



SIGNIFICANT WEATHER – March 2006

SUMMARY

Tropical cyclones *Larry* and *Wati* were experienced in Queensland, with *Floyd* and *Glenda* in Western Australia. Low pressure systems also developed in Queensland and the Northern Territory resulting in significant rainfall totals.

Severe thunderstorms were reported in Queensland, New South Wales, South Australia and the Northern Territory.

Significant flooding occurred as a result of tropical cyclone *Larry* in Queensland. Flooding from earlier cyclones affected Kalbarri, Western Australia during the middle of the month. Flooding was also reported in the Northern Territory early in the month, the remnants of a tropical low that had earlier developed off the north coast of the Top End.

Bushfires were reported in Victoria with six homes destroyed by fire in the Snake Valley area.

TROPICAL CYCLONES

Queensland

Tropical Cyclone Larry

Severe tropical cyclone *Larry* crossed the tropical north Queensland coast near Innisfail during the morning of the 20th. Major damage to homes and other buildings was caused by *Larry* as well as extensive damage to local crops. Major damage was along the portion of coast between Cairns in the north and Cardwell in the south.

Severe tropical cyclone *Larry* began as a low pressure system over the eastern Coral Sea. It formed into a tropical cyclone in the early hours of the 18th, and proceeded on an almost due westerly track towards the Queensland coast. *Larry* became a severe tropical cyclone at 10am on the 18th and continued to intensify as it approached the Queensland coast, reaching Category 4 early on the 19th. The eye of *Larry* crossed the coast near Innisfail between 6:20am and 7:20am on the 20th March. *Larry* started to weaken after it hit landfall but maintained cyclone strength for several hundred kilometres inland until the early hours of the 21st. Ex-tropical cyclone *Larry* moved into western Queensland to the north of Mount Isa.

Severe tropical cyclone *Larry* is the first severe tropical cyclone to cross near a populated section of the east coast of Queensland since Rona in 1999, and the effects of the winds on buildings were devastating. Townships affected by the northern and southern portions of the eyewall of the cyclone received the most damage, particularly Babinda and Silkwood, however all townships in the region were severely affected by the cyclone

Electricity transmission was severely disrupted. Road and rail access to the region was also disrupted for several days due to flooding. In the northwest of the state, heavy rainfall from ex-tropical cyclone *Larry* caused several townships to be isolated for several days due to flooding.

A significant storm surge was caused by severe tropical cyclone *Larry*, with sea levels exceeding the predicted tide by 1.75 metres at Clump Point, 1.76 metres at Cardwell and 1.54 metres at Mourilyan.

Tropical Cyclone Wati

Tropical cyclone *Wati* formed in Fijian waters during the 18th and tracked toward the Queensland coast as it gained intensity, reaching category 3 by the 22nd whilst more than 600 kilometres northeast of Mackay. *Wati* then tracked southeast, parallel to the Queensland coast and was still category 3 whilst east of southeast Queensland but then weakened over colder waters and eventually moved to New Zealand. The only effect on Queensland was to increase coastal onshore winds and bring large swells to the south coast.

Western Australia

Tropical Cyclone Floyd

A tropical low developed on the 18th south of the Indonesian island of Sumba and moved to the west then southwest. The tropical low was named tropical cyclone *Floyd* during the morning of the 21st about 860 kilometres northwest of Cape Leveque. Under favourable conditions, *Floyd* steadily developed reaching category 3 intensity by the evening of the 22nd, about 1,035 kilometres north-northwest of Exmouth. *Floyd* reached category 5 intensity on the 24th whilst 970 kilometres northwest of Exmouth. *Floyd* slowly weakened as it then moved on a southeast track towards the northwest coast. *Floyd* came within 285 kilometres of Exmouth then weakened and was downgraded to a tropical low on the 27th. There were no known impacts from tropical cyclone *Floyd*, however economic losses were incurred with the evacuation of some offshore oil and gas installations.

Tropical Cyclone Glenda

A tropical low formed in the southwest Gulf of Carpentaria on the 15th. It drifted slowly across the base of the Top End before moving out over the Joseph Bonaparte Gulf on the 22nd. The low remained close to the Kimberley coast as it drifted further west and developed into tropical cyclone *Glenda* on the 27th after moving off the west coast and into the Indian Ocean. The low developed rapidly about 45 kilometres northnorthwest of Kuri Bay. *Glenda* passed close to Adele Island where a wind gust of 113 km/h was recorded, indicating that it had reached category 3 intensity some 12

hours after being named. The cyclone continued to move steadily on a westsouthwest track and on the 28th *Glenda* was 240 kilometres northwest of Broome. *Glenda* passed near offshore automatic weather stations (AWS) including North Rankin recording 176 km/h mean wind speeds during the morning of the 30th when the centre was just 30 kilometres to the east of North Rankin, confirming a category 4 intensity. At this stage *Glenda* was producing very destructive gusts of around 250 km/h as it moved on a southsouthwest track and approached the Pilbara coast.

Glenda passed about 20 kilometres east of Varanus Island where mean winds of 156 km/h were recorded. Close to the coast, with the very destructive core already over the coast, *Glenda* took a more westerly track and moved along the coast on the evening of the 30th, finally crossing near Onslow. Onslow registered mean winds to 117 km/h as the prolonged interaction with land likely weakened the system to Category 3 intensity prior to reaching Onslow. *Glenda* rapidly weakened as it tracked inland to the southsouthwest and was downgraded to a tropical low by the afternoon of the 31st. A total of 206mm of rain fell at Onslow in the 24 hours to 9am on the 31st, representing the sixth wettest day on record for the town. Other centres in the Pilbara also recorded cumulative totals of over 200mm, and although, in general, *Glenda* produced less than average rainfall for a landfalling tropical cyclone, rainfall was sufficient to cause transport disruptions.

LOW PRESSURE SYSTEM

Queensland

On the 2nd a large area of strong to gale force winds had developed off the southern Queensland coast and formed into a low eastnortheast of Rockhampton. By the 3rd the low had deepened and moved down to the east of Fraser Island. The low produced gale to storm force onshore winds off the south Queensland Coast. The highest maximum winds were reported at Cape Moreton (98 km/h) and Point Lookout (98 km/h) on the 4th.

Wind damage affected many areas of Southeast Queensland as trees crushed houses and cars. A nursing home at Kirra was

evacuated when a tree fell on a unit. No residents were injured. In Brisbane, residents of a unit block in Woolloowin and a house in Chermside were lucky to escape when trees fell on their properties. There were many traffic accidents and one vehicle crashed into a house at St Lucia. Blackouts hit about 100,000 homes and businesses. At Mt Tamborine and Bonogin boggy grounds hampered restoration efforts and in Beaudesert falling trees and branches continued to damage wires. In Moreton Bay on the 5th boats were damaged and ripped from their moorings. A landslide occurred at Vantage Point Drive at Burleigh Heads on the Gold Coast, where about 30 metres of land shifted in a vacant Council allotment towards four nearby villas.

On the 4th significant wave heights up to 7.2 metres were recorded by an EPA wavemonitoring buoy located 10 kilometres southeast of Point Lookout, North Stradbroke Island while individual waves up to 15.0 metres were also recorded. Significant wave heights were also recorded on the Sunshine Coast, Gold Coast and Tweed Heads causing significant beach erosion.

Stormwater outlets blocked by surging waves caused localised flooding of low lying coastal areas such as Flat Rock Creek and Marine Parade Kirra.

As the system remained over the ocean the rainfall was not widespread. However some areas received useful rain. In the 24 hours to 9am on the 2nd, Byfield in Capricornia recorded 123mm and Samuel Hill 110mm. Near Noosa, Tuan recorded 75mm and Rainbow Beach 64mm. Significant registrations in the 24 hours to 9am on the 3rd were Kingfisher Resort (89mm), Nambour (82mm), Hervey Bay, and Oyster Creek (73mm) and Carbrook (71mm). Registrations in the 24 hours to 9am on the 4th included Springbrook (169mm), Tomewin (158mm), Coolangatta (124mm), Tallebudgera (91mm), and Gold Coast Seaway (80mm). Registrations in the 24 hours to 9am on the 5th included Springbrook (92mm), Mt Nebo (79mm), Tomewin (63mm), and Coolangatta (60mm).

Northern Territory

A tropical low formed in the Arafura Sea north of Nhulunbuy on the 24th of February. It moved northwest into the Banda Sea and deepened during the next two days. Through the remainder of February it moved slowly southsouthwest into the Timor Sea. The low persisted into March as it moved into the northeast Indian Ocean but did not reach cyclone intensity. It had no direct effect on Australia but has some significant indirect impacts on eastern Indonesia and Timor Leste.

THUNDERSTORMS

Queensland

On the 8th thunderstorms formed over a large part of central Queensland, bringing heavy rain. At St Anns (230 kilometres west of Mackay) in the Suttor River catchment, 62mm of rain was reported in 30 minutes. There were some high rainfall totals reported from Mackay through to the Richmond area from the storms around that day and the next morning.

On the 9th very heavy rain and flash flooding was reported around Mackay in the early hours of the morning, resulting in some road closures in the area. Mackay reported 93mm in 60 minutes and 109mm in 2 hours.

New South Wales

On the 1st at Norah Head (Hunter) heavy rain (40mm in 60 minutes) was experienced. At Gosford (Hunter) local flooding was experienced after 43mm of rain fell in 60 minutes. At Lake Macquarie (Hunter) heavy rain produced local flooding at Ryhope with some road closures.

On the 3rd at Bellingen (Mid North Coast) heavy rain caused flooding of local rivers, isolating the towns of Bellingen and Thora, leaving thousands of residents stranded.

On the 30th at Campbelltown (Illawarra) thunderstorms with small hail occurred. Strong winds caused minor damage to buildings and trees.

South Australia

On the 27th an upper level low brought thunderstorms with rain to the Lower North district that resulted in some localised flooding in the town of Spalding and surrounding areas. Spalding and Yacka had record daily (92.4mm and 62.6mm) and monthly (120mm and 123mm) rainfall totals for March.

Northern Territory

An early morning thunderstorm produced heavy rainfall over Darwin's northern suburbs during a 5 hour period on the 22nd. Some significant 24 hour totals to 9am included: 199mm Leanyer, 198mm Darwin Hospital, 191mm Lee Point, 178mm Karama, 144mm Thorak Cemetery, 143mm Charles Darwin University, 131mm Wagait Beach, 121mm CSIRO Berrima, 105mm Marrara. 175mm fell in 5 hours at Lee Point.

On the 25th Gove Airport received 136.6mm in an early morning thunderstorm, with flash flooding reported at the Airport. 131.2mm fell in just 2 hours.

FLOODING

Queensland

Tropical cyclone *Larry* crossed the north tropical coast near Innisfail in the early hours of the 20th, resulting in heavy rainfall between Ingham and Cairns. Due to the speed of the cyclone movement the coastal rain was not as intense as expected and only a few river basins had any significant flooding. However a day later, very heavy rainfall fell in the Leichhardt River catchment resulting in record flood levels in the river.

Herbert River:

Minor to moderate flooding occurred in the lower reaches of the Herbert River from the 22nd to 23rd March following the heavy rain associated with tropical cyclone *Larry*. Minor flooding was reported from Nash's Crossing to Gairloch with moderate flooding occurring at Halifax. All river levels had peaked by the night of the 22nd, with flooding easing slowly during the 23rd.

Tully and Murray Rivers:

The heaviest rainfall from tropical cyclone *Larry* occurred in the Tully river catchment with over 500mm recorded at Euramo in the 72 hours to 9am on the 22nd. River levels rose slowly in both rivers and the Tully River at Euramo and eventually overtopped the Bruce Highway at Euramo on the 21st. The river level at Euramo peaked at 8.60 metres during the 22nd. The Murray River at Murray Flats overtopped the Bruce Highway overnight on the 21st and peaked at 8.1 metres during the 22nd. High river levels were maintained for several days before moderate flooding started to ease. River levels fell below the levels of the Bruce Highway for both rivers on the 24th. Renewed rises and minor flooding occurred in the Tully and Murray Rivers following heavy rainfall on the 30th.

Johnstone River:

River rises occurred in the North and South Johnstone River following the rain associated with tropical cyclone *Larry*. However flood levels generally remained below the minor flood level.

Mulgrave and Russell Rivers:

Rapid river rises occurred in the Mulgrave and Russell Rivers on the 20th following heavy rainfall. The highest rainfall total recorded was 139mm in 3 hours to 9am at the Boulders on Babinda Creek. Major flooding occurred in the Mulgrave River during the day in the Peets Bridge to Gordonvale area, with the river level at Gordonvale peaking at 15.2 metres, 1 metre over the Bruce Highway bridge. Minor flooding also occurred in the Russell River but river levels were all generally below the minor flood level by the 21st.

Leichhardt River:

Very heavy rain was reported in the Leichhardt river in the 24 hours to 9am on the 22nd with the highest total of 435mm recorded at Gereta Station. The rapid onset of the intense rainfall meant that rivers and streams responded very quickly and were generally in minor flood by the morning of the 22nd. Record river levels and major flooding were reported at several stations. On Gunpowder Creek, the peak reached

10.63 metres on the 23rd after only about 8 hours of intense rainfall. This was the highest peak, by nearly 2 metres, in a record, which commenced in 1971. At Lorraine, the river commenced to rise rapidly on the morning of the 23rd and reached a peak of 16.9 metres at 6pm on the 23rd. This level was maintained overnight before starting to fall quickly on the 25th. The peak of 16.90 metres at Lorraine was the highest recorded level at the site since records started in 1974. Downstream at Floraville, the river peaked at 9.91 metres on the 26th. This was the highest recorded level since records commenced in 1984. Locals advise that this flood was the highest in the area since 1964.

Flinders River:

Moderate flooding also occurred in the lower Flinders River at the end of the month. River level rises at Walkers Bend were reported from the 25th with a flood peak of 11.17 metres occurring on the 29th with moderate flooding.

Western Australia

From the 14th to the 17th rainfall that had fallen upstream during tropical cyclones *Clare*, *Daryl* and *Emma* caused major flooding of the Murchison River near Kalbarri. Damage was reported from several pastoral stations involving sheds, fences, crops and stock losses. Pre 1900's homesteads including Berringarra, Billabalong and Murchison House sustained extensive damage with many of mud brick construction. Floodwaters peaked at Kalbarri at about midnight on the 15th. The Kalbarri town was saved by incoming floodwaters by the construction of protective sandbag levees by the community.

Northern Territory

Early in the month, the remnants of a tropical low that had earlier developed off the north coast of the Top End moved into the Victoria River District and finally dissipated in the Tanami Desert causing widespread flooding.

Daly River at Dorisvale Crossing:

On the 12th, the Daly River at Dorisvale Crossing began to rise from base-flow level. The river rose steadily, reaching minor flood level (13 metres) and moderate flood level

(15 metres) on the 21st. The river continued rising and reached a major flood level (15 metres) on the 23rd and peaked at 18.4 metres on the 24th. The river then fell back to minor flood level by month's end.

Waterhouse River At Beswick:

The Waterhouse River at Beswick began rising steeply from base-flow level on the 12th. It rose swiftly to the minor flood level of 6 metres and overtopped the Central Arnhem Road Bridge. The river then varied between 6 and 9 metres, with major flood peaks of 7.36 metres on the 14th, 8.47 metres on the 17th, 8.5 metres on the 20th, 8.9 metres at on the 21st and 8.0 metres on the 29th. The river fell below the minor flood level (bridge level) of 6 metres on the 30th.

WIND

New South Wales

Wind gusts greater than 90 km/h were reported on the following days:

4th	Byron Bay 98 km/h
5th	Byron Bay 94 km/h
12th	Thredbo AWS 91 km/h
13th	Thredbo AWS 105 km/h
15th	Montague Island 104 km/h
16th	Thredbo AWS 102 km/h

Victoria

Wind gusts in excess of 90 km/h were reported on the following days:

6th	Wilsions Promontory 106 km/h
7th	Wilsions Promontory 100 km/h
13th	Mt Hotham 118 km/h, Grampian 93 km/h Wilsions Promontory 104 km/h
15th	Mt Hotham 94 km/h
17th	Wilsions Promontory 104 km/h
31st	Wilsions Promontory 113 km/h

Tasmania

Wind gusts in excess of 90 km/h were reported on the following days:

6th	Maatsuyker Island 100 km/h
7th	Maatsuyker Island 106 km/h, Cape Grim 94 km/h,

- Tasman Island 94 km/h
 9th Hartz Mountain 102 km/h,
 Mount Wellington 96 km/h
 12th Mount Wellington 109 km/h,
 Maatsuyker Island 107 km/h,
 Scotts Peak Dam 107 km/h,
 Mount Read 94 km/h,
 Droughty Hill 94 km/h,
 Tasman Island 93 km/h,
 Hartz Mountain 93 km/h
 13th Maatsuyker Island 120 km/h,
 Mount Wellington 115 km/h,
 Mount Read 104 km/h,
 Cape Grim 93 km/h,
 Droughty Hill 91 km/h,
 Scotts Peak Dam 91 km/h,
 Tasman Island 91 km/h
 14th Maatsuyker Island 119 km/h,
 Mount Wellington 107 km/h
 19th Maatsuyker Island 96 km/h
 31st Maatsuyker Island 113 km/h,
 Cape Grim 111 km/h,
 Cape Bruny 100 km/h,
 Mount Wellington 98 km/h,
 Tasman Island 96 km/h,
 Droughty Hill 96 km/h

South Australia

On the 12th a thunderstorm passed over the Lower Eyre Peninsula and caused some damage to an old shed. Estimated wind speeds were between 85 - 95 km/h.

BUSHFIRES

Victoria

Very warm air was advected across Victoria in a northerly airflow ahead of an approaching cold front on the 12th. Maximum temperatures reached the high 30's with several centres in the northwest recording 41°C. The airmass was very dry with dewpoint temperatures typically zero or below. The northerly wind was fresh to strong at times pushing fire danger well into extreme in all districts apart from East Gippsland.

A fire began at Snake Valley, roughly 20 kilometres southwest of Ballarat in the afternoon. The extreme fire weather conditions combined with a large mixing depth created a huge smoke plume above the fire as it swept

through eucalypt bushland and pine forest plantations. A southwesterly wind change on the night of the 12th quickly turned the fire toward Snake Valley and Smythesdale. However a little rain followed overnight which assisted the fire fighting effort in the area. Six homes were destroyed by the fire in the area around Snake Valley, which burned more than 3,000 hectares.

Tasmania

A fire deliberately lit on Mount Cameron in the northeast of Tasmania on the 4th consumed over 2,000 hectares before being brought under control by the 13th. Houses in the township of Gladstone were threatened on the 7th.

TEMPERATURE

Highest Mean Maximum Temperature for March

Station	Actual °C	Previous Highest °C	Year	Years of Record
New South Wales				
Sydney	27.1	27.0	1998	147
Thredbo Village	21.0	20.8	2004	35
Victoria				
Warracknabeal Museum	29.6	29.5	1986	32
Ararat Prison	26.9	26.1	1988	35
Tasmania				
Eddystone Point	22.0	21.5	2002	49
Western Australia				
Kalbarri	34.9	34.3	1978	31

Lowest Mean Maximum Temperature for March

Station	Actual °C	Previous Lowest °C	Year	Years of Record
Western Australia				
Wyndham	32.8	33.3	2000	36
Northern Territory				
Wollogorang	32.2	32.3	1989	22

Highest Mean Minimum Temperature for March

Station	Actual °C	Previous Highest °C	Year	Years of Record
Queensland				
Walkamin Dpi	20.4	20.4	1999	38
Urundangi	24.0	23.4	2004	67
New South Wales				
Brewarrina	19.9	19.8	2000	84
Nyngan	18.8	18.8	1955	85
Nelson Bay	20.0	18.9	2004	92
Sydney Airport	19.7	19.2	2000	66

Sydney	19.6	19.3	1983, 1968, 1956	147
Riverview	18.4	18.4	1968	97
Montague Island	18.4	18.1	1974	37
Narooma	16.8	16.8	2000	41
Western Australia				
Kalbarri	34.9	34.3	1978	31
Northern Territory				
Maningrida	25.1	24.9	2004	37
Jervois	23.4	22.6	2004	35
Wollogorang	23.9	23.8	1992	21

Highest Daily Maximum Temperature for March

Station	Actual °C	Date	Previous Highest °C	Year	Years of Record
New South Wales					
Cooma (Visitors Centre)	35.2	11	35.2	1983	32
Victoria					
Kerang	40.8	12	40.7	1991	42

Lowest Daily Maximum Temperature for March

Station	Actual °C	Date	Previous Lowest °C	Year	Years of Record
Western Australia					
Emu Creek Station	24.2	31	25.1	1975	31
Gascoyne Junction	21.9	31	23.9	1964	33
Meekatharra Airport	17.5	30	19.3	1996	55

Highest Daily Minimum Temperature for March

Station	Actual °C	Date	Previous Highest °C	Year	Years of Record
New South Wales					
Nelson Bay	22.3	05	22.0	2004	37
Thredbo Village	17.5	13	17.5	1983	35
Victoria					
Point Hicks LH	22.2	13	22.0	1983	40

Lowest Daily Minimum Temperature for March

Station	Actual °C	Date	Previous Lowest °C	Year	Years of Record
Western Australia					
Salmon Gums RS	2.2	27	2.4	1975	35

RAINFALL

Highest Monthly Rainfall on Record for March

Station	Actual mm	Previous Highest mm	Year	Years of Record
Queensland				
Kamilaroi Stn	581.4	506.3	1971	108
Miranda Downs Stn	378.0	360.2	1898	98
Magowra Station	382.0	357.8	1974	37
North Head	302.6	246.0	1994	34
Daintree Tea	1697.0	1643.0	2004	41
Jochmus	249.0	227.5	1979	37
Western Australia				
Carlton Hill	592.5	427.9	1983	94
Coodardy	234.0	178.5	1926	107
Kimberley RS	662.9	466.1	2000	61
Kununarra Aero	522.4	455.8	2000	32
Oombulgarri	601.4	454.8	1922	54
Theda	558.1	495.6	1983	37
Wyndham	758.3	428.3	1974	37
Northern Territory				
Calvert Hills	443.2	373.3	1995	35
Kidman Springs	414.1	391.4	1976	34
Wollogorang	809.5	524.6	1995	30
Redbank Mine	752.7	508.0	1995	27

Lowest Monthly Rainfall on Record for March

Station	Actual mm	Previous Lowest mm	Year	Years of Record
New South Wales				
Ingebyra (Grosses Plains)	6.4	7.0	2004	35
Tasmania				
Bushy Park (Bushy Park Estates)	5.0	7.9	1916	133
Bagdad PO	5.4	5.6	1998	82
Elderslie South (Staples Sugarloaf)	5.8	7.4	1998	39

Highest Daily Rainfall on Record for any Month

Station	Actual mm	Date	Previous Highest mm	Year	Years of Record
Queensland					
Kamilaroi Station	278.6	22	257.3	1936	108

Highest Daily Rainfall on Record for March

Station	Actual mm	Date	Previous Highest mm	Year	Years of Record
Queensland					
Kamilaroi Station	278.6	22	257.3	1936	108
Iron Hurst Station	111.0	21	92.7	1971	32
Kurrajong	159.0	08	82.6	2001	45
Muttaburra	132.5	10	127.8	1994	122
Gue	80.0	10	52.6	1999	67
Stonehenge	110.2	10	108.8	1999	72
New South Wales					
Wollombi	88.0	02	69.2	1982	53

Western Australia

Carlton Hill	250.0	25	187.2	1943	84
Challa	90.0	01	84.6	1926	102
Coodardy	125.0	01	121.9	1926	103
Kimberley RS	134.0	24	121.4	1973	53
Meekatharra	123.0	01	79.2	1968	35
Meekatharra Airport	106.0	01	67.4	1984	60
Minni Downs	53.9	02	53.5	1997	35
Monte Vista	51.0	02	45.7	1968	38
Moorarie	84.0	01	80.0	2000	91
Mount Clere	153.0	01	60.2	1984	62
Mount Farmer	91.0	01	70.0	1999	69
Mount Hale	79.0	01	55.4	1999	55
Mount Magnet	96.4	01	89.2	1926	101
Mount Padbury	187.2	01	88.9	1965	57
Mount Phillip	69.0	31	64.8	1926	81
Munarra	105.0	01	81.0	1999	80
Munglinup Melaleuca	60.2	02	37.4	2000	30
One Tree Bridge	44.0	23	42.0	1998	35
Ravensthorpe	52.0	02	44.2	1927	99
Sandstone	92.0	01	89.7	1926	97
Sherwood	105.0	01	90.2	1929	72
Theda	160.0	27	138.4	1973	37
Wondinong	99.2	01	77.2	1968	86
Wyndham	252.4	25	182.4	2005	37
Yinnietharra	80.2	31	64.4	1976	44
Northern Territory					
Wollogorang	200.6	18	169.2	1995	30
Redbank Mine	276.0	19	150.0	1995	28
Timber Creek	95.6	28	82.6	2000	25

Note: Some statistical records mentioned in this report are based on data that have yet to be fully validated