the explosion. This caused disorientation and led to an inability by some workers to make it to a safe place in a reasonable amount of time. The workers also testified that the fire pump was unable to operate because of loss of power. The first aid station attached to the sawmill was destroyed in the explosion.

To Babine Forest Products Ltd.:

2. Discuss all WorkSafeBC and BC Safety Authority inspection reports, orders, hazard alerts and investigations at monthly crew meetings.

Background to the Recommendation: Many workers testified that they never saw results of inspections and investigations.

3. Ensure a hot work policy is followed and enforced.

Background to the Recommendation: Many workers were concerned that hot work policy was not being followed and hot work can easily be the cause of fires.

4. Develop a comprehensive preventative maintenance program with a focus on potential ignition sources. Include the use of thermal guns and thermal imaging to identify hot spots throughout an operation.

Background to the Recommendation: Friction and electrical faults were identified as possible ignition sources of the explosion.

5. Ensure all operator booths are built or upgraded to a 1 hour fire rating.

Background to the Recommendation: Testimony showed that worker protection and refuge was important during the fire that ensued after the explosion.

6. Task a member of the Joint Occupational Health and Safety Committee (JOHSC) to post and update safety notices and minutes of meetings throughout the operation.

Background to the Recommendation: Many workers were not aware of notices and meeting minutes.

7. Ensure compliance with the National Fire Code including that an annual fire inspection be completed by a qualified person having jurisdiction in the area. Annually review evacuation procedures with all workers and conduct fire drills on all shifts. Ensure that all fires are recorded and reported to JOHSC.

Background to the Recommendation: Testimony showed major gaps in Fire Code knowledge and inspection requirements.

8. Provide professional training for all employees in workplace harassment.

Background to the Recommendation: Testimony highlighted workers' concern with bullying, intimidation and discrimination, as a result of which they did not bring forward safety concerns.

9. Consider an aboriginal liaison coordinator or worker ombudsman to assist employees with workplace concerns.

Background to the Recommendation: Testimony highlighted workers' concerns with bullying, intimidation and discrimination as a result of which they did not bring forward safety concerns.

10. Implement a gradual employee orientation process during the job shadow period that includes continual training and emphasis on workers' rights and responsibilities.

Background on the Recommendation: Many workers gave evidence that they remembered little from their employee orientation. Numerous in-class sessions during the job shadow period would assist with information retention.

11. Use combustible gas monitor to investigate reported gas smells by workers.

Background to the Recommendation: Evidence showed there were many concerns raised by workers about gas smells.

To Hampton Resources Inc.:

12. Ensure Hampton Resources Inc. shares all health and safety information and alerts it receives from any health and safety organization across the full geographical breadth of their logging and milling operations.

Background to the Recommendation: Evidence revealed that information on the explosive nature of wood dust was available in the public domain as early as 2008. It was heard that this information was not effectively shared throughout Hampton's milling operations.

To United Steelworkers Union District 3 and WorkSafeBC:

13. Ensure that Joint Occupational Health and Safety Committees are audited semi-annually for effective function.

Background to the Recommendation: Evidence showed a lack of knowledge as to the findings of the JOHS Committee and the progress and training of Committee members.

To United Steelworkers Union District 3:

14. Develop a protocol to ensure an auditable two-way communication between all levels of the union with emphasis on information reaching the shop floor with respect to health and safety issues, both for identified and emerging risks.

Background to the Recommendation: Evidence showed a communication breakdown at all levels of the union organization.

15. Ensure that union representatives fully understand their responsibilities and the content of the collective agreement.

Background to the Recommendation: Evidence showed that there was not full confidence in having job related complaints carried forward.

16. Share applicable WorkSafeBC hazard alerts and BC Forest Safety Council safety alerts with affected local unions.

Background to the Recommendation: Evidence showed that information was not being shared with all affected parties.

To WorkSafeBC:

17. Ensure that work environment hazard alerts are communicated effectively. Update regulations and guidelines promptly to reflect current knowledge in regard to combustible dust explosions, include within the guidelines that a contained space can be an entire plant.

Background to the Recommendation: Evidence suggested that cold weather, humidity and changes in air flow may have been contributing factors in the explosion. Closing up the plant also created a contained area for the explosion to take place.

18. Develop an industry-specific checklist for Officers to follow at a worksite inspection. Include in the checklist reviews of Joint Occupational Health and Safety Committee meeting minutes, crew safety meeting minutes, near miss reports, incident reports, investigation reports and receipt of recent relevant hazard alerts.

Background to the Recommendation: Evidence showed that there was no uniform format for inspection content at high risk workplaces. In turn there was no means for effectively comparing successive inspection findings or findings across different milling operations.

19. Create a system to share workplace incident information and educational workshops within WorkSafeBC including an auditable mechanism for confirming the receipt of information.

Background to the Recommendation: Evidence showed communication gaps in information transfer and no accountability for receipt of information.

20. Host an annual meeting of representatives of the wood products manufacturing industry, including employers, worker representatives and technical experts to share health and safety results and best practices.

Background to the Recommendation: The inquest heard that a round-table of influential and committed representatives can share information about risks or improvements to health and safety to ensure better outcomes for workers.

21. Continue the Risk Analysis Unit of WorkSafeBC to review relevant local and worldwide occupational health and safety alerts and share the information in a timely manner with all affected parties.

Background to the Recommendation: Information was shown to exist within the wood products manufacturing industry, but was never assembled in one place to recognize the extreme risk associated with wood dust combustibility.

22. Engage the Risk Analysis Unit to review preliminary investigation reports to identify emerging risks.

Background to the Recommendation: The Risk Analysis Unit was introduced as a committee of specialists examining emerging risks and may have identified the extreme risk of combustible wood dust prior to the explosion should they have reviewed preliminary investigation reports.

23. Authorize the Risk Analysis Unit to recommend the issuance of a hazard alert.

Background to the Recommendation: The Risk Analysis Unit was introduced as a committee of specialists examining emerging risks and may have identified the extreme risk of combustible wood dust prior to the explosion.

24. Ensure Officers with wood product manufacturing facilities in their region have the relevant and current training to carry out their inspections.

Background to the Recommendation: Evidence showed that inspectors lacked current training specific to wood product manufacturing plants with respect to regulations and guidelines applicable to those facilities.

25. Implement an initiative to ensure all wands used in a combustible dust environment are properly grounded.

Background to the Recommendation: Evidence was heard that wands create electricity capable of igniting an explosion in a combustible environment. Grounding will eliminate this hazard.

To WorkSafeBC, Manufacturers' Advisory Group, Babine Forest Products Ltd. and United Steelworkers Union District 3:

26. Develop a video or visual presentation (PowerPoint) to demonstrate to all workers in the wood manufacturing the industry health and safety hazards associated with combustible wood dust.

Background to the Recommendation: Evidence showed a lack of workers' knowledge about the hazards of wood dust.

To Manufacturers' Advisory Group:

27. Compile and make available best practices including life safety engineering related to construction of new wood processing plants and for refitting old plants to address combustible dust issues.

Background to the Recommendation: Evidence revealed that engineering controls of wood dust were inadequate to control dust levels in the sawmill.

28. Encourage employers to utilize the existing Manufacturers' Advisory Group dust audit tool regarding combustible dust mitigation.

Background to the Recommendation: Evidence showed that dust mitigation was the key to preventing the explosion.

To Minister of Jobs, Tourism & Skills Training and Responsible for Labour of British Columbia:

29. Expand Section 132 of the *Workers Compensation Act* to give a WorkSafeBC Officer the power to address issues that are unresolved at the Joint Occupational Health and Safety Committee for an extended period of time. Add to the current wording "...a co-chair of the committee may report this to the board..." to include the co-chair or a WorkSafeBC Officer.

Background to the Recommendation: Evidence revealed that the wood dust issue remained unresolved for a long period of time and WorkSafeBC Officer intervention might have addressed and highlighted the need for dust mitigation.

30. Amend Section 176(2) of the *Workers Compensation Act* to ensure that a copy of the full incident investigation report is provided to the Joint Occupational Health and Safety Committee or the worker representative. Add in a new section as follows:
    (c) "either,
    (i) provide the report to the joint committee or worker health and safety representative, as applicable, or
    (ii) if there is no joint committee or worker health and safety representative, strategically post the report at the workplace."

Background to the Recommendation: Evidence revealed workers were not informed about results of investigation reports. The knowledge of such reports can serve as training information and safety awareness.

To Minister of Justice and Attorney General Canada:

31. Amend Section 217.1 of the Criminal Code to add Section 217.1(b) with the suggested text as follows:
    217.1(b) Anyone who fails to take reasonable steps to prevent death or bodily harm under this section is guilty of an indictable offence.

Background to the Recommendation: The Westray Act amendments created a duty under section 217.1 but did not create an offence for failing to fulfill that duty.

To BC Safety Authority:

32. Have flow-restricting or automatic cut-off valves installed on natural gas lines where combustible wood dust is present.

Background to the Recommendation: Evidence showed that the main gas line flowed freely for 40 minutes before being shut off.

To WorkSafeBC, BC Forest Safety Council, Manufacturers' Advisory Group and the associated Health Safety Associations:

33. To ensure the effective sharing of information to ensure ongoing risks can be evaluated by all members of the safety community.

Background to the Recommendation: Throughout the inquest there were many instances of a lack of and a breakdown in communication that contributed to the incident.

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PRESIDING CORONER RECOMMENDATIONS:

To Babine Forest Products Ltd.:

34. Conduct an employment equity audit pursuant to the *Employment Equity Act.*

Background to the Recommendation: Testimony from workers identified there was a lack of First Nations representation in supervisory and management positions.

To Burns Lake Native Development Corporation and Babine Forest Products Ltd.:

35. Move forward in a timely manner to ratify the Relationship Accord.

Background to the Recommendation: Witness testimony indicated that the completion of this undertaking will serve to solidify healthy working relationships.

To United Steelworkers District 3:

36. Proactively recruit Aboriginal persons for positions on the plant committee and as job stewards.

37. Proactively recruit Aboriginal persons to represent the Union on the Joint Occupational Health and Safety Committee.

Background to the Recommendation: It was heard inclusion and promotion of Aboriginal persons in these roles will serve to support healthy working relationships.

To WorkSafeBC and Office of the Fire Commissioner:

38. Collaborate in the creation of a regulation to ensure companies in the wood products manufacturing industry in all lands of the province have an annual fire inspection to ensure compliance with the application of the Fire Code to be conducted by an inspector approved by the Office of the Fire Commissioner.

Background to the Recommendation: Evidence revealed there is no regulation regarding fire inspections in unincorporated and First Nations lands.

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To Office of the Fire Commissioner:

39. Develop a list of inspectors approved to conduct fire inspections pursuant to the National Fire Code or the British Columbia Fire Code.

Background to the Recommendation: The recommended fire inspections are to be completed by qualified and approved fire inspectors.

To Minister of Justice of British Columbia:

40. Ensure the Office of the Fire Commissioner is sufficiently resourced to inspect industrial facilities in all unincorporated lands in the Province of British Columbia on a regular and consistent basis.

Background to the Recommendation: Testimony revealed that the Office of the Fire Commissioner is currently lacking in sufficient resources to fulfill this recommendation.

41. Amend the *Fire Services Act* so that it stipulates that the British Columbia Fire Code, including provisions which require fire inspections, applies to unincorporated and First Nations lands.

Background to the Recommendation: It was heard that there is currently no provision in the Fire Services Act that mandates fire inspections on unincorporated and First Nations lands.

T.E. Chico Newell
Presiding Coroner's Printed Name

Presiding Coroner's Signature