Adelaide SA 5001

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Tel: 1300 653 366

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**DEW - Department of Environment and Water** 

ATTN: Patrick Betham 24-26 Tikalara street Regency Park SA 5010 AUSTRALIA

15/08/2019

Dear Patrick

Please find attached the Final Analytical Report for

**Customer Service Request:** 143419-2019-CSR-1

143419 Account:

Project: AWQC-137395 DEW - Healthy Coorong Healthy Basin Phase 0 - Non routine

19/20

This report has also been sent to: Frank Mangeruca

AWQC Sample Receipt hours are Monday and Tuesday 8:30am to 8pm and Wednesday, Thursday and Friday 8:30am to 4:30pm.

Yours sincerely,

Darren Seebohm **Customer Services Officer** Darren.Seebohm@sawater.com.au

+61 8 7424 2150



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#### **Report Information**

AWQC-137395 **Project Name** 

Customer **DEW** - Department of Environment and Water

CSR\_ID 143419-2019-CSR-1

### **Analytical Results**

**Sampling Point** 315191-EPA - Morella Creek @ guage

**Sampled Date** 10/07/2019 8:20:00AM **Sample Received Date** 11/07/2019 1:35:03PM Sample Analysis Completed 23/07/2019 11:59:03AM

Sample ID 2019-004-2571 Status Endorsed

**Collection Type Customer Collected** 

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		_
Chlorophyll a & b T0380-02(ADEL)			11/07/2019
Chlorophyll a	0.1	11.8 μg/L	
Chlorophyll b	0.1	0.22 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	ADEL)		11/07/2019
Chlorophyll a	0.1	8.00 µg/L	
Phaeophytin a	0.1	6.59 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Ammonia as N T0100-01(ADEL)			22/07/2019
Ammonia as N	0.005	0.402 mg/L	
Chloride T0104-02(ADEL)			15/07/2019
Chloride	4.0	2510 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			12/07/2019
Nitrate + Nitrite as N	0.003	0.017 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			11/07/2019
Nitrogen - Total		1.33 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		12/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.012 mg/L	
Phosphorus - Total T0109-44(ADEL)			17/07/2019
Phosphorus - Total	0.005	0.043 mg/L	
Silica - Reactive T0111-01(ADEL)		•	15/07/2019
Silica - Reactive	0.05	7.28 mg/L	
TKN as N T0112-01(ADEL)			17/07/2019





**Test Start Date** 

18/07/2010

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#### **Analytical Results**

**Organic Chemistry** 

Sampling Point 315191-EPA - Morella Creek @ guage

 Sampled Date
 10/07/2019
 8:20:00AM

 Sample Received Date
 11/07/2019
 1:35:03PM

 Sample Analysis Completed
 23/07/2019
 11:59:03AM

 Sample ID
 2019-004-2571

 Status
 Endorsed

Sample temperature at time of receipt 9.6°C

Collection Type Customer Collected

TKN as N T0112-01(ADEL) 17/07/2019

Result

TKN as Nitrogen 0.05 1.31 mg/L

LOR

Dissolved Organic Carbon T0158-07(Al Dissolved Organic Carbon	<b>DEL)</b>	11.1 mg/L	18/07/2019
Total Organic Carbon T0158-07(ADEL)		···· ····g· <u>-</u>	18/07/2019
Total Organic Carbon	1	11.7 mg/L	
Inorganic Chemistry - Physical	LOR	Result	Test Start Date
Sample temperature at time of receipt	9.6°C		
Alkalinity Carbonate Bicarbonate and	Hydroxide T0101-0	1(ADEL)	12/07/2019
Alkalinity as Calcium Carbonate		353 mg/L	
Bicarbonate		410 mg/L	
Carbonate		10 mg/L	
Hydroxide		0 mg/L	
Conductivity & Total Dissolved Solids	T0016-01(ADEL)		12/07/2019
Conductivity	2	8820 μS/cm	
Total Dissolved Solids (by EC)	1	5100 mg/L	
pH T0010-01(ADEL)			12/07/2019
рН		8.4 pH units	
Temperature at which pH is measured		21.9 °C	
Turbidity T0018-01(ADEL)			15/07/2019
Turbidity	0.1	16 NTU	

Inorganic Chemistry - Waste Water	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.6°C Suspended Solids T0160-01(ADEL)			15/07/2019
Suspended Solids  Volatile Suspended Solids T0160-01(ADEL)  Fixed Solids	1.0	20 mg/L 13 mg/L	15/07/2019



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**Analytical Results** 

Sampling Point 315191-EPA - Morella Creek @ guage

 Sampled Date
 10/07/2019
 8:20:00AM

 Sample Received Date
 11/07/2019
 1:35:03PM

 Sample Analysis Completed
 23/07/2019
 11:59:03AM

 Sample ID
 2019-004-2571

 Status
 Endorsed

Collection Type Customer Collected

Volatile Suspended Solids T0160-01(ADEL)

15/07/2019

Volatile Suspended Solids 1 7 mg/L



Corporate Accreditation
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### **Analytical Results**

 Sampling Point
 31525-EPA - Villa de Yumpa

 Sampled Date
 10/07/2019 11:30:00AM

 Sample Received Date
 11/07/2019 1:35:41PM

 Sample Analysis Completed
 23/07/2019 11:59:13AM

 Sample ID
 2019-004-2573

Status Endorsed

Collection Type Customer Collected

<b>Biology Operations</b>	LOR	Result	<b>Test Start Date</b>
Sample temperature at time of receipt 9.	.6°C		
Chlorophyll a & b T0380-02(ADEL)			11/07/2019
Chlorophyll a	0.1	54.6 μg/L	
Chlorophyll b	0.1	5.20 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products (	
Chlorophyll a 9 Photophytin a T0290 02	(ADEL)	Phaeophytins)	11/07/2019
Chlorophyll a & Phaeophytin a T0380-02  Chlorophyll a	(ADEL) 0.1	40.7	11/0//2013
Phaeophytin a	0.1	46.7 μg/L	
гнаеорнуш а	0.1	15.3 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.6°C		
Ammonia as N T0100-01(ADEL)			22/07/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			15/07/2019
Chloride	4.0	33100 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			12/07/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)		-	11/07/2019
Nitrogen - Total		6.32 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)	•	12/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.004 mg/L	
Phosphorus - Total T0109-44(ADEL)		, and the second	17/07/2019
Phosphorus - Total	0.005	0.204 mg/L	
Silica - Reactive T0111-01(ADEL)			15/07/2019
Silica - Reactive	0.05	1.32 mg/L	
TKN as N T0112-01(ADEL)		•	17/07/2019
TKN as Nitrogen	0.05	6.32 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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18/07/2019

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15/07/2019

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#### **Analytical Results**

**Sampling Point** 31525-EPA - Villa de Yumpa 10/07/2019 11:30:00AM Sampled Date 11/07/2019 1:35:41PM Sample Received Date 23/07/2019 11:59:13AM Sample Analysis Completed

2019-004-2573 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

#### Sample temperature at time of receipt 9.6°C

**Dissolved Organic Carbon T0158-07(ADEL)** Dissolved Organic Carbon 1 17.2 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 23.0 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

### Sample temperature at time of receipt 9.6°C

15/07/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 207 mg/L Bicarbonate 253 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 93400 µS/cm Total Dissolved Solids (by EC) 1 77700 mg/L

pH T0010-01(ADEL)

рΗ 8.1 pH units

Temperature at which pH is measured 22.2 °C

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 20 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt 9.6°C

15/07/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0

52 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 16 mg/L

Volatile Suspended Solids 36 mg/L



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### **Analytical Results**

 Sampling Point
 31518-EPA - 12 South Salt Creek

 Sampled Date
 24/07/2019 7:45:00AM

 Sample Received Date
 25/07/2019 11:51:10AM

 Sample Analysis Completed
 7/08/2019 3:41:22PM

 Sample ID
 2019-004-2560

 Status
 Endorsed

Collection Type Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	0.6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	82.5 μg/L	
Chlorophyll b	0.1	11.6 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products (	
Chlorophyll a & Phaeophytin a T0380-02	(ADFL)	Phaeophytins)	25/07/2019
Chlorophyll a	0.1	66.3 µg/L	
Phaeophytin a	0.1	31.8 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	0.6°C		
Ammonia as N T0100-01(ADEL)			31/07/2019
Ammonia as N	0.005	0.010 mg/L	
Chloride T0104-02(ADEL)			25/07/2019
Chloride	4.0	35800 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			26/07/2019
Nitrate + Nitrite as N	0.003	0.005 mg/L	
Nitrogen - Total TMZ-M06(ADEL)		·	25/07/2019
Nitrogen - Total		5.45 mg/L	
Phosphorus - Filterable Reactive as P To	0108-01(ADFL)	3	26/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.004 mg/L	
Phosphorus - Total T0109-44(ADEL)		g	29/07/2019
Phosphorus - Total	0.005	0.267 mg/L	
Silica - Reactive T0111-01(ADEL)		0.20	25/07/2019
Silica - Reactive	0.05	2.79 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	5.44 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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#### **Analytical Results**

31518-EPA - 12 South Salt Creek **Sampling Point** 

24/07/2019 7:45:00AM Sampled Date 25/07/2019 11:51:10AM Sample Received Date 7/08/2019 3:41:22PM Sample Analysis Completed

2019-004-2560 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature	at time of	f receipt 9.6°C
--------------------	------------	-----------------

29/07/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 20.4 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 27.7 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

### Sample temperature at time of receipt 9.6°C

25/07/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 211 mg/L Bicarbonate 257 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/07/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 102000 µS/cm Total Dissolved Solids (by EC) 1 87500 mg/L

25/07/2019 pH T0010-01(ADEL)

рΗ 8.0 pH units Temperature at which pH is measured 21.9 °C

25/07/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 17 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt 9.6°C

31/07/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0 32 mg/L

Volatile Suspended Solids T0160-01(ADEL)

31/07/2019 Fixed Solids 1 <1 mg/L Volatile Suspended Solids

32 mg/L



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### **Analytical Results**

Sampling Point 31511-EPA - 3.2km South Salt Creek

 Sampled Date
 24/07/2019
 8:00:00AM

 Sample Received Date
 25/07/2019
 11:54:16AM

 Sample Analysis Completed
 7/08/2019
 3:42:22PM

 Sample ID
 2019-004-2562

 Status
 Endorsed

Collection Type Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	90.3 μg/L	
Chlorophyll b	0.1	10.7 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	ADEL)		25/07/2019
Chlorophyll a	0.1	78.0 µg/L	
Phaeophytin a	0.1	24.8 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Ammonia as N T0100-01(ADEL)			31/07/2019
Ammonia as N	0.005	0.005 mg/L	
Chloride T0104-02(ADEL)			25/07/2019
Chloride	4.0	35600 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			26/07/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			25/07/2019
Nitrogen - Total		5.22 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		26/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.005 mg/L	
Phosphorus - Total T0109-44(ADEL)			29/07/2019
Phosphorus - Total	0.005	0.246 mg/L	
Silica - Reactive T0111-01(ADEL)			25/07/2019
Silica - Reactive	0.05	2.84 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	5.22 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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01/08/2019

31/07/2019

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#### **Analytical Results**

31511-EPA - 3.2km South Salt Creek **Sampling Point** 

Endorsed

24/07/2019 8:00:00AM Sampled Date 25/07/2019 11:54:16AM Sample Received Date 7/08/2019 3:42:22PM Sample Analysis Completed 2019-004-2562 Sample ID

**Status Customer Collected Collection Type** 

Sample temperature at time of receipt 9.6°C

01/08/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 21.9 mg/L

**Total Organic Carbon T0158-07(ADEL)** Total Organic Carbon 1 30.8 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

### Sample temperature at time of receipt 9.6°C

25/07/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 209 mg/L Bicarbonate 255 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/07/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 102000 µS/cm Total Dissolved Solids (by EC) 1 87500 mg/L

25/07/2019 pH T0010-01(ADEL)

рΗ 8.0 pH units Temperature at which pH is measured 22.0 °C

25/07/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 16 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt 9.6°C

31/07/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0 32 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

32 mg/L

ACCREDITATION

Volatile Suspended Solids

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### **Analytical Results**

Status

Sampling Point 31517-EPA - 1.8km West Salt Creek

Endorsed

 Sampled Date
 24/07/2019
 8:00:00AM

 Sample Received Date
 25/07/2019
 11:52:06AM

 Sample Analysis Completed
 8/08/2019
 12:00:55PM

 Sample ID
 2019-004-2564

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	90.5 μg/L	
Chlorophyll b	0.1	12.0 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	ADEL)		25/07/2019
Chlorophyll a	0.1	76.5 µg/L	
Phaeophytin a	0.1	28.2 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Ammonia as N T0100-01(ADEL)			31/07/2019
Ammonia as N	0.005	0.011 mg/L	
Chloride T0104-02(ADEL)			25/07/2019
Chloride	4.0	35300 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			26/07/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			25/07/2019
Nitrogen - Total		5.33 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		26/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.007 mg/L	
Phosphorus - Total T0109-44(ADEL)			29/07/2019
Phosphorus - Total	0.005	0.219 mg/L	
Silica - Reactive T0111-01(ADEL)			25/07/2019
Silica - Reactive	0.05	2.84 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	5.33 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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29/07/2019

31/07/2019

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#### **Analytical Results**

31517-EPA - 1.8km West Salt Creek **Sampling Point** 

24/07/2019 8:00:00AM Sampled Date 25/07/2019 11:52:06AM Sample Received Date 8/08/2019 12:00:55PM Sample Analysis Completed 2019-004-2564 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

Sample temperature at tir	me of receipt 9.6°C
---------------------------	---------------------

29/07/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 20.7 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 28.3 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

### Sample temperature at time of receipt 9.6°C

25/07/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 209 mg/L Bicarbonate 255 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/07/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 103000 µS/cm Total Dissolved Solids (by EC) 1 88700 mg/L

25/07/2019 pH T0010-01(ADEL)

рΗ 7.9 pH units

Temperature at which pH is measured 22.4 °C 25/07/2019

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 17 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt 9.6°C

31/07/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0 24 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

24 mg/L



Volatile Suspended Solids

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### **Analytical Results**

Sampling Point 315191-EPA - Morella Creek @ guage

 Sampled Date
 24/07/2019
 8:20:00AM

 Sample Received Date
 25/07/2019
 11:53:21AM

 Sample Analysis Completed
 8/08/2019
 12:41:24PM

 Sample ID
 2019-004-2568

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	26.0 μg/L	
Chlorophyll b	0.1	1.68 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products (	
Chlorophyll a & Phaeophytin a T0380-02(	ADFL)	Phaeophytins)	25/07/2019
Chlorophyll a	0.1	17.5 µg/L	
Phaeophytin a	0.1	15.1 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Ammonia as N T0100-01(ADEL)			31/07/2019
Ammonia as N	0.005	0.029 mg/L	
Chloride T0104-02(ADEL)		•	25/07/2019
Chloride	4.0	2110 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)		Ç	26/07/2019
Nitrate + Nitrite as N	0.003	0.006 mg/L	
Nitrogen - Total TMZ-M06(ADEL)		Ç	25/07/2019
Nitrogen - Total		1.25 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)	Ç	26/07/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)		Ç	29/07/2019
Phosphorus - Total	0.005	0.073 mg/L	
Silica - Reactive T0111-01(ADEL)		Ç	25/07/2019
Silica - Reactive	0.05	9.13 mg/L	
TKN as N T0112-01(ADEL)		•	29/07/2019
TKN as Nitrogen	0.05	1.24 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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01/08/2019

**Test Start Date** 

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#### **Analytical Results**

315191-EPA - Morella Creek @ guage **Sampling Point** 

24/07/2019 8:20:00AM Sampled Date 25/07/2019 11:53:21AM Sample Received Date 8/08/2019 12:41:24PM Sample Analysis Completed 2019-004-2568 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

time of receipt 9.6°C

01/08/2019 **Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 10.8 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 12.2 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

# Sample temperature at time of receipt 9.6°C

25/07/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 348 mg/L Bicarbonate 403 mg/L Carbonate 11 mg/L Hydroxide 0 mg/L

25/07/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 7870 µS/cm Total Dissolved Solids (by EC) 1 4530 mg/L

25/07/2019 pH T0010-01(ADEL)

рΗ 8.5 pH units Temperature at which pH is measured 21.9 °C

LOR

25/07/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 21 NTU

Result

Sample temperature at time of receipt 9.6°C

**Inorganic Chemistry - Waste Water** 

31/07/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 256 mg/L

31/07/2019 Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 160 mg/L

Volatile Suspended Solids 96 mg/L



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### **Analytical Results**

 Sampling Point
 31515-EPA - Snipe Point

 Sampled Date
 24/07/2019 8:25:00AM

 Sample Received Date
 25/07/2019 11:51:47AM

 Sample Analysis Completed
 7/08/2019 3:43:02PM

 Sample ID
 2019-004-2563

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	105 µg/L	
Chlorophyll b	0.1	13.0 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products (	
		Phaeophytins)	05/07/0040
Chlorophyll a & Phaeophytin a T0380-02(			25/07/2019
Chlorophyll a	0.1	90.6 μg/L	
Phaeophytin a	0.1	29.5 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9. Ammonia as N T0100-01(ADEL)	6°C		31/07/2019
Ammonia as N	0.005	0.008 mg/L	
Chloride T0104-02(ADEL)		0.000 mg/L	25/07/2019
Chloride Chloride	4.0	37500 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)		07000 mg/L	26/07/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)		o.coc mg/L	25/07/2019
Nitrogen - Total		5.26 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01/ADFL)	3: <u>2</u> 3 <del>g</del> .2	26/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.007 mg/L	
Phosphorus - Total T0109-44(ADEL)		0.001g.2	29/07/2019
Phosphorus - Total	0.005	0.208 mg/L	
Silica - Reactive T0111-01(ADEL)		0.200 mg/2	25/07/2019
Silica - Reactive	0.05	2.80 mg/L	
TKN as N T0112-01(ADEL)		2.00 mg/L	29/07/2019
TKN as Nitrogen	0.05	5.26 mg/L	
-•		5. <u>_</u> 5gr	

Result

LOR



**Organic Chemistry** 

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**Test Start Date** 

01/08/2019

01/08/2019

25/07/2019

25/07/2019

25/07/2019

25/07/2019

31/07/2019

31/07/2019

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#### **Analytical Results**

**Sampling Point** 31515-EPA - Snipe Point 24/07/2019 8:25:00AM Sampled Date 25/07/2019 11:51:47AM Sample Received Date 7/08/2019 3:43:02PM Sample Analysis Completed 2019-004-2563 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

#### Sample temperature at time of receipt 9.6°C

**Dissolved Organic Carbon T0158-07(ADEL)** Dissolved Organic Carbon 1

20.3 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 29.6 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

#### Sample temperature at time of receipt 9.6°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 210 mg/L Bicarbonate 257 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 102000 µS/cm Total Dissolved Solids (by EC) 1 87500 mg/L

pH T0010-01(ADEL)

рΗ 8.0 pH units

Temperature at which pH is measured 22.0 °C

**Turbidity T0018-01(ADEL)** Turbidity 0.1 16 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

32 mg/L

Sample temperature at time of receipt 9.6°C

Suspended Solids T0160-01(ADEL) Suspended Solids 1.0

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 32 mg/L



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### **Analytical Results**

 Sampling Point
 31516-EPA - Seagull Island

 Sampled Date
 24/07/2019 8:45:00AM

 Sample Received Date
 25/07/2019 11:51:28AM

 Sample Analysis Completed
 7/08/2019 3:41:53PM

 Sample ID
 2019-004-2561

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	97.1 μg/L	
Chlorophyll b	0.1	12.3 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	ADEL)		25/07/2019
Chlorophyll a	0.1	87.7 μg/L	
Phaeophytin a	0.1	20.4 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Ammonia as N T0100-01(ADEL)			31/07/2019
Ammonia as N	0.005	0.008 mg/L	
Chloride T0104-02(ADEL)			25/07/2019
Chloride	4.0	33900 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			26/07/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			25/07/2019
Nitrogen - Total		5.09 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		26/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.006 mg/L	
Phosphorus - Total T0109-44(ADEL)			29/07/2019
Phosphorus - Total	0.005	0.230 mg/L	
Silica - Reactive T0111-01(ADEL)			25/07/2019
Silica - Reactive	0.05	2.57 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	5.09 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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#### **Analytical Results**

31516-EPA - Seagull Island **Sampling Point** 24/07/2019 8:45:00AM Sampled Date 25/07/2019 11:51:28AM Sample Received Date 7/08/2019 3:41:53PM Sample Analysis Completed 2019-004-2561 Sample ID Endorsed

**Status Customer Collected Collection Type** 

Sample temperature at time of receipt 9.6°C

**Dissolved Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon 1 21.2 mg/L

**Total Organic Carbon T0158-07(ADEL)** Total Organic Carbon 1 28.5 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

## Sample temperature at time of receipt 9.6°C

25/07/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 210 mg/L Bicarbonate 256 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/07/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 99300 µS/cm Total Dissolved Solids (by EC) 1 84400 mg/L

25/07/2019 pH T0010-01(ADEL)

рΗ 8.0 pH units Temperature at which pH is measured 22.0 °C

25/07/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 16 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt 9.6°C

31/07/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 24 mg/L

31/07/2019 Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 24 mg/L



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### **Analytical Results**

Sampling Point 300711-Tilley Swamp Drain U/S Morella

 Sampled Date
 24/07/2019
 9:00:00AM

 Sample Received Date
 25/07/2019
 11:54:51AM

 Sample Analysis Completed
 15/08/2019
 1:36:07PM

 Sample ID
 2019-004-2569

Status Endorsed

Collection Type Customer Collected

0.1 0.1	1.50 μg/L <0.1 μg/L	25/07/2019
		25/07/2019
0.1	<0.1 µg/L	
	Chlorophyll a & b results are the sum of	
	chlorophyll & their degradation by products (	
	Phaeophytins)	
•		25/07/2019
	1.30 µg/L	
0.1	0.30 µg/L	
LOR	Result	Test Start Date
		31/07/2019
0.005	0.111 mg//	0.70772010
0.000	0.111 mg/L	25/07/2019
4.0	0000	20/01/2010
4.0	2620 Hig/L	26/07/2019
0.003	4.50	20/01/2019
0.003	1.53 mg/L	25/07/2019
		25/07/2019
	1.88 mg/L	20/07/2040
• •		26/07/2019
0.003	0.012 mg/L	20/27/20/42
		29/07/2019
0.005	0.017 mg/L	
		25/07/2019
0.05	11.2 mg/L	
		29/07/2019
0.05	0.35 mg/L	
LOR	Result	Test Start Date
	0.005 4.0 0.003 -01(ADEL) 0.003 0.005 0.05	Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)  EL)  0.1



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31/07/2019

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#### **Analytical Results**

Sampling Point 300711-Tilley Swamp Drain U/S Morella

 Sampled Date
 24/07/2019
 9:00:00AM

 Sample Received Date
 25/07/2019
 11:54:51AM

 Sample Analysis Completed
 15/08/2019
 1:36:07PM

 Sample ID
 2019-004-2569

Status Endorsed

Collection Type Customer Collected

San	ıple	ter	npera	ature	at i	time c	of re	ceipt 9	9.6°C

Dissolved Organic Carbon T0158-09(ADEL)

Dissolved Organic Carbon

1.0

3.7 mg/L

**Total Organic Carbon T0158-09(ADEL)** 

Total Organic Carbon 1.0 4.0 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

### Sample temperature at time of receipt 9.6°C

•	•	-			
Alkalinit	y Carbonate	Bicarbonate and Hy	ydroxide T0101-01	(ADEL)	25/07/2019

 Alkalinity as Calcium Carbonate
 407 mg/L

 Bicarbonate
 476 mg/L

 Carbonate
 10 mg/L

 Hydroxide
 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL) 25/07/2019

Conductivity 2 9030  $\mu$ S/cm Total Dissolved Solids (by EC) 1 5230  $\mu$ S/cm

pH T0010-01(ADEL) 25/07/2019

pH 8.4 pH units Temperature at which pH is measured 22.0  $^{\circ}$ C

Turbidity T0018-01(ADEL) 25/07/2019

Turbidity 0.1 1.8 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.6°C

Suspended Solids T0160-01(ADEL) 31/07/2019

5 mg/L

2 mg/L

1.0

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 3 mg/L



Suspended Solids

Volatile Suspended Solids

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### **Analytical Results**

 Sampling Point
 31526-EPA - Nth Jack Point

 Sampled Date
 24/07/2019 9:05:00AM

 Sample Received Date
 25/07/2019 11:53:58AM

 Sample Analysis Completed
 7/08/2019 3:26:25PM

 Sample ID
 2019-004-2559

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt	9.6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	69.9 µg/L	
Chlorophyll b	0.1	8.82 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	2(ADEL)		25/07/2019
Chlorophyll a	0.1	54.3 μg/L	
Phaeophytin a	0.1	29.7 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt	9.6°C		
Ammonia as N T0100-01(ADEL)			31/07/2019
Ammonia as N	0.005	0.005 mg/L	
Chloride T0104-02(ADEL)		•	25/07/2019
Chloride	4.0	32800 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			26/07/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			25/07/2019
Nitrogen - Total		4.90 mg/L	
Phosphorus - Filterable Reactive as P T	0108-01(ADEL)		26/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.004 mg/L	
Phosphorus - Total T0109-44(ADEL)			29/07/2019
Phosphorus - Total	0.005	0.217 mg/L	
Silica - Reactive T0111-01(ADEL)			25/07/2019
Silica - Reactive	0.05	2.20 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	4.90 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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#### **Analytical Results**

 Sampling Point
 31526-EPA - Nth Jack Point

 Sampled Date
 24/07/2019 9:05:00AM

 Sample Received Date
 25/07/2019 11:53:58AM

 Sample Analysis Completed
 7/08/2019 3:26:25PM

 Sample ID
 2019-004-2559

 Status
 Endorsed

Collection Type Customer Collected

### Sample temperature at time of receipt 9.6°C

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 18.5 mg/L

Dissolved Organic Carbon 1 10.5 mg/l

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 26.0 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

### Sample temperature at time of receipt 9.6°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 208 mg/L Bicarbonate 254 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 92300  $\mu$ S/cm Total Dissolved Solids (by EC) 1 76500 mg/L

pH T0010-01(ADEL) 25/07/2019

pH 8.0 pH units
Temperature at which pH is measured 22.0 °C

Turbidity T0018-01(ADEL) 25/07/2019

Turbidity 0.1 19 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.6°C

Suspended Solids T0160-01(ADEL) 02/08/2019

32 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

1.0

Volatile Suspended Solids 1 32 mg/L



Suspended Solids

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#### **Analytical Results**

**Sampling Point** 31514-EPA - Stoney Well 24/07/2019 9:35:00AM **Sampled Date** 25/07/2019 11:52:26AM **Sample Received Date** 8/08/2019 12:01:37PM Sample Analysis Completed 2019-004-2565 Sample ID Status Endorsed **Customer Collected Collection Type** 

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	62.1 µg/L	
Chlorophyll b	0.1	8.94 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	ADEL)		25/07/2019
Chlorophyll a	0.1	52.1 μg/L	
Phaeophytin a	0.1	20.3 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Ammonia as N T0100-01(ADEL)			31/07/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			25/07/2019
Chloride	4.0	33100 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			26/07/2019
Nitrate + Nitrite as N	0.003	0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			25/07/2019
Nitrogen - Total		4.54 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		26/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.004 mg/L	
Phosphorus - Total T0109-44(ADEL)			29/07/2019
Phosphorus - Total	0.005	0.225 mg/L	
Silica - Reactive T0111-01(ADEL)			25/07/2019
Silica - Reactive	0.05	2.14 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	4.54 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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#### **Analytical Results**

 Sampling Point
 31514-EPA - Stoney Well

 Sampled Date
 24/07/2019 9:35:00AM

 Sample Received Date
 25/07/2019 11:52:26AM

 Sample Analysis Completed
 8/08/2019 12:01:37PM

 Sample ID
 2019-004-2565

Status Endorsed

Collection Type Customer Collected

Sample	temperature	at time	of receipt	9.6°C
--------	-------------	---------	------------	-------

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 18.3 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 24.6 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

### Sample temperature at time of receipt 9.6°C

	•		
Alkalinity Carbonate	Bicarbonate and Hydroxide T01	)1-01(ADEL)	25/07/2019

Alkalinity as Calcium Carbonate 207 mg/L
Bicarbonate 253 mg/L
Carbonate 0 mg/L
Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 92700  $\mu$ S/cm Total Dissolved Solids (by EC) 1 76900  $\mu$ G/cm

pH T0010-01(ADEL)

pH 8.0 pH units Temperature at which pH is measured 22.4  $^{\circ}$ C

Turbidity T0018-01(ADEL)

Turbidity 0.1 19 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

#### Sample temperature at time of receipt 9.6°C

 Suspended Solids T0160-01(ADEL)
 31/07/2019

 Suspended Solids
 1.0
 20 mg/L

#### Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L
Volatile Suspended Solids 1 20 mg/L



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### **Analytical Results**

Sampling Point 300713-Tilley Swamp Drain D/S Northern Outlet

 Sampled Date
 24/07/2019
 9:45:00AM

 Sample Received Date
 25/07/2019
 11:53:03AM

 Sample Analysis Completed
 15/08/2019
 1:36:07PM

 Sample ID
 2019-004-2570

 Status
 Endorsed

Collection Type Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.6°C		_
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	1.76 µg/L	
Chlorophyll b	0.1	<0.1 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)	, ,	25/07/2019
Chlorophyll a	0.1	1.29 µg/L	
Phaeophytin a	0.1	0.75 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.6°C		
Ammonia as N T0100-01(ADEL)			31/07/2019
Ammonia as N	0.005	0.014 mg/L	
Chloride T0104-02(ADEL)			25/07/2019
Chloride	4.0	2820 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			26/07/2019
Nitrate + Nitrite as N	0.003	1.48 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			25/07/2019
Nitrogen - Total		1.91 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		26/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.008 mg/L	
Phosphorus - Total T0109-44(ADEL)			29/07/2019
Phosphorus - Total	0.005	0.010 mg/L	
Silica - Reactive T0111-01(ADEL)			25/07/2019
Silica - Reactive	0.05	11.4 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	0.43 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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#### **Analytical Results**

Sampling Point 300713-Tilley Swamp Drain D/S Northern Outlet

 Sampled Date
 24/07/2019
 9:45:00AM

 Sample Received Date
 25/07/2019
 11:53:03AM

 Sample Analysis Completed
 15/08/2019
 1:36:07PM

 Sample ID
 2019-004-2570

Status Endorsed

Collection Type Customer Collected

Sam	ple	tempe	rature	at time	of receipt	9.6°C

Dissolved Organic Carbon T0158-09(ADEL) 05/08/2019

Dissolved Organic Carbon 1.0 4.6 mg/L

Total Organic Carbon T0158-09(ADEL)

Total Organic Carbon 1.0 4.8 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

### Sample temperature at time of receipt 9.6°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

 Alkalinity as Calcium Carbonate
 408 mg/L

 Bicarbonate
 475 mg/L

 Carbonate
 11 mg/L

 Hydroxide
 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 9530  $\mu$ S/cm Total Dissolved Solids (by EC) 1 5530  $\mu$ G/cm

pH T0010-01(ADEL) 25/07/2019

pH 8.4 pH units
Temperature at which pH is measured 22.0 °C

Turbidity T0018-01(ADEL) 25/07/2019

Turbidity 0.1 7.6 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.6°C

Suspended Solids T0160-01(ADEL) 31/07/2019

9 mg/L

1.0

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 5 mg/L

Volatile Suspended Solids 1 4 mg/L



Suspended Solids

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### **Analytical Results**

 Sampling Point
 31525-EPA - Villa de Yumpa

 Sampled Date
 24/07/2019 10:05:00AM

 Sample Received Date
 25/07/2019 11:50:34AM

 Sample Analysis Completed
 7/08/2019 3:24:16PM

 Sample ID
 2019-004-2556

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	20.4 μg/L	
Chlorophyll b	0.1	2.00 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)	r nacopnyano)	25/07/2019
Chlorophyll a	0.1	15.4 μg/L	
Phaeophytin a	0.1	9.28 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	6°C		
Ammonia as N T0100-01(ADEL)	.0 C		31/07/2019
Ammonia as N	0.005	0.021 mg/L	
Chloride T0104-02(ADEL)			25/07/2019
Chloride	4.0	22100 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)		,	26/07/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			25/07/2019
Nitrogen - Total		2.00 mg/L	
Phosphorus - Filterable Reactive as P TO	108-01(ADEL)		26/07/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			29/07/2019
Phosphorus - Total	0.005	0.116 mg/L	
Silica - Reactive T0111-01(ADEL)			25/07/2019
Silica - Reactive	0.05	0.34 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	2.00 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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#### **Analytical Results**

**Collection Type** 

**Sampling Point** 31525-EPA - Villa de Yumpa 24/07/2019 10:05:00AM Sampled Date 25/07/2019 11:50:34AM Sample Received Date 7/08/2019 3:24:16PM Sample Analysis Completed 2019-004-2556 Sample ID

**Status** Endorsed **Customer Collected** 

Sample temperature at time of receipt 9.6°C

**Dissolved Organic Carbon T0158-07(ADEL)** Dissolved Organic Carbon 1 10.6 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 13.0 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

#### Sample temperature at time of receipt 9.6°C

25/07/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 168 mg/L Bicarbonate 205 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/07/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 59600 µS/cm Total Dissolved Solids (by EC) 1 43500 mg/L

25/07/2019 pH T0010-01(ADEL)

рΗ 8.0 pH units Temperature at which pH is measured 22.0 °C

25/07/2019

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 9.4 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt 9.6°C

31/07/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0 10 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 2 mg/L Volatile Suspended Solids 8 mg/L

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### **Analytical Results**

Status

**Sampling Point** 31513-EPA - Parnka Point Boat Ramp

Endorsed

24/07/2019 10:30:00AM **Sampled Date** 25/07/2019 11:54:33AM **Sample Received Date** 8/08/2019 12:02:46PM Sample Analysis Completed 2019-004-2567 Sample ID

**Customer Collected Collection Type** 

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	.6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	24.7 μg/L	
Chlorophyll b	0.1	1.50 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	ADEL)		25/07/2019
Chlorophyll a	0.1	19.2 µg/L	
Phaeophytin a	0.1	9.85 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	.6°C		
Ammonia as N T0100-01(ADEL)			31/07/2019
Ammonia as N	0.005	0.006 mg/L	
Chloride T0104-02(ADEL)			25/07/2019
Chloride	4.0	19500 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			26/07/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			25/07/2019
Nitrogen - Total		1.74 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		26/07/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			29/07/2019
Phosphorus - Total	0.005	0.111 mg/L	
Silica - Reactive T0111-01(ADEL)			25/07/2019
Silica - Reactive	0.05	0.21 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	1.74 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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#### **Analytical Results**

**Status** 

Sampling Point 31513-EPA - Parnka Point Boat Ramp

Endorsed

 Sampled Date
 24/07/2019
 10:30:00AM

 Sample Received Date
 25/07/2019
 11:54:33AM

 Sample Analysis Completed
 8/08/2019
 12:02:46PM

 Sample ID
 2019-004-2567

Collection Type Customer Collected

Sample temperature	at time of	f receipt 9.6°C
--------------------	------------	-----------------

**Total Organic Carbon T0158-07(ADEL)** 

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 10.5 mg/L

Total Organic Carbon 1 12.6 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

### Sample temperature at time of receipt 9.6°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 163 mg/L
Bicarbonate 199 mg/L
Carbonate 0 mg/L
Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL) 25/07/2019

Conductivity 2 56700  $\mu$ S/cm Total Dissolved Solids (by EC) 1 40900  $\mu$ G/cm

pH T0010-01(ADEL) 25/07/2019

pH 8.0 pH units
Temperature at which pH is measured 21.9 °C

Turbidity T0018-01(ADEL) 25/07/2019

Turbidity 0.1 13 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 9.6°C

Suspended Solids T0160-01(ADEL) 31/07/2019

Suspended Solids 1.0 12 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids

1 4 mg/l

 Fixed Solids
 1
 4 mg/L

 Volatile Suspended Solids
 1
 8 mg/L



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#### **Analytical Results**

**Collection Type** 

**Sampling Point** 31512-EPA - McGrath Flat North 24/07/2019 11:35:00AM **Sampled Date** 25/07/2019 11:52:44AM **Sample Received Date** 8/08/2019 12:02:11PM Sample Analysis Completed 2019-004-2566 Sample ID Status Endorsed **Customer Collected** 

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	17.2 µg/L	
Chlorophyll b	0.1	1.77 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(	ADEL)		25/07/2019
Chlorophyll a	0.1	11.9 µg/L	
Phaeophytin a	0.1	9.64 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9.	6°C		
Ammonia as N T0100-01(ADEL)			31/07/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			25/07/2019
Chloride	4.0	18800 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			26/07/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			25/07/2019
Nitrogen - Total		1.81 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		26/07/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			29/07/2019
Phosphorus - Total	0.005	0.096 mg/L	
Silica - Reactive T0111-01(ADEL)			25/07/2019
Silica - Reactive	0.05	0.16 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	1.81 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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#### **Analytical Results**

31512-EPA - McGrath Flat North **Sampling Point** 24/07/2019 11:35:00AM Sampled Date 25/07/2019 11:52:44AM Sample Received Date 8/08/2019 12:02:11PM Sample Analysis Completed 2019-004-2566 Sample ID

**Status** Endorsed

**Customer Collected Collection Type** 

### Sample temperature at time of receipt 9.6°C

**Dissolved Organic Carbon T0158-07(ADEL)** Dissolved Organic Carbon 1 10.6 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 13.0 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

#### Sample temperature at time of receipt 9.6°C

25/07/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 164 mg/L Bicarbonate 200 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/07/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 58200 µS/cm Total Dissolved Solids (by EC) 1 42300 mg/L

25/07/2019 pH T0010-01(ADEL)

рΗ 8.1 pH units Temperature at which pH is measured 22.4 °C

25/07/2019 **Turbidity T0018-01(ADEL)** 

Turbidity 0.1 15 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** 

Result

Sample temperature at time of receipt 9.6°C

31/07/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 36 mg/L

Volatile Suspended Solids T0160-01(ADEL) Fixed Solids 1 12 mg/L

Volatile Suspended Solids 24 mg/L



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### **Analytical Results**

 Sampling Point
 31523-EPA - Long Point

 Sampled Date
 24/07/2019 12:45:00PM

 Sample Received Date
 25/07/2019 11:55:10AM

 Sample Analysis Completed
 7/08/2019 3:25:33PM

 Sample ID
 2019-004-2558

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	.6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	3.88 µg/L	
Chlorophyll b	0.1	0.47 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products ( Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	(ADEL)	· nacopny and	25/07/2019
Chlorophyll a	0.1	2.68 μg/L	
Phaeophytin a	0.1	2.22 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	6°C		
Ammonia as N T0100-01(ADEL)	.0 0		31/07/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)		· ·	25/07/2019
Chloride	4.0	14900 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)		-	26/07/2019
Nitrate + Nitrite as N	0.003	0.019 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			25/07/2019
Nitrogen - Total		0.48 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		26/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.025 mg/L	
Phosphorus - Total T0109-44(ADEL)			29/07/2019
Phosphorus - Total	0.005	0.043 mg/L	
Silica - Reactive T0111-01(ADEL)			25/07/2019
Silica - Reactive	0.05	0.36 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	0.46 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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25/07/2019

31/07/2019

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#### **Analytical Results**

**Sampling Point** 31523-EPA - Long Point 24/07/2019 12:45:00PM Sampled Date 25/07/2019 11:55:10AM Sample Received Date 7/08/2019 3:25:33PM Sample Analysis Completed 2019-004-2558 Sample ID **Status** Endorsed

**Customer Collected Collection Type** 

### Sample temperature at time of receipt 9.6°C

**Dissolved Organic Carbon T0158-07(ADEL)** 1 3.3 mg/L

Dissolved Organic Carbon

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 3.5 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

#### Sample temperature at time of receipt 9.6°C

•	•	-		
Alkalinity	Carbonate	<b>Bicarbonate and Hydroxide</b>	T0101-01(ADEL)	25/07/2019

Alkalinity as Calcium Carbonate 126 mg/L Bicarbonate 141 mg/L Carbonate 6 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 42700 µS/cm Total Dissolved Solids (by EC) 1 29000 mg/L

pH T0010-01(ADEL)

рΗ 8.4 pH units Temperature at which pH is measured 22.0 °C

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 3.9 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

Sample temperature at time of receipt 9.6°C

31/07/2019 Suspended Solids T0160-01(ADEL)

8 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

1.0

Volatile Suspended Solids 8 mg/L



Suspended Solids

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### **Analytical Results**

 Sampling Point
 353180-EPA - Tauwitchere

 Sampled Date
 24/07/2019 1:30:00PM

 Sample Received Date
 25/07/2019 11:50:52AM

 Sample Analysis Completed
 7/08/2019 3:24:53PM

 Sample ID
 2019-004-2557

 Status
 Endorsed

 Collection Type
 Customer Collected

<b>Biology Operations</b>	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	0.6°C		
Chlorophyll a & b T0380-02(ADEL)			25/07/2019
Chlorophyll a	0.1	12.7 μg/L	
Chlorophyll b	0.1	1.01 µg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products (	
Oblamanhull a 9 Dhaaanhutin a T0200 00	(ADEL)	Phaeophytins)	25/07/2019
Chlorophyll a & Phaeophytin a T0380-02 Chlorophyll a	(ADEL) 0.1	0.04	25/07/2019
, ,	0.1	8.61 μg/L	
Phaeophytin a	0.1	7.30 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 9	0.6°C		
Ammonia as N T0100-01(ADEL)			31/07/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			25/07/2019
Chloride	4.0	6950 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			26/07/2019
Nitrate + Nitrite as N	0.003	0.011 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			25/07/2019
Nitrogen - Total		1.04 mg/L	
Phosphorus - Filterable Reactive as P T	0108-01(ADEL)		26/07/2019
Phosphorus - Filterable Reactive as P	0.003	0.008 mg/L	
Phosphorus - Total T0109-44(ADEL)			29/07/2019
Phosphorus - Total	0.005	0.073 mg/L	
Silica - Reactive T0111-01(ADEL)			25/07/2019
Silica - Reactive	0.05	0.18 mg/L	
TKN as N T0112-01(ADEL)			29/07/2019
TKN as Nitrogen	0.05	1.03 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



29/07/2019

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#### **Analytical Results**

**Status** 

353180-EPA - Tauwitchere **Sampling Point** 24/07/2019 1:30:00PM Sampled Date 25/07/2019 11:50:52AM Sample Received Date 7/08/2019 3:24:53PM Sample Analysis Completed 2019-004-2557 Sample ID

**Customer Collected Collection Type** 

#### Sample temperature at time of receipt 9.6°C

**Dissolved Organic Carbon T0158-07(ADEL)** Dissolved Organic Carbon 1 6.1 mg/L

**Total Organic Carbon T0158-07(ADEL)** 

Total Organic Carbon 1 10.4 mg/L

**Inorganic Chemistry - Physical** LOR Result **Test Start Date** 

#### Sample temperature at time of receipt 9.6°C

<b>Alkalinity Carbonate</b>	Bicarbonate and H	ydroxide T0101-01	(ADEL)
-----------------------------	-------------------	-------------------	--------

Alkalinity as Calcium Carbonate 115 mg/L Bicarbonate 141 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 22900 µS/cm Total Dissolved Solids (by EC) 1 14200 mg/L

pH T0010-01(ADEL)

рΗ 8.1 pH units Temperature at which pH is measured 21.9 °C

**Turbidity T0018-01(ADEL)** 

Turbidity 0.1 14 NTU

**Inorganic Chemistry - Waste Water** LOR **Test Start Date** Result

#### Sample temperature at time of receipt 9.6°C

Suspended Solids T0160-01(ADEL) Suspended Solids 1.0 20 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 8 mg/L Volatile Suspended Solids 12 mg/L



ACCREDITATION

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#### **Samples Not Collected**

Sample ID	S.Point	Description	Sampled Date	Non Collect Reason
2019-004-2572	300712	Tilley Swamp Watercourse Outlet	8/07/2019	Dry
		Channel		

#### **Analytical Method**

Analytical Method Code	Description	Reference Method
T0010-01	Determination of pH	AP4500HB
T0016-01	Determination of Conductivity - Corrected to 25C	AP2510B
T0018-01	Turbidity - Nephelometric Measurement	APAWWA-WEF
T0100-01	Ammonia/Ammonium - Automated Flow Colorimetry	AP4500NH3G
T0101-01	Alkalinity - Automated Acidimetric Titration	AP2320B
T0104-02	Chloride - Discrete Analyser	AP4500CLE
T0108-01	Filterable Reactive Phosphorus - Automated Flow Colorimetry	AP4500PG
T0109-44	Phosphorous -total Kjeldahl for seawater by automated flow colorimetry	AP4500PF
T0111-01	Silica by automated fow colorimetry	AP4500SI02
T0112-01	Nitrogen- Total Kjeldahl by discrete analyser	AP4500NORGA
T0158-07	Total and Dissolved Organic Carbon (Ol Analytical)	SM5310C
T0158-09	Total and Dissolved Organic Carbon (Shimadzu TOC VCSH)	SM5310B
T0160-01	Suspended Solids 103C to 105C	AP2540DE
T0160-01	Suspended Solids 103C to 105C	AP4500
T0161-01	Nitrate + Nitrate (NOx) - Automated Flow Colorimetry	AP4500NO3I
T0380-02	Chlorophyll a & b and phaeophytin	ISO10260
T0380-02	Chlorophyll a & b and phaeophytin	Wintermans
TMZ-M06	Derived Results and Data Checks	AP4500NORGA

#### **Laboratory Information**

Laboratory	NATA accreditation ID
Inorganic Chemistry - Physical	1115
Inorganic Chemistry - Waste Water	1115
Inorganic Chemistry - Nutrients	1115
Organic Chemistry	1115
Biology Operations	1115



- 1. The last figure of the result value is a significant figure
- # determination of the component is not covered by NATA Accreditation.
   An indicates result is out of specification according to the reference guideline. Refer to report footer.
- 4. \* indicates an incident has been recorded against the sample. Refer to report footer.
- 5. & Indicates the results have changed since the last issued report.
- 6. The Limit of Reporting (LOR) is the lowest concentration of analyte which is reported at the AWQC and is based on the LOQ rounded up to a more readily used value. The Limit of Quantitation (LOQ) is the lowest concentration of analyte for which quantitative results may be
- obtained within a specified degree of confidence.

  7. Where collection type is AWQC Collect, NATA has confirmed that due to a robust system in place for maintaining the temperature integrity for samples collected by AWQC's Field Laboratory Services, the recording of temperature when samples arrive at the AWQC is out of scope.
- 8. Where applicable the Measurement of Uncertainty is available at https://www.awqc.com.au/our-services/analytical-services/
- 9. If pH has been tested then the pH will be outside of its holding time unless measured in the field.
- 10. (ADEL) indicates analysed in Adelaide, (MELB) indicates analysed in Melbourne.