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CONSULTANT PHYSICIAN IN OCCUPATIONAL & ENVIRONMENTAL MEDICINE

21 December 2006

The Supreme Court
C/- Moray & Agnew
GPO Box 639
BRISBANE QLD 4001

YOUR REF.: BGG:232458

OUR REF.: RAKTBMA:068

REPORT

RE: TEYS BROTHERS (BEENLEIGH) PTY LIMITED ats JOSEPH RAKATAU

I have been briefed in the above matter and offer opinions regarding liability. All measurements and observations were made by myself and I exposed digital photographs at the time of my inspection. I was accompanied by Erica Olsen RN, Cert OHS, Q-Comp accredited Rehabilitation Coordinator and my instructing solicitor, Ben Green. We were assisted by Mr John Dacey, manager self insurance.

I have assumed that the facts provided with my brief are the only facts available at the time of writing my report. I have not made any factual investigations and do not consider it to be within my brief. Should any new facts become available then my opinion may alter in which case an amended report would be required.

The opinions expressed by me in this report are based upon the following facts, matters and assumptions:

PO Box 8445 Bargara Qld 4670 Australia **Ph** 07 4159 1488 **Fax** 07 4159 1597 **Email** dr.johnn.olsen@bigpond.com

1. Letter of instructions dated 26 June 2006 together with the following enclosures
   a) Form 1 notice of claim dated 30.9.2003
   b) Q-Comp notice of claim for damages dated 5.12.2003
   c) Notice of claim part 2 dated 6.5.2004
   d) Statutory declaration by Joseph Hohepa Rakatau dated 6.5.2004
   e) Amended statement of claim dated 14.6.2005
   f) Defence dated 18.7.2005
   g) Plaintiff's further and better particulars of the statement of claim dated 2.9.2005
   h) Defendant's further and better particulars of the defence dated 1.3.2006
   i) Reports of O'Gorman Stabe dated 18.12.2003 and 13.1.2004
   j) Report of Crowmont Services dated 16.3.2004
   k) Report of Julie Armour dated 23.5.2006
   l) Irrigation management plan with appendix 6 dated September 2000
   m) Q-Fever - Your Questions Answered, undated
   n) Documents provided by Rowes Shopfitters, variously dated
   o) Records of Gold Coast Health Service District
   p) Letter from Queensland Rail enclosing documents dated 9.3.2006
   q) Report from Dr Vincent Chai dated 8.1.2003
   r) Report from Dr Trevor Myers dated 8.10.2003
   s) Report from Professor Andrew Lloyd AM dated 1.11.2004
   t) Report from Dr Michael Whitby dated 21.12.2004
   u) Supplementary report from Dr Michael Whitby dated 24.2.2005
2. A site inspection was conducted on 18 August 2006, observations made and where these are relied on for the purpose of my opinion all such observations and findings are described in complete detail.

HISTORY BY PLAINTIFF

I have read the history provided by the plaintiff set out in the statutory declaration signed by the plaintiff on 6 May 2004. I have copied directly from the statement to avoid any paraphrasing and also avoiding editing.

1. *I contracted chronic Q-Fever following my exposure to the Q-Fever organisms whilst employed by KD Properties Limited at a job site located at 65-71Logan River Road, Holmview. I was employed as a site foreman overseeing concrete work at the Logan River Rod worksite. The Logan River Road worksite was in close vicinity to the Teys Brothers Meatworks at Beenleigh. I recall that while working at the Logan River Road worksite a very foul smell came from the direction of the abattoir. The smells were particularly strong and hung over the worksite each morning. The unpleasant odour smelt like I can only describe as dead horse or rotten meat. I recall physically gagging, coughing and choking from the strong stench.*
2. *On or about 10 July 2002 I left the Logan River Road worksite to commence a new job on a worksite at Maroochydore. I was instructed to work on the construction of a shopping centre located in close proximity to the beach. The shopping centre site was located in a commercial area and there were no animals or rural properties in close vicinity. I do not believe I had any exposure to airborne dust and odours whilst at this employment.*
3. *Given the struggling financial situation of my employer, KD Properties Limited, I sought employment with alternative building companies following the completion of the job at Maroochydore. I immediately found employment with Bosconcrete Pty Limited. I commenced working on the construction of a high rise building in Brisbane City.*

4. *It was in the weeks following the completion of the Logan River Road job site near the Teys Brothers Meat Works that I began feeling unwell. I experienced symptoms similar to a flu including a chesty cough, lethargy and nagging headache. Given the nature of my symptoms I initially assumed I was suffering from a common cold. I started taking over the counter day and night flu tablets. Despite the tablets I noticed my condition continued to deteriorate.*

5. *On 4 August 2002 I consulted a doctor at Chevron Medical Centre at Southport about my worsening symptoms. I was given oxygen over a period of half an hour during my visit. I was prescribed antibiotics and told to go home and take it easy.*

6. *My symptoms continued to worsen despite the antibiotics and by 8 August 2002 I again required medical assistance. I attended the Southport Medical Centre and consulted Dr Uys for a second opinion as to what was causing my symptoms. I was again provided with oxygen to encourage more regular breathing. Dr Uys advised me that I was suffering from bronchitis and the only remedy was to go home and rest.*

7. *On 9 August 2002 I then consulted Dr Keough at Coomba Medical Centre to further investigate the bronchitis as my condition continued to deteriorate. My wife and I were concerned that my symptoms were increasing in severity. Upon Dr Keough's instructions I was sent for xrays to confirm my diagnosis was in fact bronchitis.*

8. *I obtained my xray results the next day fro Dr Keough who informed me that my chest and lungs appeared clear. Despite the xray results I was informed that my bronchitis was developing into pneumonia. I was prescribed numerous types of medication to assist in the resolution of my condition. I spent over $150.00 purchasing tablets, medications and medical aids including asthma pumps, ventilators and antibiotics.*

9. *Over the next 3 days I was bed bound and very incoherent. My condition appeared to be worsening and the medication did not seem to be having any effect.*

10. *By 14 August I was experiencing abnormal body sweats and very high temperatures. My temperature fluctuated to the extreme so that I was both very hot one minute and the next minute I was freezing and my body felt cold. I was pretty 'out of it' and felt like I had been hit by a bus. I felt rather incoherent and disoriented. My wife and I decided to go to the hospital as we thought that my bronchitis had developed into pneumonia.*

11. *I was admitted to the Gold Coast Hospital for a period of 2 weeks during which time I underwent extensive investigations. I was reviewed by a number of different doctors all of whom suspected I was suffering from different conditions. I underwent tests for malaria, liver conditions as well as heart studies. I had to do countless urine and blood test to determine what I was suffering from. The doctors seemed perplexed and confused as to what was causing my condition.*

12. *On 27 August I was discharged from the Gold Coast Hospital and informed my diagnosis was Q-Fever and Hepatitis A. I was prescribed antibiotics and told my condition would deteriorate before getting better. I was informed that I had suffered extensive liver damage and the severity of my symptoms indicated that I had developed chronic Q-Fever. My wife was privately informed that the medical staff at the hospital were unsure whether or not I would live through another day.*

FACTUAL REPORT – O'GORMAN STABE

I have read the report dated 18 December 2003. The report indicates that Teys Bros (Beenleigh) Pty Limited is an abattoir occupying premises bounded by Logan River

Road to the north, Holmview Road to the east, Teys Road to the west and Tallagandra Road to the south.

The factual report also sets out geographical features describing the immediate area as undulating country with the abattoir located at the bottom of a shallow valley to the direct west of the building site on which the plaintiff was working at the material time. The building site which was located on the Logan River Road was at a rise in the topography, although over the peak and therefore not in direct site of the abattoir.

The surrounding area is described as having changed from farmland to a mixture of urban development, acreage properties and an industrial estate. The industrial estate contains mainly light industry with the usual run of engineering works, furniture manufacturers, concrete batching, panel beating and similar trades.

There is a natural creek running through the abattoir property, it crosses the Logan River Road and is a tributary to the Logan River to the north east.

The factual report describes the presence of horses and cattle on rural properties nearby and the report includes photographs showing cattle in paddocks close to the Holmview Railway Station and photographed from Holmview Road.

The report also incorporates attachments. Attachment 2 showed an aerial photograph of the area.

The attachments also show photographs of cattle in rural allotments.

Attachment 3 deals with the use of a chemical wet scrubber to provide odour control for the abattoir.

Attachment 4 includes isobar charts that show the extent of odour at the abattoir site and the surrounding street locations during various tests performed. I have incorporated three figures within the present report with a view to show the extent of spread of odour and the dilation effect as a function of the distance in m from the anaerobic pond within the abattoir facilities.

Figure 1: **Contours of predicted 99.5th percentile odour concentration for secondary scrubber outlet in isolation, 3-minute average (OU_E/m^3).**

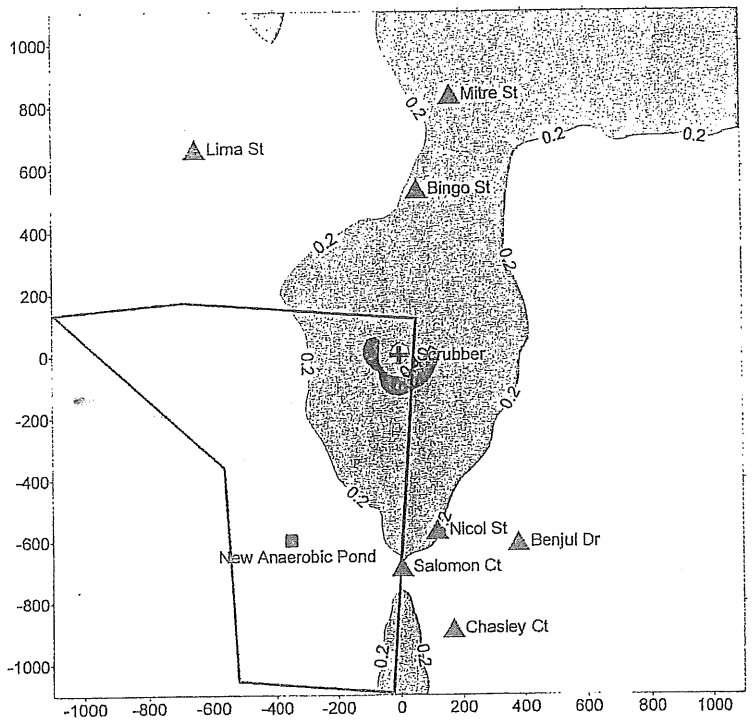


Figure 2: Contours of predicted 99.5th percentile odour concentration for new anaerobic pond in isolation, 3-minute average (OU_E/m^3).

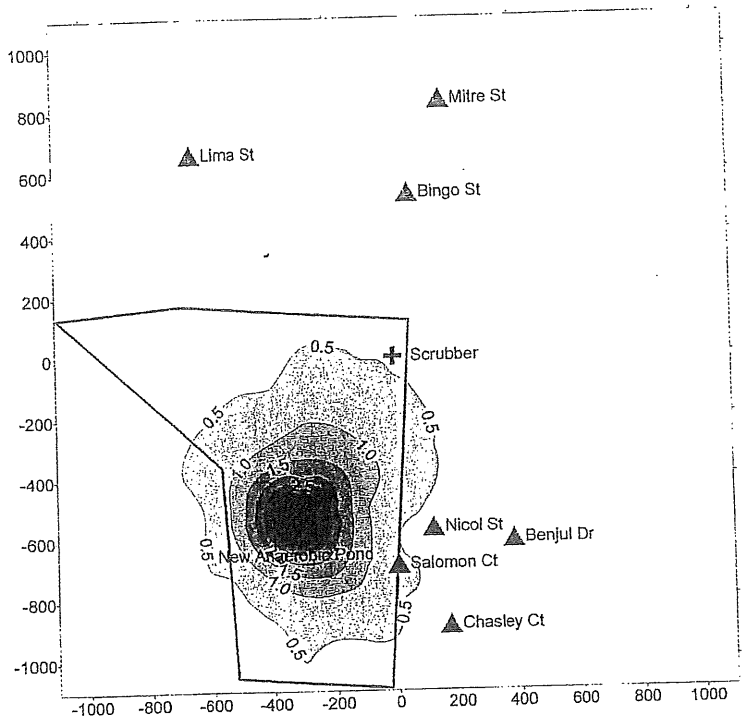
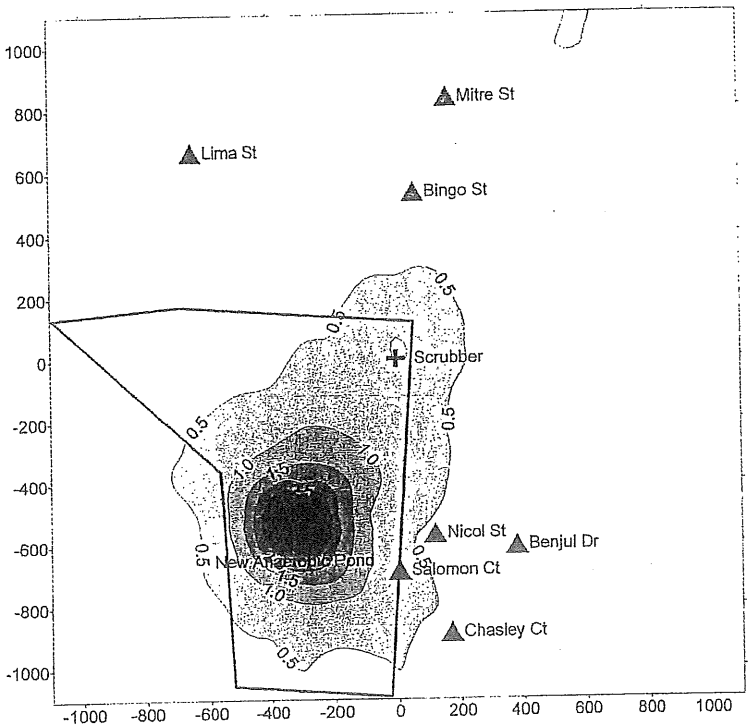


Figure 3: Contours of predicted 99.5th percentile odour concentration for secondary scrubber outlet and new anaerobic pond combined, 3-minute average (OU_E/m^3).



Figures 2 and 3 show that there is a strong dilution effect with the tendency to spread running north south with north being perhaps a little predominant. Towards the east the spread of detectable odour does not exceed 500m. In fact it is in the range of approximately 300-400m.

MEDICAL REPORTS

The medical reports were contained as Attachment 7 within the factual investigation report. I have however separated the medical reports from the factual report as the contents of the medical reports particularly the medical documentation of the onset and course of the plaintiff's illness.

MEDICAL REPORT – DR TREVOR MYERS, CONSULTANT PHYSICIAN, 8.10.2003

Dr Myers performed a medicolegal report. He had for his benefit the Gold Coast Hospital Records and also notes from the treating general practitioner. Dr Myers states that the plaintiff told him that he became ill on or around 11 July 2002 with a flu like illness. He was treated with antibiotics although failed to respond. He became more severely ill and was admitted to hospital from 16 August 2002 until 27 August 2002.

QUEENSLAND HEALTH Q FEVER NOTIFICATION

I have perused the letter from Queensland Health dated 8 January 2004 stating the following:

QUEENSLAND HEALTH – LETTER 8.1.2004

"As you are aware Q-Fever is a notifiable disease. Therefore, searches for relevant documents were conducted by the Communicable Diseases Unit of the Corporate Office, Queensland Health. I have been informed by ms Margaret Young, the Acting Manager of that Unit that notifications of Q-Fever are recorded by postcode of resident. A search of the notifiable conditions system revealed the following:

- *There were no notifications of Q-Fever for residents of the Beenleigh/Holmview area during June-July 2002.*
- *There were no notifications of Q-Fever from residents with a postcode 4215 during June-July 2002."*

QUEENSLAND HEALTH – LETTER 24.10.2006

"We searched the Queensland Health notifiable conditions register for notifications from the Holmview locality, with onset date of disease 1997-2002 inclusive. We were unable to find any notifications, documents, correspondence, or records with a Holmview locality.

We then did a search for notifications from the postcode of Holmview, 4207. This post code includes localities such as Beenleigh, Eagleby, Logan Village, Edens Landing, and Buccan. We found 23 notifications assigned to people residing in this postcode for the period 1997-2002 inclusive. Based on Australian census data available for that postcode for the year 2001, the corresponding Q fever notification incidence rate for postcode 4207 is 12 per 100,000 residents annually.

Denominator data is also available by statistical local area (SLA). Holmview is not an SLA, but there is a SLA for Beenleigh (3461). We identified 10 notifications in the five years 1997-2002 inclusive, among SLA 3461 residents. Based on 2001 Australian census population data for this SLA, this would suggest an incidence rate of 26 per 100,000 residents annually.

Please note, the notifiable conditions register maintains notifications by residence of ht person affected. Hence your plaintiff, while registered on the system with a notification of Q fever in 2002, appears as a notification in his area of residence at the time, Runaway Bay."

QUEENSLAND HEALTH – LETTER 28.11.2006

"Per our discussion, I would like to inform you that there were three notifications of Q Fever between 1997 and 2005 to residents of the Runaway Bay area. This number of notifications and the 2001 Australian Bureau of Statistics census data from that statistical local area suggest a notification rate of 4 per 100,000 residents annually."

PLAINTIFF'S TIME ON JOB

The factual report by Crowmont Services dated 16 March 2004 indicates that the plaintiff was working on the building site at 56-71 Logan River Road, Holmview Qld 4207 between 19 June 2002 and 10 July 2002.

Q-FEVER OUTBREAKS IN PRODUCTION STREET

I have read the correspondence between Jenny Rowe of Rowe Shopfitters and also reference to Metal Building Systems both located in Production Street, immediately adjacent to the Q-Rail cattle yards at the Holmview Railway Station. Queensland Health indicates in the letter of 2.11.2000 to Jenny Rowe that blood tests performed on the Rowe Shopfitters workers and the Metal Building Systems workers were completed. The results showed that none of the workers suffered Q-Fever at the time of testing and there were no signs of very recent infection. The results did however show that one worker at Rowe Shopfitters did have markers showing previous infection of Q-Fever. A worker at MBS also had Q-Fever markers, both therefore consistent with past exposure to Q-Fever. The worker at MBS also had a significant clinical history supportive of Q-Fever infection although undiagnosed at the time of illness.

In addition therefore of one definite case of Q-Fever together with two cases of Q-Fever diagnosed two years earlier at MBS indicated that there were 3-4 cases of Q-Fever over the previous three years and that this represented a 2-3% infection rate in the staff of the two business each year. This was considered to be a high proportion.

I note however that the one Rowe Shopfitter with markers were not recent markers and there was no clinical history of illness. Of the proven together with probable cases there were therefore 3 over the three years and the risk evidently would be at the lower end of the range which is 2% of staff. It is noted that the two businesses were located immediately adjacent to the Q-Rail cattle yards.

There were no other reported cases in the vicinity.

GOLD COAST HOSPITAL MEDICAL RECORDS

I have read the entire medical record dealing with hospitalisation of Mr Rakatau on 16 July 2005. He presented with malaise and pyrexia. He had had a prior admission to the Gold Coast Hospital two weeks earlier when he had basal pneumonia treated with Amoxil and discharged on antibiotics. When he represented he was febrile, he was unwell and he looked sick. He was lethargic and he had myalgia around the chest. The hospital staff arranged blood pathology, culture, chest xray, ECG and sputum.

Subsequently he was noted to have mild aortic incompetence and there was a suspected diagnosis of sub-acute bacterial endocarditis (SBE). Blood cultures were arranged which were negative and after some delay echocardiography was performed and this did not confirm the presence of vegetations and therefore SBE was ruled out.

He developed a rash which was thought initially to have been a drug rash to either Hydroxychloroquine or Doxycycline. The rash however settled and an eventual diagnosis was made of a viral illness, he was discharged well and afebrile on 22 July 2005.

Q-FEVER

Q-Fever is a zoonotic disease and is notifiable to Queensland Health. Zoonotic diseases are a group of infectious diseases acquired from animals. There are 200 zoonoses worldwide with 50 occurring in Australia. Zoonotic diseases include infectious caused by viruses, fungi, parasites and bacteria.

Q-Fever is a zoonotic disease caused by a parasite which is an intra-cellular organism called Coxiella burnetii. The disease was first discovered in Brisbane and was named Q-Fever as the disease resulted in high fever and at that time the origin was not known.

The incubation period for Q-Fever is reported in various ranges.

INCUBATION PERIOD	SOURCE
3-30 days	Occupational Medicine Handbook[1]
14-26 days	Harrison's Principles of Internal Medicine[2]
16-24 days (interquartile)	A super-spreading ewe infects hundreds with Q fever at a farmer's market in Germany[3]
2-6 weeks	Acute and chronic Q fever: epidemiology, symptoms, diagnosis and therapy of infection caused by Coxiella burnetii[4]
4-30 days	Q fever pneumonia[5]

Infection is primarily by inhalation. It is however also by ingestion and by contact with mucus membranes such as the mouth and eyes. Transfer has also occurred by blood transfusion[2].

The aetiology and epidemiology is basically that the organism Coxiella burnetii is carried by farm animals including cattle, sheep and goats as well as wild animals including marsupials such as kangaroos, wallabies, bandicoots and other small marsupials. It is also carried in ticks[1],[2]. Pets are also affected, particularly cats. Transmission in pets is most likely via ticks[2]. The organism is mostly found in the milk and excretions including urine and faeces as well as offal and in particular uterus and placenta[1],[2]. The organism is infectious, it is not however transmitted

[1] Occupational Medicine Handbook. 10th edition. WorkCover New South Wales. KK Wooller. 2002
[2] Isselbacher et al. Harrison's Principles of Internal Medicine. 13th edition. McGraw-Hill Inc. 1994. pp 755-6
[3] Porten et al. A super-spreading ewe infects hundreds with Q fever at a farmers' market in Germany. BMC Infect Disc. 2006. Oct 6;(6(1):147
[4] Bartelink et al. Acute and chronic Q fever: epidemiology, symptoms, diagnosis and therapy of infection caused by Coxiella burnetii. Ned Tijdschr Geneeskd. 2000 July 21;144(27):1303-6
[5] Marrie TJ. Q fever pneumonia. Semin Respir Infect. 1989 Mar;4(1):47-55

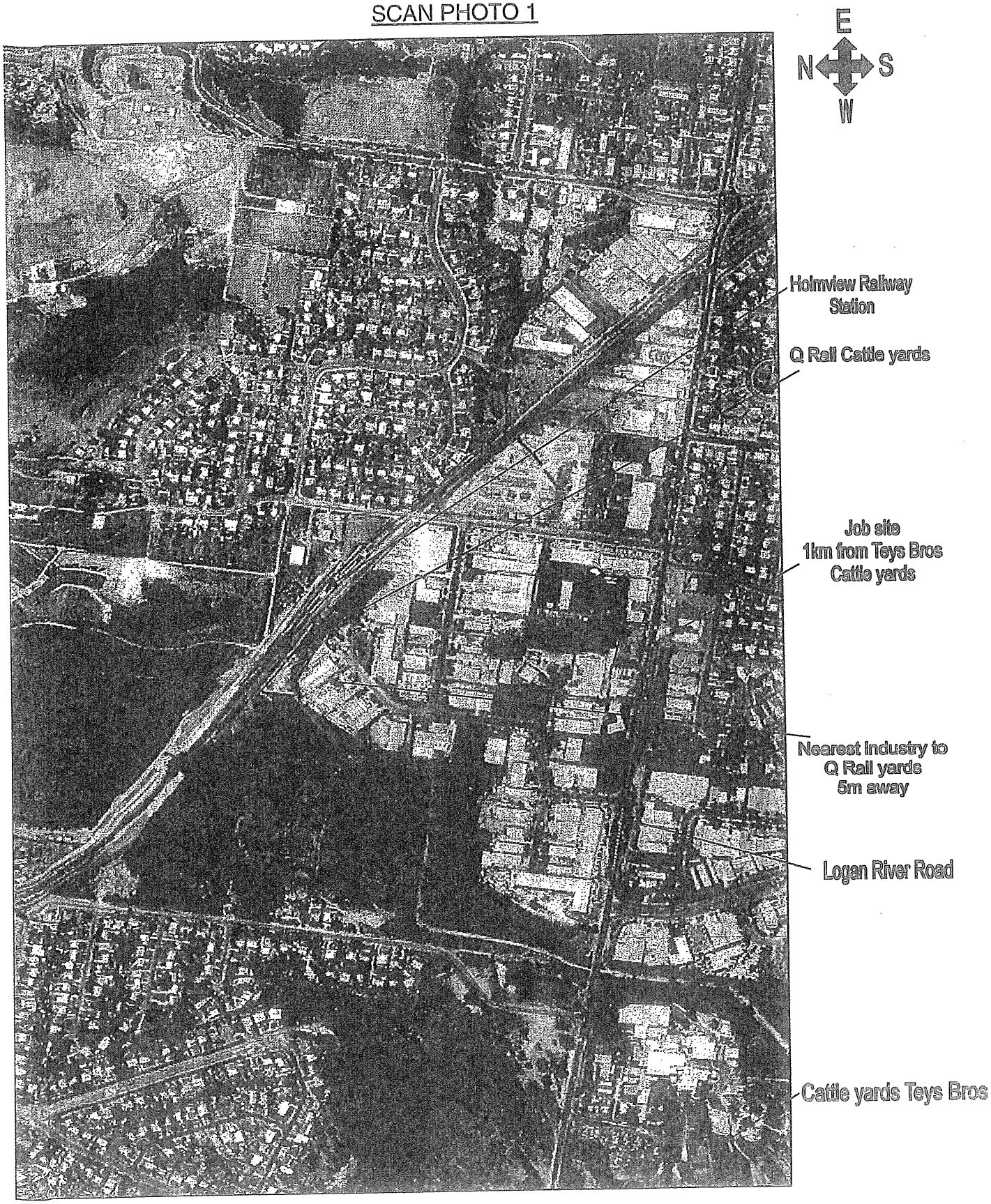
from human to human. Transmission of 1 to 10 bacteria could provoke an infection in humans[6]. The incidence of Q-Fever nationally is 600-700 cases per year with some 60-70% of those cases occurring in Queensland. The most affected Queensland regions are the Darling Downs, the South West and Central Districts[7]. Infected animals do not usually show symptoms, the organisms are hardy and can remain viable in a dried state for up to two years[7].

[6] Bossi P, Guihot A, Bricaire F. Q fever, a potential biowarfare agent. Presse Med. 2003 Oct 18;32(34):1618-21

[7] Dr Joan Byrne, Presentation AFOM/ANZSOM meeting 4 August 2005.

TOPOGRAPHY

SCAN PHOTO 1



CHRONOLOGY OF ILLNESS WITH WIND DATA

Based on the medical file I have set out the chronology in calendar form. The dates are purely based on the medical records. If there are any errors then I would be pleased to amend dates if required and reproduce the calendars. On the same calendars I have added the number of wind measurements and direction performed on each of the days as shown. For the most part measurements were taken on a 2 hourly basis using a weather vane.

JUNE 2002						
Mon	Tues	Wed	Thurs	Fri	Sat	Sun
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18 W = 0% SW SW SE SE SE SW	19 W = 0% SW SE SW SE SW SW SW SW SW SW SW SE COMMENCED WORK	20 W = 8% W SE SW SE SW SE SW SW SW SW SW E	21 W = 33% SW E SW W W SE W SW W NW W E	22 W = 12% NS SW NE NW SW W SW NE	23
24 W = 30% W SE W SE W SE SE SE E	25 W = 8% SE E SE E SE E W SE SW SE SW	26 W = 9% NE SW NE SW NE SW W SE SW SW SW	27 W = 25% SW SW W SW W NE W NE W NE NE NW NE	28 W = 30% W NW W SW W SW SW SW SW SW	29 W = 0% SW SW	30

JULY 2002						
Mon	Tues	Wed	Thurs	Fri	Sat	Sun
1 W = 0% SE SE SE E NW SW SW	2 W = 0% SW NE SW NE E NE E NE SE E E	3 W = 8% N NW N NW N W SE SW SW SW E NE	4 W = 0% SW SW SW SW E SW E SW NE SE SW	5 W = 9% SW NW SW NW SE W SE SW E SW SE	6	7
8 W = 0% SW SE SW SW SW NE NE E SE	9 W = 8% SW SE NW E N SE N SE W SE SE SW	10 W = 7% NW SE NW SE NW SE NW SE E SE NW W E LAST DAY WORKED	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25 FIRST SYMPTOMS	26	27	28
29	30	31				

AUGUST 2002						
Mon	Tues	Wed	Thurs	Fri	Sat	Sun
			1	2	3	4 FIRST MEDICAL CONSULT
5	6	7	8	9	10	11
12	13	14	15	16 HOSPITALISED	17	18
19	20	21	22	23	24	25
26	27 HOSPITAL DISCHARGE	28	29	30	31	

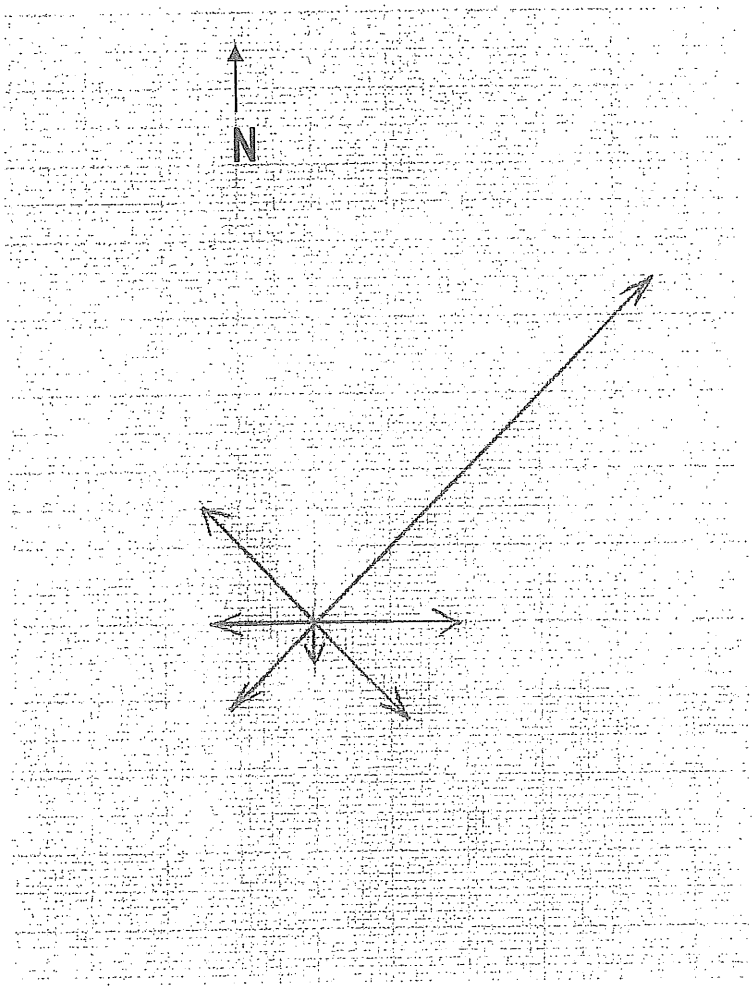
Figure 4 shows the summary of the wind measurements so that 1mm represents 1 measurement in any of the 8 nominated directions. Please note the wind was not from the south on any of the measurements made.

Perusal of Figure 4 shows that the predominant wind direction was from the south west which blows in a north easterly direction. The measurements were taken at about the time of the chronology of the plaintiff's illness and therefore should be reasonably representative of movement of dust and airborne particles at the material time.

I would further make the observation that apart from the predominant wind direction the second most predominant wind direction was from the south east, therefore blowing towards the north west and the third most common wind direction was from the west blowing towards the east. Other almost equal wind directions were from the

north west and from the north east. The only wind directions that were not significant to any extent were those from the south or from the north.

FIGURE 4
1mm – number of measurements in direction
Time scale: 19 days (18 June to 10 July 2002)



REPORT – JULIE ARMOUR

I have perused the report by Julie Armour of 23 May 2006. I do not agree with the conclusions reached by Ms Armour. I do not agree with the findings in the executive summary. The reason that I do not agree with the report is that I do not consider that

Ms Armour has examined the science and medicine sufficiently to support her opinions. I realise that this is a huge undertaking and indeed I have spent considerable time in accumulating the scientific and medical background that I consider necessary for expressing a valid expert opinion. My opinions as expressed further below do not agree with those by Ms Armour and in my opinion the reason for diverging views is possibly the assumptions made by each of us which are different and the analysis made by each of us which is different and also our medical backgrounds which are different.

SITE INSPECTION

I inspected the cattle yards and car park areas of the Teys Bros Abattoir at Beenleigh on 18 August 2006.

The location of the cattle yards in relation to the site plan is towards the westerly end of the site along Logan River Road. Immediately adjacent to the road is a large car park which extends approximately 150m back from the front section of the entrance to the site. Altogether the car park would be some 150m long. The cattle yards are located some 150m further back from the car park which would be approximately 300m from the alignment to the Logan River Road.

The cattle yards were partly gravelled. Adjacent to the open cattle yards was a large covered area which was paved and sealed and in which the cattle were washed prior to admission to the slaughter floor.

We travelled by car from the Abattoir to the Q-Rail holding yards adjacent to the Holmview Railway Station. The Q-Rail yards had mounted sprinklers. There were no cattle held in the yards at the time of inspection. I note that immediately adjacent to the Q-Rail yards was a factory called Rowe, I understand this is adjacent to the

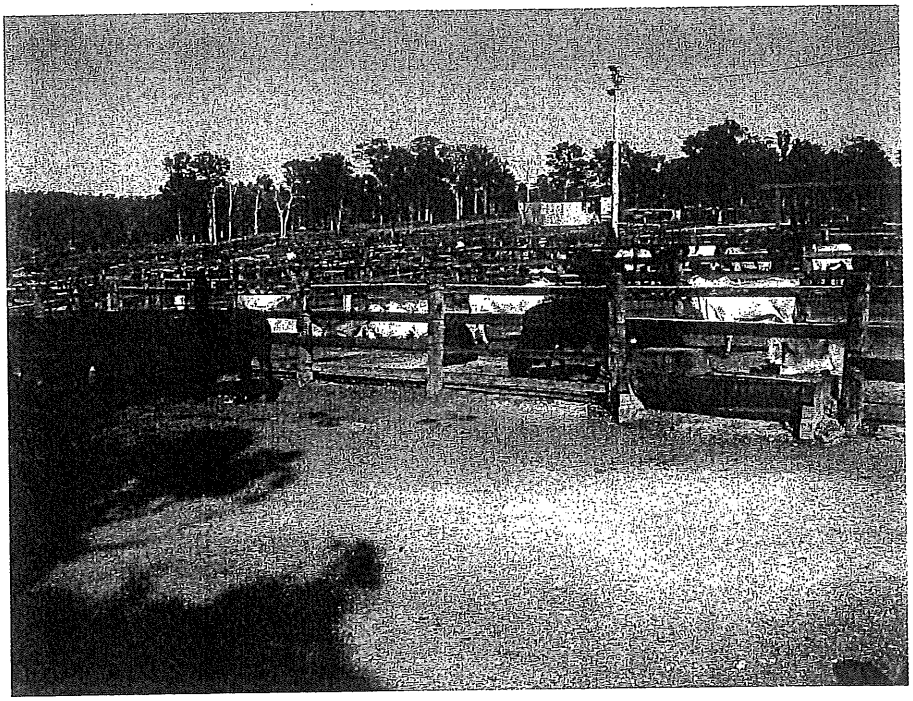
factory at which two persons contracted Q-Fever, this has been referred to further above in the report.

We then travelled by car to the former building site in Logan River Road. The building site has since been completed and now is a retail complex selling Active Marine and Trailer Centre, Never Rust Aluminium Trailers, Angle Portable Freezers and Direct Aluminium. From the driveway at No 65 Logan River Road the car odometer measured a distance of 900m to the front gates at the Teys Bros Abattoir.

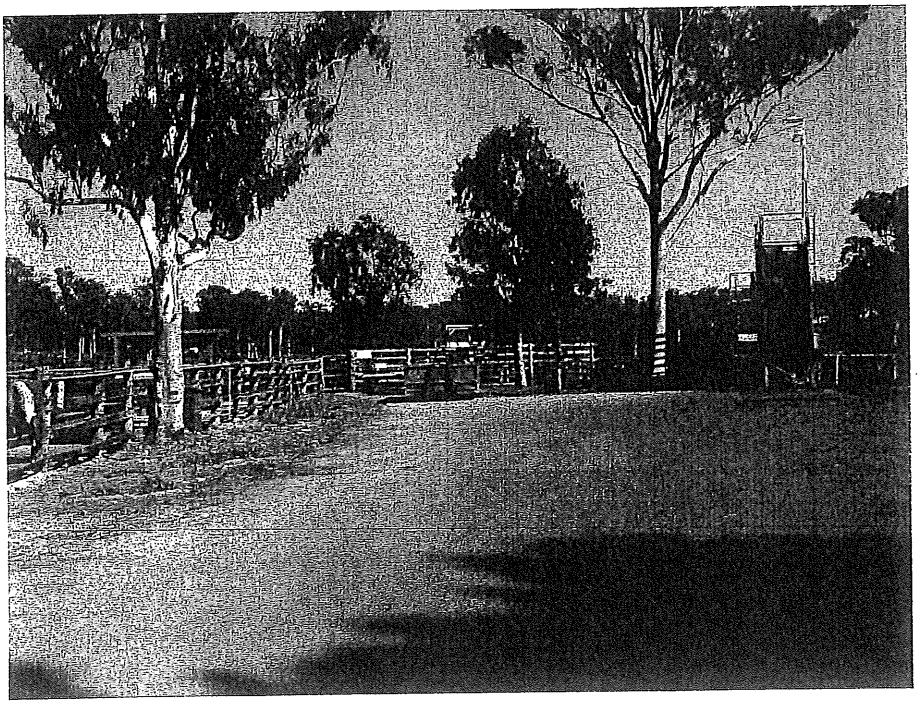
The total distance from the cattle yards to the workplace was therefore approximately 1040m.

We also travelled between the Q-Rail yards and the work site at 65 Logan River Road, using the odometer of the vehicle the distance was 300m. Finally we also measured the odometer distance between the work site at 65 Logan River Road to the cattle run that was used to run the cattle from the Q-Rail yards to the abattoir. The distance was 600m.

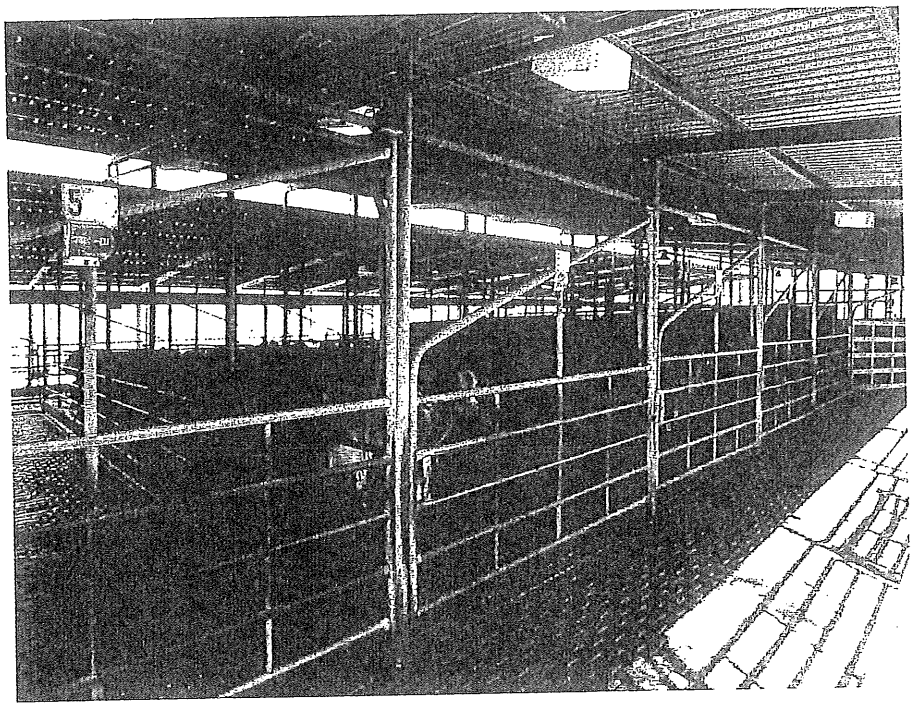
PHOTOGRAPHIC SCHEDULE



Photograph 1 - view of cattle yards



Photograph 2: - View of car park and entrance to cattle yards



Photograph 3: View of covered cattle yards

C BURNETII VIABILITY

The viability of live Coxiella burnetii has been studied extensively. The organism has a relatively high degree of environmental survival and for that reason is one of many biological agents that have been considered for weapons of mass destruction.

A good deal of literature deals with bioterrorism and various chemical and biological agents including Coxiella burnetii[8],[9],[10],[11]. C burnetii does not actually form spores[9], it

[8] Interim guidelines for action in the event of a deliberate release. HPA Centre for Infections. Version 1.1. 25th January 2006.
[9] Written Statement of Michael A Levi. Science and Technology Fellow in Foreign Policy Studies, the Brookings Institution before the National Academy of Sciences. Study on the Effects of Nuclear Earth-Penetrator Weapon and Other Weapons. April 27,2004
[10] Environmental Assessment for the Proposed Construction and Operation of a Biosafety level 3 facility at Lawrence Livermore National laboratory, Livermore, California. Department of Energy, national Nuclear Security Administration, Oakland Operations Office. December 2002.

does however enter a spore like state[8],[12],[13] and yet in spite of the organism's ability to survive and despite the fact that studies have shown that one organism is sufficient to cause infection[11] the rates of infection in communities is in fact very low indeed[12].

The actual duration of survival of C burnetii in soil or water is cited quite widely ranging from months to years. A retrospective longitudinal study in Germany covering the incidence of Q-Fever between 1947 and 1999 showed that there were 40 outbreaks of Q-Fever in the period out of which 4 were community outbreaks. The majority of cases are actually not reported although the disease is a notifiable disease. In Germany during the 1980s 22% of the population were positive for C burnetii using Phase 1/2 immunoglobulin IgG enzyme-linked immunosorbent assay. This compares with British data where a very recent publication[8] shows that sero prevalence studies show previous exposure in 20% of all farmers and 10% of the general population. The essence therefore of the published work is that although the diagnosis of the disease is not common in the general population, the sero conversion rates are very high indicating that large proportions, 10% or more of the population, have suffered Q-Fever through exposure, the nature of which is undocumented and unknown.

Environmental spread of C burnetii can be simply by the organism in a dry state forming a spore like coat although strictly it is not a spore nor does it confer the same resistance to environmental destruction. Nevertheless the organism in a dry state can exist and can travel much the same as fine dust particles. In addition the organism also can adhere to dust and can travel with dust. Studies have shown that

[11] Bioterrorism. Bioterrorism and Biological Warfare Agents. Prof. Garth L. Nicolson. The Institute for Molecular Medicine Huntington Beach, California 92649. http://www.immed.org/illness/bioterrorism.html
[12] W Hellenbrand et al. Changing Epidemiology of Q Fever in Germany; 1947-1999. Emerg Infect Dis 7(5), 2001. © 2001 Centers for Disease Control and Prevention (CDC)
http://www.medscape.com/viewarticle/4143494_print
[13] B La Scola and D Raoult. Survival of Coxiella burnetii within free-living amoeba Acanthamoeba castellanii. © 2001 Copyright by the European Society of Clinical Microbiology and Infectious Diseases.

the organism is capable of spreading at least as far as 18 km from its source[14]. An environmental assessment for the construction and operation of a biological facility in the US[10] states that although C burnetii is hardy and withstands laboratory manipulation and is highly stable in aerosols, it dies at a rate of approximately 1% per minute over a range of humidities of 30-85% (relative humidity) and temperatures of 0-30^{0}C.

OPINIONS

There is certainly no doubt that the plaintiff contracted Q-Fever in the period that is stated. It is also true that given that the incubation period for Q-Fever ranges from a few days to as high as 50 days or so, that the possible incubation period would be such that it is possible that the exposure to the C burnetii organism did occur during the period in which he was working at the building site as described. The incubation period however is also such that it covered other times when he was not working on the building site and for that reason it is not possible to say that he contracted the disease whilst at the building site.

There is no doubt that cattle processed at the Teys Bros Abattoir would at various times be infected with Q-Fever. The proven cases of Q-Fever at the two industrial sites in Production Street as described further above, in my opinion would point to a strong probability that the Q-Fever cases were contracted as a result of exposure to infected cattle at the Q-Rail yards. The proximity however of the Q-Rail yards to the two factories was in the order of 5m. That in my opinion would render the workers at the two factories almost on par with abattoir workers handling cattle in the holding yards. This means that there would be an unacceptable risk as stated in the Queensland Health correspondence to Ms Rowe. The question is whether the

[14] TF Hatchette et al. Goat-Associated Q Fever. Emerg Infect Dis 7(3), 2001. © 2001 Centers for Disease Control and Prevention (CDC). http://www.medscpae.com/viewarticle/414431_print

potential spread of the C burnetii organism causes disease outbreaks in surrounding areas to places such as abattoirs and indeed to what extent such infections may occur. In the present case however the separation between the work site and the Teys Bros abattoir was 1 km approximately.

The Queensland Health data provides the following in summary form.

- There were no notifications of Q-Fever for residents of the Beenleigh/Holmview area during June-July 2002.
- There were no other notifications of Q-Fever for residents with the postcode 4215 during June-July 2002.

COMMENT BY DR OLSEN

The fact that there were no notifications of Q-Fever for residents of the Beenleigh/Holmview area during June-July 2002 is a strong indication that there was no significant environmental presence of risk of airborne micro-organisms or micro-organisms carried with dust in the area referred to. This would mean that since the worksite at which the plaintiff was employed was some distance away from the abattoir there would be even less risk of contracting Q-Fever as a result of exposure emanating from the abattoir given that no persons who lived in the area and therefore were exposed to a significantly greater degree than the plaintiff, did not contract the disease. The fact that there were no notifications is an important factor.

With regards to the postcode 4215 that area comprises basically Labrador and Southport at the Gold Coast and it is not surprising that there were no cases of Q-Fever notified from that area as well. I understand this is the area in which the plaintiff was residing.

- There were 23 notifications of Q-Fever for people residing within the postcode 4207 during the period 1997-2002 inclusive. This has been calculated to 12 per 100,000 residents annually.

COMMENT BY DR OLSEN

The postcode 4207 covers a large area which includes both urban and rural communities. The area to the north includes Eagleby which was in part urban although largely rural at the material time. To the east are the localities of Staplyton and Alberton which are almost exclusively rural and further to Woongoolba and Steiglitz which are swampy coastal areas lying within the region of the Gold Coast. To the west is Beenleigh and to the far west of the postcode are Edens Landing and Holmview with these three areas being largely urban although Holmview was more rural than urban. Further south centrally are Mt Warren and Windaroo which are largely urban, Bannockburn which is largely rural, Wolffdene, Luscombe, Cedar Creek and Yarrabilba which were almost exclusively rural and to the western side of the area are Bahrs Scrub, Buccan, Belivah, Logan Village and Yarrabilba which are almost exclusively rural with pockets of residential acreages.

The postcode 4207 was mostly rural and still remains substantially so.

With a national rate of notifications of 700 and a population of approximately 20 million there would be 4 notified cases per 100,000 population Australia wide. 60-70% however of cases occur in Queensland which has a population of approximately 4 million, therefore the reporting rate in Queensland is approximately 11 cases per 100,000 persons. That therefore would be virtually the same as the notification rate for postcode 4207.

- The statistical local area of Beenleigh has a population of 3,461. There were 10 notifications in the five years 1997-2002. This amounts to 26 per 100,000 population. Those figures however may have included those working at the commercial properties adjoining the Q-Rail yards if residing in Beenleigh and may also include residents of Beenleigh regularly walking or travelling past the Q-Rail cattle yards if travelling by train from Holmview Railway Station. That would include the population living in the area between Boundary Street, Logan Street, George Street and City Road and possibly the areas to the immediate east of Holmview.
- There were 3 notifications of Q-Fever to residents of Runaway Bay in the period of 1997-2005 which is calculated to a rate of 4 per 100,000 residents. This is a high number given that Runaway Bay as I have described above is almost totally an urban area.

To summarise, the Queensland Health data on notifications in my opinion does not provide any indication of risk pertaining to the abattoir although the data does tend to support the finding of cases of Q-Fever in industrial premises in Production Street which is immediately adjacent to the Q-Rail cattle yards. The numbers however for the Beenleigh area are very small and therefore the significance of the findings of 26 per 100,000 residents is subject to a very high standard error. The statistics based on postcode 4207 would have a much smaller standard error given that the population incorporates many other areas in addition to Beenleigh. Furthermore the notified infection rate within postcode 4207 includes those from Beenleigh and are only equivalent to the Queensland average.

When considering the likelihood of infection resulting from the spread of C Burnetii from the Teys Bros abattoir, it is important to consider that the micro-organism can travel at least 18 km in any direction depending on the wind. Given the further fact that the micro-organism can survive possibly for up to two years in a dry state, then the wind would certainly have blown from every possible direction in that time and

therefore the spread of the micro-organism would certainly be within a radius of 18 km of the abattoir cattle yards. This means that the area in which C burnetii would travel would cover a surface area of 2000 km^2 and cover a region extending from Sunnybank, a southern suburb of Brisbane to the north, to North Stradbroke Island to the east, to Tamborine and Helensvale to the south and into rural areas such as Greenbank to the west. This includes large rural areas as well as urban areas. The rural areas would certainly carry livestock, wildlife and pets. The abattoir in the sense therefore is simply one source of many within an area of 2000 km^2.

Even if the abattoir was considered the greatest source of micro-organisms, the fact is that those micro-organisms did not reach and infect persons living nearest to the abattoir. On that basis it is not only not possible to say that one cannot determine the source of the infection sustained by the plaintiff, Mr Rakatau, it would be possible to go further and say that given the potential sources and the absence of infections closer to the abattoir, it is more likely than not that he did not sustain the infection as a result of C burnetii travelling from the abattoir to his work site.

The fact is that Q-Fever serology has shown high levels of conversion in communities, there are much higher conversion levels amongst farmers, veterinarians and abattoir workers. Since extensive vaccination has been performed in Australia there are not many new cases in abattoirs. New cases are more likely to occur in rural and farming communities.

With regards to preventive action, the use of water sprays is not helpful. It would not be feasible in the current climate to run water sprinklers 24 hours per day every day of the year. This is simply not acceptable. The practice of running sprinklers when cattle are present in the yards is totally useless since faeces and Q-Fever micro-organisms that may wash off the pelts of the animals or spread from faeces and urine cannot be removed by sprinklers. The micro-organism can survive in both wet and dry conditions and will survive the washing by the sprinklers only to dry out

eventually and may then travel to surrounding areas. There is no practical means available to suppress dust. Wind breaks and the like have limited utility, during high winds however dust will still rise and travel.

The only suitable means of prevention that I am aware of would be to not allow residential encroachment on rural communities and abattoirs, or when local councils allow such encroachments, then the public including residents within short distances of a potential source of Q-Fever should be checked for immunity and should obtain vaccination if they are not already immune.

SUMMARY

In summary the data and the matter which I have referred to above does not support the contention that the plaintiff contracted Q-Fever as a consequence of his work in an area within 1 km of the Teys Bros Area at Holmview. Given that Q-Fever organisms can travel for up to 20 km and can be viable for up to two years, there are simply too many possibilities as to why the plaintiff may have contracted Q-Fever. There is in my opinion insufficient data to draw any conclusion that the infection was likely to have emanated from the abattoir.

QUEENSLAND COURT COMPLIANCE

In order to comply with Subordinate Legislation 204 No 115 I advise as follows:

a) All facts based on my own observations stated in this report are as far as I am aware true. Where facts are provided by my instructing solicitor or others, these facts are taken as assumed facts and I cannot verify the truth of those facts.

b) All enquiries considered appropriate are made to the best of my ability and as far as possible. Enquiries however are not made into matters of fact that are supplied by instructing solicitors or any facts that have been assumed as true for the purpose of the report. Where enquiries are made in relation to certain information the source of those enquiries are disclosed.

c) The opinions stated in this report are genuinely held by me.

d) The report contains references to all matter that I consider significant where those references have been provided. An assumption is made that when instructions are received all facts are provided, there is no means available to me to confirm that all significant references have been provided. Where such references however are provided all references considered significant are disclosed in this report.

e) I understand my duty to the Court and have complied with that duty as far as I am aware.

CURRICULUM VITAE

DR JOHNN OLSEN DOB: 23rd March, 1942 NATIONALITY: AUSTRALIAN

Postal Address: **PO Box 8445 Bargara 4670**

Medical Practice Addresses:

28 See Street
Bargara Qld 4670

Mater Private Clinic
Suite 7, level 5, 550 Stanley Street
South Brisbane Qld 4101

ACADEMIC QUALIFICATIONS

MB BS University of Sydney 1978
Ph D University of California 1972

MA Sc University of Waterloo 1968
BE University of NSW 1966

MEDICAL SPECIALIST QUALIFICATIONS

Consultant Physician in Occupational and Environmental Medicine

PROFESSIONAL APPOINTMENT

Regional Director of Education - Queensland, Australasian Faculty of Occupational and Environmental Medicine
Royal Australasian College of Physicians

POSTGRADUATE QUALIFICATIONS

FAFOM	-	Fellow Australasian Faculty of Occupational Medicine of the Australasian College of Physicians
CIME	-	Certified Independent Medical Examiner American Board of Independent Medical Examiners
MIE Aust	-	Member Institution of Engineers Australia Member Risk Engineering Society Member College of Biomedical Engineering
CP Eng	-	Chartered Professional Engineer

OCCUPATIONAL MEDICINE - COMPETENCIES

a) apply the skills of a medical practitioner in order to:
   i) diagnose, assess and advise on the management of disease and injury in relation to occupation;
   ii) determine the relationship between health and fitness to work; and
   iii) advise on the impact of major contemporary health issues in a workplace
b) conduct workplace and environmental assessments in order to recognise, evaluate and control physical, chemical, biological, design and psychosocial hazards in the workplace.
c) Retrieve, critically appraise and disseminate occupational health and safety information in readily understandable terms
d) Design, conduct and interpret investigations of health problems of individuals and groups and design, implement and evaluate prevention strategies in the workplace.
e) Apply management skills in order to:
   i) manage and coordinate occupational health and safety services including health surveillance programs
   ii) implement effective change in the workplace; and
   iii) negotiate and resolve conflict relating to occupational health and safety issues.
b) communicate effectively in order to secure the cooperation of management, employees and colleagues in the provision of a safe and healthy workplace.
c) Interpret the legislative, regulatory and medico-legal aspects of occupational health and safety and be able to apply these in practice.

d) Manage a rehabilitation program
e) Advise on the effects on humans of external physical, chemical, biological, psychosocial and mechanical factors in the general environment.
f) Continue learning in order to respond to changes in the workplace and occupational health and safety knowledge.

OCCUPATIONAL MEDICINE - PRACTICE

Participation in Royal Australasian College of Physicians, Maintenance of Professional Standards Program. The program requires Fellows of College and Faculties to maintain professional standards by continuing education including participation and presentations at conferences on a regular basis. Annual attendance at two major conferences in Occupational Medicine, Rehabilitation Medicine, Musculoskeletal Medicine and Occupational Health and Safety. Reading and research in Evidence Based Medicine applied to Occupational Medicine. Presentation of papers at major scientific meetings. Presentations in disability assessment, musculoskeletal medicine and rehabilitation to paramedical and non medical meetings. Provide instruction (in clinical occupational medicine) to registrars and trainees in Occupational Medicine. Certificate of completion is current. Maintenance of Professional Standards in American Board of Independent Medical Examiners by further study.

HOSPITAL APPOINTMENTS

1981 – 1984	Visiting Medical Practitioner Woy Woy Hospital Woy Woy NSW 2256
1989 – 1993	Visiting Medical Specialist North Gosford Private Hospital Gosford NSW 2250
1994 – 1998	Visiting Medical Specialist Mater Misericordiae Private Hospital South Brisbane Qld 4101
1998 – 2003	Visiting Medical Specialist Holy Spirit Hospital Spring Hill Qld 4004
2003 – 2005	Visiting Medical Specialist St Andrews Hospital Spring Hill Qld 4004
1994 – Present	Visiting Medical Specialist Mater Hospital Bundaberg Qld 4670
2005 - Present	Visiting Medical Specialist Mater Misericordiae Private Hospital South Brisbane Qld 4101

CURRENT CONSULTING ACTIVITY

1. **Consultant Physician in Occupational and Environmental Medicine**
Past Medical Director for Olsen Associates Rehabilitation Providers, MBF Health Services and Mater Rehabilitation Service. Responsibility as medical director including clinical treatment and case management and quality assurance. Currently consulting in Occupational Rehabilitation including medical assessment, medical treatment and assessment of impairment and disability with recommendations for management of occupational rehabilitation required for persons returning to the workplace after suffering injury or illness both occupational and non occupational. Consultations in clinical occupational medicine including musculoskeletal, respiratory, dermatological and toxicological disorders. Clinical roles include both treatment and independent assessment. Disability assessments and occupational assessments include reference to AMA Guides to the Evaluation of Permanent Impairment, 4th and 5th editions and the Australian Standard Classification of Occupations. Clinical occupational medicine in the role of independent medical examinations at consultant level with comprehensive reporting which include reference to evidence based medicine where applicable and current research literature.

2. **Occupational Health and Safety**
Occupational health and safety in the workplace including application of evidence based medicine and current research in occupational disorders and the effect of work on health, migrant workers and disabled persons. The application of safety science and ergonomics in the field of human factors, engineering and risk engineering. Assessment with expert advice in relation to occupational health and safety aspects of workplace injury. Safety assessment in relation to personal injury, motor vehicle accidents, public risk and product risk. Combined qualifications in medicine to consultant level and with engineering to doctorate level enables a high level expert advice in occupational health and safety. Assessments and advice in relation to workplace exposures to chemical hazards, physical hazards and biological hazards. Advice in occupational health services planning and implementation, pre-placement and periodic medical examinations and screening. Advice in biological monitoring, epidemiology, chemical, physical and environmental hazard protection including educational programs, aspects of supervision and behavioural modification. Environmental medicine including chemical, biological, physical and thermal environments. Application of the science of ergonomics to all aspects of work. Advice regarding personal protective equipment, assessment and advice regarding treatment and prevention of occupational stress. Clinical assessments of the effect of work on and also the ability to work with medical disorders including those of the cardiovascular system, blood and blood forming organs, lungs, liver, kidneys and the nervous system.

3. **Forensic Medicine**
The combined qualifications in medicine and engineering to the highest level enables the application of occupational medicine, biomechanics, human factors engineering and risk engineering to the analysis of complex issues in relation to injury causation and accident dynamics. Medicolegal and forensic medicine applications to determine the issues of causation, foreseeability and preventability in injuries and disorders that may arise through work, personal injury, motor vehicle accidents, environmental accidents and accidents associated with product use.

PREVIOUS SESSIONAL CONSULTING - PARTIAL LIST

Arnotts Biscuits, Arnotts Snackfoods, Merck Sharpe & Dohme, Goodyear Tyre and Rubber, Meadowlea Foods, TEN Network, Sands Printing, Metro Meats, Amoco Chemicals, Blayney Abattoir, Consolidated Alloys, Cottees Foods, Dunlop Olympic, Valley View Poultry.

Typical involvement was weekly attendance for the purpose of conducting medical examination of workers with work related illness or injuries, or illnesses and injuries that would impact on their work. With regards to occupational disorders and occupational health and safety, work involved ergonomic input to the design of packing lines, safety assessment in relation to the movement of forklifts, suitable guarding of equipment, health management of industry epidemics such as RSI, health surveillance of spray painters and lead workers, hazard identification, risk assessment and control programs for manual handling, repetitious movement, chemical hazards, biological hazards and physical hazards. Involvement included consultation and communication with middle to upper levels of management. Widespread focus on injury preventive programs. Working with highly slippery environments, exposure to irritant gasses and vapours and toxic chemicals, occupational health and safety issues in television production and newsrooms, extensive experience with heavy machinery including large printing presses, tyre making machines and other complex plant including attention to guarding and safe operation. Experience with hot, wet and cold environments.

PREVIOUS NON SESSIONAL CONSULTING - PARTIAL LIST

Australia Post, Baltimore Air Coil, Bayer Australia, Cleanaway, Davids Holdings, Department of Social Security, Electric Power Transmission, Essex Laboratories, Glad Products, Gosford City Council, Health Insurance Commission, Krone Australia, NSW State Lotteries, Staff Lighting, Steggles Poultry, Taronga Park Zoo, Telecom Australia/Telstra, Woolworths

Altogether the involvement with company consulting has covered all areas of occupational and environmental medicine as well as occupational health and safety.

MEDICOLEGAL WORKPLACE ASSESSMENTS

Occupational health and safety assessment including causation, foreseeability and preventability:

1984 - 2006: total liability reports written 4903.

The reports in relation to liability have included the assessment of occupational health and safety in relation to workers compensation primarily and to a much lesser degree public liability, professional liability and motor vehicle accidents. Approximately one-half of all of the reports written have been based on a site inspection and may have involved performing measurements, the study of operating procedures and practices, observing the work performed and a variety of techniques of assessing the standards of occupational health and safety and in particular the issues of causation of injury or illness, the foreseeability of risk and also making recommendations of possible preventive action.

MEDICAL ASSESSMENT

Medical assessments have been performed at consulting rooms in Sydney, Brisbane and Bundaberg. The number of reports produced are:

1984 - 2006: total comprehensive medical reports written 4868.

Medical reports are based on a very extensive medical interview and enquiry into the work performed. The reports produced strictly for independent medical opinion purposes have included disability assessments, prognosis and also suggestions for future treatment and management of a return to work. The reports written for rehabilitation purposes have included detailed assessment of the work performed and generally a detailed assessment of an appropriate rehabilitation program and follow up during the return to work process. The number of reports written for rehabilitation processes would be approximately one-quarter of the total medical reports.

PREVIOUS APPOINTMENTS

1988-Present
Consultant Physician in Occupational and Environmental Medicine.

1998-2002
Medical Director, Mater Rehabilitation Service. Consultations in Occupational Medicine, Occupational Rehabilitation and Physical Medicine. Mater Rehabilitation Service is a comprehensive rehabilitation provider and includes full case management in physical medicine including acute and subacute trauma, musculoskeletal impairments and related disorders and chronic pain. The unit will evolve a rehabilitation plan that focuses on total rehabilitation utilising motivational models, education and early assessment of progress to optimise the rehabilitation outcome. The service focuses on high quality rehabilitation and is ACHS accredited.

1989-1990
Medical Director MBF HEALTH SERVICES and Consulting Practice in Occupational Medicine and Occupational Rehabilitation Medicine. Work included case management, medical treatment and occupational rehabilitation. MBF Health Services was a WorkCover accredited Rehabilitation Provider. Private consulting in injury Biomechanics, major trauma and injury causation and prevention. Work included work site and accident site inspection with detailed analysis of risk factors Biomechanics of injury and advice on foreseeability and preventability.

1982-1989
Principal of OLSEN ASSOCIATES PTY LIMITED a service provider in Occupational Medicine, Rehabilitation Medicine and Consultants in injury causation and prevention. OLSEN ASSOCIATES were accredited as a rehabilitation provider by The WorkCover Authority of NSW. Work included planning of Occupational Health Services for a large number of companies representing all facets of industry and commerce. Planning National Strategies in injury prevention. Workplace inspections and safety audits. Diagnosis, treatment and rehabilitation of occupational disorders. Implementation of comprehensive rehabilitation services as a major accredited rehabilitation provider. Dr Olsen was Secretary of the Association of Rehabilitation Providers in the Private Sector.

A Large client base included sessional contract to provide services in Occupational Health, Safety and Rehabilitation.

1980-1982
Family Physician, solo practice
Sports Physician Central Coast Rugby League.

1980
Resident Medical Officer, Westmead Hospital, Sydney.

1979

Intern, Royal Prince Alfred Hospital, Sydney.

1973-1977

Lecturer, mechanical engineering NSW Institute of Technology - Full time permanent position. Lecturing in mechanical engineering to undergraduate and postgraduate students. Areas of lecturing included: Engineering design, system dynamics, control engineering, thermodynamics and biomedical engineering. Research interests in biomechanics, supervision of undergraduate and postgraduate students in design and biomechanics. Responsible for the introduction of a new course in biomedical engineering. Concurrently studying Medicine University of Sydney.

1974-1978

Medical Student University of Sydney.

1969-1972

Doctoral candidate, research assistant, teaching fellow, University of California, Santa Barbara, USA. Doctoral thesis in system dynamics and control. This included mathematical analysis and experimental studies of a Distributed Parameter System. Extensive postgraduate courses in dynamics of physical systems including motor vehicles and aerospace applications, systems behaviour and optimal control. Work included complex analysis of the dynamic behaviour of systems and bodies to determine physical behaviour such as movement, velocity, acceleration and forces involved.

1968

Masters degree student, teaching assistant, University of Waterloo, Canada. Masters thesis in bioengineering. Postgraduate courses in statistics, bioengineering, Thermodynamics and Mathematics.

1966-1968

Project engineer, Federated Engineers, Sydney. Heavy equipment, water and waste treatment plant design, construction and commissioning. Extensive involvement with plant visits, trouble shooting, advanced design.

1963-1965

Undergraduate student, chemical engineering, University of NSW

1969-1962

Trainee chemist, Polymer Corporation, Sydney. Three years experience in research and quality control in paints, solvents, plastics and chemicals.

PRESENTATIONS AND CONFERENCES

Conferences attended have included the areas of Occupational Medicine, Occupational Rehabilitation and Occupational Health and Safety. The total number of major conferences attended with each attendance being in excess of two days is in the range of 50-60 conferences. Have presented at a number of conferences, papers include injury causation, biomechanics and occupational medicine. Conferences include the Royal Australasian College of Physicians Annual Scientific Meeting with attendance every year since 1989 including the Faculty of Occupational Medicine Training Program altogether comprising a five day scientific meeting.

PROFESSIONAL SOCIETIES AND APPOINTMENTS
AMA member
External Medical Officer WorkCover Queensland
Authorised Medical Officer WorkCover Authority NSW

DR. JOHNN OLSEN