TOOWOOMBA REGION

Rich traditions. Bold ambitions.

Our Reference: DM#7533483-v11
Your Reference: MAN19640
Contact Officer: David Gleeson
Telephone: 07 4688 6780

06 March 2020

Compliance Delivery Manager
Department of Environment and Science
P.O. Box 731
TOOWOOMBA QLD 4350
Attn: Sarah Horton

Dear Ms Horton

Re: TEP Final Report #11 Clifton WWTP for Period to 28 February 2020 (MAN19640)

The following progress report has been prepared and submitted in accordance with the reporting requirements of the approved Transitional Environmental Program MAN19640 that came into effect on the 12 April 2017 and remains in force for the period 12 April 2017 to 28 February 2020.

In agreement with Department of Environment and Science (DES), this report is the final report describing how the objectives of the TEP have been achieved and is to be provided to DES within one (1) month after completion of the actions of the TEP and prior to the end date of the TEP.

Objectives of TEP (MAN19640)

1. Prevention of Harm: (section 331(c)):

The objective of the TEP is to reduce the concentration of BOD_5 and Suspended Solids discharged to waters of King's Creek at Release Point W1 to sustainable levels at a location described as the downstream boundary of Portion 1454, Parish of Elphinstone at 25 Km AMTD (as described in Environmental Authority EPPR00852813) and to prevent potential environmental harm being caused to waters from the elevated load of BOD_5 and Suspended Solids being discharged to the environment.

2. Comply with a condition of an environmental authority: (section 331(e)).

Objective 1 will be achieved by transitioning effluent quality to compliance with Condition (C9) of WT0076 Amendment 2 Environmental Authority EPPR00852813. The release of contaminants to waters must comply, at the sampling and in situ measurement point specified In Schedule H, with each of the limits specified in schedule C Table 1 for each quality characteristic in EA EPPR00852813.

Refer to **Attachment #1** for the updated condition under the current licence. No change has occurred to the limits however condition numbering has changed since the TEP was submitted and approved.

Evaluation of compliance. (Refer Attachment #3)

BOD_5
An analysis of the data indicates that desludging strategies and installation of aeration in lagoon #4 provided positive improvement in BOD_5 concentrations discharged to King's Creek. The most recent data October-November 2019 were largely compliant with the licence limit.

The data does not strongly support the requirement that compliant results are reliably achievable at the 85 %ile confidence level due to the lack of consistently compliant data over a significant period

Suspended Solids (SS)

An analysis of the data indicates that desludging strategies and installation of aeration in lagoon #4 provided minimal improvement in suspended solids concentrations discharged to King's Creek. The most recent data October-November 2019 were non-compliant with the licence limit.

The data does not support the requirement that compliant results are reliably achievable at the 85 %ile confidence level.

pH

An analysis of the data indicates that desludging strategies and installation of aeration in lagoon #4 provided improvement in pH discharged to King's Creek. With one exception, results have been compliant since 04-10-2018 and have shown a marked improvement since 16-08-2018.

The data supports the requirement that pH will remain consistently within the range of 6.5-9.3

Dissolved Oxygen

An analysis of the data indicates that desludging strategies and installation of aeration in lagoon #4 provided minimal improvement in dissolved oxygen discharged to King's Creek. With two exceptions, results have been compliant since 04-10-2018. The data indicates however that the variability of dissolved has become greater.

The data supports the requirement that dissolved oxygen can be reliably maintained at > 2.0 mg/L.

Faecal Coliforms

An analysis of the data weakly indicates that desludging strategies and installation of aeration in lagoon #4 provided improvement in faecal coliforms discharged to King's Creek. Results have been compliant since 30-05-2019 with one exception.

The data does not strongly support the requirement that faecal coliforms can be reliably maintained at <1000 cfu/mL due to the lack of consistently compliant data over a significant period.

Issues and Responses

a) In accordance with the TEP and by 15 May 2019 a progress review of the TEP was held with TRC senior officers and the TEP contingency plan was activated in accordance with Section 7 of the TEP. This plan included an assessment by consultants (GHD) and if the assessment so indicated then the installation of a filter system and further monitoring to establish if the filter could bring effluent results within compliance.

b) A preliminary process assessment of the existing lagoons provided by GHD July 2019 suggests that the volume of the lagoons is adequate in terms of nominal hydraulic retention time, given the relatively low flows. However, based on assumptions of mass loading and performance of the primary sedimentation tank, the mass loads on the primary lagoon (no. 1) are probably close to or in excess of typical norms for a facultative lagoon system. This is likely to be a fundamental cause of high algal concentrations in the secondary lagoons downstream, and hence to license effluent quality non-compliance.

c) Aeration of the last secondary lagoon (no. 4) since June 2018 has marginally improved effluent quality (e.g. lowered pH) and helped to break up algal blooms. However, the performance data over the past year (in terms of plant outlet BOD and (T)SS) is inconclusive; it is unlikely that aeration alone will produce adequate overall improvement in effluent quality to achieve license compliance.

d) The fundamental problem is the failure of aeration to adequately flocculate organic material and produce removal through settlement of suspended solids (and hence BOD). Long-term removal of organic material (SS and BOD) through the system will likely always be an issue, unless process improvements are made to either flocculate and settle or filter the effluent from Lagoon no. 4 before final discharge. In addition to clarification/ filtration, a disinfection step may also need to be added, to ensure faecal coliform compliance.

e) It is a given that the lagoons are likely to attract birds and other wildlife that contribute pathogens and indicator bacterial counts.

f) July 2019 Consultant GHD requested to provide a fee estimate for

   a. Detail the solution for the cloth filters unit including provision of sourcing quotations on behalf of council so that procurement activities can be shortened.

   b. Project management services for the development, assessment and installation of the temporary solution on a "trial to buy" arrangement in line with council's policies and procedures.

g) September 2019 Water Infrastructure Services were ready to award tender for supply of filter system. There was an anticipated 6-8 weeks supply time for the equipment. Evaluation of plant loading for design purposes commenced.

h) October 2019 Plant loading report received which indicated the plant was operating well within the Environmental Authority EP. This report also identified that sludge in Lagoon #1 may be having a much more significant effect on plant performance.

i) 18 November 2019, trace levels of four wastewater indicator chemicals were reported to Council in samples taken from the bores. There are no health-based guideline levels for these chemicals in the Australian Drinking Water Guidelines." The presence of pharmaceuticals in groundwater is an indicator or possible sewage contamination. Pharmaceutical analysis of water supply bores CL#1, CL#2 and CL#3 indicated contamination of the bores with (In various instances).

   - Acesulfame K (sweetener) - 0.56 micrograms per L.
   - Primidone – 0.03 micrograms per L
   - Bisphenol A – 43 nanograms per L
   - Cholesterol – 120 nanograms per L

   On or around this date observations of the Clifton STP Lagoon system indicated an unexplained drop in levels.

   Production bores for Clifton where shut down. And a day later (19 November 2019) the reservoir was isolated, and trucking of drinking water commenced. QLD Health and the Department of Environment and Science were notified by the Principal Chemist Water and Waste Operations.
   Sampling of groundwater for pharmaceuticals and E. coli commenced.

j) 25-11-2019 Wastewater carting commenced from Clifton WWTP and lowering of the relevant lagoons commenced. All discharge to Kings Creek had ceased by this date. Effluent discharge to King's Creek was shut down due to possible contamination of groundwater from lagoons and/or Kings Creek. Trucking of effluent to Wyreema SPS commenced for Lagoons, #3 and #4. These lagoons were emptied, and Lagoon #2 partially emptied. No discharge of effluent has occurred since this date.

k) Planning commenced to address Clifton treatment system and lagoon groundwater issues.

l) A mail drop to Clifton residents was carried out 4 December 2019.

Current Status of Lagoon Levels (Refer Attachment #4)

a) Lagoon #1 is estimated to be 20% full. This lagoon is currently used as a balance lagoon and is being dewatered by vacuum trucks. Operators are pumping lagoon #2 into lagoon #1 for removal, however this is sometimes curtailed in preparation for pending rain events.
b) Lagoon #2 is estimated to be 40% full.
c) Lagoon #3 is empty, photo shows shallow water in the bottom of the lagoon result of recent rain.
d) Lagoon #4 is empty.

Carting of WWTP influent

a) Four (4) Semi trailers are currently removing lagoon influent from Clifton to the Wyreema pump station where it is pumped to Wetalla, this has been ongoing since December 2019 with a few breaks for wet weather. On average 20 loads are complete daily with an average volume of 330kL/day removed. Plant inflow is 180kL/day.
b) The expectation is that all lagoon effluent will be removed within the next three weeks, then it will be two trucks transporting daily flow to Wyreema. This estimate is subject to rainfall, the trucks cannot operate in wet conditions.
c) TRC will look to remain in compliance with the existing EA and General Environmental Duty by continuing to truck raw sewage out of the town until such time that a final option is decided upon.
d) Similarly, water supply for the town of Clifton will continue to be trucked in until such time that an alternative supply is available (that is not groundwater dependent) or it can be established that contamination issues with the groundwater are resolved.

TRC have been gathering information in relation as to what is best way forward with Clifton WWTP and whether it is to line the existing lagoons and filter the effluent or to install a new modular plant.

Advice from the Manager Strategic Water Planning & Capital Delivery is that: Consultants (Engeny) carried out a site visit 27 February 2020 to inspect the site, layout, potential area for equipment laydown and effluent reuse area.

The scope of the project was narrowed to suit the specific issues TRC will have to deal with.

- Biowin modelling
- Process overview and layout.
- 30% and 90% design review for discussion with the business and DES. 'For construction' drawings when complete.
- Land capability assessment commenced to determine the ability of council land to accept the volume of water from the waste water process

Water supply will be reliant on the Warwick pipeline ultimately, but TRC are moving forward in two (2) additional areas:

- Southern Trunk main – Design will begin shortly
- Quotations being sought from Veolia and Suez for temporary WTP's

Sampling: Refer Attachment #

TRC have contacted 4 private bore owners and sampling (of PHAS/PHOS, acesulfame, norfloxacin, Primidone, Bisphenol A and Cholesterol). Sampling of these bores will take place when the ground dries up and access is possible.

Sampling of the TRC bores will continue fortnightly. (Current available results attached)

The Principal Scientist Laboratory Services has arranged sampling with two (2) of the private bore owners and this will occur in the week commencing 08 March 2020. The remaining two (2) private bore owners have been messaged and we expect sampling will be arranged as soon as possible.

Recent heavy rain has limited access to these private bores.

If you require further clarification on the content of this report, please contact David Gleeson (Principal Management Systems) on 0407657338.

Yours Sincerely

John Mills
Manager Water Operations

Attachment 1

Release Quality Characteristics

Env Auth EPPR00852813
Clifton WWTP (Former WT0076)
Condition C9

Quality Characteristics of Release to Waters

7-WT3 The release of contaminants to waters must comply, at the sampling and in situ measurement point specified in condition 7-WT5, with each of the limits specified in Part 7 Table 1 – Release Quality Characteristic Limits for each quality characteristic.

Part 7 TABLE 1 – Release Quality Characteristics Limits

QUALITY CHARACTERISTICS	RELEASE POINT NUMBER	RELEASE LIMIT	LIMIT TYPE
5-day Biochemical Oxygen Demand. (mg/l)	W1	60	maximum
5-day Biochemical Oxygen Demand. (mg/l)	W1	20 *	long term 85 percentile compliance
Suspended Solids. (mg/l)	W1	90 **	maximum
Suspended Solids. (mg/l)	W1	30 **	long term 85 percentile compliance
pH (pH Units)	W1	6.5-9.3	range
Dissolved Oxygen (mg/L)	W1	2	minimum
Faecal Coliforms (organisms/100ml)	W1	1000 organisms per 100 millilitres as a median value, with 4 out of 5 consecutive water samples containing less than 4000 organisms per 100 millilitres.	

* This release limit is applicable after 1 March 2001
** These release limits are applicable after 1 March 2002

Attachment #2

Compliance Evaluation

(All Action Items)

TABLE 1

Actions	Start date	End date
1. Desludge Lagoon 4: • Investigate Floating Wetland removal options with SPEL • Determine temporary storage options for sludge, • Options for isolation of lagoon 4 and new temporary discharge point. • Identify risks to effluent quality. • Assess risk of desludging to lagoon integrity. (Monitor desludging closely) • Undertake works. • Reinstate floating wetland.	12 April 2017	• **Completed** • **Completed** • **Completed** • **Completed** • **Completed** • **Completed** • **Completed**
2. Power augmentation to site: • Scope additional power requirements. (See action Item 3 and 7) • Total power requirement. (Aerators + contingency filtration depending on performance of aerators.) ~~• Location of infrastructure.~~ ~~• Ergon/contractor timelines.~~ • ~~Installation of Infrastructure~~.	30 June 2017	• **Completed** • **Completed** • **Not required** • **Not required** • **Not required**
3. Installation of Aeration System Lagoon 4: • Design and implement an aeration system to treat wastewater on site and to release effluent compliant with Condition (C9) to waters at location W1. • Investigate preferred models and supply times. • Investigate fixing method and location. • Assessment of need to reinforce embankments. • Establish site access for installation. • Undertake works.	30 June 2017	• **Completed** • **Completed** • **Completed** • **Completed** • **Completed** • **Completed**
4. Install baffle curtain wall • Scope requirements length/depth/materials • ~~Source providers~~ • ~~Engage contractor~~ • Undertake works	30 June 2017	• **Completed** • **Not required** • **Not required** • **Completed**
5. Licence Performance Monitoring (4 Seasons) • Frequency Weekly (review as program proceeds) • Analysis (As required by licence)	Post Aeration 14 June 2018	Post-Aeration 30 March 2019 **(Ongoing) Instream data limited due to drought and no flow in King's Creek**
6. Assess seasonal process performance and need for contingency plan to meet licence discharge limits. • Review effluent data and compliance performance • Assess need for contingency plan activation (e.g. filter system) • Advise EHP of outcome. • If required activate contingency plan.	1 April 2019	**Plant unable to fully achieve licence. Contingency Plan Activated** 1 May 2019
7. Contingency Plan (Filtration System) • Installation • Monitor for 3 months	Installation 1 May 2019 Monitor 1 August 2019	**Action Paused due to groundwater issues** **Action Paused due to groundwater issues**
8. TEP Progress reports against Action plan • Evaluate Performance against licence. (EHP Report) • TEP Annual Return • Final Report to EHP (Includes Contingency Timeframe)	Ongoing Ongoing End of program	**Completed** **Future** **Completed**-28 February 2020

Performance indicators	Start date	End date
1. A Registered Professional Engineer supervises the design and installation of treatment system infrastructure.	3 January 2017	**Compliant**-Target 31 January 2020
2. Regular performance reviews which include a statement of achievement against the Action Plan to be submitted to EHP.	3 Monthly	**Compliant**- Target 31 January 2020
3. Each performance review will include Table(s) and Graph(s) of all water quality in-situ monitoring results and laboratory results.	3 Monthly	**Compliant**-Target 31 January 2020
4. Each performance review will include a compliance statement for Condition (C9). The release of contaminants to waters, at the sampling and in situ measurement point specified In Schedule H, with each of the limits specified in schedule C Table 1 for each quality characteristic in Environmental Authority EPPR00852813 of WT0076 Amendment 2.	3 Monthly	**Compliant**-Target 31 January 2020
Monitoring	**Start date**	**End date**
9. Suitably qualified Water Operations staff will undertake all monitoring and water quality samples are to be analyzed by TRC's NATA accredited laboratory.	1 January 2017	**Compliant**-Target 31 December 2019
10. All water quality sampling will be undertaken by Water Operations staff under the guidance of TRC's NATA certified Laboratory and with reference to the Queensland's Government Monitoring and Sampling Manual.	1 January 2017	**Compliant**-Target 31 December 2019
11. Monitor the release of contaminants to waters which is to comply, at the sampling and in situ measurement point W1 specified in Schedule H, with each of the limits specified in Schedule C Table 1 for each quality characteristic in Environmental Authority EPPR00852813. (See Attach 2 and Attach 5 - Table 1 and 2)	Frequency Weekly	**Commenced**-Target 31 December 2019
12. Monitor Kings Creek 50m upstream and 50m downstream of Release Point W1 for each quality characteristic specified in schedule C Table 1 Environmental Authority EPPR00852813. (See Attachment 5)	Frequency Weekly	**Commenced**-Target 31 December 2019
Reporting	**Start date**	**End date**
1. A three (3) monthly progress report will be prepared and submitted to EHP by the Principal Management Systems detailing the actions taken, milestones achieved and the forecasted actions to be undertaken for the following three (3) months. Three (3) monthly progress reports will also include tables and graphs of water quality monitoring results taken at the sampling and in situ measurement point W1 and 50m upstream and 50m downstream of W1.	Ongoing	31 March 2017-**Not required** 30 June 2017-**Completed** 30 Sept 2017-**Completed** 31 Dec 2017- **Completed** 31 March 2018- **Completed** 30 June 2018- **Completed** 30 Sept 2018- **Complete** 31 Dec 2018- **Complete** 31 March 2019- **Complete** 30 June 2019- **Briefing with DES** 30 Sept 2019- **Complete.**
2. A final report describing how the objectives of the TEP have been achieved will be provided to EHP within one (1) month after completion of the actions of the TEP and prior to the end date of the TEP.	31 Jan 2020	28 February 2020- **Completed**

Attachment #3
Data and Graphs

Data File: DM#7506820

Table and Graph 1 - BOD5

Clifton WWTP		Kings Creek Upstream	Xings Creek Release Point	Kings Creek Downstream	Result	Licence Limits		
Reg Date	Test	Result	Result	Result	Units	TEP Licence Limit	Licence Limit EPPR00852413	Max Limit
4/01/2018	BOD5	4	7	5	mg/L	200	20	60
11/01/2018	BOD5	5	9	4	mg/L	200	20	60
18/01/2018	BOD5	3	11	20	mg/L	200	20	60
25/01/2018	BOD5	2	9	2	mg/L	200	20	60
1/02/2018	BOD5	No flow in Kings Creek from 1 February 2018	9	No flow in Kings Creek from 1 February 2018	mg/L	200	20	60
8/02/2018	BOD5		12		mg/L	200	20	60
14/02/2018	BOD5		9		mg/L	200	20	60
22/02/2018	BOD5		15		mg/L	200	20	60
1/03/2018	BOD5		10		mg/L	200	20	60
8/03/2018	BOD5		10		mg/L	200	20	60
15/03/2018	BOD5		10		mg/L	200	20	60
21/03/2018	BOD5		18		mg/L	200	20	60
28/03/2018	BOD5		14		mg/L	200	20	60
5/04/2018	BOD5		12		mg/L	200	20	60
11/04/2018	BOD5		11		mg/L	200	20	60
19/04/2018	BOD5		15		mg/L	200	20	60
26/04/2018	BOD5		15		mg/L	200	20	60
3/05/2018	BOD5		14		mg/L	200	20	60
10/05/2018	BOD5		17		mg/L	200	20	60
17/05/2018	BOD5		19		mg/L	200	20	60
25/05/2018	BOD5		20		mg/L	200	20	60
31/05/2018	BOD5		19		mg/L	200	20	60
7/06/2018	BOD5		22		mg/L	200	20	60
15/06/2018	BOD5		20		mg/L	200	20	60
21/06/2018	BOD5		15		mg/L	200	20	60
27/06/2018	BOD5		23		mg/L	200	20	60
5/07/2018	BOD5		23		mg/L	200	20	60
12/07/2018	BOD5		26		mg/L	200	20	60
19/07/2018	BOD5		35		mg/L	200	20	60
26/07/2018	BOD5		24		mg/L	200	20	60
2/08/2018	BOD5		44		mg/L	200	20	60
9/08/2018	BOD5		79		mg/L	200	20	60
16/08/2018	BOD5		77		mg/L	200	20	60
23/08/2018	BOD5		47		mg/L	200	20	60
30/08/2018	BOD5		50		mg/L	200	20	60
6/09/2018	BOD5		50		mg/L	200	20	60
13/09/2018	BOD5		65		mg/L	200	20	60
20/09/2018	BOD5		69		mg/L	200	20	60
27/09/2018	BOD5		60		mg/L	200	20	60
4/10/2018	BOD5		48		mg/L	200	20	60
11/10/2018	BOD5		47		mg/L	200	20	60
18/10/2018	BOD5		72		mg/L	200	20	60
24/10/2018	BOD5		179		mg/L	200	20	60
31/10/2018	BOD5	2	24	10	mg/L	200	20	60
9/11/2018	BOD5	No flow in Kings Creek from 1 February 2018	31	No flow in Kings Creek from 1 February 2018	mg/L	200	20	60
14/11/2018	BOD5		47		mg/L	200	20	60
22/11/2018	BOD5		32		mg/L	200	20	60
29/11/2018	BOD5		Lagoons filling. No discharge from 29 November to 14 February 2019		mg/L	200	20	60
6/12/2018	BOD5				mg/L	200	20	60
13/12/2018	BOD5				mg/L	200	20	60
20/12/2018	BOD5				mg/L	200	20	60
27/12/2018	BOD5				mg/L	200	20	60
3/01/2019	BOD5				mg/L	200	20	60
10/01/2019	BOD5				mg/L	200	20	60
17/01/2019	BOD5				mg/L	200	20	60
24/01/2019	BOD5				mg/L	200	20	60
31/01/2019	BOD5				mg/L	200	20	60
7/02/2019	BOD5				mg/L	200	20	60
14/02/2019	BOD5	30		25	mg/L	200	20	60
21/02/2019	BOD5	65	67	34	mg/L	200	20	60
28/02/2019	BOD5	30	34	32	mg/L	200	20	60
7/03/2019	BOD5	No Flow	56	No Flow	mg/L	200	20	60
14/03/2019	BOD5		30		mg/L	200	20	60
21/03/2019	BOD5	7	15	8	mg/L	200	20	60
28/03/2019	BOD5	5	16	5	mg/L	200	20	60
4/04/2019	BOD5	7	18	10	mg/L	200	20	60
10/04/2019	BOD5	9	16	24	mg/L	200	20	60
18/04/2019	BOD5	5	47	19	mg/L	200	20	60
24/04/2019	BOD5	4	30	38	mg/L	200	20	60
2/05/2019	BOD5	19	29	29	mg/L	200	20	60
9/05/2019	BOD5	11	17	9	mg/L	200	20	60
16/05/2019	BOD5	4	13	13	mg/L	200	20	60
23/05/2019	BOD5	2	>88	10	mg/L	200	20	60
30/05/2019	BOD5	5	16	14	mg/L	200	20	60
6/06/2019	BOD5	10	18	16	mg/L	200	20	60
13/06/2019	BOD5	11	24	23	mg/L	200	20	60
20/06/2019	BOD5				mg/L	200	20	60
27/06/2019	BOD5	9	22	14	mg/L	200	20	60
11/07/2019	BOD5	6	33	21	mg/L	200	20	60
17/07/2019	BOD5	9	24	22	mg/L	200	20	60
25/07/2019	BOD5	6	23	16	mg/L	200	20	60
31/07/2019	BOD5	18	25	19	mg/L	200	20	60
6/08/2019	BOD5	No Flow to Kings Creek Lagoons refilling			mg/L	200	20	60
12/08/2019	BOD5				mg/L	200	20	60
18/08/2019	BOD5				mg/L	200	20	60
24/08/2019	BOD5				mg/L	200	20	60
30/08/2019	BOD5				mg/L	200	20	60
5/09/2019	BOD5				mg/L	200	20	60
13/09/2019	BOD5				mg/L	200	20	60
17/09/2019	BOD5				mg/L	200	20	60
23/09/2019	BOD5				mg/L	200	20	60
29/09/2019	BOD5				mg/L	200	20	60
5/10/2019	BOD5				mg/L	200	20	60
11/10/2019	BOD5				mg/L	200	20	60
17/10/2019	BOD5				mg/L	200	20	60
24/10/2019	BOD5	5	18	16	mg/L	200	20	60
30/10/2019	BOD5	8	21	21	mg/L	200	20	60
7/11/2019	BOD5	13	16	16	mg/L	200	20	60
14/11/2019	BOD5	13	16	16	mg/L	200	20	60
21/11/2019	BOD5				mg/L	200	20	60
28/11/2019	BOD5				mg/L	200	20	60
5/12/2019	BOD5				mg/L	200	20	60
12/12/2019	BOD5				mg/L	200	20	60
19/12/2019	BOD5				mg/L	200	20	60
26/12/2019	BOD5	Flow ceased to King's Creek due to possible contamination of groundwater from lagoons and/or Kings Creek. Trucking of effluent to Wyreema SPS commenced. Lagoons #3 and #4 emptied. Lagoon #2 partially emptied. Planning commenced to address ground water issues			mg/L	200	20	60
2/01/2020	BOD5				mg/L	200	20	60
9/01/2020	BOD5				mg/L	200	20	60
16/01/2020	BOD5				mg/L	200	20	60
23/01/2020	BOD5				mg/L	200	20	60
30/01/2020	BOD5				mg/L	200	20	60
6/02/2020	BOD5				mg/L	200	20	60
13/02/2020	BOD5				mg/L	200	20	60
20/02/2020	BOD5				mg/L	200	20	60
27/02/2020	BOD5				mg/L	200	20	60
	BOD5				mg/L	200	20	60

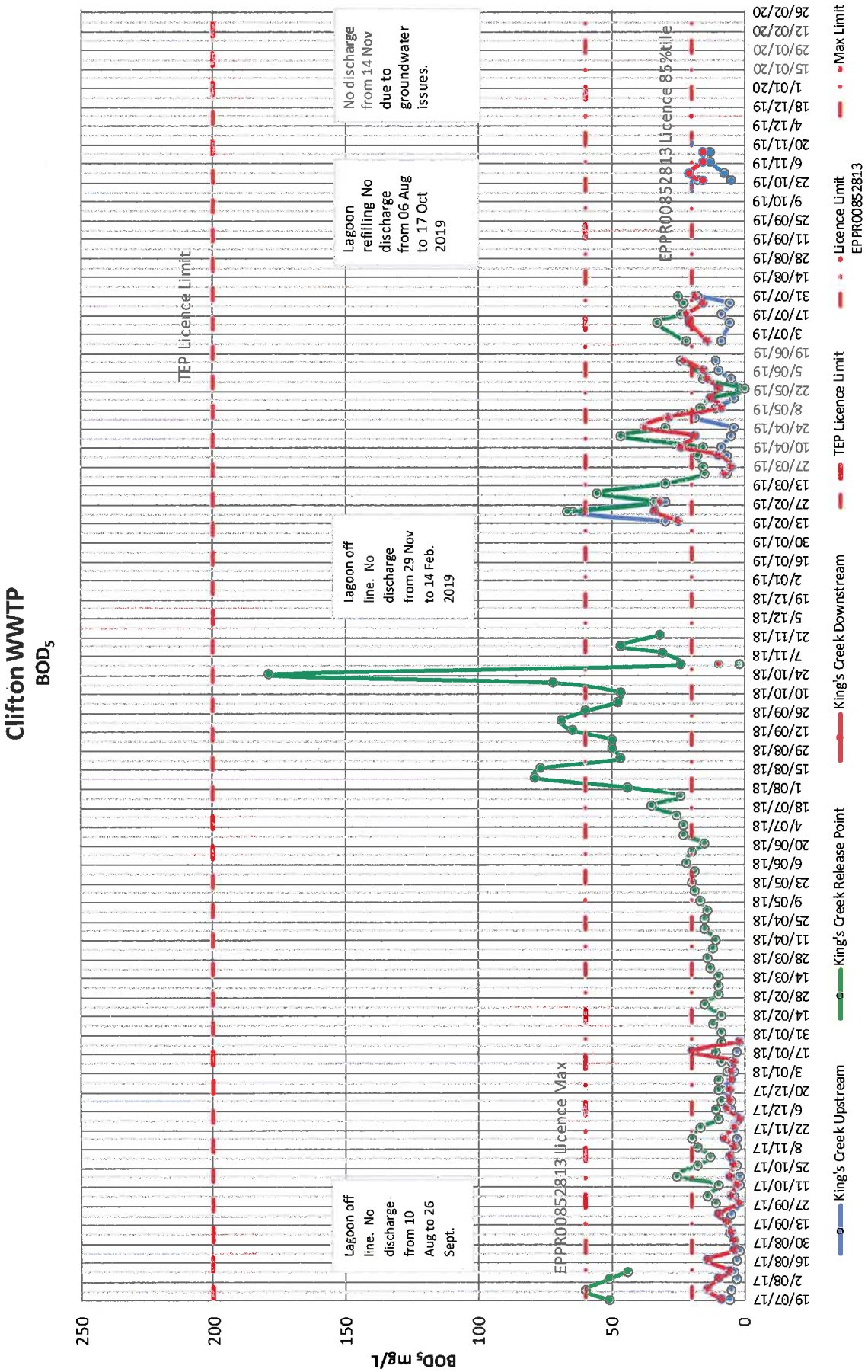

Clifton WWTP
BOD5
BOD5 mg/L
250
200
150
100
50
0
TEP Licence Limit
EPPR00852813 licence Max
EPPR00852813 Licence 85%tile
Lagoon off line. No discharge from 10 Aug to 26 Sept.
Lagoon off line. No discharge from 29 Nov to 14 Feb. 2019
Lagoon refilling No discharge from 06 Aug to 17 Oct 2019
No discharge from 14 Nov due to groundwater issues.
King's Creek Upstream
King's Creek Release Point
King's Creek Downstream
TEP Licence Limit
Licence Limit EPPR00852813
Max Limit
19/07/17
2/08/17
16/08/17
30/08/17
13/09/17
27/09/17
11/10/17
25/10/17
8/11/17
22/11/17
6/12/17
20/12/17
3/01/18
17/01/18
31/01/18
14/02/18
28/02/18
14/03/18
28/03/18
11/04/18
25/04/18
9/05/18
23/05/18
6/06/18
20/06/18
4/07/18
18/07/18
1/08/18
15/08/18
29/08/18
12/09/18
26/09/18
10/10/18
24/10/18
7/11/18
21/11/18
5/12/18
19/12/18
2/01/19
16/01/19
30/01/19
13/02/19
27/02/19
13/03/19
27/03/19
10/04/19
24/04/19
8/05/19
22/05/19
5/06/19
19/06/19
3/07/19
17/07/19
31/07/19
14/08/19
28/08/19
11/09/19
25/09/19
9/10/19
23/10/19
6/11/19
20/11/19
4/12/19
18/12/19
1/01/20
15/01/20
29/01/20
12/02/20
26/02/20

Table and Graph 2 - Suspended Solids

Clifton WWTP		Kings Creek Upstream	Kings Creek Release Point	Kings Creek Downstream	Result	Licence Limits		
Reg. Date	Test	Result-s	Result	Result	Units	TEP Licence Limit	Licence Limit EPPR00852813	Max Limit
4/1/2018	SS	22	11	26	mg/L	400	30	90
11/1/2018	SS	27	20	36	mg/L	400	30	90
18/1/2018	SS	18	24	85	mg/L	400	30	90
25/1/2018	SS	17	24	30	mg/L	400	30	90
1/2/2018	SS	No flow in Kings Creek from 1 February 2018	31	No flow in Kings Creek from 1 February 2018	mg/L	400	30	90
8/2/2018	SS		38		mg/L	400	30	90
14/2/2018	SS		30		mg/L	400	30	90
22/2/2018	SS		25		mg/L	400	30	90
1/3/2018	SS		31		mg/L	400	30	90
8/3/2018	SS		34		mg/L	400	30	90
15/3/2018	SS		64		mg/L	400	30	90
21/3/2018	SS		41		mg/L	400	30	90
28/3/2018	SS		46		mg/L	400	30	90
5/4/2018	SS		17		mg/L	400	30	90
11/4/2018	SS		14		mg/L	400	30	90
19/4/2018	SS		22		mg/L	400	30	90
26/4/2018	SS		21		mg/L	400	30	90
3/5/2018	SS		28		mg/L	400	30	90
10/5/2018	SS		19		mg/L	400	30	90
17/5/2018	SS		26		mg/L	400	30	90
23/5/2018	SS		40		mg/L	400	30	90
31/5/2018	SS		42		mg/L	400	30	90
7/6/2018	SS		35		mg/L	400	30	90
15/6/2018	SS		57		mg/L	400	30	90
21/6/2018	SS		37		mg/L	400	30	90
27/6/2018	SS		63		mg/L	400	30	90
5/7/2018	SS		62		mg/L	400	30	90
12/7/2018	SS		46		mg/L	400	30	90
19/7/2018	SS		72		mg/L	400	30	90
26/7/2018	SS		55		mg/L	400	30	90
2/8/2018	SS		62		mg/L	400	30	90
9/8/2018	SS		124		mg/L	400	30	90
16/8/2018	SS		111		mg/L	400	30	90
23/8/2018	SS		110		mg/L	400	30	90
30/8/2018	SS		85		mg/L	400	30	90
6/9/2018	SS		87		mg/L	400	30	90
13/09/180	SS		87		mg/L	400	30	90
20/9/2018	SS		79		mg/L	400	30	90
27/9/2018	SS		63		mg/L	400	30	90
4/10/2018	SS		47		mg/L	400	30	90
11/10/2018	SS		37		mg/L	400	30	90
18/10/2018	SS		77		mg/L	400	30	90
24/10/2015	SS		32		mg/L	400	30	90
31/10/2018	SS	14	41	18	mg/L	400	30	90
9/11/2018	SS	No flow in Kings Creek from 1 February 2018	51	No flow in Kings Creek from 1 February 2018	mg/L	400	30	90
14/11/2018	SS		53		mg/L	400	30	90
22/11/2018	SS		68		mg/L	400	30	90
29/11/2018	SS		Lagoon off line. No discharge from 28 November to 22 December		mg/L	400	30	90
6/12/2018	SS				mg/L	400	30	90
13/12/2018	SS				mg/L	400	30	90
20/12/2018	SS				mg/L	400	30	90
27/12/2018	SS				mg/L	400	30	90
3/1/2019	SS				mg/L	400	30	90
10/1/2019	SS				mg/L	400	30	90
17/1/2019	SS				mg/L	400	30	90
24/1/2019	SS				mg/L	400	30	90
31/1/2019	SS				mg/L	400	30	90
7/2/2019	SS				mg/L	400	30	90
14/2/2019	SS	105		65	mg/L	400	30	90
21/2/2019	SS	141	247	205	mg/L	400	30	90
28/2/2019	SS	108	92	209	mg/L	400	30	90
7/3/2019	SS	No Flow	123	No Flow	mg/L	400	30	90
14/3/2019	SS		62		mg/L	400	30	90
21/3/2019	SS	27	27	60	mg/L	400	30	90
26/03/2019	SS	18	37	22	mg/L	400	30	90
4/04/2019	SS	12	33	36	mg/L	400	30	90
10/04/2019	SS	5	23	60	mg/L	400	30	90
18/04/2019	SS	13	46	64	mg/L	400	30	90
24/04/2019	SS	14	37	75	mg/L	400	30	90
2/05/2019	SS	15	27	56	mg/L	400	30	90
9/05/2019	SS	35	45	48	mg/L	400	30	90
16/05/2019	SS	15	26	37	mg/L	400	30	90
23/05/2019	SS	10	79	48	mg/L	400	30	90
30/05/2019	SS	30	28	39	mg/L	400	30	90
6/06/2019	SS	19	37	106	mg/L	400	30	90
13/06/2019	SS	32	35	40	mg/L	400	30	90
20/06/2019	SS	23	50	64	mg/L	400	30	90
27/06/2019	SS	37	43	73	mg/L	400	30	90
2/07/2019	SS	41	87	114	mg/L	400	30	90
11/07/2019	SS	28	66	48	mg/L	400	30	90
17/07/2019	SS	29	54	69	mg/L	400	30	90
25/07/2019	SS	32	71	79	mg/L	400	30	90
31/07/2019	SS	7.3	69	85	mg/L	400	30	90
6/08/2019	SS				mg/L	400	30	90
12/08/2019	SS				mg/L	400	30	90
18/08/2019	SS				mg/L	400	30	90
24/08/2019	SS				mg/L	400	30	90
30/08/2019	SS				mg/L	400	30	90
5/09/2019	SS				mg/L	400	30	90
11/09/2019	SS		No Flow to Kings Creek Lagoon refilling		mg/L	400	30	90
17/09/2019	SS				mg/L	400	30	90
23/09/2019	SS				mg/L	400	30	90
29/09/2019	SS				mg/L	400	30	90
5/10/2019	SS				mg/L	400	30	90
11/10/2019	SS				mg/L	400	30	90
17/10/2019	SS				mg/L	400	30	90
24/10/2019	SS	40	39	75	mg/L	400	30	90
30/10/2019	SS	74	60	86	mg/L	400	30	90
7/11/2019	SS	67	38	169	mg/L	400	30	90
14/11/2019	SS	84	54	116	mg/L	400	30	90
21/11/2019	SS				mg/L	400	30	90
28/11/2019	SS				mg/L	400	30	90
5/12/2019	SS				mg/L	400	30	90
12/12/2019	SS				mg/L	400	30	90
19/12/2019	SS				mg/L	400	30	90
26/12/2019	SS		Flow ceased to Kings Creek due to possible contamination of groundwater from lagoons and/or Kings Creek. Trucking of effluent to Wyaralong STP commenced. Lagoons #3 and #4 emptied. Lagoon #2 partially emptied. Planning commenced to address groundwater issues		mg/L	400	30	90
2/01/2020	SS				mg/L	400	30	90
9/01/2020	SS				mg/L	400	30	90
16/01/2020	SS				mg/L	400	30	90
23/01/2020	SS				mg/L	400	30	90
30/01/2020	SS				mg/L	400	30	90
6/02/2020	SS				mg/L	400	30	90
13/02/2020	SS				mg/L	400	30	90
20/02/2020	SS				mg/L	400	30	90
27/02/2020	SS				mg/L	400	30	90

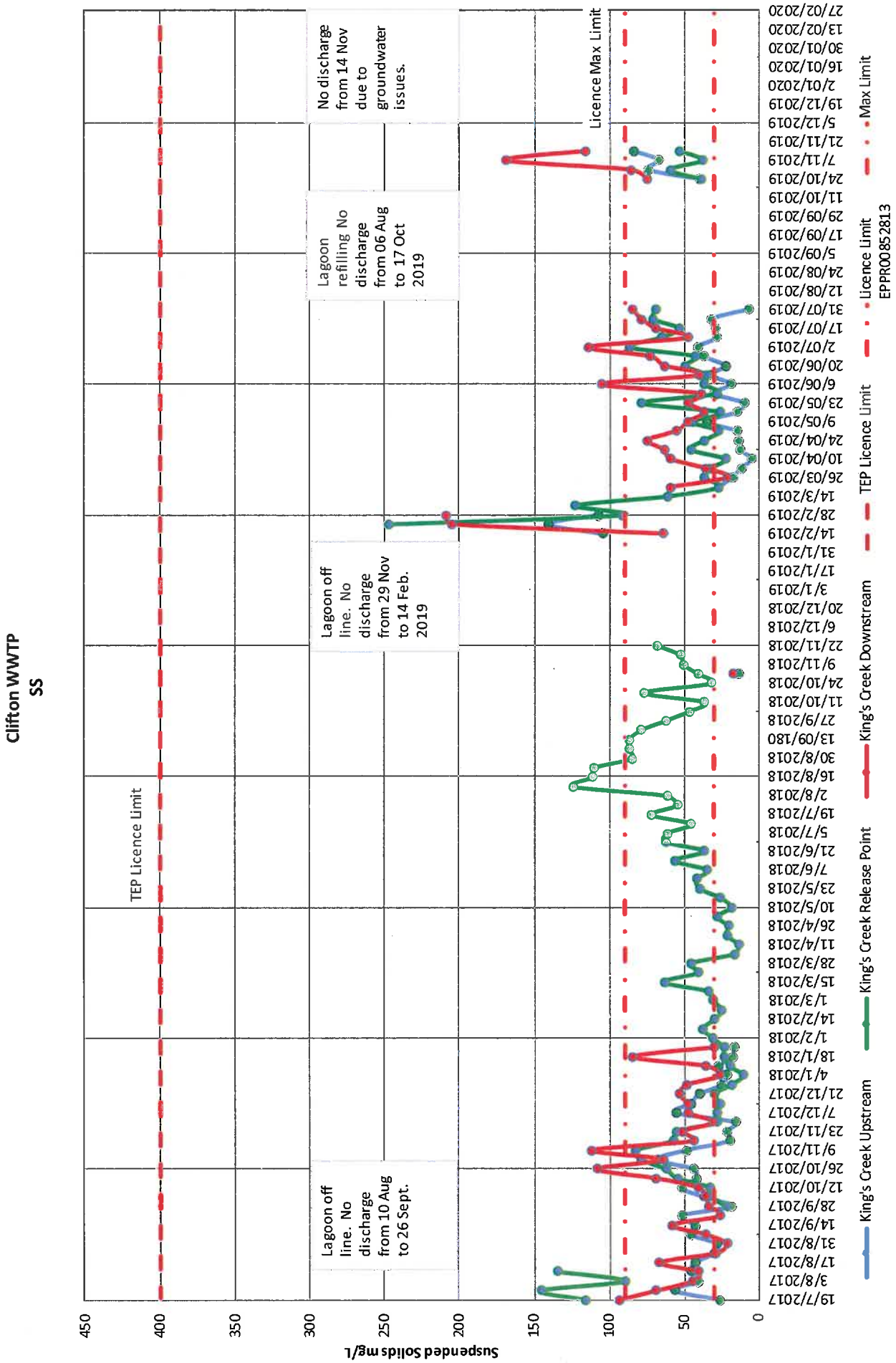

Clifton WWTP
SS
Suspended Solids mg/L
450
400
350
300
250
200
150
100
50
0
TEP Licence Limit
Lagoon off line. No discharge from 10 Aug to 26 Sept.
Lagoon off line. No discharge from 29 Nov to 14 Feb. 2019
Lagoon refilling No discharge from 06 Aug to 17 Oct 2019
No discharge from 14 Nov due to groundwater issues.
Licence Max Limit
19/7/2017
3/8/2017
17/8/2017
31/8/2017
14/9/2017
28/9/2017
12/10/2017
26/10/2017
9/11/2017
23/11/2017
7/12/2017
21/12/2017
4/1/2018
18/1/2018
1/2/2018
14/2/2018
1/3/2018
15/3/2018
28/3/2018
11/4/2018
26/4/2018
10/5/2018
23/5/2018
7/6/2018
21/6/2018
5/7/2018
19/7/2018
2/8/2018
16/8/2018
30/8/2018
13/09/180
27/9/2018
11/10/2018
24/10/2018
9/11/2018
22/11/2018
6/12/2018
20/12/2018
3/1/2019
17/1/2019
31/1/2019
14/2/2019
28/2/2019
14/3/2019
26/03/2019
10/04/2019
24/04/2019
9/05/2019
23/05/2019
6/06/2019
20/06/2019
2/07/2019
17/07/2019
31/07/2019
12/08/2019
24/08/2019
5/09/2019
17/09/2019
29/09/2019
11/10/2019
24/10/2019
7/11/2019
21/11/2019
5/12/2019
19/12/2019
2/01/2020
16/01/2020
30/01/2020
13/02/2020
27/02/2020
King's Creek Upstream
King's Creek Release Point
King's Creek Downstream
TEP Licence Limit
Licence Limit
Max Limit
EPPR00852813

Table and Graph 3 - pH

Clifton WWTP		King's Creek Upstream	King's Creek Release Point	King's Creek Downstream	Result	Licence Limits		
Reg. Date	Test	Result	Result	Result	Units	TEP Licence Limit	Licence Limit EPPP00852813	Max Limit
4/01/2018	PH	8.3	9	8.4	UNITS	9.3	6.5	9.3
11/01/2018	PH	8.4	9.2	8.4	UNITS	9.3	6.5	9.3
18/01/2018	PH	8.3	8.9	8.7	UNITS	9.3	6.5	9.3
25/01/2018	PH	8.2	8.9	8.1	UNITS	9.3	6.5	9.3
1/02/2018	PH	No flow in Kings Creek from 1 February 2018	8.9	No flow in Kings Creek from 1 February 2018	UNITS	9.3	6.5	9.3
8/02/2018	PH		9		UNITS	9.3	6.5	9.3
14/02/2018	PH		9.2		UNITS	9.3	6.5	9.3
22/02/2018	PH		8.9		UNITS	9.3	6.5	9.3
1/03/2018	PH		9		UNITS	9.3	6.5	9.3
8/03/2018	PH		8.9		UNITS	9.3	6.5	9.3
15/03/2018	PH		9.1		UNITS	9.3	6.5	9.3
21/03/2018	PH		9.1		UNITS	9.3	6.5	9.3
28/03/2018	PH		9.2		UNITS	9.3	6.5	9.3
5/04/2018	PH		9		UNITS	9.3	6.5	9.3
11/04/2018	PH		8.9		UNITS	9.3	6.5	9.3
19/04/2018	PH		9		UNITS	9.3	6.5	9.3
26/04/2018	PH		9		UNITS	9.3	6.5	9.3
2/05/2018	PH		9.1		UNITS	9.3	6.5	9.3
10/05/2018	PH		9.1		UNITS	9.3	6.5	9.3
17/05/2018	PH		8.9		UNITS	9.3	6.5	9.3
23/05/2018	PH		9		UNITS	9.3	6.5	9.3
31/05/2018	PH		9.2		UNITS	9.3	6.5	9.3
7/06/2018	PH		9.1		UNITS	9.3	6.5	9.3
15/06/2018	PH		9.3		UNITS	9.3	6.5	9.3
21/06/2018	PH		9		UNITS	9.3	6.5	9.3
27/06/2018	PH		9.2		UNITS	9.3	6.5	9.3
5/07/2018	PH		9.1		UNITS	9.3	6.5	9.3
12/07/2018	PH		8.9		UNITS	9.3	6.5	9.3
19/07/2018	PH		8.9		UNITS	9.3	6.5	9.3
26/07/2018	PH		8.8		UNITS	9.3	6.5	9.3
3/08/2018	PH		8.6		UNITS	9.3	6.5	9.3
9/08/2018	PH		9.2		UNITS	9.3	6.5	9.3
16/08/2018	PH		8.7		UNITS	9.3	6.5	9.3
23/08/2018	PH		8.5		UNITS	9.3	6.5	9.3
30/08/2018	PH		8.6		UNITS	9.3	6.5	9.3
6/09/2018	PH		8.4		UNITS	9.3	6.5	9.3
13/09/2018	PH		8.6		UNITS	9.3	6.5	9.3
20/09/2018	PH		8.4		UNITS	9.3	6.5	9.3
27/09/2018	PH		8.5		UNITS	9.3	6.5	9.3
4/10/2018	PH		8.5		UNITS	9.3	6.5	9.3
11/10/2018	PH		7.7		UNITS	9.3	6.5	9.3
18/10/2018	PH		8.6		UNITS	9.3	6.5	9.3
24/10/2018	PH		8.5		UNITS	9.3	6.5	9.3
31/10/2018	PH	8.0	8.3	7.8	UNITS	9.3	6.5	9.3
9/11/2018	PH	No flow in Kings Creek from 1 February 2018	8.7	No flow in Kings Creek from 1 February 2018	UNITS	9.3	6.5	9.3
14/11/2018	PH		8.6		UNITS	9.3	6.5	9.3
22/11/2018	PH		8.8		UNITS	9.3	6.5	9.3
29/11/2018	PH		Lagoon #1 filling. No discharge from 28 November to 24 February		UNITS	9.3	6.5	9.3
6/12/2018	PH				UNITS	9.3	6.5	9.3
13/12/2018	PH				UNITS	9.3	6.5	9.3
20/12/2018	PH				UNITS	9.3	6.5	9.3
27/12/2018	PH				UNITS	9.3	6.5	9.3
3/01/2019	PH				UNITS	9.3	6.5	9.3
10/01/2019	PH				UNITS	9.3	6.5	9.3
17/01/2019	PH				UNITS	9.3	6.5	9.3
24/01/2019	PH				UNITS	9.3	6.5	9.3
31/01/2019	PH				UNITS	9.3	6.5	9.3
7/02/2019	PH				UNITS	9.3	6.5	9.3
14/02/2019	PH	8.4		8.4	UNITS	9.3	6.5	9.3
21/02/2019	PH	8.2	8.3	8.7	UNITS	9.3	6.5	9.3
28/02/2019	PH	8.1	8.7	8.9	UNITS	9.3	6.5	9.3
7/03/2019	PH	No Flow	8.2	No Flow	UNITS	9.3	6.5	9.3
14/03/2019	PH		8.8		UNITS	9.3	6.5	9.3
21/03/2019	PH	8.0	8.5	8.1	UNITS	9.3	6.5	9.3
26/03/2019	PH	7.6	8.6	7.7	UNITS	9.3	6.5	9.3
4/04/2019	PH	6.4	8.0	6.8	UNITS	9.3	6.5	9.3
10/04/2019	PH	8.1	8.6	8.4	UNITS	9.3	6.5	9.3
18/04/2019	PH	8.1	8.3	8.4	UNITS	9.3	6.5	9.3
24/04/2019	PH	8.1	8.3	8.5	UNITS	9.3	6.5	9.3
2/05/2019	PH	8.0	8.2	8.1	UNITS	9.3	6.5	9.3
9/05/2019	PH	8.1	8.3	8.0	UNITS	9.3	6.5	9.3
16/05/2019	PH	8.0	8.3	8.2	UNITS	9.3	6.5	9.3
23/05/2019	PH	7.9	8.1	8.1	UNITS	9.3	6.5	9.3
30/05/2019	PH	8.3	8.4	8.5	UNITS	9.3	6.5	9.3
6/06/2019	PH	8.4	8.3	8.1	UNITS	9.3	6.5	9.3
13/06/2019	PH	8.4	8.3	8.3	UNITS	9.3	6.5	9.3
20/06/2019	PH	8.1	8.2	8.1	UNITS	9.3	6.5	9.3
27/06/2019	PH	8.5	8.2	8.1	UNITS	9.3	6.5	9.3
7/07/2019	PH	8.5	8.2	8.3	UNITS	9.3	6.5	9.3
11/07/2019	PH	8.4	8.1	8.0	UNITS	9.3	6.5	9.3
17/07/2019	PH	8.4	8.2	8.3	UNITS	9.3	6.5	9.3
25/07/2019	PH	8.4	8.3	8.2	UNITS	9.3	6.5	9.3
31/07/2019	PH	8.0	8.0	8.0	UNITS	9.3	6.5	9.3
6/08/2019	PH	No Flow to Kings Creek Lagoons refilling			UNITS	9.3	6.5	9.3
12/08/2019	PH				UNITS	9.3	6.5	9.3
18/08/2019	PH				UNITS	9.3	6.5	9.3
24/08/2019	PH				UNITS	9.3	6.5	9.3
30/08/2019	PH				UNITS	9.3	6.5	9.3
5/09/2019	PH				UNITS	9.3	6.5	9.3
11/09/2019	PH				UNITS	9.3	6.5	9.3
17/09/2019	PH				UNITS	9.3	6.5	9.3
23/09/2019	PH				UNITS	9.3	6.5	9.3
29/09/2019	PH				UNITS	9.3	6.5	9.3
5/10/2019	PH				UNITS	9.3	6.5	9.3
11/10/2019	PH				UNITS	9.3	6.5	9.3
17/10/2019	PH				UNITS	9.3	6.5	9.3
24/10/2019	PH	8.4	8.1	8.2	UNITS	9.3	6.5	9.3
30/10/2019	PH	8.2	7.9	8.0	UNITS	9.3	6.5	9.3
7/11/2019	PH	8.6	8.1	8.4	UNITS	9.3	6.5	9.3
14/11/2019	PH	8.0	8.0	8.0	UNITS	9.3	6.5	9.3
21/11/2019	PH	Flow ceased to Kings Creek due to possible contamination of groundwater from lagoons and/or Kings Creek. Trucking of effluent to Wyreema WPS commenced. Lagoons #3 and #4 emptied. Lagoon #2 partially emptied. Planning commenced to address groundwater issues			UNITS	9.3	6.5	9.3
28/11/2019	PH				UNITS	9.3	6.5	9.3
5/12/2019	PH				UNITS	9.3	6.5	9.3
12/12/2019	PH				UNITS	9.3	6.5	9.3
19/12/2019	PH				UNITS	9.3	6.5	9.3
26/12/2019	PH				UNITS	9.3	6.5	9.3
2/01/2020	PH				UNITS	9.3	6.5	9.3
9/01/2020	PH				UNITS	9.3	6.5	9.3
16/01/2020	PH				UNITS	9.3	6.5	9.3
23/01/2020	PH				UNITS	9.3	6.5	9.3
30/01/2020	PH				UNITS	9.3	6.5	9.3
6/02/2020	PH				UNITS	9.3	6.5	9.3
13/02/2020	PH				UNITS	9.3	6.5	9.3
20/02/2020	PH				UNITS	9.3	6.5	9.3
27/02/2020	PH				UNITS	9.3	6.5	9.3

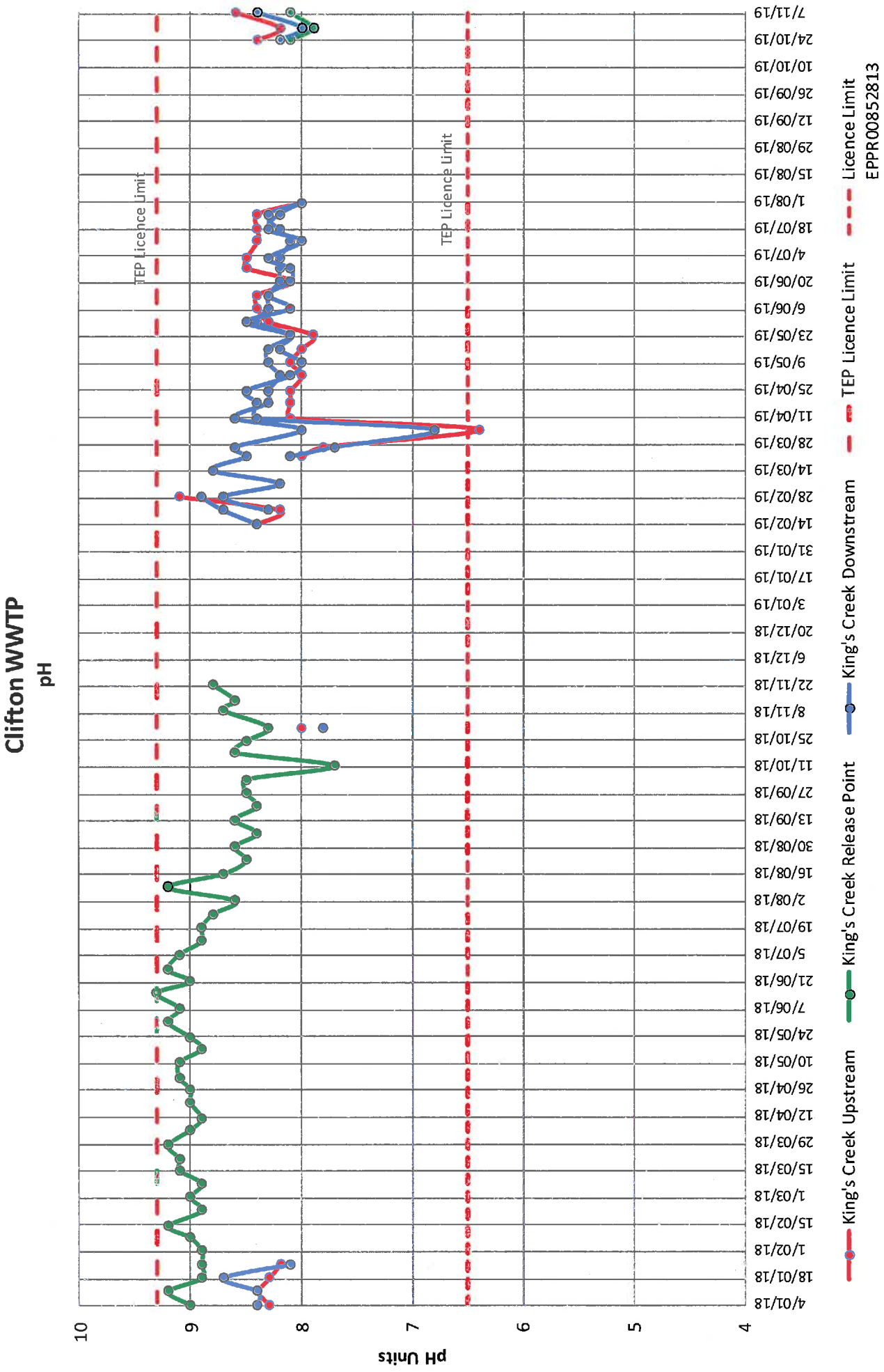

Clifton WWTP
pH
pH Units
10
9
8
7
6
5
4
TEP Licence Limit
TEP Licence Limit
4/01/18
18/01/18
1/02/18
15/02/18
1/03/18
15/03/18
29/03/18
12/04/18
26/04/18
10/05/18
24/05/18
7/06/18
21/06/18
5/07/18
19/07/18
2/08/18
16/08/18
30/08/18
13/09/18
27/09/18
11/10/18
25/10/18
8/11/18
22/11/18
6/12/18
20/12/18
3/01/19
17/01/19
31/01/19
14/02/19
28/02/19
14/03/19
28/03/19
11/04/19
25/04/19
9/05/19
23/05/19
6/06/19
20/06/19
4/07/19
18/07/19
1/08/19
15/08/19
29/08/19
12/09/19
26/09/19
10/10/19
24/10/19
7/11/19
King's Creek Upstream
King's Creek Release Point
King's Creek Downstream
TEP Licence Limit
Licence Limit
EPPR00852813

Table and Graph 4 - Dissolved Oxygen

Chinon WWTP		Kings Creek Upstream	Kings Creek Release Point	Kings Creek Downstream	Result	Licence Limits		
Reg. Date	Test	Result-<	Result	Result	Units	TEP Licence Limit	Licence Limit EPPR00852613	Max Limit
4/01/2018	DO	6.5	4.9	6.2	mg/L	2.0	2.0	
11/01/2018	DO	5.2	4.9	5.7	mg/L	2.0	2.0	
18/01/2018	DO	3.6	4	4.2	mg/L	2.0	2.0	
25/01/2018	DO	3	3.1	3.1	mg/L	2.0	2.0	
1/02/2018	DO	No flow in Kings Creek from 1 February 2018	1.8	No flow in Kings Creek from 1 February 2018	mg/L	2.0	2.0	
5/02/2018	DO		1.3		mg/L	2.0	2.0	
14/02/2018	DO		6.1		mg/L	2.0	2.0	
22/02/2018	DO		4		mg/L	2.0	2.0	
1/03/2018	DO		6.6		mg/L	2.0	2.0	
8/03/2018	DO		5.7		mg/L	2.0	2.0	
15/03/2018	DO		7.3		mg/L	2.0	2.0	
21/03/2018	DO		4.4		mg/L	2.0	2.0	
28/03/2018	DO		6.1		mg/L	2.0	2.0	
5/04/2018	DO		4.5		mg/L	2.0	2.0	
11/04/2018	DO		5.2		mg/L	2.0	2.0	
19/04/2018	DO		5.5		mg/L	2.0	2.0	
26/04/2018	DO		4.8		mg/L	2.0	2.0	
2/05/2018	DO		6.3		mg/L	2.0	2.0	
10/05/2018	DO		5.8		mg/L	2.0	2.0	
17/05/2018	DO		7.7		mg/L	2.0	2.0	
23/05/2018	DO		8.3		mg/L	2.0	2.0	
31/05/2018	DO		7.2		mg/L	2.0	2.0	
7/06/2018	DO		8.4		mg/L	2.0	2.0	
15/06/2018	DO		8.3		mg/L	2.0	2.0	
21/06/2018	DO		5.6		mg/L	2.0	2.0	
27/06/2018	DO		8.1		mg/L	2.0	2.0	
5/07/2018	DO		8.9		mg/L	2.0	2.0	
12/07/2018	DO		8.4		mg/L	2.0	2.0	
19/07/2018	DO		9.1		mg/L	2.0	2.0	
26/07/2018	DO		7.5		mg/L	2.0	2.0	
2/08/2018	DO		8.4		mg/L	2.0	2.0	
9/08/2018	DO		6.2		mg/L	2.0	2.0	
16/08/2018	DO		7.7		mg/L	2.0	2.0	
23/08/2018	DO		7.1		mg/L	2.0	2.0	
30/08/2018	DO		6.5		mg/L	2.0	2.0	
6/09/2018	DO		4.5		mg/L	2.0	2.0	
13/09/2018	DO		6.2		mg/L	2.0	2.0	
20/09/2018	DO		5.6		mg/L	2.0	2.0	
27/09/2018	DO		5.1		mg/L	2.0	2.0	
4/10/2018	DO		5.7		mg/L	2.0	2.0	
11/10/2018	DO		6.1		mg/L	2.0	2.0	
18/10/2018	DO		7.2		mg/L	2.0	2.0	
24/10/2018	DO		5.3		mg/L	2.0	2.0	
31/10/2018	DO	8.6	5.8	4	mg/L	2.0	2.0	
9/11/2018	DO	No flow in Kings Creek from 1 February 2018	5.5	No flow in Kings Creek from 1 February 2018	mg/L	2.0	2.0	
14/11/2018	DO		5.8		mg/L	2.0	2.0	
22/11/2018	DO		7.1		mg/L	2.0	2.0	
29/11/2018	DO		Lagoon off line. No discharge from 26 November to 27 December		mg/L	2.0	2.0	
6/12/2018	DO				mg/L	2.0	2.0	
13/12/2018	DO				mg/L	2.0	2.0	
20/12/2018	DO				mg/L	2.0	2.0	
27/12/2018	DO				mg/L	2.0	2.0	
3/01/2019	DO				mg/L	2.0	2.0	
10/01/2019	DO				mg/L	2.0	2.0	
17/01/2019	DO				mg/L	2.0	2.0	
24/01/2019	DO				mg/L	2.0	2.0	
31/01/2019	DO				mg/L	2.0	2.0	
7/02/2019	DO				mg/L	2.0	2.0	
14/02/2019	DO	7.1		8.5	mg/L	2.0	2.0	
21/02/2019	DO	7.0	4.6	14.7	mg/L	2.0	2.0	
28/02/2019	DO	14.4	7.3	12.7	mg/L	2.0	2.0	
7/03/2019	DO	No Flow	3.4	No Flow	mg/L	2.0	2.0	
14/03/2019	DO		10.6		mg/L	2.0	2.0	
21/03/2019	DO	4.5	5.9	5.1	mg/L	2.0	2.0	
26/03/2019	DO	5.1	5.2	2.8	mg/L	2.0	2.0	
4/04/2019	DO	6.2	5.1	5.1	mg/L	2.0	2.0	
10/04/2019	DO	6.9	6.4	7.3	mg/L	2.0	2.0	
18/04/2019	DO	6.1	5.2	6.7	mg/L	2.0	2.0	
24/04/2019	DO	5.3	5.4	10.3	mg/L	2.0	2.0	
1/05/2019	DO	6.1	6.2	8.5	mg/L	2.0	2.0	
9/05/2019	DO	6.7	5.9	5	mg/L	2.0	2.0	
16/05/2019	DO	5.45	5.84	5.7	mg/L	2.0	2.0	
23/05/2019	DO	5.3	7.22	3.07	mg/L	2.0	2.0	
30/05/2019	DO	7.93	7.3	7.17	mg/L	2.0	2.0	
6/06/2019	DO	9.6	6.92	4.34	mg/L	2.0	2.0	
13/06/2019	DO	9.25	7.53	7.77	mg/L	2.0	2.0	
20/06/2019	DO	8.8	3.73	3.66	mg/L	2.0	2.0	
27/06/2019	DO	8.98	7.09	2.43	mg/L	2.0	2.0	
2/07/2019	DO	11.16	4.87	11.38	mg/L	2.0	2.0	
11/07/2019	DO	8.85	6.76	2.86	mg/L	2.0	2.0	
17/07/2019	DO	8.39	8.11	8.13	mg/L	2.0	2.0	
25/07/2019	DO				mg/L	2.0	2.0	
31/07/2019	DO	8.91	7.76	7.89	mg/L	2.0	2.0	
8/08/2019	DO	No Flow to Kings Creek. Lagoon refilling			mg/L	2.0	2.0	
12/08/2019	DO				mg/L	2.0	2.0	
18/08/2019	DO				mg/L	2.0	2.0	
24/08/2019	DO				mg/L	2.0	2.0	
30/08/2019	DO				mg/L	2.0	2.0	
5/09/2019	DO				mg/L	2.0	2.0	
11/09/2019	DO				mg/L	2.0	2.0	
17/09/2019	DO				mg/L	2.0	2.0	
23/09/2019	DO				mg/L	2.0	2.0	
29/09/2019	DO				mg/L	2.0	2.0	
5/10/2019	DO				mg/L	2.0	2.0	
11/10/2019	DO				mg/L	2.0	2.0	
17/10/2019	DO				mg/L	2.0	2.0	
24/10/2019	DO	5.84	6.84	5.73	mg/L	2.0	2.0	
30/10/2019	DO	8.19	8.8	11.72	mg/L	2.0	2.0	
7/11/2019	DO	7.71	9.15	11.95	mg/L	2.0	2.0	
14/11/2019	DO	8.34	8.11	10.22	mg/L	2.0	2.0	
21/11/2019	DO				mg/L	2.0	2.0	
28/11/2019	DO				mg/L	2.0	2.0	
5/12/2019	DO				mg/L	2.0	2.0	
12/12/2019	DO				mg/L	2.0	2.0	
19/12/2019	DO				mg/L	2.0	2.0	
26/12/2019	DO	Flow ceased in King's Creek due to possible contamination of groundwater from lagoons and/or Kings Creek. Trucking of effluent to Wyreema SPS commenced. Lagoons #3 and #4 emptied. Lagoon #2 partially emptied. Pilaarns commenced to address groundwater issue.			mg/L	2.0	2.0	
2/01/2020	DO				mg/L	2.0	2.0	
9/01/2020	DO				mg/L	2.0	2.0	
16/01/2020	DO				mg/L	2.0	2.0	
23/01/2020	DO				mg/L	2.0	2.0	
30/01/2020	DO				mg/L	2.0	2.0	
6/02/2020	DO				mg/L	2.0	2.0	
13/02/2020	DO				mg/L	2.0	2.0	
20/02/2020	DO				mg/L	2.0	2.0	
27/02/2020	DO				mg/L	2.0	2.0	

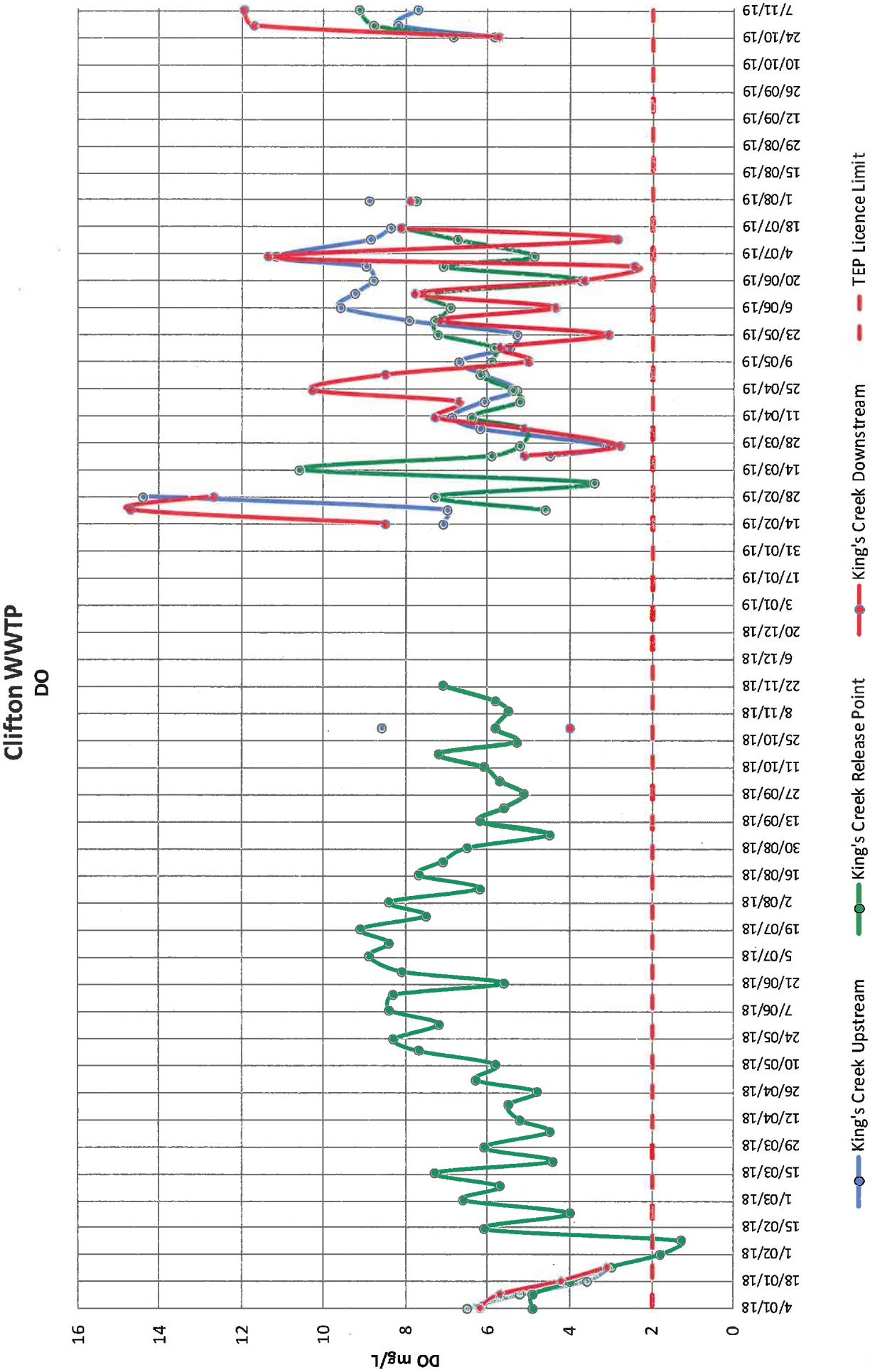
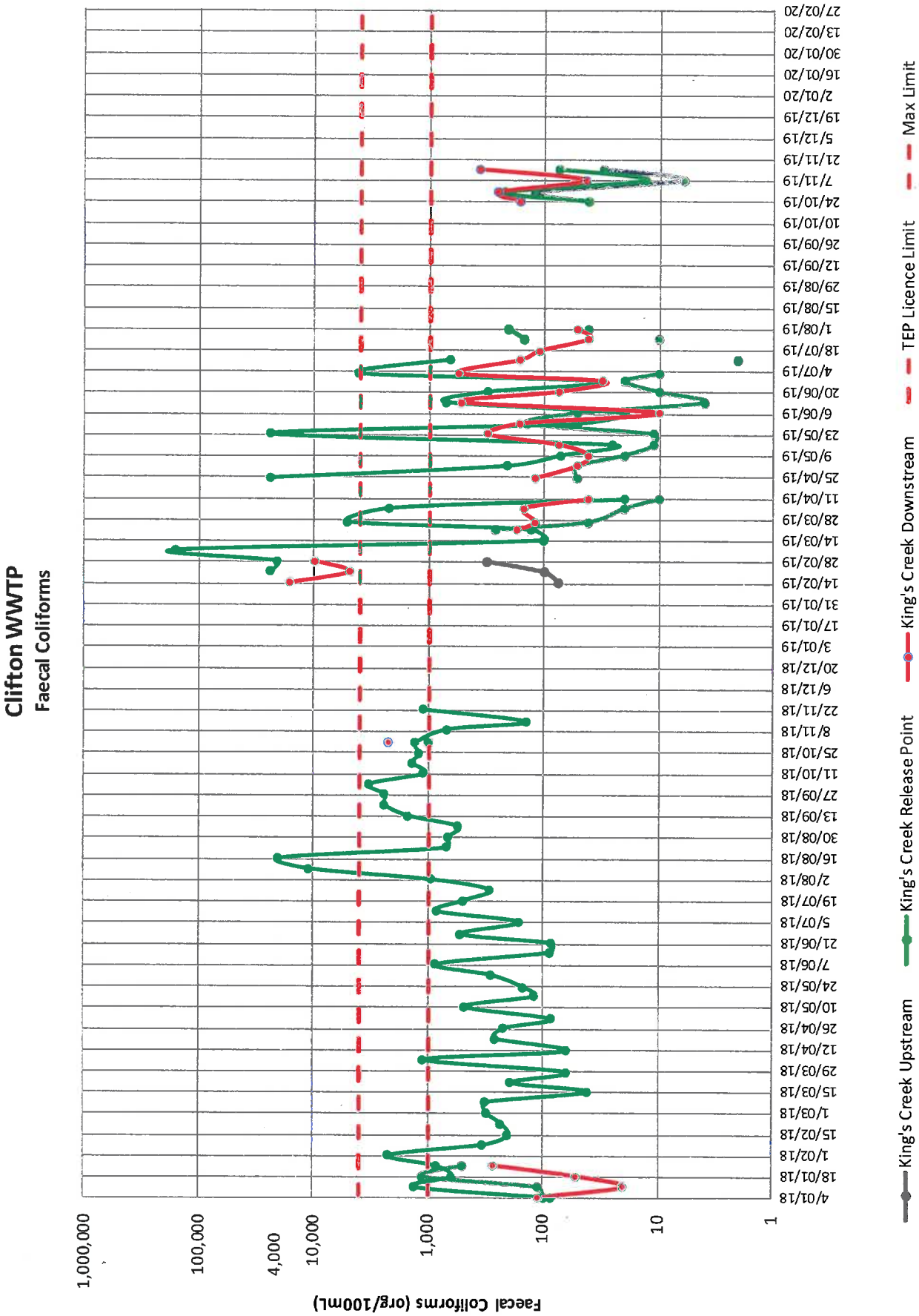

Clifton WWTP
DO
DO mg/L
0
2
4
6
8
10
12
14
16
4/01/18
18/01/18
1/02/18
15/02/18
1/03/18
15/03/18
29/03/18
12/04/18
26/04/18
10/05/18
24/05/18
7/06/18
21/06/18
5/07/18
19/07/18
2/08/18
16/08/18
30/08/18
13/09/18
27/09/18
11/10/18
25/10/18
8/11/18
22/11/18
6/12/18
20/12/18
3/01/19
17/01/19
31/01/19
14/02/19
28/02/19
14/03/19
28/03/19
11/04/19
25/04/19
9/05/19
23/05/19
6/06/19
20/06/19
4/07/19
18/07/19
1/08/19
15/08/19
29/08/19
12/09/19
26/09/19
10/10/19
24/10/19
7/11/19
King's Creek Upstream
King's Creek Release Point
King's Creek Downstream
TEP Licence Limit

Table and Graph 5 - Faecal Coliforms

Clifton WWTP		Kings Creek Upstream	Kings Creek Release Point	Kings Creek Downstream	Result	Licence Limit		
Reg. Date	Test	Result<4	Result<4	Result<4	Units	TEP Licence Limit	Licence Limit EPPR0085213	Max Limit
4/01/2018	COLI-FAECAL-MPN	97	86	110	MPN/100 mL	1000	1000	4000
11/01/2018	COLI-FAECAL-MPN	110	1300	20	MPN/100 mL	1000	1000	4000
18/01/2018	COLI-FAECAL-MPN	1100	620	52	MPN/100 mL	1000	1000	4000
25/01/2018	COLI-FAECAL-MPN	500	840	270	MPN/100 mL	1000	1000	4000
1/02/2018	COLI-FAECAL-MPN	No flow in Kings Creek from 1 February 2018	2200	No flow in Kings Creek from 1 February 2018	MPN/100 mL	1000	1000	4000
8/02/2018	COLI-FAECAL-MPN		330		MPN/100 mL	1000	1000	4000
14/02/2018	COLI-FAECAL-MPN		200		MPN/100 mL	1000	1000	4000
22/02/2018	COLI-FAECAL-MPN		230		MPN/100 mL	1000	1000	4000
1/03/2018	COLI-FAECAL-MPN		310		MPN/100 mL	1000	1000	4000
8/03/2018	COLI-FAECAL-MPN		320		MPN/100 mL	1000	1000	4000
15/03/2018	COLI-FAECAL-MPN		41		MPN/100 mL	1000	1000	4000
21/03/2018	COLI-FAECAL-MPN		190		MPN/100 mL	1000	1000	4000
28/03/2018	COLI-FAECAL-MPN		63		MPN/100 mL	1000	1000	4000
5/04/2018	COLI-FAECAL-MPN		1100		MPN/100 mL	1000	1000	4000
11/04/2018	COLI-FAECAL-MPN		63		MPN/100 mL	1000	1000	4000
16/04/2018	COLI-FAECAL-MPN		260		MPN/100 mL	1000	1000	4000
26/04/2018	COLI-FAECAL-MPN		220		MPN/100 mL	1000	1000	4000
2/05/2018	COLI-FAECAL-MPN		86		MPN/100 mL	1000	1000	4000
10/05/2018	COLI-FAECAL-MPN		480		MPN/100 mL	1000	1000	4000
17/05/2018	COLI-FAECAL-MPN		120		MPN/100 mL	1000	1000	4000
23/05/2018	COLI-FAECAL-MPN		150		MPN/100 mL	1000	1000	4000
31/05/2018	COLI-FAECAL-MPN		280		MPN/100 mL	1000	1000	4000
7/06/2018	COLI-FAECAL-MPN		860		MPN/100 mL	1000	1000	4000
15/06/2018	COLI-FAECAL-MPN		88		MPN/100 mL	1000	1000	4000
21/06/2018	COLI-FAECAL-MPN		85		MPN/100 mL	1000	1000	4000
27/06/2018	COLI-FAECAL-MPN		520		MPN/100 mL	1000	1000	4000
5/07/2018	COLI-FAECAL-MPN		160		MPN/100 mL	1000	1000	4000
12/07/2018	COLI-FAECAL-MPN		830		MPN/100 mL	1000	1000	4000
19/07/2018	COLI-FAECAL-MPN		500		MPN/100 mL	1000	1000	4000
26/07/2018	COLI-FAECAL-MPN		280		MPN/100 mL	1000	1000	4000
2/08/2018	COLI-FAECAL-MPN		930		MPN/100 mL	1000	1000	4000
9/08/2018	COLI-FAECAL-MPN		19000		MPN/100 mL	1000	1000	4000
16/08/2018	COLI-FAECAL-MPN		20000		MPN/100 mL	1000	1000	4000
23/08/2018	COLI-FAECAL-MPN		690		MPN/100 mL	1000	1000	4000
30/08/2018	COLI-FAECAL-MPN		680		MPN/100 mL	1000	1000	4000
3/09/2018	COLI-FAECAL-MPN		550		MPN/100 mL	1000	1000	4000
13/09/2018	COLI-FAECAL-MPN		1500		MPN/100 mL	1000	1000	4000
20/09/2018	COLI-FAECAL-MPN		2400		MPN/100 mL	1000	1000	4000
27/09/2018	COLI-FAECAL-MPN		2400		MPN/100 mL	1000	1000	4000
4/10/2018	COLI-FAECAL-MPN		3300		MPN/100 mL	1000	1000	4000
11/10/2018	COLI-FAECAL-MPN		1100		MPN/100 mL	1000	1000	4000
18/10/2018	COLI-FAECAL-MPN		1400		MPN/100 mL	1000	1000	4000
24/10/2018	COLI-FAECAL-MPN		1200		MPN/100 mL	1000	1000	4000
31/10/2018	COLI-FAECAL-MPN	980	1300	2200	MPN/100 mL	1000	1000	4000
9/11/2018	COLI-FAECAL-MPN	No flow in Kings Creek from 1 February 2018	680	No flow in Kings Creek from 1 February 2018	MPN/100 mL	1000	1000	4000
14/11/2018	COLI-FAECAL-MPN		140		MPN/100 mL	1000	1000	4000
22/11/2018	COLI-FAECAL-MPN		1100		MPN/100 mL	1000	1000	4000
29/11/2018	COLI-FAECAL-MPN		Lagoon off line. No discharge from 29 November to 21 December		MPN/100 mL	1000	1000	4000
6/12/2018	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
13/12/2018	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
20/12/2018	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
27/12/2018	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
3/01/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
10/01/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
17/01/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
24/01/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
31/01/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
7/02/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
14/02/2019	COLI-FAECAL-MPN	74		16000	MPN/100 mL	1000	1000	4000
21/02/2019	COLI-FAECAL-MPN	98	24000	4900	MPN/100 mL	1000	1000	4000
28/02/2019	COLI-FAECAL-MPN	310	21000	9800	MPN/100 mL	1000	1000	4000
7/03/2019	COLI-FAECAL-MPN	No Flow	160000	No Flow	MPN/100 mL	1000	1000	4000
14/03/2019	COLI-FAECAL-MPN		100		MPN/100 mL	1000	1000	4000
21/03/2019	COLI-FAECAL-MPN	260	130	170	MPN/100 mL	1000	1000	4000
28/03/2019	COLI-FAECAL-MPN	43	5200	120	MPN/100 mL	1000	1000	4000
4/04/2019	COLI-FAECAL-MPN	20	2200	150	MPN/100 mL	1000	1000	4000
10/04/2019	COLI-FAECAL-MPN	10	20	41	MPN/100 mL	1000	1000	4000
18/04/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
24/04/2019	COLI-FAECAL-MPN	52	24000	120	MPN/100 mL	1000	1000	4000
2/05/2019	COLI-FAECAL-MPN	52	210	52	MPN/100 mL	1000	1000	4000
9/05/2019	COLI-FAECAL-MPN	20	73	41	MPN/100 mL	1000	1000	4000
16/05/2019	COLI-FAECAL-MPN	11	25.5	74	MPN/100 mL	1000	1000	4000
23/05/2019	COLI-FAECAL-MPN	11	24000	310	MPN/100 mL	1000	1000	4000
30/05/2019	COLI-FAECAL-MPN	140	52	160	MPN/100 mL	1000	1000	4000
6/06/2019	COLI-FAECAL-MPN	51	20	10	MPN/100 mL	1000	1000	4000
13/06/2019	COLI-FAECAL-MPN	4	715	520	MPN/100 mL	1000	1000	4000
20/06/2019	COLI-FAECAL-MPN	10	310	75	MPN/100 mL	1000	1000	4000
27/06/2019	COLI-FAECAL-MPN	20	31	31	MPN/100 mL	1000	1000	4000
2/07/2019	COLI-FAECAL-MPN	10	4100	550	MPN/100 mL	1000	1000	4000
11/07/2019	COLI-FAECAL-MPN	2	680	150	MPN/100 mL	1000	1000	4000
17/07/2019	COLI-FAECAL-MPN	<1		110	MPN/100 mL	1000	1000	4000
25/07/2019	COLI-FAECAL-MPN	10	150	41	MPN/100 mL	1000	1000	4000
31/07/2019	COLI-FAECAL-MPN	41	200	52	MPN/100 mL	1000	1000	4000
6/08/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
12/08/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
18/08/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
24/08/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
30/08/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
5/09/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
11/09/2019	COLI-FAECAL-MPN		No Flow to Kings Creek Lagoon refilling		MPN/100 mL	1000	1000	4000
17/09/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
23/09/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
29/09/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
5/10/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
11/10/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
17/10/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
24/10/2019	COLI-FAECAL-MPN	41	41	160	MPN/100 mL	1000	1000	4000
30/10/2019	COLI-FAECAL-MPN	120	220	250	MPN/100 mL	1000	1000	4000
7/11/2019	COLI-FAECAL-MPN	6	13	44	MPN/100 mL	1000	1000	4000
14/11/2019	COLI-FAECAL-MPN	80	74	360	MPN/100 mL	1000	1000	4000
21/11/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
28/11/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
5/12/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
12/12/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
19/12/2019	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
26/12/2019	COLI-FAECAL-MPN		Flow releases to Kings Creek due to possible contamination of groundwater from lagoons and/or Kings Creek		MPN/100 mL	1000	1000	4000
2/01/2020	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
9/01/2020	COLI-FAECAL-MPN		Trucking of effluent to Wyreema BPS unrepaired		MPN/100 mL	1000	1000	4000
16/01/2020	COLI-FAECAL-MPN		Lagoons #3 and #4 emptied. Lagoon #2 partially emptied. Planning commenced to address groundwater issues		MPN/100 mL	1000	1000	4000
23/01/2020	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
30/01/2020	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
5/02/2020	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
13/02/2020	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
20/02/2020	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000
27/02/2020	COLI-FAECAL-MPN				MPN/100 mL	1000	1000	4000


Clifton WWTP
Faecal Coliforms
Faecal Coliforms (org/100mL)
1,000,000
100,000
4,000
10,000
1,000
100
10
1
4/01/18
18/01/18
1/02/18
15/02/18
1/03/18
15/03/18
29/03/18
12/04/18
26/04/18
10/05/18
24/05/18
7/06/18
21/06/18
5/07/18
19/07/18
2/08/18
16/08/18
30/08/18
13/09/18
27/09/18
11/10/18
25/10/18
8/11/18
22/11/18
6/12/18
20/12/18
3/01/19
17/01/19
31/01/19
14/02/19
28/02/19
14/03/19
28/03/19
11/04/19
25/04/19
9/05/19
23/05/19
6/06/19
20/06/19
4/07/19
18/07/19
1/08/19
15/08/19
29/08/19
12/09/19
26/09/19
10/10/19
24/10/19
7/11/19
21/11/19
5/12/19
19/12/19
2/01/20
16/01/20
30/01/20
13/02/20
27/02/20
King's Creek Upstream
King's Creek Release Point
King's Creek Downstream
TEP Licence Limit
Max Limit

Attachment #4
Photographs

Photograph 1: Lagoon System at Clifton STP



Lagoon #1 06-03-2020



Lagoon #2 06-03-2020



Lagoon #3 06-03-2020



Lagoon #4 06-03-2020



Attachment #5
Analysis Results

Queensland Government

Forensic and Scientific Services
HealthSupport Queensland

CERTIFICATE OF ANALYSIS

CLIENT : (CZTORE)
Toowoomba Regional Council
153 Herries Street
TOOWOOMBA QLD 4350

ATTN: Andrew Murray

Laboratory Reference : SSP0068276
Client Order No. : PU134956_JAN
Date Received : 17-Jan-2020
Date Commenced : 22-Jan-2020
Laboratory Number/s : 20KE621-20KE624

Number of Samples : 4

Reason for Analysis : Pesticide Residue Analysis

Method/s of Analysis : 27701 - Pharmaceuticals, Personal Care Products in Water by SPE/LCMSMS

16647 - Extractable Acid and Base/Neutral Organic Compounds from Aqueous Samples by GCMS

25391 - Endocrine Disrupting Compounds in Effluent, River and Recycled Waters by GCMS

Remarks : Health Values based on the Australian Drinking Water Guidelines 2011.

PH Reg. Std. = Public Health Regulation Standard

As from 1 September 2018, the Public Health Regulation 2018 states that samples of drinking water must not contain an amount of an ADWG parameter more than the guideline parameter for health for the parameter.

Atorvastatin, Cefalexin, Dapsone, Doxylamine,Fluvastatin, Mirtazepine, Oxycodone, Paracetamol, Ranitidine, Sulfadiazine and Sulfathiazole consistently give low recoveries by QIS 27701.
Erythromycin is reported as Erythromycin anhydrate.

NA means Not Analysed for this compound.

NATA Accredited Laboratory 41 Accredited for compliance with ISO/IEC 17025 - Testing.

Benjamin Tan
Chemist, Organic Chemistry
24-Feb-20

20KE621-20KE624

This report overrides all previous reports. The results relate solely to the sample/s as received and are limited to the specific tests undertaken as listed on the report. The results on this report are confidential and are not to be used or disclosed to any other person or used for any other purpose, whether directly or indirectly, unless that use is disclosed or the purpose is expressly authorised in writing by Queensland Health and the named recipient on this report. To the fullest extent permitted by law, Queensland Health will not be liable for any loss or claim (including legal costs calculated on an indemnity basis) which arise because of (a) problems related to the merchantability, fitness or quality of the sample/s, or (b) any negligent or unlawful act or omissions by Queensland Health that is connected with any activities or services provided by Queensland Health under this agreement (including the timing and/or method under which the sample/s were taken, stored or transported).

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Client Reference					200245_1	200245_2	200245_3	200245_4
Sample Type					Water Bore Untreated	Water Bore Untreated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					09:20 15-Jan-2020	09:40 15-Jan-2020	10:00 15-Jan-2020	10:20 15-Jan-2020
Sample Description					Bore 2	CL3-Bore 3A	CL4-Bore 4	CL5-Bore 5
Method	Phenols	PH Reg. Std.	Units	Reporting Limit	20KE621	20KE622	20KE623	20KE624
16647	Phenol	200	µg/L	0.25	< 0.47	< 0.25	< 0.25	< 0.25
16647	2-Chlorophenol	300	µg/L	1	< 1.9	< 1	< 1	< 1
16647	4-Chlorophenol	10	µg/L	0.5	< 0.9	< 0.5	< 0.5	< 0.5
16647	2-Methylphenol		µg/L	1	< 1.9	< 1	< 1	< 1
16647	4-Methylphenol	600	µg/L	1	< 1.9	< 1	< 1	< 1
16647	2-Nitrophenol		µg/L	1	< 1.9	< 1	< 1	< 1
16647	2,4-Dimethylphenol		µg/L	1	< 1.9	< 1	< 1	< 1
16647	2,4-Dichlorophenol	200	µg/L	1	< 1.9	< 1	< 1	< 1
16647	2,6-Dichlorophenol	10	µg/L	1	< 1.9	< 1	< 1	< 1
16647	4-Chloro-3-methylphenol		µg/L	1	< 1.9	< 1	< 1	< 1
16647	2,4,6-Trichlorophenol	20	µg/L	1	< 1.9	< 1	< 1	< 1
16647	2,4,5-Trichlorophenol	350	µg/L	1	< 1.9	< 1	< 1	< 1
16647	2,4-Dinitrophenol		µg/L	1	< 1.9	< 1	< 1	< 1
16647	4-Nitrophenol	30	µg/L	1	< 1.9	< 1	< 1	< 1
16647	2,3,4,6-Tetrachlorophenol		µg/L	1	< 1.9	< 1	< 1	< 1
16647	2-Methyl-4,6-dinitrophenol		µg/L	1	< 1.9	< 1	< 1	< 1
16647	Pentachlorophenol	10	µg/L	1	< 1.9	< 1	< 1	< 1
16647	Coumarin	0.5	µg/L	0.5	< 0.9	< 0.5	< 0.5	< 0.5

Client Reference					200245_1	200245_2	200245_3	200245_4
Sample Type					Water Bore Untreated	Water Bore Untreated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					09:20 15-Jan-2020	09:40 15-Jan-2020	10:00 15-Jan-2020	10:20 15-Jan-2020
Sample Description					Bore 2	CL3-Bore 3A	CL4-Bore 4	CL5-Bore 5
Method	Pharmaceuticals	PH Reg. Std.	Units	Reporting Limit	20KE621	20KE622	20KE623	20KE624
27701	Acesulfame K (sweetener)		µg/L	0.02	0.02	< 0.02	0.47	< 0.02
27701	Alprazolam	0.2	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Amidotrizoate (sodium)		µg/L	0.2	< 0.20	< 0.20	< 0.20	< 0.20
27701	Amitriptyline		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Atenolol	20	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Atorvastatin	2.3	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Baclofen		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Betaxolol	10	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Caffeine		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Carbamazepine	100	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Cefalexin	40	µg/L	0.5	< 0.50	< 0.50	< 0.50	< 0.50
27701	Chloramphenicol	200	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Citalopram	10	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Codeine	50	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Cyclophosphamide	4	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Dapsone		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Desmethyl Citalopram	10	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Desmethyl Diazepam	2	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Diazepam	2	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Diclofenac	2	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Diethyltoluamide	2000	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Diphenhydramine		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Doxepin		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Doxylamine		µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Erythromycin anhydrate	20	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Fluoxetine	10	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Fluvastatin		µg/L	0.2	< 0.20	< 0.20	< 0.20	< 0.20
27701	Furosemide	10	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Gabapentin		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Gemfibrozol	600	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Hydrochlorthiazide	10	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02

Client Reference					200245_1	200245_2	200245_3	200245_4
Sample Type					Water Bore Untreated	Water Bore Untreated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					09:20 15-Jan-2020	09:40 15-Jan-2020	10:00 15-Jan-2020	10:20 15-Jan-2020
Sample Description					Bore 2	CL3-Bore 3A	CL4-Bore 4	CL5-Bore 5
Method	Pharmaceuticals (cont.)	PH Reg. Std.	Units	Reporting Limit	20KE621	20KE622	20KE623	20KE624
27701	Ibuprofen	400	µg/L	0.5	NA	NA	NA	NA
27701	Ifosfamide	4	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Indomethacin	20	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Iopromide	800	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Lincomycin	4000	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Methadone		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Methamphetamine		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Metoprolol	20	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Mirtazapine		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Naproxen	200	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Oxazepam	20	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Oxycodone	10	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Paracetamol	200	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Pethidine		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Pheniramine		µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Phenytoin		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Pholcodine		µg/L	0.1	< 0.10	< 0.10	< 0.10	< 0.10
27701	Praziquantel	70	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Primidone		µg/L	0.02	< 0.02	< 0.02	**0.02**	< 0.02
27701	Propranolol	40	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Pseudoephedrine		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Ranitidine	80	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Roxithromycin	200	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Salicylic acid	100	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Sertraline		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Simvastatin		µg/L	0.5	NA	NA	NA	NA
27701	Sulfadiazine	1000	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Sulfamethoxazole	200	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Sulfasalazine	500	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
27701	Sulfathiazole	40	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Temazepam	5	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Theophylline	200	µg/L	0.2	< 0.20	< 0.20	< 0.20	< 0.20

Client Reference					200245_1	200245_2	200245_3	200245_4
Sample Type					Water Bore Untreated	Water Bore Untreated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					09:20 15-Jan-2020	09:40 15-Jan-2020	10:00 15-Jan-2020	10:20 15-Jan-2020
Sample Description					Bore 2	CL3-Bore 3A	CL4-Bore 4	CL5-Bore 5
Method	Pharmaceuticals (cont.)	PH Reg. Std.	Units	Reporting Limit	20KE621	20KE622	20KE623	20KE624
27701	Tramadol		µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Triclosan	1000	µg/L	0.2	< 0.20	< 0.20	< 0.20	< 0.20
27701	Trimethoprim	70	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Tylosin	1000	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Venlafaxine	40	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02
27701	Warfarin	1	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02

Client Reference					200245_1	200245_2	200245_3	200245_4
Sample Type					Water Bore Untreated	Water Bore Untreated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					09:20 15-Jan-2020	09:40 15-Jan-2020	10:00 15-Jan-2020	10:20 15-Jan-2020
Sample Description					Bore 2	CL3-Bore 3A	CL4-Bore 4	CL5-Bore 5
Method	Endocrine Disrupting Compounds (EDC)	PH Reg. Std.	Units	Reporting Limit	20KE621	20KE622	20KE623	20KE624
25391	4-t-Octylphenol	50000	ng/L	10	< 19	< 10	< 10	< 10
25391	Nonylphenol	500000	ng/L	50	< 95	< 50	< 50	< 50
25391	Bisphenol A	200000	ng/L	10	< 19	< 10	< 10	93
25391	Estrone	30	ng/L	1	< 2	< 1	< 1	< 1
25391	17β-Estradiol	200	ng/L	2	< 4	< 2	< 2	< 2
25391	Estriol	50	ng/L	2	< 4	< 2	< 2	< 2
25391	17α-Ethynylestradiol	2	ng/L	2	< 4	< 2	< 2	< 2
25391	Norgestrel		ng/L	2	< 4	< 2	< 2	< 2
25391	Testosterone	7000	ng/L	5	< 10	< 5	< 5	< 5
25391	Androsterone	10000	ng/L	5	< 4	< 5	< 5	< 5
25391	Etiocholanolone		ng/L	5	< 10	< 5	< 5	< 5
25391	Cholesterol (not an EDC)		ng/L	50	< 95	< 50	< 50	< 50
25391	Equilenin	30	ng/L	2	< 4	< 2	< 2	< 2
25391	Equilin	30	ng/L	2	< 10	< 5	< 5	< 5
25391	Mestranol	2	ng/L	5	< 10	< 5	< 5	< 5
25391	Cumylphenol		ng/L	10	< 19	< 10	< 10	< 10
25391	17α-Estradiol	200	ng/L	2	< 4	< 2	< 2	< 2
25391	Norethindrone	200	ng/L	2	< 4	< 2	< 2	< 2
25391	Progesterone	100000	ng/L	20	< 38	< 20	< 20	< 20
25391	Androstenedione		ng/L	5	< 10	< 5	< 5	< 5
25391	Dihydrotestosterone		ng/L	5	< 10	< 5	< 5	< 5
25391	β-Trenbolone		ng/L	7	< 20	< 10	< 10	< 10
25391	Predicted estradiol equivalent		ng/L	2	< 4	< 2	< 2	< 2

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General Statements:

The Australian Drinking Water Guidelines Health Value (ADWG HV) is based on the Acceptable Daily Intake (ADI) set by the Therapeutic Goods Authority (TGA). The ADI (and hence the ADWG HV) applies to the Residue Definition (RD) as listed in Table 3 of the Australian Pesticides and Veterinary Medicines Authority's (APVMA) MRL Standard. Analytical results are for individual compounds (or sums of isomers). In many instances this addresses the RD. 'Total' results, where reported, address more complex RDs.

There are instances where the individual result does not cover the full RD. This is the situation for Aldicarb, Aldoxycarb, Amitraz, Carbophenothion, Coumaphos, Dicofol, Disulfoton, Endrin, Fenamiphos, Fenthion, Fipronil, Fluazifop-butyl, Fluometuron, Glufosinate, Haloxyfop (acid), Haloxyfop-2-etotoyl, Haloxyfop-methyl, HCH isomers (other than Lindane), Imidacloprid, Methiocarb, Oxydemeton-methyl, Phorate, Phosmet, Pirimicarb, Sethoxydim (including Clethodim), Tebuthiuron, Terbufos and Triallate.
Carbendazim has the same residue definition as Benomyl, Thiophanate-methyl and Thiophanate-ethyl
Dithiocarbamates with the same residue definition include Mancozeb, Metham, Metiram, Propineb, Thiram, Zineb and Ziram

Herbicides in Water by SPE / LCMSMS:
Sethoxydim (including Clethodim), Imazapic and Fluroxypyr give consistently low recoveries with increased uncertainty when analysed by method 29937.
For testing from 01/02/2015:
When High Level testing is performed Sethoxydim gives consistently low recovery (<40%) when analysed by method QIS 29937.
When Low Level testing is performed Sethoxydim and Terbutryn give consistently low recovery (<40%) when analysed by method QIS 29937.

Herbicides in Soil/Sediment/Mud by LCMSMS:
All results are reported on a dry weight basis.
Chlopyralid, Dicamba, Flusilazole, Imazapic, Imazapyr, Imazethapyr, Picloram and Terbutryn consistently give low recovery (< 40%) when analysed by QIS Method 32456.

Endocrine Disrupting Compounds (EDC):
Predicted estradiol equivalent includes all listed EDC compounds except Androstenedione, Dihydrotestosterone, β-Trenbolone, Altrenogest and Norgestimate.
Results for phthalates, when measured, are included in this calculation.
The EDC Reporting Limits (RL) given are for Post Recycled Water or Reverse Osmosis Water. RL may be different for other water types.

Polynuclear Aromatic Hydrocarbons (PAH):
2-Ethylnaphthalene is reported as the sum of 2-Ethylnaphthalene and 1-Ethylnaphthalene
1,7-Dimethylnaphthalene is reported as the sum of 1,7-Dimethylnaphthalene, 1,3-Dimethylnaphthalene and 1,6-Dimethylnaphthalene
1,4-Dimethylnaphthalene is reported as the sum of 1,4-Dimethylnaphthalene, 2,3-Dimethylnaphthalene and 1,5-Dimethylnaphthalene
1-Methoxynaphthalene is reported as the sum of 1-Methoxynaphthalene and 2-Methoxynaphthalene
2,6-Dimethylnaphthalene is reported as the sum of 2,6-Dimethylnaphthalene and 2,7-Dimethylnaphthalene
Toxic Equivalents (TEQs) are calculated using TEQs from Nisbet and LaGoy (1992):

PAH	TEQ	PAH	TEQ
Benzo[ghi]perylene	0.01	Pyrene	0.001
Dibenz[a,h]anthracene	5	Fluoranthene	0.001
Indeno[1,2,3-cd]pyrene	0.1	Anthracene	0.01
Benzo[a]pyrene	1	Phenanthrene	0.001
Benzo[b+k]fluoranthene	0.1	Fluorene	0.001
Chrysene	0.01	Acenaphthene	0.001
Benz[a]anthracene	0.1	Acenaphthylene	0.001

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Queensland Government

Forensic and Scientific Services
HealthSupport Queensland

CERTIFICATE OF ANALYSIS

CLIENT : (CZTORE)
Toowoomba Regional Council
153 Herries Street
TOOWOOMBA QLD 4350

ATTN: Andrew Murray

Laboratory Reference : SSP0067216
Client Order No. : PU128723_October
Date Received : 25-Oct-2019
Date Commenced : 29-Oct-2019
Laboratory Number/s : 19KE8699-19KE8701

Number of Samples : 3

Reason for Analysis : Pesticide Residue Analysis

Method/s of Analysis : 16647 - Extractable Acid and Base/Neutral Organic Compounds from Aqueous Samples by GCMS
25391 - Endocrine Disrupting Compounds in Effluent, River and Recycled Waters by GCMS
27701 - Pharmaceuticals, Personal Care Products in Water by SPE/LCMSMS

Remarks : Health Values based on the Australian Drinking Water Guidelines 2011.

PH Reg. Std. = Public Health Regulation Standard

As from 1 September 2018, the Public Health Regulation 2018 states that samples of drinking water must not contain an amount of an ADWG parameter more than the guideline parameter for health for the parameter.

Atorvastatin, Cefalexin, Dapsone, Doxylamine, Mirtazepine, Oxycodone, Paracetamol, Ranitidine, Sulfadiazine and Sulfathiazole consistently give low recoveries by QIS 27701.

Erythromycin is reported as Erythromycin anhydrate.
NA means Not Analysed for this compound

Results in this report have been authorised for release by B. Tan.

NATA Accredited Laboratory 41 Accredited for compliance with ISO/IEC 17025 - Testing.

Martha du Plessis
Chemist, Organic Chemistry
08-Nov-19

19KE8699-19KE8701

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Client Reference					19_4496_1	19_4496_2	19_4496_3
Sample Type					Water Bore Untreated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					07:50 24-Oct-2019	08:10 24-Oct-2019	08:20 24-Oct-2019
Sample Description					Bore Raw Water	Bore Raw Water	Bore Raw Water
Method	**Phenols**	**PH Reg. Std.**	**Units**	**Reporting Limit**	**19KE8699**	**19KE8700**	**19KE8701**
16647	Phenol	200	µg/L	0.25	< 0.25	< 0.25	< 0.25
16647	2-Chlorophenol	300	µg/L	1	< 1	< 1	< 1
16647	4-Chlorophenol	10	µg/L	0.5	< 0.5	< 0.5	< 0.5
16647	2-Methylphenol		µg/L	1	< 1	< 1	< 1
16647	4-Methylphenol	600	µg/L	1	< 1	< 1	< 1
16647	2-Nitrophenol		µg/L	1	< 1	< 1	< 1
16647	2,4-Dimethylphenol		µg/L	1	< 1	< 1	< 1
16647	2,4-Dichlorophenol	200	µg/L	1	< 1	< 1	< 1
16647	2,6-Dichlorophenol	10	µg/L	1	< 1	< 1	< 1
16647	4-Chloro-3-methylphenol		µg/L	1	< 1	< 1	< 1
16647	2,4,6-Trichlorophenol	20	µg/L	1	< 1	< 1	< 1
16647	2,4,5-Trichlorophenol	350	µg/L	1	< 1	< 1	< 1
16647	2,4-Dinitrophenol		µg/L	1	< 1	< 1	< 1
16647	4-Nitrophenol	30	µg/L	1	< 1	< 1	< 1
16647	2,3,4,6-Tetrachlorophenol		µg/L	1	< 1	< 1	< 1
16647	2-Methyl-4,6-dinitrophenol		µg/L	1	< 1	< 1	< 1
16647	Pentachlorophenol	10	µg/L	1	< 1	< 1	< 1
16647	Coumarin	0.5	µg/L	0.5	< 0.5	< 0.5	< 0.5

Client Reference					19_4496_1	19_4496_2	19_4496_3
Sample Type					Water Bore Untreated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					07:50 24-Oct-2019	08:10 24-Oct-2019	08:20 24-Oct-2019
Sample Description					Bore Raw Water	Bore Raw Water	Bore Raw Water
Method	Pharmaceuticals	PH Reg. Std.	Units	Reporting Limit	19KE8699	19KE8700	19KE8701
27701	Acesulfame K (sweetener)		µg/L	0.02	< 0.02	**0.56**	< 0.02
27701	Alprazolam	0.2	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Amidotrizoate (sodium)		µg/L	0.2	< 0.20	< 0.20	< 0.20
27701	Amitriptyline		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Atenolol	20	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Atorvastatin	2.3	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Baclofen		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Betaxolol	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Caffeine		µg/L	0.02	< 0.05	< 0.05	< 0.05
27701	Carbamazepine	100	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Cefalexin	40	µg/L	0.5	< 0.50	< 0.50	< 0.50
27701	Chloramphenicol	200	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Citalopram	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Codeine	50	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Cyclophosphamide	4	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Dapsone		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Desmethyl Citalopram	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Desmethyl Diazepam	2	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Diazepam	2	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Diclofenac	2	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Diethyltoluamide	2000	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Diphenhydramine		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Doxepin		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Doxylamine		µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Erythromycin anhydrate	20	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Fluoxetine	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Fluvastatin		µg/L	0.2	< 0.2	< 0.2	< 0.2
27701	Furosemide	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Gabapentin		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Gemfibrozol	600	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Hydrochlorthiazide	10	µg/L	0.02	< 0.02	< 0.02	< 0.02

Client Reference					19_4496_1	19_4496_2	19_4496_3
Sample Type					Water Bore Untreated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					07:50 24-Oct-2019	08:10 24-Oct-2019	08:20 24-Oct-2019
Sample Description					Bore Raw Water	Bore Raw Water	Bore Raw Water
Method	Pharmaceuticals (cont.)	PH Reg. Std.	Units	Reporting Limit	19KE8699	19KE8700	19KE8701
27701	Ifosfamide	4	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Indomethacin	20	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Iopromide	800	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Lincomycin	4000	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Methadone		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Methamphetamine		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Metoprolol	20	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Mirtazapine		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Naproxen	200	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Oxazepam	20	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Oxycodone	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Paracetamol	200	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Pethidine		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Pheniramine		µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Phenytoin		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Praziquantel	70	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Primidone		µg/L	0.02	< 0.02	0.03	< 0.02
27701	Propranolol	40	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Pseudoephedrine		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Ranitidine	80	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Roxithromycin	200	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Salicylic acid	100	µg/L	0.05	< 0.10	< 0.10	< 0.10
27701	Sertraline		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Simvastatin		µg/L	0.5	NA	NA	NA
27701	Sulfadiazine	1000	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Sulfamethoxazole	200	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Sulfasalazine	500	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Sulfathiazole	40	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Temazepam	5	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Theophylline	200	µg/L	0.2	< 0.2	< 0.2	< 0.2

Client Reference					19_4496_1	19_4496_2	19_4496_3
Sample Type					Water Bore Untreated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					07:50 24-Oct-2019	08:10 24-Oct-2019	08:20 24-Oct-2019
Sample Description					Bore Raw Water	Bore Raw Water	Bore Raw Water
Method	Pharmaceuticals (cont.)	PH Reg. Std.	Units	Reporting Limit	19KE8699	19KE8700	19KE8701
27701	Tramadol		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Triclosan	1000	µg/L	0.2	< 0.20	< 0.20	< 0.20
27701	Trimethoprim	70	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Tylosin	1000	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Venlafaxine	40	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Warfarin	1	µg/L	0.02	< 0.02	< 0.02	< 0.02

Client Reference					19_4496_1	19_4496_2	19_4496_3
Sample Type					Water Bore Untreated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					07:50 24-Oct-2019	08:10 24-Oct-2019	08:20 24-Oct-2019
Sample Description					Bore Raw Water	Bore Raw Water	Bore Raw Water
Method	Endocrine Disrupting Compounds (EDC)	PH Reg. Std.	Units	Reporting Limit	19KE8699	19KE8700	19KE8701
25391	4-t-Octylphenol	50000	ng/L	10	< 10	< 10	< 10
25391	Nonylphenol	500000	ng/L	50	< 50	< 50	< 50
25391	Bisphenol A	200000	ng/L	10	< 10	**12**	**43**
25391	Estrone	30	ng/L	1	< 1	< 1	< 1
25391	17β-Estradiol	200	ng/L	2	< 2	< 2	< 2
25391	Estriol	50	ng/L	2	< 2	< 2	< 2
25391	17α-Ethynylestradiol	2	ng/L	2	< 2	< 2	< 2
25391	Norgestrel		ng/L	2	< 2	< 2	< 2
25391	Testosterone	7000	ng/L	5	< 5	< 5	< 5
25391	Androsterone	10000	ng/L	5	< 2	< 2	< 2
25391	Etiocholanolone		ng/L	5	< 5	< 5	< 5
25391	Cholesterol (not an EDC)		ng/L	50	< 50	**120**	< 50
25391	Equilenin	30	ng/L	2	< 2	< 2	< 2
25391	Equilin	30	ng/L	2	< 2	< 2	< 2
25391	Mestranol	2	ng/L	5	< 5	< 5	< 5
25391	Cumylphenol		ng/L	10	< 10	< 10	< 10
25391	17α-Estradiol	200	ng/L	2	< 2	< 2	< 2
25391	Norethindrone	200	ng/L	2	< 2	< 2	< 2
25391	Progesterone	100000	ng/L	20	< 20	< 20	< 20
25391	Androstenedione		ng/L	5	< 5	< 5	< 5
25391	Dihydrotestosterone		ng/L	5	< 5	< 5	< 5
25391	β-Trenbolone		ng/L	7	< 7	< 7	< 7
25391	Altrenogest		ng/L	7	< 7	< 7	< 7
25391	Norgestimate		ng/L	7	< 7	< 7	< 7
25391	Predicted estradiol equivalent		ng/L	2	< 2	< 2	< 2

This report overrides all previous reports. The results relate solely to the sample/s as received and are limited to the specific tests undertaken as listed on the report. The results on this report are confidential and are not to be used or disclosed to any other person or used for any other purpose, whether directly or indirectly, unless that use is disclosed or the purpose is expressly authorised in writing by Queensland Health and the named recipient on this report. To the fullest extent permitted by law, Queensland Health will not be liable for any loss or claim (including legal costs calculated on an indemnity basis) which arise because of (a) problems related to the merchantability, fitness or quality of the sample/s, or (b) any negligent or unlawful act or omissions by Queensland Health that is connected with any activities or services provided by Queensland Health under this agreement (including the timing and/or method under which the sample/s were taken, stored or transported).

General Statements:

The Australian Drinking Water Guidelines Health Value (ADWG HV) is based on the Acceptable Daily Intake (ADI) set by the Therapeutic Goods Authority (TGA). The ADI (and hence the ADWG HV) applies to the Residue Definition (RD) as listed in Table 3 of the Australian Pesticides and Veterinary Medicines Authority's (APVMA) MRL Standard. Analytical results are for individual compounds (or sums of isomers). In many instances this addresses the RD. 'Total' results, where reported, address more complex RDs.

There are instances where the individual result does not cover the full RD. This is the situation for Aldicarb, Aldoxycarb, Amitraz, Carbophenothion, Coumaphos, Dicofol, Disulfoton, Endrin, Fenamiphos, Fenthion, Fipronil, Fluazifop-butyl, Fluometuron, Glufosinate, Haloxyfop (acid), Haloxyfop-2-etotoyl, Haloxyfop-methyl, HCH isomers (other than Lindane), Imidacloprid, Methiocarb, Oxydemeton-methyl, Phorate, Phosmet, Pirimicarb, Sethoxydim (including Clethodim), Tebuthiuron, Terbufos and Triallate.
Carbendazim has the same residue definition as Benomyl, Thiophanate-methyl and Thiophanate-ethyl
Dithiocarbamates with the same residue definition include Mancozeb, Metham, Metiram, Propineb, Thiram, Zineb and Ziram

Herbicides in Water by SPE / LCMSMS:
Sethoxydim (including Clethodim), Imazapic and Fluroxypyr give consistently low recoveries with increased uncertainty when analysed by method 29937.
For testing from 01/02/2015:
When High Level testing is performed Sethoxydim gives consistently low recovery (<40%) when analysed by method QIS 29937.
When Low Level testing is performed Sethoxydim and Terbutryn give consistently low recovery (<40%) when analysed by method QIS 29937.

Herbicides in Soil/Sediment/Mud by LCMSMS:
All results are reported on a dry weight basis.
Chlopyralid, Dicamba, Flusilazole, Imazapic, Imazapyr, Imazethapyr, Picloram and Terbutryn consistently give low recovery (< 40%) when analysed by QIS Method 32456.

Endocrine Disrupting Compounds (EDC):
Predicted estradiol equivalent includes all listed EDC compounds except Androstenedione, Dihydrotestosterone, β-Trenbolone, Altrenogest and Norgestimate.
Results for phthalates, when measured, are included in this calculation.
The EDC Reporting Limits (RL) given are for Post Recycled Water or Reverse Osmosis Water. RL may be different for other water types.

Polynuclear Aromatic Hydrocarbons (PAH):
2-Ethylnaphthalene is reported as the sum of 2-Ethylnaphthalene and 1-Ethylnaphthalene
1,7-Dimethylnaphthalene is reported as the sum of 1,7-Dimethylnaphthalene, 1,3-Dimethylnaphthalene and 1,6-Dimethylnaphthalene
1,4-Dimethylnaphthalene is reported as the sum of 1,4-Dimethylnaphthalene, 2,3-Dimethylnaphthalene and 1,5-Dimethylnaphthalene
1-Methoxynaphthalene is reported as the sum of 1-Methoxynaphthalene and 2-Methoxynaphthalene
2,6-Dimethylnaphthalene is reported as the sum of 2,6-Dimethylnaphthalene and 2,7-Dimethylnaphthalene
Toxic Equivalents (TEQs) are calculated using TEQs from Nisbet and LaGoy (1992):

PAH	TEQ	PAH	TEQ
Benzo[ghi]perylene	0.01	Pyrene	0.001
Dibenz[a,h]anthracene	5	Fluoranthene	0.001
Indeno[1,2,3-cd]pyrene	0.1	Anthracene	0.01
Benzo[a]pyrene	1	Phenanthrene	0.001
Benzo[b+k]fluoranthene	0.1	Fluorene	0.001
Chrysene	0.01	Acenaphthene	0.001
Benz[a]anthracene	0.1	Acenaphthylene	0.001

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Queensland Government

Forensic and Scientific Services
HealthSupport Queensland

CERTIFICATE OF ANALYSIS

CLIENT : (CZTORE)
Toowoomba Regional Council
153 Herries Street
TOOWOOMBA QLD 4350

ATTN: Andrew Murray

Laboratory Reference	: SSP0067609
Client Order No.	: PU131412 November
Quote Number	: 19KQ1003
Date Received	: 21-Nov-2019
Date Commenced	: 28-Nov-2019
Laboratory Number/s	: 19KE9442-19KE9444

Number of Samples : 3

Reason for Analysis : Pesticide Residue Analysis

Method/s of Analysis : 27701 - Pharmaceuticals, Personal Care Products in Water by SPE/LCMSMS

16647 - Extractable Acid and Base/Neutral Organic Compounds from Aqueous Samples by GCMS
25391 - Endocrine Disrupting Compounds in Effluent, River and Recycled Waters by GCMS

Remarks : Health Values based on the Australian Drinking Water Guidelines 2011.

PH Reg. Std. = Public Health Regulation Standard

As from 1 September 2018, the Public Health Regulation 2018 states that samples of drinking water must not contain an amount of an ADWG parameter more than the guideline parameter for health for the parameter.

27701 - Atorvastatin, Cefalexin, Dapsone, Doxylamine, Mirtazepine, Oxycodone, Paracetamol, Ranitidine, Sulfadiazine and Sulfathiazole consistently give low recoveries by QIS 27701.
Erythromycin is reported as Erythromycin anhydrate. NA means Not Analysed for this compound.

Results in this report have been authorised for release by Benjamin Tan.

NATA Accredited Laboratory 41 Accredited for compliance with ISO/IEC 17025 - Testing

Renu Patel
Analyst
09-Dec-19

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Client Reference					19/4914-1	19/4914-2	19/4914-3
Sample Type					Water Reservoir Treated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					13:30 19-Nov-2019	13:15 19-Nov-2019	13:00 19-Nov-2019
Sample Description					Reservoir	Bore Raw Water	Bore Raw water
Method	Phenols	PH Reg. Std.	Units	Reporting Limit	19KE9442	19KE9443	19KE9444
16647	Phenol	200	µg/L	0.25	< 0.25	< 0.25	< 0.25
16647	2-Chlorophenol	300	µg/L	1	< 1	< 1	< 1
16647	4-Chlorophenol	10	µg/L	0.5	< 0.5	< 0.5	< 0.5
16647	2-Methylphenol		µg/L	1	< 1	< 1	< 1
16647	4-Methylphenol	600	µg/L	1	< 1	< 1	< 1
16647	2-Nitrophenol		µg/L	1	< 1	< 1	< 1
16647	2,4-Dimethylphenol		µg/L	1	< 1	< 1	< 1
16647	2,4-Dichlorophenol	200	µg/L	1	< 1	< 1	< 1
16647	2,6-Dichlorophenol	10	µg/L	1	< 1	< 1	< 1
16647	4-Chloro-3-methylphenol		µg/L	1	< 1	< 1	< 1
16647	2,4,6-Trichlorophenol	20	µg/L	1	< 1	< 1	< 1
16647	2,4,5-Trichlorophenol	350	µg/L	1	< 1	< 1	< 1
16647	2,4-Dinitrophenol		µg/L	1	< 1	< 1	< 1
16647	4-Nitrophenol	30	µg/L	1	< 1	< 1	< 1
16647	2,3,4,6-Tetrachlorophenol		µg/L	1	< 1	< 1	< 1
16647	2-Methyl-4,6-dinitrophenol		µg/L	1	< 1	< 1	< 1
16647	Pentachlorophenol	10	µg/L	1	< 1	< 1	< 1
16647	Coumarin	0.5	µg/L	0.5	< 0.5	< 0.5	< 0.5

Client Reference					19/4914-1	19/4914-2	19/4914-3
Sample Type					Water Reservoir Treated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					13:30 19-Nov-2019	13:15 19-Nov-2019	13:00 19-Nov-2019
Sample Description					Reservoir	Bore Raw Water	Bore Raw water
Method	Pharmaceuticals	PH Reg. Std.	Units	Reporting Limit	19KE9442	19KE9443	19KE9444
27701	Acesulfame K (sweetener)		µg/L	0.02	0.03	0.49	< 0.02
27701	Alprazolam	0.2	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Amidotrizoate (sodium)		µg/L	0.2	< 0.20	< 0.20	< 0.20
27701	Amitriptyline		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Atenolol	20	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Atorvastatin	2.3	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Baclofen		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Betaxolol	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Caffeine		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Carbamazepine	100	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Cefalexin	40	µg/L	0.5	< 0.50	< 0.50	< 0.50
27701	Chloramphenicol	200	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Citalopram	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Codeine	50	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Cyclophosphamide	4	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Dapsone		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Desmethyl Citalopram	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Desmethyl Diazepam	2	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Diazepam	2	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Diclofenac	2	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Diethyltoluamide	2000	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Diphenhydramine		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Doxepin		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Doxylamine		µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Erythromycin anhydrate	20	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Fluoxetine	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Fluvastatin		µg/L	0.2	< 0.20	< 0.20	< 0.20
27701	Furosemide	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Gabapentin		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Gemfibrozol	600	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Hydrochlorthiazide	10	µg/L	0.02	< 0.02	< 0.02	< 0.02

Client Reference					19/4914-1	19/4914-2	19/4914-3
Sample Type					Water Reservoir Treated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					13:30 19-Nov-2019	13:15 19-Nov-2019	13:00 19-Nov-2019
Sample Description					Reservoir	Bore Raw Water	Bore Raw water
Method	Pharmaceuticals (cont.)	PH Reg. Std.	Units	Reporting Limit	19KE9442	19KE9443	19KE9444
27701	Ibuprofen	400	µg/L	0.5	< 0.50	< 0.50	< 0.50
27701	Ifosfamide	4	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Indomethacin	20	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Iopromide	800	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Lincomycin	4000	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Methadone		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Methamphetamine		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Metoprolol	20	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Mirtazapine		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Naproxen	200	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Oxazepam	20	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Oxycodone	10	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Paracetamol	200	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Pethidine		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Pheniramine		µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Phenytoin		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Pholcodine		µg/L	0.1	< 0.10	< 0.10	< 0.10
27701	Praziquantel	70	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Primidone		µg/L	0.02	< 0.02	**0.03**	< 0.02
27701	Propranolol	40	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Pseudoephedrine		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Ranitidine	80	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Roxithromycin	200	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Salicylic acid	100	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Sertraline		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Simvastatin		µg/L	0.5	NA	NA	NA
27701	Sulfadiazine	1000	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Sulfamethoxazole	200	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Sulfasalazine	500	µg/L	0.05	< 0.05	< 0.05	< 0.05
27701	Sulfathiazole	40	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Temazepam	5	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Theophylline	200	µg/L	0.2	< 0.20	< 0.20	< 0.20

Client Reference					19/4914-1	19/4914-2	19/4914-3
Sample Type					Water Reservoir Treated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					13:30 19-Nov-2019	13:15 19-Nov-2019	13:00 19-Nov-2019
Sample Description					Reservoir	Bore Raw Water	Bore Raw water
Method	Pharmaceuticals (cont.)	PH Reg. Std.	Units	Reporting Limit	19KE9442	19KE9443	19KE9444
27701	Tramadol		µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Triclosan	1000	µg/L	0.2	< 0.20	< 0.20	< 0.20
27701	Trimethoprim	70	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Tylosin	1000	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Venlafaxine	40	µg/L	0.02	< 0.02	< 0.02	< 0.02
27701	Warfarin	1	µg/L	0.02	< 0.02	< 0.02	< 0.02

Client Reference					19/4914-1	19/4914-2	19/4914-3
Sample Type					Water Reservoir Treated	Water Bore Untreated	Water Bore Untreated
Sampling Time/Date					13:30 19-Nov-2019	13:15 19-Nov-2019	13:00 19-Nov-2019
Sample Description					Reservoir	Bore Raw Water	Bore Raw water
Method	Endocrine Disrupting Compounds (EDC)	PH Reg. Std.	Units	Reporting Limit	19KE9442	19KE9443	19KE9444
25391	4-t-Octylphenol	50000	ng/L	10	< 10	< 10	< 10
25391	Nonylphenol	500000	ng/L	50	< 50	< 50	< 50
25391	Bisphenol A	200000	ng/L	10	< 10	28	< 10
25391	Estrone	30	ng/L	1	< 1	< 1	< 1
25391	17β-Estradiol	200	ng/L	2	< 2	< 2	< 2
25391	Estriol	50	ng/L	2	< 2	< 2	< 2
25391	17α-Ethynylestradiol	2	ng/L	2	< 2	< 2	< 2
25391	Norgestrel		ng/L	2	< 2	< 2	< 2
25391	Testosterone	7000	ng/L	5	< 5	< 5	< 5
25391	Androsterone	10000	ng/L	5	< 5	< 5	< 5
25391	Etiocholanolone		ng/L	5	< 5	< 5	< 5
25391	Cholesterol (not an EDC)		ng/L	50	< 50	< 50	73
25391	Equilenin	30	ng/L	2	< 2	< 2	< 2
25391	Equilin	30	ng/L	2	< 2	< 2	< 2
25391	Mestranol	2	ng/L	5	< 5	< 5	< 5
25391	Cumylphenol		ng/L	10	< 10	< 10	< 10
25391	17α-Estradiol	200	ng/L	2	< 2	< 2	< 2
25391	Norethindrone	200	ng/L	2	< 2	< 2	< 2
25391	Progesterone	100000	ng/L	20	< 20	< 20	< 20
25391	Androstenedione		ng/L	5	< 5	< 5	< 5
25391	Dihydrotestosterone		ng/L	5	< 5	< 5	< 5
25391	β-Trenbolone		ng/L	7	< 7	< 7	< 7
25391	Predicted estradiol equivalent		ng/L	2	< 2	< 2	< 2

This report overrides all previous reports. The results relate solely to the sample/s as received and are limited to the specific tests undertaken as listed on the report. The results on this report are confidential and are not to be used or disclosed to any other person or used for any other purpose, whether directly or indirectly, unless that use is disclosed or the purpose is expressly authorised in writing by Queensland Health and the named recipient on this report. To the fullest extent permitted by law, Queensland Health will not be liable for any loss or claim (including legal costs calculated on an indemnity basis) which arise because of (a) problems related to the merchantability, fitness or quality of the sample/s, or (b) any negligent or unlawful act or omissions by Queensland Health that is connected with any activities or services provided by Queensland Health under this agreement (including the timing and/or method under which the sample/s were taken, stored or transported)

General Statements:

The Australian Drinking Water Guidelines Health Value (ADWG HV) is based on the Acceptable Daily Intake (ADI) set by the Therapeutic Goods Authority (TGA). The ADI (and hence the ADWG HV) applies to the Residue Definition (RD) as listed in Table 3 of the Australian Pesticides and Veterinary Medicines Authority's (APVMA) MRL Standard. Analytical results are for individual compounds (or sums of isomers). In many instances this addresses the RD. 'Total' results, where reported, address more complex RDs.

There are instances where the individual result does not cover the full RD. This is the situation for Aldicarb, Aldoxycarb, Amitraz, Carbophenothion, Coumaphos, Dicofol, Disulfoton, Endrin, Fenamiphos, Fenthion, Fipronil, Fluazifop-butyl, Fluometuron, Glufosinate, Haloxyfop (acid), Haloxyfop-2-etotoyl, Haloxyfop-methyl, HCH isomers (other than Lindane), Imidacloprid, Methiocarb, Oxydemeton-methyl, Phorate, Phosmet, Pirimicarb, Sethoxydim (including Clethodim), Tebuthiuron, Terbufos and Triallate.
Carbendazim has the same residue definition as Benomyl, Thiophanate-methyl and Thiophanate-ethyl
Dithiocarbamates with the same residue definition include Mancozeb, Metham, Metiram, Propineb, Thiram, Zineb and Ziram

Herbicides in Water by SPE / LCMSMS:
Sethoxydim (including Clethodim), Imazapic and Fluroxypyr give consistently low recoveries with increased uncertainty when analysed by method 29937.
For testing from 01/02/2015:
When High Level testing is performed Sethoxydim gives consistently low recovery (<40%) when analysed by method QIS 29937.
When Low Level testing is performed Sethoxydim and Terbutryn give consistently low recovery (<40%) when analysed by method QIS 29937.

Herbicides in Soil/Sediment/Mud by LCMSMS:
All results are reported on a dry weight basis.
Chlopyralid, Dicamba, Flusilazole, Imazapic, Imazapyr, Imazethapyr, Picloram and Terbutryn consistently give low recovery (< 40%) when analysed by QIS Method 32456.

Endocrine Disrupting Compounds (EDC):
Predicted estradiol equivalent includes all listed EDC compounds except Androstenedione, Dihydrotestosterone, β-Trenbolone, Altrenogest and Norgestimate.
Results for phthalates, when measured, are included in this calculation.
The EDC Reporting Limits (RL) given are for Post Recycled Water or Reverse Osmosis Water. RL may be different for other water types.

Polynuclear Aromatic Hydrocarbons (PAH):
2-Ethylnaphthalene is reported as the sum of 2-Ethylnaphthalene and 1-Ethylnaphthalene
1,7-Dimethylnaphthalene is reported as the sum of 1,7-Dimethylnaphthalene, 1,3-Dimethylnaphthalene and 1,6-Dimethylnaphthalene
1,4-Dimethylnaphthalene is reported as the sum of 1,4-Dimethylnaphthalene, 2,3-Dimethylnaphthalene and 1,5-Dimethylnaphthalene
1-Methoxynaphthalene is reported as the sum of 1-Methoxynaphthalene and 2-Methoxynaphthalene
2,6-Dimethylnaphthalene is reported as the sum of 2,6-Dimethylnaphthalene and 2,7-Dimethylnaphthalene
Toxic Equivalents (TEQs) are calculated using TEQs from Nisbet and LaGoy (1992):

PAH	TEQ	PAH	TEQ
Benzo[ghi]perylene	0.01	Pyrene	0.001
Dibenz[a,h]anthracene	5	Fluoranthene	0.001
Indeno[1,2,3-cd]pyrene	0.1	Anthracene	0.01
Benzo[a]pyrene	1	Phenanthrene	0.001
Benzo[b+k]fluoranthene	0.1	Fluorene	0.001
Chrysene	0.01	Acenaphthene	0.001
Benz[a]anthracene	0.1	Acenaphthylene	0.001

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Unitywater Laboratory

REPORT OF ANALYSIS

JOB DESCRIPTION: Mt Kynoch WTP - Wastewater

JOB STATUS: FINAL REPORT - All pages of this report have been checked and approved for release. This report overrides all previous reports.

CUSTOMER:	Toowoomba Regional Council PO Box 3021 Toowoomba QLD 4350	**REPORT ID:**	UW-33463
		DATE SAMPLED:	2/12/2019
EMAIL:	labservices@tr.qld.gov.au	**DATE RECEIVED:**	2/12/2019
CONTACT:	Lab Services	**DATE ANALYSIS COMMENCED:**	2/12/2019
ORDER / REFERENCE NO:		**DATE REPORT ISSUED:**	6/12/2019

REPORT LEGEND

ABBREVIATIONS

NA - Not Applicable
NR - Not Reported

--- Test Not Required

< Less than
> Greater than

MPN - Most Probable Number
CFU - Colony Forming Unit
PFU - Plaque Forming Unit
EST - Estimated Count

NATA ACCREDITATION

TEST METHOD marked with * indicates NATA Accreditation does not cover the performance of this service.
TEST METHOD marked with X indicates tests performed by External Laboratory

- All sampling performed by the Unitywater Laboratory conforms to In-House Method FQ01.
- Processing and testing of all samples performed on day received, otherwise samples were appropriately stored and preserved.
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Your Feedback is important to us. Your comments are welcome at the above email address or please feel free to telephone us at any time.

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Dawn Hadfield
Microbiology Supervisor

Unitywater - Laboratory Report

Mt Kynoch WTP - Wastewater **UW-33463**

FINAL REPORT - All pages of this report have been checked and approved for release. This report overrides all previous reports.

	Units	Test Method	19/5063-1	19/5063-2
DATESAMPLED TimeSampled			2/12/2019 09:30	2/12/2019 09:45
Somatic Coliphages	pfu/100mL	MM10	<1	<1
Male-specific Coliphages	pfu/100mL	MM10	<1	<1
Clostridium perfringens spores	cfu/100mL	MM11	<1	<1

COMMENTS

ATTACHMENTS

INV_UW-33463_UW-33463_06-12-2019-122112.PDF

Report Revision No: 00

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Unitywater Laboratory

REPORT OF ANALYSIS

JOB DESCRIPTION: Mt Kynoch WTP

JOB STATUS: FINAL REPORT - All pages of this report have been checked and approved for release. This report overrides all previous reports.

CUSTOMER:	Toowoomba Regional Council PO Box 3021 Toowoomba QLD 4350	**REPORT ID:**	UW-33630
		DATE SAMPLED:	18/12/2019
EMAIL:	labservices@tr.qld.gov.au	**DATE RECEIVED:**	19/12/2019
CONTACT:	Lab Services	**DATE ANALYSIS COMMENCED:**	19/12/2019
ORDER / REFERENCE NO:		**DATE REPORT ISSUED:**	20/12/2019

REPORT LEGEND

ABBREVIATIONS

NA - Not Applicable
NR - Not Reported

--- Test Not Required

< Less than
> Greater than

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PFU - Plaque Forming Unit
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Dawn Hadfield
Microbiology Supervisor

Unitywater - Laboratory Report

Mt Kynoch WTP **UW-33630**

FINAL REPORT - All pages of this report have been checked and approved for release. This report overrides all previous reports.

	Units	Test Method	19/5322-1	19/5322-2	19/5322-3	19/5322-4
DATE SAMPLED Time Sampled			18/12/2019 09:45	18/12/2019 10:00	18/12/2019 10:15	18/12/2019 10:30
Somatic Coliphages	pfu/100mL	MM10	<1	<1	<1	<1
Male-specific Coliphages	pfu/100mL	MM10	<1	<1	<1	<1
Clostridium perfringens spores	cfu/100mL	MM11	<1	<1	<1	<1

COMMENTS

ATTACHMENTS

INV_UW-33630_UW-33630_20-12-2019-124714.PDF

Report Revision No: 00

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Unitywater Laboratory

REPORT OF ANALYSIS

JOB DESCRIPTION: Toowoomba Phage Testing

JOB STATUS: FINAL REPORT - All pages of this report have been checked and approved for release. This report overrides all previous reports.

CUSTOMER:	Toowoomba Regional Council PO Box 3021 Toowoomba QLD 4350	**REPORT ID:**	UW-34001
		DATE SAMPLED:	15/01/2020
EMAIL:	labservices@tr.qld.gov.au	**DATE RECEIVED:**	16/01/2020
CONTACT:	Lab Services	**DATE ANALYSIS COMMENCED:**	16/01/2020
ORDER / REFERENCE NO:		**DATE REPORT ISSUED:**	17/01/2020

REPORT LEGEND

ABBREVIATIONS

NA - Not Applicable
NR - Not Reported

--- Test Not Required

< Less than
> Greater than

MPN - Most Probable Number
CFU - Colony Forming Unit
PFU - Plaque Forming Unit
EST - Estimated Count

NATA ACCREDITATION

TEST METHOD marked with * indicates NATA Accreditation does not cover the performance of this service.
TEST METHOD marked with X indicates tests performed by External Laboratory

- All sampling performed by the Unitywater Laboratory conforms to In-House Method FQ01.
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Dawn Hadfield
Microbiology Supervisor

Unitywater - Laboratory Report

Toowoomba Phage Testing **UW-34001**

FINAL REPORT - All pages of this report have been checked and approved for release. This report overrides all previous reports.

	Units	Test Method	20/0245-1	20/0245-2	20/0245-3	20/0245-4
DATE SAMPLED Time Sampled			15/01/2020 09:20	15/01/2020 09:40	15/01/2020 10:00	15/01/2020 10:20
Somatic Coliphages	pfu/100mL	MM10	<1	<1	<1	<1
Male-specific Coliphages	pfu/100mL	MM10	<1	<1	<1	<1
Clostridium perfringens spores	cfu/100mL	MM11	<1	<1	<1	<1

COMMENTS

Samples warm when received as no ice was included with samples.

ATTACHMENTS

INV_UW-34001_UW-34001_17-01-2020-163100.PDF

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Unitywater Laboratory

REPORT OF ANALYSIS

JOB DESCRIPTION: Toowoomba Phage Testing

JOB STATUS: FINAL REPORT - All pages of this report have been checked and approved for release. This report overrides all previous reports.

CUSTOMER:	Toowoomba Regional Council PO Box 3021 Toowoomba QLD 4350	**REPORT ID:**	UW-34288
		DATE SAMPLED:	29/01/2020
EMAIL:	labservices@tr.qld.gov.au	**DATE RECEIVED:**	30/01/2020
CONTACT:	Lab Services	**DATE ANALYSIS COMMENCED:**	30/01/2020
ORDER / REFERENCE NO:		**DATE REPORT ISSUED:**	31/01/2020

REPORT LEGEND

ABBREVIATIONS

NA - Not Applicable
NR - Not Reported

--- Test Not Required

< Less than
> Greater than

MPN - Most Probable Number
CFU - Colony Forming Unit
PFU - Plaque Forming Unit
EST - Estimated Count

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Dawn Hadfield
Microbiology Supervisor

Unitywater - Laboratory Report

Toowoomba Phage Testing **UW-34288**

FINAL REPORT - All pages of this report have been checked and approved for release. This report overrides all previous reports.

	Units	Test Method	20/0330-1	20/0330-2	20/0330-3	20/0330-4
DATE SAMPLED Time Sampled			29/01/2020 07:20	29/01/2020 07:35	29/01/2020 07:50	29/01/2020 08:05
Somatic Coliphages	pfu/100mL	MM10	<1	<1	<1	<1
Male-specific Coliphages	pfu/100mL	MM10	<1	<1	<1	<1
Clostridium perfringens spores	cfu/100mL	MM11	<1	<1	<1	<1

COMMENTS

ATTACHMENTS

INV_UW-34288_UW-34288_31-01-2020-163853.PDF

Report Revision No: 01

NATA
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Dawn Hadfield
Microbiology Supervisor

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TEST REPORT

Issued: 6/03/20

BATCH NO: 20/0616
RECEIVED: 19/02/20
APPROVED: Incomplete

CLIENT: Toowoomba Regional Council
Clifton Service Centre
PO Box 3021

Toowoomba QLD 4350
ATTENTION: Jeremy Hanson

ORDER NO:

REPORT NO: 190220-0616-Prelim

METHOD	Client Reference: Laboratory Reference: Sample Date: Sample Time: ANALYSIS	UNITS	LOR	Clifton Bore 2 20/0616/1 19/02/2020 0800	CL3 Clifton Bore 3A 20/0616/2 19/02/2020 0810	CL4 Clifton Bore 4 20/0616/3 19/02/2020 0820	CL5 Clifton Bore 5 20/0616/4 19/02/2020 0830
QP-KYN-105	*E.coli*	MPN/100mL	1	<1	<1	<1	<1
Unity*	Somatic Coliphages	pfu/100mL	1	<1	<1	<1	<1
Unity*	Male-Specific Coliphages	pfu/100mL	1	<1	<1	<1	<1
Unity*	*Clostridium perfringens*	cfu/100mL	1	<1	<1	<1	<1
QHFSS*	Outsourced Testing - Pharma						
NMI	Outsourced Testing - PFAS						
	Temperature on Arrival	°C		23	[NA]	[NA]	[NA]

Comments
Samples outsourced for Phage analysis to Unity Water. Please refer to attached Report Number UW-34777.
Microbiology approved by Daniel Bishop.

R.M. DANIELS
SENIOR LABORATORY TECHNICIAN

NATA Accredited Laboratory
Number 12009
Accredited for compliance with ISO/IEC 17025 - Testing

File Reference: S-002290 (Internal)
*not covered by NATA scope of accreditation
LOR = Limit of Reporting
If Measurement Uncertainty required refer to following hyperlink:
http://www.tr.qld.gov.au/environment-water-waste/water-supply-dams/water-treatment-testing/12052-water-analysis
"Derived" - Derived value.
Results apply to sample(s) as received at laboratory.

Unitywater
ABN: 89791717472

Ground Floor, 33 King Street
Caboolture QLD 4510
PO Box 953
Caboolture QLD 4510
www.unitywater.com

67 Weier Road, Morayfield
PO Box 953, Caboolture QLD 4510
Phone (07) 54318855
Email: Labstaff@unitywater.com

Unitywater Laboratory

REPORT OF ANALYSIS

JOB DESCRIPTION: Toowoomba Phage Testing

JOB STATUS: FINAL REPORT - All pages of this report have been checked and approved for release. This report overrides all previous reports.

CUSTOMER:	Toowoomba Regional Council PO Box 3021 Toowoomba QLD 4350	**REPORT ID:**	UW-34777
		DATE SAMPLED:	19/02/2020
EMAIL:	labservices@tr.qld.gov.au	**DATE RECEIVED:**	21/02/2020
CONTACT:	Lab Services	**DATE ANALYSIS COMMENCED:**	21/02/2020
ORDER / REFERENCE NO:		**DATE REPORT ISSUED:**	24/02/2020

REPORT LEGEND

ABBREVIATIONS

NA - Not Applicable
NR - Not Reported

--- Test Not Required

< Less than
> Greater than

MPN - Most Probable Number
CFU - Colony Forming Unit
PFU - Plaque Forming Unit
EST - Estimated Count

NATA ACCREDITATION

TEST METHOD marked with * indicates NATA Accreditation does not cover the performance of this service.
TEST METHOD marked with X indicates tests performed by External Laboratory

- All sampling performed by the Unitywater Laboratory conforms to In-House Method FQ01.
- Processing and testing of all samples performed on day received, otherwise samples were appropriately stored and preserved.
- The results refer only to the sample(s) as received and tested.

Your Feedback is important to us. Your comments are welcome at the above email address or please feel free to telephone us at any time.

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.
Accreditation No. 14414.

This report shall not be reproduced except in full, without written approval of the laboratory.

Dawn Hadfield
Microbiology Supervisor

Unitywater
ABN: 89791717472

Ground Floor, 33 King Street
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Unitywater Laboratory

REPORT OF ANALYSIS

JOB DESCRIPTION: Toowoomba Phage Testing

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		DATE SAMPLED:	19/02/2020
EMAIL:	labservices@tr.qld.gov.au	**DATE RECEIVED:**	21/02/2020
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ORDER / REFERENCE NO:		**DATE REPORT ISSUED:**	24/02/2020

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Dawn Hadfield
Microbiology Supervisor

Unitywater - Laboratory Report

Toowoomba Phage Testing **UW-34777**

FINAL REPORT - All pages of this report have been checked and approved for release. This report overrides all previous reports.

	Units	Test Method	20/0616-1	20/0616-2	20/0616-3	20/0616-4
DATE SAMPLED Time Sampled			19/02/2020 08:00	19/02/2020 08:10	19/02/2020 08:20	19/02/2020 08:30
Somatic Coliphages	pfu/100mL	MM10	<1	<1	<1	<1
Male-specific Coliphages	pfu/100mL	MM10	<1	<1	<1	<1
Clostridium perfringens spores	cfu/100mL	MM11	<1	<1	<1	<1

COMMENTS

ATTACHMENTS

INV_UW-34777_UW-34777_24-02-2020-115151.PDF

NATA
WORLD RECOGNISED ACCREDITATION

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Accreditation No. 14414.

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Dawn Hadfield
Microbiology Supervisor

REPORT OF ANALYSIS

Report No. RN1261312

Client	: TOOWOOMBA REGIONAL COUNCIL	**Job No.**	: TOOW01/200117
	MT KYNOCH LABORATORY	**Quote No.**	: QT-02012
	SHUTTLEWOOD STREET	**Order No.**	: PU134955JANUARY
		Date Received	: 17-JAN-2020
Attention	: ANDREW MURRAY	**Sampled By**	: CLIENT
Project Name	:		
Your Client Services Manager	: Richard Coghlan	**Phone**	: 02 9449 0161

Lab Reg No.	Sample Ref	Sample Description
N20/001076	20/0245-1	WATER BORE
N20/001077	20/0245-2	WATER BORE
N20/001078	20/0245-3	WATER BORE
N20/001079	20/0245-4	WATER BORE

Lab Reg No.		N20/001076	N20/001077	N20/001078	N20/001079	
Date Sampled		15-JAN-2020	15-JAN-2020	15-JAN-2020	15-JAN-2020	
Sample Reference	Units	20/0245-1	20/0245-2	20/0245-3	20/0245-4	Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
PFPeA (2706-90-3)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxA (307-24-4)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFHpA (375-85-9)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFOA (335-67-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFNA (375-95-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDA (335-76-2)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFHxS (355-46-4)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFHpS (375-92-8)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFOS (1763-23-1)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFNS (68259-12-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFOSA (754-91-6)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70

REPORT OF ANALYSIS

Report No. RN1261312

Lab Reg No.	Units	N20/001076	N20/001077	N20/001078	N20/001079	Method
Date Sampled		15-JAN-2020	15-JAN-2020	15-JAN-2020	15-JAN-2020	
Sample Reference		20/0245-1	20/0245-2	20/0245-3	20/0245-4	
PFAS (per-and poly-fluoroalkyl substances)						
N-MeFOSE (24448-09-7)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 FTS (39108-34-4)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)	%	95	102	109	107	NR70
PFPeA (Surrogate Recovery)	%	110	114	113	105	NR70
PFHxA (Surrogate Recovery)	%	101	112	107	111	NR70
PFHpA (Surrogate Recovery)	%	106	106	106	99	NR70
PFOA (Surrogate Recovery)	%	99	106	102	97	NR70
PFNA (Surrogate Recovery)	%	80	104	106	93	NR70
PFDA (Surrogate Recovery)	%	85	114	100	90	NR70
PFUdA (Surrogate Recovery)	%	86	92	100	85	NR70
PFDoA (Surrogate Recovery)	%	70	100	90	89	NR70
PFTeDA (Surrogate Recovery)	%	66	73	71	64	NR70
PFHxDA (Surrogate Recovery)	%	70	81	84	78	NR70
FOUEA (Surrogate Recovery)	%	82	86	89	84	NR70
PFBS (Surrogate Recovery)	%	93	93	93	91	NR70
PFHxS (Surrogate Recovery)	%	98	99	100	95	NR70
PFOS (Surrogate Recovery)	%	116	121	98	108	NR70
PFOSA (Surrogate Recovery)	%	77	79	93	81	NR70
N-MeFOSA (Surrogate Recovery)	%	71	56	58	70	NR70
N-EtFOSA (Surrogate Recovery)	%	71	71	60	55	NR70
N-MeFOSAA (Surrogate Recovery)	%	79	96	88	90	NR70
N-EtFOSAA (Surrogate Recovery)	%	72	82	81	77	NR70
N-MeFOSE (Surrogate Recovery)	%	58	67	108	83	NR70
N-EtFOSE (Surrogate Recovery)	%	77	72	82	64	NR70
4:2 FTS (Surrogate Recovery)	%	48	54	54	57	NR70
6:2 FTS (Surrogate Recovery)	%	64	73	74	73	NR70
8:2 FTS (Surrogate Recovery)	%	59	70	62	61	NR70
8:2 diPAP (Surrogate Recovery)	%	31	32	33	31	NR70
Dates						
Date extracted		23-JAN-2020	23-JAN-2020	23-JAN-2020	23-JAN-2020	
Date analysed		23-JAN-2020	23-JAN-2020	23-JAN-2020	23-JAN-2020	

N20/001076

REPORT OF ANALYSIS

to
N20/001079

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

Luke Baker, Analyst
Organics - NSW
Accreditation No. 198

30-JAN-2020

NATA
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TECHNICAL
COMPETENCE

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This report shall not be reproduced except in full.
Results relate only to the sample(s) tested.

This Report supersedes reports: *RN1261310*

Measurement Uncertainty is available upon request.
Chemical Accreditation 198: 105 Delhi Road, North Ryde, NSW. 2113

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2001371**	Page	: 1 of 2
Client	: **TOOWOOMBA REGIONAL COUNCIL**	Laboratory	: Environmental Division Brisbane
Contact	: ANDREW MURRAY	Contact	: Customer Services EB
Address	: P.O. BOX 3021 TOOWOOMBA VILLAGE FAIR QLD, AUSTRALIA 4350	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 7 46886270	Telephone	: +61-7-3243 7222
Project	: PU134962 (January)	Date Samples Received	: 17-Jan-2020 12:40
Order number	: PU134962 (January)	Date Analysis Commenced	: 21-Jan-2020
C-O-C number	: ----	Issue Date	: 28-Jan-2020 16:31
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Sarah Ashworth	Laboratory Manager - Brisbane	WRG Subcontracting, Stafford, QLD

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

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

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

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

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

- PPCP (EP241) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	20/0245-1	20/0245-2	20/0245-3	20/0245-4	----
			Client sampling date / time	15-Jan-2020 00:00	15-Jan-2020 00:00	15-Jan-2020 00:00	15-Jan-2020 00:00	----
Compound	CAS Number	LOR	Unit	EB2001371-001	EB2001371-002	EB2001371-003	EB2001371-004	---------
				Result	Result	Result	Result	---
EP241A: Pharmaceuticals and Personal Care Products (PPCP) Positive								
Norfloxacin	70458-96-7	1	µg/L	<1	<1	<1	<1	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2002621**	Page	: 1 of 2
Client	: **TOOWOOMBA REGIONAL COUNCIL**	Laboratory	: Environmental Division Brisbane
Contact	: ANDREW MURRAY	Contact	: Customer Services EB
Address	: P.O. BOX 3021 TOOWOOMBA VILLAGE FAIR QLD, AUSTRALIA 4350	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 7 46886270	Telephone	: +61-7-3243 7222
Project	: PU134962 (January)	Date Samples Received	: 31-Jan-2020 11:20
Order number	: PU134962 (January)	Date Analysis Commenced	: 04-Feb-2020
C-O-C number	: ----	Issue Date	: 12-Feb-2020 16:48
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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Signatories	*Position*	*Accreditation Category*
Matt Frost	Assistant Laboratory Manager	WRG Subcontracting, Stafford, QLD

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- PPCP (EP241) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)			Client sample ID	**20/0330-1**	**20/0330-2**	**20/0330-3**	**20/0330-4**	**----**
			Client sampling date / time	29-Jan-2020 00:00	29-Jan-2020 00:00	29-Jan-2020 00:00	29-Jan-2020 00:00	----
Compound	*CAS Number*	*LOR*	*Unit*	**EB2002621-001**	**EB2002621-002**	**EB2002621-003**	**EB2002621-004**	--------
				Result	Result	Result	Result	----
EP241A: Pharmaceuticals and Personal Care Products (PPCP) Positive								
Norfloxacin	70458-96-7	1	µg/L	<1	<1	<1	<1	----



Toowoomba Regional Council recently noticed a sharp drop in the local aquifer and has also found impurities in water samples taken from two of the three bores servicing the Clifton township.

As a precautionary measure, Council ceased using local bore water to service Clifton on Tuesday 26 November. At present all water is being trucked from the Toowoomba Water Supply (via Wyreema) and Nobby bores. You may notice water trucks in the Clifton area.

Council is working with Queensland Health to investigate the issue.

Further information

To find out more about this change or how water restrictions apply to your community:

- **Book an appointment to speak to our water team on Thursday 5 December** between 4.30 and 6.30pm at the Clifton Senior Citizens Building. Please call 131 872 to book.
- **Visit Council's website www.tr.qld.gov.au/water** to view information about supply, treatment and connection, water conservation tips, rainwater tanks and water testing.
- **Phone 131 872** to speak to our water team.
- **Email info@tr.qld.gov.au** to ask a question or request additional information.

TOOWOOMBA REGION