



# Canberra Aqua Park

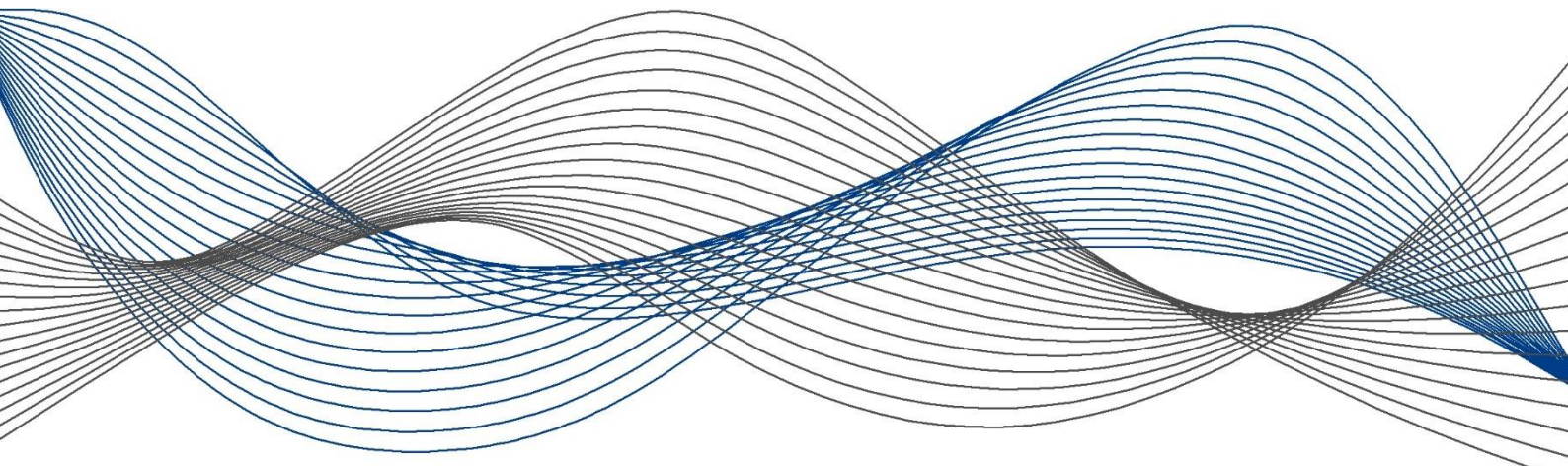
**National Capital Authority**

**REPORT ON:**

Water Quality Monitoring

12 February 2020

CAP-191111



**Revision: 2.0**

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## Revision History

Revision	Date	Description	Prepared By	Reviewed By	Approved By
1.0	28/01/2020	Issued to NCA	G. Chalmers	#M. Santosa	#W. Yeap
2.0	12/02/2020	Updated with additional monitoring data	G. Chalmers		

# Denotes signature on original copy

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# 1 Introduction

Canberra Aqua Park Pty Ltd (CAP) has established an inflatable fun park on the waters of Lake Burley Griffin in the Black Mountain Peninsula. The general area includes council facilities and a section of the lake has been licensed to CAP as shown below.



Figure 1-1: CAP Layout

During the initial consultation phase of the project, CAP committed to National Capital Authority (NCA) to undertake an analysis of the impacts that the park has on lake water quality, namely the suspended solids due to increased use of the lake.

This document outlines the analysis undertaken and the results.



## 2 Approach

CAP capped the peak usage of the park facility at up to 100 patrons per hour, for up to 10 hours per day. During the public consultation period, some concerns were raised that this number of people may cause a measurable impact on the water quality of the lake.

In practice, some sessions have booked out at 100 people per hour; however, the average usage over the day is generally less with (say) 10 to 20 people in the first hour, then 70-100 people in the peak hour and 20 to 30 people per hour in the later sessions. As a result, the weekly numbers have generally peaked in the order of 1,500 to 1,700 patrons.

CAP is committed to long term suitability of Australia’s water resources and has undertaken water quality sampling of the lake upstream, at, and downstream of the inflatables to understand the impacts of the aqua park on the lake.

NCA currently reports on turbidity, bacteria and blue green algae levels at the nearby public swimming area. Samples are collected and analysed by an independent laboratory called “ALS Water Resources Group” (ALS). CAP augmented this testing by adding suspended solids testing to the samples taken. CAP also paid for ALS to analyse samples taken at various locations of the aqua park before setup and during operation to help understand the impacts that the park was having on water quality. The figure below shows the sample locations.

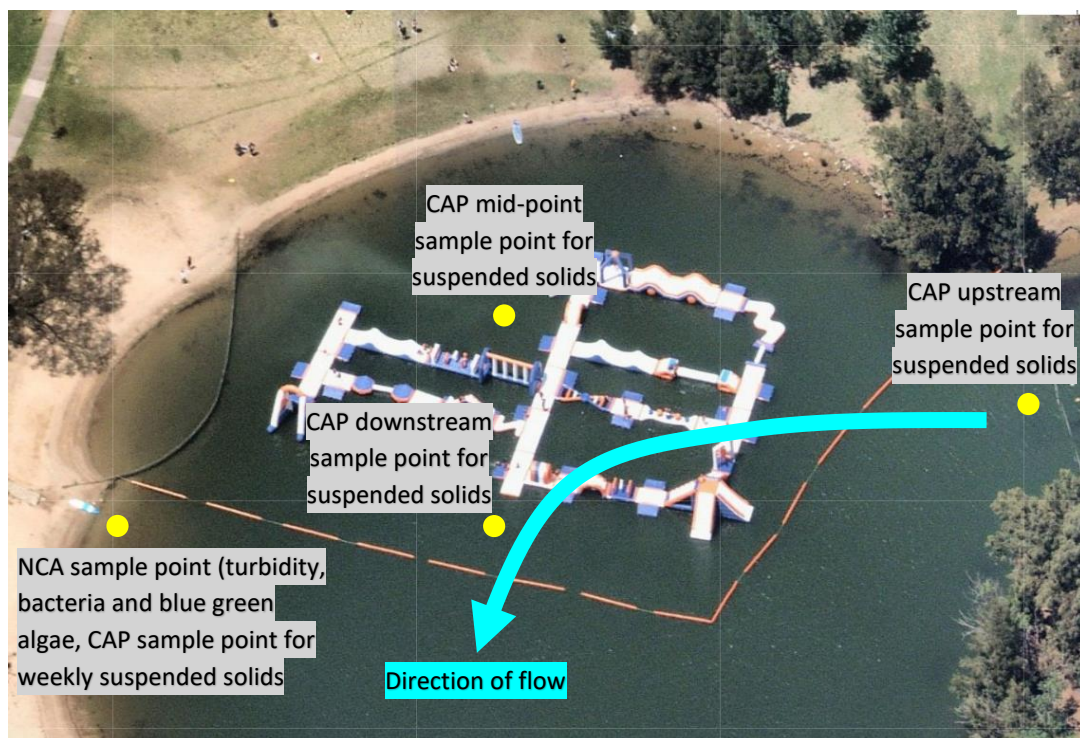


Figure 2-1: Water Quality Sample Locations

In terms of visible and measurable impacts on water quality, suspended solids and turbidity were adopted as indicators that could be tracked. In most situations, a total suspended solids concentration below 20 mg/L appears clear, while a reading over 40 mg/L may begin to appear cloudy. In comparison, a turbidity reading below 5 NTU appears clear, while a reading of over 55 NTU will start to look cloudy<sup>1</sup>.

These parameters (turbidity and suspended solids) were adopted because of the concerns that patrons may “stir” up the lake to an extent that solids or particles could be re-suspended from the lake base and into the water. It has been assumed that these concerns relate to the possibility of a plume of sediment or particulates being created from the aqua park area, which could flow into downstream areas of the lake.

At the beginning of the project, it was assumed that the lake suspended solids would be generally below 10 mg/L, and if CAP increased these reading to 30 mg/L, then further testing would be undertaken downstream to understand how widespread the impacts were. As will be discussed later in this report, the findings have been the impacts of the inflatables are so low on the downstream system, they cannot be measured.

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<sup>1</sup> <https://www.fondriest.com/environmental-measurements/parameters/water-quality/turbidity-total-suspended-solids-water-clarity/>

### 3 Data

#### 3.1 Background

Weekly quality data has been collected by NCA (via ALS) and published on the internet for the 2019/2020 season since the aqua park has been opened. In addition, NCA provided historical turbidity and suspended solids data from Lake Burley Griffin. This data and the additional data collected by CAP has been added to the dataset and can be summarised below.

#### 3.2 Historical Suspended Solids and Turbidity Data

Historical suspended solids and turbidity data for Lake Burley Griffin was provided by NCA via emails as follows:

- 15 January 2020 - Historical SS and Turbidity Data for Site LBG504.
- 17 January 2020 - Historical SS and Turbidity Data for Site LBG515 2012-2015.
- 22 January 2020 - Historical SS and Turbidity Data for Site LBG515 2015-2020.

There are hundreds of lines of data and therefore the information has been tabulated and included in Appendix B for future reference as required, rather than included in the body of this report. Figure 3-1 below shows the location of sample site LBG504 relative to the CAP site, which is located at LBG515.

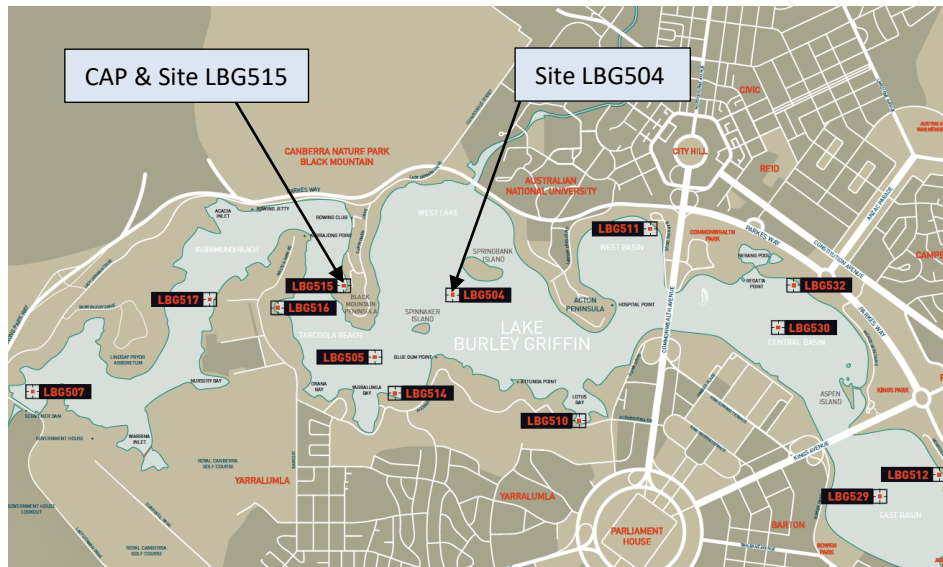


Figure 3-1: Historical Water Quality Sampling Sites<sup>2</sup>

<sup>2</sup> From Lake Burley Griffin Water Quality Management Plan, dated 2011, page 70/72 of pdf.



### 3.3 NCA Data for 2019/2020

The following table provides the relevant NCA water quality data provided since CAP opened. CAP opened on 11 November 2019 following a week of setup.

Table 3-1: Weekly NCA Water Quality Data

Date/time	Turbidity (NTU)	Bacteria - Enterococci – Confirmed (MPN/100mL)
4/11/2019 9:00	2.3	17
11/11/2019 9:38	2.8	6
18/11/2019 9:00	4.4	4
25/11/2019 9:10	1.9	12
2/12/2019 8:43	1.7	17
9/12/2019 9:09	2.9	17
16/12/2019 9:07	1.7	19
23/12/2019 8:55	2.4	4
30/12/2019 8:58	3.8	8
4/01/2020 12:15	3.9	16
6/01/2020 9:30	4.0	19
13/01/2020 9:42	6.0	4
20/01/2020 9:41	8.9	13
28/01/2020 8:49	2.9	10

### 3.4 Additional CAP Data

The following data has been collected by CAP. Refer to Appendix A for lab records. ALS also provided total dissolved solids reading of the 4/11/2019 samples. These were not requested and are not analysed, but have been included in the Appendix for information.

Table 3-2: CAP Water Quality Data pre and during use

Date/time	Suspended Solids, mg/L		
	Upstream	Midpoint	Downstream
4/11/2019 9:00	2	<2	2
4/01/2020 12:15	5	14	5

The following tables shows suspended solids data that has been collected to augment the turbidity data collected by NCA. Interpretation of the data is provided in the following section.

Table 3-3: Weekly CAP data

Date/time	Suspended Solids, mg/L	Patrons for the week before sampling
4/11/2019 9:00am	2	0
11/11/2019 9:38am	2.8*	145
18/11/2019 9:00am	3.5*	472
25/11/2019 9:10am	4	734
2/12/2019 8:43am	6	345
9/12/2019 9:09am	24**	899
16/12/2019 9:07am	1.5	1486
23/12/2019 8:55am	7	1263
30/12/2019 8:58am	6	1533
04/01/2020 12:15pm	5	255
06/01/2020 9:30am	10	0
13/01/2020 9:42am	7	1661

\* data interpolated for charting/visual purposes.

\*\* this appears to be an abhorrent data point - turbidity was low which indicates someone has introduced sand into the sample - possibly children or public swimming in the public area. This abhorrent data point has been later excluded and replaced with an average value from the previous readings.

## 4 Interpretation of Data

### 4.1 Historical Data

The following figure show the suspended solids data from the Lake Burley Griffin Water Quality Management Plan, from 1982 to 2009. The management plan notes the general trend is for turbidity to be typically below 20mg/L after the Year 2000, except after large storm or wind events due to influx of solids or resuspension of solids.

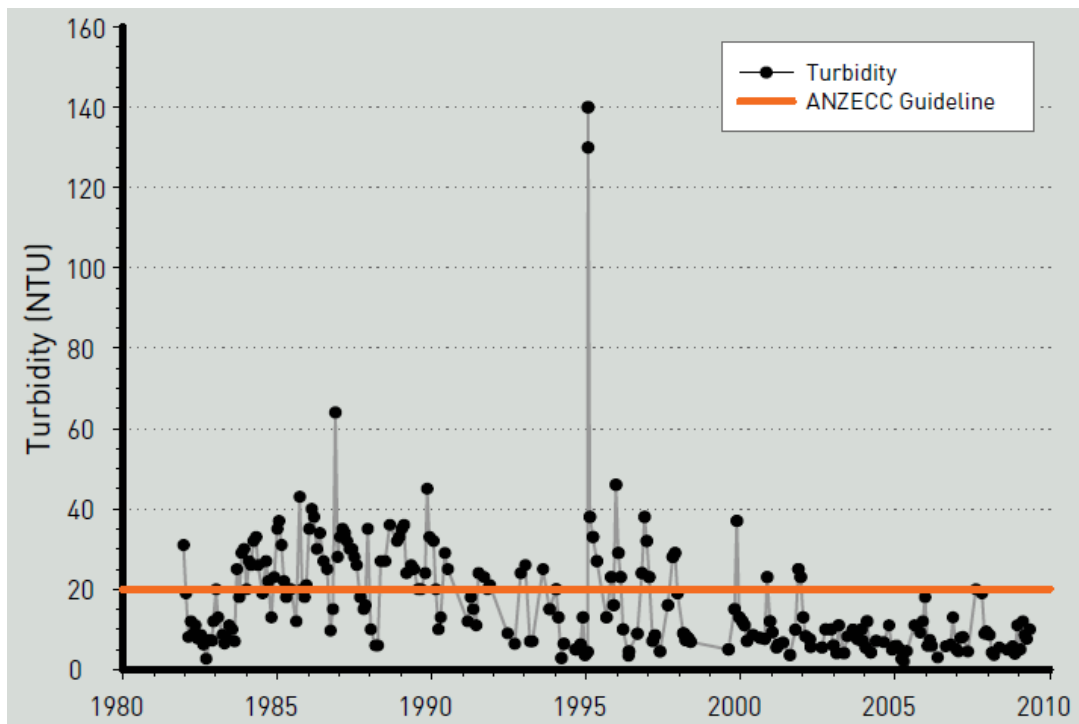


Figure 4-1: Turbidity values in Lake Burley Griffin for 1981 - 2009 (West Lake, site 504)

The following chart shows the additional data provided by NCA for suspended solids and turbidity at site LBG515. There are data gaps in the “offseason” so a time series line was not plotted. However, the point values are consistent with the data presented in the above chart. Typically the turbidity is below 20 NTU with the exception of some outlying data. Suspended solids typically range from 5 to 10 mg/L; however, readings in the range of 10 to 20 mg/L are not uncommon.

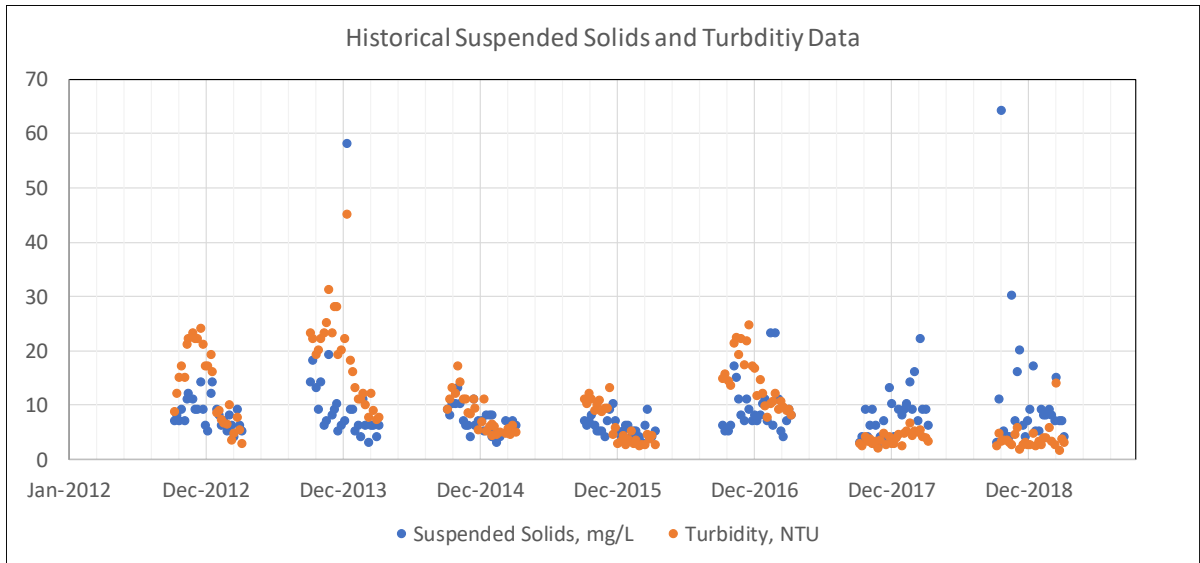


Figure 4-2: Turbidity values in Lake Burley Griffin for 2015 - 2019 (West Lake, site LBG515)

## 4.2 Current Data (2019/2020 CAP Season)

The premise for the analysis is that by increasing the number of lake users, there is an increased risk of solids becoming resuspended into the lake water. Alternatively, an increase in lake users could result in an increase in bacteria count. If one or both of these premises holds true, then it would be possible to analyse and plot the water quality results in comparison with patron numbers and find a relationship.

The first indicators plotted were turbidity and suspended solids. As shown in the chart below, there is no pattern between patron numbers and turbidity and suspended solids downstream of the park. In fact, some of the best water quality readings have occurred following some of the highest park usage.

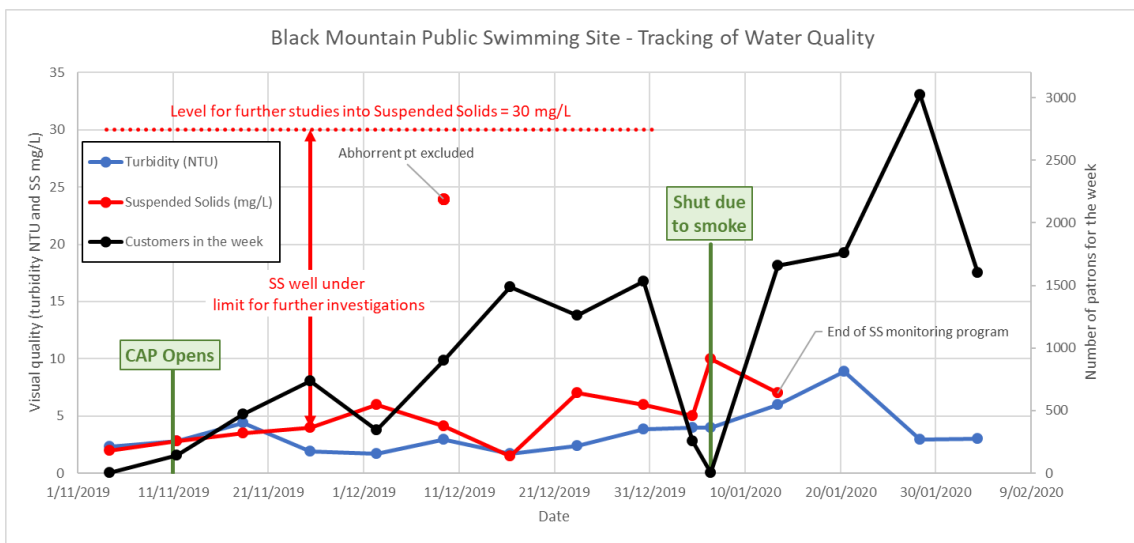


Figure 4-3: Patrons versus visual water quality indicators

The suspended solids readings taken pre and during operation also back-up these findings. The data in Table 3-2 shows there has been no measurable impact on suspended solids downstream of the park since it was opened. As to be expected, there was a measured increase in suspended solids in the immediate area where patrons are walking/swimming from the shore onto the inflatable obstacles. The readings taken during operation suggest the upstream and downstream suspended solids readings were 5 mg/L, whereas the area where patrons are entering/exiting the park had a suspended solids reading of 14 mg/L. The fact the reading downstream was 5 mg/L (i.e. the same as the upstream reading) suggests the impact due to patrons using the park are both localised and low. That is, disturbed particles have settled before reaching the downstream area.

The next indicator plotted, for completeness, was bacteria. Whilst this is not a visual water quality indicator, it would be reasonable to assume the possibility that an increased number of patrons could result in increased bacteria levels. The following chart provides a comparison with the patron numbers and bacteria count. As per the visible water quality indicators, there is no relationship between the number of patrons and the bacteria count. In some weeks, the water quality has improved with peaking patron numbers. Note the allowable bacteria limit of 200 shown on the chart has been taken from NCA’s Lake Burley Griffin Water Quality Management Plan dated 2011.

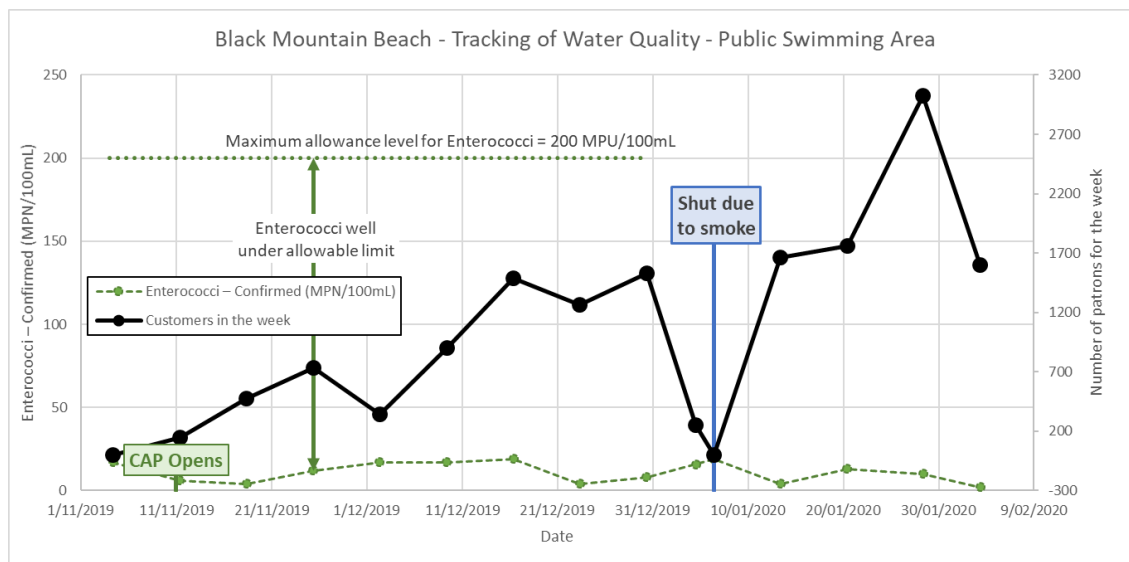


Figure 4-4: Patrons versus bacteria count



### 4.3 Overlay of Historical Data and Current Data

The following charts show how the 2019/2020 summer compares with previous years.

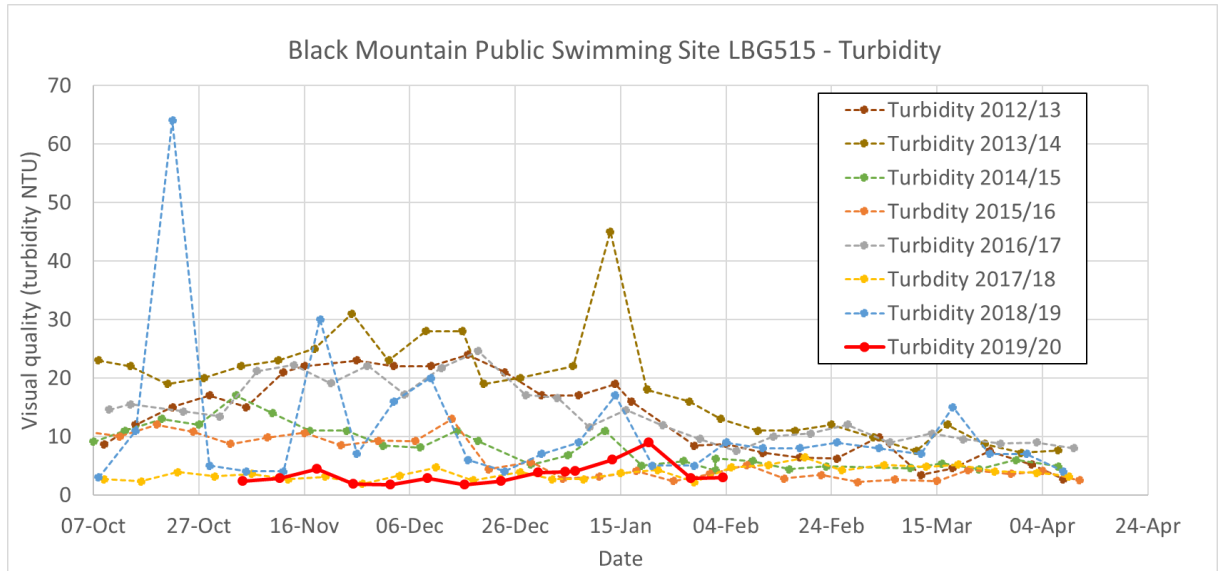


Figure 4-5: Turbidity Data Overlay

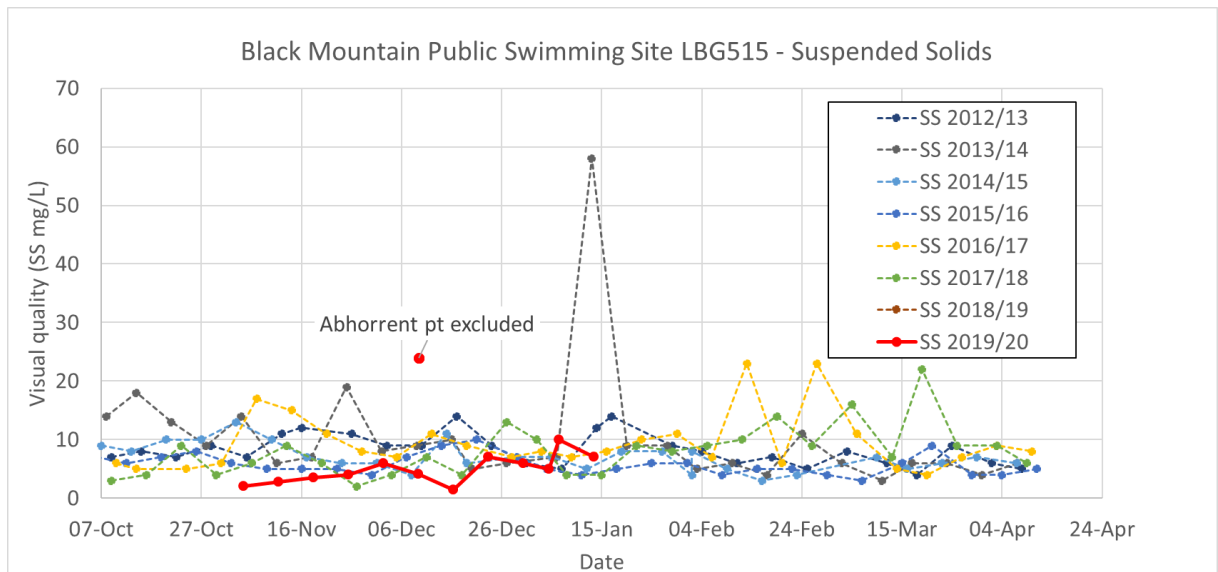


Figure 4-6: Suspended Solids Data Overlay

Both charts indicate that the park is having either minimal, or immeasurable impacts on the downstream system as the 2019/2020 year, which is when CAP started, has amongst the best water quality results of all years. This is discussed further in the next section.

## 4.4 Possible Reasons for Minimal Impacts

A valid question could be asked “how can the patrons have such a limited effect on water quality?”. The answer is likely to lie within the following factors:

1. The entry/exit area is sandy, not silty. As patrons walk into the lake to access the inflatables, they may stir some of the lake bed-sand. Given that sand particles generally have a high settling velocity, they will tend to fall back to the bottom of the lake relatively quickly. In contrast, suspension of silts or fine materials may persist as a suspended solid for a greater duration/distance. It is the silts and fine particles that are most likely to impact on visual water quality parameters such as turbidity or suspended solids.
2. Once on the inflatable equipment, patrons rarely touch the lake bed. Generally if patrons fall/jump/slide or swing into the lake, they do so in deeper areas. Whilst some of these deeper areas do have a layer of silt/fine material, the patrons are rarely impacting on this. Note the lake bed was observed at various locations during diving activities in the setup phase and the bed varies significantly across the park. Some areas are rocky, some are silty, some are sandy and some areas have coverage of aquatic vegetation.
3. The area of the lake is large compared with the area of the aqua park. The licensed area of CAP is less than 0.07% of the overall lake area.
4. There are other large scale factors that will have a significant impact on lake water quality such as wind/wave action, wildlife, surface runoff, eutrophication, internal currents/flow, etc. The influence of the inflatables on these natural processes would be insignificant.

## 5 Conclusions

NCA and CAP have been monitoring various water quality indicators to measure lake water health and also determine if patrons from CAP are having an impact on the water quality of the lake. Water samples have been taken and analysed by an independent laboratory, ALS.

Analysis of the data to date shows that:

- The aqua park is not having a measurable impact on visual water quality indicators (turbidity and suspended solids). To date, some of the best water quality readings have coincided with the peak usage of the park.
- The aqua park is not having a measurable impact on bacteria count. To date, some of the lowest bacteria readings have coincided with the peak usage of the park.

Based on observations and readings to date, we can conclude the aqua park is not having any measurable adverse impacts on the water quality.

For further reading about the indicators used in this report, please refer to NCA's report "Lake Burley Griffin Water Quality Management Plan" dated 2011.

## Appendix A

# ALS data for CAP



**CERTIFICATE OF ANALYSIS**

<b>Work Order</b>	<b>CA1907181</b>	<b>Page</b>	1 of 2
<b>Client</b>	Canberra Aqua Park Pty Ltd	<b>Laboratory</b>	ALS Water Resources Group
<b>Contact</b>	Greg Chalmers	<b>Contact</b>	Client Services
<b>Address</b>	59 Waverly Park Drive Mulgrave VIC 3170	<b>Address</b>	16B Lithgow Street Fyshwick ACT Australia 2609
<b>Telephone</b>	----	<b>Telephone</b>	+61 2 6202 5404
<b>Project</b>	----	<b>Date Samples Received</b>	04-Nov-2019 11:55
<b>Order number</b>	----	<b>Date Analysis Commenced</b>	11-Nov-2019
<b>C-O-C number</b>	----	<b>Issue Date</b>	15-Nov-2019 15:59
<b>Sampler</b>	----		
<b>Site</b>	Canberra Aqua Park - Greg Chalmers		
<b>Quote number</b>	----		
<b>No. of samples received</b>	3		
<b>No. of samples analysed</b>	3		



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- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

**Signatories**  
 This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<b>Signatories</b>	<b>Position</b>	<b>Accreditation Category</b>
Clare Kennedy	Analyst	Inorganics, Fyshwick, ACT

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Page : 2 of 2  
 Work Order : CA1907181  
 Client : Canberra Aqua Park Pty Ltd  
 Project : ----



**General Comments**

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Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 ^ = This result is computed from individual analyte detections at or above the level of reporting  
 e = ALS is not NATA accredited for these tests.  
 ~ = Indicates an estimated value.

For samples collected by ALS WRG, sampling was carried out in accordance with Procedure EN67

**Analytical Results**

Sub-Matrix: WATER  
 (Matrix: WATER)

Compound	CAS Number	LOR	Unit	Client sample ID		Client sampling date / time		Result	
				P1	U1	D1	Result	Result	Result
				CA1907181-001	CA1907181-002	CA1907181-003	Result	Result	Result
EA01SCA: Total Dissolved Solids									
<b>Total Dissolved Solids</b>		10	mg/L	198	202	209			
EA02SCA: Suspended Solids									
<b>Suspended Solids (SS)</b>		2	mg/L	2	<2	2			





**CERTIFICATE OF ANALYSIS**

<b>Work Order</b>	<b>CA1907656</b>	<b>Page</b>	<b>1 of 2</b>
<b>Client</b>	Canberra Aqua Park Pty Ltd	<b>Laboratory</b>	ALS Water Resources Group
<b>Contact</b>	Greg Chalmers	<b>Contact</b>	Client Services
<b>Address</b>	59 Waverly Park Drive Mulgrave VIC 3170	<b>Address</b>	16B Lithgow Street Fyshwick ACT Australia 2609
<b>Telephone</b>	----	<b>Telephone</b>	+61 2 6202 5404
<b>Project</b>	----	<b>Date Samples Received</b>	25-Nov-2019 11:00
<b>Order number</b>	191111	<b>Date Analysis Commenced</b>	28-Nov-2019
<b>C-O-C number</b>	----	<b>Issue Date</b>	09-Dec-2019 14:42
<b>Sampler</b>	Jamie Barney		
<b>Site</b>	----		
<b>Quote number</b>	----		
<b>No. of samples received</b>	1		
<b>No. of samples analysed</b>	1		



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<b>Signatories</b>	<b>Position</b>	<b>Accreditation Category</b>
Clare Kennedy	Analyst	Inorganics, Fyshwick, ACT

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Page : 2 of 2  
 Work Order : CA1907656  
 Client : Canberra Aqua Park Pty Ltd  
 Project : ----



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 e = ALS is not NATA accredited for these tests.  
 ~ = Indicates an estimated value.

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**Analytical Results**

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID		LBG515	---	---	---	---
				Black Mountain Beach (Suspended Solids)				
		Client sampling date / time		25-Nov-2019 09:12	---	---	---	---
Compound	CAS Number	LOR	Unit	CA1907656-001	-----	-----	-----	-----
				Result	---	---	---	---
<b>EA025CA: Suspended Solids</b>								
Suspended Solids (SS)	---	2	mg/L	4	---	---	---	---



**CERTIFICATE OF ANALYSIS**

<b>Work Order</b>	<b>CA1907864</b>	<b>Page</b>	<b>1 of 2</b>
<b>Client</b>	Canberra Aqua Park Pty Ltd	<b>Laboratory</b>	ALS Water Resources Group
<b>Contact</b>	Greg Chalmers	<b>Contact</b>	Client Services
<b>Address</b>	59 Waverly Park Drive Mulgrave VIC 3170	<b>Address</b>	16B Lithgow Street Fyshwick ACT Australia 2609
<b>Telephone</b>	----	<b>Telephone</b>	+61 2 6202 5404
<b>Project</b>	----	<b>Date Samples Received</b>	02-Dec-2019 09:30
<b>Order number</b>	191111	<b>Date Analysis Commenced</b>	05-Dec-2019
<b>C-O-C number</b>	----	<b>Issue Date</b>	16-Dec-2019 12:14
<b>Sampler</b>	Thomas Byron		
<b>Site</b>	----		
<b>Quote number</b>	----		
<b>No. of samples received</b>	1		
<b>No. of samples analysed</b>	1		



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<b>Signatories</b>	<b>Position</b>	<b>Accreditation Category</b>
Clare Kennedy	Analyst	Inorganics, Fyshwick, ACT

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Page : 2 of 2  
 Work Order : CA1907864  
 Client : Canberra Aqua Park Pty Ltd  
 Project : ----



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Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 ^ = This result is computed from individual analyte detections at or above the level of reporting  
 e = ALS is not NATA accredited for these tests.  
 ~ = Indicates an estimated value.

• For samples collected by ALS WRG, sampling was carried out in accordance with Procedure EN67

**Analytical Results**

Sub-Matrix: WATER  
 (Matrix: WATER)

		Client sample ID		Client sampling date / time					
Compound	CAS Number	LOR	Unit	CA1907864-001	02-Dec-2019 08:43	Result			
<b>EA025CA: Suspended Solids</b>									
<b>Suspended Solids (SS)</b>		---	2	mg/L	6				



**CERTIFICATE OF ANALYSIS**

<b>Work Order</b>	<b>CA1908054</b>	<b>Page</b>	<b>: 1 of 2</b>
<b>Client</b>	Canberra Aqua Park Pty Ltd	<b>Laboratory</b>	: ALS Water Resources Group
<b>Contact</b>	Greg Chalmers	<b>Contact</b>	: Client Services
<b>Address</b>	59 Waverly Park Drive Mulgrave VIC 3170	<b>Address</b>	: 16B Lithgow Street Fyshwick ACT Australia 2609
<b>Telephone</b>	: ---	<b>Telephone</b>	: +61 2 6202 5404
<b>Project</b>	: ---	<b>Date Samples Received</b>	: 09-Dec-2019 11:00
<b>Order number</b>	: 191111	<b>Date Analysis Commenced</b>	: 16-Dec-2019
<b>C-O-C number</b>	: ---	<b>Issue Date</b>	: 24-Dec-2019 11:30
<b>Sampler</b>	: Jessica Thomson, Simon House		
<b>Site</b>	: ---		
<b>Quote number</b>	: ---		
<b>No. of samples received</b>	: 1		
<b>No. of samples analysed</b>	: 1		



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<b>Signatories</b>	<b>Position</b>	<b>Accreditation Category</b>
Clare Kennedy	Analyst	Inorganics, Fyshwick, ACT

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Page : 2 of 2  
 Work Order : CA1908054  
 Client : Canberra Aqua Park Pty Ltd  
 Project : ---



**General Comments**

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 ~ = Indicates an estimated value.

• For samples collected by ALS WRG, sampling was carried out in accordance with Procedure EN67

**Analytical Results**

Sub-Matrix: WATER  
 (Matrix: WATER)

				Client sample ID	LBG515				
					Black Mountain Beach (Suspended Solids)				
				Client sampling date / time	09-Dec-2019 09:10				
Compound	CAS Number	LOR	Unit	CA1908054-001					
				Result					
<b>EA025CA: Suspended Solids</b>									
<b>Suspended Solids (SS)</b>		---	2 mg/L	24					



**CERTIFICATE OF ANALYSIS**

<b>Work Order</b>	<b>CA1908276</b>	<b>Page</b>	<b>1 of 2</b>
<b>Client</b>	Canberra Aqua Park Pty Ltd	<b>Laboratory</b>	ALS Water Resources Group
<b>Contact</b>	Greg Chalmers	<b>Contact</b>	Client Services
<b>Address</b>	59 Waverly Park Drive Mulgrave VIC 3170	<b>Address</b>	16B Lithgow Street Fyshwick ACT Australia 2609
<b>Telephone</b>	----	<b>Telephone</b>	+61 2 6202 5404
<b>Project</b>	----	<b>Date Samples Received</b>	16-Dec-2019 07:21
<b>Order number</b>	191111	<b>Date Analysis Commenced</b>	23-Dec-2019
<b>C-O-C number</b>	----	<b>Issue Date</b>	08-Jan-2020 12:16
<b>Sampler</b>	Jamie Barney		
<b>Site</b>	----		
<b>Quote number</b>	----		
<b>No. of samples received</b>	1		
<b>No. of samples analysed</b>	1		



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Clare Kennedy	Analyst	Inorganics, Fyshwick, ACT

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Page : 2 of 2  
 Work Order : CA1908276  
 Client : Canberra Aqua Park Pty Ltd  
 Project : ----



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**Analytical Results**

Sub-Matrix: WATER  
 (Matrix: WATER)

				Client sample ID				
				LBG515	---	---	---	---
				<b>Black Mountain Beach (Suspended Solids)</b>				
				16-Dec-2019 09:07	---	---	---	---
Compound	CAS Number	LOR	Unit	CA1908276-001	Result			
<b>EA025CA: Suspended Solids</b>								
<b>Suspended Solids (SS)</b>		---	2 mg/L	<2	---	---	---	---



**CERTIFICATE OF ANALYSIS**

<b>Work Order</b>	<b>CA1908484</b>	<b>Page</b>	<b>: 1 of 2</b>
<b>Client</b>	Canberra Aqua Park Pty Ltd	<b>Laboratory</b>	: ALS Water Resources Group
<b>Contact</b>	Greg Chalmers	<b>Contact</b>	: Client Services
<b>Address</b>	59 Waverly Park Drive Mulgrave VIC 3170	<b>Address</b>	: 16B Lithgow Street Fyshwick ACT Australia 2609
<b>Telephone</b>	: ---	<b>Telephone</b>	: +61 2 6202 5404
<b>Project</b>	: ---	<b>Date Samples Received</b>	: 23-Dec-2019 12:00
<b>Order number</b>	: 191111	<b>Date Analysis Commenced</b>	: 02-Jan-2020
<b>C-O-C number</b>	: ---	<b>Issue Date</b>	: 08-Jan-2020 08:44
<b>Sampler</b>	: Jessica Thomson		
<b>Site</b>	: ---		
<b>Quote number</b>	: ---		
<b>No. of samples received</b>	: 1		
<b>No. of samples analysed</b>	: 1		



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<b>Signatories</b>	<b>Position</b>	<b>Accreditation Category</b>
Geetha Ramasundara	Chemistry Teamleader	Inorganics, Fyshwick, ACT

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Page : 2 of 2  
 Work Order : CA1908484  
 Client : Canberra Aqua Park Pty Ltd  
 Project : ---



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**Analytical Results**

Sub-Matrix: WATER  
 (Matrix: WATER)

				Client sample ID	LBG515				
					Black Mountain Beach (Suspended Solids)				
				Client sampling date / time	23-Dec-2019 08:55				
Compound	CAS Number	LOR	Unit	CA1908484-001					
				Result					
<b>EA025CA: Suspended Solids</b>									
<b>Suspended Solids (SS)</b>		---	2 mg/L	7					





**CERTIFICATE OF ANALYSIS**

<b>Work Order</b>	<b>CA1908558</b>	<b>Page</b>	<b>: 1 of 2</b>
<b>Client</b>	Canberra Aqua Park Pty Ltd	<b>Laboratory</b>	: ALS Water Resources Group
<b>Contact</b>	Greg Chalmers	<b>Contact</b>	: Client Services
<b>Address</b>	59 Waverly Park Drive Mulgrave VIC 3170	<b>Address</b>	: 16B Lithgow Street Fyshwick ACT Australia 2609
<b>Telephone</b>	: ---	<b>Telephone</b>	: +61 2 6202 5404
<b>Project</b>	: ---	<b>Date Samples Received</b>	: 30-Dec-2019 10:00
<b>Order number</b>	: 191111	<b>Date Analysis Commenced</b>	: 06-Jan-2020
<b>C-O-C number</b>	: ---	<b>Issue Date</b>	: 08-Jan-2020 16:12
<b>Sampler</b>	: Jamie Barney		
<b>Site</b>	: ---		
<b>Quote number</b>	: ---		
<b>No. of samples received</b>	: 1		
<b>No. of samples analysed</b>	: 1		



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<b>Signatories</b>	<b>Position</b>	<b>Accreditation Category</b>
Geetha Ramasundara	Chemistry Teamleader	Inorganics, Fyshwick, ACT

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Page : 2 of 2  
 Work Order : CA1908558  
 Client : Canberra Aqua Park Pty Ltd  
 Project : ---



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 ^ = This result is computed from individual analyte detections at or above the level of reporting  
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 ~ = Indicates an estimated value.

• For samples collected by ALS WRG, sampling was carried out in accordance with Procedure EN67

**Analytical Results**

Sub-Matrix: WATER  
 (Matrix: WATER)

				Client sample ID	LBG515				
					Black Mountain Beach (Suspended Solids)				
				Client sampling date / time	30-Dec-2019 09:00				
Compound	CAS Number	LOR	Unit	CA1908558-001					
					Result				
<b>EA025CA: Suspended Solids</b>									
<b>Suspended Solids (SS)</b>		---	2 mg/L	6					



**CERTIFICATE OF ANALYSIS**

<b>Work Order</b>	<b>CA2000122</b>	<b>Page</b>	: 1 of 2
<b>Client</b>	Canberra Aqua Park Pty Ltd	<b>Laboratory</b>	: ALS Water Resources Group
<b>Contact</b>	Greg Chalmers	<b>Contact</b>	: Client Services
<b>Address</b>	59 Waverly Park Drive Mulgrave VIC 3170	<b>Address</b>	: 16B Lithgow Street Fyshwick ACT Australia 2609
<b>Telephone</b>	----	<b>Telephone</b>	: +61 2 6202 5404
<b>Project</b>	Water Samples	<b>Date Samples Received</b>	: 06-Jan-2020 08:30
<b>Order number</b>	CAPT2	<b>Date Analysis Commenced</b>	: 09-Jan-2020
<b>C-O-C number</b>	----	<b>Issue Date</b>	: 13-Jan-2020 13:08
<b>Sampler</b>	----		
<b>Site</b>	----		
<b>Quote number</b>	----		
<b>No. of samples received</b>	: 3		
<b>No. of samples analysed</b>	: 3		



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Geetha Ramasundara	Chemistry Teamleader	Inorganics, Fyshwick, ACT

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<b>Page</b>	: 2 of 2
<b>Work Order</b>	: CA2000122
<b>Client</b>	: Canberra Aqua Park Pty Ltd
<b>Project</b>	: Water Samples



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**Analytical Results**

Sub-Matrix: WATER (Matrix: WATER)	CAS Number	LOR	Unit	Client sample ID			Result	Result	Result
				U - Mid	Mid - Mid	DS - Mid			
				Mid Point Upstream	Middle of Park	Mid Point Downstream			
				04-Jan-2020 12:15	04-Jan-2020 12:16	04-Jan-2020 12:17	----	----	----
				CA2000122-001	CA2000122-002	CA2000122-003	-----	-----	-----
				Result	Result	Result	----	----	----
<b>EA025CA: Suspended Solids</b>									
<b>Suspended Solids (SS)</b>	----	2	mg/L	5	14	5	---	---	---



**CERTIFICATE OF ANALYSIS**

<b>Work Order</b>	<b>CA2000117</b>	<b>Page</b>	1 of 2
<b>Client</b>	Canberra Aqua Park Pty Ltd	<b>Laboratory</b>	ALS Water Resources Group
<b>Contact</b>	Greg Chalmers	<b>Contact</b>	Client Services
<b>Address</b>	59 Waverly Park Drive Mulgrave VIC 3170	<b>Address</b>	16B Lithgow Street Fyshwick ACT Australia 2609
<b>Telephone</b>	----	<b>Telephone</b>	+61 2 6202 5404
<b>Project</b>	----	<b>Date Samples Received</b>	06-Jan-2020 12:00
<b>Order number</b>	191111	<b>Date Analysis Commenced</b>	13-Jan-2020
<b>C-O-C number</b>	----	<b>Issue Date</b>	16-Jan-2020 12:41
<b>Sampler</b>	Jessica Thomson		
<b>Site</b>	----		
<b>Quote number</b>	----		
<b>No. of samples received</b>	1		
<b>No. of samples analysed</b>	1		



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<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Geetha Ramasundara	Chemistry Teamleader	Inorganics, Fyshwick, ACT

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Page : 2 of 2  
 Work Order : CA2000117  
 Client : Canberra Aqua Park Pty Ltd  
 Project : ----



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**Analytical Results**

Sub-Matrix: WATER  
 (Matrix: WATER)

				Client sample ID				
				LBG515	---	---	---	---
				<b>Black Mountain Beach (Suspended Solids)</b>				
				06-Jan-2020 08:45	---	---	---	---
Compound	CAS Number	LOR	Unit	CA2000117-001	Result	---	---	---
<b>EA025CA: Suspended Solids</b>								
<b>Suspended Solids (SS)</b>		---	2 mg/L	10	---	---	---	---



**CERTIFICATE OF ANALYSIS**

<b>Work Order</b>	<b>CA2000273</b>	<b>Page</b>	1 of 2
<b>Client</b>	Canberra Aqua Park Pty Ltd	<b>Laboratory</b>	ALS Water Resources Group
<b>Contact</b>	Greg Chalmers	<b>Contact</b>	Client Services
<b>Address</b>	59 Waverly Park Drive Mulgrave VIC 3170	<b>Address</b>	16B Lithgow Street Fyshwick ACT Australia 2609
<b>Telephone</b>	----	<b>Telephone</b>	+61 2 6202 5404
<b>Project</b>	----	<b>Date Samples Received</b>	13-Jan-2020 11:00
<b>Order number</b>	191111	<b>Date Analysis Commenced</b>	15-Jan-2020
<b>C-O-C number</b>	----	<b>Issue Date</b>	21-Jan-2020 10:52
<b>Sampler</b>	Jamie Barney		
<b>Site</b>	----		
<b>Quote number</b>	----		
<b>No. of samples received</b>	1		
<b>No. of samples analysed</b>	1		



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Geetha Ramasundara	Chemistry Teamleader	Inorganics, Fyshwick, ACT

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Page : 2 of 2  
 Work Order : CA2000273  
 Client : Canberra Aqua Park Pty Ltd  
 Project : ----



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**Analytical Results**

Sub-Matrix: WATER  
 (Matrix: WATER)

				Client sample ID				
				LBG515	---	---	---	---
				<b>Black Mountain Beach (Suspended Solids)</b>				
				Client sampling date / time	13-Jan-2020 09:42	---	---	---
Compound	CAS Number	LOR	Unit	CA2000273-001	Result	---	---	---
<b>EA025CA: Suspended Solids</b>								
<b>Suspended Solids (SS)</b>		---	2 mg/L	7	---	---	---	---

## Appendix B

# Historical Data provided by NCA

Table B5-1: Historical SS and Turbidity Data for Site LBG504

Code	Place	Date	Suspended Solids (SS), mg/L	Turbidity, NTU
LBG504_B	West Lake	24/02/2016	9	8
LBG504_B	West Lake	19/04/2016	5	3.7
LBG504_B	West Lake	14/10/2016	19	29.2
LBG504_B	West Lake	7/12/2016	32	59.6
LBG504_B	West Lake	10/03/2017	13	18.1
LBG504_B	West Lake	4/04/2017	7	11.9
LBG504_B	West Lake	28/10/2019	12	7.2
LBG504_B	West Lake	30/12/2019	11	6.9
LBG504_S	West Lake	24/02/2016		2.3
LBG504_S	West Lake	19/04/2016		3.2
LBG504_S	West Lake	14/10/2016		18.5
LBG504_S	West Lake	7/12/2016		18.1
LBG504_S	West Lake	10/03/2017		14.2
LBG504_S	West Lake	4/04/2017		6.9
LBG504_S	West Lake	27/10/2017		2.4
LBG504_S	West Lake	28/12/2017		1.7
LBG504_S	West Lake	5/02/2018		4
LBG504_S	West Lake	3/04/2018		4
LBG504_S	West Lake	22/10/2018		1.6
LBG504_S	West Lake	18/12/2018		2.8
LBG504_S	West Lake	28/02/2019		2.6
LBG504_S	West Lake	19/07/2019		3.4
LBG504_S	West Lake	28/10/2019		2.4
LBG504_S	West Lake	30/12/2019		1.4
LBG504_T	West Lake	24/02/2016	4	
LBG504_T	West Lake	19/04/2016	5	
LBG504_T	West Lake	14/10/2016	10	
LBG504_T	West Lake	7/12/2016	9	
LBG504_T	West Lake	10/03/2017	14	
LBG504_T	West Lake	4/04/2017	11	
LBG504_T	West Lake	27/10/2017	5	
LBG504_T	West Lake	28/12/2017	4	
LBG504_T	West Lake	5/02/2018	8	
LBG504_T	West Lake	3/04/2018	5	
LBG504_T	West Lake	22/10/2018	2	
LBG504_T	West Lake	18/12/2018	3	

Code	Place	Date	Suspended Solids (SS), mg/L	Turbidity, NTU
LBG504_T	West Lake	28/02/2019	8	
LBG504_T	West Lake	19/07/2019	6	
LBG504_T	West Lake	28/10/2019	4	
LBG504_T	West Lake	30/12/2019	4	
LBG504	LBG504_S	9/10/2015		11.4
LBG504	LBG504_B	9/10/2015	6	16
LBG504	LBG504_T	9/10/2015	5	
LBG504	LBG504_S	19/11/2015	8	10.3
LBG504	LBG504_B	19/11/2015	20	27.9
LBG504	LBG504_S	27/11/2015	9	14.2
LBG504	LBG504_B	27/11/2015	16	18.3
LBG504	LBG504_S	3/12/2015	8	12.8
LBG504	LBG504_B	3/12/2015	23	25.4
LBG504	LBG504_S	10/12/2015	6	10.3
LBG504	LBG504_B	10/12/2015	27	29.9
LBG504	LBG504_S	16/12/2015	6	9.7
LBG504	LBG504_B	16/12/2015	23	31.1
LBG504	LBG504_S	18/02/2016	4	3.9
LBG504	LBG504_B	18/02/2016	10	9.4
LBG504	LBG504_S	24/02/2016	3	2.2
LBG504	LBG504_B	24/02/2016	9	8
LBG504	LBG504_S	3/03/2016	4	3.3
LBG504	LBG504_B	3/03/2016	13	10.9
LBG504	LBG504_S	9/03/2016	4	2.6
LBG504	LBG504_B	9/03/2016	15	14.5
LBG504	LBG504_S	16/03/2016	5	4.4
LBG504	LBG504_B	16/03/2016	13	9.3
LBG504	LBG504_S	18/11/2019	2	2.2
LBG504	LBG504_B	18/11/2019	6	5.9
LBG504	LBG504_S	28/11/2019	2	1.7
LBG504	LBG504_B	28/11/2019	19	13.6
LBG504	LBG504_S	13/12/2019	3	2.1
LBG504	LBG504_B	13/12/2019	28	6.8

Additional information outlined below was provided by NCA via email on 17 January 2020.

Table B5-2: Historical SS and Turbidity Data for Site LBG515 2012-2015

Code	Place	Date	Suspended Solids (SS), mg/L	Turbidity, NTU
LBG515	Black Mt Bch (9) - LBG	9/10/2012	7	8.6

Code	Place	Date	Suspended Solids (SS), mg/L	Turbidity, NTU
LBG515	Black Mt Bch (9) - LBG	15/10/2012	8	12
LBG515	Black Mt Bch (9) - LBG	22/10/2012	7	15
LBG515	Black Mt Bch (9) - LBG	29/10/2012	9	17
LBG515	Black Mt Bch (9) - LBG	5/11/2012	7	15
LBG515	Black Mt Bch (9) - LBG	12/11/2012	11	21
LBG515	Black Mt Bch (9) - LBG	16/11/2012	12	22
LBG515	Black Mt Bch (9) - LBG	26/11/2012	11	23
LBG515	Black Mt Bch (9) - LBG	3/12/2012	9	22
LBG515	Black Mt Bch (9) - LBG	10/12/2012	9	22
LBG515	Black Mt Bch (9) - LBG	17/12/2012	14	24
LBG515	Black Mt Bch (9) - LBG	24/12/2012	9	21
LBG515	Black Mt Bch (9) - LBG	31/12/2012	6	17
LBG515	Black Mt Bch (9) - LBG	7/01/2013	5	17
LBG515	Black Mt Bch (9) - LBG	14/01/2013	12	19
LBG515	Black Mt Bch (9) - LBG	17/01/2013	14	16
LBG515	Black Mt Bch (9) - LBG	29/01/2013	9	8.4
LBG515	Black Mt Bch (9) - LBG	4/02/2013	8	8.7
LBG515	Black Mt Bch (9) - LBG	11/02/2013	6	7.2
LBG515	Black Mt Bch (9) - LBG	18/02/2013	7	6.4
LBG515	Black Mt Bch (9) - LBG	25/02/2013	5	6.2
LBG515	Black Mt Bch (9) - LBG	4/03/2013	8	9.9
LBG515	Black Mt Bch (9) - LBG	12/03/2013	6	3.4
LBG515	Black Mt Bch (9) - LBG	18/03/2013	4	4.6
LBG515	Black Mt Bch (9) - LBG	25/03/2013	9	7.5
LBG515	Black Mt Bch (9) - LBG	2/04/2013	6	5.2
LBG515	Black Mt Bch (9) - LBG	8/04/2013	5	2.7
LBG515	Black Mt Bch (9) - LBG	8/10/2013	14	23
LBG515	Black Mt Bch (9) - LBG	14/10/2013	18	22
LBG515	Black Mt Bch (9) - LBG	21/10/2013	13	19
LBG515	Black Mt Bch (9) - LBG	28/10/2013	9	20
LBG515	Black Mt Bch (9) - LBG	4/11/2013	14	22
LBG515	Black Mt Bch (9) - LBG	11/11/2013	6	23
LBG515	Black Mt Bch (9) - LBG	18/11/2013	7	25
LBG515	Black Mt Bch (9) - LBG	25/11/2013	19	31
LBG515	Black Mt Bch (9) - LBG	2/12/2013	8	23
LBG515	Black Mt Bch (9) - LBG	9/12/2013	9	28
LBG515	Black Mt Bch (9) - LBG	16/12/2013	10	28
LBG515	Black Mt Bch (9) - LBG	20/12/2013	5	19
LBG515	Black Mt Bch (9) - LBG	27/12/2013	6	20



Code	Place	Date	Suspended Solids (SS), mg/L	Turbidity, NTU
LBG515	Black Mt Bch (9) - LBG	6/01/2014	7	22
LBG515	Black Mt Bch (9) - LBG	13/01/2014	58	45
LBG515	Black Mt Bch (9) - LBG	20/01/2014	9	18
LBG515	Black Mt Bch (9) - LBG	28/01/2014	9	16
LBG515	Black Mt Bch (9) - LBG	3/02/2014	5	13
LBG515	Black Mt Bch (9) - LBG	10/02/2014	6	11
LBG515	Black Mt Bch (9) - LBG	17/02/2014	4	11
LBG515	Black Mt Bch (9) - LBG	24/02/2014	11	12
LBG515	Black Mt Bch (9) - LBG	3/03/2014	6	9.8
LBG515	Black Mt Bch (9) - LBG	11/03/2014	3	7.5
LBG515	Black Mt Bch (9) - LBG	17/03/2014	6	12
LBG515	Black Mt Bch (9) - LBG	24/03/2014	6	8.7
LBG515	Black Mt Bch (9) - LBG	31/03/2014	4	7.2
LBG515	Black Mt Bch (9) - LBG	7/04/2014	6	7.6
LBG515	Black Mt Bch (9) - LBG	7/10/2014	9	9.1
LBG515	Black Mt Bch (9) - LBG	13/10/2014	8	11
LBG515	Black Mt Bch (9) - LBG	20/10/2014	10	13
LBG515	Black Mt Bch (9) - LBG	27/10/2014	10	12
LBG515	Black Mt Bch (9) - LBG	3/11/2014	13	17
LBG515	Black Mt Bch (9) - LBG	10/11/2014	10	14
LBG515	Black Mt Bch (9) - LBG	17/11/2014	7	11
LBG515	Black Mt Bch (9) - LBG	24/11/2014	6	11
LBG515	Black Mt Bch (9) - LBG	1/12/2014	6	8.4
LBG515	Black Mt Bch (9) - LBG	8/12/2014	4	8.1
LBG515	Black Mt Bch (9) - LBG	15/12/2014	11	11
LBG515	Black Mt Bch (9) - LBG	19/12/2014	6	9.2
LBG515	Black Mt Bch (9) - LBG	29/12/2014	7	5.2
LBG515	Black Mt Bch (9) - LBG	5/01/2015	7	6.8
LBG515	Black Mt Bch (9) - LBG	12/01/2015	5	11
LBG515	Black Mt Bch (9) - LBG	19/01/2015	8	5
LBG515	Black Mt Bch (9) - LBG	27/01/2015	8	5.8
LBG515	Black Mt Bch (9) - LBG	2/02/2015	4	4.2
LBG515	Black Mt Bch (9) - LBG	2/02/2015	8	6.2
LBG515	Black Mt Bch (9) - LBG	9/02/2015	5	5.8
LBG515	Black Mt Bch (9) - LBG	16/02/2015	3	4.4
LBG515	Black Mt Bch (9) - LBG	23/02/2015	4	4.9
LBG515	Black Mt Bch (9) - LBG	10/03/2015	7	4.6
LBG515	Black Mt Bch (9) - LBG	16/03/2015	5	5.4
LBG515	Black Mt Bch (9) - LBG	23/03/2015	6	4.4

Code	Place	Date	Suspended Solids (SS), mg/L	Turbidity, NTU
LBG515	Black Mt Bch (9) - LBG	30/03/2015	7	6
LBG515	Black Mt Bch (9) - LBG	7/04/2015	6	4.9

The more recent information outlined below was provided by NCA via email on 22 January 2020.

Table B5-3: Historical SS and Turbidity Data for Site LBG515 2015-2020

Code	Place	Date	Suspended Solids (SS), mg/L	Turbidity, NTU
LBG515	Black Mt Bch - LBG	6/10/2015	7	10.8
LBG515	Black Mt Bch - LBG	12/10/2015	6	10.0
LBG515	Black Mt Bch - LBG	19/10/2015	7	12.0
LBG515	Black Mt Bch - LBG	26/10/2015	8	10.8
LBG515	Black Mt Bch - LBG	2/11/2015	6	8.7
LBG515	Black Mt Bch - LBG	9/11/2015	5	9.8
LBG515	Black Mt Bch - LBG	16/11/2015	5	10.6
LBG515	Black Mt Bch - LBG	23/11/2015	5	8.5
LBG515	Black Mt Bch - LBG	30/11/2015	4	9.3
LBG515	Black Mt Bch - LBG	7/12/2015	7	9.2
LBG515	Black Mt Bch - LBG	14/12/2015	9	13.0
LBG515	Black Mt Bch - LBG	21/12/2015	10	4.4
LBG515	Black Mt Bch - LBG	29/12/2015	7	5.6
LBG515	Black Mt Bch - LBG	4/01/2016	5	2.8
LBG515	Black Mt Bch - LBG	11/01/2016	4	3.1
LBG515	Black Mt Bch - LBG	18/01/2016	5	4.1
LBG515	Black Mt Bch - LBG	25/01/2016	6	2.4
LBG515	Black Mt Bch - LBG	1/02/2016	6	3.6
LBG515	Black Mt Bch - LBG	8/02/2016	4	5.1
LBG515	Black Mt Bch - LBG	15/02/2016	5	2.8
LBG515	Black Mt Bch - LBG	22/02/2016	5	3.4
LBG515	Black Mt Bch - LBG	29/02/2016	4	2.2
LBG515	Black Mt Bch - LBG	7/03/2016	3	2.6
LBG515	Black Mt Bch - LBG	15/03/2016	6	2.4
LBG515	Black Mt Bch - LBG	21/03/2016	9	4.3
LBG515	Black Mt Bch - LBG	29/03/2016	4	3.6
LBG515	Black Mt Bch - LBG	4/04/2016	4	4.1
LBG515	Black Mt Bch - LBG	11/04/2016	5	2.5
LBG515	Black Mt Bch - LBG	10/10/2016	6	14.6
LBG515	Black Mt Bch - LBG	14/10/2016	5	15.5

Code	Place	Date	Suspended Solids (SS), mg/L	Turbidity, NTU
LBG515	Black Mt Bch - LBG	24/10/2016	5	14.3
LBG515	Black Mt Bch - LBG	31/10/2016	6	13.4
LBG515	Black Mt Bch - LBG	7/11/2016	17	21.2
LBG515	Black Mt Bch - LBG	14/11/2016	15	22.2
LBG515	Black Mt Bch - LBG	21/11/2016	11	19.1
LBG515	Black Mt Bch - LBG	28/11/2016	8	22.1
LBG515	Black Mt Bch - LBG	5/12/2016	7	17.2
LBG515	Black Mt Bch - LBG	12/12/2016	11	21.7
LBG515	Black Mt Bch - LBG	19/12/2016	9	24.6
LBG515	Black Mt Bch - LBG	28/12/2016	7	17.1
LBG515	Black Mt Bch - LBG	3/01/2017	8	16.6
LBG515	Black Mt Bch - LBG	9/01/2017	7	11.6
LBG515	Black Mt Bch - LBG	16/01/2017	8	14.5
LBG515	Black Mt Bch - LBG	23/01/2017	10	11.9
LBG515	Black Mt Bch - LBG	30/01/2017	11	9.6
LBG515	Black Mt Bch - LBG	6/02/2017	7	7.5
LBG515	Black Mt Bch - LBG	13/02/2017	23	10.0
LBG515	Black Mt Bch - LBG	20/02/2017	6	10.5
LBG515	Black Mt Bch - LBG	27/02/2017	23	12.0
LBG515	Black Mt Bch - LBG	6/03/2017	11	9.0
LBG515	Black Mt Bch - LBG	14/03/2017	5	10.5
LBG515	Black Mt Bch - LBG	20/03/2017	4	9.5
LBG515	Black Mt Bch - LBG	27/03/2017	7	8.8
LBG515	Black Mt Bch - LBG	3/04/2017	9	9.0
LBG515	Black Mt Bch - LBG	10/04/2017	8	8.0
LBG515	Black Mt Bch - LBG	9/10/2017	3	2.7
LBG515	Black Mt Bch - LBG	16/10/2017	4	2.3
LBG515	Black Mt Bch - LBG	23/10/2017	9	3.9
LBG515	Black Mt Bch - LBG	30/10/2017	4	3.2
LBG515	Black Mt Bch - LBG	6/11/2017	6	3.6
LBG515	Black Mt Bch - LBG	13/11/2017	9	2.7
LBG515	Black Mt Bch - LBG	20/11/2017	6	3.1
LBG515	Black Mt Bch - LBG	27/11/2017	2	1.9
LBG515	Black Mt Bch - LBG	4/12/2017	4	3.3
LBG515	Black Mt Bch - LBG	11/12/2017	7	4.7
LBG515	Black Mt Bch - LBG	18/12/2017	4	2.5
LBG515	Black Mt Bch - LBG	27/12/2017	13	3.9

Code	Place	Date	Suspended Solids (SS), mg/L	Turbidity, NTU
LBG515	Black Mt Bch - LBG	2/01/2018	10	2.7
LBG515	Black Mt Bch - LBG	8/01/2018	4	2.7
LBG515	Black Mt Bch - LBG	15/01/2018	4	3.7
LBG515	Black Mt Bch - LBG	22/01/2018	9	4.3
LBG515	Black Mt Bch - LBG	29/01/2018	8	2.2
LBG515	Black Mt Bch - LBG	5/02/2018	9	4.7
LBG515	Black Mt Bch - LBG	12/02/2018	10	5.1
LBG515	Black Mt Bch - LBG	19/02/2018	14	6.4
LBG515	Black Mt Bch - LBG	26/02/2018	9	4.2
LBG515	Black Mt Bch - LBG	5/03/2018	16	5.1
LBG515	Black Mt Bch - LBG	13/03/2018	7	4.8
LBG515	Black Mt Bch - LBG	19/03/2018	22	5.2
LBG515	Black Mt Bch - LBG	26/03/2018	9	4.0
LBG515	Black Mt Bch - LBG	3/04/2018	9	3.8
LBG515	Black Mt Bch - LBG	9/04/2018	6	3.2
LBG515	Black Mt Bch - LBG	16/04/2018	4	3.2
LBG515	Black Mt Bch - LBG	8/10/2018	3	2.3
LBG515	Black Mt Bch - LBG	15/10/2018	11	4.7
LBG515	Black Mt Bch - LBG	22/10/2018	64	3.1
LBG515	Black Mt Bch - LBG	29/10/2018	5	3.3
LBG515	Black Mt Bch - LBG	5/11/2018	4	3.3
LBG515	Black Mt Bch - LBG	12/11/2018	4	2.9
LBG515	Black Mt Bch - LBG	19/11/2018	30	2.6
LBG515	Black Mt Bch - LBG	26/11/2018	7	4.3
LBG515	Black Mt Bch - LBG	3/12/2018	16	5.6
LBG515	Black Mt Bch - LBG	10/12/2018	20	1.6
LBG515	Black Mt Bch - LBG	17/12/2018	6	2.6
LBG515	Black Mt Bch - LBG	24/12/2018	4	2.9
LBG515	Black Mt Bch - LBG	31/12/2018	7	2.6
LBG515	Black Mt Bch - LBG	7/01/2019	9	2.6
LBG515	Black Mt Bch - LBG	14/01/2019	17	4.5
LBG515	Black Mt Bch - LBG	21/01/2019	5	2.2
LBG515	Black Mt Bch - LBG	29/01/2019	5	3.1
LBG515	Black Mt Bch - LBG	4/02/2019	9	2.5
LBG515	Black Mt Bch - LBG	11/02/2019	8	3.8
LBG515	Black Mt Bch - LBG	18/02/2019	8	3.8
LBG515	Black Mt Bch - LBG	25/02/2019	9	5.6

Code	Place	Date	Suspended Solids (SS), mg/L	Turbidity, NTU
LBG515	Black Mt Bch - LBG	4/03/2019	8	3.1
LBG515	Black Mt Bch - LBG	12/03/2019	7	2.5
LBG515	Black Mt Bch - LBG	18/03/2019	15	13.9
LBG515	Black Mt Bch - LBG	25/03/2019	7	1.5
LBG515	Black Mt Bch - LBG	1/04/2019	7	3.6
LBG515	Black Mt Bch - LBG	8/04/2019	4	3.0
LBG515	Black Mt Bch - LBG	8/10/2019	3	1.5
LBG515	Black Mt Bch - LBG	14/10/2019	3	0.9
LBG515	Black Mt Bch - LBG	21/10/2019	2	2.0
LBG515	Black Mt Bch - LBG	28/10/2019	9	2.9
LBG515	Black Mt Bch - LBG	4/11/2019	6	2.3
LBG515	Black Mt Bch - LBG	11/11/2019	4	2.8
LBG515	Black Mt Bch - LBG	18/11/2019	10	4.4
LBG515	Black Mt Bch - LBG	25/11/2019	7	1.9
LBG515	Black Mt Bch - LBG	2/12/2019	8	1.7
LBG515	Black Mt Bch - LBG	9/12/2019	52	2.9
LBG515	Black Mt Bch - LBG	16/12/2019	7	1.7
LBG515	Black Mt Bch - LBG	23/12/2019	45	2.4
LBG515	Black Mt Bch - LBG	30/12/2019	10	3.8
LBG515	Black Mt Bch - LBG	6/01/2020	30	4.0
LBG515	Black Mt Bch - LBG	13/01/2020	17	6.0