PO Box 1751 250 Victoria Square Adelaide SA 5001 Adelaide SA 5000

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Tel: 1300 653 366

Fax: 1300 883 171

DEW - Department of Environment and Water ATTN: Patrick Betham 24-26 Tikalara street Regency Park SA 5010 AUSTRALIA

25/11/2019

Dear Patrick

Please find attached the Final Analytical Report for

Customer Service Request: 143419-2019-CSR-1

Account: 143419

Project: AWQC-140182 DEW - Healthy Coorong Healthy Basin Phase 0 - Non routine

19/20

This report has also been sent to: Frank Mangeruca Mark de Jong

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

Project Name AWQC-140182

Customer DEW - Department of Environment and Water

CSR_ID 143419-2019-CSR-1

Analytical Results

Sampling Point 31511-EPA - 3.2km South Salt Creek

 Sampled Date
 23/10/2019
 8:15:00AM

 Sample Received Date
 24/10/2019
 11:30:06AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9931

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 19	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	23.6 μg/L	
Chlorophyll b	0.1	3.41 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)		24/10/2019
Chlorophyll a	0.1	45.4 μg/L	
Phaeophytin a	0.1	5.60 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 10 Ammonia as N T0100-01(ADEL)	0.2°C		06/11/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	44600 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	0.004 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		5.66 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)		-	04/11/2019
Phosphorus - Total	0.005	0.192 mg/L	
Silica - Reactive T0111-01(ADEL)		5	04/11/2019
Silica - Reactive	0.05	2.27 mg/L	
TKN as N T0112-01(ADEL)		-	04/11/2019





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Analytical Results

Sampling Point 31511-EPA - 3.2km South Salt Creek

 Sampled Date
 23/10/2019
 8:15:00AM

 Sample Received Date
 24/10/2019
 11:30:06AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9931

Status Endorsed

Collection Type Customer Collected

TKN as N T0112-01(ADEL) 04/11/2019

TKN as Nitrogen 0.05 5.66 mg/L

Organic Chemistry	LOR	Result	Test Start Date
Sample temperature at time of receipt 1 Dissolved Organic Carbon T0158-07(ADE		23.1 ma/L	31/10/2019
Total Organic Carbon T0158-07(ADEL) Total Organic Carbon	1	30.8 mg/L	31/10/2019

Inorganic Chemistry - Physical	LOR	Result	Test Start Date
Sample temperature at time of receipt	10.2°C		
Alkalinity Carbonate Bicarbonate and	Hydroxide T0101-0	1(ADEL)	25/10/2019
Alkalinity as Calcium Carbonate		229 mg/L	
Bicarbonate		279 mg/L	
Carbonate		0 mg/L	
Hydroxide		0 mg/L	
Conductivity & Total Dissolved Solids T0016-01(ADEL)			25/10/2019
Conductivity	2	108000 μS/cm	
Total Dissolved Solids (by EC)	1	94600 mg/L	
pH T0010-01(ADEL)			25/10/2019
рН		8.0 pH units	
Temperature at which pH is measured		22.5 °C	
Turbidity T0018-01(ADEL)			28/10/2019
Turbidity	0.1	13 NTU	

Inorganic Chemistry - Waste Water	LOR	Result	Test Start Date
Sample temperature at time of receipt 10.2° Suspended Solids T0160-01(ADEL)			31/10/2019
Suspended Solids Volatile Suspended Solids T0160-01(ADEL)	1.0	75 mg/L	31/10/2019
Fixed Solids	1	<1 mg/L	



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Analytical Results

Sampling Point 31511-EPA - 3.2km South Salt Creek

 Sampled Date
 23/10/2019
 8:15:00AM

 Sample Received Date
 24/10/2019
 11:30:06AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9931

 Status
 Endorsed

Collection Type Customer Collected

Volatile Suspended Solids T0160-01(ADEL)

31/10/2019

Volatile Suspended Solids 1 75 mg/L



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Analytical Results

Sampling Point 31517-EPA - 1.8km West Salt Creek

 Sampled Date
 23/10/2019
 8:15:00AM

 Sample Received Date
 24/10/2019
 11:31:53AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9933

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	62.7 μg/L	
Chlorophyll b	0.1	9.27 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)	,	24/10/2019
Chlorophyll a	0.1	58.5 μg/L	
Phaeophytin a	0.1	10.7 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		00/44/0040
Ammonia as N T0100-01(ADEL)	0.005		06/11/2019
Ammonia as N	0.005	<0.005 mg/L	0.4.44.100.40
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	40900 mg/L	00/40/0040
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		5.41 mg/L	
Phosphorus - Filterable Reactive as P T0	•		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	0.006 mg/L	
Phosphorus - Total T0109-44(ADEL)			04/11/2019
Phosphorus - Total	0.005	0.230 mg/L	
Silica - Reactive T0111-01(ADEL)			04/11/2019
Silica - Reactive	0.05	2.91 mg/L	
TKN as N T0112-01(ADEL)			04/11/2019
TKN as Nitrogen	0.05	5.41 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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31/10/2019

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Analytical Results

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

23/10/2019 8:15:00AM Sampled Date 24/10/2019 11:31:53AM **Sample Received Date** 15/11/2019 2:27:42PM Sample Analysis Completed

2019-006-9933 Sample ID **Status** Endorsed

Customer Collected Collection Type

Sample temperature at	time of receipt 10.2°C
-----------------------	------------------------

31/10/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

Dissolved Organic Carbon 1 21.6 mg/L

Total Organic Carbon T0158-07(ADEL) Total Organic Carbon 1 29.3 mg/L

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

Sample temperature at time of receipt 10.2°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)	25/10/2019
---	------------

Alkalinity as Calcium Carbonate 227 mg/L Bicarbonate 277 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/10/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 105000 µS/cm Total Dissolved Solids (by EC) 1 91000 mg/L

25/10/2019 pH T0010-01(ADEL)

рΗ 8.1 pH units Temperature at which pH is measured 22.5 °C

28/10/2019 **Turbidity T0018-01(ADEL)**

Turbidity 0.1

12 NTU

29 mg/L

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

Sample temperature at time of receipt 10.2°C

30/10/2019 Suspended Solids T0160-01(ADEL)

1.0

Volatile Suspended Solids T0160-01(ADEL)

30/10/2019 Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 29 mg/L



Suspended Solids

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Analytical Results

 Sampling Point
 31515-EPA - Snipe Point

 Sampled Date
 23/10/2019 8:45:00AM

 Sample Received Date
 24/10/2019 11:31:17AM

 Sample Analysis Completed
 7/11/2019 2:36:28PM

 Sample ID
 2019-006-9932

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	41.0 µg/L	
Chlorophyll b	0.1	9.35 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products (Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02	(ADFL)	r nacopnyuns)	24/10/2019
Chlorophyll a	0.1	38.7 µg/L	
Phaeophytin a	0.1	7.40 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 1 Ammonia as N T0100-01(ADEL)	0.2°C		06/11/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	44800 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		5.41 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			04/11/2019
Phosphorus - Total	0.005	0.178 mg/L	
Silica - Reactive T0111-01(ADEL)			04/11/2019
Silica - Reactive	0.05	2.89 mg/L	
TKN as N T0112-01(ADEL)			04/11/2019
TKN as Nitrogen	0.05	5.41 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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31/10/2019

31/10/2019

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Analytical Results

 Sampling Point
 31515-EPA - Snipe Point

 Sampled Date
 23/10/2019 8:45:00AM

 Sample Received Date
 24/10/2019 11:31:17AM

 Sample Analysis Completed
 7/11/2019 2:36:28PM

 Sample ID
 2019-006-9932

 Status
 Endorsed

Collection Type Customer Collected

Sample temperature at time of receipt 10.2°C

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 22.7 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 29.9 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

Sample temperature at time of receipt 10.2°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)
25/10/2019

Alkalinity as Calcium Carbonate 231 $\mbox{ mg/L}$ Bicarbonate 282 $\mbox{ mg/L}$ Carbonate 0 $\mbox{ mg/L}$ Hydroxide 0 $\mbox{ mg/L}$

Conductivity & Total Dissolved Solids T0016-01(ADEL) 25/10/2019

Conductivity 2 105000 μ S/cm Total Dissolved Solids (by EC) 1 91000 μ G/cm

pH T0010-01(ADEL) 25/10/2019

pH 8.1 pH units Temperature at which pH is measured 22.5 $^{\circ}$ C

Turbidity T0018-01(ADEL) 28/10/2019

Turbidity 0.1 12 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 10.2°C

Suspended Solids T0160-01(ADEL) 31/10/2019

Suspended Solids 1.0 50 mg/L Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 5 mg/L

Volatile Suspended Solids 1 45 mg/L



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Analytical Results

Collection Type

Sampling Point 31519-EPA - Morella Basin at Outlet Regulator

Customer Collected

23/10/2019 9:00:00AM **Sampled Date** 24/10/2019 11:32:28AM Sample Received Date 15/11/2019 2:27:42PM Sample Analysis Completed *2019-006-9937 Sample ID Status Endorsed

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	59.5 μg/L	
Chlorophyll b	0.1	4.27 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of	
		chlorophyll & their degradation by products (
		Phaeophytins)	04/40/0040
Chlorophyll a & Phaeophytin a T0380-02(•		24/10/2019
Chlorophyll a	0.1	49.2 μg/L	
Phaeophytin a	0.1	19.1 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 10 Ammonia as N T0100-01(ADEL) Ammonia as N	0.2°C 0.005	0.085 mg/L	06/11/2019
Chloride T0104-02(ADEL) Chloride	4.0	4090 mg/L	04/11/2019
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		3.88 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	0.009 mg/L	
Phosphorus - Total T0109-44(ADEL)			04/11/2019
Phosphorus - Total	0.005	0.242 mg/L	
Silica - Reactive T0111-01(ADEL)		•	04/11/2019
Silica - Reactive	0.05	15.4 mg/L	
TKN as N T0112-01(ADEL)		-	04/11/2019
TKN as Nitrogen	0.05	3.88 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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31/10/2019

25/10/2019

Test Start Date

30/10/2019

Test Start Date

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Analytical Results

Status

Conductivity

31519-EPA - Morella Basin at Outlet Regulator **Sampling Point**

Endorsed

1

LOR

LOR

23/10/2019 9:00:00AM Sampled Date 24/10/2019 11:32:28AM Sample Received Date 15/11/2019 2:27:42PM Sample Analysis Completed *2019-006-9937 Sample ID

Customer Collected Collection Type

Sample temperature at time of receipt 10.2°C

Inorganic Chemistry - Physical

31/10/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

29.0 mg/L

Result

12100 µS/cm

Dissolved Organic Carbon 1 23.0 mg/L

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

Sample temperature at time of receipt 10.2°C 25/10/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL) Alkalinity as Calcium Carbonate 395 mg/L Bicarbonate 443 mg/L Carbonate

19 mg/L Hydroxide 0 mg/L Conductivity & Total Dissolved Solids T0016-01(ADEL)

Total Dissolved Solids (by EC) 1 7110 mg/L 25/10/2019

pH T0010-01(ADEL)

рΗ 8.5 pH units

Temperature at which pH is measured 22.4 °C

30/10/2019 **Turbidity T0018-01(ADEL)** Turbidity 0.1 9.0 NTU

Result

Inorganic Chemistry - Waste Water Sample temperature at time of receipt 10.2°C

Suspended Solids T0160-01(ADEL) Suspended Solids 1.0 13 mg/L

30/10/2019 Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L Volatile Suspended Solids 13 mg/L



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Analytical Results

 Sampling Point
 31516-EPA - Seagull Island

 Sampled Date
 23/10/2019 9:05:00AM

 Sample Received Date
 24/10/2019 11:31:36AM

 Sample Analysis Completed
 15/11/2019 2:27:42PM

 Sample ID
 2019-006-9930

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	51.2 µg/L	
Chlorophyll b	0.1	7.76 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)		24/10/2019
Chlorophyll a	0.1	46.0 μg/L	
Phaeophytin a	0.1	11.7 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Ammonia as N T0100-01(ADEL)			06/11/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	42100 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		5.08 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			04/11/2019
Phosphorus - Total	0.005	0.168 mg/L	
Silica - Reactive T0111-01(ADEL)			04/11/2019
Silica - Reactive	0.05	2.49 mg/L	
TKN as N T0112-01(ADEL)			04/11/2019
TKN as Nitrogen	0.05	5.08 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



31/10/2019

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Analytical Results

31516-EPA - Seagull Island **Sampling Point** 23/10/2019 9:05:00AM Sampled Date 24/10/2019 11:31:36AM Sample Received Date 15/11/2019 2:27:42PM Sample Analysis Completed 2019-006-9930 Sample ID

Status Endorsed

Customer Collected Collection Type

Sample temperature at time of receipt 10.2°C

31/10/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

Dissolved Organic Carbon 1 21.4 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 29.5 mg/L

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

Sample temperature at time of receipt 10.2°C

25/10/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 235 mg/L Bicarbonate 287 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/10/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 104000 µS/cm Total Dissolved Solids (by EC) 1 89800 mg/L

25/10/2019 pH T0010-01(ADEL)

рΗ 8.2 pH units Temperature at which pH is measured 22.4 °C

28/10/2019

Turbidity T0018-01(ADEL)

Turbidity 0.1 12 NTU

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

Sample temperature at time of receipt 10.2°C

30/10/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0

43 mg/L

36 mg/L

Volatile Suspended Solids T0160-01(ADEL)

30/10/2019 Fixed Solids 1 7 mg/L

ACCREDITATION

Volatile Suspended Solids

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Analytical Results

Sampling Point 300711-Tilley Swamp Drain U/S Morella

 Sampled Date
 23/10/2019
 9:20:00AM

 Sample Received Date
 24/10/2019
 11:29:14AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9938

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	1.97 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)	Пасорпуштоу	24/10/2019
Chlorophyll a	0.1	1.72 µg/L	
Phaeophytin a	0.1	0.44 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		06/11/2019
Ammonia as N T0100-01(ADEL) Ammonia as N	0.005	0.054	00/11/2019
	0.005	0.054 mg/L	04/11/2019
Chloride T0104-02(ADEL) Chloride	4.0	4700 #	04/11/2019
	4.0	4780 mg/L	28/10/2019
Nitrate + Nitrite as N T0161-01(ADEL) Nitrate + Nitrite as N	0.003	0.040	20/10/2019
	0.003	0.010 mg/L	24/10/2019
Nitrogen - Total TMZ-M06(ADEL) Nitrogen - Total		0.70 #	24/10/2019
	400.04/4.051.	0.78 mg/L	28/10/2019
Phosphorus - Filterable Reactive as P T0	0.003	0.005 #	20/10/2019
Phosphorus - Filterable Reactive as P	0.003	0.005 mg/L	04/11/2019
Phosphorus - Total T0109-44(ADEL) Phosphorus - Total	0.005		04/11/2019
•	0.005	0.024 mg/L	04/11/2019
Silica - Reactive T0111-01(ADEL) Silica - Reactive	0.05	0.00	04/11/2019
	0.05	2.99 mg/L	04/11/2019
TKN as N T0112-01(ADEL)	0.05	0.77	04/11/2019
TKN as Nitrogen	0.05	0.77 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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Analytical Results

300711-Tilley Swamp Drain U/S Morella **Sampling Point**

23/10/2019 9:20:00AM Sampled Date 24/10/2019 11:29:14AM Sample Received Date 15/11/2019 2:27:42PM Sample Analysis Completed 2019-006-9938

Sample ID **Status** Endorsed

Customer Collected Collection Type

31/10/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

7.5 mg/L

Dissolved Organic Carbon 1 7.4 mg/L

1

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

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

Sample temperature at time of receipt 10.2°C

25/10/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 392 mg/L Bicarbonate 437 mg/L Carbonate 20 mg/L Hydroxide 0 mg/L

25/10/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 14200 µS/cm Total Dissolved Solids (by EC) 1 8440 mg/L

25/10/2019 pH T0010-01(ADEL)

рΗ 8.5 pH units Temperature at which pH is measured 22.6 °C

28/10/2019 **Turbidity T0018-01(ADEL)**

Turbidity 0.1 1.8 NTU

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

Sample temperature at time of receipt 10.2°C

30/10/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 6 mg/L

30/10/2019 Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 3 mg/L

Volatile Suspended Solids 3 mg/L



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Analytical Results

 Sampling Point
 31526-EPA - Nth Jack Point

 Sampled Date
 23/10/2019 9:40:00AM

 Sample Received Date
 24/10/2019 11:33:20AM

 Sample Analysis Completed
 15/11/2019 2:27:42PM

 Sample ID
 2019-006-9537

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	45.1 μg/L	
Chlorophyll b	0.1	6.63 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)		24/10/2019
Chlorophyll a	0.1	43.1 μg/L	
Phaeophytin a	0.1	5.86 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		
Ammonia as N T0100-01(ADEL)			06/11/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	49600 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)		•	28/10/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)		0.000 mg. 2	24/10/2019
Nitrogen - Total		4.84 mg/L	
	400 04/ADEL\	4.04 mg/L	28/10/2019
Phosphorus - Filterable Reactive as P T0 Phosphorus - Filterable Reactive as P	0.003	40,000	20/10/2010
•	0.003	<0.003 mg/L	04/11/2019
Phosphorus - Total T0109-44(ADEL)	0.005		04/11/2019
Phosphorus - Total	0.005	0.200 mg/L	0.4/44/0040
Silica - Reactive T0111-01(ADEL)	0.05		04/11/2019
Silica - Reactive	0.05	1.05 mg/L	
TKN as N T0112-01(ADEL)			04/11/2019
TKN as Nitrogen	0.05	4.84 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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Analytical Results

31526-EPA - Nth Jack Point **Sampling Point** 23/10/2019 9:40:00AM Sampled Date 24/10/2019 11:33:20AM **Sample Received Date** 15/11/2019 2:27:42PM Sample Analysis Completed 2019-006-9537 Sample ID

Status Endorsed

Customer Collected Collection Type

Sample	temperature at	time of	receipt	10.2°C
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Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 22.0 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 29.2 mg/L

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

Sample temperature at time of receipt 10.2°C

	<u>•</u>	
Alkalinity Carbonate	Bicarbonate and Hydroxide T0101-01(ADEL)	25/10/2019

Alkalinity as Calcium Carbonate 232 mg/L Bicarbonate 283 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/10/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 101000 μS/cm Total Dissolved Solids (by EC) 1 86300 mg/L

25/10/2019 pH T0010-01(ADEL)

рΗ 8.2 pH units Temperature at which pH is measured 22.3 °C

28/10/2019

Turbidity T0018-01(ADEL)

Turbidity 0.1 14 NTU

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

Sample temperature at time of receipt 10.2°C

30/10/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0

30 mg/L

30 mg/L

Volatile Suspended Solids T0160-01(ADEL)

30/10/2019 Fixed Solids 1 <1 mg/L



Volatile Suspended Solids

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Analytical Results

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

 Sampled Date
 23/10/2019
 9:40:00AM

 Sample Received Date
 24/10/2019
 11:29:48AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9933

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	1.74 μg/L	
Chlorophyll b	0.1	0.28 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)		24/10/2019
Chlorophyll a	0.1	1.48 µg/L	
Phaeophytin a	0.1	0.54 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Ammonia as N T0100-01(ADEL)			06/11/2019
Ammonia as N	0.005	0.036 mg/L	
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	4420 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	0.156 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		1.22 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	0.008 mg/L	
Phosphorus - Total T0109-44(ADEL)			28/10/2019
Phosphorus - Total	0.005	0.077 mg/L	
Silica - Reactive T0111-01(ADEL)			04/11/2019
Silica - Reactive	0.05	7.80 mg/L	
TKN as N T0112-01(ADEL)			28/10/2019
TKN as Nitrogen	0.05	1.06 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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Analytical Results

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

23/10/2019 9:40:00AM Sampled Date 24/10/2019 11:29:48AM Sample Received Date 15/11/2019 2:27:42PM Sample Analysis Completed 2019-006-9939 Sample ID

Status Endorsed

Customer Collected Collection Type

31/10/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

Dissolved Organic Carbon 1 6.0 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 6.2 mg/L

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

Sample temperature at time of receipt 10.2°C

25/10/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 422 mg/L Bicarbonate 500 mg/L Carbonate 7 mg/L Hydroxide 0 mg/L

25/10/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 13500 µS/cm Total Dissolved Solids (by EC) 1 7990 mg/L

25/10/2019 pH T0010-01(ADEL)

рΗ 8.4 pH units Temperature at which pH is measured 22.5 °C

28/10/2019 **Turbidity T0018-01(ADEL)**

Turbidity 0.1 1.6 NTU

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

Result

Sample temperature at time of receipt 10.2°C

30/10/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 2 mg/L

30/10/2019 Volatile Suspended Solids T0160-01(ADEL)

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



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Analytical Results

Sampling Point 300712-Tilley Swamp Watercourse Outlet Channel

 Sampled Date
 23/10/2019
 9:50:00AM

 Sample Received Date
 24/10/2019
 11:29:31AM

 Sample Analysis Completed
 7/11/2019
 3:02:04PM

 Sample ID
 2019-006-9941

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	56.5 μg/L	
Chlorophyll b	0.1	19.1 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)		24/10/2019
Chlorophyll a	0.1	44.7 μg/L	
Phaeophytin a	0.1	27.2 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Ammonia as N T0100-01(ADEL)			06/11/2019
Ammonia as N	0.005	0.014 mg/L	
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	3910 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		0.64 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			28/10/2019
Phosphorus - Total	0.005	0.015 mg/L	
Silica - Reactive T0111-01(ADEL)			04/11/2019
Silica - Reactive	0.05	0.65 mg/L	
TKN as N T0112-01(ADEL)			28/10/2019
TKN as Nitrogen	0.05	0.64 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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Analytical Results

300712-Tilley Swamp Watercourse Outlet Channel **Sampling Point**

23/10/2019 9:50:00AM Sampled Date 24/10/2019 11:29:31AM Sample Received Date 7/11/2019 3:02:04PM Sample Analysis Completed 2019-006-9941 Sample ID **Status** Endorsed

Customer Collected Collection Type

Sample temperature at	time of receipt 10.2°C
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31/10/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

Dissolved Organic Carbon 1 39.6 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 50.1 mg/L

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

Sample temperature at time of receipt 10.2°C

25/10/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 488 mg/L Bicarbonate 524 mg/L Carbonate 35 mg/L Hydroxide 0 mg/L

25/10/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 11700 µS/cm Total Dissolved Solids (by EC) 1 6870 mg/L

25/10/2019 pH T0010-01(ADEL)

рΗ 8.6 pH units Temperature at which pH is measured 22.7 °C

28/10/2019 **Turbidity T0018-01(ADEL)**

Turbidity 0.1

6.7 NTU

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

Sample temperature at time of receipt 10.2°C

31/10/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 20 mg/L

31/10/2019 Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 5 mg/L Volatile Suspended Solids 15 mg/L



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Analytical Results

 Sampling Point
 31514-EPA - Stoney Well

 Sampled Date
 23/10/2019 10:30:00AM

 Sample Received Date
 24/10/2019 11:31:00AM

 Sample Analysis Completed
 15/11/2019 2:27:42PM

 Sample ID
 2019-006-9934

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	45.9 μg/L	
Chlorophyll b	0.1	7.31 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)		24/10/2019
Chlorophyll a	0.1	40.2 μg/L	
Phaeophytin a	0.1	12.4 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Ammonia as N T0100-01(ADEL)			06/11/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	41300 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		4.62 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			04/11/2019
Phosphorus - Total	0.005	0.181 mg/L	
Silica - Reactive T0111-01(ADEL)			04/11/2019
Silica - Reactive	0.05	0.51 mg/L	
TKN as N T0112-01(ADEL)			04/11/2019
TKN as Nitrogen	0.05	4.62 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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31/10/2019

25/10/2019

30/10/2019

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Analytical Results

Sampling Point 31514-EPA - Stoney Well 23/10/2019 10:30:00AM Sampled Date 24/10/2019 11:31:00AM Sample Received Date 15/11/2019 2:27:42PM Sample Analysis Completed 2019-006-9934 Sample ID

Status Endorsed

Customer Collected Collection Type

Sample to	emperature at	time of	receipt	10.2°C
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31/10/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

Dissolved Organic Carbon 1 21.7 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 28.2 mg/L

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

Sample temperature at time of receipt 10.2°C

25/10/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 225 mg/L Bicarbonate 274 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 101000 μS/cm Total Dissolved Solids (by EC) 1 86300 mg/L

25/10/2019 pH T0010-01(ADEL)

рΗ 8.2 pH units Temperature at which pH is measured 22.3 °C

28/10/2019 **Turbidity T0018-01(ADEL)**

Turbidity 0.1 16 NTU

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

Result

29 mg/L

Sample temperature at time of receipt 10.2°C

30/10/2019 Suspended Solids T0160-01(ADEL)

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

1.0

Volatile Suspended Solids 29 mg/L



Suspended Solids

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Analytical Results

Sampling Point 31513-EPA - Parnka Point Boat Ramp

 Sampled Date
 23/10/2019
 11:00:00AM

 Sample Received Date
 24/10/2019
 11:30:42AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9936

Status Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	23.2 μg/L	
Chlorophyll b	0.1	2.50 μg/L	
Chlorophyll comment		Chlorophyll a & b results are the sum of chlorophyll & their degradation by products (Phaeophytins)	
Chlorophyll a & Phaeophytin a T0380-02(ADFL)	r naeopnyuns)	24/10/2019
Chlorophyll a	0.1	21.5 μg/L	
Phaeophytin a	0.1	3.80 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Ammonia as N T0100-01(ADEL)			06/11/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	36700 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		3.96 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	0.004 mg/L	
Phosphorus - Total T0109-44(ADEL)			04/11/2019
Phosphorus - Total	0.005	0.200 mg/L	
Silica - Reactive T0111-01(ADEL)			04/11/2019
Silica - Reactive	0.05	1.07 mg/L	
TKN as N T0112-01(ADEL)			04/11/2019
TKN as Nitrogen	0.05	3.96 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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Analytical Results

Collection Type

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

23/10/2019 11:00:00AM Sampled Date 24/10/2019 11:30:42AM Sample Received Date 15/11/2019 2:27:42PM Sample Analysis Completed 2019-006-9936 Sample ID

Status Endorsed **Customer Collected**

Sample temperature at time of receipt 10.2°C

31/10/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

Dissolved Organic Carbon 1 19.1 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 22.3 mg/L

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

Sample temperature at time of receipt 10.2°C

25/10/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 220 mg/L Bicarbonate 268 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/10/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 94800 µS/cm Total Dissolved Solids (by EC) 1 79300 mg/L

25/10/2019 pH T0010-01(ADEL)

рΗ 8.3 pH units Temperature at which pH is measured 22.4 °C

28/10/2019 **Turbidity T0018-01(ADEL)**

Turbidity 0.1 15 NTU

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

Sample temperature at time of receipt 10.2°C

30/10/2019 Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 30 mg/L Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 8 mg/L

Volatile Suspended Solids 22 mg/L

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Analytical Results

 Sampling Point
 31512-EPA - McGrath Flat North

 Sampled Date
 23/10/2019
 12:15:00PM

 Sample Received Date
 24/10/2019
 11:30:24AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9935

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	15.7 μg/L	
Chlorophyll b	0.1	0.99 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)	. , ,	24/10/2019
Chlorophyll a	0.1	14.8 μg/L	
Phaeophytin a	0.1	1.93 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		
Ammonia as N T0100-01(ADEL)	. •		06/11/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)		•	04/11/2019
Chloride	4.0	36300 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		3.98 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			04/11/2019
Phosphorus - Total	0.005	0.203 mg/L	
Silica - Reactive T0111-01(ADEL)			04/11/2019
Silica - Reactive	0.05	0.74 mg/L	
TKN as N T0112-01(ADEL)			04/11/2019
TKN as Nitrogen	0.05	3.98 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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Analytical Results

31512-EPA - McGrath Flat North **Sampling Point** 23/10/2019 12:15:00PM Sampled Date 24/10/2019 11:30:24AM Sample Received Date 15/11/2019 2:27:42PM Sample Analysis Completed 2019-006-9935 Sample ID

Status Endorsed

Customer Collected Collection Type

Sample to	emperature at	time of	receipt	10.2°C
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31/10/2019 **Dissolved Organic Carbon T0158-07(ADEL)**

Dissolved Organic Carbon 1 18.3 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 21.1 mg/L

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

Sample temperature at time of receipt 10.2°C

25/10/2019 Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 222 mg/L Bicarbonate 271 mg/L Carbonate 0 mg/L Hydroxide 0 mg/L

25/10/2019 Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 91000 µS/cm Total Dissolved Solids (by EC) 1 75000 mg/L

25/10/2019 pH T0010-01(ADEL)

рΗ 8.3 pH units Temperature at which pH is measured 22.5 °C

28/10/2019 **Turbidity T0018-01(ADEL)**

Turbidity 0.1 15 NTU

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

Sample temperature at time of receipt 10.2°C

30/10/2019 Suspended Solids T0160-01(ADEL) Suspended Solids 1.0

40 mg/L

28 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 12 mg/L



Volatile Suspended Solids

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Analytical Results

 Sampling Point
 31523-EPA - Long Point

 Sampled Date
 23/10/2019 2:10:00PM

 Sample Received Date
 24/10/2019 11:32:45AM

 Sample Analysis Completed
 15/11/2019 2:27:42PM

 Sample ID
 2019-006-9536

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		_
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	7.61 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)		24/10/2019
Chlorophyll a	0.1	7.13 µg/L	
Phaeophytin a	0.1	0.62 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Ammonia as N T0100-01(ADEL)			06/11/2019
Ammonia as N	0.005	0.012 mg/L	
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	11900 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	0.012 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		1.47 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			04/11/2019
Phosphorus - Total	0.005	0.075 mg/L	
Silica - Reactive T0111-01(ADEL)			04/11/2019
Silica - Reactive	0.05	0.15 mg/L	
TKN as N T0112-01(ADEL)			04/11/2019
TKN as Nitrogen	0.05	1.46 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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31/10/2019

31/10/2019

25/10/2019

25/10/2019

28/10/2019

31/10/2019

31/10/2019

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Analy	tical	Res	ults
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 Sampling Point
 31523-EPA - Long Point

 Sampled Date
 23/10/2019
 2:10:00PM

 Sample Received Date
 24/10/2019
 11:32:45AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9536

 Sample ID
 2019-006

 Status
 Endorsed

Collection Type Customer Collected

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 10.7 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 11.7 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

Sample temperature at time of receipt 10.2°C

Alkalinity Carbonate	Bicarbonate and Hydroxide T0101-01	(ADEL) 25.	/10/2019
<u> -</u>		· · ·	

Alkalinity as Calcium Carbonate 145 mg/L
Bicarbonate 176 mg/L
Carbonate 0 mg/L
Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 36500 μ S/cm Total Dissolved Solids (by EC) 1 24100 μ G/cm

pH T0010-01(ADEL)

pH 8.3 pH units

Temperature at which pH is measured 22.6 °C

Turbidity T0018-01(ADEL)

Turbidity 0.1 3.8 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 10.2°C

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

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 <1 mg/L

Volatile Suspended Solids 1 10 mg/L



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Analytical Results

Sampling Point 31518-EPA - 12 South Salt Creek

23/10/2019 2:45:00PM **Sampled Date** 24/10/2019 11:29:09AM **Sample Received Date** 15/11/2019 2:27:42PM Sample Analysis Completed 2019-006-9538-03 Sample ID Endorsed

Status

Customer Collected Collection Type

LOR	Result	Test Start Date
0.2°C		
0.1	55.9 μg/L	
0.1	8.78 µg/L	
	Chlorophyll a & b results are the sum of	
	chlorophyll & their degradation by products (
	Phaeophytins)	
ADEL)		
0.1	53.8 μg/L	
0.1	6.79 µg/L	
LOP	Popult	Test Start Date
LOK	Result	iest Start Date
0.005	<0.005 ma/L	
4.0	43200 mg/l	
0.003	<0.003 mg/l	
0.000	10.000 Hig/E	
0.003	40,000	
0.003	<0.003 mg/L	
	5.37 mg/L	
•		
0.003	<0.003 mg/L	
0.005	0.190 mg/L	
0.05	2.84 mg/L	
	-	
•	0.2°C 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.005 4.0 0.003 0.003 108-01(ADEL) 0.003 0.005	0.1 55.9 μg/L 0.1 8.78 μg/L Chlorophyll & b results are the sum of chlorophyll & their degradation by products (Phaeophytins) ADEL) 0.1 53.8 μg/L 0.1 6.79 μg/L LOR Result 0.2°C 0.005 <0.005 mg/L 4.0 43200 mg/L 0.003 <0.003 mg/L 5.37 mg/L 108-01(ADEL) 0.003 <0.003 mg/L 0.005 0.190 mg/L



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Test Start Date

Tost Start Date

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Analytical Results

Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 23/10/2019
 2:45:00PM

 Sample Received Date
 24/10/2019
 11:29:09AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9538-03

Status Endorsed

Collection Type Customer Collected

Organic Chemistry	LOR	Result	Test Start Date
Sample temperature at time of receipt	10.2°C		
Dissolved Organic Carbon T0158-07(Al	DEL)		
Dissolved Organic Carbon	1	22.7 mg/L	
Total Organic Carbon T0158-07(ADEL)			
Total Organic Carbon	1	29.7 mg/L	

Result

Sample	temperature	at timo	of receint	10	っっつ

Inorganic Chemistry - Physical

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate	227 mg/L
Bicarbonate	277 mg/L
Carbonate	0 mg/L
Hydroxide	0 mg/L

LOR

LOR

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 2 106000 μ S/cm Total Dissolved Solids (by EC) 1 92200 μ G/cm

pH T0010-01(ADEL)

pH 8.1 pH units Temperature at which pH is measured 22.5 $^{\circ}$ C

Turbidity T0018-01(ADEL)

Inorganic Chemistry - Waste Water

Turbidity 0.1 12 NTU

morganio enomicaly reacto react.	20.1	Result	icst Gtart Bate
Sample temperature at time of receip	t 10.2°C		
Suspended Solids T0160-01(ADEL)			
Suspended Solids	1.0	50 mg/L	
Volatile Suspended Solids T0160-01(A	DEL)		
Fixed Solids	1	5 mg/L	
Volatile Suspended Solids	1	45 mg/L	

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Analytical Results

Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 23/10/2019
 2:45:00PM

 Sample Received Date
 24/10/2019
 11:32:10AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9538

 Sample ID
 2019-006

 Status
 Endorsed

Collection Type Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 10).2°C		_
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	55.9 μg/L	
Chlorophyll b	0.1	8.78 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)		24/10/2019
Chlorophyll a	0.1	53.8 μg/L	
Phaeophytin a	0.1	6.79 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 10).2°C		06/11/2019
Ammonia as N T0100-01(ADEL) Ammonia as N	0.005	<0.005 mg/L	00/11/2019
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	43200 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrite as N T0107-01(ADEL)			28/10/2019
Nitrite as Nitrogen	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		5.37 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)	o	28/10/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)		5	04/11/2019
Phosphorus - Total	0.005	0.190 mg/L	
Silica - Reactive T0111-01(ADEL)		3	04/11/2019
Silica - Reactive	0.05	2.84 mg/L	
TKN as N T0112-01(ADEL)		3	04/11/2019
TKN as Nitrogen	0.05	5.37 mg/L	
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Analytical Results

Sampling Point 31518-EPA - 12 South Salt Creek

 Sampled Date
 23/10/2019
 2:45:00PM

 Sample Received Date
 24/10/2019
 11:32:10AM

 Sample Analysis Completed
 15/11/2019
 2:27:42PM

 Sample ID
 2019-006-9538

 Sample ID
 2019-006

 Status
 Endorsed

Collection Type Customer Collected

Organic Chemistry	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Dissolved Organic Carbon T0158-07(ADE	EL)		31/10/2019
Dissolved Organic Carbon	1	22.7 mg/L	
Total Organic Carbon T0158-07(ADEL)			31/10/2019
Total Organic Carbon	1	29.7 mg/L	
Inorganic Chemistry - Physical	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Alkalinity Carbonate Bicarbonate and Hy	droxide T0101-0	1(ADEL)	25/10/2019
Alkalinity as Calcium Carbonate		227 mg/L	
Bicarbonate		277 mg/L	
Carbonate		0 mg/L	
Hydroxide		0 mg/L	
Conductivity & Total Dissolved Solids T0	016-01(ADEL)		25/10/2019
Conductivity	2	106000 μS/cm	
Total Dissolved Solids (by EC)	1	92200 mg/L	
pH T0010-01(ADEL)			25/10/2019
рН		8.1 pH units	
Temperature at which pH is measured		22.5 °C	
Turbidity T0018-01(ADEL)			28/10/2019
Turbidity	0.1	12 NTU	
Inorganic Chemistry - Waste Water	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Suspended Solids T0160-01(ADEL)			31/10/2019
Suspended Solids	1.0	50 mg/L	
Volatile Suspended Solids T0160-01(ADE	L)		31/10/2019
Fixed Solids	1	5 mg/L	
Volatile Suspended Solids	1	45 mg/L	



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Analytical Results

 Sampling Point
 353180-EPA - Tauwitchere

 Sampled Date
 23/10/2019 3:00:00PM

 Sample Received Date
 24/10/2019 11:33:38AM

 Sample Analysis Completed
 7/11/2019 2:19:14PM

 Sample ID
 2019-006-9535

 Status
 Endorsed

 Collection Type
 Customer Collected

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	51.0 μg/L	
Chlorophyll b	0.1	12.4 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)	i nacopnyuno)	24/10/2019
Chlorophyll a	0.1	48.3 μg/L	
Phaeophytin a	0.1	9.23 µg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
	LOIC	Result	
Sample temperature at time of receipt 1 Ammonia as N T0100-01(ADEL)			06/11/2019
Ammonia as N	0.005	0.046 mg/L	
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	389 mg/L	20/40/2040
Nitrate + Nitrite as N T0161-01(ADEL)	0.000		28/10/2019
Nitrate + Nitrite as N	0.003	0.046 mg/L	24/40/2040
Nitrogen - Total TMZ-M06(ADEL) Nitrogen - Total		4.05	24/10/2019
· ·	2400 04/ABEL	1.95 mg/L	28/10/2019
Phosphorus - Filterable Reactive as P TO Phosphorus - Filterable Reactive as P	0.003	0.004//	20/10/2019
•	0.003	0.004 mg/L	04/11/2019
Phosphorus - Total T0109-44(ADEL) Phosphorus - Total	0.005	0.125 mg/L	04/11/2013
Silica - Reactive T0111-01(ADEL)	0.000	0.123 mg/L	04/11/2019
Silica - Reactive	0.05	0.70 mg/L	
TKN as N T0112-01(ADEL)		0.1 0 mg/2	04/11/2019
TKN as Nitrogen	0.05	1.90 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



31/10/2019

31/10/2019

25/10/2019

25/10/2019

25/10/2019

28/10/2019

30/10/2019

30/10/2019

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Analytical Results

353180-EPA - Tauwitchere **Sampling Point** 23/10/2019 3:00:00PM Sampled Date 24/10/2019 11:33:38AM Sample Received Date 7/11/2019 2:19:14PM Sample Analysis Completed 2019-006-9535 Sample ID **Status** Endorsed

Customer Collected Collection Type

Sample temperature at time of receipt 10.2°C

Dissolved Organic Carbon T0158-07(ADEL)

Dissolved Organic Carbon 1 8.7 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 16.1 mg/L

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

Sample temperature at time of receipt 10.2°C

|--|

Alkalinity as Calcium Carbonate 110 mg/L Bicarbonate 102 mg/L Carbonate 16 mg/L Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL)

Conductivity 1660 µS/cm Total Dissolved Solids (by EC) 1 924 mg/L

pH T0010-01(ADEL)

рΗ 9.0 pH units

Temperature at which pH is measured 22.5 °C

Turbidity T0018-01(ADEL)

Turbidity 0.1 31 NTU

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

Sample temperature at time of receipt 10.2°C

Suspended Solids T0160-01(ADEL) Suspended Solids 1.0 48 mg/L

Volatile Suspended Solids T0160-01(ADEL)

Fixed Solids 1 24 mg/L

Volatile Suspended Solids 24 mg/L



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Analytical Results

Collection Type

Sampling Point 31525-EPA - Villa de Yumpa 23/10/2019 4:00:00PM **Sampled Date** 24/10/2019 11:33:03AM Sample Received Date 15/11/2019 2:06:53PM Sample Analysis Completed 2019-006-9534 Sample ID Endorsed Status **Customer Collected**

Biology Operations	LOR	Result	Test Start Date
Sample temperature at time of receipt 1	0.2°C		_
Chlorophyll a & b T0380-02(ADEL)			24/10/2019
Chlorophyll a	0.1	21.7 μg/L	
Chlorophyll b	0.1	2.76 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)		24/10/2019
Chlorophyll a	0.1	20.1 μg/L	
Phaeophytin a	0.1	3.77 μg/L	
Inorganic Chemistry - Nutrients	LOR	Result	Test Start Date
Sample temperature at time of receipt 10	0.2°C		
Ammonia as N T0100-01(ADEL)			06/11/2019
Ammonia as N	0.005	<0.005 mg/L	
Chloride T0104-02(ADEL)			04/11/2019
Chloride	4.0	39700 mg/L	
Nitrate + Nitrite as N T0161-01(ADEL)			28/10/2019
Nitrate + Nitrite as N	0.003	<0.003 mg/L	
Nitrogen - Total TMZ-M06(ADEL)			24/10/2019
Nitrogen - Total		3.74 mg/L	
Phosphorus - Filterable Reactive as P T0	108-01(ADEL)		28/10/2019
Phosphorus - Filterable Reactive as P	0.003	<0.003 mg/L	
Phosphorus - Total T0109-44(ADEL)			04/11/2019
Phosphorus - Total	0.005	0.162 mg/L	
Silica - Reactive T0111-01(ADEL)			04/11/2019
Silica - Reactive	0.05	1.00 mg/L	
TKN as N T0112-01(ADEL)			04/11/2019
TKN as Nitrogen	0.05	3.74 mg/L	
Organic Chemistry	LOR	Result	Test Start Date



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31/10/2019

30/10/2019

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Analytical Results

 Sampling Point
 31525-EPA - Villa de Yumpa

 Sampled Date
 23/10/2019 4:00:00PM

 Sample Received Date
 24/10/2019 11:33:03AM

 Sample Analysis Completed
 15/11/2019 2:06:53PM

 Sample ID
 2019-006-9534

 Sample ID
 2019-006-95

 Status
 Endorsed

Collection Type Customer Collected

Sample temperature at	time of receipt 10.2°C
-----------------------	------------------------

Dissolved Organic Carbon T0158-07(ADEL) 31/10/2019

Dissolved Organic Carbon 1 19.3 mg/L

Total Organic Carbon T0158-07(ADEL)

Total Organic Carbon 1 21.9 mg/L

Inorganic Chemistry - Physical LOR Result Test Start Date

Sample temperature at time of receipt 10.2°C

Alkalinity Carbonate Bicarbonate and Hydroxide T0101-01(ADEL)

Alkalinity as Calcium Carbonate 222 mg/L
Bicarbonate 252 mg/L
Carbonate 9 mg/L
Hydroxide 0 mg/L

Conductivity & Total Dissolved Solids T0016-01(ADEL) 25/10/2019

Conductivity 2 94600 μ S/cm Total Dissolved Solids (by EC) 1 79000 mg/L

pH T0010-01(ADEL) 25/10/2019

pH 8.4 pH units Temperature at which pH is measured 22.4 $^{\circ}$ C

Turbidity T0018-01(ADEL) 28/10/2019

Turbidity 0.1 9.8 NTU

Inorganic Chemistry - Waste Water LOR Result Test Start Date

Sample temperature at time of receipt 10.2°C

Suspended Solids T0160-01(ADEL)

Suspended Solids 1.0 39 mg/L

Volatile Suspended Solids T0160-01(ADEL)
Fixed Solids 1 14 mg/L

Volatile Suspended Solids 1 25 mg/L



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EPA - Morella Creek @ guage

Incidents

Sample ID	S.Point	Description	Sampled Date	Analysis (where Applicable)	Incident Description
2019-006-9937 Samples Not C	31519	EPA - Morella Basin at Outlet Regulator	23/10/2019	Turbidity	Test results have been checked and the results verified
Sample ID	S.Point	Description	Sampled Date	Non Collect Reason	

7/10/2019

Bottles Not Collected

315191

2019-006-9940

Sample ID	S.Point	Description	Sampled Date	Laboratory	Non Collect Reason
2019-006-9940-0	315191	EPA - Morella Creek @ guage	7/10/2019	Inorganic Chemistry -	Bottle not received at AWQC
				Nutrients	
2019-006-9940-0	315191	EPA - Morella Creek @ guage	7/10/2019	Biology Operations	Bottle not received at AWQC
2019-006-9940-0	315191	EPA - Morella Creek @ guage	7/10/2019	Inorganic Chemistry -	Bottle not received at AWQC
				Physical	
2019-006-9940-0	315191	EPA - Morella Creek @ guage	7/10/2019	Organic Chemistry	Bottle not received at AWQC
2019-006-9940-0	315191	EPA - Morella Creek @ guage	7/10/2019	Inorganic Chemistry -	Bottle not received at AWQC
				Nutrients	
2019-006-9940-0	315191	EPA - Morella Creek @ guage	7/10/2019	Inorganic Chemistry -	Bottle not received at AWQC
				Waste Water	
2019-006-9940-0	315191	EPA - Morella Creek @ guage	7/10/2019	Inorganic Chemistry -	Bottle not received at AWQC
				Nutrients	
2019-006-9940-0	315191	EPA - Morella Creek @ guage	7/10/2019	Inorganic Chemistry -	Bottle not received at AWQC
				Nutrients	



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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	
T0107-01	Nitrite - Automated Flow Colorimetry	AP4500NO3I	
T0108-01	Filterable Reactive Phosphorus - Automated Flow	AP4500PG	
	Colorimetry		
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 (OI Analytical)	SM5310C	
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.
 * notice 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/r
- 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.