QUEENSLAND COURTS

CORONERS COURT OF QUEENSLAND

FINDINGS OF INQUEST

CITATION:	Inquest into the death of Stephen Ross Brown
TITLE OF COURT:	Coroners Court
JURISDICTION:	Toowoomba
FILE NO(s):	2014/3137
DELIVERED ON:	27 March 2018
DELIVERED AT:	Brisbane
HEARING DATE(s):	2 November 2016, 22 – 24 February 2017, 18-19 October 2017, 22-23 February 2018
FINDINGS OF:	John Lock, Deputy State Coroner
CATCHWORDS:	Coroners: inquest, heavy vehicle crash, whether fatigue failure to suspension caused crash or event of pulmonary thromboembolism, maintenance of heavy vehicles, National Heavy Vehicle National Law

REPRESENTATION:

Counsel Assisting:	Ms M Jarvis
Counsel for Leah Haig:	Mr MD Evans i/b Kelly & Frecklington
Counsel for Norco Co-operative Limited:	Mr JR Hunter QC with him Mr G Hampson i/b Piper Alderman
Counsel for the National Heavy Vehicle Regulator:	Ms JR Rotili
Counsel for Lesley Niebling:	Mr N Robson, Barry Nilsson Lawyers
Counsel for Sgt C Jackson:	Mr C Lloyd, Gilshenan & Luton, Lawyers

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Introduction

1. Stephen Ross Brown was 54 years of age when the truck he was driving on behalf of his employer, Norco Co-Operative Limited trading as Goldmix Stock Feeds, left the road near Cloyna in Queensland on the morning of 27 August 2014, crashed into a tree on the driver's side, and came to rest in a paddock.

2. There were no direct witnesses to the crash, but a number of persons arrived a short time later and provided assistance to Stephen until emergency services attended. Stephen remained conscious for much of this period and spoke to a number of these persons. He referred to hearing a loud bang and the truck suddenly veering to the right into the paddock. A forensic inspection of the scene was consistent with a sudden veer to the right.

3. Stephen suffered very serious traumatic injuries, particularly to his right leg. He was airlifted to Nambour General Hospital where he underwent emergency surgery. Whilst in theatre he suffered an episode of haemodynamic instability and was unable to be saved.

4. The truck Stephen was driving underwent mechanical inspection by the Queensland Police Service Vehicle Inspection Unit. The police mechanic observed that two of the suspension leaf springs within the truck's right front suspension had sheared or snapped off.

5. A forensic engineer found that both the suspension leaves showed evidence of long standing fatigue fractures, and opined it was likely they failed prior to the crash and therefore caused the crash. The engineer also noted that due to the presence of grease in the area, it is likely the fatigue fractures went unnoticed during servicing.

6. In simple terms, if the leaf springs both fail then the axle will move rearwards and cause a sudden change of direction. In this case, a failure of the suspension on the right will drag the vehicle to the right and the evidence was that in a heavy vehicle, this would be difficult for the driver to control.

7. An autopsy examination found the presence of thromboemboli (blood clots) in both of Stephen's lungs, completely blocking his main pulmonary arteries. The forensic pathologist initially considered this occurred prior to the accident and may have caused Stephen to lose control of the vehicle. On the provision of further information, the forensic pathologist opined that if

one accepts the cause of the crash was due to mechanical failure (a matter for the Court to determine), it is likely that pre-existing thrombi broke off as a result of the crash and injuries to his legs, becoming lethal pulmonary thromboemboli.

8. Stephen's wife, Leah Haigh, has communicated a number of concerns with regards to the circumstances of Stephen's death. She says Stephen had mentioned on more than one occasion that he had concerns about the mechanical integrity of the trucks that were being used by his employer.

9. Ms Haig requested that the coronial investigation into her husband's death examine whether or not proper inspection and maintenance of the truck had been carried out prior to the crash, and whether the condition of the suspension leaf springs could and should have been detected. She requested an inquest be held.

Issues for inquest

10. Given there remained some uncertainties as to what caused the crash, a decision was made to hold an inquest. A pre-inquest conference was held on 2 November 2016 and the inquest commenced in Toowoomba on 22 February 2017 for three days. As a result of further information becoming available in the course of hearing evidence, I decided to carry out some further investigations and tentatively listed the resumption of the inquest in May 2017. Due to the absence of an important witness, the inquest had to be adjourned to October 2017. Unfortunately, at this time another witness was excused on health grounds from giving evidence and the matter was adjourned to 22 February 2018 in Kingaroy to hear from that witness and another and to consider submissions. The following issues for the inquest were set:

    i. The findings required by s. 45 (2) of the *Coroners Act 2003*; namely the identity of the deceased, when, where and how he died and what caused his death.

    ii. The circumstances leading up to the single vehicle accident on 27 August 2014.

    iii. Whether the deceased's employer took reasonable steps to ensure the deceased's safety when driving the vehicle involved in the accident, particularly with regards to maintenance and repair of the vehicle.

iv. Whether there are any matters about which preventative recommendations might be made pursuant to section 46 of the *Coroners Act 2003*.

List of witnesses

- Senior Constable Paul BRITTEN (crash investigator and author of QPS Crash Analysis Report)
- Andrew MCLAREN, Vehicle Inspection Officer, QPS Vehicle Inspection Unit (conducted vehicle inspection and prepared statement of inspection)
- Terrence CASEY, Metallurgist (examined leaf springs and prepared report)
- Professor Peter ELLIS, Queensland Health Forensic and Scientific Services (performed autopsy and provided addendum report re: pulmonary thromboembolism)
- Leah HAIGH, wife of deceased (provided statement about her husband's employment and complaints about vehicles)
- Steven BAUER, mill worker, Goldmix (attended crash scene, spoke with deceased)
- Jesse MULLER, truck driver and maintenance person, Goldmix (attended crash scene, spoke with deceased, gathered paperwork from truck, involved in maintenance)
- Wayne Charity, former employee of Goldmix
- Brad Urban, former employee of Goldmix
- Leslie NIEBLING, mechanic, Niebling's Machinery and Diesel Services (serviced and maintained Goldmix vehicles, attended crash scene)
- Adrien NIEMANN, manager, Goldmix (attended crash scene, spoke with deceased, in charge of site)
- Kate Powell, internal investigator, Norco Co-operative Ltd (conducted internal investigation into the accident and prepared report dated 8 October 2014).
- Wayne Whitmore, Senior Specialist Accreditation with the National Heavy Vehicle Regulator (NHVR)
- Bradley Rowlinson, truck driver
- Marc Riddell, truck driver
- Sergeant Colin Jackson, First response police attendance
- Senior Sergeant Lance Gutteridge, Officer in Charge Murgon Police Station
- James Houlihan, tow truck driver
- Robert Zelenski, RoadTek contractor
- Peter Wilson, Engineer, Department of Transport and Main Roads
- Lesley Wilson, former employee of Goldmix

What caused the death?

Medical treatment provided

11. Queensland Ambulance Service (QAS) officers found Stephen suffering from almost complete traumatic amputation to his right leg below the knee, as well as a fractured left leg and back pain. He was extricated from the vehicle by Queensland Fire and Emergency Services officers and transported by helicopter to Nambour General Hospital where he underwent emergency surgery.

12. The records from QAS note the emergency call was received at 9:45 hours and officers were on the scene by 10:00 hours. The physical observations recorded by QAS on their electronic devices, note Stephen was anxious and distressed; his speech was normal and in sentences; he was orientated; obeyed commands; had a good recall of events and had a GCS between 14 and 15. Stephen is described as saying he had a problem with the steering. Stephen was entrapped in the vehicle for 40 minutes. His observations remained the same throughout the time he was first observed until he was taken to Nambour Hospital arriving at 12:11 hours. Although it was evident he had a serious injury to the lower right leg (partial amputation) the QAS records state there was no immediate threat to life and no major haemorrhage with only a possible blood loss of 1500ml whilst in the vehicle.

13. In the operating theatre at Nambour Hospital a decision was made that the right leg would need to be amputated. This was about to proceed when there was an event of haemodynamic instability, which was ongoing. There was no obvious head, neck or chest injury. A laparotomy to rule out further bleeding noted no obvious bleeding from the abdomen or pelvis. Medical efforts to save Stephen's life were not successful and he was pronounced deceased at 14:49 hours on 27 August 2014.

14. The medical statement of Dr Ian Mackle stated that the cause of death was not clear but a myocardial infarction or a massive embolic (venous thromboembolism or fat embolism) event are likely to have contributed. Haemorrhage did not appear to be the primary cause.

Autopsy results

15. Professor Peter Ellis, a very experienced forensic pathologist, conducted an autopsy examination. The examination confirmed the presence of very severe injury to Stephen's right leg, lesser injury to his left leg, and pelvic damage. No obvious internal bleeding was identified.

16. Stephen's body weight was found to be 159 kg with a BMI of 47.5 and in the morbid obesity range. There was history of high blood pressure. The heart was enlarged and well above the normal range for body weight due to high blood pressure.

17. Significantly, Professor Ellis found thromboemboli (blood clots) in both of Stephen's lungs, completely blocking his main pulmonary arteries. He explained that these blood clots would have formed elsewhere, probably in

Stephen's leg or pelvic veins, and travelled through his heart into his lungs, causing obstruction. Professor Ellis had observed thrombi in some pelvic veins.

18. Professor Ellis stated in his Autopsy Report: *It is unlikely that this condition occurred after the accident and it is probable that the development of pulmonary emboli may have caused (Stephen) to lose control of his vehicle, crashing it and resulting in the following injuries.*

19. Given the significance of this finding, and the inconsistency between this opinion and evidence I later received from the Queensland Police Service stating that mechanical failure may have been the cause of the accident, I wrote to Professor Ellis, to advise him of the mechanical findings and evidence of Stephen being conscious and aware at the scene, to query the timing of when the pulmonary embolus occurred.

20. Professor Ellis advised that, assuming the mechanical findings were accurate and adequately explained the loss of control of the vehicle, then it seemed likely that Stephen's pre-existing thrombi broke off as a result of the crash and injuries to his legs, becoming lethal pulmonary thromboemboli.

21. Professor Ellis stated that thromboemboli can only arise from pre-existing thrombosis elsewhere unless the thrombi form in situations within the pulmonary arteries. There was no evidence of that occurring in this case and in particular, the thromboemboli he observed did not form exact casts of the pulmonary vessels but rather represented casts of other veins that travelled to the pulmonary arteries and became subsequently folded and impacted in the narrower pulmonary artery tree. Professor Ellis stated this is a typical situation with pulmonary thromboembolism.

22. Professor Ellis acknowledged that thromboembolism may occur quickly and may in fact have occurred after Stephen's leg injuries and his subsequent immobilisation. Professor Ellis stated it is difficult to imagine extensive intravascular thrombosis developing within the leg and pelvic veins over such a short period as passed between the accident and the subsequent death. Additionally, Professor Ellis said it was must be acknowledged that Stephen's general condition, namely significant obesity together with relatively sedentary occupation (being seated behind the wheel of a truck travelling significant distances) would be regarded as a high risk situation in respect of the development of pelvic and leg vein thrombi.

23. Professor Ellis concluded that it was likely Stephen had been suffering from deep vein thrombosis, possibly without any significant symptoms, before the accident, but the combination of the injuries to his legs together with the immobility following the incident resulted in pre-existing thrombi breaking off and travelling to his lungs, causing his death.

The circumstances leading up to the crash

Forensic Crash Unit investigation

24. The Forensic Crash Unit investigation was completed by Senior Constable Paul Britten, who at the time was a part time FCU officer of Kingaroy Police. The vehicle involved was a Nissan prime mover registration 569KMT towing a single trailer registration 931 QWD. The crash was a single vehicle, single occupant crash. Police enquiries found no witnesses to the actual crash. The only witnesses were those who saw the crashed truck and attended to assist Stephen at the time.

25. It is apparent from company records that Stephen was taking his third load of grain for the day to a feedlot approximately 43km from the base. He was about 12km from the base. He left at about 9:30am.

26. The vehicle was travelling south along Murgon-Gayndah Road heading towards Murgon. The weather at the time was not raining, however, there had been showers around the area throughout the day. The road construction was bitumen with gravel/grass shoulders. The speed limit was 100km/h. The road is a gently curving stretch of road with grass shoulders. SC Britten noted in his report and confirmed in evidence before the inquest that he did not observe any significant road features that could have contributed to the crash. Inspection of road tyre marks were consistent with the prime mover veering to the right and off the road. A tree had impacted with the driver's side of the prime mover cabin.

27. Police did not observe any other tyre marks or road evidence that would indicate any other vehicle was involved in the crash or could have contributed to the crash. There was also no evidence that a mobile phone had been in use at the time of the crash, and nothing indicating any other driver distraction.

28. SC Britten obtained service and maintenance records and did not identify any concerns as to the maintenance of the vehicle.

Evidence of witnesses at the scene

29. A number of witness statements were obtained. The significance of their observations were important in establishing what was the medical cause of Stephen's death as well as some other issues that arose as to preservation of the scene.

30. The first statement was from Mr Adrian Niemann who was the manager of the Goldmix Stock Feeds site. Mr Niemann had made his way to the incident site after receiving information about the crash. He went over to the truck and spoke to Stephen to keep him awake. He asked Stephen what happened and Stephen said 'I heard a bang and it went to the right'. Stephen said he was doing 100km an hour at the time.

31. The second statement was from Mr Steven Bauer who was at the scene shortly after the crash. Mr Bauer was also an employee of Goldmix and came across the crash site. He wrapped his shirt around Stephen's right leg, which was badly injured, and he was able to disconnect the battery to the truck and stop the motor. He then rang emergency services for help and stayed with Stephen until he was loaded onto the rescue helicopter.

32. Jesse Muller, another Goldmix employee, also attended and heard Stephen Brown say 'I have come around the corner and the steering has locked'. In court he also said Stephen had said he heard a bang and the steering jammed to the right.

Mechanical Inspection

33. The truck Stephen was driving underwent mechanical inspection by the Queensland Police Service Vehicle Inspection Unit. To do so the truck was towed from Cloyna to Nambour. The court was told that the Murgon Police station holding yard was not able to hold a vehicle of that size and for security reasons the truck needed to be held elsewhere.

34. The police mechanic Andrew McLaren observed two of the suspension leaf springs within the truck's right front suspension had sheared or snapped off.

35. During the inspection of the prime mover it was noted the steer axle, right leaf spring was broken adjacent to its front chassis hanger and locating pin. There was some wear in this area consistent with component pre-incident movement. The second helper leaf spring, which wraps around the broken main leaf spring eye for safety, was fatigue fractured in the same area and

had eventually failed. Mr McLaren considered this failure would cause the steer axle to move suddenly rearwards on the right side, causing a sudden change of steering direction with the vehicle veering to the right.

36. Mr McLaren said it would be very hard for the driver to control the vehicle in that event.

37. One issue raised in the course of the hearing was the potential for the condition of the leaf spring to deteriorate or indeed to break as a result of the action of towing the truck. During the adjournment of the inquest I sought further information. James Houlihan has been a qualified mechanic for 43 years and employed by Clayton's Towing for 36 years. He has retrieved numerous heavy vehicles in that time. He clearly enjoys his work. His company was contracted to tow the truck. Mr Houlihan stated he was aware there was a suspension problem and vaguely recalls a broken spring at the front and as a result he used an extra chain to secure it to the rig. He said the condition of the leaf spring will not change by the action of towing as the truck in fact will be getting a smoother ride and it would be unlikely to break from being towed.

38. Mr Houlihan stated that when the leaf spring totally fails the whole suspension drops and the outcome would be catastrophic.

39. All other aspects of the mechanical inspection of the prime mover were satisfactory.

40. In relation to the inspection of the grain-tanker/trailer it was considered that all brakes were in an unsatisfactory condition due to their adjustments, with this condition causing a reduction in the trailer's maximum stopping capability. No other mechanical defects were found.

41. As a combination vehicle, Mr McLaren was of the opinion that the unsatisfactory condition of the tanker/trailer brakes would cause a reduction in the maximum operating potential of the brakes, however, under normal stopping conditions these unsatisfactory conditions may go unnoticed.

42. The overall conclusion from the inspection was that the catastrophic failure of the prime mover's right front second leaf spring caused a sudden change in the vehicle direction with the vehicle veering to the right. This condition was considered by Mr McLaren as the major contributing cause of the incident and would most likely go unnoticed during servicing due to the presence of

grease in the area. Regarding the 'bang', Mr McLaren suggested Stephen was probably hearing the sound of the shackles at the rear of the suspension coming back and hitting the chassis roller just after the second leaf spring failed, rather than the sound of the leaf spring breaking.

43. Mr McLaren disagreed with the suggestion contained in the evidence of Mr Whitmore that the location of the fractures in this case, being near the eye of the leaf springs, was unusual as the most common place for a leaf spring to fail is at the centre point where there is often a hole that allows a bolt to pass through it. Mr McLaren stated it would be out of character for a leaf spring to break at that centre point as that whole section is usually clamped very tight with clamps and u-bolts and does not flex. Mr McLaren explained that in his experience it is more common to see a leaf spring break in areas where there are flex points. He stated leaf springs are designed to flex but over time something that keeps flexing is going to break. He therefore did not consider the location of the breaks in this case as out of character.

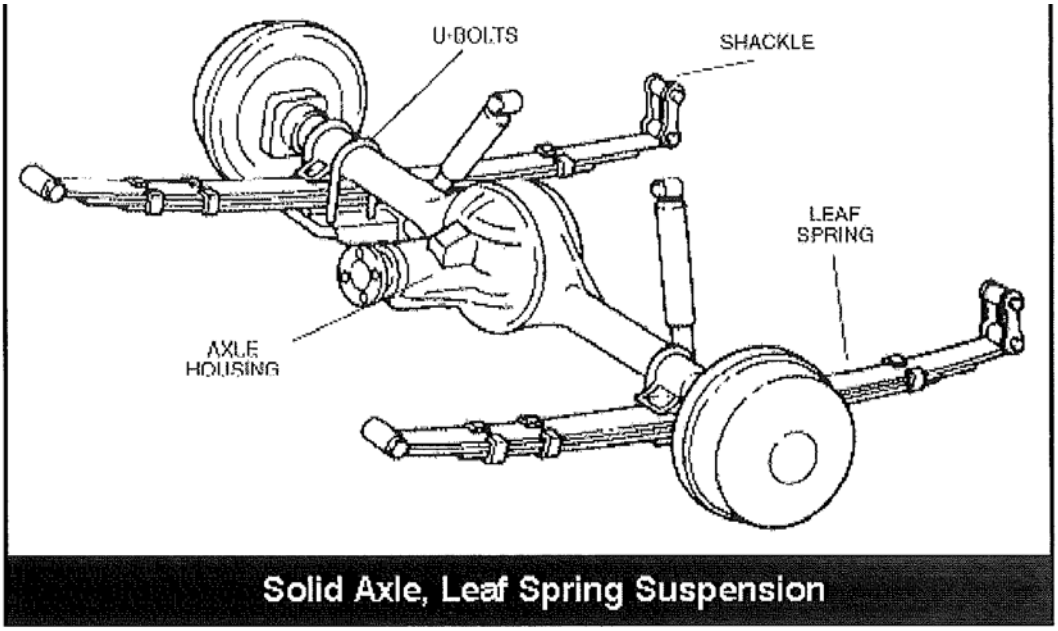
44. Mr McLaren was asked about the suggestion of Mr Whitmore that it is not common for an individual leaf to break at or close to the eyelet unless subjected to a particularly strong force and, in particular, a strong vertical force such as that experienced when hitting large potholes or running over embankments.

45. Mr McLaren noted that whilst the eyelet area is not a major flex point, the leaf spring is what is actually holding or stopping the vehicle as part of the braking system (and is therefore experiencing significant force). He stated that in his experience it was not unusual for the break to occur at the eyelet, and he had seen 'plenty' break around that area. He believed this could occur simply due to the component flexing over a period of time.

46. Mr McLaren reiterated in evidence that he found no other reasons apart from the failed leaf springs for the sudden change in direction. Without the grease Mr McLaren said you would see the fracture in the first leaf spring but only after it had been a complete fracture.

47. The FCU report to the coroner recommended that heavy vehicle companies, when conducting their scheduled servicing and maintenance regime, assign time to clean the vehicles so that inspections can be conducted more thoroughly. This is an issue that arose in evidence. The National Heavy Vehicle Accreditation Scheme (NHVAS) documentation did suggest all

vehicles being presented for inspection must be unladen and cleaned. This was set out in a document titled a Certificate of Inspection Reminder Notice, a document Mr Niebling, an accredited mechanic employed to service and maintain Goldmix's vehicles under the NHVAS accreditation scheme, surprisingly said he had not seen before. Mr Niebling stated it was not specifically a recommendation on his paperwork but agreed it would be an advantage if vehicles were cleaned. Mr Niebling stated that notwithstanding what is set out in the document this was not routinely complied with even at the Department of Transport and Main Roads (DTMR) inspection centres.



Evidence of the National Heavy Vehicle Regulator

48. Wayne Whitmore is a Senior Specialist Accreditor with the National Heavy Vehicle Regulator (NHVR). He has multiple relevant qualifications and is an A Grade Motor Mechanic and Licensed Safety Certificate Examiner. He stated that when conducting a vehicle inspection the trained eye gravitates to the known areas of failure or concern. A visual check may reveal whether a component is situated or located as expected, is of a shape or size as expected, and potentially whether it can perform its intended function.

49. Mr Whitmore stated vehicles presented for inspection were expected to be in a state for inspection, in that components such as turn tables that would most likely be heavily lubricated were sufficiently clean to allow the inspection to take place. In reality vehicles presented for inspection often required the inspector to remove heavy deposits to allow suitable visibility of components. It was the duty of the inspector to be satisfied they had been adequately able to view the component being inspected.

50. Given the restrictions of time, location, equipment and visibility and the number of components that make up a heavy vehicle, Mr Whitmore stated it is inconceivable that every occurrence of fault will be detected. The possibility of a failed component going undetected is always a reality for anyone undertaking vehicle inspections. Concentration of effort on the most likely components to fail is the norm for these types of inspection.

51. At times of routine maintenance the trained eye is searching for any possible issues with componentry not necessarily those items required to be checked. Hardware items such as chassis rails, axels, suspension items, retention devices and main body parts are all examples of the types of components that should be looked over.

52. Mr Whitmore stated it is when lack of experience, or lack of effort or any other influencing factor is part of the routine maintenance that vehicle defects may not be noticed and vehicle standards are compromised. For some components, a flaw may never be noticed, or may not be detectable prior to failure so that even with the best efforts, failure, catastrophic or otherwise, may still occur.

53. Components that are subject to continual wear are at most risk of developing faults or defects between periods of routine maintenance, then being identified at the time of inspection. Manufacturers set times or distances for

checks to be completed however, parts are subjected to continual wear and may well develop a defect prior to the next routine check.

54. Based on his knowledge as a mechanic and vehicle inspector Mr Whitmore stated when a vehicle is travelling in a straight line, its suspension components are subject to lines of force mostly in a vertical direction. There is the vertical downward force upon the springs from the weight of the vehicle and its load and, in opposition is the upward force from road surface irregularities.

55. Leaf springs are anchored at both ends and flex through an arc about the centre point of its length. The to-ing and fro-ing of opposing vertical forces is what causes the flexing. Parabolic springs accentuate this effect due to the smaller number of leaves used.

56. From his experience, Mr Whitmore stated leaf springs used in heavy vehicles have two areas that are commonly identified as failing. The first is the loss of spring height where over time the material has weakened and is no longer able to hold the amount of load it was defined to hold.

57. The second is where individual leaves of the spring break. The spring in operation is put through stressors focused at or near the midpoint of the spring leaf. At this point there is also a relief hole for the securing bolt of the leaf to pass through. The combination of the effect on this point from the back and forth stress about the midpoint and the reduced available material (due to the hole) means that this is a common area for an individual leaf of the spring to break.

58. The next most common location for a spring leaf to break is at the point where the end of the lower leaf ends and works upon the leaf above it.

59. With the leaf spring being anchored at both ends it was not his experience for individual leaves to break at or close to the eyelet area, unless subjected to a force not usually within its normal range of motion.

60. Only when subjected to a vertical force causing the spring to be put through a range of motion exceeding the limits of motion is it likely that failure at or near the entry point may occur.

61. This type of force is consistent with hitting a large pothole or running over an embankment where the force is considerable and sudden.

62. Mr Whitmore stated his experience of defective spring leaves found during inspection is that they are broken rather than partly cracked or fractured. It is also his experience that spring leaf failure at or near the eye of the spring is not associated with usual wear and tear and is rarely found. Mr Whitmore stated in his evidence that the area of failure would be unlikely to have been seen or picked up easily. Degreasing the area would increase the likelihood but it was in an area where you would not normally expect to see a failure.

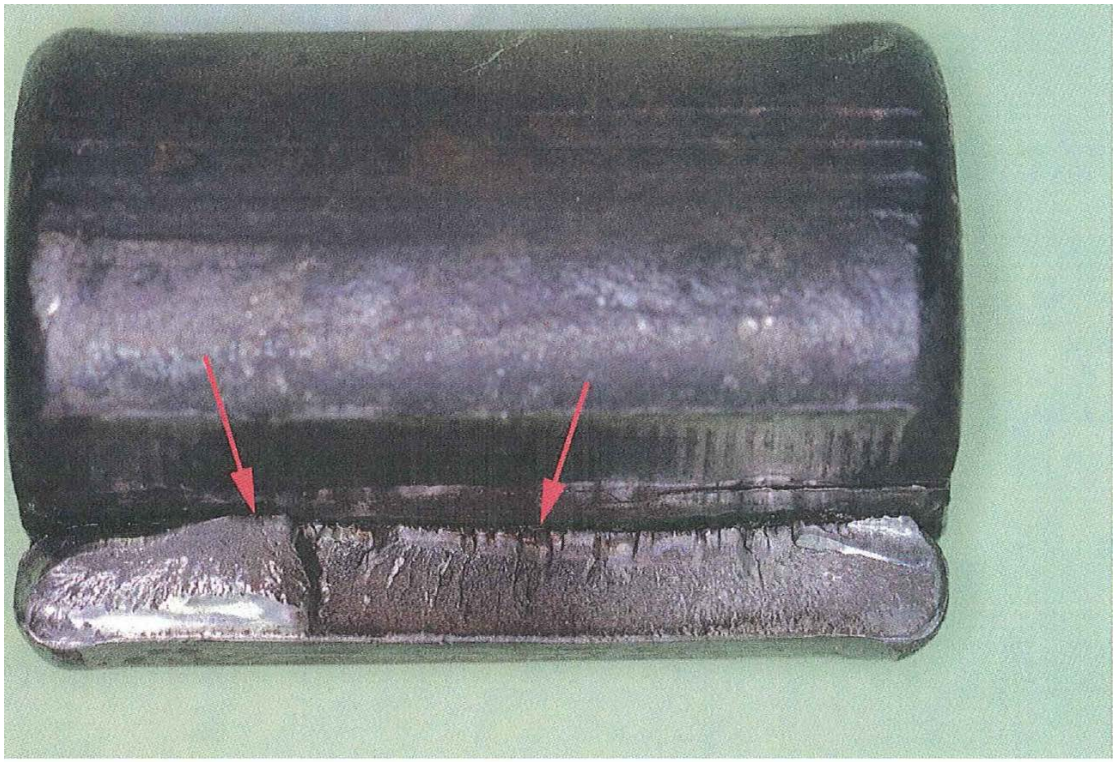
63. Mr Whitmore stated that presenting vehicles for inspection in a clean state was desirable but it was not currently a regulatory requirement. He said any recommendation to that effect should be for all vehicles and not just heavy vehicles and it really is a matter for the inspectors to determine if they needed a vehicle cleaned.

Inspection by Mr Terrence Casey

64. The failed sections of the leaf springs, together with photographs of the accident scene and damaged vehicle, were sent by QPS to Mr Terrence Casey, a forensic mechanical engineer, for examination to determine whether the leaves had failed prior to the truck leaving the road, or as a result of the truck's impact with the ground in the paddock.

65. Mr Casey found that both leaves showed evidence of long standing fatigue fractures, and it was likely they failed prior to the crash. The conclusion was that both the submitted leaves of the right front suspension of the prime mover had failed as a result of the initiation and growth of fatigue cracks, with the main leaf spring failing prior to the second leaf. Contact wear patterns, shown by the section of the main leaf, indicated that the vehicle had continued in operation for some time subsequent to failure of the main leaf spring. Mr Casey in evidence was unable to say what this meant in hours or kilometres. It would be hours or tens of kilometres at least but could have been weeks or thousands of kilometres. This occurred at some time well before the failure of the second spring.

66. Mr Casey said in evidence that when the main leaf spring fails this doubles the stressors on the second leaf.



Fatigue fractures the main spring had initiated at the locations arrowed.

67. He also noted the presence of grease in the area, and considered it is likely the fatigue fractures went unnoticed during servicing. Mr Casey stated that it was possible if the grease in the area had been cleared away that an inspection of that area may have revealed the failure in the main leaf. The fatigue fracture in the second leaf, in itself would not be easy to detect on a general visual inspection.

68. Mr Casey stated that the corrosion of the main leaf and the corrosion of the fatigue area of the second leaf were different indicating a time difference between the final failure and the production of the fractures. Mr Casey stated that the fatigue cracks in the upper surface of the main leaf accounted for 15% of the fracture, and would have occurred over an extended period of time and there would have been a sudden event causing a fairly high level of unusual stress to cause the final stress fracture.

69. Mr Casey and Mr McLaren did not agree with the suggestion the rust or corrosion observable along the cracks within the main and second leaf springs may have developed during the period of time where the vehicle was held in the yard and exposed to the elements, and was therefore not necessarily evidence that there had been pre-existing cracks within the leaf springs prior to the accident.

70. Mr Casey disagreed with the view of Mr Whitmore that the location of the fractures in this case, being near the eye of the leaf springs, were unusual as the most common place for a leaf spring to fail is at the centre point where there is often a hole that allows a bolt to pass through it. He stated he did not see any particular special reason why a fracture should occur through the drill hole through the centre of all the springs in the spring pack, based on his understanding of the nature of the forces experienced by leaf spring components (forces being his area of expertise). Mr Casey did not believe the way in which a spring pack of multiple leaves is structured places higher load at the centre compared with, for example, the loads placed at those points where one leaf finishes and the load is then increased on the upper parts of the spring pack from that point.

71. Mr Casey at inquest stated he did not disagree that a break in the eyelet area is unusual. In response to the suggestion this type of break is not associated with usual wear and tear but rather an unusually high one-off load, Mr Casey explained the pre-existing fatigue fractures, which developed in the leaf springs, dramatically reduced the strength of the leaves and therefore made them subject to failure at much lower than usual conditions. He went on to state ‘there is no way of getting around the fact’ the two leaves failed as a result of the development of fatigue cracks, which is a time-dependent mechanism and cannot be produced during an impact or accident sequence.

72. Mr Casey did not think that a driver would be aware of the change in the suspension when the main leaf had completely fractured.

73. Mr Casey did not think it would need to have been a particularly severe increase in load to cause the final failure because of the reduced strength capacity of the remaining sections of the second leaf and the high stressors, which is characteristic of the fatigue fracture which pre-existed.

74. Mr Casey further noted that, given the relatively reduced level of impact damage in the area of the right front spring hanger, it was likely that the complete failure of the right front spring had occurred pre-impact. He explained that this would have caused movement of the right side of the front axle, producing an uncontrolled steering effect. That is, it was likely that spring failure was the cause of loss of vehicle control.

75. This was consistent with the evidence of Mr Niemann who spoke to Stephen shortly after the crash. This witness says Stephen told him that ‘he heard a

bang and it (the truck) went to the right'. It was also consistent with police observations as to markings on the road at the scene of the crash, which indicated that the truck had suddenly veered to the right into the oncoming lane and then continuing off the road.

Condition of the roadway

76. Although SC Britten noted in his report and confirmed in evidence he did not observe any significant road features that could have contributed to the crash, evidence was introduced as to the existence of a depression or subsidence in the road surface about 100 metres prior to where the truck left the roadway and near where the crash occurred. SC Britten did not consider the subsidence referred to was significant in the context of the particular roadway, which he said was not in the best condition in any case. A report from DTMR referred to depressions, which on the basis of the percentages stated were insignificant. SC Britten stated he did not observe a pot hole or crater in the roadway, which would have been sufficient to break the leaf spring.

77. It is apparent from the evidence of a number of witnesses there was an area of the road surface, which drivers considered was rough. For instance, Mr Niemann stated in evidence there was a 'sinkhole type thing' that everyone knew about and drove around. He describes that it covered up a fair proportion of the road and if another vehicle was coming in the opposite direction you could not avoid it. Mr Niemann said the road was a typical country road and there were bad spots, one of which was near where the accident occurred.

78. Jesse Muller said there was a severe hole in the bitumen and a few metres after the hole he noted a skid mark set which veered off in the direction of the tree. Mr Muller stated that three weeks after the accident the council came and fixed the section of road.

79. Mr Niebling, the mechanic, also gave evidence there was an area of subsidence on the road on the bend that drivers knew about and if you hit

the spot it would throw the vehicle around. Mr Niebling agreed travelling over this area of subsidence would put extra strain on the wrapper leaf if the main spring had fractured.

80. Mr Marc Riddell was a driver with Goldmix and was also familiar with the area where the tragic incident occurred. He considered himself a friend of Stephen. He stated there was a spot on the left hand side of the road as you took the curve, which was known to most truck drivers as being a bit of a problem. If you took that corner at 100 km an hour then the suspension would bottom out, although there were several sections of road like that in the area. He stated it was not what could be described as a pot hole but more of dip in the road. In the daytime you had to take the dip on because you could not tell if anyone was coming towards you. At night you would be able to see the headlights and so you could avoid the dip.

81. Mr Bradley Rowlinson was also a truck driver with Goldmix and also knows the particular stretch of road where the crash occurred. He said there was a soft section and the road was generally rough around that area but he has never really experienced any problems. Knowing that stretch of road he would generally drive to the conditions and pick his line and avoid going into the depression and slow down.

82. Mr McLaren was asked about the depression in the roadway 100 metres before and whether it could have caused the leaf spring to fail. He stated that trucks were designed to handle such depressions but it, in combination with applying the brakes after hitting the depression, may have assisted in the breaking of the leaf spring. Mr McLaren said that could particularly be the case here because the condition of the trailer brakes may have meant the prime mover's brakes were doing more work and created more strain on the already partly failed leaf spring, which has progressively got weaker and weaker.

83. Sgt Jackson stated the section of road was rough and you would bounce around a bit and he would not go over 90 km/hr, but he would not think there was anything special about the roadway condition.

84. Mr Casey agreed it was possible that the act of braking could have applied stress sufficient to trigger leaf failure on the second leaf spring. Mr Casey also said it was possible that the depression in the road in the area of the crash referred to in the DTMR report could also have contributed.

85. DTMR conducts a Fatal Crash Analysis in relation to all fatal crashes on state roads. A site investigation was conducted on 2 September 2014. The carriage way around the crash investigation area was identified as being through a right hand curve with a slight downhill grade of 2%, travelling in gazettal direction. The prime mover was travelling in the opposite direction, against gazettal. The sealed carriage way 100 metres prior to where the prime mover left the travel lane was thought to have slight depressions travelling in against the gazettal direction with 1-2% super elevation on a flat grade.

86. Road crash data indicated there were no previous validated crashes recorded at the location in the past six years. The review considered there were no road contributing factors in the circumstances of the crash and no immediate interim and remedial measures were required.

87. It is apparent from the statement of Christopher Van den Kieboom that as part of a continuous program of works, DTMR completed road pavement rehabilitation in the period between 7 April 2015 and 17 July 2015 on the section of road. According to Peter Wilson, civil engineer with DTMR, in September 2014 he had recommended pavement rehabilitation be undertaken on sections of the Murgon-Gayndah Road, which included the crash site. He was not aware of the crash. Mr Wilson stated the pavement rehabilitation was in the usual course of business consistent with DTMR's approach to maintaining and upgrading state controlled roads. The area of roadway generally had been identified in 2011 and placed on a lengthy four year rolling program. The road repairs were conducted quite independent to the crash and had been signed off in September 2014.

88. The supervisor of the construction works, Paul Baldwin, also was not aware of the crash and the death. He was familiar with the accident site. He referred to the DTMR Fatal Crash Investigation report. He stated the road at the accident site was showing signs of age fatigue. There were no major pot holes nor defects, and it was in no different condition to any other road surface in the area of that age.

89. Mr Baldwin stated that in the direction of travel of the truck prior to the accident site there is a sweeping left hand bend in the road with a long continuous depression in the pavement. These types of depressions are common in this area and are caused by the weight of traffic change in

direction through the bend and compacting the black soil underneath. Mr Baldwin stated these types of depressions in the road are not regarded as a hindrance nor danger to traffic but do eventually require rehabilitation.

90. Robert Zelenski was a RoadTek contractor who did some of the work on the road repairs. He recognised the dip in the road and said the suspension springs would bottom out and a truck would be thrown around if you were travelling over 85-90 km/hr and went into the corner through the dip.

Maintenance and repair issues of the vehicle.

91. Stephen's wife, Leah Haigh, communicated a number of concerns with regards to the circumstances of Stephen's death, and has provided a formal statement evidencing these concerns. Specifically, Leah claims that her husband made regular complaints to her and others about the condition, state of repair, roadworthiness, safety and maintenance of the various vehicles owned and operated by his employer, including the vehicle he was driving on the day of the crash. Leah believes that several Goldmix employees were reluctant to drive and avoided driving the truck involved in the crash due to its condition, state of repair and roadworthiness.

92. Ms Haig also gave evidence that Stephen had two clipboard folders, which he took to work. One had the logbook and the other contained photocopies of documents Stephen had completed. This latter clipboard folder was not returned to her and has not been seen since the accident. She told the Court this folder included copies of 'NCRs' he had completed and handed in as well as other notes and maps. Ms Haig was unaware what NCR stood for but understood it was to do with documenting if something was wrong with the truck so it could be fixed. She was also aware of a vehicle maintenance book, which she believed stayed in the truck. Ms Haig was able to identify her husband's writing on a Mass Management book dealing with vehicle maintenance but when shown some Goldmix 'Non-Conformance Reports' (NCRs) was not able to identify the form but was able to identify her husband's handwriting on one of them.

93. There was other evidence led about the existence of this folder of NCRs. Stephen Bauer told the court he was aware that towards the end before the crash Stephen had kept photocopies of NCRs in a folder but he had never seen the folder or specific NCRs. Mr Bauer was one of the first persons on the scene at the accident and was asked questions about documents that

were in the cabin but was unable to say what was present and what happened to them.

Preservation of the scene

94. This issue of preservation of the scene was raised in the context of a series of concerns about the alleged absence of NCRs from the records that were said to be held by Stephen in his truck and subsequently taken by Goldmix staff. It is apparent from the evidence of a number of Goldmix workers, as well as the nature of the form itself, that NCRs were used to report a variety of issues including relating to product and safety issues at the depot or places visited but could be used to report on mechanical issues. As well there was a vehicle maintenance log for particular vehicles kept in the vehicle and viewed by the mechanic at the weekly servicing on the Monday.

95. Sergeant Jackson from Murgon Police was the first police officer at the scene. From Police records it was indicated that Sergeant Jackson attended from about 9:50 hours to 14:00 hours. Other officers attended during the afternoon and SC Britten attended at about 18:00 hours.

96. SC Britten stated it is the normal practice for first response officers to secure the scene and to not remove items or debris unless they posed a safety hazard. He agreed that it would not be usual for police to allow papers or folders to be removed from the cabin of the truck except in the situation put to him where it is evident there had been some rain after the crash and the top of the cabin had been removed.

97. Mr Muller also attended on the day of the incident and stated he was requested to gather up all of the paperwork that was in the truck by Mr Niemann. He retrieved the driver logbook and maintenance logbook and other general paperwork. There was also a folder, which contains things such as receipts and some duplicate buds of the National Driver Work Diary. Mr Muller explained the driver logbook is for fatigue management. The truck maintenance log, also known as the pre-start book, is where drivers made comments about any issues they had with the truck. He placed these in a feed bag found on site and gave it to Mr Niemann by placing it on the back seat of his utility vehicle.

98. Mr Niemann says he spoke to police and asked them whether they could start picking up to the debris that was lying around. He and Mr Muller picked up all the paperwork that was lying around and personal belongings and put all

the truck wreckage in a pile so they could come back later and pick it up. Mr Niemann says he also asked police if he could start organising for a towing company to come and tow the truck out of the paddock. He also said the police officer wanted some of the paperwork including the logbook and they collected that together and handed them to him and then collected all the other stuff including delivery dockets and slips.

99. Mr Niemann stated the police officer wanted the logbook and anything to do with the load and involving the delivery he was doing. This was happening after emergency services had attended and Stephen had been taken away. He stated there was not much paperwork left in the truck. Mr Niemann stated it was put in a bentonite feed bag and he took this bag back to the office and as far as he knows it was still there. At the time of giving evidence he stated he had not worked for the company for two years.

100. Mr Niemann told the Court that he believed he gave the documents requested by the police the next day or the day after that. At the same time the human relations section of the company had also arrived and were collecting other documents relating to the truck to provide to the police. The HR people wanted to copy the maintenance records, delivery slips and time sheets.

101. Mr Niemann recalls seeing some clip board folders, which included blank NCR forms, the NHVAS rules, instructions related to weighing of the vehicle, and lots of mud maps. He agreed there might have been two clipboard folders. He was not sure where he picked those up from. He agreed one of the folders contained the driver's logbook. He was not able to say whether the other folder contained photocopies of forms that Stephen had completed about issues to do with the truck. Mr Niemann stated he vaguely remembers picking up the truck's paperwork, a couple of folders, a first aid kit, some other personal belongings such as a jacket and he put all these into a bentonite bag. These were left in his office. As far as he was aware this bag was picked up by someone as part of the inquest. He did not destroy any of the contents put in the bag that he collected from the truck crash site.

102. This mystery bentonite bag was eventually located by the company after hearing the first section of the evidence and was delivered to my office. There were some folders in it but no NCRs related to the mechanical condition of Stephen's truck.

103. Sgt Jackson received information over the Police radio about the crash at about 9:50 am. He arrived at around 10:08 whilst Stephen was still in the driver's seat of the prime mover. Queensland Fire and Emergency Services and Queensland Ambulance Service personnel were present as were two company employees. He was the only police officer present for a number of hours. As confirmed by Senior Sergeant Gutteridge, the station was restricted in personnel who could respond due to mandatory training requirements taking place that day.

104. Stephen was talking to emergency services officers. Sgt Jackson assisted where possible until Stephen was removed and flown out. He was aware of the information the driver had provided to emergency services that he heard a bang and the vehicle pulled to the right. He then commenced to inspect the incident scene and took a series of photographs with a digital camera. Sgt Jackson had requested assistance and a Police Liaison officer attended with a camera and Lidar device to take measurements. Sgt Jackson noticed a male person walking from the truck to a utility carrying some documents. Sgt Jackson stated he went to the utility and found out that the person was an employee of Goldmix. He examined the documents and took possession of the National Driver Work Diary and the Goldmix Vehicle Maintenance Book. He does not recall what the other documents were and considered they were of no value to the investigation of the incident. Sgt Jackson was shown a NCR and said this was the first time he had seen it and does not believe they were in the group of documents taken to the truck. Sgt Jackson does not recall the documents being contained in a betonite bag, which is a common animal feed bag in the area.

105. On inspecting the work diary Sgt Jackson established that fatigue did not appear to be a factor. The Maintenance Book did not show any indications of problems with the steering or suspension of the vehicle. Sergeant Jackson states he later returned both books to the company after photocopying various relevant pages.

106. Sgt Jackson states he did not give anyone instructions to gather documents together. Documents could have gone missing at any time before he arrived and he was the only officer present and could not be in all places at the same time.

107. Sgt Jackson did not immediately contact the FCU. He stated he considered the incident not a complicated one in so far as causation and thought Stephen was going to survive. If he had known that it was likely that Stephen would die he would have arranged for the FCU to attend. This was arranged by Snr Sgt Gutteridge later that afternoon when he was informed of the death.

Maintenance and service history

108. Given the evidence of mechanical failure as a cause of the accident, police then investigated the truck's maintenance and service history. They were assisted by the company providing maintenance records for a two year period. According to SC Britten no significant gaps were identified from maintenance and servicing records, and none of the staff who provided statements to police identified any issues with regards to the adequacy and appropriateness of maintenance and servicing at Goldmix.

109. Mr Niemann stated that at the start of each shift the drivers do a daily pre-start check of a vehicle and noted any problems in the Vehicle Maintenance Book. The company also has a mobile mechanic come out every week to service the vehicles. The services are classified as "A" consisting of a grease and general check of the vehicle conducted weekly; "B" which is a full service including filters and oil conducted every 400 hours; and "C" which is a yearly roadworthiness prior to the machinery inspection for the NHVAS. This process was confirmed by Mr Niebling.

110. There was some confusion at the inquest as to the timing of these services and in particular the "C" service, although in the end this confusion was rectified and I am satisfied there is documentation relating to the conduct of these services for the prime mover in question, albeit with some of those services not being performed strictly within a 12 month period from the previous service.

111. Jesse Muller works for Goldmix as a part-time truck driver and maintenance person. He had a certificate in welding, structural design and a Certificate III in engineering but has no mechanical certificates. He says he assisted the main mechanic Mr Les Niebling. Mr Muller stated he was always supervised by the mechanic other than when performing simple tasks like changing bulbs and fixing flat tyres. He recalls helping Mr Niebling with routine maintenance such as oil changes, blowing out air filters and greasing the

augers on the trailer. He did not recall helping the mechanic with anything major on the prime mover. Mr Niebling confirmed this in his evidence.

112. Mr Muller stated Stephen did not want him working on his truck. He says Stephen did not give him a reason why and accordingly he stopped doing anything on the truck a few months prior to the crash.

113. It was put to Mr Muller that, according to the evidence of Bradley Urban, he at one stage had been asked to weld an axle on a truck by Adrian Niemann. Mr Muller recalls such an event and says he refused to do this as he was not qualified to do that and in any event you could not just weld chassis rails. He said he doubted Mr Niemann was being serious when he made the request. Mr Muller believed it was sent elsewhere for repairs. Mr Niemann also recalls an incident of this nature and that he asked Jesse Muller if he was qualified to weld a chassis and Mr Muller said he was not qualified. Mr Niemann explained that to weld a chassis you also need some special equipment and special rods and accordingly he got another company BZ Engineering to do the chassis repair. A copy of the invoice for the welding of a chassis on an Acco truck was subsequently received.

114. Mr Muller stated he had never spoken to Stephen directly about the prime mover but had overheard Stephen say it was all over the road and other drivers such as Brad Urban saying it was rough

115. Mr Muller stated that after Stephen was flown away by helicopter he and Mr Niemann and Mr Niebling were walking around the truck trying to find out how this incident happened. He did not see anything himself but heard them comment that Mr Niemann found a broken spring in the front of the prime mover on the driver's side.

116. Lesley Niebling is a qualified A grade mechanic with 30 years of experience working on heavy machinery. He was sub-contracted since 2002 to service and maintain Goldmix's fleet of trucks and other equipment. He stated that the current system under the NHVAS consists of a vehicle maintenance book for each vehicle where truck drivers record their daily inspection reports. In the front of the book there is a list of driver obligations to check on the truck before each use. This book is also where the drivers must enter any problems they are experiencing. The book remains in the truck. This book is then referred to by him when conducting any maintenance, servicing and repair work. Mr Niebling stated the drivers would either contact himself

or the manager of the company to advise if they were not driving the truck because they considered it unfit and the reasons why.

117. Mr Niebling stated that when checking all the suspension, wheel and steering components, he would use a lever and check for free play in kingpins and wheel bearings according to industry standards for tolerances. He would visually inspect springs and shackle pins and bushes. He stated it is not normal practice to clean the truck suspension and steering components to check them, however, if he noted excessive free play in any of these areas he would then clean the suspect area, usually by scraping off excess grease and dirt, and do a closer inspection.

118. Mr Niebling said in his statement a "C" service was conducted on the truck in about October/November 2013 and he did not find any defects with the right side suspension components. He replaced the left side rear drive truck suspension airbag and also repaired the clutch plate and gear box. The truck was due for its next "C" service a few months after the crash occurred. There was confusion about this particular "C" service and eventually it was found to be recorded as a roadworthy compliance service, which started on 24 February 2014 and was completed on 3 March 2014 and not in October/November 2013. It is apparent there had been a change in scheduling of the annual compliance checks from being based on date of registration to the beginning of the calendar year.

119. During the period 2012-2013, Mr Niebling stated that he noticed an increase in suspension components wear amongst all of the trucks due to bad road conditions following flooding and rains in 2012-2013. Mr Niebling stated if he noticed a suspension component was wearing he would monitor this within tolerances. If a suspension component was broken he would not allow the truck to be driven. With respect to Stephen's truck there was no indication on his weekly visual inspections that the suspension components needed replacing or repairing. Mr Niebling stated that the invoice records held by him over the past two years do not suggest ongoing right side suspension component issues.

120. Mr Niebling stated that on the day of the crash he inspected the truck in position after the crash and noticed that the right side leaf spring had broken but he thought that the wrapper safety leaf was still intact. In his opinion this wrapper safety leaf would still be sufficient to support the truck enough for

the driver to be able to control the truck. In his experience leaf springs fail regularly in trucks, especially on country roads. Truck drivers tell him the truck will veer but they can still maintain control and continue driving. Mr Niebling stated that he has seen main springs broken but never both springs at the same time.

121. Mr Niebling gave evidence that the springs fitted to the truck were installed by him in 2009 to replace the original springs, which were considered not as suitable on Queensland rural roads and particularly for off road.

122. Mr Niebling stated in evidence that apart from the maintenance log, drivers would verbalise concerns and Stephen would do so often. He stated there was no conflict between Stephen and himself although Stephen had his bad days when he was tired or in pain and could snap at him (a description also affirmed by Mr Niemann). Mr Niebling explained that Stephen would complain about small items quite a bit but nothing to do with vehicle performance or safety.

123. Mr Niebling was aware of NCRs but thought they were more to do with the mill side of things and he had not looked at one for mechanical issues.

124. Mr Niebling worked on a Monday to complete the weekly services. He was asked on a number of occasions whether he had complained about not having enough time to do all of the trucks properly. He stated he may not have "complained" as such, but it would have been something that was mentioned. He now has two days to complete the weekly services.

125. The manager of the Goldmix site, Adrian Niemann, stated that at no time had Stephen or any other driver made a verbal or written complaint about the maintenance of vehicles other than what they had written in the Vehicle Maintenance Book. He also stated that no employees have refused to drive vehicles or were dismissed for refusing to drive a vehicle because of the alleged defects. After the incident all company vehicles were checked and there were no major problems identified.

126. Wayne Charity was a body truck driver with Goldmix. He did not drive the prime movers except to move them in the yard while being loaded and he did not operate them for long enough distances so was unable to make any observations on the prime movers' condition.

127. On 4 March 2014 Mr Charity says he suffered injuries to his hand in a work related incident. He socialised with Stephen and their respective families. Mr Charity says Stephen and he spoke often about trucks and Stephen would regularly tell him his truck was all over the place and he had "another blue" with the mechanic over "not fixing this or that". Mr Charity could not recall any specifics of the problems but he stated Stephen was never really happy with the work of the mechanic. Stephen complained about the steering and said sometimes the truck was all over the road.

128. Mr Charity stated that Cameron Anderson also drove the truck and he believed Cameron was fired over his complaints about the truck. Mr Niemann denied this was the case and stated Mr Anderson was a casual driver who had other work and he was not needed after a point in time. Mr Charity stated other drivers also told him they hated driving the Kenworth truck.

129. Mr Charity stated he overheard some heated conversations between Stephen and Leslie Niebling about the safety of the truck and Stephen requesting it be fixed. Mr Charity stated the first protocol for any issue was to write it in the log book and if it was not fixed or was a bigger issue the driver was to complete a NCR and hand that in to the office. To his knowledge Stephen had lodged several NCRs regarding the truck in question as well as for other property and Stephen told him he kept copies. He also said Stephen told him he had complained to Mr Niebling although he had not witnessed this himself.

130. Mr Charity stated that prior to the accident Mr Niebling would come in each Monday (sometimes it was a Tuesday) and service two semi-trailers, two body trucks and forklifts. Since the accident he now has two days to complete repairs. He stated Mr Niebling would complain regularly he did not have enough time to repair all the trucks properly.

131. Mr Charity stated he was advised that a mechanic in Wondai had inspected the vehicles after the incident and the mechanic said they should not have been on the road.

132. Brad Urban was also employed at Goldmix and stated Stephen regularly complained to him about the truck in question and its condition. Other drivers preferred not to drive the truck. He drove the truck in the yard for loading and noticed various problems with brakes, steering and

suspensions. Mr Urban said he only drove Stephen's truck in the yard. In evidence he called the truck 'dodgy' and a 'death trap' and listed numerous issues about the truck. He stated in evidence that he did not lodge any complaints about the vehicle despite the issues he raised in evidence. The mechanic was useless he said, again added to with gratuitous insults.

133. Mr Urban stated he was aware Stephen had regularly lodged non-conformance reports regarding the trucks with management and he had sighted some of these but cannot recall details. He stated he had never lodged an NCR himself adding again gratuitously it was a waste of time and they only got lost.

134. Mr Urban stated that after the accident the trucks were sent to another mechanic in Wondai for full inspections and they all failed. He was also aware of a driver being sacked because he complained about the truck as a death trap.

135. Mr Urban also stated that Jesse Muller was asked to weld a chassis and did so and rejected the evidence of Mr Muller, Mr Niemann and Mr Niebling on this issue.

136. Mr Urban's evidence was delivered with such a degree of gratuitous hyperbole, I found his evidence not reliable.

137. Bradley Rowlinson was also a truck driver with Goldmix. He drove all the trucks the company used including the Nissan prime mover, which he agreed drove a bit rough. Mr Rowlinson had driven the truck sometime in the month before the crash. He stated he has never had any issues with this particular truck. If there was an issue this would be entered into the Maintenance Records Book. He cannot remember anything particular for the truck but if he did make an entry it would have been only minor things.

138. Cameron Anderson also drove the Nissan Prime Mover occasionally. He stated the truck was rough to drive but he does not remember having any major mechanical issues with it when he drove it. If there were any issues there was a work diary kept in the truck that each driver would fill out.

139. Marc Riddell said he also has driven the Nissan Prime mover a fair bit. The company records indicate he had driven it as late as 19 and 20 August 2014. He stated he had no particular problems driving it although he thought it was gutless and a little rough to drive but that could apply to any number

of trucks. He preferred to drive the Kenworth truck, not because it was better in any particular aspect other than having better power and torque. Mr Riddell stated that if maintenance was required on a truck he used the Vehicle Maintenance Book, but if an urgent repair was needed he would telephone the mechanic Les Niebling.

140. Mr Riddell stated that an NCR is a reporting mechanism used as a way of reporting an issue to management. He usually would not use an NCR to report mechanical issues, but may have on occasion. He had no problems with the maintenance performed by the mechanic who he considered one of the best mechanics in the area.

Statement of Lesley Wilson

141. Lesley Wilson was employed at Goldmix for four years until July 2015 as an administration assistant in the office. Between the adjourned hearing dates Ms Wilson had been speaking with witnesses who had given evidence. As a result she agreed to provide a statement to the lawyers representing Ms Haig. This statement was provided in June 2017.

142. Ms Wilson stated there were four other full-time employees also working in the office. Adrian Niemann and Jo Orford had offices in the area. Normally the office doors would be open unless they were having a meeting or on the telephone.

143. Ms Wilson stated there were two shredders in the building. There was a small capacity shredder in Mr Niemann's office and she had access to a bigger one. Ms Wilson stated that Mr Niemann rarely used his own shredder because it was loud and could only handle a few pages at the time.

144. Ms Wilson stated that drivers would regularly come to the office to talk to management about issues they had with the trucks, delivery locations, the mill or anything else. Stephen would come into the office at least once or twice a week and she spoke to him about some of the problems and issues he had at work. She recalls a common topic of conversation was the general condition of the trucks and particularly his complaints about the prime mover he drove. Stephen told her he had written some issues in the trucks log book for the mechanic to fix and they were not being fixed. The mechanic would leave a note saying he would fix things next time.

145. Ms Wilson recalls two main occasions that stuck in her mind. On one occasion Stephen had told her he was driving the Nissan down the Binjour

Range and the steering wheel came off in his hands. The second occasion he told her he was coming back from Gayndah when the cab of the truck felt like it dropped on one side and veered to one side before he could gain control. Stephen complained to her about concerns he had about the steering column in his truck. She was aware that drivers would use a log book in the truck to record any maintenance issues they wanted addressed. In addition drivers could also complete and lodge NCRs. If a driver completed an NCR they would either put in a tray at the mill office or deliver them directly to Liam Frawley, the Quality Assurance Officer. Liam maintained a separate folder for each year where he would file any NCRs.

146. Ms Wilson stated that about 12 months prior to the accident she was asked to attend monthly manager meetings where they would discuss NCRs. She stated that none of the NCRs discussed at the meeting related to truck issues or anything that Stephen had submitted. In evidence she stated the NCRs discussed at these meetings were about issues related to the safety of farms where goods were delivered.

147. Ms Wilson stated that after some of the NCRs Stephen had lodged had not been addressed he decided to start photocopying every NCR he lodged. Ms Wilson stated that Stephen would lodge a new NCR almost on a weekly or fortnightly basis and he would ask her to photocopy it for him. She would read a small part of what was written and she recalls numerous NCRs he brought in related to problems with the vehicle he drove. She recalls Stephen putting the photocopies in a blue clip board type folder with a clear sleeve on the inside of the front cover. She stated she saw Stephen taking this folder with him after leaving work. She recalls a couple of instances when Stephen phoned her and asked her to go to his truck and collect the blue folder because he had forgotten it.

148. Ms Wilson stated that after Stephen had photocopied an NCR he would personally give it to Liam Frawley or put it in the in-tray on his desk. Stephen had also asked her to fax copies of NCRs to Yasmin Lawrence of Human Resources at the Lismore head office. She scanned the forms from the photocopier to a computer and then forwarded them to Yasmin Lawrence. Ms Wilson stated these NCRs all related to issues regarding Stephen's truck. She recalls one NCR was with respect to an incident on the Binjour Range when his steering wheel came off and another related to an incident where Steve was travelling back from Gayndah and the truck veered off the

road. Stephen also submitted an NCR about Jesse Muller working on his truck and Adrian Niemann stated Jesse was not to work on Stephen's truck anymore but he continued to work on the other trucks.

149. In evidence Ms Wilson agreed she could not now recall any specific issues that were the subject of NCRs other than one related to Stephen not wanting Jesse Muller working on his truck; one related to the steering wheel issue and some that related to delivery issues at the properties they were delivering to that Stephen considered dangerous.

150. Ms Yasmin Lawrence states in her statement that she has no recollection of ever receiving such documents. She stated it would have been most unusual for her to receive such a document, and if she had she expects she would have recorded that fact and would have spoken to the safety team and Ms Kate Powell and referred it to them. She also stated that such a document is not something that would have gone unnoticed and not something she expects she would forget.

151. Ms Lawrence stated she does not recall receiving an NCR relating to Stephen complaining about Jesse Muller working on his truck. She recalls speaking to Mr Niemann and Mr Niemann advising her that the only work Mr Muller was carrying out was minor, such as changing blown bulbs and that type of thing.

152. Ms Lawrence also has no recollection of an incident involving a steering wheel of a heavy vehicle coming out in someone's hands. She stated it is not something she would forget. She is confident she did not receive an email containing an NCR or any other communication about such an incident involving Stephen.

153. Mr Niemann has no knowledge about a Binjour Range incident involving Stephen. He does recall issues in relation to the steering column and organising for someone to fix the steering column and a mounting bracket the day the issue was raised. Issues were raised to him by Stephen about Jesse Muller working on his truck and he told Jesse not to work on the truck anymore.

154. Ms Lawrence stated that during her term as HR manager she saved copies of all emails related to her area of responsibility and is confident that if she had received any emails containing NCRs she would have saved them.

155. Ms Lawrence also stated she did not, as alleged by Ms Wilson, attend at the Goldmix site the day following the death with two other persons. She did attend Stephen's funeral but did not go to the office. She did not give Mr Niemann or anyone else any instructions about any documents that had been collected relating to Stephen or the truck he was driving.

156. Ms Wilson states that around 10 minutes before Mr Niemann left the office on the day of the accident she recalls hearing his shredder operating constantly for about 10 minutes. At the time she thought this was unusual because he usually uses the shredder located next to her desk.

157. Mr Niemann stated he does not recall shredding any documents on his shredder in his office or on the main shredder on the day of the crash but he may have. Most of his afternoon was making telephone calls to head office regarding how to manage the situation. He denied any documents obtained from Stephen's vehicle were shredded by him. He recalls collecting documents at the scene but did not carefully look at them other than to sufficiently identify documents the Police had requested including log books, delivery slips for the day and time sheets.

158. Ms Wilson states that the day after Stephen's funeral she made a point of looking at the NCR folders in the bookcase above Liam Frawley's desk and did not find any of the NCRs that she knew Stephen had lodged in relation to his truck. Ms Wilson did not report her concerns or suspicions that documents relating to the maintenance of Stephen's truck had been shredded to Norco management. Ms Wilson agreed she had provided management with concerns regarding another employee possibly taking stock feed and that potentially the shredding allegation would have been more serious.

159. It was also put to Ms Wilson that there was no incident of a steering wheel coming off on the Binjour Range. It is apparent there had been an incident involving Stephen on the Binjour Range some time ago but not involving a steering wheel coming off. It was put to Ms Wilson that any reference to a steering wheel was an incident where the steering wheel bent due to the size of Stephen; he wrote about it in the maintenance book; and it was fixed. Ms Wilson was unable to recall this.

160. Ms Wilson stated that Marc Riddell drove the same truck as Stephen during a different shift and had mentioned to her in passing one day that he would not drive the truck again as it was dangerous.

161. Mr Riddell stated he was not aware of any issue regarding the steering wheel of the truck or the cab of the truck dropping to one side or veering to one side. He does not recall having a conversation with Lesley Wilson relating to the truck being dangerous. If he had any conversation it would have been about the tyre issue. This had involved a conversation with Stephen when he had informed him he felt the truck was steering wrongly. He says Stephen and Les Niebling thought it involved different tyre tread patterns which once changed resolved the problem. He stated saying a truck was dangerous was a big statement and he had no issues suggesting the truck was dangerous. Ms Wilson responded in evidence that Mr Riddell was not telling the truth.

Report by Kate Powell

162. Norco Co-operative Ltd, the parent company of Goldmix, also conducted its own internal investigation. Similar to the police investigation, the company's internal investigator Kate Powell did not identify any significant gaps in relation to the maintenance and servicing of the truck involved in the crash or any other evidence that Goldmix or its employees were aware of fatigue cracks within the suspension spring leaves.

163. The review noted that the company's site at Windera has NHVAS accreditation for Mass Management and Maintenance Management effective from 12 March 2014. It was noted in the review that Stephen had complained that Jesse Muller was undertaking work on the truck. The review stated there was no written evidence of this in the vehicle maintenance book and it was reported by the site manager that any work performed by Jesse was done so under instruction by the mechanic.

164. A review of the maintenance records indicated that fault/repair records were completed for 100% of days the vehicle was working. In all instances, except for two reported faults, all jobs were signed off as completed the following Monday when the mechanic was on site. In the two instances the work was not completed until 11 days after the report of the fault, and this was due to parts requiring to be ordered.

165. The roadworthy compliance inspection completed in 2014 highlighted a few areas requiring rectification such as windscreen replacement, lights and reflectors, which were repaired to meet the compliance requirements.

166. The review noted there were inconsistencies between Stephen's time sheet start and finish times with those documented in his log book. There were also occasions where Stephen had claimed over 12 hours work time on his time sheets. Based on the NHVR standard for hours, a driver must not work for more than a maximum of 12 hours in any 24 hour period.

167. The review made a number of recommendations to assist in improving processes for managing transport going forward. These included:

- Undertaking an external audit in relation to Chain of Responsibility to ensure the business is compliant in relation to its responsibilities in the transport chain.
- Provide information and training to all truck drivers in relation to their work and rest hour requirements.
- Implement a system whereby truck driver hours are audited on a regular basis.
- Review the mechanical resources and requirements for the site to ensure all vehicle mechanical work is conducted by a qualified truck mechanic.
- Ensure a peer review of mechanical work is conducted at least annually through a third party roadworthy inspector.
- Implement a procedure regarding the management of mobile phones issued to each truck, and ensure hands-free kits are installed.

168. Mr Niemann as the site manager said in evidence he was aware of the review but he had not seen the report of Ms Powell. Ms Powell stated this surprised her. She also discussed the review with Mr Niemann who recalls being asked to obtain copies of accreditations and certificates from the various contractors used by the branch, but little else. Mr Niemann said he was not aware of the recommendations that came from the review.

169. Ms Powell was aware the branch's trucks were inspected by another mechanic, as one of her recommendations, but was not aware of the result. She stated an invoice was received. Mr Niemann also said he was not told of or was aware of the result of the peer mechanical inspection. It is apparent from an email trail provided in documents sought from Goldmix by my office that although Mr Niemann may not have possibly seen a full

report, he was aware of some of the items needing attention, as he responded to an email and provided a response.

Response of the National Heavy Vehicle Regulator

170. Wayne Whitmore is a Senior Specialist Accreditor with the NHVR. He has multiple relevant qualifications and is an A Grade Motor Mechanic and Licensed Safety Certificate Examiner. The NHVR was provided with parts of the brief of evidence and asked if it could comment on the issues or otherwise assist the court. In particular Mr Whitmore was asked to review the truck's maintenance and servicing records and he stated he did not identify anything that caused concern and there was nothing in the documents that would have alerted anyone to there being an issue with the leaf springs.

171. Mr Whitmore also provided a helpful overview of the current regulatory framework for heavy vehicles. The NHRV is a statutory body created to regulate all vehicles over 4.5 tonnes gross vehicle mass in all states and territories other than the Northern Territory and Western Australia. The NHVR administers the Heavy Vehicle National Law through delegated agencies including police and officers with DTMR.

172. There is a specific requirement in the National Law that a person must not use, or permit to be used, on a road, a heavy vehicle that is unsafe.

173. The National Law establishes the National Heavy Vehicle Accreditation Scheme (NHVAS), which allows heavy vehicle operators to demonstrate, through the audit of their management systems, that the operation of vehicles and/or drivers complies with NHVAS business rules and standards. In return, accredited operators benefit from alternative compliance methods or concessions, depending on which module they are accredited for. For instance, a participant in the Mass Management module is allowed to carry higher masses. The participant in the Fatigue Management module can allow drivers to drive for longer than standard hours. Heavy vehicle operators who are accredited in the Maintenance Management module are relieved of their obligation to present their vehicles to state road authorities for annual mechanical inspection.

174. The scheme recognises operators who have robust safety and other management systems in place and is increasingly being used to show compliance with general duty requirements under road transport law.

175. In submissions made at the conclusion of the evidence counsel for the NHVR noted the foundations of the NHVAS is a combination of daily checks; a system for drivers to report faults; a schedule of regular service and maintenance, of different levels, at different intervals, including weekly services; as well as documented management standards and practices, overlaid with a scheme of auditors and spot checking.

176. The NHVR conducted a project to establish baseline data on roadworthiness for future comparison called the National Roadworthiness Baseline Survey. One of the findings from the survey was that there was a lower rate of major defects found in vehicles that were in the NHVAS or a similar scheme when compared with vehicles that were not in such schemes. The rate of major defects found in vehicles not in any scheme was 13%. For vehicles in schemes, it was 9%.

177. NHVR records indicate that Norco Co-Operative Ltd trading as Goldmix held Maintenance Management accreditation at the time of the incident current to 3 March 2018. The vehicle in question was included as a nominated vehicle at the time of the incident.

178. NHVR audit records show a successful compliance audit for Maintenance Management conducted in January 2014 and September 2015. The records also indicate a number of spot check audits and six months compliance audits, which resulted in corrective action requests. Such requests did not indicate that vehicles were not being maintained or that faults were not being identified and actioned. The deficiencies were administrative failures to document and regularly report on the operation of the scheme. Such non-conformance with administrative matters was not uncommon and many companies received similar corrective actions.

179. The NHVR accepted that Goldmix's compliance with maintenance and servicing schedules was acceptable.

180. Counsel for the NHVR also informed the Court that the Heavy Vehicle National Law has been amended to transform existing chain of responsibility obligations similar to Workplace Health and Safety laws. The amended law is due to commence in Queensland in 2018. The term "transport activities " is defined widely and would include usual activities such as scheduling, loading and consigning, but will also cover business decisions and practices including arranging maintenance work. It would also cover a driver's health

and fitness for duty. Under the amended law, executive officers of companies will have due diligence obligations to ensure the duty is discharged. The effect is that each party in the so-called Chain of Responsibility will have a duty to ensure the safety of their transport activities. Parties in the chain include employers, operators, consignors, consignees, packers and schedulers. The essence of the amended legislation is to make a risk based framework integral to the heavy vehicle industry. This is an approach that emphasises identification, assessment and treatment of risks, so far as reasonably practicable, in preference to a prescriptive approach that attempts to set rules that all vehicles and operators must conform to, despite wide variation in the circumstances.

Conclusions on the issues

181. In reaching my conclusions it should be kept in mind the *Coroners Act 2003* provides that a coroner must not include in the findings or any comments or recommendations, statements that a person is or maybe guilty of an offence or is or maybe civilly liable for something. The focus is on discovering what happened, not on ascribing guilt, attributing blame or apportioning liability. The purpose is to inform the family and the public of how the death occurred with a view to reducing the likelihood of similar deaths.

182. A coroner should apply the civil standard of proof, namely the balance of probabilities but the approach referred to as the Briginshaw sliding scale is applicable. This means that the more significant the issue to be determined, the more serious an allegation or the more inherently unlikely an occurrence, the clearer and more persuasive the evidence needed for the trier of fact to be sufficiently satisfied that it has been proven to the civil standard.

How Stephen Brown died and what caused his death?

183. The evidence leads to an uncontroversial conclusion that Stephen died from pulmonary thromboembolism. The development of pulmonary thromboembolism occurred whilst he was being treated in hospital and was not a causal factor in the crash occurring.

184. This is consistent with the autopsy findings and the clinical picture of his sudden haemodynamic instability on the operating table. At the scene Stephen was conscious and alert. There had been a serious leg injury and

partial amputation but the blood loss was not significant, no doubt due to the early provision of assistance by bystanders.

185. It is highly likely there were existing clots or deep vein thrombosis in Stephen's legs prior to the crash. Stephen had a number of medical co-morbidities, which would have predisposed him to this condition including his obesity and relatively sedentary occupation. Stephen was rendered immobile immediately after the crash and whilst receiving treatment in hospital. Immobility also predisposes to clots breaking off from the legs and these can enter the arteries leading to the lungs and cause death.

The circumstances leading up to the single vehicle accident on 27 August 2014.

186. It is my finding consistent with Stephen's statement 'I heard a bang and it went to the right' that the truck left the road due to the sudden failure of the second leaf spring within the truck's leaf spring suspension system, the main spring having already failed. There is no other conclusion that can be drawn on the balance of probabilities as all of the available evidence is consistent with that being the cause. There is no evidence that suggests speed, fatigue of the driver or inattention played a part. The evidence does not support a finding the second leaf spring broke whilst being towed or that it failed as a result of the impact of the truck over the embankment and hitting the tree.

187. Mr McLaren and Mr Casey agreed the failure of the right front second leaf spring would have caused the axle to move rearwards causing the truck to steer to the right, and this would have been difficult for the driver to correct, particularly with the trailer pushing from behind.

188. Mr McLaren stated he was of the opinion the failure of the second leaf spring was the cause of the vehicle's sudden change of direction described by the driver. He described the statement 'I heard a bang and it went to the right' as 'absolutely consistent' with his findings in relation to the leaf springs. Mr Casey also agreed that in his opinion, it was likely the failure of the second leaf spring was the cause of loss of control of the vehicle.

189. I accept the evidence of Mr Casey that the main leaf spring would have failed first, resulting in the second leaf spring having to carry a load 'at least four times higher than usual'. Further, the nature of the crack in the second leaf spring (a 't crack') acted as a 'very effective stress concentrator', meaning the stress carried by the second leaf spring was 'dramatically higher' than it

was designed for, such that it was carrying stressors close to that which would have caused failure. This evidence is also consistent with the evidence of Mr McLaren on this point.

190. Mr Whitmore stated it was not common for an individual leaf to break at or close to the eyelet unless subjected to a particularly strong force and, in particular, a strong vertical force such as that experienced when hitting large potholes or running over embankments.

191. Mr Casey and Mr McLaren were of the opinion the second leaf spring did not break as a result of going down a two to three metre embankment at high speed and hitting a tree. Mr Casey agreed you could not dismiss the possibility vertical forces experienced as a result of the truck hitting the paddock may have caused the second leaf spring to fracture, but the condition of the leaf springs were such that there did not need to have been a particularly severe increase in load to cause final failure of the second leaf spring and the simple act of braking could possibly be sufficient.

192. Mr Casey did not disagree that a break in the eyelet area is unusual. In response to the suggestion this type of break is not associated with usual wear and tear but rather an unusually high one-off load, Mr Casey explained the pre-existing fatigue fractures, which developed in the leaf springs, dramatically reduced the strength of the leaves and therefore made them subject to failure at much lower than usual conditions. He went on to state 'there is no way of getting around the fact' the two leaves failed as a result of the development of fatigue cracks, which is a time-dependent mechanism and cannot be produced during an impact or accident sequence.

193. Mr Casey and Mr McLaren disagreed with the suggestion that the rust or corrosion observable along the cracks within the main and second leaf springs may have developed during the period of time where the vehicle was held in the yard and exposed to the elements, and was therefore not necessarily evidence that there had been pre-existing cracks within the leaf springs prior to the accident.

194. The condition of the road may have been a contributing factor to the extent that a number of witnesses gave consistent evidence this was an area of road where drivers would brake as they were going around the bend and at the same time come across what is described as a 'slight depression'. Mr Casey was asked about the slight depression in the road described in the

DTMR report, and agreed it was possible that may have been a contributory factor. However, Mr Casey stated the failure of the second leaf spring would have happened in a relatively short period of time in any case, and it would not have taken a lot to cause the fracture – simply the continued operation of a vehicle would cause continued propagation of the fatigue crack such that it would eventually fail.

195. Mr McLaren stated that even simply applying the brakes does affect the forces placed on a leaf spring, and even more so with a trailer attached and a possible delay with the trailer brakes such that most of the braking would be on the prime mover placing more strain on the leaf spring. That is, the simple act of applying the brakes may have resulted in sufficient force to cause the leaf spring to break at that moment in time, with or without the truck also experiencing a bump or jolt due to a depression or subsidence in the road at that same time.

196. I find the condition of the roadway was not in itself a contributing factor. It was no doubt a bit rough consistent with many country roads in the area, and consistent with being identified for improvement as part of the DTMR program for road pavement rehabilitation. Trucks are built to withstand such irregularities in the pavement surface.

197. The condition of the roadway may have resulted in Stephen applying the brakes leading into the bend and the depression in the road surface and this was the final catalyst to the second leaf spring failing, but this is conjecture and but a possibility.

198. As to the reduced efficiency of the trailer brakes due to a minor air leak and being out of adjustment, Mr Casey stated he would not expect the braking condition to have much input in the capacity for the driver to regain control. It may have been a factor, but that is as high as the evidence takes it.

Whether the deceased's employer took reasonable steps to ensure the deceased's safety when driving the vehicle involved in the accident, particularly with regards to maintenance and repair of the vehicle.

199. On the issue of whether the pre-existing fatigue cracks could have been detected, Mr Casey and Mr McLaren stated fatigue cracks were very difficult to detect on a visual inspection.

200. Mr Casey and Mr McLaren essentially agreed in saying it is possible the total failure of the main leaf spring would have been observable during a service

of the truck however, it would have been necessary to clear away the large build-up of grease for the failure to have been visible. The fatigue crack in the second leaf spring would not have been easy to detect particularly on a simple visual inspection and particularly if you were not looking for cracks. A general inspection was unlikely to identify the fatigue crack in the second leaf spring.

201. Mr Casey said in his evidence that due to the location of the fatigue cracks within both the main and second leaf spring, either of these fatigue cracks would have been very difficult to locate without pulling the spring out. He agreed that even if the area was cleared of grease and debris, you would need some form of non-destructive testing technique to assist a visual inspection of the leaf springs.

202. Mr Whitmore stated the location of the pre-existing fracture 'is not an area you would pick up easily or even know of'. It was not in an area that normally fails in that particular way and even with the grease removed, it would increase the likelihood but still be unlikely that it would be seen.

203. There is insufficient evidence to make a finding as to whether the broken main leaf spring should have been detected during any inspection of the vehicle carried out in the weeks or months preceding the incident, given the precise date that it broke is unknown. It was certainly prior to the day of the incident as there was a sufficient length of time prior to cause some rubbing and wear marks to the components. It is also evident that between the last Monday service by Mr Niebling and the day of the incident the vehicle had travelled up to 1100 kilometres so it is possible the fracture of the leaf spring occurred in that time. There is no documentary evidence in the maintenance records of mechanical issues indicating the possibility of a failed leaf spring.

204. Mr McLaren and Mr Casey also agreed that a driver would not be particularly conscious of the change in the way of the vehicle behaved when driving a truck with a failed main leaf spring. Given Stephen's adherence to mechanical safety standards it is most unlikely Stephen would have some knowledge or inclination that there was a failed main leaf spring and a fractured second leaf spring and still drive the vehicle.

205. The NHVR accepted that Goldmix's compliance with maintenance and servicing schedules was acceptable based on the documentary evidence of the schedule of maintenance.

206. Mechanical faults or issues were usually recorded in the vehicle maintenance book kept with the truck. Prior to the incident drivers could also verbally report to Mr Niemann or directly to Mr Niebling.

207. Weekly checks of the trucks each Monday was conducted and regular services seem to have occurred. After the incident Mr Niebling was engaged for two days a week to provide him with more time to complete more thorough inspections.

208. The annual roadworthy check of the truck in 2013 was put back by a number of months from October 2013 until March 2014 due to a change in scheduling. Annual inspections are now conducted by another mechanic independent to the regular servicer.

209. Although there was criticism by some ex-employees of the quality of maintenance performed, there were few specific examples provided and none that held up under further examination during the inquest.

210. The resolution of the contentious issue of alleged shredding of missing NCRs, their general use and the extent to which Stephen utilised them for mechanical issues took up some amount of time during the inquest.

211. It is evident that generally vehicle maintenance issues were recorded in the vehicle maintenance book. NCRs were used at times for vehicle maintenance and at least one NCR completed by Stephen on 14 May 2014 related to a levelling valve on the air bags of the truck's rear suspension. The evidence suggests a new valve was installed on the same day. Otherwise no other NCRs relating to maintenance of the trucks were able to be produced.

212. It was unfortunate that Goldmix staff were able to collect documentation from the scene and place it in a feed bag and start to remove it from the scene, but I accept this was a site of some chaos and it would have been difficult for one police officer to take effective control of the scene. It was regrettable that it was not until sometime during the adjourned dates in 2017 that Goldmix found the feed bag in the office where it had been left by Mr Niemann and belatedly produced it to the court. The fact that no NCRs were found in the bag, despite evidence from witnesses that Stephen had photocopies of such documents in his blue folder, no doubt compounded the suspicions of family there was some form of cover up. There was an

allegation Mr Niemann shredded such documents on the afternoon of the crash. Mr Niemann denies this.

213. From an evidentiary point of view, and given the significance of the allegation, it has to be said based on the Briginshaw formula, a finding of shredding and a cover up would be difficult to substantiate.

214. Furthermore there is great merit in the submission of counsel assisting when she said the relevance of such evidence should be narrowed to whether it could be said that such documents, if they existed, related to knowledge of pre-existing fatigue cracks and/or the failed main leaf spring.

215. As Ms Jarvis submitted there is no evidence to suggest Stephen or anyone else observed fatigue cracks or the failed leaf spring or experienced issues, which may have caused further investigation of the suspension, and that this information made its way to an NCR. It certainly did not make its way to the vehicle maintenance book. The evidence of Mr Casey and Mr McLaren was that until the second leaf spring failed Stephen would not have experienced any handling or driving issues that would have alerted him to a problem.

Whether there are any matters about which preventative recommendations might be made pursuant to section 46 of the Coroners Act 2003.

216. The FCU and Ms Haig's counsel submitted there should be a recommendation that heavy vehicle companies, when conducting their scheduled servicing and maintenance regime, assign time to clean the vehicles so that inspections can be conducted more thoroughly.

217. It is uncontentious to say that inspections involving cleaning of grease from the leaf spring components are more likely to result in detection of broken or fractured suspension leaf spring components. That would also be evident for a myriad of other vehicle components.

218. Whether there should be a specific recommendation as such, which could also be enforced, was the subject of evidence from Mr Whitmore and a submission from the NHVR.

219. In his evidence Mr Whitmore stated 'it would be nice if heavy vehicles are pristine and brand new' but that's 'just not reality'. Mr Whitmore stated that technically, it is not currently a requirement either within the accreditation scheme or under the DTMR inspection regime that vehicles are cleaned prior to annual inspections. He noted documentation from DTMR does ask

for vehicles to be presented in a clean manner, but in reality this does not always happen and it is up to the inspector as to whether he can inspect the vehicle properly or not in that condition.

220. Mr Whitmore agreed if there is excessive grease on a leaf spring component, the person undertaking the inspection should assess for themselves whether they believe they can see it properly and, if not, it would be better to remove the grease. It is the duty of the person doing the inspection to be satisfied they have been able to inspect the component correctly.

221. The NHVR submitted that under the risk based framework the heavy vehicle industry will be subject to under the amended legislation, the approach emphasises identification, assessment and treatment of risk, so far as reasonably practicable, in preference to a prescriptive approach that attempts to set rules that all vehicles and operators must conform to, despite wide variation in the circumstances. It was submitted in the present case, for example, it has been identified that the trucks in use travelled on rough roads, and in and out of the paddocks and yards while heavily loaded. A careful assessment of the risks in those circumstances might indicate increased wear and tear, and a shorter lifespan for suspension components. An appropriate response may have been to simply replace those components at a shorter interval than would be the norm for vehicles on better roads. Another treatment may have been to completely strip and inspect the suspension components at certain intervals. Those actions would be warranted in response to this particular circumstance but would not be appropriate to be applied universally. The concern was that this would place an unnecessary burden on other vehicle operators that would achieve little, and could potentially take away from other issues.

222. In that regard, counsel assisting provided an alternative suggestion that there be enhanced education and guidelines to ensure persons performing inspections are aware of the risks involved in not having clean components when they perform a visual check. Given the evidence in this case is visual inspections of even clean suspension components would have unlikely identified stress fractures in the second leaf springs or the failed main spring, this may be an appropriate response.

223. The NHVR also submitted it would assist the NHVR perform its functions if there was a recommendation that other agencies such as DTMR, QPS,

WHSQ and QAS establish protocols for notifying NHVR of every serious incident involving a heavy vehicle. NHVR is building the capability to store and analyse this sort of information so that safety policy is based on evidence. In this case the Coroners Court advised the NHVR of the inquest and invited it to respond and appear if it so wished. NHVR was aware that the current MOU between QPS and WHSQ is currently being considered and suggested that this recommendation be made the subject matter of the MOU including regarding securing evidence, and notification of heavy vehicle incidents to the NHVR.

224. Such a recommendation is uncontentious, sensible and would not be costly or arduous to implement. I recently raised this in a meeting with QPS, WHSQ and DTMR in relation to a new investigation and it was agreed to be a sensible idea. The NHVR had been informed and was engaging with WHSQ in its investigation.

225. The family also expressed concern that emergency services should be able to find a better method of identifying the location of an incident requiring an emergency response utilising modern GPS or mobile data rather than relying on the efforts of a seriously injured person, such as was the case with Stephen, to describe the location. It is accepted the emergency call in this instance would have been particularly distressing for family to hear. This is a matter I will approach Queensland Ambulance Services about but will not make a specific recommendation, QAS not having been asked to respond to such a suggestion as the issue only arose in the course of submissions. It is also noted that in this case QAS attended within 15 minutes of the emergency call being received, well within the recommended response time, particularly in a rural setting and there is no issue or concern about its response time or actions to stabilise Stephen and get him to hospital.

Findings required by s. 45

Identity of the deceased – Stephen Ross Brown

How he died – On 27 August 2014, Stephen Brown was driving a Goldmix Stock Feeds truck in the course of his employment along the Murgon-Gayndah Road heading south towards Murgon. Whilst approaching a left hand bend in the road his truck suffered a catastrophic mechanical failure when the front right

suspension collapsed causing the vehicle to veer sharply to the right across the road, down an embankment and into a tree. The failure of the suspension rendered the truck uncontrollable. The suspension failed because two leaf springs had fractured over time due to the stress of driving on rough country roads. The main leaf spring had fractured first and had completely broken leaving the suspension support contingent on the second leaf spring. This spring had also suffered stress fractures and eventually failed. Stephen Brown suffered serious injuries including an almost complete traumatic amputation to his right leg below the knee. He however remained conscious and was ably assisted by witnesses who attended shortly after as well as ambulance officers. He was taken to Nambour Hospital. His injuries were at that time considered to be survivable. Whilst on the operating table he had an episode of haemodynamic instability and could not be revived. An autopsy revealed he had suffered a massive pulmonary embolism due to the presence of pre-existing Deep Vein Thrombosis. Stephen Brown was predisposed to the development of DVT due to his obesity and sedentary lifestyle as a truck driver, but it was the combination of his injuries and immobility after the crash that caused the existing DVT to break off and travel to his lungs and cause his death.

Place of death – Nambour General Hospital, Nambour, Queensland

Date of death– 27 August 2014

Cause of death – 1(a) Pulmonary embolus
2 Pelvic and leg injuries
Hypertensive heart disease

Comments and recommendations

226. I recommend that the National Heavy Vehicle Regulator and Department of Transport and Main Roads consider if there should be enhanced education and guidelines to ensure persons performing heavy vehicle inspections are aware of the risks involved in not having clean components when they perform a visual check.

227. I recommend that in the process of revising the current MOU between QPS and WHSQ that this includes a process for the notification of heavy vehicle incidents to the NHVR.

I close the inquest.

John Lock
Deputy State Coroner
Brisbane
27 March 2018