GREENCAP Bladin Point Groundwater Sampling Record



Client:					_	A REAL PROPERTY AND INCOME.			the second day of the	
D		Trillity Groundwater by	ore Installation ar	id campling		Job No: sch4 Sampled by	lp4(6) Person	al Information		
Project: Location:		Agnes Water, Q		a serriging		Date:	23-6-	2020		
Lote dom		WELL DETAILS			SAMPLING EQU	PMENT				
0-	1	Well depth:	1.0	2 (m)		Peristaltic (low flo	w)	GEO#		
(1)	15	Well diameter:	50		Water meter			YSI#		
11	12	Casing type:	PV	110	Turbidity Meter			TM#		-
		Initial water leve	And in case of the local division in which the local division in t	/0 (m	Interphase prob DO	e: Sp. Conductivity	Salinity	1P# pH	ORP	Turbidity
Time	Amount purged	Cumulative purged (L)	Water Level (m)	Temperature C	% sat	μS/cm	PSU	Units	mV	NTU
1146	2	2	0.780							
1123	1.0	2.0	DRM							
112a	17	X	Part							
						_				
		1						0-		
							.01			
							9			
								-		
						C'				
						15				
							2			
Stabilisation Crite	ria (Presiding)	and the second sec	Drawdown		Co					av la
within ranges)		N/A	<10cm	± 10%	± 10%	7.555	± 10%	2 0.1	± 10mV	N/A
pur	in a second	Contraction of the second s			1 Abrah	mont	nern	0 - 0-		
14	ngeer	dry	at 3	XXX Q	t diel	not	necor	een,		
	npear	any	art 3	Has water qualit		dity meter been calit			manual and recorde	d² Yes
		any	art 3	Has water qualit	y meter and turbi	dity meter been calit			manual and recorde	d? Yes Order
Observations d	uring Sampling:-		art 3	Has water qualit Decontaminatio	y meter and turbl n procedures folio	dity meter been calit	orated in accordar	ce with operating		
Observations d	uring Sampling:-		art 3	Has water qualit Decontaminatio Samples Taken	y meter and turbl n procedures folio	dity meter been calit	orated in accordar	ce with operating		
Observations d	uring Sampling:-		st 3	Has water qualit Decontaminatio Samples Taken Metals Plastic*	y meter and turbi n procedures folic	dity meter been calit swed? Yes	orated in accordar	ce with operating		
Observations d	uring Sampling:-		st 3	Has water qualit Decontaminatio Samples Taken Metals Plastic*	y meter and turbin n procedures folio	dity meter been calit swed? Yes	orated in accordar	ce with operating		
Observations d	uring Sampling:-		art 3	Has water qualit Decontaminatio Samples Taken Metals Plastic * Plastic unprese Preserved inon Glass vials (40r	y meter and turbl n procedures folic reved (norganics ganics (250mL) nL)	dity meter been calib wed? Yes (1L)	orated in accordar	ce with operating		
Observations d	uring Sampling:-		art 3	Has water qualit Decontaminatio Samples Taken Metals Plastic* Plastic unprese Preserved inon Glass viais (40r Glass amber ur	y meter and turbl n procedures folio inved inorganics ganics (250mL) nL) ipreserved (500r	dity meter been calib wed? Yes (1L) nL)	orated in accordar	ce with operating		
Observations d	uring Sampling:-		art 3	Has water qualit Decontamination Samples Taken Metals Plastic * Plastic unprese Preserved inon Glass amber un Plastic nutrient	y meter and turble in procedures follo inved inorganics ganics (250mL) nL) preserved (500r is 60mL green/w	dity meter been calib swed? Yes (11) n1) hite	orated in accordar	ce with operating		
Observations d	uring Sampling:-		st 3	Has water qualit Decontaminatio Samples Taken Metals Plastic Plastic unprese Preserved inon Glass amber un Plastic nutrient Plastic nutrient Plastic nutrient	y meter and turbl n procedures folio inved inorganics ganics (250mL) nL) ipreserved (500r	dity meter been calib swed? Yes (11) hite (500mL)	orated in accordar	ce with operating		
Observations d	uring Sampling:-		art 3	Has water qualit Decontamination Samples Taken Metals Plastic * Preserved inon Glass vials (40r Glass amber ur Plastic nutrient Plastic nutrient Glass amber ur Plastic nutrient Glass amber ur	y meter and turble n procedures follo rived inorganics ganics (250mL) nL) ipreserved (500m is 60mL green/w irved inorganics is 60mL light green preserved (100m	dity meter been calib swed? Yes (11) nL) hite (500mL) en nL)	orated in accordar	ce with operating		
Observations d	uring Sampling:-		art 3	Has water qualit Decontamination Samples Taken Metals Plastic * Plastic unprese Preserved Inon Glass vials (40r Glass amber un Plastic nutrient Glass amber un Plastic nutrient Glass amber un Plastic nutrient	y meter and turbli n procedures folio inved inorganics ganics (250mL) nL) preserved (500r is 60mL green/w is 60mL light gre preserved (100r erved inorganics	dity meter been calib wed? Yes (1L) hite (SOOmL) en mL) (250mL)	orated in accordar	ce with operating		
Observations d	uring Sampling:-		art 3	Has water qualit Decontamination Samples Taken Metals Plastic * Plastic unprese Preserved Inon Glass vials (40r Glass amber un Plastic nutrient Glass amber un Plastic nutrient Glass amber un Plastic nutrient	y meter and turble n procedures follo rived inorganics ganics (250mL) nL) ipreserved (500m is 60mL green/w irved inorganics is 60mL light green preserved (100m	dity meter been calib wed? Yes (1L) hite (SOOmL) en mL) (250mL)	orated in accordar	ce with operating		
Observations d eg. Odours, shee	uring Sampling:- ens, turbidity, wa negati wa sa	ter colour	art 3	Has water qualit Decontaminatio Samples. Taken Metals. Plastic * Plastic unprese Preserved inon Glass vials (40r Glass amber un Plastic nutrient Plastic nutrient Plastic nutrient Plastic nutrient Glass amber un Plastic unprese Plastic nutrient Glass amber un Plastic unprese (* DESIGNATES	y meter and turbli n procedures folio inved inorganics ganics (250mL) nL) preserved (500r is 60mL green/w is 60mL light gre preserved (100r erved inorganics	dity meter been calib wed? Yes (1L) hite (SOOmL) en mL) (250mL)	orated in accordar	ce with operating		
Observations d eg. Odours, shee MONITORING V Diameter of we	uring Sampling:- ens, turbidity, wa ns, turbidity, wa NELL VOLUMES:- Il casing:	ter colour	art 3	Has water qualit Decontamination Samples Taken Metals Plastic * Preserved inon Glass amber un Plastic unprese Plastic nutrient Plastic nutrient Plastic nutrient Glass amber un Plastic nutrient Glass amber un Plastic unprese (* DESIGNATES	y meter and turbli n procedures folio inved inorganics ganics (250mL) nL) preserved (500r is 60mL green/w is 60mL light gre preserved (100r erved inorganics	dity meter been calib wed? Yes (1L) hite (SOOmL) en mL) (250mL)	orated in accordar	ce with operating		
Observations d eg. Odours, shee MONITORING V Diameter of we Diameter of ho	uring Sampling:- ens, turbidity, wa turbidity, wa NELL VOLUMES:- ell casing: le drilled:	ter colour	STO	Has water qualit Decontamination Samples Taken Metals Plastic * Preserved Inon Glass vials (40r Glass amber un Plastic nutrient Plastic nutrient Glass amber un Plastic nutrient Charter (Charter	y meter and turbli n procedures folio inved inorganics ganics (250mL) nL) preserved (500r is 60mL green/w is 60mL light gre preserved (100r erved inorganics	dity meter been calib swed? Yes (11) hite (500mL) en nL) (250mL) RED IN FIELD)	orated in accordar	ce with operating		
Observations d eg. Odours, shee MONITORING V Diameter of we	uring Sampling:- ens, turbidity, wa ns, turbidity, turbidity, wa ns, turbidity, tu	ter colour		Has water qualit Decontamination Samples Taken Metals Plastic * Preserved inon Glass amber un Plastic unprese Plastic nutrient Plastic nutrient Plastic nutrient Glass amber un Plastic nutrient Glass amber un Plastic unprese (* DESIGNATES	y meter and turbli n procedures folio inved inorganics ganics (250mL) nL) preserved (500r is 60mL green/w is 60mL light gre preserved (100r erved inorganics	dity meter been calib wed? Yes (1L) hite (SOOmL) en mL) (250mL)	orated in accordar	ce with operating		
Observations d eg. Odours, shee Diameter of we Diameter of we Diameter of (2) Volume of c (2) Volume of c (3) Volume of a	uring Sampling:- ens, turbidity, wai NELL VOLUMES:- Il casing: Ile drilled: :asing only irill-hole innulus around c	ter colour		Has water qualit Decontaminatio Samples Taken Metals Plastic * Plastic unprese Preserved inon Glass vials (40r Glass amber ur Plastic nutrient Plastic nutrient Plastic unprese Plastic unprese (* DESIGNATES mm mm D m3 (kL) D m3 (kL)	y meter and turbli n procedures folio inved inorganics ganics (250mL) nL) preserved (500r is 60mL green/w is 60mL light gre preserved (100r erved inorganics	dity meter been calib awed? Yes (1L) (1L) hite (SOOmL) en nL) (SOOmL) RED IN FIELD) 0.00 L per metre 0.00 L per metre 0.00 L per metre	orated in accordar	ce with operating		
Observations d eg. Odours, shee Diameter of we Diameter of we Diameter of ve (1) Volume of c (2) Volume of a (3) Volume of a (4) Total Bore V	uring Sampling:- ans. turbidity, wat NELL VOLUMES:- Il casing: le drilled: lasing only irill-hole	esing		Has water qualit Decontamination Samples Taken Metals Plastic * Plastic unprese Preserved inon Glass vials (40r Glass vials (40r Glass amber un Plastic nutrient Plastic nutrient Glass amber un Plastic unprese (* DESIGNATES (* DESIGNATES	y meter and turbli n procedures folio inved inorganics ganics (250mL) nL) preserved (500r is 60mL green/w is 60mL light gre preserved (100r erved inorganics	dity meter been calib wed? Yes (1L) (1L) hite (500mL) en mL) (250mL) RED IN FIELD) 0.00 L per metre 0.00 L per metre	orated in accordar	ce with operating		

Field Technician #1

Field Technician #2

GREENCAP Bladin Point Groundwater Sampling Record



Client:	Trility				Job No: ch4	lp4(6) Person	al Information		
Project;		re installation an	id sampling		Sampled by: Date: 2	3-6-	2020		
ocation	Agnes Water, Q	d					Lew		
	WELL DETAILS Well depth:	1.80	1 (m)	SAMPLING EQU Sampling device	PMENT Peristaltic (low flor	w)	GEO#		
00/00	Well diameter:	500		Water meter			Y5I#		
00/07	Casing type:	PUC		Turbidity Meter			TM#		
ise praci a	Initial water level	DRY		Interphase prob			IPH	ORP	Turbidity
Time Amount purge		Water Level	Temperature	DO % sat	Sp. Conductivity uS/cm	Salinity	pH Units	mV	NTU
(L)	purged (L)	(m)		79.541	42/5/1	148		and the second s	A Real Property in Subscreen
	-								
and the second sec									
and the second						0.			
					L-O				
					19				
	-								
	_	February and a			$+ \alpha$		-	1	23,122
within ranges) Field observations: eg. Nearby ac		Drawdown <10cm	z 10%	£10%	2:55	± 10%	2 0.1	± 10mv	N/4
within ranges)	tivities, weather		z 10%		1.556	± 10%	± 0.1	± 10mv	N/A
within ranges) Field observations; eg. Nearby ac	tivities, weather		Has water qualit	ty meter and turbl	dity meter been calit				
within ranges) Field observations: eg. Nearby ac	tivities, weather		Has water qualit Decontaminatio	ty meter and turbl n procedures folio	dity meter been calit	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations; eg. Nearby as WEU	tivities, weather		Has water qualit Decontaminatio Samples Taker	ty meter and turbl n procedures folio	dity meter been calit				
within ranges) Field observations: eg. Nearby as WEU	tivities, weather		Has water qualit Decontaminatio	ty meter and turbl n procedures folio	dity meter been calit	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations: eg. Nearby as WEU	tivities, weather		Has water qualit Decontaminatio Samples Taker	ty meter and turbl n procedures folio	dity meter been calit	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations: eg. Nearby as WEU	tivities, weather		Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unprese	ty meter and turbl n procedures folk	dity meter been callt owed? Yes	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations: eg. Nearby as WEU	tivities, weather		Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved Inor	ty meter and turbl n procedures folia enved Inorganics ganics (250mL)	dity meter been callt owed? Yes	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations: eg. Nearby as WEU	tivities, weather		Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved Inor Glass vials (40r	ty meter and turbin n procedures folio enved (norganics rganics (250mL) mL)	dity meter been calit owed? Yes (1L)	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations: eg. Nearby as WEU	tivities, weather		Has water qualit Decontaminatio Samples Taker Metais Plastic " Plastic unpress Preserved Inor Glass vials (40r Glass amber un	ty meter and turbi in procedures folio enved (norganics ganics (250mL) mL) hpreserved (500	dity meter been calit owed? Yes (1L)	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations: eg. Nearby as WEU	tivities, weather		Has water qualit Decontaminatio Samples Taker Metais Piastic Plastic unpress Preserved Inor Glass smalls (Aor Glass amber un Plastic nutrien Plastic unpress	ty meter and turbl n procedures folio ganics (250mL) mL) npreserved (500mL st 50mL green/w erved inorganics	dity meter been callb owed? Yes (1L) hite (500mL)	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations: eg. Nearby as WEU	tivities, weather		Has water qualit Decontaminatio Samples Taker Metais Piastic Plastic unpress Preserved Inor Glass amber un Plastic nutrien Plastic unpress Plastic nutrien	ty meter and turbl n procedures folio ganics (250mL) mL) npreserved (500mL ts 60mL green/w erved inorganics ts 60mL light gree	dity meter been callt owed? Yes (1L) hite (500mL) en	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations; eg. Nearby as WEU	tivities, weather		Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved Inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Plastic nutrien Glass amber u	ty meter and turbi n procedures folio served Inorganics ganics (250mL) mL) npreserved (500m ts: 60mL green/W erved Inorganics, ts: 60mL light green npreserved (100	dity meter been call owed? Yes (1L) hite (500mL) en mL)	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations: eg. Nearby as WEU	tivities, weather		Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unprese Preserved Inor Glass vials (40r Glass amber un Plastic nutrien Glass amber un Plastic nutrien Glass amber un Plastic unprese Plastic unprese	ty meter and turbl n procedures folio ganics (250mL) mL) npreserved (500mL ts 60mL green/w erved inorganics ts 60mL light gree	dity meter been calls wed? Yes (1L) hite (500mL) en mL) (250mL)	preted in accordar	nce with operating	manual and record	ed? Yes
Field observations; eg. Nearby ac WBU Observations during Sampling eg. Odours, sheens, turbidity, w	tivities, weather DRY ater colour		Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unprese Preserved Inor Glass vials (40r Glass amber un Plastic nutrien Plastic nutrien Glass amber un Plastic nutrien Glass amber un Plastic unprese	ty meter and turbl n procedures folk enved Inorganics ganics (250mL) mL) npreserved (500 ts 60mL green/us ts 60mL light gre npreserved (100 enved Inorganics	dity meter been calls wed? Yes (1L) hite (500mL) en mL) (250mL)	preted in accordar	nce with operating	manual and record	ed? Yes
Within ranges) Field observations; eg. Nearby as WEW Observations during Sampling eg. Odours, sheens, turbidity, w	tivities, weather DRY ater colour		Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved Inor Glass amber ut Plastic nutrien Plastic nutrien Plastic nutrien Plastic nutrien Plastic nutrien Glass amber ut Plastic nutrien Glass amber ut Plastic unpress Plastic unpress (* DESIGNATE:	ty meter and turbl n procedures folk enved Inorganics ganics (250mL) mL) npreserved (500 ts 60mL green/us ts 60mL light gre npreserved (100 enved Inorganics	dity meter been calls wed? Yes (1L) hite (500mL) en mL) (250mL)	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations; eg. Nearby as WEW Observations during Sampling eg. Odours, sheens, turbidity, w MONITORING WELL VOLUMES Diameter of well casing:	tivities, weather DRY ater colour		Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unprese Preserved Inor Glass vials (40r Glass amber un Plastic nutrien Plastic nutrien Glass amber un Plastic nutrien Glass amber un Plastic unprese	ty meter and turbl n procedures folk enved Inorganics ganics (250mL) mL) npreserved (500 ts 60mL green/us ts 60mL light gre npreserved (100 enved Inorganics	dity meter been calls wed? Yes (1L) hite (500mL) en mL) (250mL)	preted in accordar	nce with operating	manual and record	ed? Yes
within ranges) Field observations; eg. Nearby as WEW Observations during Sampling eg. Odours, sheens, turbidity, w	tivities, weather DRY ater colour	<10cm	Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved Inor Glass vials (40r Glass amber un Plastic nutrien Plastic nutrien Glass amber un Plastic nutrien Glass amber un Plastic unpress (* DESIGNATE: mm mm 0 m3 (kL)	ty meter and turbl n procedures folk enved Inorganics ganics (250mL) mL) npreserved (500 ts 60mL green/us ts 60mL light gre npreserved (100 enved Inorganics	dity meter been calls owed? Yes (1L) (1L) (500mL) en mL) (250mL) RED IN FIELD) 0.00 L per metre	preted in accordar	nce with operating	manual and record	ed? Yes
Within ranges) Field observations; eg. Nearby as WEW Observations during Sampling eg. Odours, sheens, turbidity, w MONITORING WELL VOLUMES Diameter of well casing: Diameter of hole drilled: (1) Volume of casing only (2) Volume of drill-hole	tivities, weather DRY ater colour	<10cm	Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved Inor Glass amber un Plastic nutrien Glass amber un Plastic unpress Plastic unpress Plastic unpress (* DESIGNATE: mm mm 0 m3 (kL) 0 m3 (kL)	ty meter and turbl n procedures folk enved Inorganics ganics (250mL) mL) npreserved (500 ts 60mL green/us ts 60mL light gre npreserved (100 enved Inorganics	dity meter been calls wed? Yes (1L) hite (500mL) en mL) (250mL) RED IN FIELD) 0.00 L per metre 0.00 L per metre	preted in accordar	nce with operating	manual and record	ed? Yes
Within ranges) Field observations; eg. Nearby as WEW Observations during Sampling eg. Odours, sheens, turbidity, w MONITORING WELL VOLUMES Diameter of well casing: Diameter of hole drilled: (1) Volume of casing only	tivities, weather DAY ater colour casing	<10cm	Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved Inor Glass vials (40r Glass amber un Plastic nutrien Plastic nutrien Glass amber un Plastic nutrien Glass amber un Plastic unpress (* DESIGNATE: mm mm 0 m3 (kL)	ty meter and turbl n procedures folk enved Inorganics ganics (250mL) mL) npreserved (500 ts 60mL green/us ts 60mL light gre npreserved (100 enved Inorganics	dity meter been calls owed? Yes (1L) (1L) (500mL) en mL) (250mL) RED IN FIELD) 0.00 L per metre	preted in accordar	nce with operating	manual and record	ed? Yes

Field Technician #1

Field Technician #2

GREENCAP Bladin Point Groundwater Sampling Record



Client:	Trility	Mar Maaringar	Land and March		Job No: sch	4p4(6) Perso	onal Informatio	n	
roject:		ore Installation an	id sampling		Sampled by: 2	3-6-2	2020		
ocation	Agnes Water, Q	ld		Contraction of the local division of the loc		202			1
	WELL DETAILS			SAMPLING EQUI		-	GEO#		-
1	Well depth:	1.785		Sampling device Water meter	Peristaltic (low flow	v)	Y5(#		
DOLOS	Well diameter:	50mm	s	Turbidity Meter			TM#		
00/00	Casing type: Initial water leve			Interphase prob			IP#		-
Amountpurge	THE OWNER WHEN THE PARTY NAMES IN COLUMN	Water Level	Temperature	DO	Sp. Conductivity	Salinity	pH	ORP	Turbidity
Time (L)	purged (L)	(m)	C	96 sat	u\$/cm	PSU	Units	mV.	NTU
						and the second second second			
							0-	·	
						0.			
									_
	2-								
						9			
		-			1.6				
					Dia				
			1						
Stabilization Criteria Presdings		Drawdown	119993	G		+ 109/		+ 10my	N/A
within ranges)		Drawdown <10cm	± 10%	x 10%	2.506	± 10%	±0.1	± 10mV	N/A
within ranges) Field observations: eg. Nearby ad	tivities, weather	1 4 1 2 2	± 10%	£ 10%	2.566	± 10%	20.1	± 10mv	N/A
Stabilisation Criteria (Breadings within ranges) Field observations: eg. Nearby ac	tivities, weather	1 4 1 2 2	Has water qualit		fity meter been calib				
within ranges) Field observations: eg. Nearby as WBU DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio	y meter and turble	fity meter been calib	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: eg. Nearby as WEW DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker	y meter and turble	fity meter been calib				
within ranges) Field observations: eg. Nearby as WEW DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio	y meter and turble	fity meter been calib	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: eg. Nearby as WEW DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metais Plastic*	y meter and turble	dity meter been calib wed? Yes	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: eg. Nearby as WEW DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unprese	y meter and turble n procedures follo	dity meter been calib wed? Yes	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: eg. Nearby as WEW DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unpress Preserved inor	y meter and turbly n procedures follo erved Inorganics ganics (250mL)	dity meter been calib wed? Yes	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: eg. Nearby as WEW DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unpress Preserved inor Glass vials (40r	y meter and turbl n procedures follo enved Inorganics ganics (250mL) mL)	dity meter been calib wed? Yes (1L)	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: eg. Nearby as WEW DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved inor Glass vials (40r Glass amber u	ry meter and turble n procedures folic served inorganics ganics (250mL) mLj npreserved (500m	filty meter been calib iwed? Yes (1L)	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: eg. Nearby as WEW DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metals Plastic Preserved inor Glass vials (40r Glass amber u Plastic nutrien	ry meter and turble n procedures follo ganics (250mL) mL) npreserved (500r ts 60mL green/w	filty meter been calib inwed? Yes (1L) hite	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: eg. Nearby as WEU DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved inor Glass vials (40r Glass amber un Plastic unpress	ry meter and turble n procedures folic served inorganics ganics (250mL) mLj npreserved (500m	dity meter been calib wed? Yes (1L) hite (500mL)	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: eg. Nearby as WEU DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved inor Glass vials (40r Glass amber un Plastic nutrien Plastic nutrien Plastic nutrien Glass amber un	y meter and turble n procedures follo ganics (250mL) mLJ npreserved (500m ts 60mL green/w erved inorganics. ts 60mL ight green reved inorganics.	dity meter been calib wed? Yes (1L) hite (SoomL) en nL]	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: eg. Nearby as WEW DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unpress Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Plastic nutrien Glass amber u Plastic unpress	y meter and turblin n procedures folic ganics (250mL) mL) npreserved (500r ts 60mL right green/ws ts 60mL light green/ss ts 60mL light green/ss tryed inorganics	dity meter been callb wwed? Yes (1L) hite (500mL) en mL) (250mL)	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: eg. Nearby as WEU DI	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unpress Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Plastic nutrien Glass amber u Plastic unpress	y meter and turble n procedures follo ganics (250mL) mLJ npreserved (500m ts 60mL green/w erved inorganics. ts 60mL ight green reved inorganics.	dity meter been callb wwed? Yes (1L) hite (500mL) en mL) (250mL)	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: e.g. Nearby as WEW DI Observations during Sampling e.g. Odours, sheens, turbidity, w	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unpress Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Plastic nutrien Glass amber u Plastic unpress	y meter and turblin n procedures folic ganics (250mL) mL) npreserved (500r ts 60mL right green/ws ts 60mL light green/ss ts 60mL light green/ss tryed inorganics	dity meter been callb wwed? Yes (1L) hite (500mL) en mL) (250mL)	rated in accordar	nce with operating	manual and recorde	d? Yes
Within ranges) Field observations: eg. Nearby as WEW DI Observations during Sampling eg. Odours, sheens, turbidity, w	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unpress Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Plastic nutrien Glass amber u Plastic unpress	y meter and turblin n procedures folic ganics (250mL) mL) npreserved (500r ts 60mL right green/ws ts 60mL light green/ss ts 60mL light green/ss tryed inorganics	dity meter been callb wwed? Yes (1L) hite (500mL) en mL) (250mL)	rated in accordar	nce with operating	manual and recorde	d? Yes
within ranges) Field observations: e.g. Nearby as WEW DI Observations during Sampling e.g. Odours, sheens, turbidity, w	tivities, weather	1 4 1 2 2	Has water qualit Decontaminatio Samples Taker Metais Plastic " Plastic unpress Preserved inor Glass amber u Plastic nutrien Plastic nutrien Plastic nutrien Glass amber u Plastic nutrien	y meter and turblin n procedures folic ganics (250mL) mL) npreserved (500r ts 60mL right green/ws ts 60mL light green/ss ts 60mL light green/ss tryed inorganics	dity metar been calib wed? Yes (1L) hite (500mL) en nL) (250mL) RED IN FIELD)	rated in accordar	nce with operating	manual and recorde	d? Yes
Within ranges) Field observations: eg. Nearby as WEW DI Observations during Sampling eg. Odours, sheens, turbidity, w MONITORING WELL VOLUMES Diameter of well casing: Diameter of hole drilled: (1) Volume of casing only	tivities, weather		Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved Inor Glass vials (40r Glass amber un Plastic nutrien Plastic nutrien Glass amber un Plastic nutrien Comber de Comber de Com	y meter and turblin n procedures folic ganics (250mL) mL) npreserved (500r ts 60mL right green/ws ts 60mL light green/ss ts 60mL light green/ss tryed inorganics	dity meter been calib wwsd? Yes (1L) hite (SOOmL) en mLJ (250mL) RED IN FIELD) 0.00 L per metre	rated in accordar	nce with operating	manual and recorde	d? Yes
Within ranges) Field observations: eg. Nearby as WEW DI Observations during Sampling eg. Odours, sheens, turbidity, w MONITORING WELL VOLUMES Diameter of well casing: Diameter of hole drilled: (1) Volume of casing only (2) Volume of drill-hole	tivities, weather	<10cm	Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved inor Glass vials (40r Glass amber u Plastic unpress Plastic nutriem Glass amber u Plastic nutriem Glass amber u Plastic nutriem Glass amber u Plastic unpress (* DESIGNATE: 0 m3 (kL) 0 m3 (kL)	y meter and turblin n procedures folic ganics (250mL) mL) npreserved (500r ts 60mL right green/ws ts 60mL light green/ss ts 60mL light green/ss tryed inorganics	dity meter been callb wwed? Yes (1L) hite (SOOmL) en nL] (250mL) RED IN FIELD) 0.00 L per metre 0.00 L per metre	rated in accordar	nce with operating	manual and recorde	d? Yes
Within ranges) Field observations: eg. Nearby as WEW DI Observations during Sampling eg. Odours, sheens, turbidity, w MONITORING WELL VOLUMES Diameter of well casing: Diameter of hole drilled: (1) Volume of casing only	tivities, weather	<10cm	Has water qualit Decontaminatio Samples Taker Metais Plastic Plastic unpress Preserved Inor Glass vials (40r Glass amber un Plastic nutrien Plastic nutrien Glass amber un Plastic nutrien Comber de Comber de Com	y meter and turblin n procedures folic ganics (250mL) mL) npreserved (500r ts 60mL right green/ws ts 60mL light green/ss ts 60mL light green/ss tryed inorganics	dity meter been calib wwsd? Yes (1L) hite (SOOmL) en mLJ (250mL) RED IN FIELD) 0.00 L per metre	rated in accordar	nce with operating	manual and recorde	d? Yes

Field Technician #1

Field Technician #2



-josure Lot

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment

Plant, Agnes Water

Appendix B-1: June 2020 Quarterly Results Summary Table

greencap.com.au

												>				
								Appendix	B: Results S	ummary T	able June 20					
					Field	-						Inorgani	cs			
LOR			Bissolved Oxygen (DO)	tectrical Conductivity (EC) wک/Sm	돕 pH_Units	₹ Oxidation Reduction Potential (O	් Temperature	mg/L 0.01	chloride 1	Mgeldahl Nitrogen Total	mg/ultrate (as N)	mg/L 0.01	Nitrogen (Total) ™ 1.0	mg/L 0.1	mg/L 0.01	1 Sulphate as S
		Trigger Criteria	from	20% change from background	No change from background		7	from	20% change from background		20% change from background		20% change from background		20% change from background	from
Sample ID	Sampled Date	Lab_Report Number			2											
STP1	24/06/2020	EB2016812	0.85	3,844	6.67		23.7	0.03	1,020	0.1	< 0.01	< 0.01	0.1	0.1	0.01	92
STP2	24/06/2020	EB2016812	0.49	12,069	6.5		26.3	0.03	3,850	0.3	<0.01	<0.01	0.4	0.4	0.07	369
STP1 Duplicate	24/06/2020	EB2016812	0.85	3,844	6.67		23.7	0.04	1020	0.1	<0.01	<0.01	0.1	<0.1	0.01	92
DESAL1	22/06/2020	EB2016548	0.18	343.1	4.1		24.5	0.12	77	1.1	0.3	<0.01	1.4	0.3	0.01	<1
DESAL2	22/06/2020	EB2016548	0.32	238.2	4.3		23.8	0.15	52	1	<0.01	<0.01	1	<0.1	0.14	<1
DESAL3	22/06/2020	EB2016548	0.34	202	5.07		26.3	0.47	47	1.2	<0.01	<0.01	1.2	<0.1	0.07	<1
DESAL 1 Duplicate	22/06/2020	EB2016548	0.18	343.1	4.1		24.5	0.13	78	1.1	<0.01	<0.01	1.4	0.31	0.01	<1
			5													

													30						
									Append	dix B: Resu	Its Summar Metals	y Table Jun	e 2020						
											ivietais								
			Aluminium	번 Aluminium (Filtered)	а Л/Я Аrsenic	편 저 Arsenic (Filtered)	Boron Hg/L	Cadmium 7/ ^{3M}	전 거 고	Aft Chromium (III+VI)	는 Chromium (III+VI) (Filtered)	соран М ^д	ති Cobalt (Filtered)	Copper μg/L	표 Copper (Filtered)	υσι μg/L	편 Ton (Filtered)	read μg/L	لق ^ر (Filtered)
LOR			μg/L 10	μg/L 10	μg/L 1	μg/∟ 1	μg/L 50	μg/L 0.1	μg/L 0.1	μg/L 1	μg/L 1	μg/L 1	μg/ L 1	μg/L 1	μg/ L 1	μg/ L 50	μg/L 50	μg/L 1	μg/L 1
		Trigger Criteria	55	55	13	13	No change from background	0.2	0.2	1	1	1.4	1.4	1.4	1.4			3.4	3.4
Sample ID	Sampled Date	Lab_Report Number					0	\sim											
STP1	24/06/2020	EB2016812	<10	<10	1.0	1.0	<50	<0.1	<0.1	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	1,660	1,780	<1.0	<1.0
STP2	24/06/2020	EB2016812	<10	<10	2.0	2.0	<50	<0.1	<0.1	<1.0	<1.0	2.0	2.0	<1.0	<1.0	60	50	<1.0	<1.0
STP1 Duplicate	24/06/2020	EB2016812	<10	<10	1	<1.0	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1,630	1,760	<1.0	<1.0
DESAL1	22/06/2020	EB2016548	620	610	<1.0	<1.0	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	2.0	170	170	<1.0	<1.0
DESAL2	22/06/2020	EB2016548	620	590	<1.0	<1.0	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	0.001	2.0	760	740	<1.0	<1.0
DESAL3	22/06/2020	EB2016548	840	1,000	2	0.0	<50	<0.1	<0.1	3.0	3.0	<1.0	<1.0	<1.0	<1.0	3,000	3,000	<1.0	<1.0
DESAL 1 Duplicate	22/06/2020	EB2016548	0.61	1	<1.0	<1.0	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	160	170	<1.0	<1.0
				2															

												oc	>					
								A		: Results Su	nmary Tab	le June 202	0					
									M	etals							Microb	iological
			Manganese	函 Manganese (Filtered)	Mercury hg/L	지) Mercury (Filtered)	an Nickel الم	n) Nickel (Filtered)	Silver	and Silver (Filtered)	Ralenium	ති T/A Selenium (Filtered)	Ę μg/L	Tin (Filtered)	zuc μg/L	전 기여 기여	io u cfu/100 ml	Enterococci ctn/100 u
LOR			1	1	0.1	0.1	1	1	0.01	0.01	10	10	1	1	5	5	1	1
		Trigger Criteria	1900	1900	0.06	0.06	11	11	0.05	0.05	5	5			8	8	No change from background	from
Sample ID	Sampled Date	Lab_Report Number				20												
STP1	24/06/2020	EB2016812	1,260	1,380	<0.1	<0.1	12.0	4.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	6.0	<1	<1
STP2	24/06/2020	EB2016812	121	116	<0.1	<0.1	3.0	4.0	0.02	0.02	<10	<10	<1.0	<1.0	17.0	<5.0	<1	<1
STP1 Duplicate	24/06/2020	EB2016812	1,280	1,380	<0.1	<0.1	<1.0	<1.0	<0.01	<0.1	<10	<10	<1.0	<1.0	<5.0	5.0	<1	<1
DESAL1	22/06/2020	EB2016548	13.0	14.0	<0.1	<0.1	<1.0	<1.0	<0.01	< 0.01	<10	<10	<1.0	<1.0	<5.0	7.0	<1	<1
DESAL2	22/06/2020	EB2016548	12.0	26.0	<0.1	<0.1	<1.0	1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	9.0	<1	<1
DESAL3	22/06/2020	EB2016548	23	26	<0.1	<0.1	2.0	2.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	5.0	<1	<1
DESAL 1 Duplicate	22/06/2020	EB2016548	13	13	<0.1	<0.1	1.0	1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	5.0	<1	<1
				2														



-josure Lot

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment

Plant, Agnes Water

Appendix B-2: IWTP Annual Results Summary Table

greencap.com.au

										He.		>				
							Append	lix B: Results Sun	nmary Tabl	e July 2019 to June 2020)					
				Field								Inorgani	ics			
			. Disadved Oxygen (DO) ¹	: Electrical Conductivity (EC)	рн ₂	Oxidation Reduction Potential (C	. Temperature	Ammonia as N	chloride	Kjedahi Nitrogen Total	Nitrate (as N)	Nikrite (as N)	Nîtrogen (Total)	, Oxides of Mtrogen	, Total Phosphorus as P	Sulphate as S
			mg/L	μS/cm	pH_Units	mV	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample ID	Sampled Date	Lab_Report Number	Dissolved Oxygen (DO)	Electrical Conductivity (EC) (µ5/cm)	ΡĦ	Oxidation Reduction Potential (ORP)	Temperature	Ammonia as N	Chloride	Kjeldahl Nitrogen Total	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)	Oxides of Nitrogen	Total Phosphorus as P	Sulphate as S
DESAL 1	16/09/2019	EB1924392	0.13	239	3.92	306	32.4	0.15	56	0.7	0.11	<0.01	0.8	0.11	0.02	2
DESAL 1	16/12/2019	EB1933892	0.88	278	3.89	248	25.2	0.14	72	0.8	0.02	<0.01	1	0.02	0.02	<1.0
DESAL 1	15/04/2020	EB2010399	0.32	298.7	3.99	172.4	26.3	0.1	74	1.2	0.76	<0.01	2	0.76	<0.05	<5.0
DESAL 1 DESAL 2	24/06/2020 16/09/2019	EB2016548 EB1924392	0.18 0.15	343.1 212	4.1	334	24.5	0.12	77 48	1.1 0.7	0.3	<0.05 <0.01	1.4	0.3	0.01	<5
DESAL 2 DESAL 2	16/12/2019	EB1924392 EB1933892	0.15	194	3.71	292	23.9	0.08	48	1.3	0.07	<0.01	1.3	0.55	0.01	<1.0
DESAL 2	15/04/2020	EB1933892 EB2010399	0.31	313.6	3.92	180.6	23.5	0.08	81	1.3	0.03	<0.01	1.3	0.03	0.1	2
DESAL 2	22/06/2020	EB2016548	0.32	238.2	4.3	100.0	23.8	0.15	52	1.5	< 0.05	<0.01	1.5	<0.01	0.14	<5
DESAL 3	16/09/2019	EB1924392	0.15	222	4.74	-171.8	25	0.39	56	1.5	<0.01	<0.01	1.5	<0.01	0.06	<1.0
DESAL 3	16/12/2019	EB1933892	1.51	208	4.72	-155	26.6	0.38	54	1.6	<0.01	< 0.01	1.6	<0.01	0.09	<1.0
DESAL 3	15/04/2020	EB2010399	0.44	219	4.82	-177.7	27.6	0.5	60	1.6	<0.01	<0.01	1.6	<0.01	0.21	<1.0
DESAL 3	24/06/2020	EB2016548	0.34		5.07		26.3	0.47	47	1.2	<0.05	<0.05	1.2	<0.01	0.07	<5

								Appendi	ix B: Results Sumn	nary Table July 2019 to Ju		0 ⁹						
		a Aluminium (j	6 Aluminium (Filtered)	Arsenic	a Asenic (Filtered)	Boron	Cadmium	 Gadmium (Filtered) 	Š Chromium (III+VI)	Metals	cobait	Cobalt (Filtered)	Copper	copper (Filtered)	uoj	E Iron (Filtered)	Fead	편 전 구
Sampled Date	Lab_Report Number	Aluminium	Aluminium (Filtered)	Arsenic	Arsenic (Filtered)	Boron	Cadmium	Cadmium (Filter ed)	Chromium (III+VI)	romium (III+VI) (Filtered)	Cobalt	Cobalt (Filtered)	Copper	Copper (Filtered)	Iron	Iron (Filtered)	Lead	Lead (Filtered)
16/09/2019	EB1924392	420	420	<1.0	<1.0	50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	290	250	<1.0	<1
																		<1.0
24/06/2020																		<1.0
16/09/2019																		<1.0
16/12/2019							<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	460	390		<1.0
15/04/2020	EB2010399	1350	560	<1.0	<1.0	<50	<0.1	<0.1	3	<1.0	<1.0	<1.0	2	<1.0	670	570	1	<1.0
22/06/2020	EB2016548	620	590	< 0.001	<0.001	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	0.001	2	760	740	<1.0	<1.0
16/09/2019	EB1924392	1030	800	1	1	<50	<0.1	<0.1	4	3	<1.0	<1.0	2	<1.0	4300	4280	<1.0	<1.0
16/12/2019	EB1933892	870	1040	2	2	<50	<0.1	<0.1	3	3	<1.0	<1.0	<1.0	1	4290	3860	<1.0	1
15/04/2020			730	1		<50	<0.1				<1.0	<1.0	<1.0	<1.0	3990	3710	<1.0	<1.0 <1.0
16/ 15/ 24/ 16/ 15/ 22/ 16/ 16/ 15/	V09/2019 /12/2019 /04/2020 /06/2020 /09/2019 /12/2019 /04/2020 /06/2020 /09/2019 /12/2019	0 EB1924392 /12/2019 EB1933892 /04/2020 EB2010399 /06/2020 EB2010548 /09/2019 EB1924392 /12/2019 EB1924392 /04/2020 EB2010548 /09/2019 EB1924392 /04/2020 EB2010548 /09/2019 EB1924392 /12/2019 EB1933892 /04/2020 EB2010549 /09/2019 EB1933892 /04/2020 EB2010549	Number EB Report Auminium (ug/t3 009/2019 EB1924392 420 /12/2019 EB1933892 560 /04/2020 EB2016548 620 /09/2019 EB1933892 510 /04/2020 EB2016548 620 /06/2020 EB2016548 620 /06/2020 EB2016548 620 /04/2020 EB2016549 1030 /12/2019 EB1933892 870 /04/2020 EB2010399 920	Sample Core EB1924392 420 420 1/2/2019 EB1924392 420 420 1/2/2019 EB1924392 550 470 0/0/2020 E82010399 590 480 0/0/2020 E82010399 550 470 0/0/2020 E82010399 550 470 0/0/2020 E82010399 550 450 0/0/2020 E82010399 1350 5500 0/0/2020 E82010548 620 610 0/0/2020 E82010549 1350 5500 0/0/2020 E82010548 620 590 0/0/2020 E82010549 920 730<	Sample Core Line (Lg)/L Line (Lg)/L Lg/L Lg/L	Sample Core με/L με/L	Sample Core Line (Hittered) Line (Hittered	Sample Date Link Link Link Link Link Link Link Link	Sample Guession Light of the second se	Sempled Date Lei Samo Aluminium (Filtered) (ug/L vsenic (ug/Lvsenic (sampled Orie μιμμ μμμ/L μμ/L μμ/L	sampled Oate Number of 12/2019 420 420 410<	Samp bed Date Samp bed	Number Figure 1 August 1 August 1 August 2 <	Number Numer Numer Numer <td>Image: series Image: s</td> <td>Image: series Series</td> <td>here here <t< td=""></t<></td>	Image: series Image: s	Image: series Series	here here <t< td=""></t<>

														00				
									Append	lix B: Results Sumr Meta		July 2019 to June 20	20				B4ic	obiological
			Manganese	Manganese (filtere d)	Mercury	Mercury (Filtered)	Nickel	Nickel (Fittered)	Silver	Silver (Filtered)	Selenium	Selenium (Filtered)	Tin	Tin (Filtered)	Zinc	Zinc (Filtered)	E. Coli	Enterococci
			μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	cfu/100 ml	cfu/100 ml Enterococci (cfu/100 ml)
Sample ID	Sampled Date	Lab_Report Number	Mangan ese	Manganese (Filtered)	Mercury	Mercury (Filtered)	Nickel	Nickel (Filtered)	Silver	Silver (Filtered)	Selenium	Lielenium (Filtered) (µg/ elenium (Filtered) (#	Tin	Tin (Filtered)	Zinc	Zinc (Filtered)	E. Con (cic) 200 min)	Enterococci
DESAL 1	16/09/2019		7	7	<0.1	<0.1	<0.1	<1.0	<0.01	<0.01	<10	<10	<1	<1	<5	<5	<1	<1
DESAL 1	16/12/2019	EB1933892	7	6	<0.1	<0.1	<1.0	<1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
DESAL 1	15/04/2020 24/06/2020	EB2010399	8	8	<0.1	<0.1	<1.0	<1.0 <1.0	< 0.01	<0.01	<10	<10	<1.0 <1.0	<1.0	6	<5.0	<1	<1
DESAL 1 DESAL 2	16/09/2019	EB2016548 EB1924392	13	14 0.014	<0.1	<0.1 <0.1	<1.0 <1.0	<1.0	<0.01 <0.01	<0.01 <0.01	<10 <10	<10 <10	<1.0	<1.0 <1.0	<5.0	7 <5.0	<1 <1	<1 <1
DESAL 2 DESAL 2	16/12/2019	EB1924392 EB1933892	7	6	<0.1	<0.1	<1.0	<1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
DESAL 2	15/04/2020	EB2010399	30	28	<0.1	<0.1	2	1	0.04	<0.01	<10	<10	<1.0	<1.0	<5.0	7	<1	<1
DESAL 2	22/06/2020	EB2016548	12	26	<0.1	<0.1	<1.0	1	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	9	<1	<1
DESAL 3	16/09/2019	EB1924392	33	36	<0.1	<0.1	4	3	< 0.01	<0.01	<10	<10	<1.0	<1.0	6	<5.0	<2	<2
DESAL 3	16/12/2019	EB1933892	33	30	<0.1	<0.1	3	3	< 0.01	<0.01	<10	<10	<1.0	<1.0	7	<5.0	<1	<1
DESAL 3	15/04/2020	EB2010399	28	29	<0.1	<0.1	3	3	0.02	<0.01	<10	<10	<1.0	<1.0	6	8	<1	<1
DESAL 3	24/06/2020	EB2016548	23	26	<0.1	<0.1	2	2	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	5	<1	<1



-josure Lot

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment

Plant, Agnes Water

Appendix B-3: WwTP Annual Results Summary Table

greencap.com.au

							Annen	diy R: Results Sun	mary Table	e July 2019 to June 202		>				
				Field							-	Inorgani	cs			
			Disolved Oxygan (DO) ¹	Eketrial Conductivity (EC)	рН²	Dudation Reduction Potential (Temperature	Ammonia as N	Chloride	Kjeldahi Nitrogen Total	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)	Oxides of Nitrogen	Total Phosphorus as P	Sulphate as S
			mg/L	μS/cm	pH_Units	mV	°C	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample ID	Sampled Date	Lab_Report Number	Dissolved Oxygen (DO) (mg/L) Dissolved Oxygen (DO) Dissolved Oxygen (D) Dissolved O	Electrical Conductivity (EC)	포	Oxidation Reduction Potential (ORP)	Temperature	Ammonia as N	Chloride	Kjeldahi Nitrogen Total	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)	Oxides of Nitrogen	Total Phosphorus as P	Sulphate as S
STP1 STP1	17/09/2019 17/12/2019		0.25 2.64	3,848 3,648	6.68 6.54	10.7 2.1	23.5 24	0.05	1,030	<0.1 <0.1	<0.1 <0.01	<0.1 <0.01	<0.1 <0.1	<0.1 <0.01	0.01	95 96
STP1	15/04/2020		0.72	3,648	6.71	-16.7	24	0.05	1,020	0.1	<0.01	<0.01	0.3	<0.01	0.01	95
STP1	24/06/2020		0.85	3,844	6.67		23.7	0.03	1,020	0.1	<0.01	<0.01	0.1	0.1	0.01	92
STP2	17/09/2019		0.83	12,364	6.5	121	23.3	0.04	3,940	<0.1	<0.1	<0.1	<0.1	<0.1	0.02	375
STP2	17/12/2019		3.24	11,708	6.35	111	23.5	0.01	4,020	<0.1	<0.01	<0.01	<0.1	<0.01	0.02	381
STP2 STP2	15/04/2020 24/06/2020	EB2010933 EB2016812	1.13 0.49	11,732 12,069	6.53 5.07	85.5	24 26.3	0.18	3,850 3,850	0.3	<0.01 <0.01	<0.01	0.3	<0.01 0.4	0.04	369 369
				PJOI										+		

									Арреп	dix B: Results Summ	hary Table July 2019 to Jun Metals		~ ⁰						
			μαι Aluminium In an international	λα Manufatium (Filtereed)	μg J/ Arsenic Duric for a servic	Ên 7 Å Arsenic (Filtered)	5 bog μg/L cron (ug/l	Cadmin Jan Mainten Jan Mainten) on the addition (altered)	յուս (Ազգիյ) անցուց Դեր Սես (Ազգիյ) անցուց	للبورية ريد المرابع مرابع المرابع المرابع المرابع المرابع المرابع المرابع المرابع المرابع المرابع المرابع المرابع المرابع المرابع المرابع المرابع المرابع مما مما مما مما مما مما مما مما مما مما	Copart μgu/L	ر (filtered) المالي (filtered)	Copper Jug/L	√gu Vgu (Fitkered)	οι μg/L	القال roon (Eiltereed) العلم المعادي (عار	peag µg/L	J, Lead (Filtered) Lead (Filtered)
Sample ID	Sampled Date	Lab_Report Number	Aluminium	Aluminium (Filtered)	Arsenic	Arsenic (Filtered)	Boron	Cadmium	Cadmium (Filtered)	Chromium (III+VI)	Gromium (III+VI) (Filtered)	Cobalt	Cobalt (Filtered)	Copper	Copper (Filtered)	Iron	Iron (Filtered)	Lead	Lead (Filtered)
STP1 STP1 STP1 STP2 STP2 STP2 STP2 STP2 STP2	17/12/2019 15/04/2020 24/06/2020 17/09/2019 17/12/2019 15/04/2020	9 EB1924565 9 EB1934065 0 EB2010933 0 EB2016812 9 EB1924565 9 EB1924565 9 EB1934065 0 EB2010933 0 EB2016812	<10 10 <10 <10 <10 10 <10 <10 <10	<10 <10 <10 <10 <10 <10 <10 <10	1.0 1.0 1.0 1.0 1.0 1.0 2.0	10 10 10 10 10 20 20 20	80 <50 <50 <50 <50 <50 <50	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	<0.1	<1.0 <1.0 <1.0 2.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 1.0 1.0 1.0 2.0	<1.0 <1.0 <1.0 <1.0 1.0 2.0 2.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	1,680 1,830 1,820 1,660 <50 <50 <50 <50 60	1,670 1,610 1,570 3,780 <\$0 <\$0 <\$0 <\$0 50	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0

									Anneno	liv R [.] Besults Sum	nary Table	July 2019 to June 20		00				
										Meta		2015 to sulle 20					Mici	robiological
			A Manganese	년 전 제 2016 - Stittered	Meccury J/gH	· · · · · · · · · · · · · · · · · · ·	∏/8π Nickel	· Nickel (Filtered) 기억	h ^g h Silver	ୁଅ ଅନୁସ୍ଥ		A Selenium (Filtered)	E µg/L	Tin (Filtered)	<mark>ис</mark> щ <u>у</u> /L	문 고대(Fittered)	ت ت در//200 ml	tu tu chu/100 mi France 1 de chu/200 mi
Sample ID	Sampled Date	Lab_Report Number	Aanganese (µg/L Ma а а а а а е е е	Aanganese (Filtered) (μg/ Manganese (Filtered)	Mercury (µg/	Vercury (Filtered) (µg/L Mercury (Filtered)	Nickel	Kuckel (Filtered) (µg/L Nickel (Filtered)	Ilver (µg/ Silver	Giver (Hiltered) (µg/L Silver (Hiltered)	elenium (µg/l Selenium	Lalenium (Filtered) (µg/) Seleni Um (Filtered) Hittered)		in (Filtered) (µg/ Tin (Filtered)	L Zinc (µg/L)	Sinc (Filtered) (µg/L Zinc (Filte red)	E. Coli (ctu/100 mi)	Enterococci (cfu/100 ml) Enterococci CC.
STP1	17/09/2019		1,340	1,310	<0.1	<0.1	<1.0	<1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
STP1 STP1	17/12/2019 15/04/2020		1,350	1,260	<0.1	<0.1	<1.0 <1.0	<1.0 <1.0	<0.01 <0.01	<0.01 <0.01	<10 <10	<10 <10	<1.0 <1.0	<1.0	<5.0 <5.0	<5.0	<1 <1	<1 <1
STP1 STP1	24/06/2020		1,390 1,260	1,240	<0.1	<0.1 <0.1	<1.0	4.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	5.0	<1	<1
STP2	17/09/2019		111	126	<0.1	<0.1	3.0	2.0	0.03	0.03	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
STP2	17/12/2019		109	105	<0.1	<0.1	2.0	2.0	0.03	0.02	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
STP2	15/04/2020		113	111	<0.1	<0.1	3.0	3.0	0.02	0.01	<10	<10	<1.0	<1.0	<5.0	5.0	<1	<1
STP2	24/06/2020	EB2016812	121	116	<0.1	<0.1	3.0	4.0	0.02	0.02	<10	<10	<10	<1.0	17	<5.0	<1	<1
				2	0													



closure Lot

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment

Plant, Agnes Water

Appendix D: Groundwater Contours

greencap.com.au



22-265 relation to the data

al damage) relating to any use of or reliance upon the data. Data must not be used for riling

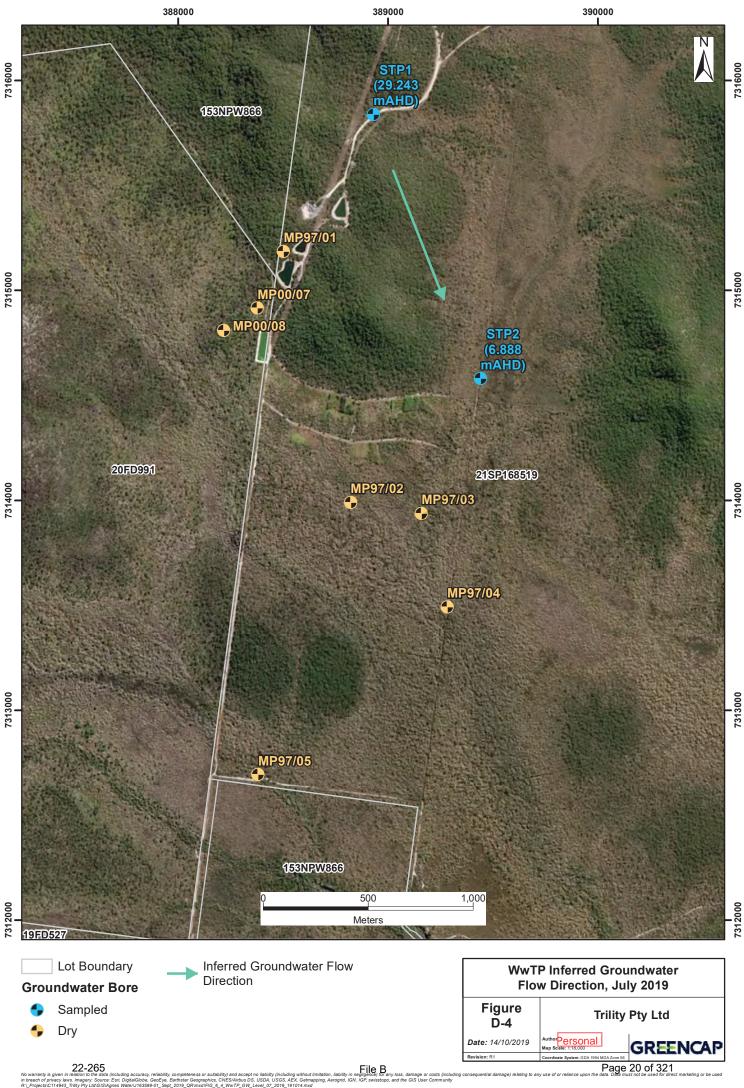


22-265

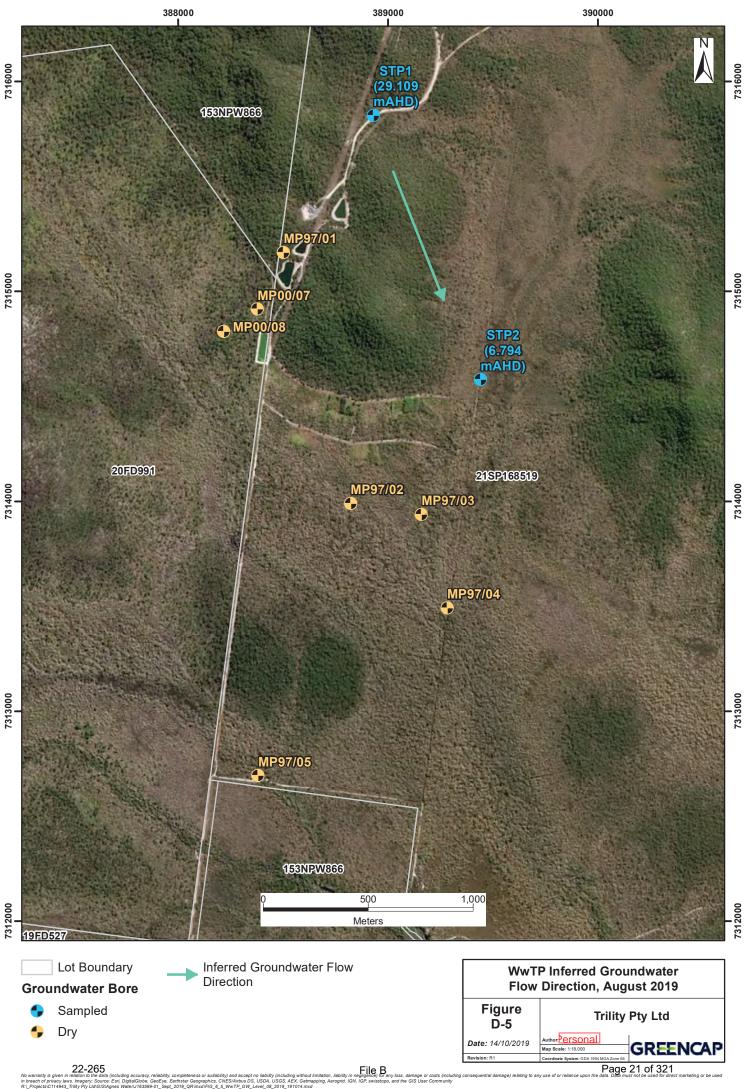


22-265 File B letion to the data (including accuracy, reliability, completeness or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (integrated integration of the second s

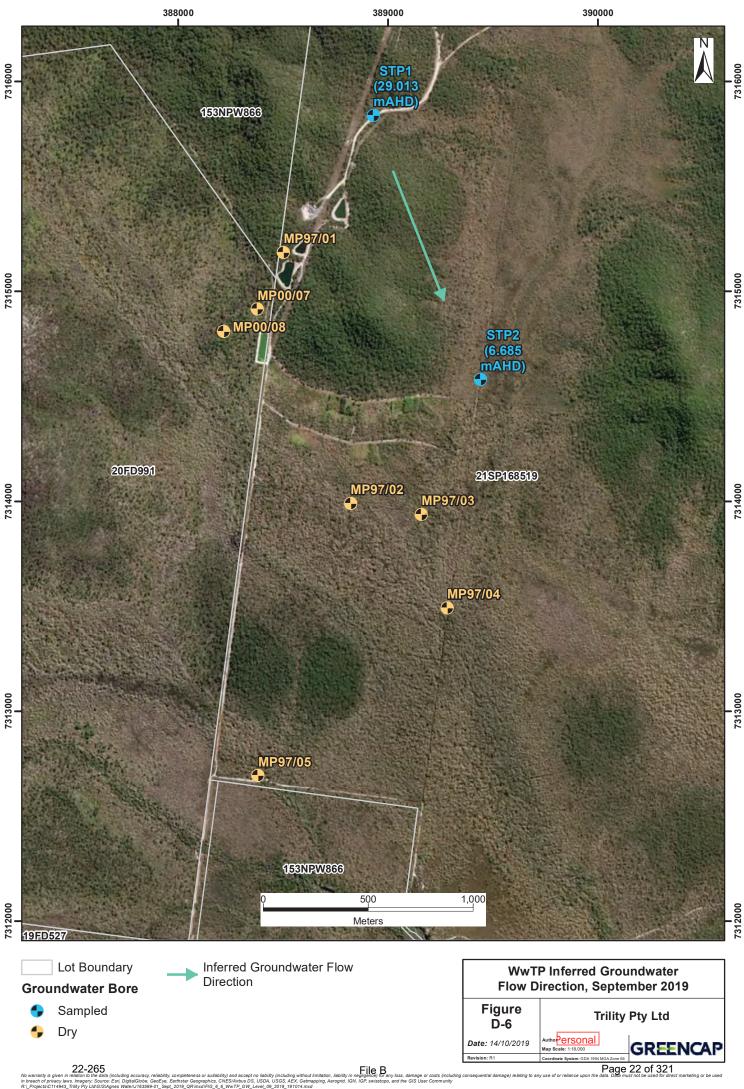
22-265



ics, CNES/Airbus DS, USDA, USGS, AEX, G_6_4_WwTP_GW_Level_07_2019_1910 Esri, Digital be, GeoEye, Earthstar Geog 3599-01 Sent 2019 OR\m



ics, CNES/Airbus DS, USDA, USGS, AEX G_6_5_WwTP_GW_Level_08_2019_1910 be, GeoEye, Earthstar Geog 3599-01 Sent 2019 OR\m



ics, CNES/Airbus DS, USDA, USGS, AEX G_6_WwTP_GW_Level_09_2019_1910 be, GeoEye, Earthstar Geog 3599-01 Sent 2019 OR\m

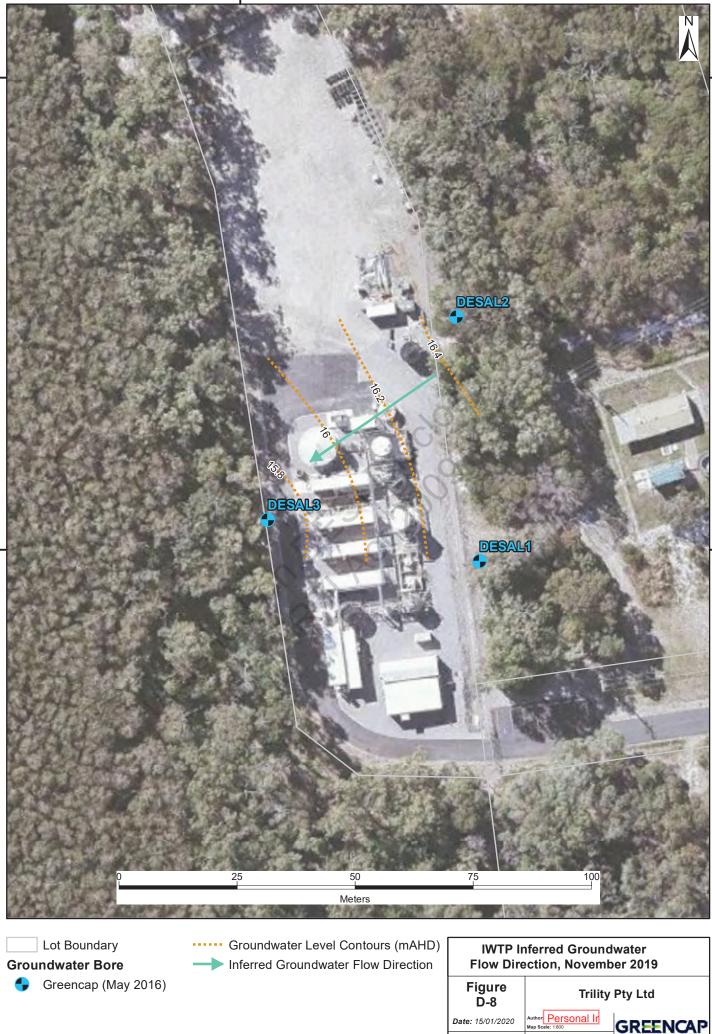


I data (including accuracy, reliability, completeness or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or of Inity Pty Ltd/GISAgnes Water/J13359-02_Dec_2019_QRmxdFIG_e_1_IWTP_GW_Level_10_2019_200115 mud

22-265

Page 23 of 321

damage) relating to any use of or re



Povision: P1

tial damage) relating to any

Page 24 of 321

use of or reliance upon t

390000

22-265 in reliator to the data (including accuracy, reliability, completeness or suitability) and accept no liability (including without limitation, kability in negligence) for any loss, damage or costs (in was...mager. jects/C114943_Trilly Pty Ltd/GIS/Agnes Water/J163399-02_Dec_2019_QR/mxd/FIG_6_2_IWTP_GW_Leve_11_2019_200115.mxd

in brea

7321000



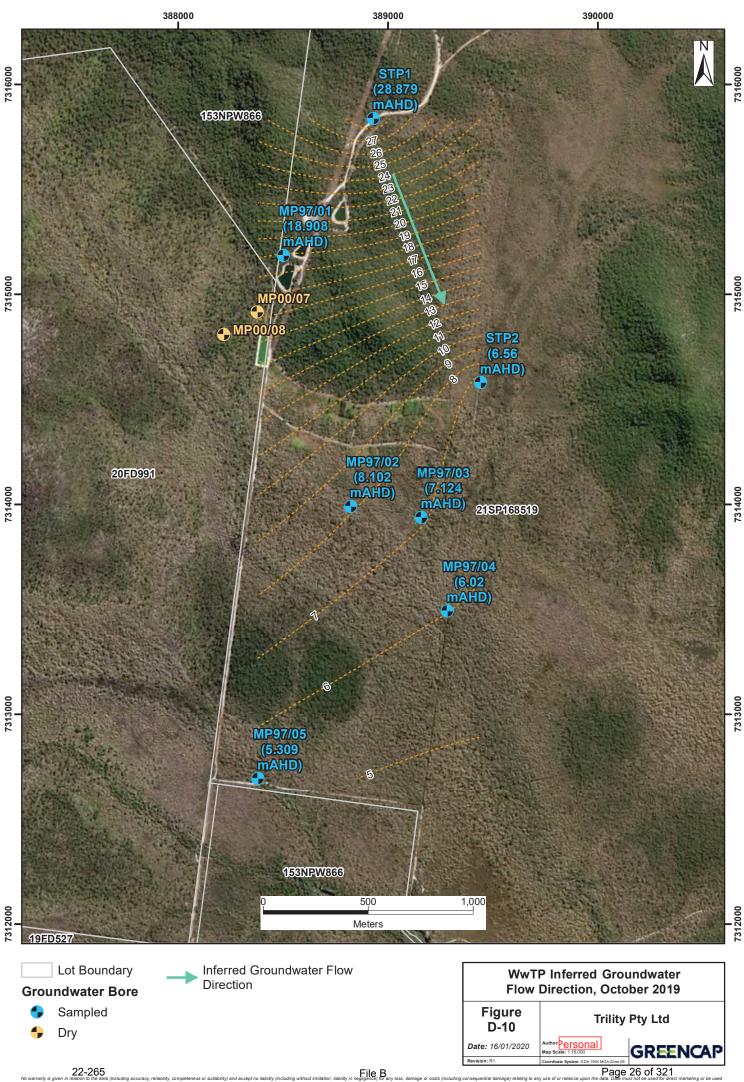
7321000

Povision: P1

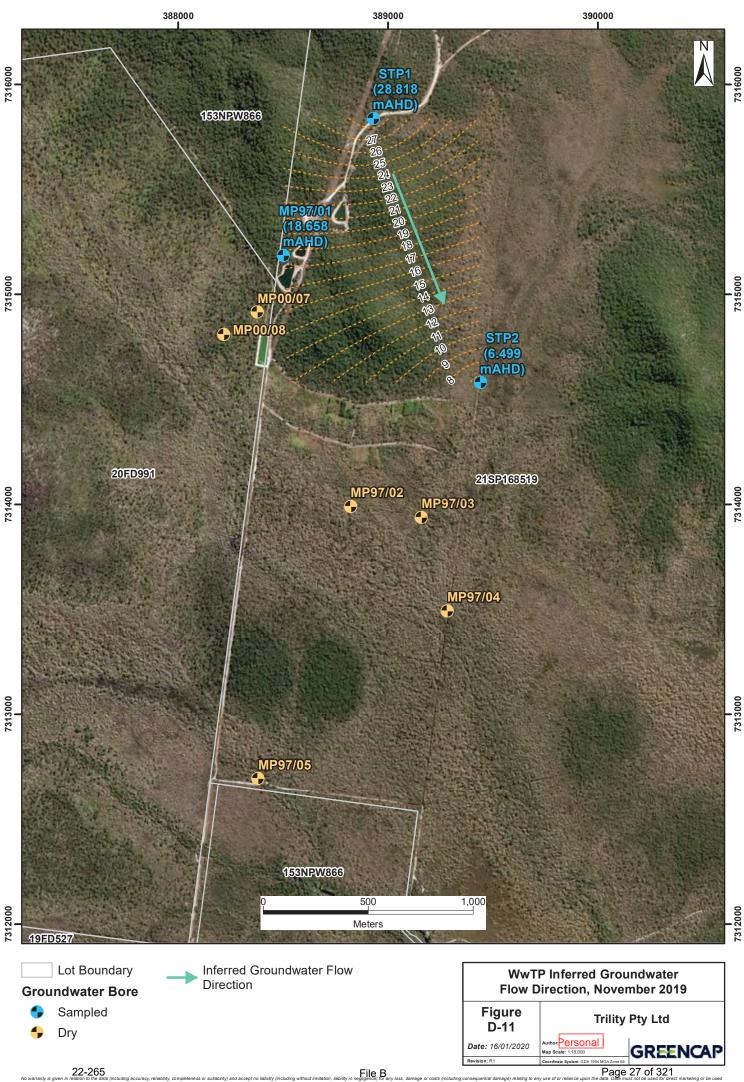
ntial damage) relating to any use of or reliance upon i

Page 25 of 321

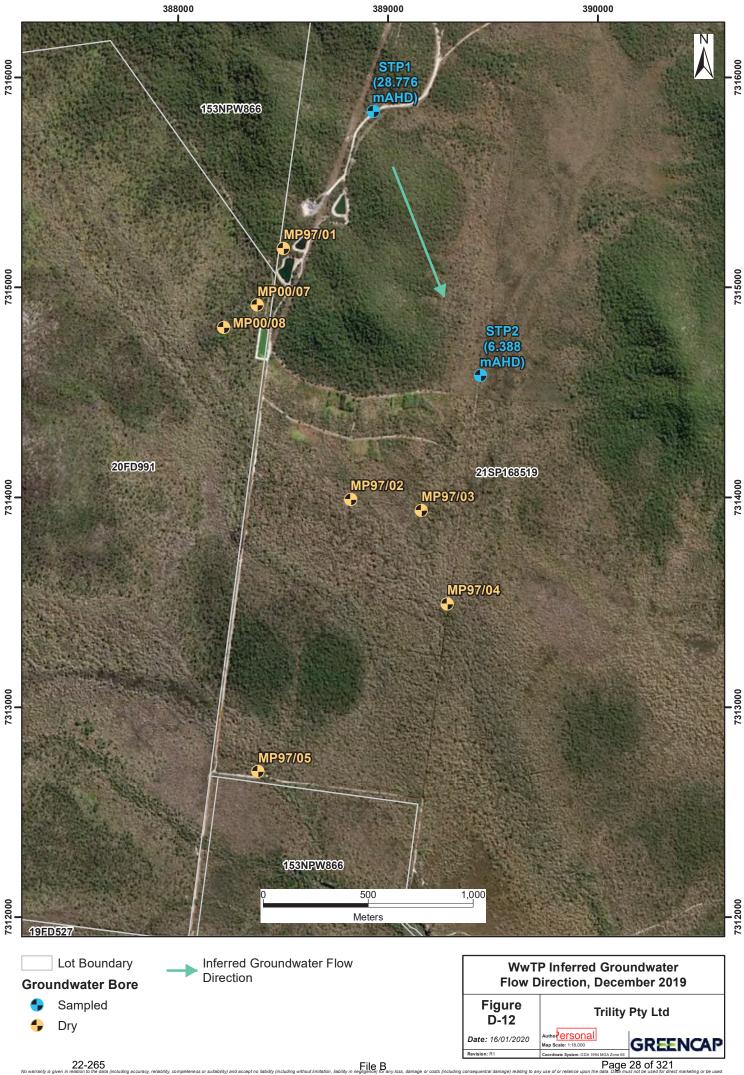
22-265 in reliator to the data (including accuracy, reliability, completeness or suitability) and accept no liability (including without limitation, kability in negligence) for any loss, damage or costs (in was...mager. jects/C114943_Trilly Pty Ltd/GIS/Agnes Water/J153399-02_Dec_2019_QR/mxd/FIG_6_3_IWTP_GW_Leve_12_2019_200115.mxd in bre



Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS IG_6_4_WwTP_GW_Level_07_2019_200115.mxd eoEye, Earths



Airbus DS, USDA, USGS, AeroGRID, IGN, and the G_6_5_WwTP_GW_Level_11_2019_200115.mxd



SeoEye, Earthstar Geographics, CNÉS/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS ater/J163599-02_Dec_2019_QR\mxdlFIG_6_6_WwTP_GW_Level_12_2019_200115.mxd

Page 28 of 321



7320900

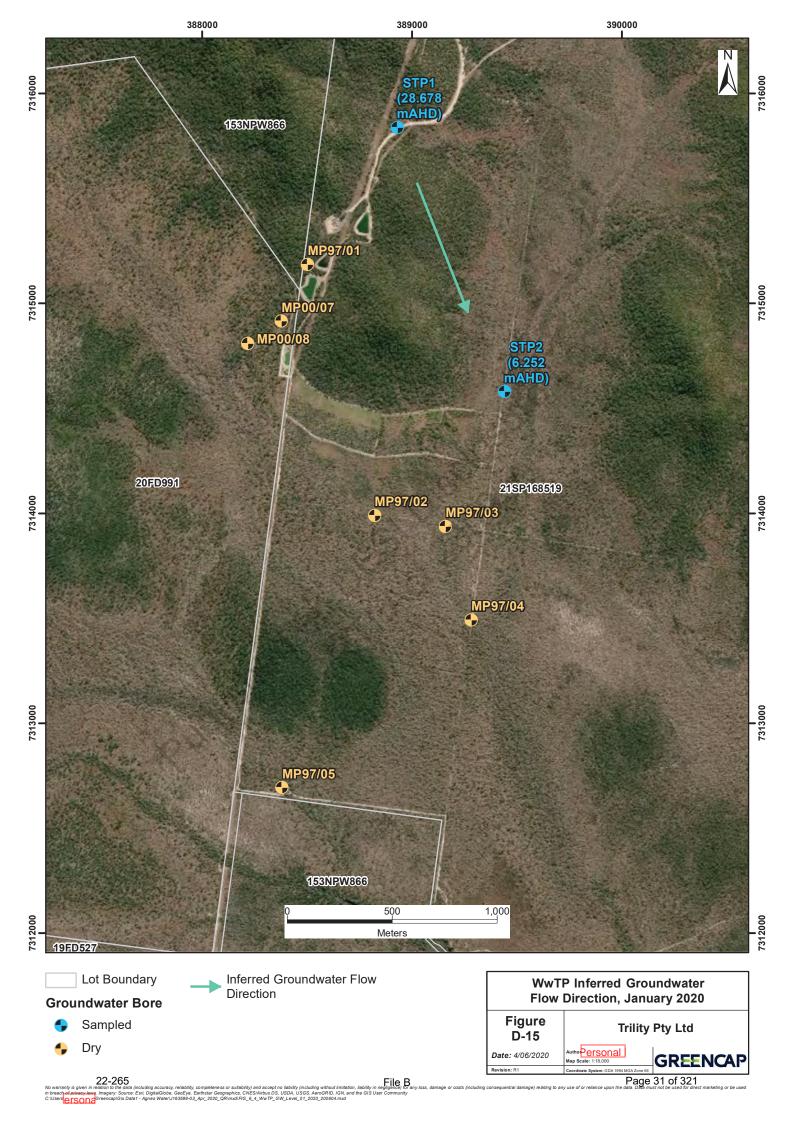
P22-265 ation to the data (including accuracy, reliability, completeness or suitability) and accept no lability (including without limitasion, liability in negligence) for any loss, damage or imagery: reencepiGis Data 1 - Agnes Water/163999-03, Apr_2020_ORVimxdFIG_6_1_UWTP_GW_Leve[_01_2020_200604.mxd C:User ersona

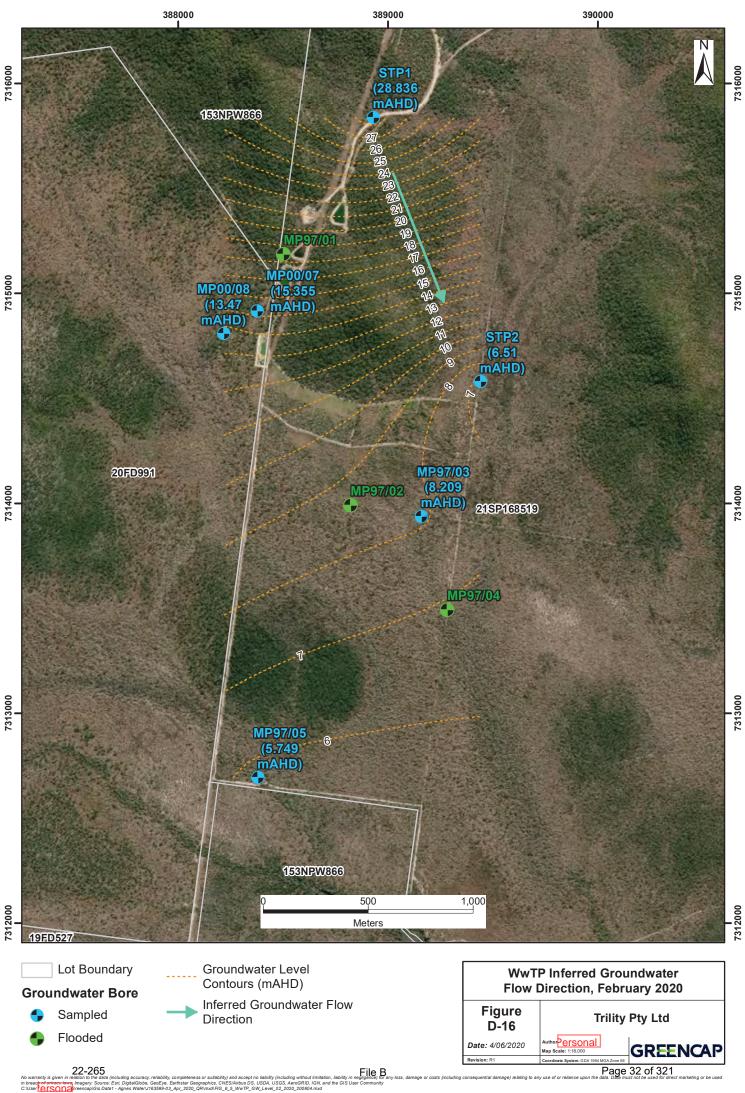
Page 29 of 321

damage) relating to any use of or re



65 he date (including accuracy, reliability, completeness or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or (Gis Data 1 - Agnes Water/163599-03_Apr_2020_QR/mxdrFiG_6_2_WTVP_GW_Leve[02_2020_200604.mxd





GeoEye, Ear



; losure Loc

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment

Plant, Agnes Water

Appendix E: Graphs

greencap.com.au

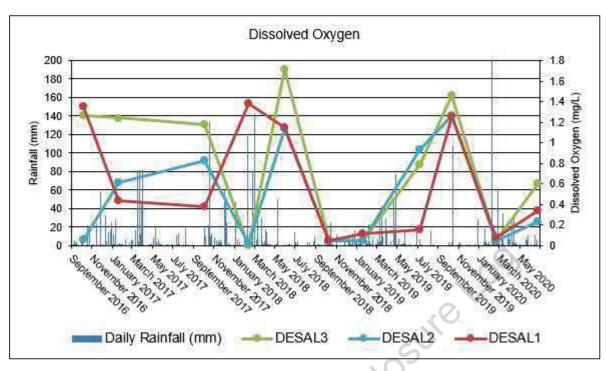


Figure 1 IWTP Dissolved Oxygen, September 2016 – June 2020

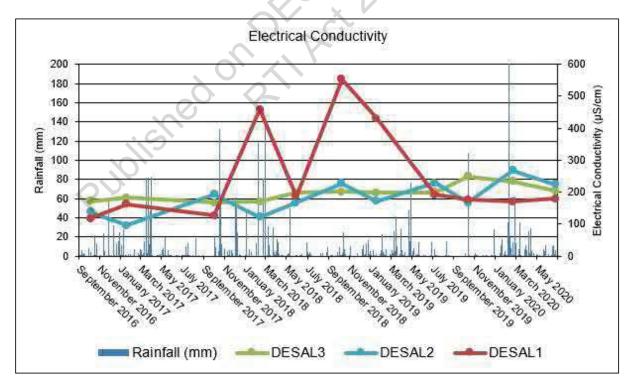


Figure 2 IWTP Electrical Conductivity, September 2016 – June 2020

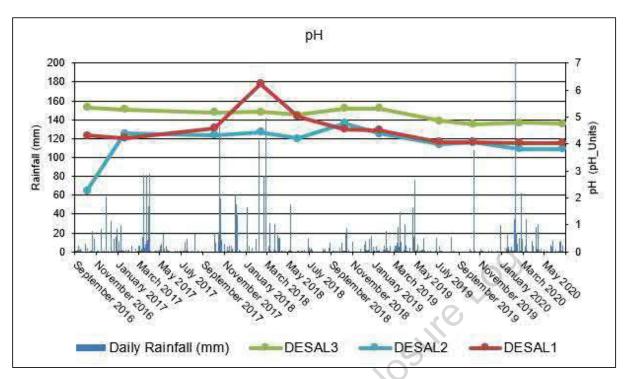


Figure 3 IWTP pH, September 2016 – June 2020

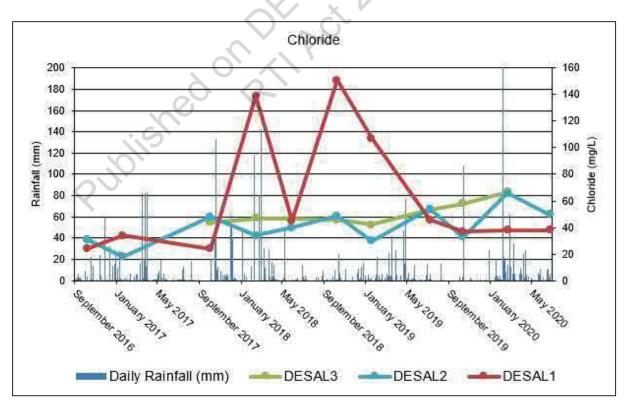


Figure 4 IWTP Chloride, September 2016 – June 2020

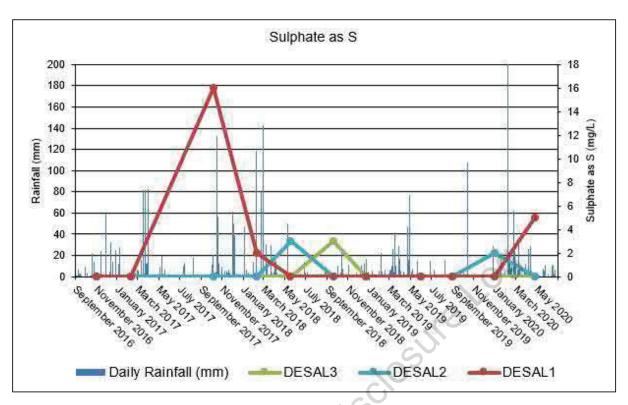


Figure 5 IWTP Sulphate, September 2016 – June 2020

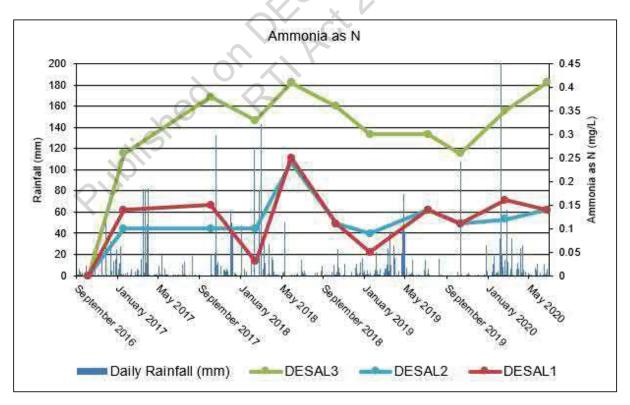


Figure 6 IWTP Ammonia, September 2016 – June 2020

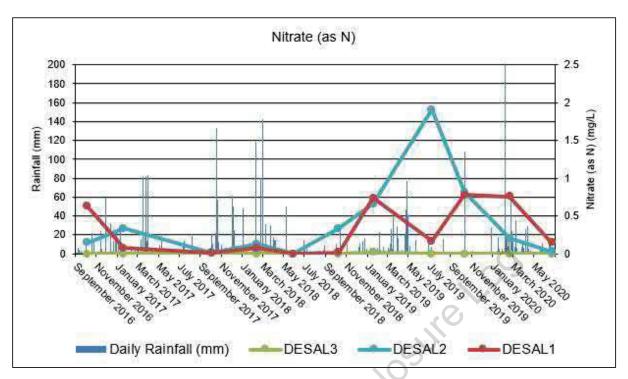


Figure 7 IWTP Nitrate, September 2016 – June 2020

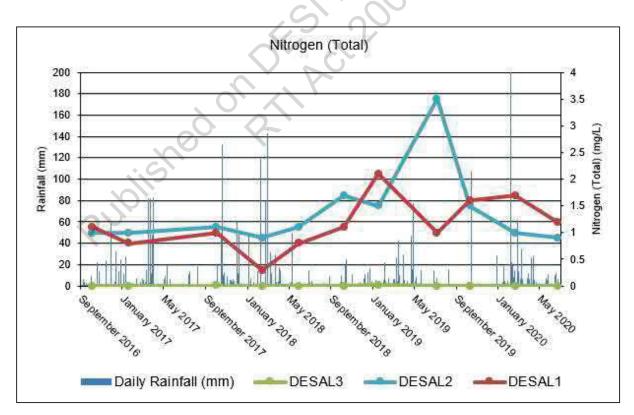


Figure 8 IWTP Total Nitrogen, September 2016 – June 2020

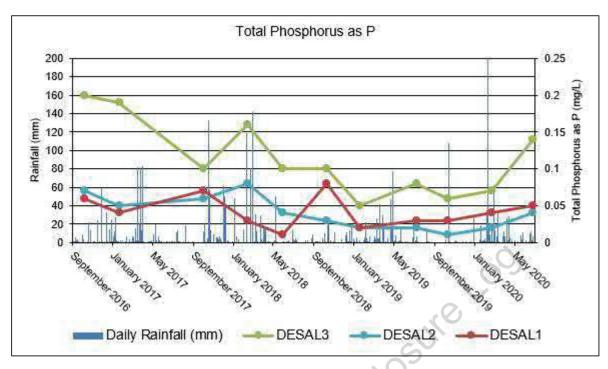


Figure 9 IWTP Total Phosphorus, September 2016 – June 2020

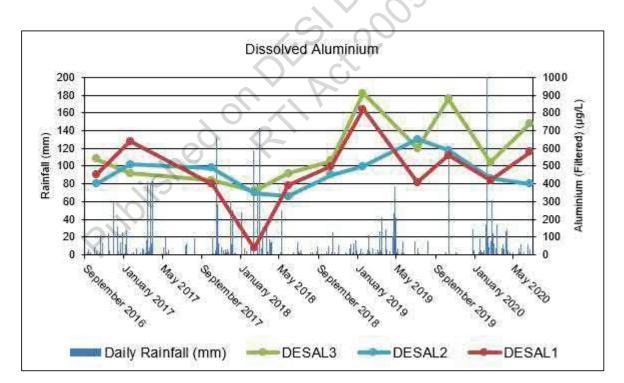


Figure 10 IWTP Dissolved Aluminium, September 2016 – June 2020

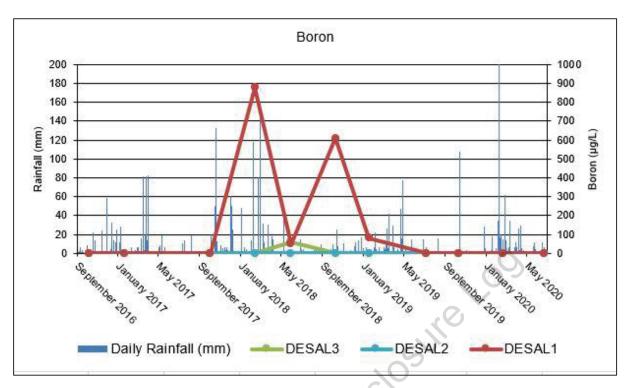


Figure 11 IWTP Total Boron, September 2016 – June 2020

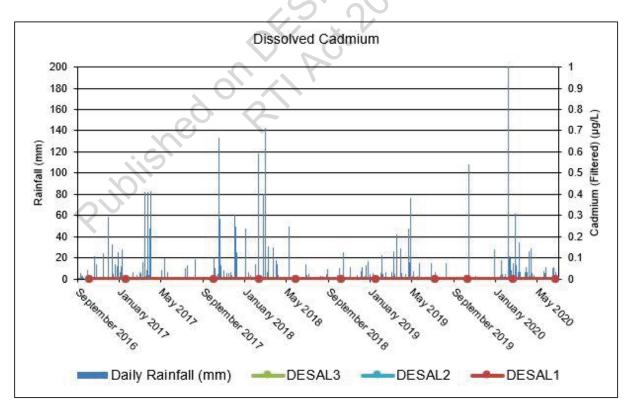


Figure 12 IWTP Dissolved Cadmium, September 2016 – June 2020

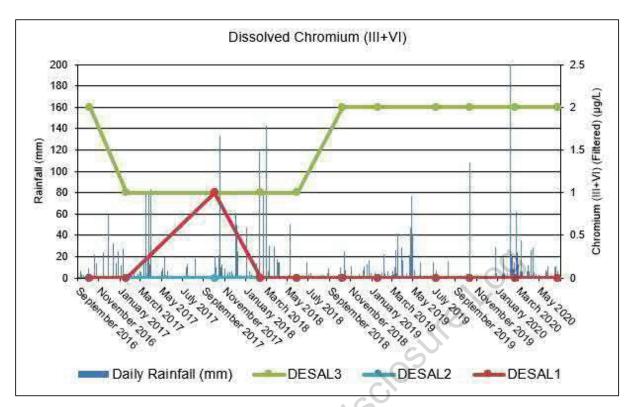


Figure 13 IWTP Dissolved Chromium, September 2016 – June 2019

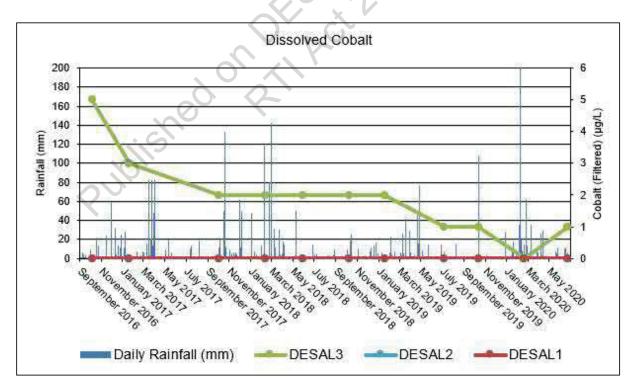


Figure 14 IWTP Dissolved Cobalt, September 2016 – June 2020

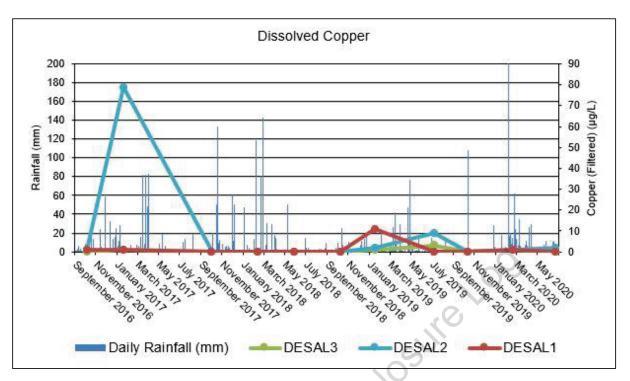


Figure 15 IWTP Dissolved Copper, September 2016 – June 2020

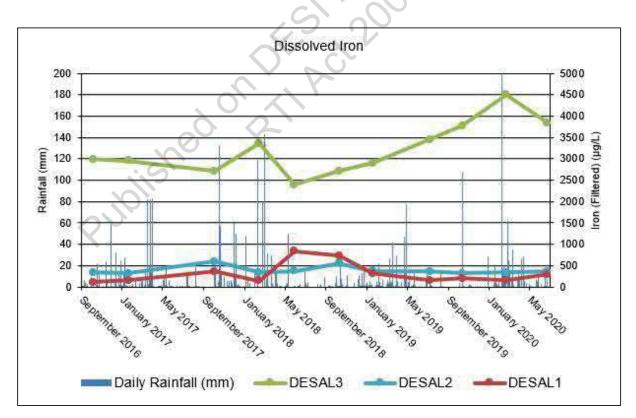


Figure 16 IWTP Dissolved Iron, September 2016 – June 2020

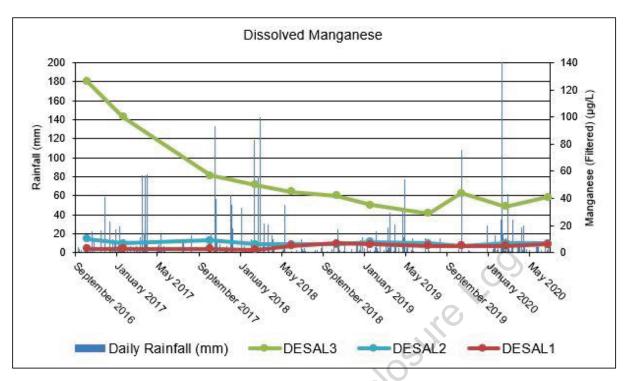


Figure 17 IWTP Dissolved Manganese, September 2016 – June 2020

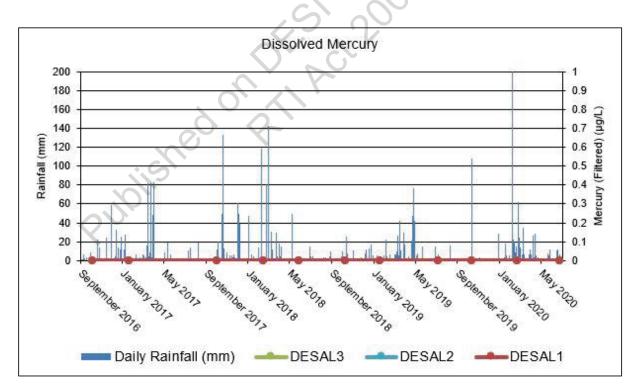


Figure 18 IWTP Dissolved Mercury, September 2016 – June 2020

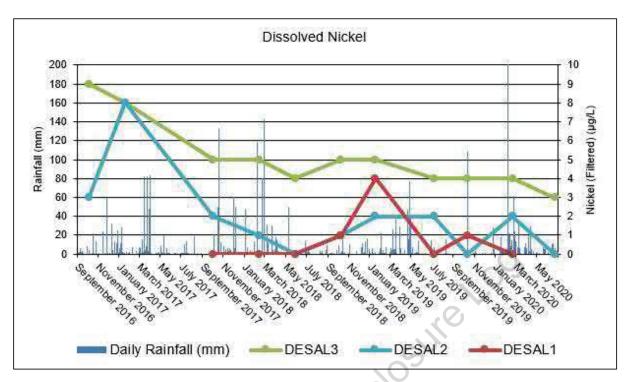


Figure 19 IWTP Dissolved Nickel, September 2016 – June 2020

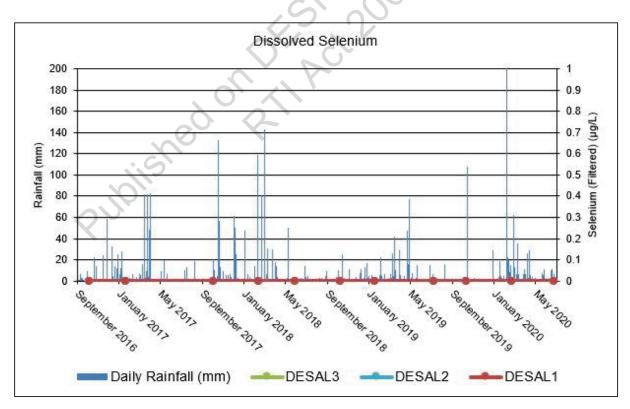


Figure 20 IWTP Dissolved Selenium, September 2016 – June 2020

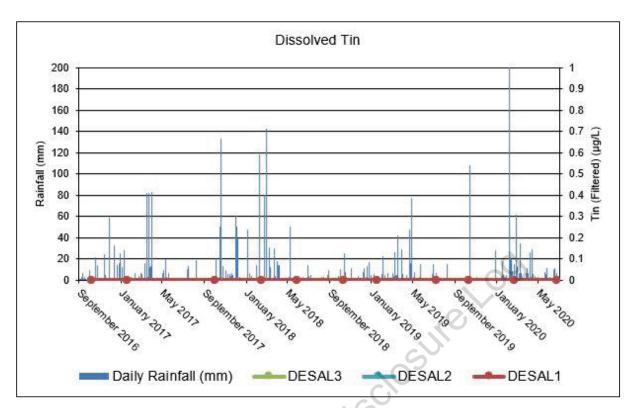


Figure 21 IWTP Dissolved Tin, September 2016 – June 2020

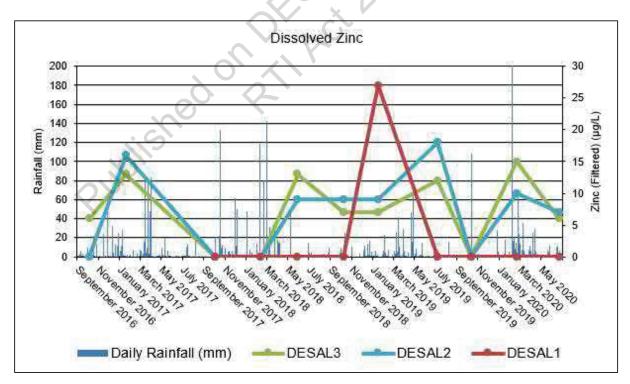


Figure 22 IWTP Dissolved Zinc, September 2016 – June 2020

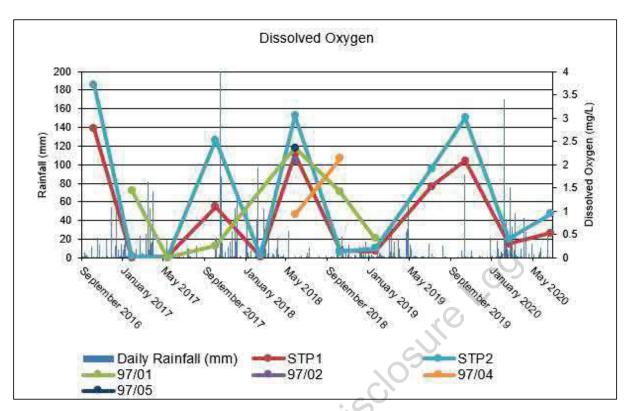


Figure 23 WwTP Dissolved Oxygen, September 2016 – June 2020

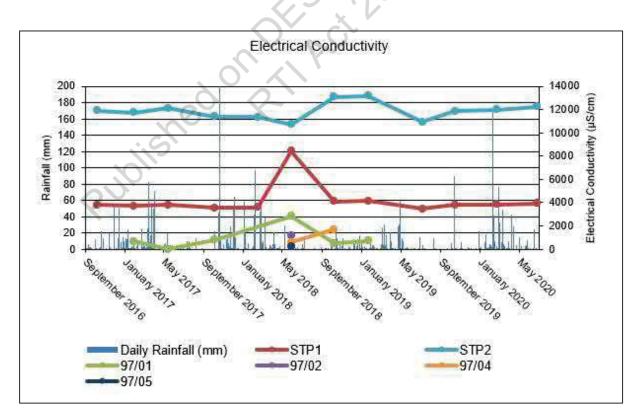


Figure 24 WwTP Electrical Conductivity, September 2016 – June 2020

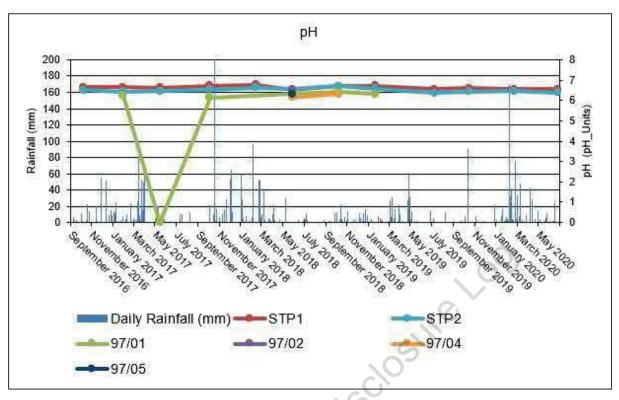


Figure 25 WwTP pH, September 2016 – June 2020

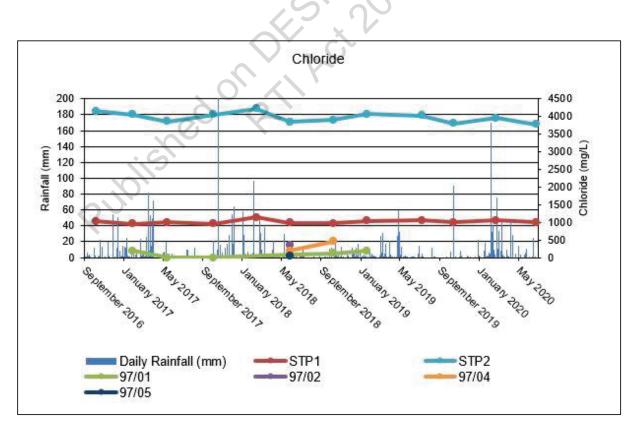


Figure 26 WwTP Chloride, September 2016 – June 2020

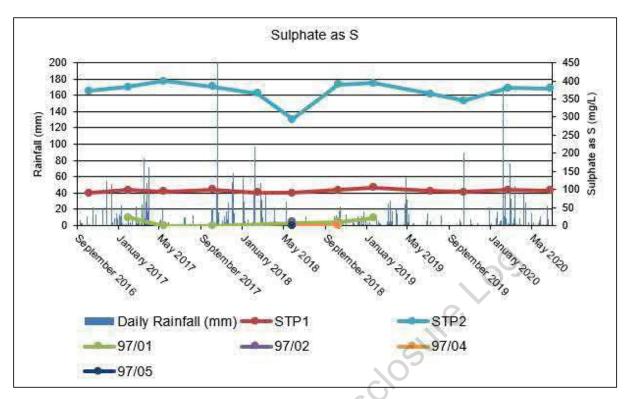


Figure 27 WwTP Sulphate, September 2016 – June 2020

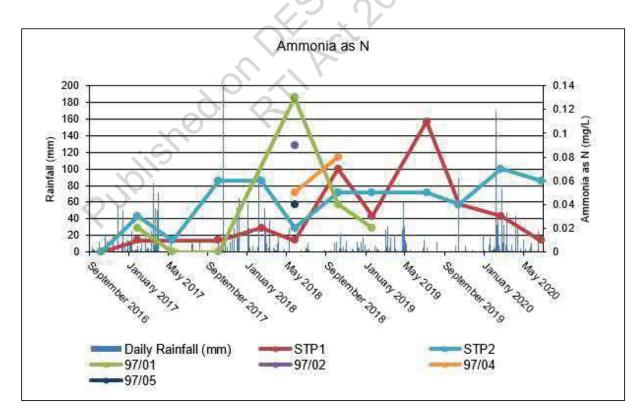


Figure 28 WwTP Ammonia, September 2016 – June 2020

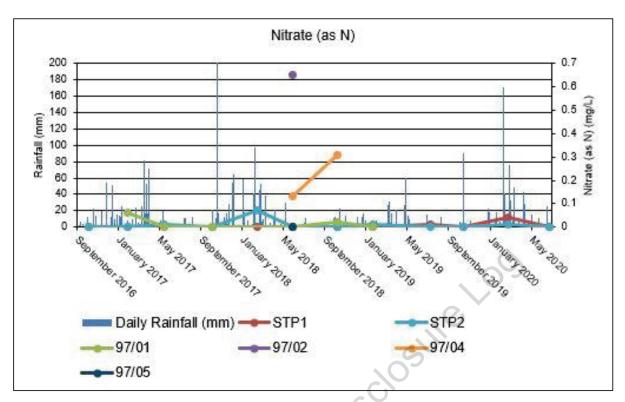


Figure 29 WwTP Nitrate, September 2016 – June 2020

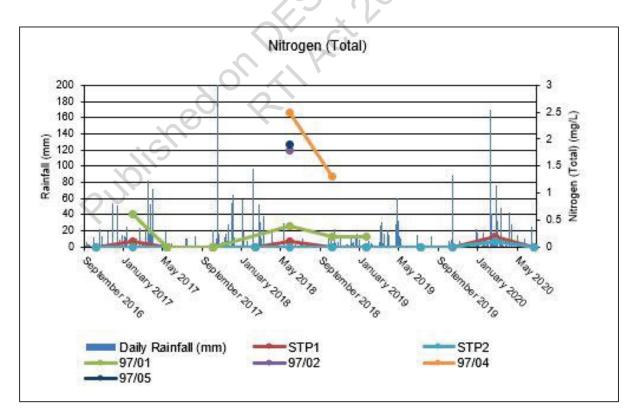


Figure 30 WwTP Total Nitrogen, September 2016 – June 2020

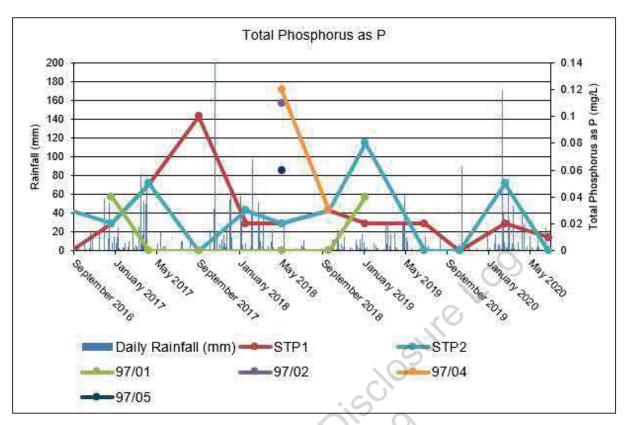


Figure 31 WwTP Total Phosphorus, September 2016 – June 2020

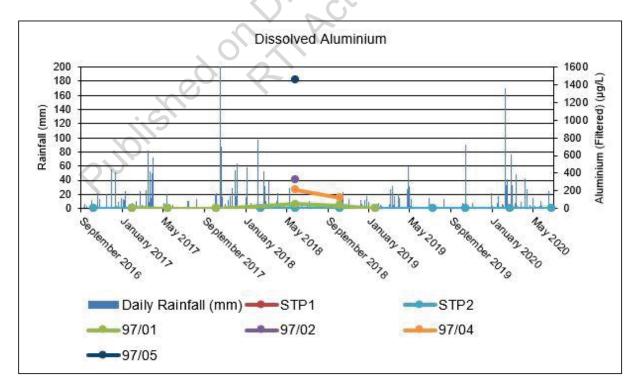


Figure 32 WwTP Dissolved Aluminium, September 2016 – June 2020

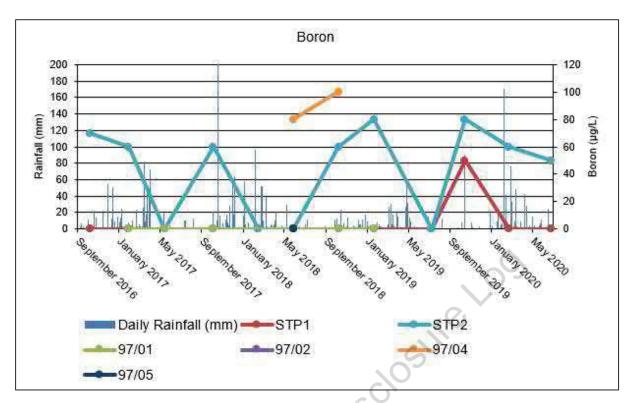


Figure 33 WwTP Total Boron, September 2016 – June 2020

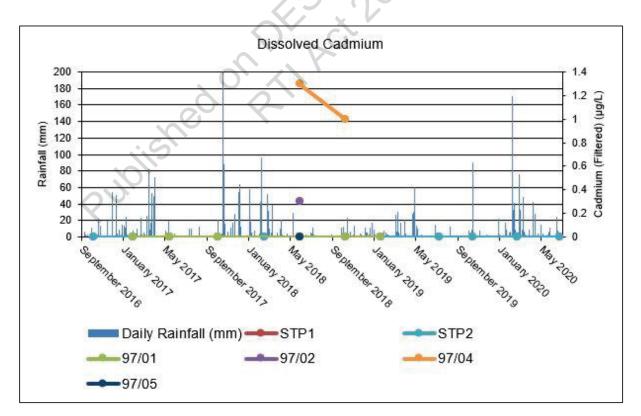


Figure 34 WwTP Dissolved Cadmium, September 2016 – June 2020

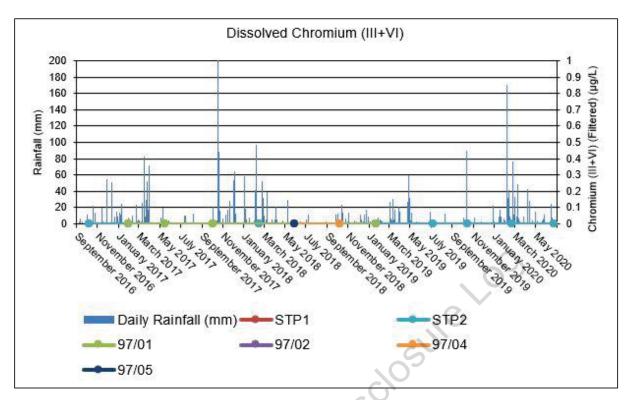


Figure 35 WwTP Dissolved Chromium, September 2016 – June 2020

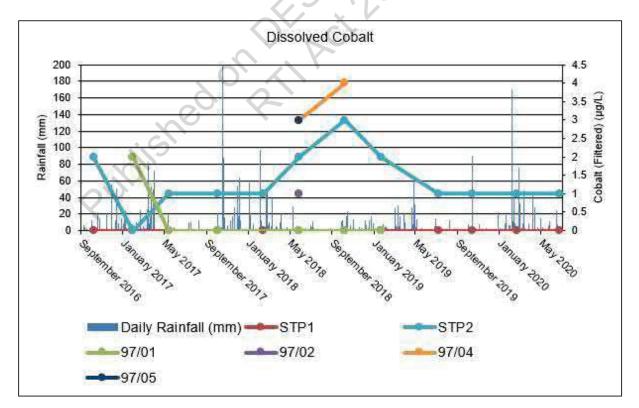


Figure 36 WwTP Dissolved Cobalt, September 2016 – June 2020



Level 1 / 381 MacArthur Avenue Hamilton QLD 4007 Australia

JUNE 2020 ANNUAL REPORT

September 2020 J169864

Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment Plant, Agnes Water

C114943: VB

greencap.com.auABN 76 006 318 01022-265File BPage 52 of 32Adelaide | Auckland | Brisbane | Canberra | Darwin | Melbourne | Newcastle | Perth | Sydney | Wollongong





Document Control

Document Quality Management Details.					
Report Name:	June 2020 Annual Report				
Site Details:	Integrated Water Treatment Plant and Wastewater Treatment Plant, Agnes Water				
Project Number:	J169864				
Client Name:	Trility Pty Ltd				
Client Number:	C114943				
	Prepared By: Authorised By:				
Signatures:	sch4p4(6) Personal Information sch4p4(6) Personal Information p4(6) Personal Inform h4p4(6) Personal Informati Environmental Consultant Principal Consultant - Environment				

Issue Status

Issue Status		15	
Version No.	Date	Creator	Reviewer
1		h4p4(6) Personal Informa	h4p4(6) Personal Informati
Document Circu	ulation		

No of Copies	Туре	Customer Name	Position & Company
1	Electronic	Trility Pty Ltd) Personal Inf- Administration Officer
•	PUIDI		



JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment Plant, Agnes Water

Statement of Limitations

All and any Services proposed by Greencap to the Client were subject to the Terms and Conditions listed on the Greencap website at: https://www.greencap.com.au/terms-conditions. Unless otherwise expressly agreed to in writing and signed by Greencap, Greencap does not agree to any alternative terms or variation of these terms if subsequently proposed by the Client. The Services were carried out in accordance with the current and relevant industry standards of testing, interpretation and analysis. The Services were carried out in accordance with Commonwealth, State, Territory or Government legislation, regulations and/or guidelines. The Client was deemed to have accepted these Terms when the Client signed the Proposal (where indicated) or when the Company commenced the Services at the request (written or otherwise) of the Client. The services were carried out for the Specific Purpose, outlined in the body of the Proposal. To the fullest extent permitted by law, Greencap, its related bodies corporate, its officers, consultants, employees and agents assume no liability, and will not be liable to any person, or in relation to, any losses, damages, costs or expenses, and whether arising in contract, tort including negligence, under statute, in equity or otherwise, arising out of, or in connection with, any matter outside the Specific Purpose. The Client acknowledged and agreed that proposed investigations were to rely on information provided to Greencap by the Client or other third parties. Greencap made no representation or warranty regarding the completeness or accuracy of any descriptions or conclusions based on information supplied to it by the Client, its employees or other third parties during provision of the Services. Under no circumstances shall Greencap have any liability for, or in relation to, any work, reports, information, plans, designs, or specifications supplied or prepared by any third party, including any third party recommended by Greencap. The Client releases and indemnifies Greencap from and against all Claims arising from errors, omissions or inaccuracies in

documents or other information provided to Greencap by the Client, its employees or other third parties. The Client was to ensure that Greencap had access to all information, sites and buildings as required by or necessary for Greencap to undertake the Services. Notwithstanding any other provision in these Terms, Greencap will have no liability to the Client or any third party to the extent that the performance of the Services was not able to be undertaken (in whole or in part) due to access to any relevant sites or buildings being prevented or delayed due to the Client or their respective employees or contractors expressing safety or health concerns associated with such access.

Unless otherwise expressly agreed to in writing and signed by Greencap, Greencap, its related bodies corporate, its officers, employees and agents assume no liability and will not be liable for lost profit, revenue, production, contract, opportunity, loss arising from business interruption or delay, indirect or consequential loss or loss to the extent caused or contributed to by the Client or third parties, suffered or incurred arising out of or in connection with our Proposals, Reports, the Project or the Agreement. In the event Greencap is found by a Court or Tribunal to be liable to the Client for any loss or damage arising in connection with the Services, the Client's entitlement to recover damages from Greencap shall be reduced by such amount as reflects the extent to which any act, default, omission or negligence of the Client, or any third party, caused or contributed to such loss or damage. Unless otherwise agreed in writing and signed by both parties, Greencap's total aggregate liability will not exceed the total consulting fees paid by the client in relation to this Proposal. For further detail, see Greencap's Terms and Conditions available at https://www.greencap.com.au/terms-conditions.

The Report is provided for the exclusive use of the Client and for this Project only, in accordance with the Scope and Specific Purpose as outlined in the Agreement, and only those third parties who have been authorized in writing by Greencap. It should not be used for other purposes, other projects or by a third party unless otherwise agreed and authorized in writing by Greencap. Any person relying upon this Report beyond its exclusive use and Specific Purpose, and without the express written consent of Greencap, does so entirely at their own risk and without recourse to Greencap for any loss, liability or damage. To the extent permitted by law, Greencap assumes no responsibility for any loss, liability, damage, costs or expenses arising from interpretations or conclusions made by others, or use of the Report by a third party. Except as specifically agreed by Greencap in writing, it does not authorize the use of this Report by any third party. It is the responsibility of third parties to independently make inquiries or seek advice in relation to their particular requirements and proposed use of the site.

The conclusions, or data referred to in this Report, should not be used as part of a specification for a project without review and written agreement by Greencap. This Report has been written as advice and opinion, rather than with the purpose of specifying instructions for design or redevelopment. Greencap does not purport to recommend or induce a decision to make (or not make) any purchase, disposal, investment, divestment, financial commitment or otherwise in relation to the site it investigated. This Report should be read in whole and should not be copied in part or altered. The Report as a whole set outs the findings of the investigations. No responsibility is accepted by Greencap for use of parts of the Report in the absence (or out of context) of the balance of the Report.

greencap.com.au

ii



JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment Plant, Agnes Water

Definitions and Acronyms

Acronym	Definition
ALS	Australian Laboratory Services
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
AS/NZS 5667:11	Water Quality Sampling Part 11: Guidance on sampling of groundwaters (1998)
CoC	Chain of Custody
EHP	Department of Environment and Heritage Protection
ERA	Environmentally Relevant Activity
Greencap	Greencap Pty Ltd
IWTP	Integrated Water Treatment Plant
m AHD	metres Australian Height Datum
mg/L	milligrams per litre
ML	Mega Litre
NATA	National Association of Testing Authorities
NEPM	National Environmental Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013
QA/QC	Quality Assurance / Quality Control
RPD	Relative Percent Difference
SWL	Standing Water Level
TOC	Top of Casing
Trility	Trility Pty Ltd
μS/cm	microsiemens per centimetre
µg/L	mircograms per litre
WwTP	Wastewater Treatment Plant





Integrated Water Treatment Plant and Wastewater Treatment Plant, Agnes Water

Table of Contents

1	Intro	duction	1			
	1.1	Background1				
	1.2	Objective	2			
2	Site D	Description				
	2.1	Integrated Water Treatment Plant	3			
		2.1.1 Geology 2.1.2 Operations	3			
		2.1.2 Operations	3			
		2.1.3 Potential for Leaks	3			
	2.2	Wastewater Treatment Plant and Irrigation Area	3			
		2.2.1 Geology	3			
		2.2.1 Geology 2.2.2 Operations	4			
		2.2.3 Potential for Leaks ndwater Bore Monitoring Network	4			
3	Grou	ndwater Bore Monitoring Network	7			
	3.1	Integrated Water Treatment Plant	7			
	3.2	Wastewater Treatment Plant and Irrigation Area	7			
4		toring Parameters and Trigger Values				
5		ling Methodology				
6	moni	toring Results				
	6.1	Rainfall	14			
	6.2	Field Observations during Groundwater Sampling				
		6.2.1 IWTP	14			
		6.2.2 WwTP	15			
	6.3	Field Parameter Measurements	23			
		6.3.1 June 2020 Quarterly Results	23			
		6.3.2 IWTP Annual Summary	23			
		6.3.3 WwTP Annual Summary	24			
	6.4	Laboratory Results	24			
		6.4.1 June 2020 Quarterly Results	24			
		6.4.2 IWTP Annual Summary	26			
		6.4.3 WwTP Annual Summary	27			
7	Quali	ty Assurance and Quality Control	28			



	7.1	June 2020 Quarterly QA/QC	28
		7.1.1 Field Duplicates	28
		7.1.2 Laboratory	28
	7.2	Annual Field QA/QC Results	29
	7.3	Annual Laboratory QA/QC Data	29
		7.3.1 Quality Control Measures	29
		7.3.2 Laboratory Quality Control	29
8	Discu	ssion and Trend Analysis	31
	8.1	IWTP	
		8.1.1 Groundwater Levels	
		8.1.2 Field Parameters	32
		8.1.3 Chloride and Sulphate8.1.4 Nutrients	33
		8.1.4 Nutrients	33
		8.1.5 Metals	
		8.1.6 Microbiological Parameters	34
	8.2	WwTP	34
		8.2.1 Groundwater Levels	34
		8.2.1 Groundwater Levels8.2.2 Field Parameters	35
		8.2.3 Chloride and Sulphate	36
		8.2.4 Nutrients	36
		8.2.4 Nutrients	36
		8.2.6 Microbiological Parameters	
9	Conta	mination Assessment & Conclusions	37

- Appendix A: Groundwater Field Sampling Records
- Appendix B-1: June 2020 Quarterly Results Summary Table
- Appendix B-2: IWTP Annual Results Summary Table
- Appendix B-3: WwTP Annual Results Summary Table
- Appendix C: Laboratory Results. COC and QA/QC Documentation
- Appendix D: Groundwater Contour Levels
- Appendix E: Graphs

Table of Figures

Figure 2-1	Site location of IWTP	5
Figure 2-2	Site location of WwTP	6
Figure 3-1	Location of IWTP Groundwater Bores	9
Figure 3-2	Location of WwTP Groundwater Bores	10
Figure 6-1	IWTP Groundwater Level Contours, April 2020	17
V	aroon	





Figure 6-2	IWTP Groundwater Level Contours, May 2020	. 18
-	IWTP Groundwater Level Contours, June 2020	
Figure 6-4	WwTP Groundwater Level Contours, April 2020	. 20
Figure 6-5	WwTP Groundwater Level Contours, May 2020	. 21
Figure 6-6	WwTP Groundwater Level Contours, June 2020	. 22
Figure 8-1	IWTP Groundwater Levels, September 2016 – June 2020	. 32
Figure 8-2	WwTP Groundwater Levels, September 2016 – June 2019	. 35

Table of Tables

Table 1-1	Location and ERAs of Facilities	
Table 3-1	Integrated Water Treatment Plant Groundwater Monitoring Bores	7
Table 3-2	Wastewater Treatment Plant Groundwater Monitoring Bores	
Table 4-1	Monitoring Parameters and Trigger Values First sampling event at IWTP and WwTP bores	11
Table 4-2	First sampling event at IWTP and WwTP bores	12
Table 6-1	Rainfall Data	
Table 6-2	Groundwater Gauging Data, IWTP July 2019 – June 2020	
Table 6-3	Groundwater Gauging Data, WwTP July 2019 – June 2020	15
Table 6-4	Field Measured Water Quality Parameters, June 2020	23
Table 6-5	Groundwater Trigger Value Exceedances, June 2020	25
Table 6-6	Groundwater Trigger Value Exceedances, IWTP July 2019 – June 2020	26
Table 6-7	Groundwater Trigger Value Exceedances, WwTP July 2019 – June 2020	27
Table 7-1	Laboratory QA/QC data	28



1 INTRODUCTION

1.1 Background

In 2015, Greencap Pty Ltd (Greencap) was commissioned by Trility Pty Ltd (Trility) to provide advice regarding the site groundwater conditions and monitoring of groundwater at the Gladstone Regional Council owned and Trility operated Integrated Water Treatment Plant (IWTP) and Wastewater Treatment Plant (WwTP) facilities located in Agnes Water, Queensland (Table 1-1).

Table 1-1Location and ERAs of Facilities

Facility	Environmental Relevant Activity	Location	
Integrated Water Treatment Plant (IWTP)	ERA64-(1a) Water Treatment > 0.5 ML but < 5ML water day	Springs Road Agnes Water - (Lot 52 Plan SP155903 and Lot 41 Plan SP 206868 (Figure 2-1)	
Wastewater Treatment Plant (WwTP)*	ERA63 (1d) Sewage Treatment >4000 to 10,000EP	Streeter Drive Agnes Water (Lot 20 Plan FD991 and Lot 21 Plan SP168519) (Figure 2-2)	

*It is acknowledged that the treated effluent from the WwTP is irrigated to land as identified in the lot and plan provided above.

These two facilities are administered in accordance with the Department of Environment and Heritage Protection (EHP) Environmental Authority EPPR00959913 (hereafter referred to as the Environmental Authority) issued to Gladstone Regional Council on 1 September 2015, with a revised version issued on 14 May 2020.

In accordance with condition WT7-AW of the Environmental Authority, Greencap was engaged to prepare a Preliminary Groundwater Assessment Report for the IWTP in August 2015 and the WwTP in February 2016. The reports presented an overview of the local geological and hydrogeological conditions, and a number of recommendations identified during the assessment were implemented in September 2016. These included Greencap's recommendations:

IWTP

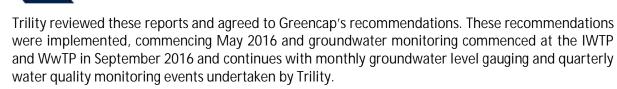
- Prepare and document a groundwater monitoring program, and provide this to EHP for approval, as required by the Environmental Authority EPPR00959913 (the Environmental Authority);
- Install three additional groundwater monitoring wells at the site, in accordance with the Groundwater Monitoring Program; and
- Ongoing groundwater monitoring, in accordance with the Groundwater Monitoring Program. WwTP
- Undertake collar surveys of the existing groundwater monitoring bores so that groundwater level elevations can be determined in reference to Australian Height Datum (AHD);
- Install two up inferred hydraulic gradient bores to enable monitoring of background groundwater conditions;
- Prepare a groundwater management system in accordance with the Environmental Authority conditions that meet the requirements of the Environmental Authority in relation to monitoring groundwater for potential contamination; and
- Undertake the required assessment and reporting of groundwater monitoring results.

1

greencap.com.au

Adelaide | Auckland | Brisbane | Canberra | Darwin | Melbourne | Newcastle | Perth | Sydney | Wollongong





1.2 Objective

The overarching objective is to comply with requirements of the Environmental Authority issued by EHP in relation to the monitoring of groundwater for the Gladstone Regional Council owned and Trility operated IWTP and WwTP facilities.

The objective of this annual report is to present the quarterly groundwater monitoring results at the WwTP and IWTP from April to June 2020 and summarise the results of monitoring for the annual Publicshed PHILACLARD period July 2019 to June 2020 in accordance with Conditions WT8-AW, WT9-AW, WT10-AW and WT11-AW of the Environmental Authority.

greencap.com.au

Adelaide | Auckland | Brisbane | Canberra | Darwin | Melbourne | Newcastle | Perth | Sydney | Wollongong

2



2 SITE DESCRIPTION

2.1 Integrated Water Treatment Plant

2.1.1 Geology

The IWTP is located at Springs Road, Agnes Water on (Lot 6 on SP150900, Lot 40 Plan SP206868, Lot 52 Plan 155903 and Lot 41 Plan SP206868) and is positioned on the coastal dune system between the Reedy Creek coastal swamp and the Coral Sea (Figure 2-1).

The basement rocks in the area are the Lower to Middle Triassic age Agnes Water Volcanics. The shoreline to the east of the IWTP is characterised by rocky outcrops and form coastal headlands to the north and south of the IWTP. These volcanics are widespread to the inland of the site. Overlying the volcanics are Tertiary age Elliot Formation sandstones and alluvial sediments. The Elliot Formation is mapped as outcropping in the elevated areas to the west of the Agnes Water.

The Quaternary age coastal dune deposits are a linear sand deposit located immediately adjacent the Coral Sea. These dune deposits reach heights of 50 m AHD in the vicinity of the IWTP. The Reedy Creek Swamp area to the west of the IWTP is mapped as consisting of Quaternary age alluvium.

2.1.2 Operations

The IWTP operations can be summarised as follows:

- The IWTP extracts raw water from the adjoining Pacific Ocean via an intake system sited at Chinaman's Beach, and bore water from the Springs Road bores (Figure 3-1);
- Water received at the IWTP is processed via filtration and reverse osmosis systems;
- Water is then chemically dosed to adjust the water properties before distribution to the Gladstone City Council operated potable water network.

The IWTP incorporates the storage and usage of chemicals involved in the water treatment process. These chemicals are stored under cover in designated chemical storage locations and managed in accordance with the IWTP Environmental Management Plan provisions.

2.1.3 Potential for Leaks

The potential for impacts on groundwater from IWTP activities are generally restricted to:

- Release of chemicals and materials during their transfers to and around the treatment facility;
- Loss of integrity of bunding and/or containment systems in chemical storage areas;
- Leakages from transfer systems in the plant operational area;
- Sewage pipe leakages; and
- Brine disposal pipe leakages.

Any releases of chemicals, raw materials and/or process by products have the potential to impact on the existing shallow dune aquifer above the rock layer and potentially move west, the inferred groundwater flow direction.

2.2 Wastewater Treatment Plant and Irrigation Area

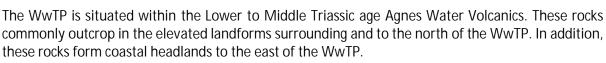
2.2.1 Geology

The WwTP is located at Streeter Drive, Agnes Water (Lot 21 on SP168519 and Lot 20 on FD991), and is positioned some 4.5 km inland to the west of the Coral Sea, south-east of a local topographic feature known as Round Hill, within the Deepwater Creek catchment area (Figure 2-2).

3

Adelaide | Auckland | Brisbane | Canberra | Darwin | Melbourne | Newcastle | Perth | Sydney | Wollongong





These volcanics are a mixture of igneous rock types, thought to have been deposited in a terrestrial environment. Overlying the volcanics in the WwTP area are Quaternary Age alluvium and colluvium.

2.2.2 Operations

The operations of the wastewater treatment plant on site can be summarised as follows:

- Sewage from Agnes Water township is pumped to the site via a number of designated pumping stations, at a volume of no more than 10,000 equivalent persons (EPs);
- Sewage undergoes tertiary treatment (to class B standard) on site through aerobic digestion;
- Following tertiary treatment, treated effluent is retained in a series of specially constructed lagoons; and
- Treated effluent is discharged via irrigation to the designated irrigation area.

2.2.3 Potential for Leaks

The potential for impacts on groundwater from WwTP activities is generally restricted to:

- Release of chemicals and materials during transfer to and around the treatment facility;
- Loss of integrity from bunding and/or containment systems in chemical storage areas;
- Leakages from transfer systems in the plant operational area;
- Sewage pipe leakages;
- Leaks from the liner of the treated effluent pond; and
- Deep drainage from inappropriate irrigation practices in the irrigation area.

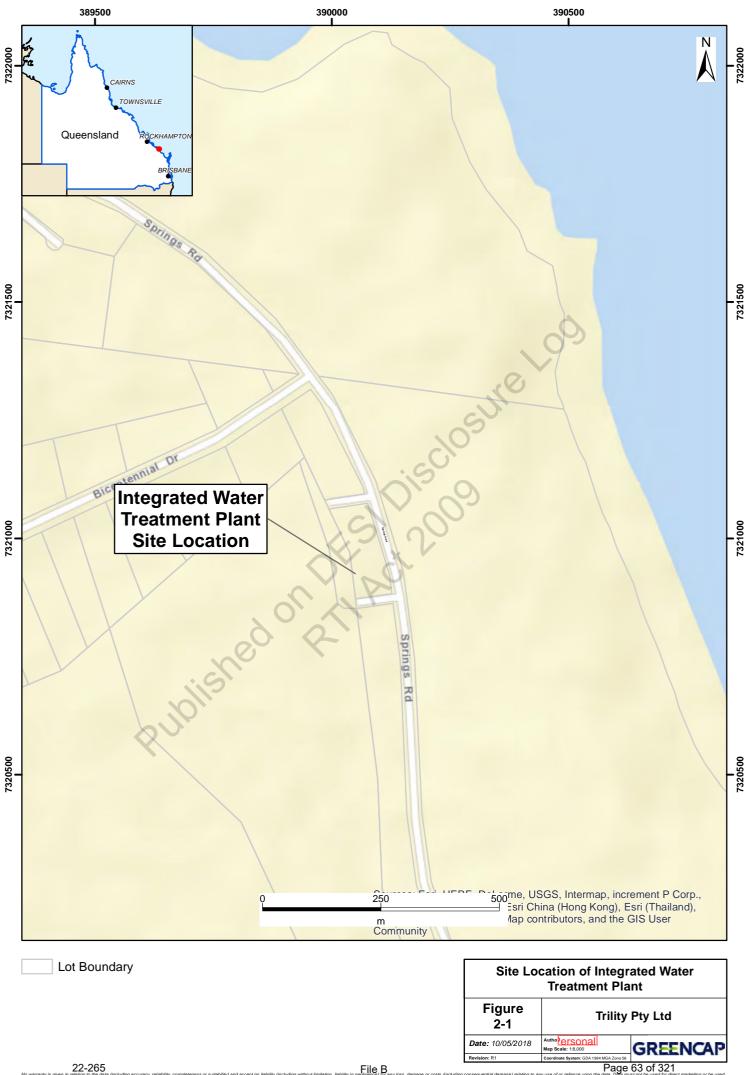
Any leaks of chemicals and/or contaminants arising from the operation have the potential to impact the aquifer in the Agnes Water Volcanics and shallow alluvial material at the WwTP site.

As groundwater flow is inferred as flowing in a southerly direction, impacts from the release of chemicals and/or contaminants on residents drawing water from this aquifer at Agnes Water is unlikely.

Within the irrigation area, both the shallow local alluvial aquifer and the deeper Agnes Water Volcanics may be present. In both areas, groundwater flow direction inferred to be generally in a southern direction and hence have the potential to be impacted upon by any chemical and/or contaminant releases.

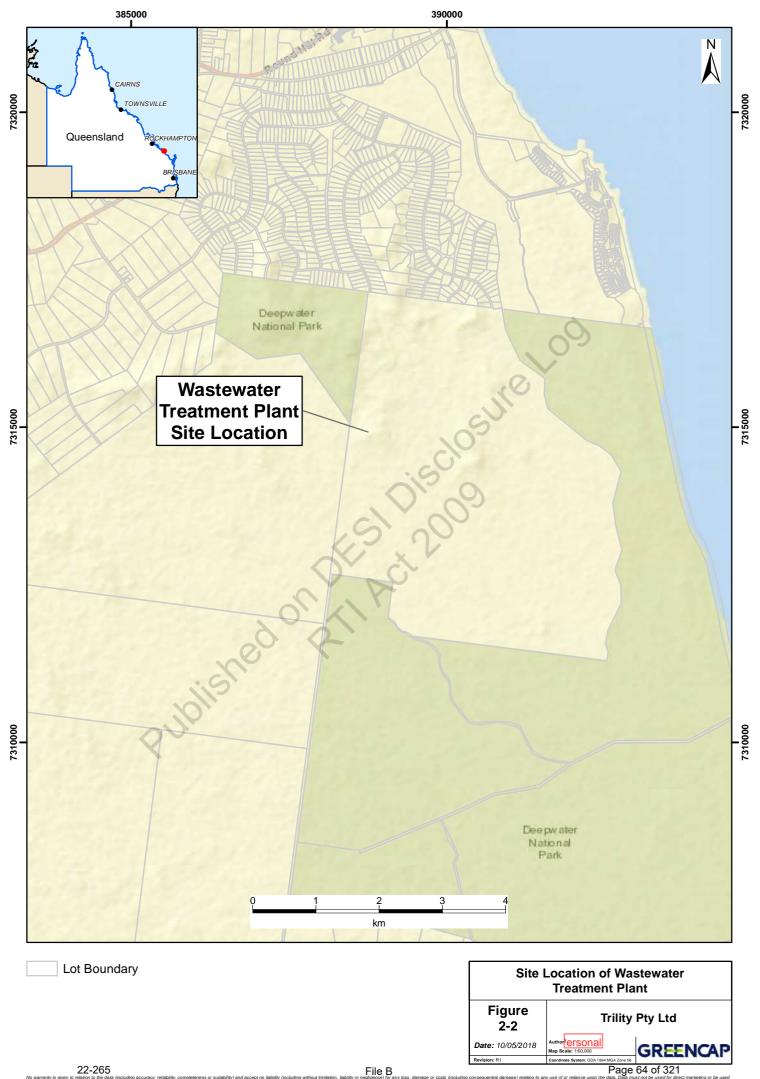
4

Adelaide | Auckland | Brisbane | Canberra | Darwin | Melbourne | Newcastle | Perth | Sydney | Wollongong



rlJ143710-01_Sept_2017_QR\mxd\FIG_2_1_IWTP_site_location_171221.mxd

File B



Ne warany is given in relation to the data (including accuracy, reliability, complemenses or suitability) and accept no lability (including hording ho



3 GROUNDWATER BORE MONITORING NETWORK

3.1 Integrated Water Treatment Plant

Greencap attended the IWTP on 23 May 2016 to supervise the installation of three groundwater monitoring bores in accordance with condition WT22-AWDP. A surveyor was engaged to provide the coordinates for each monitoring bore and to determine the relative elevation levels.

Following development of the bores, groundwater level gauging was also conducted by Greencap and documented on 25 May 2016 to identify the level of groundwater within the bores. Table 3-1 below summarises the details of the IWTP groundwater monitoring bores. The locations of the IWTP groundwater bores are shown in Figure 3-1.

		-				
Well Name	Easting	Northing	Depth of Well (m)	Relative Level (m)	Depth to Water (m) ¹	Relative Height Data (m AHD)
DESAL1	390050.613	7320897.615	6.5	19.117	2.287	16.830
DESAL2	390045.732	7320949.351	6.0	19.555	2.483	17.072
DESAL3	390005.808	7320906.402	5.0	18.739	3.014	15.725

Table 3-1 Integrated Water Treatment Plant Groundwater Monitoring Bores

¹ As measured on 25 May 2016.

3.2 Wastewater Treatment Plant and Irrigation Area

Groundwater monitoring bores (MP97/01 to MP97/05, MP00/07 and MP00/08) were installed at the WwTP prior to 2008. This was also prior to the management of the facility by Trility. Monitoring of water quality from the supply pipe from the existing bores commenced in September 2008 and has been ongoing on a regular basis.

On 25 May 2016 Greencap inspected all the existing bores and identified that they appeared to be shallow but in good working condition and suitable for monitoring purposes if groundwater is present. At this time Greencap also supervised the installation of two additional groundwater monitoring bores at the WwTP, identified as STP1 and STP2, for the purposes of obtaining information on the background groundwater quality in the area to be able to identify wastewater impacts in comparison with background groundwater quality. A surveyor was engaged to provide the coordinates for all the existing and newly installed monitoring bores at the WwTP and to determine the levels relative to AHD.

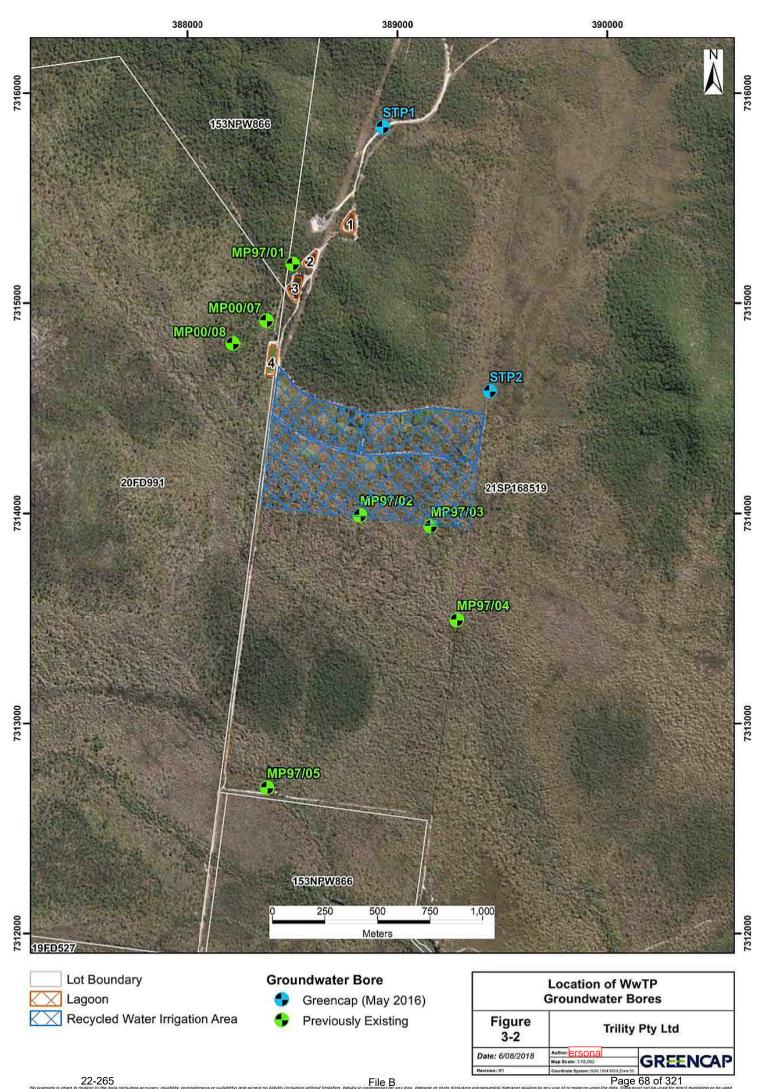
Groundwater level gauging was also conducted by Greencap and documented on 25 May 2016 to identify the level of groundwater within bores. Table 3-2 below summaries the details of the WwTP groundwater monitoring bores. The locations of the WwTP groundwater bores are shown in Figure 3-2.



Table 3-2 Wastewater Treatment Plant Groundwater Monitoring Bores						
Easting, MGA94	Northing, MGA94	Depth of Well (m)	Relative Level	Depth to Water (m) ¹	Relative Height Data (m AHD)	
388929.148	7315839.541	15.36	31.081	0.607	30.474	
389440.292	7314580.914	13.14	10.880	2.915	7.965	
388501.285	7315186.657	1.10	19.938	0.959	18.979	
388820.691	7313990.578	1.70	9.422	1.154	8.268	
389158.188	7313938.606	1.69	8.479	1.342	7.137	
389280.803	7313491.850	1.57	7.130	1.108	6.022	
388379.765	7312693.071	1.02	6.074	0.784	5.290	
388376.341	7314916.325	1.80	15.835	DRY	NA	
388215.935	7314808.284	1.785	14.120	1.706	12.414	
MP00/08 388215.935 7314808.284 1.785 14.120 1.706 12.414 ¹ As measured on 25 May 2016.						
	Easting, MGA94 388929.148 389440.292 388501.285 388501.285 388820.691 389158.188 389280.803 388379.765 388376.341 388215.935 25 May 2016.	Easting, MGA94Northing, MGA94388929.1487315839.541389440.2927314580.914389501.2857315186.657388501.2857315186.65738820.6917313990.578389158.1887313938.606389280.8037313491.850388379.7657312693.071388376.3417314916.325388215.9357314808.28425 May 2016.	Easting, MGA94Northing, MGA94Depth of Well (m)388929.1487315839.54115.36389440.2927314580.91413.14388501.2857315186.6571.10388820.6917313990.5781.70389158.1887313938.6061.69389280.8037313491.8501.57388379.7657312693.0711.02388376.3417314916.3251.80388215.9357314808.2841.78525 May 2016.25	Easting, MGA94Northing, MGA94Depth of Well (m)Relative Level388929.1487315839.54115.3631.081389440.2927314580.91413.1410.880388501.2857315186.6571.1019.938388820.6917313990.5781.709.422389158.1887313938.6061.698.479389280.8037313491.8501.577.130388379.7657312693.0711.026.074388376.3417314916.3251.8015.835388215.9357314808.2841.78514.12025 May 2016.25	Easting, MGA94Northing, MGA94Depth of Well (m)Relative LevelDepth to Water (m)1388929.1487315839.54115.3631.0810.607389440.2927314580.91413.1410.8802.915388501.2857315186.6571.1019.9380.959388820.6917313990.5781.709.4221.154389158.1887313938.6061.698.4791.342389280.8037313491.8501.577.1301.108388379.7657312693.0711.026.0740.784388376.3417314916.3251.8015.835DRY388215.9357314808.2841.78514.1201.70625 May 2016.2534343434	

Table 3-2 Wastewater Treatment Plant Groundwater Monitoring Bores

		springs Road	
41SP206868		load	7321000
			ALC: NOT
			40SP206868
	train by		A Car
			LE ROX THE
6SP150900 DESAL2			
	Contraction of		
	Contraction of the second	A KC	
		THE	
	0		
DESAL3		-High B	
DESALI		· 田子 2	7320900
		(Alara a	13
	the state	11-31	
		2	
			No this
	1	A STATE OF THE OWNER	and the
	Res 2	Service - P	
1SP150900		A Cont	
	使 自己。		
	40SP20686	8	
		Par .	8
0 25 50 75	100	A TO AND	7320800
Meters		A Stan	
		2004 - Copiet - p. 2020	PLAYON PUTCH
Lot Boundary		Location of I Groundwater	
 Groundwater Bore (Greencap May 2016) Indicative Location of Treated Water Flush Point 	Figure		
Indicative Location of Brine Pipe	3-1	Trili	ty Pty Ltd
Indicative Location of Seawater Pipe	Date: 9/07/2018 Revision: R1	Author Map Scale: 1:1,200 Coordinate System: GDA 1994 MGA Zor	GREENCAP
22-265 No warranty is given in relation to the data (including accuracy, reliability, completeness or suitability) and accept no liability (including without limitation, liability) in negligence) for any loss, damage or costs (includin Imagery (2014) © State of Queersland. R. Projectics114 Mark J Tahly Pty LidGiSNgnes Water(J143710-01-01-01_Mar, 2018, QRmxdFIG, 3_1_INTP_GW_bone, bc, 180709.mxd	L	D -	ge 67 of 321



265 File B





4 MONITORING PARAMETERS AND TRIGGER VALUES

The Environmental Authority for the WwTP sets out which parameters will be monitored and the associated trigger values as part of the regular groundwater monitoring program. These are summarised in Table 4-1.

Quality Characteristic	Units	Trigger Values	
Dissolved Oxygen	mg/L		
Total Nitrogen	mg/L as Nitrogen	Ó.	
Nitrate	mg/L as Nitrogen	05	
Ammonia	mg/L as Nitrogen	20% change from background ¹	
Total Phosphorous	mg/L		
Chloride	mg/L		
Electrical Conductivity	uS/cm		
Sulphate	mg/L		
Boron	pron mg/L		
рН	pH unit	No change from background ²	
Faecal Coliforms	Colony forming units/100ml		
Enterococcus Organisms	Colony forming units/100ml		
Total Metals: (Al, Fe, Mn, As, Cd, Cr, Co, Cu, Pb, Hg, Ni, Se, Ag, Sn, Zn).	mg/L or ug/L	Within ANZECC Cuidelines	
Dissolved Metals: (Al, Fe, Mn, As, Cd, Cr, Co, Cu, Pb, Hg, Ni, Se, Ag, Sn, Zn).	mg/L or ug/L	Within ANZECC Guidelines	

Table 4-1Monitoring Parameters and Trigger Values

¹ Trigger values are defined as an upper limit (20% increase from background) with the exception of dissolved oxygen, which is defined as a lower limit (20% decrease from background).

² Trigger values are defined as an upper limit – an exceedance is any increase from the background value, with the exception of pH which is defined as any change up or down from the background value.

As the Environmental Authority does not define background data and there is no suitable baseline data for the area, the background value is considered to be the results from the first sampling event for each of the bores. The first sampling event recorded for each bore is listed in Table 4-2.

Trigger values for total and dissolved metals are detailed in the Agnes Water Groundwater Management Program and are in accordance with Australian and New Zealand Guidelines for Fresh and Marine Water Quality (Australian and New Zealand Environment and Conservation Council [ANZECC] and the Agriculture and Resource Management Council of Australia and New Zealand [ARMCANZ], 2000a) (ANZECC Guidelines).

The Environmental Authority for the IWTP does not specify any particular requirements for groundwater monitoring parameters and trigger values. On this basis, the groundwater monitoring parameters and trigger values set out in Table 4-1 above also apply to the IWTP.





Table 4-2

First sampling event at IWTP and WwTP bores

Bore	Month of first sampling event	
STP1	September 2016	
STP2	September 2016	
MP97/01	September 2016	
MP97/02	December 2017 (All parameters Except E. Coli and Enterococci)	
MP97/03	Not sampled	
MP97/04	December 2017	
MP97/05	December 2017 (All parameters Except E. Coli and Enterococci)	
MP00/07	Not sampled	
MP00/08	Not sampled	
DESAL1	September 2016	
DESAL2	September 2016	
DESAL3	September 2016	
DESAL3		



5 SAMPLING METHODOLOGY

Monthly groundwater level gauging in WwTP and IWTP bores has been undertaken by Trility in parallel with the quarterly groundwater sampling each September, December, April and June, with reference to industry standards including AS/NZS 5667.11:1998 Water Quality Sampling – Guidance on sampling of groundwater (AS/NZS 5667.11).

Groundwater sampling was conducted using low-flow sampling techniques to obtain samples representative of groundwater within the uppermost aquifer which may be impacted. This technique has been recognised by National Environmental Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 (NEPM [2013]).

As indicated by Trility, groundwater bores were purged using a peristaltic pump and sampled via dedicated low-density polyethylene tubing at each location. During purging, groundwater level measurements were recorded to confirm that drawdown within the bores stabilised as required by the low-flow groundwater sampling procedure.

Groundwater quality parameters including pH, temperature, electrical conductivity (EC), salinity, dissolved oxygen (DO), and oxidation reduction potential (ORP) were recorded continually during the purging process using a calibrated YSI Professional Plus multi-parameter water quality meter fitted with a flow-through cell. The samples were collected when these parameters stabilised i.e the purged groundwater is representative of the aquifer conditions. The groundwater sampling records provided by Trility are given in Appendix A.

It is understood that decontamination of non-dedicated sampling equipment between each sampled bore was undertaken using a phosphate-free detergent and rinsed with laboratory grade deionised water between sampling locations, in accordance with AS/NZS 5667:11.

Samples used for dissolved metals analysis were filtered in the field using a 0.45 μ m filter and placed in the appropriately preserved sample bottles provided by the testing laboratory as required for individual analyses. Samples were stored in a chilled portable cooler immediately after collection and were delivered under similar conditions to the analytical laboratories with accompanying chain of custody (COC) documentation.

The laboratory used for the program was Australian Laboratory Services Pty Ltd (ALS), a laboratory accredited by the National Association of Testing Authorities (NATA) with analysis of the samples being conducted under NATA approved methodologies as required under condition G15-AW (b) of the Environmental Authority.





6 MONITORING RESULTS

A summary of the analytical results is provided in Appendix B and is discussed in the sections below. Laboratory certificates and chain of custody (COC) documentation provided by Trility are given in Appendix C.

6.1 Rainfall

The rainfall recorded for the April to June 2020 quarter was 170.7 mm for the WwTP and 149.2 mm for the IWTP. This was significantly less rainfall compared with the rainfall recorded for the same quarter in 2019 which had 241.6 mm and 289 mm of rainfall at the WwTP and IWTP respectively.

The total annual rainfall recorded at the WwTP and IWTP was 949.5 mm and 929.5 mm respectively for the annual monitoring period (Table 6-1). This indicates dryer wet season compared to previous wet season rainfall figures of 1,191.9 mm and 996 mm recorded at locations for the WwTP and IWTP respectively. Rainfall was the highest in February 2020 with the volume comparative to the total volume for the entire October 2019 - March 2020 wet season.

Month	WwTP	IWTP
Jul-19	7.5	12
Aug-19	14.5	17
Sep-19	1.5	0
Oct-19	113.9	117.5
Nov-19	16.75	7.8
Dec-19	46.2	36.05
Jan-20	67.8	54.05
Feb-20	422.65	451.95
Mar-20	88.0	83.7
Apr-20	91.2	77
May-20	38.5	36.0
Jun-20	41.0	36.2
Total	949.5	929.25

Table 6-1 Rainfall Data

6.2 Field Observations during Groundwater Sampling

Groundwater level contour maps for each month within the April to June 2020 quarter for IWTP are presented in Figure 6-1 to Figure 6-6 for WwTP are presented in Figure 6-4 to Figure 6-6.

6.2.1 IWTP

Groundwater level gauging results for the monitoring period for IWTP bores are presented in Table 6-2.

Table 6-2 Gr	roundwater Gauging D	ata, IWTP July 2019 <mark>–</mark> Ju	ne 2020
--------------	----------------------	---------------------------------------	---------

Marchie	Groundwater Elevation (m AHD) ¹			
Month	DESAL1	DESAL2	DESAL3	
July 2019	16.639	16.769	15.558	
August 2019	16.535	16.723	15.512	



Month	Groundwater Elevation (m AHD) ¹							
Month	DESAL1	DESAL2	DESAL3					
September 2019	16.49	16.606	15.433					
October 2019	16.57	16.704	15.649					
November 2019	16.357	16.49	15.657					
December 2019	16.333	16.415	16.311					
January 2020	16.174	16.311	15.087					
February 2020	17.013	17.11	15.96					
April 2020	16.874	17.032	15.779					
May 2020	16.687	16.860	15.667					
June 2020	16.674	16.82	15.659					

¹ m AHD = metres Australian Height Datum

During the September, December, April and June sampling events the following physical characteristics of the bores were noted by Trility representatives:

• Water colour was generally ranging between light brown and very dark brown; and

The water odours ranged from no odour to very odorous.

6.2.2 WwTP

Groundwater level gauging for the monitoring period for WwTP is summarised in Table 6-3.

Table 6-3Groundwater Gauging Data, WwTP July 2019 – June 2020

Month				Ground	water Elevat	ion (m AHD))1		
Month	STP1	STP2	MP97/01	MP97/02	MP97/03	MP97/04	MP97/05	MP00/07	MP00/08
July 2019	29.243	6.888	Dry	Dry	Dry	Dry	Dry	Dry	Dry
August 2019	29.109	6.794	Dry	Dry	Dry	Dry	Dry	Dry	Dry
September 2019	29.013	6.685	Dry	Dry	Dry	Dry	Dry	Dry	Dry
October 2019	28.879	6.560	18.908	8.102	7.124	6.020	5.309	Dry	Dry
November 2019	28.818	6.499	18.658	Dry	Dry	Dry	Dry	Dry	Dry
December 2019	28.776	6.388	Dry	Dry	Dry	Dry	Dry	Dry	Dry
January 2020	28.678	6.252	Dry	Dry	Dry	Dry	Dry	Dry	Dry
February 2020	28.836	6.510	Dry	Dry	8.209	Dry	5.749	15.355	13.470
April 2020	28.833	6.738	19.100	8.152	7.129	6.020	5.314	Dry	12.680
May 2020	28.906	6.780	18.974	8.117	7.127	6.015	5.304	Dry	12.445
June 2020	28.856	6.707	19.258	8.112	7.363	6.370	5.948	Dry	Dry

¹ m AHD = metres Australian Height Datum

During the September, December, April and June sampling events the following physical characteristics of the groundwater were noted by Trility representatives:



- Water colour was generally clear at the STP1 and STP2 bores;
- The water in STP1 was mostly odourless;
- The water at STP2 on occasion was noted to have had a low odour; and
- The MP bores were found to be dry for almost the entire year, likely due to the relatively low rainfall experienced during this annual period compared to previous years.

Published on Principal 2009

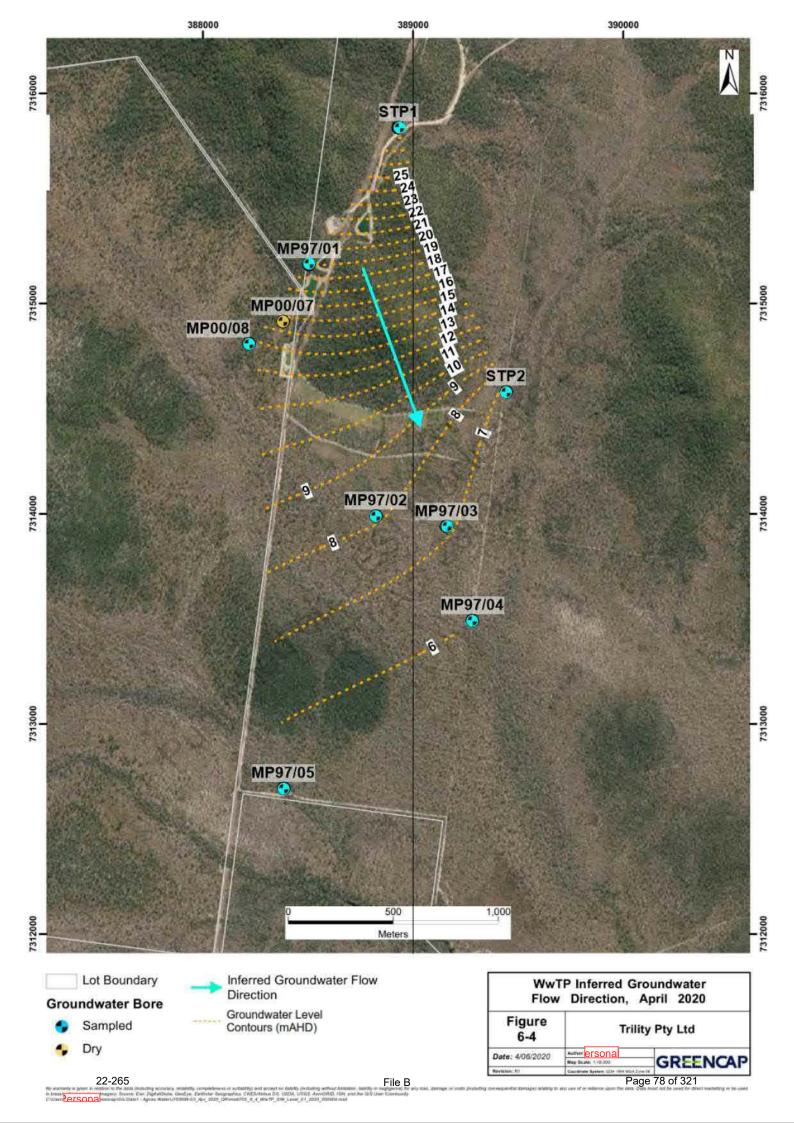


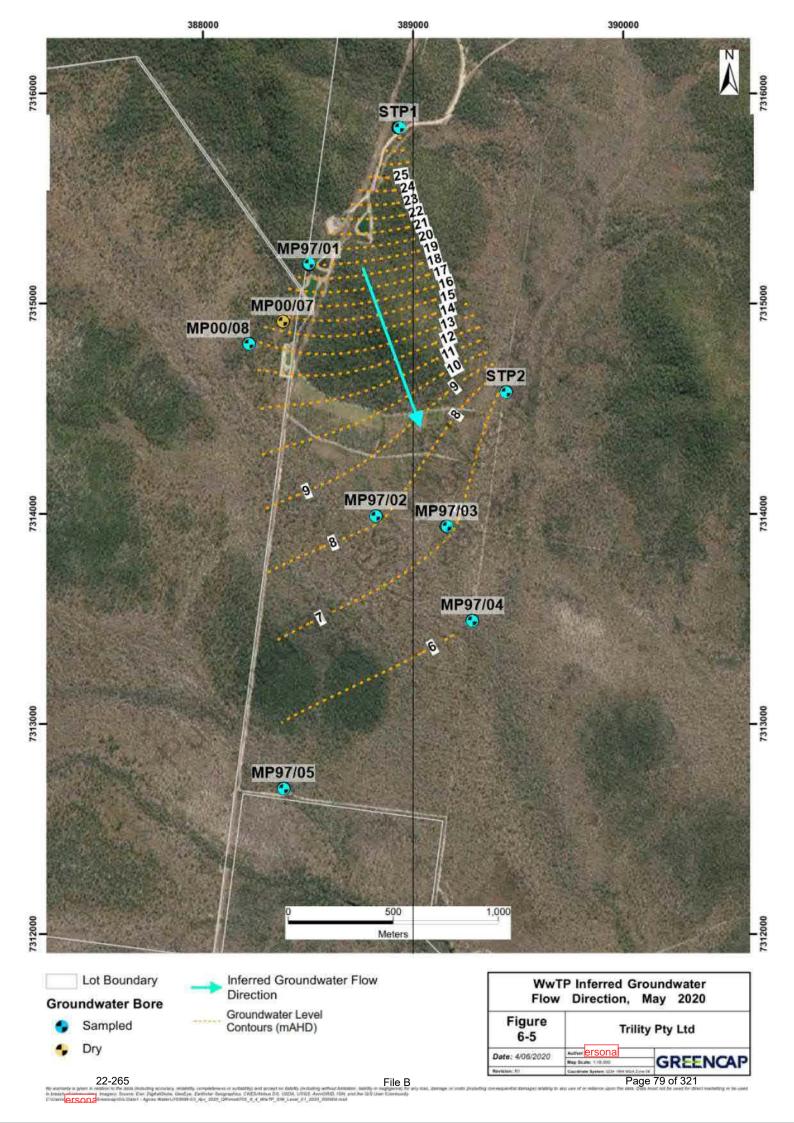


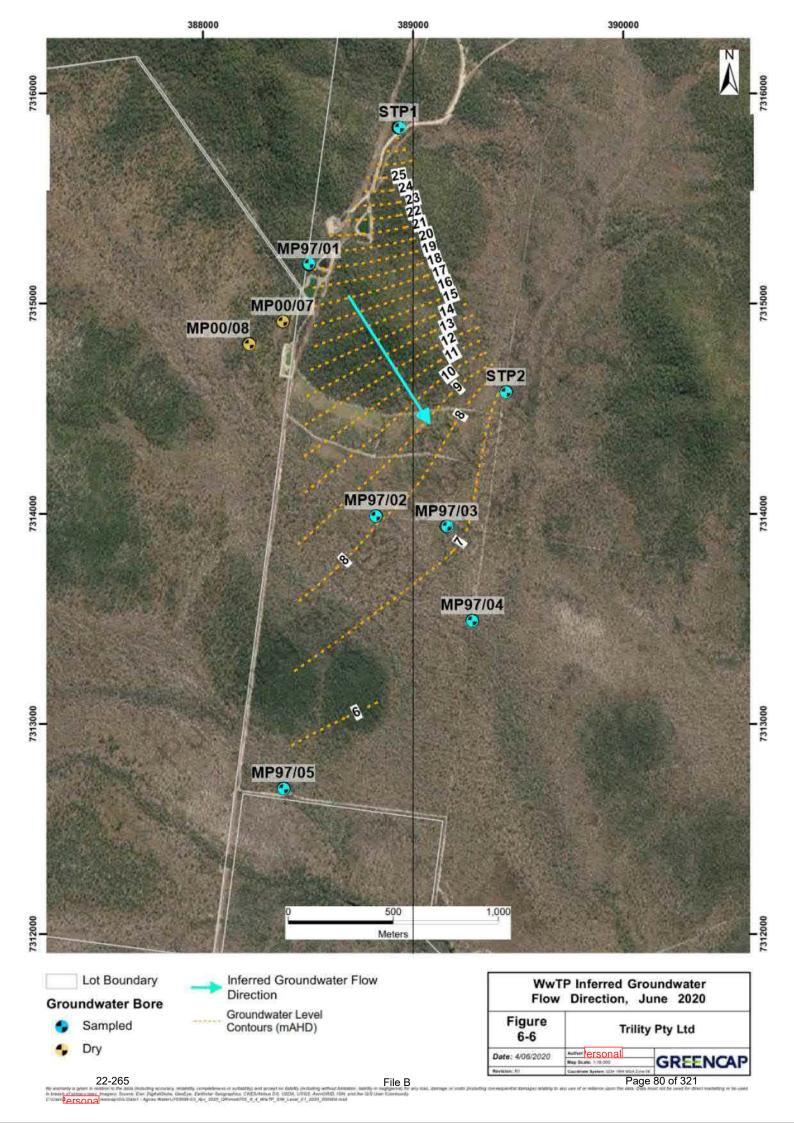
ele (gar Dates, ryllowe methodographical "Alla" 2003, "Disponsibles", a "Mata", "and "Yoon", 04" 323,0" 50004 was MA



ele (gar Dates, ryllowe methodographical "Alla" 2003, "Disponsibles", a "Mata", "and "Yoon", 04" 323,0" 50004 was MA









6.3 Field Parameter Measurements

Physico-chemical groundwater quality parameters were monitored during purging and prior to sampling. Parameters measured were pH, electrical conductivity (EC), dissolved oxygen (DO), temperature and oxidation reduction potential (ORP). Samples were collected and tested at all IWTP and WwTP bores that were not dry.

6.3.1 June 2020 Quarterly Results

The June 2020 quarterly results are presented in the table below. Gray shading indicates an exceedance of the adopted trigger values (refer Section 4).

	Physico-Chemical Parameters										
Monitoring locations	pH ¹ (pH Units)	EC ² (µS/cm)	DO ² (mg/L)	Temperature ³ (°C)	ORP ³ (mV)						
WwTP			20	9							
STP1	6.67	3,844	0.85	23.7	1.0						
STP2	6.50	12,069	0.49	23.8	80.0						
IWTP			-1 00								
DESAL1	4.1	343.1	0.18	24.5							
DESAL2	4.3	238.2	0.32	23.8							
DESAL3	5.07	202	0.34	26.3							

Table 6-4	Field Measured	Water Quality	/ Parameters	lune 2020
			y i ui ui ii ci ci s	

¹ The criteria for pH exceedance is any change from the background-derived trigger value,

² The criteria for dissolved oxygen and electrical conductivity exceedance is a 20% change down from the background value,

³ No associated trigger value

These results indicate that the groundwater within the WwTP bores is generally neutral and within IWTP bores is acidic. These results are consistent with previous quarterly results. The dissolved oxygen is low, which is expected in groundwater aquifers.

The salinity of the IWTP groundwater is indicative of fresh water, whilst the salinity of the background WwTP bores is highly variable and tending towards saline.

6.3.2 IWTP Annual Summary

The field results collected from IWTP bores during the monitoring period are summarised as follows:

- Measured pH ranged from 4.1 to 5.07 pH units at the IWTP sites, indicating acidic groundwater;
- Electrical conductivity (EC) results ranged from 202 to 343.1 µS/cm at the IWTP, indicating freshwater;
- Dissolved oxygen (DO) was relatively consistent across the IWTP bores, ranging from 0.18 to 0.34 mg/L;
- Temperature was relatively consistent across the IWTP bores, ranging from 23.8 to 26.3 °C; and
- Oxidation reduction potential (ORP) ranged from -174.6 mV at the downgradient bore DESAL3 to +381 mV at upgradient bore DESAL2. (note: no ORP readings were recorded during June 2020 monitoring event).





Of the parameters listed above, trigger values apply to pH, EC and DO. The following exceedances of the adopted background trigger values were recorded during the monitoring period:

- pH exceedances ranging from 3.6 to 4.74 pH units in all monitoring rounds;
- EC exceedances ranging from 194 to 298.7 µS/cm in all monitoring rounds; and
- DO exceedances ranging from 0.32 to 0.88 mg/L in all monitoring rounds.

6.3.3 WwTP Annual Summary

The field results collected from the background WwTP bores during the monitoring period are summarised as follows:

- Measured pH ranged from 6.5 to 6.67 pH units, indicating slightly acidic groundwater;
- Electrical conductivity (EC) results ranged from 3,844 to 12,069 µS/cm at the WwTP, indicating a high degree of variability in salinity levels across the bores at the WwTP;
- Dissolved oxygen (DO) was relatively consistent across the WwTP bores, ranging from 0.49 to 0.85 mg/L;
- Temperature was relatively consistent across the WwTP bores, ranging from 23.7 to 23.8°C; and
- Oxidation reduction potential (ORP) ranged from -24.6 to 119.4 mV.

Of the parameters listed above, trigger values apply to pH, EC and DO. The following exceedances of the adopted trigger values at the background WwTP were recorded during the monitoring period:

- pH exceedances ranged from 6.35 to 6.71 pH units in all monitoring rounds;
- DO exceedances ranged from 0.25 to 1.13 mg/L in all monitoring rounds.

6.4 Laboratory Results

6.4.1 June 2020 Quarterly Results

Only background bores STP1 and STP2 were found to contain groundwater during the June 2020 quarterly event at WwTP. Other monitoring bores were found to be dry. The groundwater quality exceeded adopted trigger values at the background WwTP bores for:

- Ammonia;
- Chloride;
- Total Nitrogen;
- Total Phosphorus;
- Sulphate as S;
- Dissolved Cobalt;
- Cobalt;
- Nickel;
- Zinc
- Chromium

All three groundwater bores at IWTP were sampled during the June 2020 monitoring event. The groundwater quality exceeded adopted trigger values within the IWTP bores for:

- Ammonia;
- Chloride;
- Nitrate;
- Total Nitrogen;
- Total Phosphorus;
- Aluminium;

24

greencap.com.au



- Dissolved Aluminium;
- Total Chromium;
- Dissolved Chromium;
- Dissolved Copper and
- Dissolved Zinc.

These exceedances are summarised in Table 6-5, and Appendix B-1 presents a summary of the June 2020 reported results, trigger values and exceedances.

Table 6-5Groundwater Trigger Value Exceedances, June 2020

Parameter	Trigger Value	Bores Exceeding Trigger Value	Range of Reported Exceedances
Background WwTP Bor	res		
Ammonia	20% change from background	STP1, STP2	0.03 mg/L
Chloride	20% change from background	STP1, STP2	1,020 – 3,850 mg/L
Total Nitrogen	20% change from background	STP1, STP2	0.1 – 0.4 mg/L
Total Phosphorus	20% change from background	STP1, STP2	0.1 – 0.07 mg/L
Sulphate as S	No change from background	STP1, STP2	97 - 379 mg/L
Dissolved Cobalt	1.4 μg/L	STP2	2.0 μg/L
Cobalt	1.4 μg/L	STP2	50 μg/L
Nickel	11 µg/L	STP1	12.0 µg/L
Zinc	8 µg/L	STP2	17.0 µg/L
Chromium	1 µg/L	STP1	2.0 μg/L
IWTP	02		
Ammonia	20% change from background	DESAL1, DESAL2, DESAL3	0.12 – 0.47 mg/L
Chloride	20% change from background	DESAL1, DESAL2, DESAL3	42 – 77 mg/L
Nitrate	20% change from background	DESAL1	0.3 mg/L
Total Nitrogen	20% change from background	DESAL1	1.4 mg/L
Total Phosphorus	20% change from background	DESAL1, DESAL2, DESAL3	0.01 – 0.14 mg/L
Aluminium	55 μg/L	DESAL1, DESAL2, DESAL3	620 – 840 µg/L
Dissolved Aluminium	55 μg/L	DESAL1, DESAL2, DESAL3	610 – 1,000 μg/L
Total Chromium	1.0 μg/L	DESAL1	3.0 µg/L
Dissolved Chromium	1.0 μg/L	DESAL1	3.0 µg/L
Dissolved Copper	1.4 µg/L	DESAL1, DESAL2	2.0 µg/L
Dissolved Zinc	8 µg/L	DESAL2	9.0 µg/L





6.4.2 IWTP Annual Summary

Groundwater exceeded adopted trigger values at some of the IWTP bores for ammonia, chloride, nitrate, total nitrogen, total phosphorous, sulphate, total and dissolved chromium and total copper over the reporting period (refer Table 6-6). Appendix B-2 presents a summary of all reported results and exceedances.

			-
Parameter	Monitoring Period	Bores Exceeding Trigger Value	Range of Reported Exceedances
Ammonia	September 2019, December 2019, April 2020, June 2020	DESAL1, DESAL2, DESAL3	0.08 – 0.39 mg/L
Chloride	September 2019, December 2019, April 2020, June 2020	DESAL1, DESAL2, DESAL3	47 – 77 mg/L
Nitrate	September 2019, December 2019, April 2020, June 2020	DESAL1, DESAL2	0.02 – 0.76 mg/L
Total Nitrogen	December 2019, April 2020	DESAL1, DESAL2	1.0 – 2.0 mg/L
Total Phosphorous	September 2019, December 2019, April 2020, June 2020	DESAL1, DESAL2, DESAL3	0.01 – 0.14 mg/L
Sulphate as S	September 2019, April 2020	DESAL1, DESAL2	2.0 – 5.0 mg/L
Total Chromium	September 2019, December 2019, April 2020, June 2020	DESAL1, DESAL2, DESAL3	3.0 – 4.0 µg/L
Dissolved Chromium	September 2019, December 2019, April 2020, June 2020	DESAL3	2.0 – 3.0 µg/L
Total Copper	September 2019, April 2020	DESAL2, DESAL3	2.0 µg/L
Pulolis	ned R1.		

Table 6-6Groundwater Trigger Value Exceedances, IWTP July 2019 – June 2020

greencap.com.au





6.4.3 WwTP Annual Summary

Groundwater exceeded adopted trigger values only at the background WwTP bores STP1 and STP2 for ammonia, total nitrogen, total phosphorous, sulphate and boron (Table 6-7), noting that these 'exceedances" are not associated with WwTP activities. Appendix B-3 presents a summary of all reported results and exceedances.

T (D	0 1 1 7		
Table 6-7	Groundwater	I ridder Value Exceedances	, WwTP July 2019 – June 2020

88	,					
Monitoring Period	Bores Exceeding Trigger Value	Range of Reported Exceedances				
September 2019, December 2019, April 2020	STP1, STP2	0.18 – 0.25 mg/L				
April 2020, June 2020	STP1, STP2	0.1 – 0.4 mg/L				
September 2019, December 2019, April 2020, June 2020	STP1, STP2	0.01 – 0.07 mg/L				
September 2019, December 2019, April 2020, June 2020	STP1, STP2	92 – 381 mg/L				
September 2019, December 2019, April 2020, June 2020	STP1, STP2	<50 – 80 µg/L				
ned on RTIA						
	September 2019, December 2019, April 2020 April 2020, June 2020 September 2019, December 2019, April 2020, June 2020 September 2019, December 2019, April 2020, June 2020 September 2019, December	Monitoring PeriodTrigger ValueSeptember 2019, December 2019, April 2020STP1, STP2April 2020, June 2020STP1, STP2September 2019, December 2019, April 2020, June 2020STP1, STP2				

greencap.com.au





7 QUALITY ASSURANCE AND QUALITY CONTROL

7.1 June 2020 Quarterly QA/QC

7.1.1 Field Duplicates

Only intra-laboratory duplicates were collected and tested during the June 2020 groundwater sampling. Calculated relative percent differences (RPD) between primary and duplicate samples were below the acceptable threshold of 50%.

7.1.2 Laboratory

A summary of laboratory quality assurance and quality control (QA/QC) data is presented in Table 7-1.

Laboratory QA/QC data

Table 7-1

Report #	Analysis Within Holding Tim	Lab. Duplicate e RPD %	Lab Matrix Spike Recovery	Lab. Control Sample	Lab Method Blank				
EB2016548 (IWTP)	Р	Р	СР	Р	Р				
EB2016812 (WwTP)	Р) Р Р Р			Р	Р				
P= Pass X = Fail - = no	ot required *	= refer to report text							
Quality Assurance Criteria	(Quality Control Criteria							
Holding Times	1	Accuracy							
Volatile Organic Carbons 1 and water		Matrix spike, control sample: 70-130%, depending on analyte. Surrogate recovery: 50-150%, depending on analyte.							
Semi Volatile Organic Carb water, 14 days soil	ons 7 days	Precision							
Metals 6 months, Mercury		Method Blank: Not detected Duplicate: No limit (<10xLOR), 0-50% (10-20xLOR), 0-20% (>20xLOR)							

As shown in Table 7-1 all analytical laboratory quality control data was within acceptable limits.





7.2 Annual Field QA/QC Results

The QA/QC samples collected include:

- Intra-laboratory sample (duplicate assesses reproducibility of results through by the primary NATAaccredited laboratory);
- Inter-laboratory sample (triplicate assesses reproducibility of results through a second NATA-accredited laboratory);
- Field rinsate blank sample (assesses effectiveness of sampling equipment decontamination procedures);
- Field blank sample (assesses potential for sample contamination during sampling); and
- Trip blank sample (assesses for contamination during transportation).

The duplicate/triplicate results were within the adopted acceptance criteria of 30-50% (Australian Standard AS4482.1-2005 Guide to the investigation and sampling of sites with potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds) relative percent difference (RPD), for samples where results were greater than 10 times the laboratory's limit of reporting.

All blank results we reported below laboratory limits of reporting indicating no cross contamination between samples occurred.

Issues have arisen where laboratory results for dissolved metals have returned higher concentrations than the associated total metal. As indicated by the analytical laboratory used this is likely to be a result of the use of different methods for total and dissolved chemicals. This will be further verified during the next sampling rounds.

7.3 Annual Laboratory QA/QC Data

7.3.1 Quality Control Measures

Quality assurance and quality control measures for this investigation included:

- Use of standard water sampling procedures, including decontamination of equipment;
- Appropriate sampling containers, sample labelling, preservation, storage and transport under COC procedures;
- Samples submitted to laboratory within appropriate holding times to extract and conduct sample analyses; and
- Use of laboratories that hold National Association of Testing Authorities (NATA) accreditation for the analyses undertaken.

7.3.2 Laboratory Quality Control

The analysis of matrix spikes, surrogate spikes, control spike recoveries and laboratory duplicates was undertaken by the laboratory. A review of laboratory quality control is summarised below:

- All samples were received by the laboratory in good condition, chilled and within appropriate holding times for analysis, with the following exception;
- All samples were extracted and analysed within the recommended holding times;
- Laboratory limits of reporting were less than the adopted trigger values in most analytes with the exception of mercury (LOR 0.1 μg/L, Trigger Value 0.06 μg/L) and selenium (LOR 10 μg/L, Trigger Value 5.0 μg/L. However, these analytes are not chemicals of concern and are not considered significant to the outcome of this report.



- The majority of matrix spike recoveries, surrogate spike recoveries and control spike recoveries were within an acceptable range (laboratory's historical statistical range). Some matrix spike outliers occurred during testing. The laboratory advised that the matrix spike recovery was not determined as the background level was greater than or equal to 4x spike level, or that the spike recovery was greater than the upper data quality objective. This was not considered to affect the validity of the data. These analytes were:
 - Samples associated with the WwTP and IWTP batches analysed for sulphate and chloride in September 2019;
 - > One sample associated with the IWTP batch analysed for ammonia in December 2019;
 - > One sample associated with the IWTP batch analysed for chloride in April 2020;
 - Samples associated with the WwTP and IWTP batches analysed for Sulphate in June 2020
- Surrogate spike recoveries were reported within the laboratory control limits for all samples; and
- All laboratory sample RPDs were within the acceptable range.

The laboratory noted that total concentrations were less than dissolved concentrations for some metal analytes in both WwTP and IWTP samples at various points during the monitoring period, however the laboratory considered that the difference was within experimental variation. Further explanation should be requested from the laboratory.





8 DISCUSSION AND TREND ANALYSIS

The following sections discuss the results of groundwater sampling events conducted during the July 2019 – June 2020 annual monitoring period.

It is important to note that the exceedances for most parameters reported in quarterly reports and in Section 6 of this report were based on comparison with the results of the initial groundwater monitoring undertaken in September 2016. The result from this single round have been used to develop a set of trigger levels discussed in Section 4.

Based on the groundwater sampling results collected to date some variations in chemical concentrations were noted which may be attributable to seasonal variation associated with groundwater level fluctuations and rainfall recharge, rather than groundwater impacts associated with site activities.

Aside from trigger values developed based on the initial groundwater monitoring event, concentrations of metals were also compared against water quality criteria specified by the ANZECC 2000 guideline. Although some exceedances were noted against these criteria, the reported concentrations of metals are likely to be naturally elevated as they we reported in the bores which monitor the background quality of groundwater. Such seasonal variations would need to be assessed to establish true background levels and enable identifications of impacts associated with the site activities.

This section summarises the annual trends in groundwater results and discusses potential causes for the changes in reported concentrations of chemicals of concern and other water quality parameters.

A summary of sampling results is presented in Appendix B, and graphs are presented in Appendix E.

8.1 IWTP

8.1.1 Groundwater Levels

Groundwater levels at the IWTP bores remained relatively consistent during the annual monitoring period, with groundwater level ranging from approximately 15.1 mAHD at DESAL3 to 17.1 mAHD at DESAL2 (Figure 8-1).

The groundwater level contours plotted using September 2019 (dry season) and February 2020 (wet season) gauging data (Figures D-3 and D-14, Appendix D) show that the direction of the groundwater flow was to the west and south west (away from the coastline). This remained consistent through both seasons and was consistent with previous monitoring rounds.



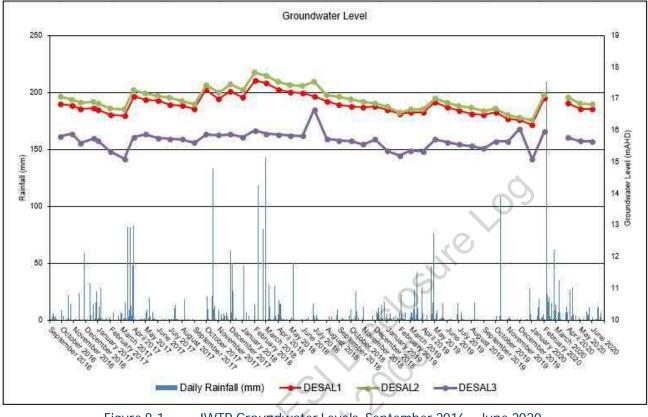


Figure 8-1 IWTP Groundwater Levels, September 2016 – June 2020

8.1.2 Field Parameters

Field parameter which have trigger values assigned include dissolved oxygen (DO), electrical conductivity (EC) and pH. The trigger values for DO, EC and pH are based on percentage change or any change from the adopted background value. The data used to assess trends is presented in Appendix B-2 and the reported values plotted against rainfall are shown in Figures 1 to 3, (Appendix E).

The following observations were made for field parameters at the IWTP for the annual monitoring period:

- No continuous increasing and/or decreasing trends in DO in all three bores (DESAL1, DESAL2, DESAL3) were noted. DO variations appeared to be associated with rainfalls;
- EC levels in the downgradient bore DESAL3 were similar to the background bores DESAL1 and DESAL2, indicating no noticeable impacts have occurred.
- pH levels remained generally consistent at all three bores, including background and downgradient. pH levels indicated that groundwater was generally acidic at the IWTP.





8.1.3 Chloride and Sulphate

Graphs for chloride and sulphate plotted against rainfall are presented in Figures 4 to 5 (Appendix E). The following observations were made for the annual monitoring period:

- Chloride concentrations showed similar pattern to EC levels (discussed above) with no indication of impacts in the downgradient bore DESAL3 throughout the annual monitoring period; and
- Sulphate was not detected within the groundwater with the exception of background bores DESAL2 in January 2020 and DESAL1 in May 2020.

Overall, no particular trends were noted for the monitoring period.

8.1.4 Nutrients

Graphs for ammonia, nitrate, total nitrogen and total phosphorus plotted against rainfall are presented in Figures 6 to 9 (Appendix E).

The following observations were made for nutrients at the IWTP for the annual monitoring period:

- Ammonia concentrations increased in all three bores over the annual monitoring period but is still within the historical range. Ammonia level in the background bore DESAL3 has always been higher compared to background bores DESAL1 and 2, with no notable long-term increasing trends.
- Nitrate returned the highest concentration since monitoring began in 2016 at the background bore DESAL2 in July 2019, but has steadily decreased over the monitoring period, consistent with historical results. Nitrate levels fluctuated in the background bore DESAL1 over the monitoring period but were consistent with historical results. Nitrate was not detected within DESAL3 over the annual monitoring period.
- Total nitrogen returned the highest concentration since monitoring began in 2016 at DESAL2 in August 2019, but has steadily decreased over the monitoring period, consistent with historical results.

Variations in nutrients may occur as a result of alteration of the physicochemical conditions in the groundwater. This may result in the conversion of ammonia to nitrate and vice versa as a result of variation in ORP levels. There appears to be no consistent seasonal influences on nutrient concentrations, however as DESAL3 is downgradient and has the lowest nutrient concentrations, nutrients found in the groundwater are unlikely to be a result of site activities.

8.1.5 Metals

Graphs for (all dissolved) aluminium, cadmium, chromium (III+VI), cobalt, copper, iron, manganese, mercury, nickel, selenium, tin, and zinc, as well as boron, are plotted against rainfall and presented in Figures 10 to 22 (Appendix E). For the purposes of this discussion, emphasis has been given to the dissolved rather than the total metal results, as metals in the dissolved phases can migrate with groundwater and provide a better indication of potential groundwater contamination.

The following observations were made for metals at the IWTP during the annual monitoring period:

- DESAL1 and DESAL3 showed the same trend in fluctuations of dissolved aluminium, whilst DESAL2 decreased in concentrations over the annual monitoring period. The levels of aluminium in the downgradient DESAL 3 was reported to be higher than background levels
- No concentrations of boron, dissolved cadmium, dissolved mercury, dissolved selenium or dissolved tin were detected above laboratory limits of reporting within any of the three bores over the monitoring period.





- Dissolved chromium and dissolved cobalt were detected within the downgradient DESAL3 in all four monitoring events, however they were not detected within background bores DESAL1 or DESAL2.
- Dissolved manganese and dissolved nickel returned higher concentrations at the downgradient bore DESAL3 compared to the background levels at DESAL1 and DESAL2. The reported levels of these metals have a notable decreasing trend in DESAL3 since initial monitoring rounds in 2016.
- DESAL2 and DESAL3 showed the same trend in fluctuations of dissolved zinc potentially associated with seasonal variations, whilst no dissolved zinc was detected within DESAL1 over the annual monitoring period.

Fluctuations of dissolved metal concentrations during this annual monitoring period do not correlate with changes in the physiochemical parameters (pH, EC, DO). DESAL3, which is downgradient bore, generally has higher concentrations of several dissolved metals compared to DESAL1 and DESAL2, although no increasing trends were evident.

This will be reviewed as data from subsequent monitoring becomes available.

8.1.6 Microbiological Parameters

Concentrations of E. Coli and Enterococci at the IWTP bores were below the limit of reporting for the entire monitoring period. No further discussion was considered necessary.

8.2 WwTP

Groundwater monitoring at the WwTP area is required to assess potential impacts on groundwater quality from treated wastewater disposed via irrigation on an area shown on Figure 2-2 or as a result of wastewater seepage from the treatment ponds.

As discussed in Section 6, several bores (97/01, 97/02, 97/03, 97/04, and 97/05) located down inferred hydraulic gradient from the WwTP facilities and irrigation area were found to be ether dry or did not have sufficient volume of water to collect a sample during all four sampling rounds conducted within this annual period.

8.2.1 Groundwater Levels

Groundwater levels at the background WwTP bores remained relatively stable with minor seasonal variations during the annual monitoring period, with groundwater levels ranging from approximately 28.68 to 29.24 mAHD at STP1 and 6.25 to 6.94 mAHD at STP2 (Figure 8-2). This range in groundwater elevation is driven by the variation in ground levels.

The groundwater level contours plotted using September 2019 (dry season) and February 2020 (wet season) gauging data (Figures D-6 and D-16, Appendix D) show that the inferred direction of the groundwater flow was in a south-easterly direction. This remained consistent through both seasons.



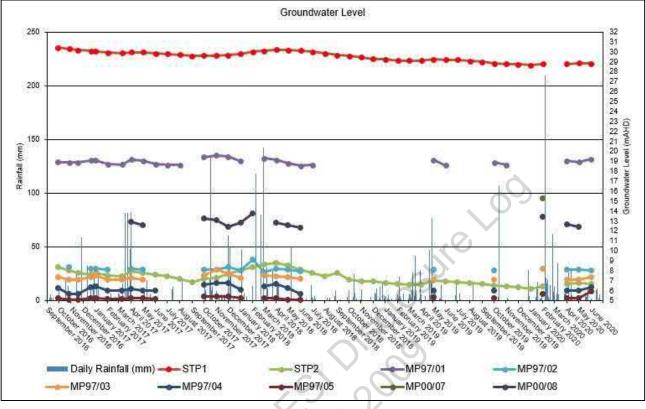


Figure 8-2 WwTP Groundwater Levels, September 2016 – June 2019

8.2.2 Field Parameters

The trigger values for dissolved oxygen (DO), electrical conductivity (EC) and pH are based on changes from the background values based on the initial monitoring event conducted in September 2016.

The annual data is presented in Appendix B and plotted against rainfall in Figures 23 to 25 (Appendix E).

It is also noted that only background bores were sampled during this reporting period and the variations in reported values are not attributable the WwTP activities.

The following observations were made for field parameters at the WwTP for the annual monitoring period:

- Variations in DO may be associated with rainfall events;
- Relatively consistent EC levels across the monitoring period with STP1 indicating that the groundwater is slightly saline and STP2 indicating that the groundwater is highly saline; and
- pH levels were relatively consistent, with the pH level indicating slightly acidic to near neutral pH levels.



8.2.3 Chloride and Sulphate

Graphs for chloride and sulphate plotted against rainfall are presented in Figures 26 to 27 (Appendix E). Overall, no notable trends were observed during the monitoring period for chloride and sulphate in the background groundwater.

8.2.4 Nutrients

Graphs for ammonia, nitrate, total nitrogen, and total phosphorus plotted against rainfall are presented in Figures 28 to 31 (Appendix E).

The following observations were made for nutrients levels in the background groundwater at the WwTP for the annual monitoring period:

- Ammonia results showed a decreasing trend over the annual monitoring period in STP1 after a spike concentration detected in June 2019. Conversely an increase in ammonia occurred in January 2020 at STP2.
- A small spike in nitrate was detected in April 2020 at STP1 but returned to non-detect in June 2020.
- A small spike in total nitrogen occurred at both STP1 and STP2 in April 2020 but returned to nondetect in June 2020.
- A large spike in total phosphorous was detected in April 2020 at STP2 but returned to non-detect in June 2020. Total phosphorous levels remained consistent throughout the annual monitoring period at STP1.

As these two bores are only background bores were sampled no comments can be made in relation to any impacts from site activities. This will be assessed further when more data becomes available.

8.2.5 Metals

Graphs for (all dissolved) aluminium, cadmium, chromium (III+VI), cobalt, copper, iron, manganese, mercury, nickel, selenium, tin, and zinc, as well as boron, are plotted against rainfall and presented in Figures 32 to 44 (Appendix E). For the purposes of this discussion, emphasis has been given to the dissolved rather than the total metal results, as metals in the dissolved phase can migrate with groundwater and provide a better indication of potential groundwater contamination.

The following observations were made for metals in the background groundwater at the WwTP for the annual monitoring period:

- Some variation in boron was noted at STP1 and STP2, with concentrations increasing in December 2019;
- Dissolved copper increased at both bores in August 2019, but was below the laboratory's limit of reporting from October 2019 onwards; and
- Dissolved aluminium, cadmium, chromium, mercury, selenium, tin zinc remained undetected in both bores.

As only background bores were sampled no comments can be made in relation to any impacts from site activities. This will be assessed further when more data becomes available.

8.2.6 Microbiological Parameters

Graphs for E. Coli and Enterococci plotted against rainfall and presented in Figures 45 to 46 (Appendix E). E. Coli and Enterococci were not reported to be present in the background bores STP1 and STP2.

36





9 CONTAMINATION ASSESSMENT & CONCLUSIONS

While some variations in groundwater parameters were noted at both the IWTP and WwTP sites, these variations were not interpreted to be associated with the onsite activities.

It is important to note that monitoring at the WwTP is limited to only background bore as the bores downgradient from site activities and infrastructure are dry most of the time or the volume of groundwater is not sufficient to fill necessary sampling containers. It is also noted that the depth of pre-existing bores MP97/01, MP97/02, MP97/03, MP97/04, MP97/05, MP00/07 and MP00/08 are all less than 2m, and to obtain better indication of down-gradient groundwater quality, it is recommended that deeper wells are installed in these locations.

On the basis of the information set out above, and the limited record of data as discussed above, the monitoring data reported by Trility during the annual monitoring period at both the WwTP and the IWTP did not indicate the presence of groundwater contamination associated with the onsite activities.

A review of trigger levels was conducted in July 2020 and the results of this review should be adopted and used during the next monitoring events.

greencap.com.au



-josure Lor

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment

Plant, Agnes Water

Appendix A: Groundwater Field Sampling Records

greencap.com.au

Adelaide | Auckland | Brisbane | Canberra | Darwin | Melbourne | Newcastle | Perth | Sydney | Wollongong

ALS	CHAIN OF CUSTODY ALS Laboratory: please tick →	UCLADSTONE 48 Callemo DIGLADSTONE 48 Callemo Ph: 07 4978 7944 E: ALSEn	NGP1Nglabal.co Italfora GLP-112 5 5555 amerikan Indah Drive Cik	Phill (27,40044 047) Li Men Triculente Phill (21,4004 047) Phill (21,4004 047)	nterior Inicial Monkay (200-275 1.5. mookary@panightabat.com 2.4. Westali Road Damgeato V 3.5. sutterior, metabarnesitantey Evaluey Road Modgan, NSW 2 1.1. mudgato malegoangeana (2	KPD1-0014	Unite Unite Unite	VCASTLE 0 Res (A006 0473 E 5) ANRA (113 Casary (4423 22001E 5) 4711 (2 Ho2 Way 3 9200 7015 C 5)	Hindih moscash Hitee bonh Nas Coralgalogional Matami WA Ob	killtəhiqtəbəl cə mə 1953X 2543 dam 190	194	Philosophie and a second secon	prior Record Samelihard RESW, 2001 from hydrocyddych galadau cymn grana Cloant Frances (2012) Allyn a wedi'r mraeannwm (Rachogana) cann wedi Nherol Wolfongrong RESW, 2000 Magner glygalau falan Com
CLIENT: TRILITY				ROUND REQUIREMENTS :	Standard TAT (Li	st due date):				FC	OR LABORATORY USE	
OFFICE: AGNES			(Standard e.g., Ultra	TAT may be longer for some lests Trace Organics)	Non Standard or	irgent TAT (List due da	te):				stody Seal Intact?	Yes No I
ROJECT: GROUND		PROJECT NO .:		OTE NO.: BN/222/16			1	STATISTICS.	UENCE NUM	BER (Circle) Fre	e ice / frozen ice bricks pres	
RDER NUMBER:	PURCHASE ORDER NO	0:: 45000 54738	COUNTR	Y OF ORIGIN:			co	C: 1 2	3 4	5 6	Car.	elot? ndom Sample Temperature o	
ROJECT MANAGER	Feisonal III	CONTACT	PH: (07) 49	974 7975			0	1 2	3 4	5 6	and they are	er comment:	C.
AMPLER: p4(6) P		SAMPLER	MOBILE: 4	p4(6) Personal Informa	RELINQUISHED BY:		RE	CEIVED BY:		9		UISHED BY:	RECEIVED BY:
OC Emailed to ALS?	T REST NOT	EDD FORM											NEVENCE BI.
The second se	OnagTRILITY.com.au; awatergroup@	State of the state			DATE/TIME:			TE/TIME:			DATE/TH	ME:	DATE/TIME:
nail Invoice to (will d	lefault to PM if no other addresses are lis	sted): accountspayable	etrility.co	m.au	20000 16.9.	19 12	00 20	CTIONO			100000	145386	CATE/TONE.
OMMENTS/SPECIAL	HANDLING/STORAGE OR DISPOSA	L:					1	3.			1		
	SAMPLE	DETAILS				ANALY	ISIS DEOU			alarotra -	8 - 7/		1
ALS USE ONLY		id(S) Water(W)	- <u>1</u>	CONTAINER INFO	DRMATION							listed to attract suite price) eld filtered bottle required).	Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATI (refer to codes below		TABLET	plt Fishold	Temp Frend	D.0 1.520	Gud Freed	010 (-1000		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	DESAL 1	9.15	w	0	5	×		23.4	0-13	239	306		
2	DESAL 2	10.00	w	, 0	5	х	3.60	23.0	0.15	3.3			
3	DESAL 3	10.40	w	0 0	5	x		25.0	1	399	334		
4	DESAL I Deplecte	9.15	w		5	v		1			1		
				2	~	×	3. 14	23.4	0.15	23.9	306		
			0						Contra pro-				
		0	P.										
													a sector a construction data de sector de la construction de la constr
ter Container Codes O	2=265eserved Plastic, N = Nitric Preserved I VB = VOA Vial Sodium Biaulohate Preserved				TOTAL 20								Page 97 of 321

GREENCAP

No.	in sampling i										
Client: Project: Location:	Trility Groundwater t Agnes Water,	ore installation a	and sampling			Sampled by	94(6) Persona		-		
a o canon.	righes water,	Contraction of the second second	Const Development of the second se	Anna an anna an an an an an an an an an a		Date:	16-9-1	9			
		WELLDETAIL			SAMPLING EC	SAMPLING EQUIPMENT					New York Concerning of the Second
0	1 1	Well depth:	6.4	(m) c		ce: Peristallic (lo	w flow)	GEO#	V	Contraction of the second	
Desc		AAGII OJSWEIGE: 20 WW			Water meter:		the second	YSI#	17		
PCC		Casing type:	WZ		Turbidity Meter			the second s	1		
and the second second		Initial water lev		. 77 (m)	Interphase pro	be:		TM#			
Time	Amount	Cumulative	Water Level	Temperature	DO	Sp. Conductivit	Salinity	IP#		-	-
	purged (L)	purged (L)	(m)	°C	% sat	µS/cm	PSU	pi Uni		ORP	Turbidity
3 45	2L	24	2635	23.5	0.59	256.4	-	3.9	and a state of the	332	NTU
3.49	21	44	2638	23 4	0.57	249-0	-	3.9		317	1
8.53	24	62	2634	23.4	0.36	238 0	-	3.5		319	1
8-57	24	84	2634	23.4	0-18	240.5	-	3.9	Art ar we have	313	-
7.01	24	101	2635	23.4	0.12	242.5	-	3.8			-
-05	24	126	2635	23.4	0-11	238.6	2	3.9	and the second s	305	-
-09	22	146	2635	23.4	0.13	239.9	-	3.9	and the second second second	308	-
.13	22	162	2635	23.4	0.13	239.4	-	3.5		306	1 1
~			semp	e col	lected	and the second se			-	306	
							30	1 1			
							9	1 1			
)				
abilisation Criteri hin ranges)	a (3 readings	N/A	Drawdown			-01		1			
ald obsequally	ons: eg. Nearby a		<10cm	\$ 10%	± 10%	\$ 5%	± 10%	± 0,1		± 10my	N/A
						5					
servations du	ring Sampling:		and the second second	Has water quality m Decontamination pro	eter and turbidity r ocadures followed	nele been celibral	ed in accordance	with operation	ng man	uel and recorded?	Yes
Odours, shear	tour dibidity was	an webber		Samples Taken Metals Plastic*			Number	Duplicie: C	A_1	riplicate: QA	Order
light +	ionnià sta	ined	SI						-+		
000 00	ionnià sta Dour,			Plastic unpreserve	d inorganics (1)	.)			-		
				reserved inorgan	lcs (250mL)						
			10	plass viais (40mL)	1				-	in the second	
		QN.	0	Hass vials (40mL)	eserved (500ml)			+		
		60.		less amber unon lastic nutrients 60 lastic unpreserve	eserved (500mL)mL green/white d inorganics (50						
		<i>2</i> 0.		less amber unon lastic nutrients 60 lastic unpreserve lastic nutrients 60	eserved (500mL 0mL green/white d inorganics (50 0mL light green	OmL.)					
		<i>Rn</i> .	<u>ା</u> ଜାନାନା ଡାନ	less amber unpre lastic nutrients 60 lastic unpreserve lastic nutrients 60 lass amber unpre lastic unpreserve	eserved (500mL 0mL green/white d Inorganics (50 0mL light green 156rvad (100mL d Inomanics (25	0mL)					
NITOPING W		Q	<u>ା</u> ଜାନାନା ଡାନ	lass amber unpro lastic nutrients 60 lastic unpreserve lastic nutrients 60 lass amber unpre	eserved (500mL 0mL green/white d Inorganics (50 0mL light green 156rvad (100mL d Inomanics (25	0mL)					
NITORING WE	LL VOLUMES-	Q	<u>ା</u> ଜାନାନା ଡାନ	less amber unpre lastic nutrients 60 lastic unpreserve lastic nutrients 60 lass amber unpre lastic unpreserve	eserved (500mL 0mL green/white d Inorganics (50 0mL light green 25erved (100mL d Inomanics (25	0mL)					
neter of well ca	LL VOLUMES:-	Q		less amber unpre lastic nutrients 60 lastic unpreserve lastic nutrients 60 lass amber unpre lastic unpreserve	eserved (500mL 0mL green/white d Inorganics (50 0mL light green 25erved (100mL d Inomanics (25	0mL)		and the owner of the local division of the l			
heter of well ca heter of hole di	LL VOLUMES:- ising:	Q	С 19 19 19 19 19 19 19 19 19 19 19 19 19	iless amber unpri- lastic nutrients 60 lastic unpreserve lastic nutrients 60 lass amber unpre- lastic unpreserve DESIGNATES 8 m	eserved (500mL 0mL green/white d Inorganics (50 0mL light green 25erved (100mL d Inomanics (25	0mL)	· · ·	and the owner of the local division of the l			
heter of well ca heter of hole di plume of casing	LL VOLUMES:- ising: illed: only	Q	0.000000 m	iless amber unpri- lastic nutrients 60 lastic unpreserve lastic nutrients 60 lass amber unpre- lastic unpreserve DESIGNATES 8 m m 3 (kL)	eserved (500mL 0mL green/white d inorganics (50 0mL light green eserved (100mL d inorganics (25 AMPLES FILTE	0mL)) 0mL) RED IN FIELD)		and the owner of the local division of the l			
neter of well ca neter of hole di olume of casing olume of drill-he	LL. VOLUMES:- ising: illed: only sile	Q	0.000000 m	iless amber unpri- lastic nutrients 60 lastic unpreserve lastic nutrients 60 lass amber unpre- lastic unpreserve DESIGNATES 8 m m 3 (kL)	eserved (500mL 0mL green/white d inorganics (50 0mL light green eserved (100mL d inorganics (25 AMPLES FILTE 0.00 L p	OmL) OmL) CmL) RED IN FIELD) er metre		and the owner of the local division of the l			
neter of well ca neter of hole dr olume of casing olume of drill-ha olume of annuit	LL VOLUMES:- ising: illed: only	Q	С 19 19 19 19 19 19 19 19 19 19 19 19 19	Iless amber unpri- lastic nutrients 60 lastic unpreserve lastic unpreserve DESIGNATES 8 m m 3 (kL) 3 (kL) 3 (kL)	eserved (500mL 0mL green/white d inorganics (50 0mL light green eserved (100mL d inorganics (25 AMPLES FILTE 0.00 L p 0.00 L p	0mL)) 0mL) RED IN FIELD)		and the owner of the local division of the l			

eld Technician #1 .

Field Technician #2

(assuming 30% porosity in sand/gravel peck)

EENCAP din Point oundwater Sampling Record			9		*					GREE	
nt:			And the second								
ol: Non:	Trility Groundwater b Agnes Water, (ore Installation Qld	and sampling				4(6) Persona		-	en ganera de la deservação	
	A REAL PROPERTY AND INCOME.	WELL DETAIL	SAVENUE (Coloursely) hereits in the		SAMPLING EC	and the second se					A CONTRACTOR OF CONTRACTOR
1	0 0	Well depth: Well diameter	6-	C (m) Sampling device: Peristallic (low flow) GEO#						nan kanan kakan kakan kakan	
280	al 2	Casing type:	A A		Water meter:				ALO	1	**************************************
And the opposite starts		Initial water lev	vel: 29	49 (m)	Turbidity Meter	:)a:		TM#	×		
Time	Amount purged (L)	Cumulative purged (L)	Water Level	Temperature	DO	Sp. Conductivity	Salinity	IP#	1×	ORP	1
-30	24	2L	(m)	°C	% sat	µ\$/cm	PSU		lis	mV	Turbidity NTU
34	24		2950	23.1	0.73	218	-	3.8	k	329	-
38	The second secon	HL	2951	28.0	0.61	217	-	3.7	0	352	-
	34	62	2952	23.0	0.38	216	-	3.1	- and the second	327	
42	34	SL	2951	23.0	0-31	215				and the second s	
46	24	IUL	2951	23.0	0-21	213		3.0	and the second sec	339	-
50	2L	12-6	0951	23.0		a state which it is not a surrought the surr	-		30	393	
-54	24	146	2951		0.19	203	~		12	337.6	-
58	22	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and the second	23.0	0.16	212	N=	3.1	SO	335	_
2.0	- ar	16 2	2951	23.0	0-15	212	~		60	334	-
			Don	mle	coll	ected				334	
				-							
		and the second second second									
							6		-		
		A					~ ()~~~				
									-		
tion Criteri nges)	ia (3 readings	N/A	Drawdown	# 10%		C			-		VAD
hearvall	ons: eg. Nestoy so lot lest	Nuttion weather	<10cm		± 10%	\$ 5%	≥ 10%	±0.	1	± 10mv	N/A
			-		$\mathcal{O}^{\mathbf{v}}$	×C2					
			1	les water quality m becontamination pro	eler and turbidity m	selec been calibrate	ed in accordance	with operat	00 0000	uni and successions	
ations du	ring Sampling:-		the second s		pcedures followed?	Yes		inin operation	agman	ARI SUO LOCOLOGQ?	Yes
ours, shee	ns, lurbidity, wate	ar colour	45	lamples Taken letals Plastic*			Number	Duplicie (QA_T	riplicate: QA	Order
Lagh	+ ton~	stain									
2	1	~		léélic una	ad tax			- H			
he w	odour			lastic unpreserva reserved inorgan	lcs (250ml)	.)					
		~	G	lass vials (40mL))	-					
		N N	G	less amber unpri astic nutrients 6(eserved (500mL)			tt	-		
			P	astic unpreserve	d inoroanice (60	0001)					
			P	astic nutrients 60	mL light orean						
			G	ass amber unpre astic unpreserve	served (100mL)	2011					
and the second				Particulate a month in	AMDI ES SU TO	SEO IN DUELON					and the second second
RING WE	and the second second		10	DEGIGNATES S	THE LES LIFICI	YEU IN MELDI				and the second se	and and
of well ca	LL VOLUMES:-		E	DESIGNATES S	Chine LEG FIL (EF	NEO IN FIELD)			-	Contraction of the local division of the loc	
or nois d	LL VOLUMES:-		IC		COULTES FILLE	(EU IN FIELD)				Territoria de la comunicación de la	
of casto	asing: rilled:	E	m	n	IN LES PILIE	VED IN HELD)					
of casing of drill-h	asing: rilled: 9 only ole	E	0.000000 m3	m m ! (kL)	0.00 L p		and a decision in more other so				
of casing of driii-h of annult	ssing: rillad: g only ole us around casing	E	0.000000 m3	n n ! (kL) ! (kL)	0.00 L p 0.00 L p	er metre er metre	Song Saddana ya Kang yang Sang Yang Sang Saddana ya Kang Saddana ya Kang Sang Saddana ya Kang Saddana ya Kang Saddana ya Kang Saddana ya Kang Sadda				
e of casing e of driil-h e of annult ore Volun	asing: rillad: g only ole us around casing no = 0.3*(3) + (1)	E	0.000000 m3	n n (kL) (kL) (kL)	0.00 L p	er metre er metre er metre				1	
e of casing e of driil-h e of annult fore Volun ling 30% p	asing: rillad: g only ole us around casing ne = 0.3°(3) + (1) orosity in sand/gro	avel pack)	0.000000 m3 0.000000 m3	n n (kL) (kL) (kL)	0.00 L p 0.00 L p 0.00 L p	er metre er metre er metre)	
e of casing e of drill-h e of annult Sore Volun	asing: rillad: g only ole us around casing ne = 0.3°(3) + (1) orosity in sand/gro	avel pack)	0.000000 m3 0.000000 m3	n n (kL) (kL) (kL) (kL)	0.00 L p 0.00 L p 0.00 L p 0.0 L fr	éf mètre er metre er metre n)	
e of casing e of driil-h e of annult fore Volun ling 30% p	asing: rillad: g only ole us around casing ne = 0.3°(3) + (1) orosity in sand/gro	avel pack)	0.000000 m3 0.000000 m3	n n (kL) (kL) (kL) (kL)	0.00 L p 0.00 L p 0.00 L p	éf mètre er metre er metre n					
e of casing e of driil-h e of annult ore Volun ing 30% p	asing: rillad: g only ole us around casing ne = 0.3°(3) + (1) orosity in sand/gro	avel pack)	0.000000 m3 0.000000 m3	n n (kL) (kL) (kL) (kL)	0.00 L p 0.00 L p 0.00 L p 0.0 L fr	éf mètre er metre er metre n				*	
e of casing e of driil-h e of annult ore Volun ing 30% p	asing: rillad: g only ole us around casing ne = 0.3°(3) + (1) orosity in sand/gro	avel pack)	0.000000 m3 0.000000 m3	n n (kL) (kL) (kL) (kL)	0.00 L p 0.00 L p 0.00 L p 0.0 L fr	éf mètre er metre er metre n)	
e of casing e of driil-h e of annult ore Volun ing 30% p	asing: rillad: g only ole us around casing ne = 0.3°(3) + (1) orosity in sand/gro	avel pack)	0.000000 m3 0.000000 m3	n n (kL) (kL) (kL) (kL)	0.00 L p 0.00 L p 0.00 L p 0.0 L fr	éf mètre er metre er metre n					

GREENCAP

Client:	Trility				in the Constant of the State of	1.1.2				ALL ALL SALE
Project: Location:	Groundwater I Agnes Water,	ore Installation	and sampling			Job No: Sampled by:	p4(6) Person	8		NEW YORK OF THE REAL PROPERTY OF
A Designation of the second se	Autos vester.	Contraction of the second seco			And and a second second	Date:	16-	9-17		
		WELL DETAIL Well depth:	8 50	the state of the s	SAMPLING E	QUIPMENT				
Door	17	Well diameter:		(m)	Sampling dev	ice: Peristalitic (lo	w flow)	GEO#		The state of the s
Ves	43	Casing type:	PU		Water meter:			YSI#	ne/	
AND ADDRESS OF TAXABLE PARTY.	The second s	Initial water lev	rel: 33	06 (m)	Turbidity Mete	fi.		TM#		
Time	Amount purged (L)	Cumulativa	Water Level	Temperature	DO	Sp. Conductivit	Salinity	IP#	1 005	Commence and the second
10 100	and the second sec	purged (L)	(m)	°C	% sat	µS/cm	PSU	PH	ORP mV	Turbidity
10-10	24	2L	3840	24.9	0.13	211	-	4.2	Contract of the owner	NTU
10-14	BL	46	3645	24.9	0.13	212	-	4.5		
10.18	136	66	3650	24.9	0.13	213	-	4.7	Land	
10.02	36	86	3650	24.9	0.14	215		and the second s		-
10.26	2L	101	3650	24.9	0.13	217		4.71		-
10.30	36	12L	3650	25.0	0.13	1		4.7		-
10.34	35	146	3650	24.9	and the second second second second	218		4.73	the second part of the second s	-
10.38	26	16L	3650	a reaction of the second	0.14	293		4.74	0 -172.6	~
		- UE	and the second sec	25.0	0.15	999		4:74	771.8	-
-			Denja	o co	leito	0.	0			
								1		
a fyli den skartet men er pterfaste										
							5			
							2			
abilisation Criter	ia (3 readings		Dławdown							
inin ranges)	ons: eg. Nasrby a	N/A	<10cm	\$ 10%	± 10%	\$ 5%	# 10%	± 0,1	± 10mv	
-		The local day in the second second	_		, Pc	~ر			×	
			10	les water quality me econtamination pro	iter and turbidity in cedures followed	meter been celibrat	ed in accordance	with operating	manual and recorded?	Yes
Odoltra shoe	iring Sampling: ns, turbidity, wat	201 - D. C.		amples Taken	California - Constant	T	Number	Duplicing	Triplicate: QA	
light	odour.	L		letals Plastic*				D dpinotal GCA	Implicate: QA	Order
444	(CAJUNIN Z	SIGIN								
000	odour		P	lastic unpreserve reserved inorgan	d inorganics (1	L)			+	
	SI (N)		G	lass vials (40mL)						
		\mathbf{Q}	G	ass amber unpre	served (500ml)				
			PI	astic nutrients 60 astic unpreserved	mL green/white				1	
			PI	astic nutrients 60	mL light green	1				
			G	ess amber unpre astic unpreserved	Landah havag	2			+	
and the strength of the streng	and the second	Name of Concession, Name of Street, or other	IC.	DESIGNATES S	AMPLES FILTE	RED IN FIELD)				
ITORING WE	LL VOLUMES:-	And the second	Hard State of Lot of Lo		- Landard and a state of the state	alternative sectors and balance	Contraction of the local division of the loc			
neter of well o neter of hole d	asing:	E	m	n					and a state of the second s	
olume of casin	only		m							
olume of drill-h	ola		0.000000 m3 0.000000 m3	(KL)		er metre				
olume of annul	us around casing ns = 0.3*(3) + (1)		0.000000 m3	(KL)		er melre				
suming 30% p	ns = 0.3°(3) + (1) prosity in sand/gri	avel pack)	0.000000 m3	(%L)	0.00 L /	er metre m			<u>*</u>	
Techniclan i		a paya)		- Advantance			Contractor in the			
, dominutan i	P 1			Flel	d Technician i	10				STORE STORE STORE

Field Technician #2



DESAL

Į

Į

I

Į

Į

Groundwater Monitoring Standing Water Level Measurement

Date	t to be taken in mm	Operator	Desal 1	Desal 2	Desal 3
1-9-2016	1300	operator	2210	2440	2985
27.9 2016	10:00		2.275	2500	2992
13-10-2016	11.45	•	2324		2845
		•		2575	
is. 11.2016	2.50pm		2440	2672-	3142
14.12.2016.	0910ml		2405	2650	2995
19.1.2017	0745	-	2461	3698	3072
27.2.2017	0230		2627	2860	3402
8.3.2011	0930		2650	2539	3642
18/4/2017	3 30pm		2.051	2278	29.53
1952017	11:30m		2135	2372	2460
21-18 - 2017	9.30		2170	2470	2980
20-7-2017	15-40		2240	2510	2998
23-8-2017	8.1011		2317	2627	3017
29-9-2017	9.10 Am.		2425	2718	3120
26/10/2017	3 pm		1825	2120	2554
20/1/2017	izpn.		2120	2344	2292
14 -12 17	8.50		1983	2085	2862
21.1.15	1:10pm		2065	2280	2950
27.2.18	8-20 A.M		1302	1788	2745
22.3.18	9.00 A.M	4p4(6) Personal Informat	1602	1830	ZRUK
17-4-18	3.30pm		1834	2023	2875
173-5-15	\$15		1912	2123	2896
4-6-18	9.00 J.M		1930	2150	2912
6-7-18	9.10 a.m.		2030	2023	2083
03-8-18	11.100.00	O	2210	2441	3001
19-9-18	9-00 00		2296	2498	
8-10-18					3058
7.6726	642 AM	•	2350	2578	3072
29-11-18	13:06 pm		2370	2660	3175
18-12-18	9-00 Am		2765	2692	3016
31-1-19	16:00 pm		2475	2810	3390
28-2-19	10:40 Am		2587	2980	3535
25-3-19	9-00AM		2530	2882	3375
16-4-19	8.10 A.M		2547	2889	3401
27-5-19	12.30 p.m		2234	2889 2552 2081 2786	3012
34-6-19 31-7-2019	9.00 am		2380	2081	3110
31-7-2019	7.20 A.M		2478	2786	3181
16.8.19	6.30 pm		2582 1	2832	3227
16.9.19	8.45 Am	·	2627	8949	3306
	*				

K:\OPS\22u265cts\Agnes Water\Trility\Operations\Admin\Templates\I\#178'Broundwater Monitoring\Desal groundwater nRager101106321

OUCCUPH Bladin Point Groundwater Sampling Record

1

Client:	Trility	Annual Contraction Contains and	and the second			-				
Project: Location:	Groundwater I Agnes Water,	ore Installation	and sampling		10101010	Job No: Sampled by:	6) Perso			No. of Concession, Name
and construction of the second		WELL DETAIL			In the second		6-12-1	7		
			A REAL PROPERTY OF STATEMENTS		SAMPLING E	QUIPMENT	and the should be an an and the	the second s		Washington Comp
\cap	1127 10	Well depth:		·5 (m)[Sampling devi	ce: Peristeliic (ic	w flaul	GEO#	man como como como man	-
Vaca	()	Well diameter:	5	omm	Water meter:	Cherry Lo	in average and a second	and the second s	1020	
0-0	-()	Casing type:		puc	Turbidity Mete	f:		and the second second second	TRO	- An Older MA
And a local diversion of the local diversion	Amount	Initial water lev		784 (m)	Interphase pro	be:		TM#		
Time	purged (L)	Cumulative purged (L)	Water Level	Temperature	DO	Sp. Conductivi	b Salinity	IP#		a) and an external state
0	1	housed (r)	(m)	°C	% sat	µ\$/cm	PSU	Units	ORP	Turbidity
9.00	1 ah	22	2796	25.0	0.62	-		an provide the second state of the second	mV	NTU
9.04	24	HL	2794	25-1		1271		3.86	188	
9.08	24	62	2795	100000000000000000000000000000000000000	0.23	273	-	3.88	215	-
9.17	24	8 L		25.2	0.33	252	-	3.87	232	-
9-16	22	and the second se	2795	25-2	0.57	281	-	J.86	241	
9.20	71	IOL	2795	25-2	0.67	286	-	3-86	248	
9.24		124	2795	25.2	0.87	279	_	3.86		
the second state of the se	24	ILL	2795	25-2	0.88	280	-	1	248	
9.28	7-	164	2795	25-2	0.88	278	-	3.88	248	-
			- AV.	and	1.	1 1		3.89	248	-
				- cerry	Le Lo	llecta	2			
						-				
				Contraction of the later street of the						
tabilisation Criteri									-	CARLES AND
(Repres)	Contract of the first state of the	N/A	D/awdown <10cm	# 10%	# 10%					
ield observatio	ins: eg. Nesrby ac	livities, weather	Troom [21070	2 5%	# 10%	*0/1	± 10my	N/A
					S.					
			H	es water quality me	ler and furbidity m	eler been calibrate	id in accordance v	th constitue and	recorded to the feur	
servations du	ring Sampling:-	and strend the Constant of Strends			COMMENT TONOWING?	Yes		and an and an a strength in the	inal and recorded?)	(es
Coours, sheen	s, lurbidity, wate	rcolour	IM	mples Taken stals Plastic*			Number D	uplicie QA	riplicate: QA	
Low	edour									Order
1	edour s. lurbidity, wele edour sta.		S PI	astic unpreserved						
Jerni a	sta,	100.	Pre	eserved inorganic	cs (250mL)					
			Gla	iss vials (40mL)	and the second se					
		\mathbf{O}	Pla	stic nutrients 60r	n oteenhubte	and the second distance of the second				
			Pla	stic unpreserved	inomanies (soc	mL)				
	13		Gia	ss ember uppres	nL light green					
	And and a state of the state of		1 100	and unpreserved	[00maniaa /ozo	mL)				
ITORING WEL	L VOLUMES:-	Long and the second		ESIGNATES SA	MPLES FILTER	ED IN FIELD)	National Action			
eter of well cas	100:			and the second se	Webs Constant and State	and sold in the second second		Charge and and an and an and	Non Alexandra Contractor	-
aler of hole dril	lad		mm				14		State of the local division of the local div	
fume of casing o	only	L	mm							
fume of drill-hol	0		0.000000 m3 ()	kL.)	0.00 L pe	T PARTA		1 11		
iume of ennulue	Bround contan		0.000000 m3 ()	(L)	0.00 L per	inche		1.51		
tai Bore Voluma	# 0.39/31 + fer		0.000000 m3 (#	(L)	0.00 L per	metre		11		
suming 30% por	osity in sand/grav	al march)	0.000000 m3 (#	iL)	0.0 L /m				3	1
Technician #1		ar pauk)	The stimule of the source of the second	The Analysis of Concerning	www.sellin					1
· AAMINGIBU &					and a second sec	Statement of the Artistic Statement of the	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			1

Field Technician #2

GREENCAP

ENCAP		Pacard	ň.		1					GREE	INICO
t: ol: tion:	Trility	ore installation	and sampling	antesti operationer an	of the state of th	Job No; Sampled by:	6) Personal I	nf¢		CALL	
	Agnes Water,	the stand of the standard and the standard and the			- Crick and Construction of the	Date:	10-12-1	7			
		WELL DETAIL	S		SAMPLING E	UIPMENT			-		Manufacture and the second second
0	0 -	Well depth: Well diameter:		60 (m)	Sampling devi	ce: Peristallic (ic	ow flow)	GEO#	17	Carreno and Carrow Constanting	Andread Party and a good and
Ves	Sal 2	Casing type:		Somm	Water mater:			YSI#	1.2	PRO	
SPIS CORRECTION		Initial water lay	rel: 31	Addition of the second se	Turbidity Meter Interphase pro	ti.		TM#	1		
Time	Amount	Cumulative	Water Level	Temperature	DO	Sp. Conductivi	N. Pallalk	IP#	-	and the second se	
3	purged (L)	purged (L)	(m)	°C	% sat	uS/cm	b Salinity PSU	p	H	ORP	Turbidity
9.40	21	24	3145	23.9	00	The second se		1	Conversion,	mV	NTU
7-44	22	4L	3145	23.9	0.98	197		3	84	920	-
7.48	71		The statement which the		1-02	197	-	3.	84	250	-
	21	61	3146	23.9	1.08	197		and the family of	Contraction of the last		
7.52	-76	81	3146	23.9				00 00	86	256	-
956	26	IOL	and the second sec		0.31	195		3.	34	281	-
0.00	the second state of the second second	and the second day with the second	3146	23.9	0.93	196	-	3.7	28	389	
1	22	17L	3146	23.9	0.97	192	-	1	The second se		
0.04	2L	146	3146	23.9				3.	11	292	~
				001	0.98	194		3-	20	292	
				panp	6 000	lecter	2			J	
				- /			11				
	and the second second		and the second							1	
							6	- il			
										Autor and	- Martin market
ion Criteria 1968)	(3 readings	N/A	Drawdown					+			Name and Address of the Owner
	ns: eg. Nearby ac		<10cm	± 10%	± 10%	\$ 5%	* 10%	*0.1	-		
A	E W.NC	3, Ho			and the second second	and the second s	the second		(station production of	± 10my	N/A
					OF.	S C	102				
ions duri	ing Sampling:-	-	Contraction of the local division of the loc	es water quality me econlamination pro	ter and turbidity m codures followed?	leler been celibra) 'Yes	ed in accordance w	in operation	ng manu	al and recorded? y	65
s, sheens	a, lurbidity, wate	r colour		emples Taken letals Plastic*			Number D	uplicte C	A Tr	Iplicate: QA	
4	10 1	10	K	To case r HASUC				11	T	private, Con	Order
10	E wh	Nas	. 6					11			
11	-		PI	astic unpreserved	inorganics (1)	1					
Ho	Ŧ		P	eserved inorgania	cs (250mL)				-	T	
1	1	1 +	G	ass vials (40mL.)							
Low	to M	oural		ass amber unpre	served (500mL)			-+++			
od	000.	X	Pla	astic nutrients 60r	nL green/white						
70	9	-1 -	Pla	isuc nutrients 60r	tight aroon	and the second se			-		
rows	Jonner	odrate stain.	Gl	ISS ambar unneas	BOILD LADO						
CTR POLICY CONTRACTOR	and the second se		Pla	ious unpreserved	(Rotraniae /aco	mail i			_		
			ICI	DESIGNATES SA	MPLES FILTER	ED IN FIELD)		-	_		
NG WELL	VOLUMES:-	and the Deside and the second	and the second se	WINDOWS IN CONTRACTOR INCOME.			And address of the second second		and a provide such	And a spectrum diversion of the state	The second s
well cast	ng:		mm				the second second		-	Real Property lies and the second	and the second
HOUS ONLY	perd 7	and the second s	in the second se								

well casing:	Providence and		And Monte WEINSTREET, MARKING MARKING STATUS	A DECEMBER OF THE OWNER OWNER OF THE OWNER
f hole drilled:	mm	12		and and the second s
of casing only	Llmm			
of drill-hole	0.000000 m3 (kL)	0.00 L per metre		
of annulus around casing	0.000000 m3 (kL)	0.00 L per matre		1
re Voluma = 0,3*(3) + (1)	0.000000 m3 (kL)	0.00 L per metra	1 E T	
g 30% porosity in sand/gravel pack)	0.000000 m3 (kL)	0.0 L/m		
A REAL PROPERTY AND A REAL	and the second sec		1 ± 1	1

nician #1

Field Technician #2

GREENCAP

Client:	And A COLUMN TWO IS NOT THE OWNER.	And and a second s							100		
Project:	Trility Groundwater b	ore Installation	and sempling	and the second	2 Inchange Information	Job No:	4			1(6) Doroonol I	oform
Location:	Agnes Water,	Qld	and camping			Sampled by: Date:			1	4(6) Personal I	
	Alfostius and an and a state of the state of	WELL DETAIL	S	and a second a feature of the second as a second a Second as a second as a sec	TOAL IN THE P	CONTRACTOR OF A CONTRACT OF A CONTRACT			-	16-17-1	9
200		Well depth:	SAMPLE AND	5.0 (m)	SAMPLING E	QUIPMENT	and a second		1		Annal a local data
Desal	3	Well diameter:		Oan	Water mater:	ce: Peristalilo (lo	w flow)	GEO#		A COLORINA COLORINA	Paulianeteinenpepuien
-		Casing typa:		pre	Turbidity Mete	**	territe	YSI#	V	PHO	And the Art of the Art
And a survey back to start a low story	Amount	Initial water lay		3892 (m)	Interphase pro	be:		TM# IP#	-		
Time	purged (L)	Cumulative purged (L)	Water Level	Temperature	DO	Sp. Conductivi	ly Salinity	interferences in the second in	- Ha	ORP	Statements and a
10.15	and a substantial card box	1	(m)	°C	% sat	µS/cm	PSU		nus	mV	Turbidit
10.19	3	36	2810	26.6	1.24	1207	-		67	-123	NTU
1023	2	46	2817	26.7	1.28	208		and the second second	67	-143	
	2	64	2820	26.6	1.48	209		4.	67	and the second second	
10.27	2	86	2820	26.6	1.56	215		and the second second second	5	-151	
10.31	2	IOL	2830	26.6	1.51	208		4-	1	-154	-
10.35	2	124	3821	266	1.51	205		4.	23	-155	
				mple	colle			4.	72	- 155	
				mpa	cone	use.		-	\bigcirc	_	line in the second
	and a distant and a distant of the local distant of				and the second states of						
							5				
							0			-	
abilisation Criteria hin ranges)	1.123	N/A	Drawdown			0					
ald observation	St co Nandura	IL AN	<10cm	± 10%	2 10%	* 5%	\$ 10%	= 0.		± 10my	
					\mathbf{X}				ļ.		
					Y P	3					
and stands of the stand of the stands			h	es water gusity me	ler and turbidity in badures followed?	reter been calibrate Yes	ed in accordance v	vith operat	ing manu	al and recorded? Y	6e
OCOURS Shappa	Rear Market States		18	iss water quality me econtamination pro- amples Takan	ier and turbidity n badures followed?	ieler been calibrate Yes	North Works and Party of the Pa	11			ės
OGALINA ALAAAAA	Rear Market States	rcolour	18	es water quality me econtamination pro- amples Taken letals Plastic*	iér and turbidity n baduras followed?	teler boen celibrate Yes	North Works and Party of the Pa	vith operat		al and recorded? Y	es Order
OGALLA ALAAAA	Rear Market States	r colour), od ex	18	amples Taken etals Plastic*			North Works and Party of the Pa	11			
OGALINA Abaaaa	Rear Market States	rcolour , ociecu	18	amples Taken letals Plastic*	inorganice (1)		North Works and Party of the Pa	ouplicie			
OGALINA Abaaaa	Rear Market States	rcolour), odec	18	amples Taken letals Plastic* astic unpreserved eserved inorgania	inorganice (1)		North Works and Party of the Pa	Duplicte (
OGALLA ALAAAA	Rear Market States	r colour) , odex	00 N E E	amples Taken letals Plastic* astic unpreserved eserved inorganit ass vials (40mi.)	i inorganics (1L cs (250mL))	North Works and Party of the Pa	Puplicie			
OGALLA ALAAAA	Rear Market States	r colour), odex	and the second sec	amples Taken letels Plastic* astic unpreserved eserved inorgani ass vials (40mL) ass amber unpre- astic nutrients 600	inorganics (1L ss (250mL) served (500mL))	North Works and Party of the Pa	Puplicie			
OGALLA ALAAAA	Rear Market States	r colour , od ex R		amples Taken letals Plastic* astic unpreserved eserved inorgani ass vials (40mL) ass amber unpre- astic nutrients 60r astic nutrients 60r	inorganics (1L se (250mL) served (500mL) nL green/white)	North Works and Party of the Pa	Puplicie			
OGALLA ALAAAA	Rear Market States	r colour , od ex		amples Taken letals Plastic* astic unpreserved eserved inorgani ass vials (40mL) ass amber unpre- astic nutrients 60r astic nutrients 60r astic nutrients 60r astic nutrients 60r	inorganics (11. 25 (250mL) served (500mL) nl. green/white Inorganics (500)) DmL)	North Works and Party of the Pa	Puplicie			
OCOURS Shappa	Rear Market States	r colour), odew R		amples Taken letals Plastic* astic unpreserved eserved inorgania ass vials (40mL) ass amber unpre- astic nutrients 60r astic unpreserved astic unpreserved astic unpreserved astic unpreserved	5 inorganics (1L 29 (250mL) served (500mL) nL green/white Inorganics (50 nL light green erved (100mL) Inorganics (22))))mL)	North Works and Party of the Pa	Puplicie			
Janu N	, lurbidity, wate Han	r colour), odee		amples Taken letals Plastic* astic unpreserved eserved inorgani ass vials (40mL) ass amber unpre- astic nutrients 60r astic nutrients 60r astic nutrients 60r astic nutrients 60r	5 inorganics (1L 29 (250mL) served (500mL) nL green/white Inorganics (50 nL light green erved (100mL) Inorganics (22))))mL)	North Works and Party of the Pa	Puplicie			
Janu N	VOLUMES.	roolour , odee		amples Taken letals Plastic* astic unpreserved eserved inorgania ass vials (40mL) ass amber unpre- astic nutrients 60r astic unpreserved astic unpreserved astic unpreserved astic unpreserved	5 inorganics (1L 29 (250mL) served (500mL) nL green/white Inorganics (50 nL light green erved (100mL) Inorganics (22))))mL)	North Works and Party of the Pa	Puplicie			
ITORING WELL eter of well cash aler of hole drille	VOLUMES:-	roolour , odee		amples Taken letals Plastic* astlic unpreserved reserved inorgani ass vials (40mL) ass vials (40mL) ass in unpreserved astic nutrients 60r astic unpreserved astic unpreserved DESIGNATES SA	5 inorganics (1L 29 (250mL) served (500mL) nL green/white Inorganics (50 nL light green erved (100mL) Inorganics (22))))mL)	No. of Concession, Name				
ITORING WELL eter of well cashing on	VOLUMES:-	r colour), od cu R	P P G G P P P G G P P P G G P P P G G P P P G G P P P G G P P P G G P P P G G P P P G G P P P G P P P G P P P G P P P G P P P G P P P P G P P P P G P P P P G P P P P G P	amples Taken letals Plastic* astic unpreserved eserved inorgania ass vials (40mL) ass amber unpre- astic nutrients 60r astic unpreserved astic nutrients 60r ass amber unpre- setic unpreserved pesigima TES SA	5 inorganics (1L 29 (250mL) served (500mL) nL green/white Inorganics (50 nL light green erved (100mL) Inorganics (22))))mL)	No. of Concession, Name				
Servations durin Odours, sheens Janu A TORING WELL eter of well cash ater of hole drille lume of casing of sume of drill-hole	VOLUMES;- nly	Rull	0.000000 m3	amples Taken letals Plastic* astic unpreserved eserved inorgani ass vials (40mL) ass amber unpres astic nutrients 60r astic nutrients 60r astic nutrients 60r astic unpreserved selic unpreserved selic unpreserved DESIGNATES SA	5 inorganics (1L 29 (250mL) served (500mL) nL green/white Inorganics (500 nL light green ervad (100mL) inorganics (250 MPLES FILTER 0.00 L ps) DmL) ImL) ED IN FIELD)	No. of Concession, Name				
TORING WELL eter of well cash alter of hola drille alter of drill-hole hume of drill-hole hume of drill-hole	VOLUMES;- Ig: Ig:	Rull	0.000000 m3 0.000000 m3	amples Taken letals Plastic* astic unpreserved eserved inorgani ass vials (40mL) ass amber unpres astic nutrients 60r astic nutrients 60r astic nutrients 60r ass amber unpreserved selic unpreserved DESIGNATES SA	5 inorganics (1L 29 (250mL) served (500mL) nL green/white Inorganics (500 nL light green erved (100mL) inorganics (250 MPLES FILTER 0.00 L ps 0.00 L ps) DmL) ImL) ED IN FIELD) v metre r metre	No. of Concession, Name				
ITORING WELL eter of well cash eter of hole drille lume of casing or lume of drill-hole lume of drill-hole lume of drill-hole stat Bore Volume a	VOLUMES:- 19: 19: 19: 19: 19: 19: 10: 10: 10: 10: 10: 10: 10: 10	Rull	0.000000 m3	amples Taken letals Plastic* astic unpreserved eserved inorgani ass vials (40mL) ass amber unpre- astic nutrients 60r astic unpreserved astic unpreserved pesic unpreserved DESIGNATES SA (kL) (kL) (kL)	5 inorganics (1L 29 (250mL) 29 (250mL) 20 (250mL) 20 (250mL) 20 (200mL) 20 (2))))))))))))))	No. of Concession, Name				
TORING WELL eter of well casing of the state of delili- hole delili-hole nume of delili-hole nume of annulus of tal Bore Volume = suming 30% poro	VOLUMES:- 19: 19: 19: 19: 19: 19: 10: 10: 10: 10: 10: 10: 10: 10	Rull	0.000000 m3 0.000000 m3	amples Taken letals Plastic* astic unpreserved eserved inorgani ass vials (40mL) ass amber unpre- astic nutrients 60r astic unpreserved astic unpreserved astic unpreserved DESIGNATES SA (kL) (kL) (kL)	5 inorganics (1L 29 (250mL) served (500mL) nL green/white Inorganics (500 nL light green erved (100mL) inorganics (250 MPLES FILTER 0.00 L ps 0.00 L ps))))))))))))))	No. of Concession, Name				
ITORING WELL eter of well cashing on	VOLUMES:- 19: 19: 19: 19: 19: 19: 10: 10: 10: 10: 10: 10: 10: 10	Rull	0.000000 m3 0.000000 m3	amples Taken etals Plastic* astic unpreserved eserved inorgani ass vials (40mL) ass amber unpre- astic nutrients 60r astic nutrients 60r astic unpreserved astic unpreserved DESIGNATES SA (kL) (kL) (kL) (kL)	5 inorganics (1L 29 (250mL) 29 (250mL) 20 (250mL) 20 (250mL) 20 (200mL) 20 (2))mL) imL) ED IN FIELD) r metre r metre	No. of Concession, Name				

GREENCAP

	Trility	1	d and the second			Job No: Sampled by:		4(6) Personal		
	Groundwater b Agnes Water, (ore installation ar Ald	id sampling			Date:		15-4-20	220	
a shanka filin		WELL DETAILS	X		SAMPLING EQ	JIPMENT				
		Well depth:	6.5	(m)	Sampling devic	e: Peristaltic (low	flow)	GEO#		1000000000
mark	1 1	Well diameter:	6.5 50 mil	1	Water meter:				0+	
DESA	LI	Casing type:	PUC		Turbidity Meter:			TM#		
		Initial water leve			Interphase prob			IP#	000	T
Time	Amount purged (L)	Cumulative purged (L)	Water Level (m)	Temperature °C	DO % sat	Sp. Conductivity µS/cm	Salinity PSU	pH Units	ORP mV	Turbidity NTU
11.77	2	2	2.252	26.0	0.12	338.8		3.88	233.1	
11.31	2	4	2-252	26.2	0.11	324.5		3.90	219.3	
11.35	2	6	2.252	26.2	0.15	311-6		3.95	208.4	
11-39	2	8	2-252	26.3	0.22	303-6		3,97	199.4	
11.43	2	10	2.252	26:3	0.27	302.0		3.98	193.1	
11-47	2	12	2-252	26.3	0:29	301.0		3.98	186.7	_
11.51	2	14	2-252	26.3	0.30	300.2		3.99	182.1	
11-55	2	16	2.252	26.3	0.31	299.6		3.99	178.9	
11-59	2	18	2-252	26.3	0:32	297.1		4.00	174-9	
12:03	2	20	2-252	26.3	0:32	298.7		3099	172.4	
			SAMPL	ES T	AKEN					
	_									
Labilization Color	in 12 constants		Desired			5				
tabilisation Crite ithin ranges)	na (3 readings	N/A	Drawdown <10cm	± 10%	± 10%	± 5%	± 10%	± 0.1	± 10mv	N/A

FIME, SLIGHT SOUTHERLY BREEZE

Has water quality meter and turbidity meter been calibrated in accordance with operating manual and recorded? Yes Decontamination procedures followed? Yes

Observations during Sampling:-	Samples Taken	Number	Duplicte: QA_	Triplicate: QA	Order
eg. Odours, sheens, turbidity, water colour	Metals Plastic*				
COLOUR BUT NOT TURBID			1		
	Plastic unpreserved inorganics (1L)				
	Preserved inorganics (250mL)				
	Glass vials (40mL)				_
	Glass amber unpreserved (500mL)		1		
	Plastic nutrients 60mL green/white				
	Plastic unpreserved inorganics (500mL)				
	Plastic nutrients 60mL light green				
	Glass amber unpreserved (100mL)				Thun-
	Plastic unpreserved inorganics (250mL)				
	(* DESIGNATES SAMPLES FILTERED IN FIE	LD)			

MONITORING WELL VOLUMES:-			
Diameter of well casing:	mm		
Diameter of hole drilled:	mm		
(1) Volume of casing only	0.000000 m3 (kL)	0.00 L per metre	
(2) Volume of drill-hole	0.000000 m3 (kL)	0.00 L per metre	
(3) Volume of annulus around casing	0.000000 m3 (kL)	0.00 L per metre	
(4) Total Bore Volume = 0.3*(3) + (1)	0.000000 m3 (kL)	0.0 L /m	
(assuming 30% porosity in sand/gravel pack	<)		

Field Technician #1

Field Technician #2

GREENCAP

Client: Project: .ocation:	Trility Groundwater b Agnes Water, (ore installation a ગ્રોત	nd sampling			Job No: Sampled by: Date:		4p4(6) Persona		
DESA	DESAL 2 Well diameter: 50mm Casing type: PUC Initial water level: 2.523 (m					SAMPLING EQUIPMENT Sampling device: Peristaltic (low flow) Water meter: Turbidity Meter: Interphase probe: IP#				
Time	Amount purged (L)	Cumulative purged (L)	Water Level	Temperature °C	DO % sat	Sp. Conductivity µS/cm	Salinity PSU	pH Units	ORP mV	Turbidity NTU
10-10	7	2	2.530	24.7	0.24	292.2		416	1350	
10-14	2	4	2.530	24.7	0.16	286.0		403	163.3	
10-18	2	6	2.532	24.8	0.16	304.0		3.99	186.2	
10.22	2	-3	2.532	24-8	0.19	311.0		3.91	190.0	
10.26	2	10	2.532	24.8	0.22	314.2		3:89	191:8.	
10-30	2	12	2.532	24-8	0.26	3/4.0		3.87	129.6	
10.34	2	14	2,532	24-8	0.28	313.3	11.2 C. 11. C. 1.	3.90	186.8	
10.38	2	16	2.532	24-8	0.29	31107		3.91	186-2	
10.42	2	18	2:532	24.8	0.31	3/3.6.		3.94	185.3	
10.46	2	20	2.532	24.8	0.31	313.6	.0	3092	180.6	
10-10		-	SAM	PLES	TAKE		<u>.</u>			
						- 0	2			
						6				
Stabilisation Crite	ria (3 readings	N/A	Drawdown <10cm	± 10%	± 10%	± 5%	± 10%	± 0.1	± 10mv	N/A

FINE, SLIGHT SOUTHERLY BREEZE

Observations during Sampling:-	Samples Taken	Number	Duplicte: QA	Triplicate: QA	Order
eg. Odours, sheens, turbidity, water colour	Metals Plastic*				
TURBID					
	Plastic unpreserved inorganics (1L)				
	Preserved inorganics (250mL)				
	Glass vials (40mL)				
	Glass amber unpreserved (500mL)				
	Plastic nutrients 60mL green/white				
	Plastic unpreserved inorganics (500mL)				
	Plastic nutrients 60mL light green				
	Glass amber unpreserved (100mL)				
	Plastic unpreserved inorganics (250mL)				
	(* DESIGNATES SAMPLES FILTERED IN FIE	ELD)			

MONITORING WELL VOLUMES:-			
Diameter of well casing:	mm		
Diameter of hole drilled:	mm		
(1) Volume of casing only	0.000000 m3 (kL)	0.00 L per metre	
(2) Volume of drill-hole	0.000000 m3 (kL)	0.00 L per metre	
(3) Volume of annulus around casing	0.000000 m3 (kL)	0.00 L per metre	
(4) Total Bore Volume = 0.3*(3) + (1)	0.000000 m3 (kL)	0.0 L /m	
(assuming 30% porosity in sand/gravel pack	k)		

Field Technician #1

Field Technician #2

ŝ.

lient: roject: ocation:	Trility Groundwater bo Agnes Water, C	ore installation ar	nd sampling		Job No: Sampled by: Date:					
outron	and a second	WELL DETAILS	3		SAMPLING EC	UIPMENT				
		Well depth:	5.0	(m)		e: Peristaltic (low f	low)	GEO#	1000	
DESAL 3		Well diameter: 50 mm Casing type: WG			Water meter: Turbidity Meter:			YSI# PRO+ TM#		
	Amount	Cumulative	Water Level	Temperature	DO	Sp. Conductivity	Salinity	pН	ORP	Turbidity
Time	purged (L)	purged (L)	(m)	°C	% sat	µS/cm	PSU	Units	mV	NTU
0830	2	2	3.264	27.6	0.12	198.7		4.86	-109.8	
0834	2	4	30323	27.7	0.22	199.1		4.83	-139:7	_
0838	2	6	3:328	27.6	0.36	200.6.		4.81	-155.7	
0842	2	8	3.342	27.7	0.39	204-6		4.83	-159.7	
0846	2	10	3.350	27.7	0.41	205,4		4.82	-167.2	
0350	2	12	3.360	27:2	0.42	207.9		4.82	-171-9	
0854	2	14	3:370.	20.6	0.42	209.1		4.82	-173.2	_
0358	2	16	3.376	27.6	0.42	211.1		4.82	-175.8	
0902	2	18	3.382	27.6	0.42	211-1		4.83	-177.8	
0906	2	20	3.386	27.7.	0.43	21203	.0	4.82	-177-9	
0910	2	22	3.392	27-6.	0.43	218.5		4.32	-177.7	
0914	2	24	3.396	27-6	0.44	219.0	2	4-82	-177.7	
			SA	MPLE	\$ TA	EN				
						1.6				
Stabilisation Criteria (3 readings within ranges)		N/A	Drawdown <10cm	± 10%	± 10%	± 5%	± 10%	± 0.1	± 10mv	N/A

FIME, SLIGHT SOUTHERLY BREEZE

	Has water quality meter and turbidity meter been call Decontamination procedures followed? Yes		ee mee eperang		
Observations during Sampling:-	Samples Taken	Number	Duplicte: QA	Triplicate: QA	Order
eg. Odours, sheens, turbidity, water colour	Metals Plastic*				
DIRTY, TAHNIN COLOURED, ODOUROUS					
DIFI / I TRANIM COLOUKEN	Plastic unpreserved inorganics (1L)				
OTONIC	Preserved inorganics (250mL)				
0 000000	Glass vials (40mL)				
	Glass amber unpreserved (500mL)				
	Plastic nutrients 60mL green/white				
	Plastic unpreserved inorganics (500mL)				
	Plastic nutrients 60mL light green				
	Glass amber unpreserved (100mL)				
	Plastic unpreserved inorganics (250mL)				
	(* DESIGNATES SAMPLES FILTERED IN FIE	ELD)			

MONITORING WELL VOLUMES:-Diameter of well casing: mm Diameter of hole drilled: Imm 0.00 L per metre 0.000000 m3 (kL) (1) Volume of casing only (2) Volume of drill-hole 0.000000 m3 (kL) 0.00 L per metre 0.00 L per metre 0.000000 m3 (kL) (3) Volume of annulus around casing (4) Total Bore Volume = 0.3*(3) + (1) 0.000000 m3 (kL) 0.0 L/m (assuming 30% porosity in sand/gravel pack)

Field Technician #1

Field Technician #2

GREENCAP

GREENCAP **Bladin Point**



Groundwater	Samping										
lient:		Trility	1	mating		Sampled bit*	4p4(6) Person				
oject:		Agnes Water, Qld	e Installation and sa	mpling		Date: 2	1-4-20	020			
ocation:		Agnes Water, Qiu									
		WELL DETAILS			SAMPLING EQUI			CEON .	_		
		Well depth: 15036 (m) Well diameter: 50 mm			Sampling device. Peristaltic (low flow) GEO# Phot Water meter YSI# Phot Turbidity Meter TM#						
CTD	1										
STP1		Casing type: PUC			Toronary meter						
		Initial water leve	NAME AND ADDRESS OF TAXABLE PARTY.	Temperature	Interphase probe	Sp. Conductivity	Salinity	pH	ORP	Turbidity	
Time	Amount purged (L)	Cumulative purged (L)	Water Level (m)	"C	% sat	μS/cm	PSU	Units ,	mV	NTU	
mal	0	Durkeo (c)	0000	24.2	1.11.11.11.1	3801		6.66	7.2		
0936	6				10 11	C.		111	2.8		
0940	2	4	2.395	24.2	0.54	3764		6.64		-	
norlika	0	6	7.478	24.7	0.65	3738		6.70	-6.7		
0744	K	0	6160	11.1		The second second second		6-70	-9.9		
0948	2	8	2.448	24-1	0.66	3727		C.C.			
nar	0	10	2.468	24-1	0.68	3680		6.70	-13.2		
125	-6		0 100	01.0	Contraction of the second	2716		6.71	-15.4		
0956	2	12	2:484	24-2	0.70	3716		1-1-12			
1000	2	14	2.495	241	0-71	3720		6-12	-19.1		
	5	1	2.505	24-1	0.77	3716		6.72	-17.4		
1004	6	16	6 9 9 9	PI PI	0.00	0200		6.71			
1008	2	18	2.512	241	0.12	3729	6	0.01	-16-7		
				SAMPL	AS TA	KFN				_	
				anna	-	1.1	-	-			
			-			+ - O'					
						1.5					
							D				
_											
						1					
tabilisation Criter	ria (3readings	N/A	Drawdown								
ield observations	s: eg. Nearby activ	ities, weather	SUMA	± 10%	±10%	± 5%	±10%	±0.1	±10mv	N/A	
ield observations		ities, weather	SUMA		±10%	15%	±10%	±0.1	±10mv	N/A	
Field observations		ities, weather		17 Has water qualit		lity meter been cali			± 10mv		
Field observations	INE , NO	ities, weather	7, 50M	17 Has water qualit	y meter and turbid n procedures follow	lity meter been cali					
Field observations	INE NO	D WIMS	7, 50M	Has water qualit Decontaminatio	y meter and turbid n procedures follow	lity meter been cali	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee	INE NC	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker	y meter and turbid n procedures follow	lity meter been cali	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee	INE NC	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic*	y meter and turbid n procedures follor	lity meter been cali wed? Yes	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee	INE NC	D WIMS	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic*	y meter and turbid n procedures follor	lity meter been cali wed? Yes	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Dbservations du eg. Odours, shee	INE NC	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor	y meter and turbid n procedures follow erved Inorganics ganics (250mL)	lity meter been cali wed? Yes	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Dbservations du	INE NC	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r	y meter and turbid n procedures follor n erved Inorganics (250mL) nL)	lity meter been calil wed? Yes (11)	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee	INE NC	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unpresse Preserved inor Glass vials (40r Glass amber ui	y meter and turbid n procedures follow ganics (250mL) nL) npreserved (500r	lity meter been calil wed? Yes (1L)	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Dbservations du eg. Odours, shee	INE NC	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber u Plastic nutrien	y meter and turbid n procedures follow ganics (250mL) nL) npreserved (500r ts 60mL green/w	lity meter been calil wed? Yes (1L) nL) hite	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee	INE NC	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien	y meter and turbid n procedures follow ganics (250mL) nL) npreserved (500r	lity meter been calil wed? Yes (1L) hite (500mL)	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Dbservations du eg. Odours, shee	INE NC	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber un Plastic nutrien Plastic nutrien Plastic nutrien	y meter and turbid n procedures follow ganics (250mL) nL) npreserved (500r ts 60mL green/w erved inorganics	lity meter been calil wed? Yes (1L) hite (500mL) en	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee	INE NC	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass vials (400 Glass amber uu Plastic nutrien Plastic nutrien Glass amber uu Plastic nutrien Glass amber uu Plastic nutrien	y meter and turbid n procedures folloo ganics (250mL) nL) npreserved (500m ts 60mL green/w ts 60mL light gree npreserved (100r erved Inorganics)	ity meter been calil wed? Yes (11) nL) hite (500mL) en mL) (250mL)	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Dbservations du eg. Odours, shee	INE NC	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass vials (400 Glass amber uu Plastic nutrien Plastic nutrien Glass amber uu Plastic nutrien Glass amber uu Plastic nutrien	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500m ts 60mL green/w erved inorganics) ts 60mL light green npreserved (100m	ity meter been calil wed? Yes (11) nL) hite (500mL) en mL) (250mL)	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee	uring Sampling:- ens, turbidity, wat	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass vials (400 Glass amber uu Plastic nutrien Plastic nutrien Glass amber uu Plastic nutrien Glass amber uu Plastic nutrien	y meter and turbid n procedures folloo ganics (250mL) nL) npreserved (500m ts 60mL green/w ts 60mL light gree npreserved (100r erved Inorganics)	ity meter been calil wed? Yes (11) nL) hite (500mL) en mL) (250mL)	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee CLEA	INE NK	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber un Plastic nutrien Plastic nutrien Plastic nutrien Plastic nutrien Glass amber un Plastic unprese Plastic unprese (* DESIGNATES	y meter and turbid n procedures folloo ganics (250mL) nL) npreserved (500m ts 60mL green/w ts 60mL light gree npreserved (100r erved Inorganics)	ity meter been calil wed? Yes (11) nL) hite (500mL) en mL) (250mL)	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee CLEA MONITORING W	UNE NK	ter colour	Signal Source	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber un Plastic unprese Plastic nutrien Glass amber un Plastic unprese Plastic unprese (* DESIGNATES	y meter and turbid n procedures folloo ganics (250mL) nL) npreserved (500m ts 60mL green/w ts 60mL light gree npreserved (100r erved Inorganics)	ity meter been calil wed? Yes (11) nL) hite (500mL) en mL) (250mL)	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee CLEA MONITORING W Diameter of wel Diameter of hol	VELL VOLUMES:- II casing: Ie drilled:	ter colour	D, SUMA	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber ui Plastic nutrien Plastic nutrien Glass amber ui Plastic nutrien Glass amber ui Plastic nutrien Glass amber ui Plastic unprese (* DESIGNATES	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500r ts 60mL green/w erved inorganics ts 60mL light green npreserved (100r erved Inorganics S SAMPLES FILTER	lity meter been calil wed? Yes (1L) hite (SOOML) en mL) (2SOML) RED IN FIELD)	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee CLEA MONITORING W Diameter of wel Diameter of hol (1) Volume of ca	VELL VOLUMES:- Il casing: Le drilled: asing only	ter colour	2, SUMA	Has water qualit Decontaminatio Samples Taker Metals Plastic* Preserved inor Glass vials (40r Glass amber ui Plastic nutrien Plastic nutrien Glass amber ui Plastic nutrien Glass amber ui	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500r ts 60mL green/w erved inorganics ts 60mL light green preserved (100r erved Inorganics s SAMPLES FILTER	ity meter been calil wed? Yes (11) nL) hite (500mL) en mL) (250mL)	prated in accordanc	e with operating n	nanual and recorded	? Yes	
Observations du eg. Odours, shee CLEA MONITORING W Diameter of wel Diameter of hol (1) Volume of ca (2) Volume of di	VELL VOLUMES:- II casing: le drilled: asing only rill-hole	ter colour	2, SUMA 6 0.0000 0.00000	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber ui Plastic nutrien Plastic nutrien Glass amber ui Plastic nutrien Glass amber ui Plastic nutrien Glass amber ui Plastic unprese (* DESIGNATES	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500m ts 60mL green/w erved inorganics ts 60mL light green preserved (100m erved Inorganics S SAMPLES FILTER	lity meter been calil wed? Yes (1L) hite (SOOML) en mL) (250mL) RED IN FIELD) 0.00 L per metre	prated in accordanc	e with operating n	nanual and recorded	? Yes	
NONITORING W Diameter of hol (1) Volume of da (2) Volume of da	VELL VOLUMES:- Il casing: Le drilled: asing only	ter colour	0.0000 0.00000 0.00000	Has water qualit Decontaminatio Samples Taker Metals Plastic* Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Plastic nutrien Glass amber u Plastic nutrien Mmm Mmm Mmm Mmm Mmm Mmm Mmm Mmm Mmm Mm	y meter and turbid n procedures follou ganics (250mL) mL) npreserved (500m ts 60mL green/w erved inorganics) ts 60mL light green npreserved (100m erved Inorganics) S SAMPLES FILTER	lity meter been calil wed? Yes (1L) hite (SOOML) en mL) (250mL) RED IN FIELD) 0.00 L per metre 0.00 L per metre	prated in accordanc	e with operating n	nanual and recorded	? Yes	

Fleid Technician #1

Field Technician #2

GREENCAP

Groundwater	Sampling Reco	ord						197855		
Client:	Trility	- 20 3	2 10			Job No:	sch4p4(6) Pe	ersonal Inform	ation	
Project: Location:	Groundwater bo Agnes Water, Qlo	re Installation and	sampling			Sampled by: Date:		- 7.07.02		
LOCATION.	Agries Water, Qi	A REPORT OF THE PARTY OF				A STATE OF L	E T	- 1010		
		WELL DETAILS			SAMPLING EQUI	the state of the s	21/14			
-		Well depth:	13:14) Sampling device.	Peristaltic (low flo	ow)	GEO#	PRO +	
STP	2	Well diameter:	Som	2	Water meter Turbidity Meter			YSI# V TM#	THU F	
	5	Casing type: Initial water leve		-7 (m)	Interphase probe			IP#		
	Amount purged	Cumulative	Water Level	Temperature	DO	Sp. Conductivity	Salinity	pH	ORP	Turbidity
Time	(L)	purged (L)	(m)	"C	% sat	μS/cm	PSU	Units	mV	NTU
1051	2	2	4.517	241	0.62	11903		6.55	925	
1055	2	IL	4.510	24.0	1.07	11786		6.54	89.7	
1059	2	1	1100	240	1.07	11749		6.CTL	85.6	
	0	8	7.565	24-0	1.09	ilot		6.07	86.3	
1105			4.365			11000		0.50	8.3	
1109	2	10	4565	24.0	1.10	11/18		0.57		
1(14	2	12	4.565	240	1012	11640		0.55	85.9	
1118	2	14	4.565	24.0	1.13	11732	0	6.53	85.5	
			SAM	ZES "	AKEN					
				_						
							5		P	
						$ c\rangle$				
						. 6				
	u-						<u> </u>			
tabilisation Crite	ria (3readings	N/A	Drawdown	±10%	±10%	1.5%	± 10%	±0.1	± 10mv	N/A
	ł		D, SOM	Ó						
			SCO		y meter and turbidit		rated in accordance	e with operating m	anual and recorded	Yes
Observations du	ring Sampling:-			Samples Taken			Number	Duplicte: QA	Triplicate: QA	Order
	ns, turbidity, wate)	Metals Plastic*						
CITA	R, NO	onario								
Cher	1 1901	DOUR		Diastia unanasa	and increasing (1	1)				
				Preserved inorg	rved Inorganics (1	L)				
				Glass vials (40m	and the second se		1			
				Provide the second seco	preserved (500ml)				
				and the state of t	s 60mL green/whi	Automa and a second sec		1	1	
					rved inorganics (5		1	1		
				State of Street State St	s 60mL light greer					
					preserved (100ml					
					rved Inorganics (2				-	
				(* DESIGNATES	SAMPLES FILTERE	D IN FIELD)				
MONITORING	ELL VOLUMES:									
MONITORING W	/ELL VOLUMES:-			mm						
Diameter of wel	I casing:			mm mm						
Diameter of wel Diameter of hol	l casing: e drilled:		0.000000	mm m3 (kL)	0.	00 L per metre				
Diameter of wel Diameter of hol (1) Volume of ca (2) Volume of di	l casing: e drilled: ising only ill-hole		0.000000	mm m3 (kL) m3 (kL)	0.	00 L per metre				
Diameter of wel Diameter of hol (1) Volume of ca (2) Volume of di (3) Volume of ar	l casing: e drilled: Ising only ill-hole nnulus around cas		0.000000	mm m3 (kL) m3 (kL) m3 (kL)	0. 0.	00 L per metre 00 L per metre				
Diameter of wel Diameter of hol (1) Volume of ca (2) Volume of di (3) Volume of ar (4) Total Bore Vo	l casing: e drilled: ising only ill-hole	1)	0.000000	mm m3 (kL) m3 (kL) m3 (kL)	0. 0.	00 L per metre				

Fleid Technician #1



DESAL

1

Groundwater Monitoring Standing Water Level Measurement

NB Measurement to be taken in mm from top of bore casing

Date	Time	Operator	Desal 1	Desal 2	Desal 3
1-9-2016	1300		2210	2440	2985
27.9.2016	10:00		2275	2500	2992
18=10-2016	11.45		.2324	2575	2845
5.11.2016	2:50pm		2440	2672	3142
4.12.2016.	0910m		2405	2650	2005
7.1.2017	0745		2461	2698	- Comp
27.2.2017	0230		2627		3072
8.3.2017	0930		2650	2860	3402
18/4/2017	3 30pm			2839	3642
1952017	11.2-		2051	2378	2953
21-6-2017	11:30m		2135	2372	2960
the second division of	9.30		2170	2470	2980
20-7-2017	15-90		2240	2510	2998
25-8-2017	8-10AN		2317	2627	3017
019-2017	9.10 Am.		2425	2718	3120
26/10/2017	3 pm		1825	2120	2054
30/1/2017	12pm		0,615.	2344	2892
14 -12 - 17	8 50		1882	2085	2862
21.1.18	1:10pm		2065	2280	2950
27.2.18	8-30 A.M		1522	1788	2745
22.3.18	7.00 A.M	1.0	1607	1830	DRUK
27-4-18	3.30pm		1834	2023	2015
173-5-15	\$15		1912	2123	2896
4-6-18	9.00 0.M		1930	2150	2912
6-7-18	9.10 a.m.	h4p4(6) Personal Informat	2030		2712
03-8-18	11.100.00		2210	2023	2083
19-9-18	9-00 00		2296	2441	3001
8-10-18				2498	3058
29-11-18	642 AM	-	2350	2572	3072
	13:06 pm		2370	2660	3175
18-12-18	900AN		2765	2692	3016
21-1-19	YE COpm		2475	2810	3390
28-2-19	10:40 Am		2587	2980	3535
25-3-19	9-00AM		2530	2882	3375
10-4-19	8.10 A.M		2547	2889	3401
27.5-19	1230pm		2547	2552	3012
34-6-19 31-7-2019	9.00 AM		2380	2681	3401 3012 8100
31-7-2019	7.20 A.M		2478	2552 2681 2786	3181
16.8.19	6.30 pm		2582 1	2832	3227
16.9.19	8:45 pm		2582 1 2627	2832	3306
21.10-19	11:20 Am		2547	2851	3090
27.11.19	14:15 P.M.		2760	3065	3082
16-12-19	4.00 000		2784	3065 3140	and
29-1-20	15:00 pm	c.	2943	22144	3652
26.2.20	10/200		2104	3244 2445 2523	2632
15-4-20	12.50 pm		2017	2443	2779
15-4-20	0830		2243 2430	2323	2960
20 / 20	000		2730	2695	3072
22-6-20	0950		2443	6735	3080

22-265 File B Page 110 of 321 K:\OPS\Contracts\Agnes Water\Trility\Operations\Admin\Templates\IWTP\Groundwater Monitoring\Desal groundwater monitoring log.xls

	Agnes Water, Qlo			_	SAMPLING EQUIP	MENT		1		
		WELL DETAILS	15:36	(m)	Sampling device.	Peristaltic (low flow	w)	GEO#		Rent
1-1	21	Well depth:	50 M.K		Water meter			YSI# PRO-	+	
511		Well diameter:	SUBVE	-	Turbidity Meter			TM#		
<u> </u>		Casing type: Initial water leve		1 400	Interphase probe	é.		IP#		
	C descent second	CONTRACTOR AND	Water Level	Temperature	DO	Sp. Conductivity	Salinity	pH	ORP	Turbidity
Time	Amount purged (L)	purged (L)	(m)	.c	% sat	μS/cm	PSU	Units	mV	NTU
1033	5	2	2 335	23.6	3.22	3894		6-67	13.8	
	X	10	CA USE	nor	2.82	2875		6.67	7.5	
10 37	2	X	2368	136	I A GOL	3012		1.17	4.4	
1041	2	6	2394	23.1	2.38	J/7		001		
1045	2	8	2414	23.7	2.11	3860	-	0.61	3.8	
1089	n cy	10	2431	23.7	1.59	3861		6.67	1.1	
.0.5	2	12	51148	23.7	1-32	3864		0.67	0	
10-34	5	12	5/115	227	1.22	3866		6.67	-01	
1051	x	1.8	2462	25-1	1 9a	2855	50	667	0.2	
(01,	2	16	2415	123.1	1-01	2012		1.7-7	Dig	
1105	2	13	2484	23.1	0.96	3878		1/10	Va	
109	2	20	2492	23.7	0.93	3863		6.61	0.5	
119	0	22	2450	23.	0.85	3898		667	1.0	
115	-	1 de	and	1		. 6				
				Bar	malil	Eano	nar			
				Ser	your up		90			
Lillian Maria Calib	eria (3readings		Drawdown		± 10%	±5%	± 10%	±0.1	± 10mv	N/A
Diffisation chi	ena (Sreadings	N/A	<10cm	± 10%	£ 10%	1.10		- minter	- Contraction of	Comment of the second
thin ranges)										

CLEAR, FINE, STILL

	Decontamination procedures followed? Yes				
Observations during Sampling:-	Samples Taken	Number	Duplicte: QA	Triplicate: QA	Order
eg. Odours, sheens, turbidity, water colour	Metals Plastic*				
no odour slightly turbid, clear colour					
no occour sugning	Plastic unpreserved Inorganics (1L)				
Fundard and	Preserved inorganics (250mL)				
alean colour	Glass vials (40mL)				
	Glass amber unpreserved (500mL)		-		
	Plastic nutrients 60mL green/white				
	Plastic unpreserved inorganics (500mL)				
	Plastic nutrients 60mL light green				
	Glass amber unpreserved (100mL)				
	Plastic unpreserved Inorganics (250mL)			i l	
	(* DESIGNATES SAMPLES FILTERED IN FIELD)		-		

MONITORING WELL VOLUMES:-			
Diameter of well casing:	mm		8
Diameter of hole drilled:	mm		
(1) Volume of casing only	0.000000 m3 (kL)	0.00 L per metre	
(2) Volume of drill-hole	0.000000 m3 (kL)	0.00 L per metre	
(3) Volume of annulus around casing	0.000000 m3 (kL)	0.00 L per metre	
(4) Total Bore Volume = 0.3(3) + (1)	0.000000 m3 (kL)	0,00 L per metre	
(assuming 30% porosity in sand/gravel pack)			

Fleld Technician #1

GREENCAP

lient:		Trility Groundwater by	ore Installation ar	nd sampling		Samplad but	p4(6) Person			
oject: ocation:		Agnes Water, C				Date:	24-6-20	20		
cation.					SAMPLING EQUIP	AL ACANT			Statistics and statistics	- Income of the second second
		WELL DETAILS	13:1	(m)		Peristaltic (low flo	w)	GEO#		
STP	2	Well depth: Well diameter:	501		Water meter			YSIH PRO-	+	N. Philosofte
)// u	A	Casing type:		VC	Turbidity Mater			TM#		
		Initial water leve	41	73 (m)	Interphase probe			IP#		
Time Am	count purged		Water Level	Temperature	DO	Sp. Conductivity	Salinity	pH	OI P m /	Turbidity NTU
Time	(L)	purged (L)	(m)	ic i	%sat	uS/cm	Fill	Units	diversity of the local	NIU
834	2	2	4510	23.2	0.79	12/02		6.52	912	
838	2	U	4600	23.6	1399	12067		10.5a	68.6	
030	2	T	11/200	001	0.00	10059		651	71.2	10-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
1943	2	6	4000	23.0	0.01	avai				- 20 - 14
847	2	3	4628	23.6	0.74	12063		6.51	78.8	
DEI	2	10	4625	22.6	0.66	12033		6.51	79.9	
8-1-	2	15	102	230	101-5	104 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		6.50	79.6	
1055	2	12	4640	R.S. 6	0.03			1 -0	77.6	
859	2	14	4645	23.6	0.56	12032	6	6.50	17-6	
904	2	16	4648	23-7	0.54	12031		6.50	77.6	
10.5	à	18		23.8	0.07	11921	P.V.	6.50	27.6	
2900	2		8650	\$ 2.0	0 33	11131	9	1		5-01-
2912	2	18	4650	23.7	0.50	12020		6.50	29.0	
DOIL	à	20	4653	23.8	0.47	12009		650	80.0	
110	n n	40	1022	as -		1. Co				
				0	1-1					0.000
				Sam	ples	Campon	()			
	3readings	N/A	Drawdown <10cm	± 10%	± 10%	1.5%	± 10%	± 0.1	± 10mv	N/A
vithin ranges) ield observations: eg	g. Nearby acti	vities, weather	<10cm	± 10%	10%	2.5%	± 10%	± 0.1	± 10mv	N/A
(thin ranges) eld observations: eg	g. Nearby acti	A support	<10cm	± 10%		15%	± 10%	± 0.1	± 10mv	N/A
(thin ranges) eld observations: eg	g. Nearby acti	vities, weather	<10cm	on		,				
(thin ranges) eld observations: eg	g. Nearby acti	vities, weather	<10cm	Has water qualit	ty meter and turbid	lity meter been call			± 10inv	
(thin ranges) eld observations: eg	g. Nearby acti	vities, weather	<10cm	Has water qualit		lity meter been call				
(thin ranges) ald observations: eg CLEAA	g Nearby acth	Vities, weather	<10cm	Has water qualit Decontaminatio Samples Taker	ty meter and turbid	lity meter been call				d? Yes
(thin ranges) eld observations: eg CLEAA bservations during g. Odours, sheens, t	g Nearby acth 2 / F/1 g Sampling:- turbidity, wa	vities, weather <i>HE</i> , <i>ST</i> ter colour	ill 6	Has water qualit Decontaminatio	ty meter and turbid	lity meter been call	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
(thin ranges) eld observations: eg CLEAA bservations during g. Odours, sheens, t	g Nearby acth 2 / F/1 g Sampling:- turbidity, wa	vities, weather <i>HE</i> , <i>ST</i> ter colour	ill 6	Has water qualit Decontaminatio Samples Taker	ty meter and turbid	lity meter been call	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
(thin ranges) eld observations: eg CLEAA Deservations during g. Odours, sheens, t	g Nearby acth 2 / F/1 g Sampling:- turbidity, wa	vities, weather <i>HE</i> , <i>ST</i> ter colour	ill 6	Has water qualit Decontaminatio Samples Taker Metais Plastic	ty meter and turbid	lity meter been call wed? Yes	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
(thin ranges) eld observations: eg CLEAA bservations during g. Odours, sheens, t	g Nearby acth 2 / F/1 g Sampling:- turbidity, wa	vities, weather <i>HE</i> , <i>ST</i> ter colour	ill 6	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese	ty meter and turbid	lity meter been call wed? Yes	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
(thin ranges) eld observations: eg CLEAA bservations during g. Odours, sheens, t	g Nearby acth 2 / F/1 g Sampling:- turbidity, wa	vities, weather <i>HE</i> , <i>ST</i> ter colour	ill 6	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese	ry meter and turbid n procedures follo	lity meter been call wed? Yes	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
(thin ranges) ald observations: eg CLEAA	g Nearby acth 2 / F/1 g Sampling:- turbidity, wa	vities, weather <i>HE</i> , <i>ST</i> ter colour	ill 6	Has water qualit Decontaminatio Samples Taker Metals Plastic " Plastic unprese Preserved inor Glass vials (40r Glass amber un	ry meter and turbid in procedures follow erved incorganics (gganics (250mL) mL) npreserved (500m	lity meter been call wed? Yes 1L)	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
(thin ranges) eld observations: eg CLEAA bservations during g. Odours, sheens, t	g Nearby acth 2 / F/1 g Sampling:- turbidity, wa	vities, weather <i>HE</i> , <i>ST</i> ter colour	ill 6	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass vials (40r Glass amber un Plastic nutrien	ty meter and turbid in procedures follow erved incorganics (gganics (250mL) mL) inpreserved (500mr ts 60mL green/wh	lity meter been call wed? Yes 1L) nL]	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
(thin ranges) eld observations: eg CLEAA Deservations during g. Odours, sheens, t	g Nearby acth 2 / F/1 g Sampling:- turbidity, wa	vities, weather <i>HE</i> , <i>ST</i> ter colour	ill 6	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass vials (400 Glass samber un Plastic nutrien Plastic nutrien Plastic unprese	erved inciganics (ganics (250mL) mL) nopreserved (500m rs 60mL green/wh erved inciganics (Ity meter been call wed? Yes 1L) nL] nite 500mL)	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
(thin ranges) eld observations: eg CLEAA bservations during g. Odours, sheens, t	g Nearby acth 2 / F/1 g Sampling:- turbidity, wa	vities, weather <i>HE</i> , <i>ST</i> ter colour	ill 6	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass vals (400 Glass amber un Plastic nutrien Plastic nutrien	ty meter and turbid in procedures follow erved incorganics (gganics (250mL) mL) inpreserved (500mr ts 60mL green/wh	lity meter been call wed? Yes 1L) 1L) http: 500mL) en	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
ithin ranges) eld observations: eg CLEAA Deservations during g. Odours, sheens, t	g Nearby acth 2 / F/1 g Sampling:- turbidity, wa	vities, weather <i>HE</i> , <i>ST</i> ter colour	ill 6	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass amber un Plastic nutrien Plastic unprese Plastic unprese	arved inorganics (ganics (250mL) mL) npreserved (500m ts 60mL i gat green/wit ts 60mL i gat green npreserved (1000 preved inorganics (Ilty meter been call wed? Yes 1L) 1L) 500mL) sn 1L] 250mL)	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
ithin ranges) eld observations: eg CLEAA Deservations during g. Odours, sheens, t	g Nearby acth 2 / F/1 g Sampling:- turbidity, wa	vities, weather <i>HE</i> , <i>ST</i> ter colour	ill 6	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass amber un Plastic nutrien Plastic nutrien Glass amber un Plastic unprese	ry meter and turbid n procedures follo procedures follo served incrganics (ganics (250mL) mL) npreserved (500m ts 60mL green/wi erved incrganics (ts 60mL l ght gree npreserved (100m	Ilty meter been call wed? Yes 1L) 1L) 500mL) sn 1L] 250mL)	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
Diservations during eg. Odours, sheens, 1 Clear turid	g Nearby acth 2 , F/1 g Sampling:- turbidity, wa 2 , 1	vities, weather 4E, 3T ter colour lightly No odd	ill 6	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass amber un Plastic nutrien Plastic nutrien Glass amber un Plastic unprese	arved inorganics (ganics (250mL) mL) npreserved (500m ts 60mL i gat green/wit ts 60mL i gat green npreserved (1000 preved inorganics (Ilty meter been call wed? Yes 1L) 1L) 500mL) sn 1L] 250mL)	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
Vithin ranges) ield observations: eg CLEAA Deservations during eg. Odours, sheens, t Cleav turid turid	g Nearby acth 2 , F/1 g Sampling:- turbidity, wa 2 , 7 2 , 7	vities, weather 4E, 3T ter colour lightly No odd	ill 6	Has water qualit Decontaminatio Samples Taker Metals Plastic " Plastic unprese Preserved infor Glass amber un Plastic nutrien Plastic nutrien Plastic nutrien Glass amber un Plastic nutrien Glass amber un Plastic unprese (* DESIGNATES	arved inorganics (ganics (250mL) mL) npreserved (500m ts 60mL i ght gree npreserved (1000 preved inorganics (ts 60mL i ght gree npreserved (1000	Ilty meter been call wed? Yes 1L) 1L) 500mL) sn 1L] 250mL)	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
Althin ranges) ield observations: eg LLEAA Observations during rg. Odours, sheens, t Clear turid MONITORING WELL Diameter of well ca	g Nearby acth 2 , F// g Sampling:- turbidity, wa 2 , 7 2 , 7	vities, weather 4E, 3T ter colour lightly No odd	ill 6	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass amber un Plastic nutrien Plastic nutrien Glass amber un Plastic unprese	arved inorganics (ganics (250mL) mL) npreserved (500m ts 60mL i ght gree npreserved (1000 preved inorganics (ts 60mL i ght gree npreserved (1000	Ilty meter been call wed? Yes 1L) 1L) 500mL) sn 1L] 250mL)	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
Althin ranges) ield observations: eg CLEAR Disservations during og. Odours, sheens, to Clear tured tured MONITORING WELL Diameter of well ca Diameter of hole dr	g Nearby acth 2 / F// g Sampling:- turbidity, wa 2 / 2 / 2 / 3 / 2 / 3 / 2 / 3 / 3	vities, weather 4E, 3T ter colour lightly No odd	ILL G	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unpress Preserved inor Glass amber un Plastic nutrien Plastic nutrien Plastic nutrien Glass amber un Plastic nutrien Glass amber un Plastic nutrien Glass amber un Plastic unpress (* DESIGNATE:	ry meter and turbid in procedures follo procedures follo mil inpreserved (500mL) mil inpreserved (500m ts 60mL green/wit reved inorganics (ts 60mL i ght gree inpreserved (100m erved inorganics (S SAMPLES FILTEE	Ilty meter been call wed? Yes 1L) 1L) 500mL) sn 1L] 250mL)	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
Althin ranges) ield observations: eg CLEAA Diservations during rg. Odours, sheens, to Clean turid MONITORING WELL Diameter of well ca Diameter of hole dr (1) Volume of casin (2) Volume of drill-1	g Nearby acth 2 / F// g Sampling:- turbidity, wa 2 / 2 / 3 / 3 / 4 / 4 / 4 / 4 / 4 / 4	vities, weather 4E, 3T ter colour lightly No odd		Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass vials (40r Glass amber un Plastic unprese Plastic nutrien Glass amber un Plastic unprese Plastic unprese (* DESIGNATE: mm mm D0 m3 (kL) X0 m3 (kL)	ry meter and turbid n procedures follo erved inorganics (ganics (250mL) mL) npreserved (500m ts 60mL green/with s 60mL 1 ght gree npreserved (100m erved inorganics (S SAMPLES FILTER	Ilty meter been call wed? Yes 1L) 1L) 1L) 1L) 1L) 1L) 1L) 1L) 1L) 1L)	brated in accorda	nce with operating	manual an 1 recorde	d? Yes
Ithin ranges) (eld observations: eg CLEAR Observations during og. Odours, sheens, to Clear turid turid Diameter of well ca Diameter of hole dr (1) Volume of casin	g Nearby acth 2 / F// g Sampling:- turbidity, wa - , Q - , ,	vities, weather YE, ST ter colour lightly Ne odd		Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass vials (40r Glass amber un Plastic unprese Plastic nutrien Glass amber un Plastic unprese (* DESIGNATE: mm mm DO m3 (kL)	arved inorganics (ganics (250mL) mL) npreserved (500m rs 60mL geen/wi ts 60mL light gree npreserved (100m npreserved (100m npreserved (100m	Ity meter been call wed? Yes 1L) 1L) nite 500mL) sn nL] 250mL) SED IN FIELD) 0.00 L per metre	brated in accorda	nce with operating	manual an 1 recorde	

Field Technician #1

GREENCAP

Bladin Point Groundwater Sampling Record

oject:	Trility	B. Martine and	energling		Job No: Sampled b	N:	ersonal Inforn	nation		
		re Installation and	sampling		Date:	24-1	6-7020			
ation:	Agnes Water, Qlo				SAMPLING EQUIP	MENT				
	1	WELL DETAILS	TEN			Peristaltic (low flow	()	GEO# 🗸		
07	11	Well depth: Well diameter:	1.500 50m		Water meter			YSI# PRO	+	
-1 /	/	Casing type:	PUC		Turbidity Meter			TM#		
	6	Initial water level	0.6	80 (m)	Interphase probe			IP#	000	Turbidity
820	Amount purged	Cumulative	Water Level	Temperature	DO	Sp. Conductivity	Salinity PSU	pH Units	ORP mV	NTU
Time	(L)	purged (L)	(m)	·c	% sat	μS/cm	P30		185.6	
2945	12	a	0.600	M.6	a.65	851		5.Sd	1150	
GUG	2	4	2-658	19.6	2:98	827		5.52	141.1	
17-1		1	0 109	0.1	2.79	816		5-53	147.7	
953	a	6	V. 673	19-6	arri			6.00	187.8	
957	a	8	0.695	19.6	2.62	804		2.34	1 × 1.0	
0.00	2	10	DIAC	9.6	2.55	797		5.55	148:2	
000	a	10	0 693	04	2.55	700		5.55	188.5	
004	2	12	0.695	14.0	4.33	001		5.56	1801	
0.08	2	14	0.695	19.5	2.46	181		3.20	120-1	
		1								
			X -	2/20	Can	2				
			Do	mones	cion	m	0			
						CN				
						1.6				
						Dia	0			
									-	-
Littentine Call	teria (3readings	N/A	Drawdown	± 10%		A REAL PROPERTY.	10000000	±0.1	± 10mv	N/A
	ns: eg. Nearby activ	ities, weather	<10cm		± 10%	± 5%	±10%	10.1		
			<10cm		± 10%	± 5%	± 10%	10.1		
			S C	Has water qualit		ity meter been calib			1	
FIME	E, CLEAR	, STIU.	S	Has water qualit Decontaminatio	y meter and turbid n procedures follow	ity meter been calib			anual and recorded	? Yes
FIME	E CLEAR	, STIL .	S	Has water qualit	y meter and turbid n procedures follow	ity meter been calib	rated in accordan	ce with operating m	anual and recorded	
FIME Deservations	during Sampling:-	j STIL . iter colour	Ster	Has water qualit Decontaminatio Samples Taker	y meter and turbid n procedures follow	ity meter been calib	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Deservations	during Sampling:-	j STIL . iter colour	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic*	y meter and turbid	ity meter been calib wed? Yes	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Deservations	during Sampling:-	, STIL .	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic*	y meter and turbid n procedures follow	ity meter been calib wed? Yes	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Deservations	during Sampling:-	j STIL . iter colour	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor	y meter and turbid n procedures follow erved Inorganics (ganics (250mL)	ity meter been calib wed? Yes	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Deservations	during Sampling:-	j STIL . iter colour	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r	y meter and turbid n procedures follow erved Inorganics (ganics (250mL) mL)	ity meter been calib wed? Yes	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Deservations	during Sampling:-	j STIL . iter colour	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber u Plastic nutrien	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500r ts 60mL green/wi	ity meter been calib wed? Yes (1L) hite	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Deservations	during Sampling:-	j STIL . iter colour	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Plastic nutrien	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500r ts 60mL green/w erved inorganics (ity meter been calib wed? Yes (1L) hite (500mL)	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Deservations	during Sampling:-	j STIL . iter colour	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unpress Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic unpress Plastic nutrien	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500m ts 60mL green/w erved inorganics i ts 60mL green/w	ity meter been calib wed? Yes (1L) hite (500mL) en	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Deservations	during Sampling:-	j STIL . iter colour	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unpress Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Plastic nutrien Glass amber u	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500m ts 60mL green/w erved inorganics i ts 60mL light gree npreserved (100m	ity meter been calib wed? Yes (1L) hite (500mL) en mL)	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Observations eg. Odours, sh	during Sampling:-	j STIL . iter colour	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Glass amber u Plastic nutrien Glass amber u Plastic unprese	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500m ts 60mL green/w erved inorganics i ts 60mL light gree npreserved (100r erved inorganics	ity meter been calib wed? Yes (1L) hite (500mL) en mL) (250mL)	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Dbservations	during Sampling:-	j STIL . iter colour	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Glass amber u Plastic nutrien Glass amber u Plastic unprese	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500m ts 60mL green/w erved inorganics i ts 60mL light gree npreserved (100m	ity meter been calib wed? Yes (1L) hite (500mL) en mL) (250mL)	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Observations eg. Odours, sh Mo	during Sampling:- eens, turbidity, wa	ster colour	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic Plastic unprese Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Glass amber u Plastic nutrien Glass amber u Plastic unprese	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500m ts 60mL green/w erved inorganics i ts 60mL light gree npreserved (100r erved inorganics	ity meter been calib wed? Yes (1L) hite (500mL) en mL) (250mL)	rated in accordan	ce with operating m	anual and recorded	? Yes
FIME Observations eg. Odours, sh Mo	during Sampling:- eens, turbidity, wa Odaww	ster colour	Ster	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Glass amber u Plastic nutrien Glass amber u Plastic unprese (* DESIGNATE	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500m ts 60mL green/w erved inorganics i ts 60mL light gree npreserved (100r erved inorganics	ity meter been calib wed? Yes (1L) hite (500mL) en mL) (250mL)	rated in accordan	ce with operating m	anual and recorded	? Yes
Diservations eg. Odours, sh Mo MONITORING Diameter of M	during Sampling:- eens, turbidity, wa Odaww Gdaww	ster colour	bid	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unpress Preserved inor Glass vials (40r Glass amber u Plastic nutrien Glass amber u Plastic nutrien Glass amber u Plastic unpress Plastic nutrien Glass amber u Plastic unpress (* DESIGNATE	y meter and turbid n procedures follow ganics (250mL) mL) npreserved (500r ts 60mL green/w erved inorganics ts 60mL light green npreserved (100r erved Inorganics S SAMPLES FILTER	ity meter been calib wed? Yes (1L) hite (S00mL) en nL) (250mL) RED IN FIELD)	rated in accordan	ce with operating m	anual and recorded	? Yes
Deservations og. Odours, sh Mo MONITORING Diameter of to Diameter of to 1) Volume of	during Sampling:- eens, turbidity, wa Odaww WELL VOLUMES: vell casing: oole drilled: f casing only	ster colour	bid	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unpress Preserved inor Glass vials (40r Glass amber u Plastic nutrien Glass amber u Plastic nutrien Glass amber u Plastic unpress (* DESIGNATE mm mm 00 m3 (kL)	y meter and turbid n procedures follow ganics (250mL) mL) mpreserved (500r ts 60mL green/w erved inorganics ts 60mL light green npreserved (100r erved Inorganics S SAMPLES FILTEI	ity meter been calib wed? Yes (1L) hite (S00mL) en mL) (250mL) RED IN FIELD) 0.00 L per metre	rated in accordan	ce with operating m	anual and recorded	? Yes
Deservations ag. Odours, sh MONITORING Diameter of h Diameter of h (1) Volume of (2) Volume of	during Sampling:- eens, turbidity, wa odaww odaww well casing: nole drilled: f casing only f drill-hole	ner colour	bid	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unpress Preserved inor Glass vials (40r Glass amber u Plastic nutrien Plastic nutrien Plastic nutrien Glass amber u Plastic unpress (* DESIGNATE mm mm 00 m3 (kL) 00 m3 (kL)	y meter and turbid n procedures follow ganics (250mL) mL) mpreserved (500m ts 60mL green/w erved inorganics i ts 60mL light green npreserved (100m erved inorganics S SAMPLES FILTER	ity meter been calib wed? Yes (1L) hite (S00mL) en nL) (250mL) RED IN FIELD)	rated in accordan	ce with operating m	anual and recorded	? Yes
Deservations age, Odours, sh MONITORING Diameter of M Diameter of M Diameter of M 01 Volume of (2) Volume of (3) Volume of	during Sampling:- eens, turbidity, wa Odaww WELL VOLUMES: vell casing: oole drilled: f casing only	ater colour	bid	Has water qualit Decontaminatio Samples Taker Metals Plastic* Plastic unpress Preserved inor Glass vials (40r Glass amber u Plastic nutrien Glass amber u Plastic nutrien Glass amber u Plastic unpress (* DESIGNATE mm mm 00 m3 (kL)	y meter and turbid n procedures follow ganics (250mL) mL) mpreserved (500m ts 60mL green/w erved inorganics i ts 60mL light green npreserved (100m erved inorganics S SAMPLES FILTER	ity meter been calib wed? Yes (1L) hite (SOOML) en mL) (250mL) RED IN FIELD) 0.00 L per metre 0.00 L per metre	rated in accordan	ce with operating m	anual and recorded	? Yes

Field Technician #1

GREENCAP

Bladin Point

Groundwater Sampling Record



Client:		Trility				Job No: SC	h4p4(6) Perso	onal Informatio	n	
Project: Location:		Groundwater bo Agnes Water, Q		nd sampling		Sampled by: Date:	23-6-2	020		
and all a state of the state of		WELL DETAILS			SAMPLING EQU	PMENT			11 - 11 - 11 - 11 - 11 - 11 - 11 - 11	
1		Well depth:	1.70	(m)	CONCERNMENT OF CONCERNMENT OF CASES	Peristaltic (low fl	low)	GEO#		
971	2	Well diameter.	501		Water meter			YSI#		
111		Casing type:	pve	-	Turbidity Meter			TM#		
		Initial water level			interphase prob	er		1P#		
Time	Amount purgeo	Cumulative	Water Level	Temperature	DO	Sp. Conductivity	COOMING	рн	ORP	Turbidity
Tinke	(L)	purged (L)	(m)		% sat	µ\$/cm	PSU	Units	mV	NTU
1040	1	1	DRV							
-			/							
						-		A second second second		
			1.0							
							-			
								0-		_
				-			0	M		
			0			stanting the state				
							LV-			
							1			
		-								
						0	7			
	And a state of the state		-			$+ \alpha$				
Stabilisation Criter within ranges)	ria (Breadings	N/A	Drawdown <10cm	± 10%	± 10%	15%	± 10%	± 0.1	± 10mv	N/A
Field observations	eg. Nearby act	lvities, weather								A Real Sector
		doy	6	on		did n				
				r						
							brated in accordar	ice with operating	manual and recorde	d? Yes
			2	Decontamination	procedures tollo	WED: Tes				
Observations du				Samples Taken			Number	Duplicte: QA	Triplicate: QA	Order
eg. Odours, sheer	ns, turbidity, wa	iter colour		Metals Plastic*						
		SV.								
		\sim		Discolin and	and the second second					
				Preserved inorg	rved Inorganics (11				-
				Glass vials (40m						
				Glass amber un		nL)		-		
				Plastic nutrients				1		99 St 496 49
1				Plastic unprese						
				Plastic nutrients	s 60mL light gree	in				
					preserved (100n					
				Plastic unpreser						
				(* DESIGNATES	SAMPLES FILTER	RED IN FIELD)		1		
MONITORING W	ELL VOLUMES								and the second second	
Diameter of well				mm						
Diameter of hole				mm						
(1) Volume of ca			0.000000	m3 (kL)		0.00 L per metre				
(2) Volume of dr			0.000000			0.00 L per metre				
(3) Volume of an			0.00000.0			0.00 L per metre				
(4) Total Bore Vo			0.000000	m3 (kL)		0.00 L per metre				
(assuming 30	To porosity in sa	and/gravel pack)								

Field Technician #1

GREENCAP

CIT I I		Trility	and the second s			Job No:	sch4p4(6) Perso	anal Informatio		
Client: Project:			re installation ar	d sampling		Sampled by:				
Location		Agnes Water, Q				Date:	23-6-	2020		
		WELL DETAILS			SAMPLING EQU	PMENT		- 140/-00 HI-US		
0.1	1/0	Well depth:	1.69	(m)	Sampling device	CALL PROPERTY OF COMPANY OF COMPANY	flow)	GEO#		
01	13	Well diameter.	50m	m	Water meter			YSI#		
1 .	1-	Casing type:	PVC		Turbidity Meter			TM#		
		Initial water leve	TAXABLE INCOME.	A COLUMN TWO IS NOT THE OWNER.	Interphase prob	And the Party Name of Street, or other Designment of Street, o	1	IP#		-
Time	Amount purged	Cumulative purged (L)	Water Level (m)	Temperature 'C	DO % sat	Sp. Conductivit uS/cm	Salinity PSU	pH Units	ORP mV	Turbidity NTU
1056	1.8	Contraction of the local division of the loc			/5.38b			and the second se		and the second second
1056	10	1.8	DRY				-			
			1							
							-			
					-			05		
							0.			
		1				. (
	-									
						L-O'	-			
						1.5				
						10	1			
	The second s				-		4			
Stabilisation Crite within ranges)	eria (Breadings	N/A	Drawdown <10cm	± 10%	± 10%	255	± 10%	± 0.1	± 10mv	N/A
	/	dory at	6	01						
			X				alibrated in accordar	ice with operating	manual and recorde	d? Yes
			5	Decontamination	procedures follo	wed? Yes				
Observations d	uring Sampling:-			Samples Taken			Number	Duplicte: QA	Triplicate: QA	Order
eg. Odours, she	ens, turbidity, wat	ter colour		Metals Plastic*						
		\sim								
				Plastic unprese	rved Inorganics I	1()				
				Preserved inorg		2.71				
				Glass vials (40m	The state of the s					
				Glass amber un	preserved (500n	A. F. Parts				
				Glass amber un Plastic nutrient	preserved (500n s 60mL green/wi	nite				
				Glass amber un Plastic nutrient Plastic unprese	preserved (500n s 60mL green/w rved inorganics (nite 500mL)				
				Glass amber un Plastic nutrient Plastic unprese Plastic nutrient	preserved (500n s 60mL green/wi	nite 500mL) m				
				Glass amber un Plastic nutrient Plastic unprese Plastic nutrient Glass amber un Plastic unprese	preserved (500n s 60mL green/wi rved inorganics (s 60mL light gree preserved (100n rved inorganics)	nite 500mL) nL) 250mL)				
				Glass amber un Plastic nutrient Plastic unprese Plastic nutrient Glass amber un Plastic unprese	preserved (500n s 60mL green/wi rved inorganics (s 60mL light gree preserved (100n	nite 500mL) nL) 250mL)				
MONITORING	WELL VOLUMES-			Glass amber un Plastic nutrient Plastic unprese Plastic nutrient Glass amber un Plastic unprese	preserved (500n s 60mL green/wi rved inorganics (s 60mL light gree preserved (100n rved inorganics)	nite 500mL) nL) 250mL)				
MONITORING V	WELL VOLUMES:-			Glass amber un Plastic nutrient Plastic unprese Plastic nutrient Glass amber un Plastic unprese	preserved (500n s 60mL green/wi rved inorganics (s 60mL light gree preserved (100n rved inorganics)	nite 500mL) nL) 250mL)			÷	
	Il casing:			Glass amber un Plastic nutrient: Plastic unprese Plastic nutrient: Glass amber un Plastic unprese (* DESIGNATES	preserved (500n s 60mL green/wi rved inorganics (s 60mL light gree preserved (100n rved inorganics)	nite 500mL) nL) 250mL)				
Diameter of we Diameter of ho (1) Volume of c	II casing: le drilled: asing only		0.000000	Glass amber un Plastic nutrient: Plastic unprese Plastic nutrient: Glass amber un Plastic unprese (* DESIGNATES mm mm mm m3 (kL)	preserved (500n s 60mL green/wi rved inorganics (s 60mL light gree preserved (100n rved inorganics i SAMPLES FILTER	nite 500mL) in hL) 250mL) RED IN FIELD) 0.00 L per metre				
Diameter of we Diameter of ho (1) Volume of c (2) Volume of d	Il casing: le drilled: asing only Irill-hole		0.000000	Glass amber un Plastic nutrient Plastic unprese Plastic nutrient Glass amber un Plastic unprese (* DESIGNATES mm mm m3 (kL) m3 (kL)	preserved (500n s 60mL green/wi rved inorganics (s 60mL light gree preserved (100n rved Inorganics i SAMPLES FILTE!	nite 500mL) nL 250mL) 250mL) 250mL) 250mL) 0.00 L per metre 0.00 L per metre				
Diameter of we Diameter of ho (1) Volume of c (2) Volume of d (3) Volume of a	II casing: le drilled: asing only	asing		Glass amber un Plastic nutrient Plastic unprese Plastic unprese Glass amber un Plastic unprese (* DESIGNATES mm m3 (kL) m3 (kL) m3 (kL)	preserved (500n s 60mL green/wi ved inorganics (s 60mL light gree preserved (100n rved inorganics SAMPLES FILTER	nite 500mL) in hL) 250mL) RED IN FIELD) 0.00 L per metre				

Field Technician #1



Client:		Trility				Job No: : : : h4p	04(6) Person	al Informatio		
Project:			ore Installation an	id sampling		Sampled by:	3-6-2			
ocation:		Agnes Water, Q	ld			Date: 2	-2-6-2	020		
		WELL DETAILS			SAMPLING EQU	NAME AND ADDRESS OF TAXABLE PARTY.				
02	111	Well depth:	1.57		And and a state of the state of	Peristaltic (low flo	w)	GEQ#		
91	17	Well diameter:	50mm		Water meter			YSI#		
1		Casing type:	PVC	<u> </u>	Turbidity Meter			TM#		W
		Initial water leve	COLUMN STATES OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER OWNE	Statement of the local division of the local	Interphase prob DO	e: 5p. Conductivity	Salinity	IP#	ORP	Turbidity
Time	Amount purged	Cumulative purged (L)	Water Level (m)	Temperature	% sat	uS/cm	PSU	Units	mV	NTU
1130	2	Z	1.300							
ITAU	a	a	1.000							
1123	1		DAV							
			1					1-0		<u></u>
								03		
							0			-
		-								
							9			
						C C				
						1.6				
								Access 11 Access		
Stabilisation Crite	aria (3readings		Drawdown	- 10%	Crat	- Aren	+ 10%	+01	+ 10my	N/A
within ranges) Field observation	is: eg. Nearby acti		<10cm	±10% 3 c	4 diel	rest	± 10%	20.1	± 10mv	N/A
within ranges) Field observation	is: eg. Nearby acti	vities, weather	and the state of t			not				N/A
within ranges) Field observation	is: eg. Nearby acti	vities, weather	<10cm	3 2	4 did	not	nea	over	5 M	
within ranges) Field observation	is: eg. Nearby acti	vities, weather	<10cm	3 C	4 due) not	nea	over	5 M	
within ranges) Field observation	is: eg. Nearby acti	vities, weather	<10cm	3 C	4 did) not	nea	over	5 M	
within ranges) Field observation P w	is: eg. Nearby acti	vities, weather	<10cm	3 Has water qualit Decontamination Samples Taken	or duct) not	nea	over	5 M	
within ranges) Field observation Pw Observations d	ns: eg. Nearby acti	vities, weather dry	<10cm	3 c Has water qualit Decontamination	or duct) not	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation Pw Observations d	uring Sampling:-	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken	or duct) not	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation P w Observations d	uring Sampling:-	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic*	y meter and turble	dity meter been callb	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation P w Observations d	uring Sampling:-	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic* Plastic unprese	erved inorganics	dity meter been callb	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation P w Observations d	uring Sampling:-	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic*	y meter and turble procedures folic rved inorganics (250mL)	dity meter been callb	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation P w Observations d	uring Sampling:-	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic* Plastic unprese Preserved inorg Glass vials (400	y meter and turble procedures folic rved inorganics (250mL)	dity meter been callb wed? Yes	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation Pw Observations d	uring Sampling:-	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic * Plastic unprese Preserved inory Glass vials (40n Glass amber un Plastic nutrient	er duck y meter and turble n procedures folic rved inorganics (ganics (250mL) nL) preserved (500r s 60mL green/w	dity meter been callb wed? Yes (1L) hite	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation Pw Observations d	uring Sampling:-	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic * Plastic unprese Preserved inorr Glass vials (40m Glass amber ur Plastic nutrient Plastic nutrient Plastic nutrient	y meter and turble n procedures folic rved inorganics i ganics (250mL) hL) ppreserved (500m s 60mL green/w rved inorganics	dity meter been callb wed? Yes (1L) hite (500mL)	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation Pw Observations d	uring Sampling:-	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic * Plastic unprese Preserved inorr Glass vials (40m Glass amber un Plastic nutrient Plastic nutrient Plastic nutrient	y meter and turble n procedures folic rved inorganics ganics (250mL) hL) ppreserved (500m s 60mL green/w rved inorganics i s 60mL light gree	dity meter been callb wed? Yes (1L) hite (SOOmL) en	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation Pw Observations d	uring Sampling:-	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic * Plastic unprese Preserved inory Glass vials (40n Glass amber un Plastic nutrient Plastic nutrient Plastic nutrient Glass amber un	y meter and turble n procedures folic rved inorganics ganics (250mL) ht) preserved (500m s 60mL green/w rved inorganics i s 60mL ight gree preserved (100r	dity meter been callb wed? Yes (1L) hite (500mL) en nLJ	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation Pw Observations d	uring Sampling:-	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic* Plastic unprese Preserved inorg Glass vials (40n Glass amber ur Plastic nutrient Plastic nutrient Plastic nutrient Glass amber ur Plastic nutrient Plastic nutrient Plastic nutrient	y meter and turble procedures folic procedures folic rved inorganics ganics (250mL) nL) preserved (500m year inorganics s 60mL light gree preserved (100m rved inorganics)	dity meter been callb wed? Yes (1L) nL) hite (SOOmL) en nLJ (250mL)	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
P w	uring Sampling:-	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic* Plastic unprese Preserved inorg Glass vials (40n Glass amber ur Plastic nutrient Plastic nutrient Plastic nutrient Glass amber ur Plastic nutrient Plastic nutrient Plastic nutrient	y meter and turble n procedures folic rved inorganics ganics (250mL) ht) preserved (500m s 60mL green/w rved inorganics i s 60mL ight gree preserved (100r	dity meter been callb wed? Yes (1L) nL) hite (SOOmL) en nLJ (250mL)	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation Pw Observations d eg. Odours, shee	uring Sampling:- ens, turbidity, wat	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic* Plastic unprese Preserved inorg Glass vials (40m Glass amber un Plastic unprese Plastic nutrient Plastic unprese Plastic unprese Plastic unprese (* DESIGNATES	y meter and turble procedures folic procedures folic rved inorganics ganics (250mL) nL) preserved (500m year inorganics s 60mL light gree preserved (100m rved inorganics)	dity meter been callb wed? Yes (1L) nL) hite (SOOmL) en nLJ (250mL)	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation Pw Observations d eg. Odours, shee MONITORING V Diameter of we	uring Sampling:- ens, turbidity, wat	vities, weather dry	<10cm	Has water qualit Decontamination Samples Taken Metals Plastic * Plastic unprese Preserved inorr Glass vials (40m Glass amber un Plastic nutrient Plastic nutrient Plastic nutrient Glass amber un Plastic nutrient Glass amber un Plastic nutrient Glass amber un Plastic unprese (* DESIGNATES	y meter and turble procedures folic procedures folic rved inorganics ganics (250mL) nL) preserved (500m year inorganics s 60mL light gree preserved (100m rved inorganics)	dity meter been callb wed? Yes (1L) nL) hite (SOOmL) en nLJ (250mL)	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
within ranges) Field observation P w Observations d eg. Odours, shee eg. Odours, shee Diameter of we Diameter of ho	uring Sampling:- ens, turbidity, wat WELL VOLUMES:- Il casing: le drilled:	vities, weather dry	at	Has water qualit Decontamination Samples Taken Metals Plastic * Plastic unprese Preserved inorn Glass vials (40m Glass vials (40m Plastic nutrient Plastic unprese Plastic nutrient Glass amber un Plastic unprese Plastic unprese (* DESIGNATES	y meter and turble n procedures folic rved inorganics i ganics (250mL) hL) preserved (500m s 60mL light gree preserved (100c rved inorganics s 60mL light gree preserved (100c	dity meter been calib wed? Yes (1L) (1L) nL) hite (SOOML) en nL) (250mL) RED IN FIELD)	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
Within ranges) Field observation P w Observations d eg. Odours, shee eg. Odours, shee Diameter of we Diameter of ho (1) Volume of c	vring Sampling:- ens, turbidity, wat NELL VOLUMES:- il casing: le drilled; casing only	vities, weather dry	<10cm	3 Has water qualit Decontamination Samples Taken Metals Plastic * Plastic unprese Preserved inorg Glass vials (40n Glass amber un Plastic nutrient Plastic nutrient Plastic nutrient Glass amber un Plastic nutrient Plastic nutrient Glass amber un Plastic nutrient Comber (Comber de Comber de Co	y meter and turble n procedures folic rved inorganics i ganics (250mL) hL) preserved (500m s 60mL light gree preserved (100c rved inorganics s 60mL light gree preserved (100c	dity meter been callb wed? Yes (1L) (1L) (1L) (SOOML) en nL] (SOOML) en nL] (SOOML) RED IN FIELD)	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
Within ranges) Field observation P w Observations d eg. Odburs, shed eg. Odburs, shed Diameter of ho Diameter of ho (2) Volume of c (2) Volume of c	vring Sampling:- ens, turbidity, wat NELL VOLUMES:- il casing: le drilled; casing only	vities, weather dry	at	Has water qualit Decontamination Samples Taken Metals Plastic* Plastic unprese Preserved inorg Glass vials (40n Glass amber ur Plastic nutrient Plastic nutrient Plastic nutrient Glass amber ur Plastic nutrient Glass amber ur Plastic nutrient Missic unprese (* DESIGNATES	y meter and turble n procedures folic rved inorganics i ganics (250mL) hL) preserved (500m s 60mL light gree preserved (100c rved inorganics s 60mL light gree preserved (100c	dity meter been calib wed? Yes (1L) (1L) nL) hite (SOOML) en nL) (250mL) RED IN FIELD)	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes
Within ranges) Field observation P w Observations d eg. Odours, shed eg. Odours, shed Diameter of we Diameter of wo (1) Volume of c (2) Volume of a (3) Volume of a	NELL VOLUMES:- Il casing: le drilled: Lasing only Irill-hole	vities, weather dry	<10cm	Has water qualit Decontamination Samples Taken Metals Plastic* Plastic unprese Preserved inorg Glass vials (40m Glass amber ur Plastic nutrient Plastic nutrient Plastic unprese Plastic nutrient Glass amber ur Plastic unprese (* DESIGNATES	y meter and turble n procedures folic rved inorganics i ganics (250mL) hL) preserved (500m s 60mL light gree preserved (100c rved inorganics s 60mL light gree preserved (100c	dity meter been callb wed? Yes (1L) (1L) nL) hite (SOOmL) en nL] (250mL) RED IN FIELD) 0.00 L per metre 0.00 L per metre	PCCC rated in accorda	nce with operating r	* manual and record	ied? Yes

Fleid Technician #1

GREENCAP

The Tripy Direction and sampling both multi-lation and samplin	Groundwate	r sampling r	BLOID								
Opcode Or couldwater fore installation and sampling Sampled By	Client:		Trillity				Job No:	ch4p4(6) Perso	nal Information	The state of the state	
October Ages Water, Cliff Date: 2 > 6 > 2 > 6 > 200 977/5 Well depth: 1 - 32 > 100 antibility device Preside tow Rev. 000 antibility device Preside t			Groundwater bo	re Installation ar	d sampling						
MAXIMUM BOUNDARY MAXIMUM BOUNDARY 977/5 Weil carea Units Weil carea Weil carea Weil carea Visit Weil carea Weil carea			Agnes Water, Q	d			Date:	23-6-	2020		
977/5 Weil sector 0 2 min 1 0 2 min 0 2 min 0 2 min Weil sector 100 year 100 year 100 year 100 year 100 year Time Amount purple 0 0 year matching 100 year 100 year 100 year Time Amount purple 0 0 year matching 100 year 100 year 100 year Time Amount purple 0 0 year matching 100 year 100 year 100 year Time Amount purple 0 year 100 year 100 year 100 year Time Amount purple 0 year 100 year 100 year 100 year Time Amount purple 0 year 100 year 100 year 100 year Time Amount purple 0 year 100 year 100 year 100 year Time Amount purple 0 year 100 year 100 year 100 year Time Amount purple 100 year 100 year 100 year 100 year Time Amount purple 100 year 100 year 100 year 100 year Time Amount purple 100 year 100 year 100 year 100 year Time Amount purple 100 year 100 year			WELL DETAILS			SAMPLING FOU	PMENT				
Will be ansatzer Commence of the intervent of the i	0-	1	CONTRACTOR OF THE OWNER WATER OF THE OWNER	1.03	2 (m)			v flow)	GEO#		
Image Image Image Image Image Image Image Image	(17	15	Contraction of the State of the						YSI#		
Image Image <th< td=""><td>- / /</td><td>12</td><td>Second the restricted by the</td><td>PV</td><td>CI</td><td>Turbidity Meter</td><td></td><td></td><td>TM#</td><td></td><td></td></th<>	- / /	12	Second the restricted by the	PV	CI	Turbidity Meter			TM#		
Time Decision Decision Decision Decision Decision Decision TIME Q Q Q OTRONO State Decision Pail Long my http://discussion. TIME Q Q Q OTRONO Text Decision Pail Decision Decision TIME Q Q Q Q Q Q Decision Pail Decision TIME Q Q Q Q Q Q Q Decision Decision TIME Q Q Q Q Q Q Q Q Decision TIME Q Q Q Q Q Q Q Q Q TIME Q Q Q Q Q Q Q Q Q TIME Q <td>2011 21 6</td> <td></td> <td>and the second day of the seco</td> <td>0.5</td> <td>20 (m)</td> <td>Interphase prob</td> <td>e:</td> <td></td> <td>1P#</td> <td></td> <td></td>	2011 21 6		and the second day of the seco	0.5	20 (m)	Interphase prob	e:		1P#		
Image: State Control Contrel Control Control	These	Amountpurged	Cumulative	Water Level		1.1.2.2	and the second sec				
IIISQUITA SIX Diff. Diff. Diff. Diff. IIISQUITA SIX Diff. Diff. Diff. Diff. IIISQUITA SIX Diff. Diff. Diff. Diff. IIISQUITA SiX Diff. Diff. Diff. Diff. Diff. IIISQUITA SiX Diff. Diff. Diff. Diff. Diff. Diff. Stabilization Chara Intell. Intell. Intell. Intell. Intell. Intell. Intell. Stabilization Chara Intell. Intell. Intell. Intell. Intell. Intell. Intell. Stabilization Chara Intell. Intell. Intell. Intell. Intell. Intell. Intell. Stabilization Chara Intell. Intell.<	Time	(L)	purged (L)	(m)	'C	% sat	µS/cm	PSU	Units	M	NTU
IIISQUITA SIX Diff. Diff. Diff. Diff. IIISQUITA SIX Diff. Diff. Diff. Diff. IIISQUITA SIX Diff. Diff. Diff. Diff. IIISQUITA SiX Diff. Diff. Diff. Diff. Diff. IIISQUITA SiX Diff. Diff. Diff. Diff. Diff. Diff. Stabilization Chara Intell. Intell. Intell. Intell. Intell. Intell. Intell. Stabilization Chara Intell. Intell. Intell. Intell. Intell. Intell. Intell. Stabilization Chara Intell. Intell. Intell. Intell. Intell. Intell. Intell. Stabilization Chara Intell. Intell.<	1146	17	2	0.780							
Amount of the second matrix of the second	11/0	111	6.61								
MAR <100m 2.40% 2	115a	1.8	3'X	DEVI							
MAR <100m 2.40% 2				/							
MAR <100m 2.40% 2										5-15-15-15	
MAR <100m 2.40% 2											
MAR <100m 2.40% 2									0-		1
MAR <100m 2.40% 2											
MAR <100m 2.40% 2	0										
MAR <100m 2.40% 2											
MAR <100m 2.40% 2						111					
MAR <100m 2.40% 2			-								
MAR <100m 2.40% 2											
MAR <100m 2.40% 2										Contraction and and	
MAR <100m 2.40% 2						-	C				
MAR <100m 2.40% 2							170				
MAR <100m 2.40% 2											
MAR <100m 2.40% 2								C/			1
MAR <100m 2.40% 2											
MAR <100m 2.40% 2							10	<u> </u>			
Within rages) Images) Images) Red observations: e.g. Nearby activities, weather Description: e.g. Nearby activities, weather Has water quality mater and turbletty meter been calibrated in accordance with operating manual and recorded? Yes Description: E.g. Court, sheens, turbletty, water colour Has water quality mater and turbletty meter been calibrated in accordance with operating manual and recorded? Yes Description: E.g. Court, sheens, turbletty, water colour Description: E.g. Court, sheens, turbletty, water colour Plastic unpreserved inorganics (1) Preserved inorganics (20ml.) Plastic unpreserved inorganics (20ml.) Plastic nutrients 60ml (green (white Plastic nutrients 60ml (green (white Plastic nutrients 60ml (green (white Plastic nutrients 60ml (green (S00ml.) Plastic nutrients 60ml (green (G10ml.) Plastic nutrients 60ml (green (G10ml.) Plastic nutrients 60ml (green (G10ml.) Plastic nutrients 60ml (green (G10ml.) <td>Stabilisation Crite</td> <td>ria (Breadings</td> <td>N/A</td> <td>L DATE STORE AND A DATE OF A DATE OF</td> <td>+ 10%</td> <td>+ 10%</td> <td>+ 554</td> <td>± 10%</td> <td>: 0.1</td> <td>± 10mV</td> <td>N/A</td>	Stabilisation Crite	ria (Breadings	N/A	L DATE STORE AND A DATE OF	+ 10%	+ 10%	+ 554	± 10%	: 0.1	± 10mV	N/A
Decontamination procedures followed? Yes Observations during Sampling:: Samples Taken Number Duplicte: QA Triplicate: QA Order eg. Odours, sheens, turbidity, water colour Metais Plastic *	Pur	nped	dry	at 3	XX	t did	not	necor	een,		
Decontamination procedures followed? Yes Observations during Sampling:: Samples Taken Number Duplicte: QA Triplicate: QA Order eg. Odours, sheens, turbidity, water colour Metais Plastic *				6							
Decontamination procedures followed? Yes Observations during Sampling:: Samples Taken Number Duplicte: QA Triplicate: QA Order eg. Odours, sheens, turbidity, water colour Metais Plastic *					Has water qualit	v meter and turble	filty meter been i	calibrated in accorda	nce with operating r	nanual and record	ded? Yes
eg. Odours, sheens, turbidity, water colour, Metais Plastic unpreserved inorganics (11) Plastic unpreserved inorganics (250mL) Glass vials (40mL) Glass amber unpreserved [500mL] Plastic nutrients 60mL green/white Plastic nutrients 60mL green/white Plastic nutrients 60mL light green Glass amber unpreserved [500mL] Plastic nutrients 60mL light green Glass amber unpreserved [500mL] Plastic nutrients 60mL light green Glass amber unpreserved [100mL] Plastic nutrients 60mL light green Glass amber unpreserved [100mL			. • .	6				1787 DA TRANS VILO DE 1893 - 4			
eg. Odours, sheens, turbidity, water colour, Metais Plastic unpreserved inorganics (11) Plastic unpreserved inorganics (250mL) Glass vials (40mL) Glass amber unpreserved [500mL] Plastic nutrients 60mL green/white Plastic nutrients 60mL green/white Plastic nutrients 60mL light green Glass amber unpreserved [500mL] Plastic nutrients 60mL light green Glass amber unpreserved [500mL] Plastic nutrients 60mL light green Glass amber unpreserved [100mL] Plastic nutrients 60mL light green Glass amber unpreserved [100mL			Contrast and the second					Number		Trainile to OA	Order
MONITORING WELL VOLUMES:- Diameter of well casing: Diameter of hole drilled: (1) Volume of casing only 0.000000 m3 (kL) 0.000000 m3 (kL) <	and the set of the set of the set of the set of the set	and the second se						Number	Duplicte: QA	Implicate: UA	Order
Preserved inorganics (250mL)	eg. Udours, shee	ns, turpicity, wa	ter colour		IVICLES PIESUL		7				
Preserved inorganics (250mL)			$\Delta \nabla$								1
Preserved inorganics (250mL)			X		Plastic unprese	rved inorganics	(11)	-			
Glass vials (40mL)						the second data and the se					
Plastic nutrients 60mL green/white					and the second data was not second as	Contract of the second s					
Plastic unpreserved inorganics (500mL) Image: Comparise for the second of the seco											
Plastic nutrients 60mL light green					Plastic nutrient	ts 60mL green/w	hite				
Glass amber unpreserved (100mL) Image: Plastic unpreserved (100mL) Plastic unpreserved Inorganics (250mL) Image: Plastic unpreserved (100mL) (* DESIGNATES SAMPLES FILTERED IN FIELD) Image: Plastic unpreserved (100mL) MONITORING WELL VOLUMES:- Image: Plastic unpreserved (100mL) Diameter of well casing: Image: Plastic unpreserved (100mL) Image: Plastic unpreserved (100mL) Diameter of well casing: Image: Plastic unpreserved (100mL) Image: Plastic unpreserved (100mL) Diameter of well casing: Image: Plastic unpreserved (100mL) Image: Plastic unpreserved (100mL) Diameter of well casing: Image: Plastic unpreserved (100mL) Image: Plastic unpreserved (100mL) Diameter of well casing: Image: Plastic unpreserved (100mL) Image: Plastic unpreserved (100mL) Diameter of well casing: Image: Plastic unpreserved (100mL) Image: Plastic unpreserved (100mL) Diameter of drill-hole Image: Plastic unpreserved (100mL) (1) Volume of annulus around casing Image: Plastic unpreserved (100mL) (3) Volume of annulus around casing Image: Plastic unpreserved (100mL) (4) Total Bore Volume = 0.3(3) + (1) Image: Plastic unpreserved (100mL)					And the second se	and the second sec	Contraction in the second of a				
Plastic unpreserved Inorganics (250mL) - (* DESIGNATES SAMPLES FILTERED IN FIELD) - MONITORING WELL VOLUMES:- - Diameter of well casing: mm Diameter of hole drilled: mm (1) Volume of casing only 0.000000 m3 (kL) 0.00 L per metre (2) Volume of drill-hole 0.000000 m3 (kL) 0.00 L per metre (3) Volume of annulus around casing 0.000000 m3 (kL) 0.00 L per metre (4) Total Bore Volume = 0.3(3) + (1) 0.000000 m3 (kL) 0.00 L per metre											
(* DESIGNATES SAMPLES FILTERED IN FIELD) MONITORING WELL VOLUMES:- Diameter of well casing: mm Diameter of hole drilled: (1) Volume of casing only 0.000000 m3 (kL) 0.000000 m3 (kL) 0.00 L per metre (2) Volume of drill-hole 0.000000 m3 (kL) (3) Volume of annulus around casing 0.000000 m3 (kL) (4) Total Bore Volume = 0.3(3) + (1) 0.000000 m3 (kL)					State and and a state of the st	And and the owner of the local day of the second	and the second se				
MONITORING WELL VOLUMES:- Diameter of well casing: mm Diameter of hole drilled: mm (1) Volume of casing only 0.000000 m3 (kL) 0.00 L per metre (2) Volume of drill-hole 0.000000 m3 (kL) 0.00 L per metre (3) Volume of annulus around casing 0.000000 m3 (kL) 0.00 L per metre (4) Total Bore Volume = 0.3(3) + (1) 0.000000 m3 (kL) 0.00 L per metre					Contraction international statistics of the	and the second state of the last of the second state of the	Contraction of the second s				
Diameter of well casing: mm Diameter of hole drilled: mm (1) Volume of casing only 0.00000 m3 (kL) 0.00 L per metre (2) Volume of drill-hole 0.00000 m3 (kL) 0.00 L per metre (3) Volume of annulus around casing 0.00000 m3 (kL) 0.00 L per metre (4) Total Bore Volume = 0.3(3) + (1) 0.00000 m3 (kL) 0.00 L per metre					IL DESIGNATES	SAWIFLES FILLE	NEU IN PIECU)		-		1
Diameter of well casing: mm Diameter of hole drilled: mm (1) Volume of casing only 0.00000 m3 (kL) 0.00 L per metre (2) Volume of drill-hole 0.00000 m3 (kL) 0.00 L per metre (3) Volume of annulus around casing 0.00000 m3 (kL) 0.00 L per metre (4) Total Bore Volume = 0.3(3) + (1) 0.00000 m3 (kL) 0.00 L per metre	MONITORING W	ELL VOLUMES:	5								
Diameter of hole drilled: mm (1) Volume of casing only 0.00000 m3 (kL) 0.00 L per metre (2) Volume of drill-hole 0.000000 m3 (kL) 0.00 L per metre (3) Volume of annulus around casing 0.00000 m3 (kL) 0.00 L per metre (4) Total Bore Volume = 0.3(3) + (1) 0.000000 m3 (kL) 0.00 L per metre				1000	mm						
(2) Volume of drill-hole 0.000000 m3 (kL) 0.00 L per metre (3) Volume of annulus around casing 0.00000 m3 (kL) 0.00 L per metre (4) Total Bore Volume = 0.3(3) + (1) 0.000000 m3 (kL) 0.00 L per metre					and the second se						
(3) Volume of annulus around casing 0.000000 m3 (kL) 0.00 L per metre (4) Total Bore Volume = 0.3(3) + (1) 0.000000 m3 (kL) 0.00 L per metre											
(4) Total Bore Volume = 0.3(3) + (1) 0.000000 m3 (kL) 0.00 L per metre			AN 8 5 2 2								
				.0.000000	una lord		NAME NET THEY	34.5			

Field Technician #1



			and the second day is a second day of the second	the second day of the	and the second division of the second divisio			_		No. of Concession, Name of Concession, Name of Street, or other	
lient:		Trility Groundwater bor	. Installation and	desmaling		Job No: Sampled by:			al Informatio		
roject:		Agnes Water, Qlo		io sampling		Date:	23-	6-	2020		
ocation:		Contraction of the local division of the loc			SAMPLING EQU	N TRANSPORT				and the literation	and the second second
		WELL DETAILS	1.80	1 (m)	Sampling device		flow)	-	GEO#		Contract Contractor
		Well depth: Well diameter:	500		Water meter				YSI#		
001	07	Casing type:	PVC		Turbidity Meter			1	TM#		
	an a	Initial water level:	DAY	(m)	Interphase prob	e:			IP#		and the second division of the second divisio
Time	Amount purged	Cumulative	Water Level	Temperature	DO	Sp. Conductivi			pH	ORP mV	Turbidity NTU
line	(L)	purged (L)	(m)	'C	% sat	uS/cm	PS		Units	,my	1410
						-					
			The second s								
						1			10-10-10-10-10-10-10-10-10-10-10-10-10-1		
							-				
									09		
											1200
							-				
(territorial and a second s	10						_				
								-			
							-0-				
						C					
						16					
							0				-
							<u>Y)</u>				
Stabilisation Criter	ela l'Anandiner		Drawdown		Ca			05/	± 0.1	± 10mv	N/A
within ranges)	na (bieanings	N/A	<10cm	z 10%	± 10%	± 5%	±1	U76	20.1	TE ASSILLY	in the second
	s: eg. Nearby acti					3					
	s: eg. Nearby acti		6	010	(IP						
			6	000		5					
			- Cec				calibrated in a	accordan	ce with operating	manual and records	ed? Yes
			sned		y meter and turbl						
Observations du	uring Sampling:-	DRY	STE	Decontaminatio	n procedures folio			accordan	ce with operating Duplicte: QA	manual and records	ed? Yes Order
Observations du	uring Sampling:-	DRY	Sted	Decontaminatio	n procedures folio						
Observations du	uring Sampling:-	DRY	Sted	Decontaminatio	n procedures folio						
Observations du	uring Sampling:-	DRY	Sned	Decontaminatio Samples Taken Metais Plastic*	n procedures folk	owed? Yes					
Observations du	uring Sampling:-	DRY	sned	Decontaminatio Samples Taken Metais Plastic* Plastic unprese	n procedures folio	owed? Yes					
Observations du	uring Sampling:-	DRY	Sted	Decontaminatio Samples Taken Metais Plastic Plastic unprese Preserved inor Glass vials (40r	n procedures folio erved Inorganics ganics (250mL) mL)	(1L)					
Observations du	uring Sampling:-	DRY	Sted	Decontaminatio Samples Taken Metais Plastic Plastic unprese Preserved inor Glass vials (40r Glass amber un	n procedures folio erved Inorganics ganics (250mL) mL) npreserved (500r	(1L) mL)					
Observations du	uring Sampling:-	DRY	6100	Decontaminatio Samples Taken Metais Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber ur Plastic nutrien	n procedures folio erved Inorganics ganics (250mL) mL) preserved (500 ts 60mL green/w	(1L) mL)					
Observations du	uring Sampling:-	DRY	6160	Decontaminatio Samples Taken Metais Plastic * Plastic unprese Preserved inor Glass vials (40r Glass amber ur Plastic nutrien Plastic nutrien	n procedures follo erved Inorganics ganics (250mL) mL) npreserved (500 is 60mL green/w erved inorganics	(1L) (1L) mL) (500mL)					
Observations du	uring Sampling:-	DRY	Sted	Decontaminatio Samples Taken Metais Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber ur Plastic nutrien Plastic nutrien	n procedures folio erved Inorganics ganics (250mL) mL) preserved (500 ts 60mL green/w	(1L) (1L) (1L) (500mL) (500mL) (en					
Observations du	uring Sampling:-	DRY	Sned	Decontaminatio Samples Taken Metais Plastic* Plastic unprese Preserved Inor Glass vials (40r Glass amber ur Plastic nutrien Glass amber ur Plastic nutrien Glass amber ur Plastic unprese	n procedures follo erved Inorganics ganics (250mL) mL) npreserved (500i ts 60mL green/is ts 60mL light gre npreserved (100i erved Inorganics	(1L) (1L) mL) chite (500mL) en mL) (250mL)					
Observations du	uring Sampling:-	DRY	5100	Decontaminatio Samples Taken Metais Plastic* Plastic unprese Preserved Inor Glass vials (40r Glass amber ur Plastic nutrien Glass amber ur Plastic nutrien Glass amber ur Plastic unprese	n procedures folk erved Inorganics ganics (250mL) hL) hpreserved (500i ts 60mL green/w sty 60mL light gre hpreserved (100i	(1L) (1L) mL) chite (500mL) en mL) (250mL)					
Observations du eg. Odours, shee	uring Sampling:-	DRY ter colour	5100	Decontaminatio Samples Taken Metais Plastic* Plastic unprese Preserved Inor Glass vials (40r Glass amber ur Plastic nutrien Glass amber ur Plastic nutrien Glass amber ur Plastic unprese	n procedures follo erved Inorganics ganics (250mL) mL) npreserved (500i ts 60mL green/is ts 60mL light gre npreserved (100i erved Inorganics	(1L) (1L) mL) chite (500mL) en mL) (250mL)					
Observations du eg. Odours, shee	uring Sampling:- ens, turbidity, wa	DRY ter colour	5100	Decontaminatio Samples Taken Metais Plastic* Plastic unprese Preserved Inor Glass vials (40r Glass amber ur Plastic nutrien Glass amber ur Plastic nutrien Glass amber ur Plastic unprese	n procedures follo erved Inorganics ganics (250mL) mL) npreserved (500i ts 60mL green/is ts 60mL light gre npreserved (100i erved Inorganics	(1L) (1L) mL) chite (500mL) en mL) (250mL)					
Observations du eg. Odours, shee	VELL VOLUMES:-	DRY ter colour	5100	Decontaminatio Samples Taken Metais Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber ur Plastic nutrien Plastic nutrien Plastic nutrien Glass amber ur Plastic unprese Plastic unprese (* DESIGNATES	n procedures follo erved Inorganics ganics (250mL) mL) npreserved (500i ts 60mL green/is ts 60mL light gre npreserved (100i erved Inorganics	(1L) (1L) mL) chite (500mL) en mL) (250mL)					
Observations du eg. Odours, shee MONITORING W Diameter of hol (1) Volume of ci	VELL VOLUMES:- Il casing: le drilled: casing only	DRY ter colour		Decontaminatio Samples Taken Metais Plastic* Plastic unprese Preserved inor Glass vials (40r Glass vials (40r Glass amber un Plastic nutrien Plastic nutrien Glass amber un Plastic nutrien Class amber un Plastic nutrien Plastic nutr	n procedures follo erved Inorganics ganics (250mL) mL) npreserved (500i ts 60mL green/is ts 60mL light gre npreserved (100i erved Inorganics	(1L) (1L) (1L) (1L) (1L) (1L) (1L) (1L)	re				
Observations du eg. Odours, shee Diameter of we Diameter of hol (1) Volume of co (2) Volume of do	WELL VOLUMES:- Il casing: le drilled: asing only trill-hole	DRY ter colour	0.00000	Decontaminatio Samples Taken Metais Plastic* Plastic unprese Preserved inor Glass vials (40r Glass amber ur Plastic nutrien Plastic nutrien Glass amber ur Plastic nutrien Glass amber ur Plastic nutrien Glass amber ur Plastic unprese (* DESIGNATES mm mm 0 m3 (kL) 0 m3 (kL)	n procedures follo erved Inorganics ganics (250mL) mL) npreserved (500i ts 60mL green/is ts 60mL light gre npreserved (100i erved Inorganics	(1L) (1L) (1L) (500mL) (500mL) (250mL)	re				
MONITORING W Diameter of we Diameter of we (1) Volume of ci (2) Volume of di (3) Volume of a	VELL VOLUMES:- Il casing: le drilled: casing only	ter colour	0.00000	Decontaminatio Samples Taken Metais Plastic* Plastic unprese Preserved inor Glass vials (40r Glass vials (40r Glass amber un Plastic nutrien Plastic nutrien Glass amber un Plastic nutrien Class amber un Plastic nutrien Plastic nutr	n procedures follo erved Inorganics ganics (250mL) mL) npreserved (500i ts 60mL green/is ts 60mL light gre npreserved (100i erved Inorganics	(1L) (1L) (1L) (1L) (1L) (1L) (1L) (1L)	re re				

Field Technician #1



Groundwater Sampling r									
Client:	Trility	AL AVERAGE	Toolog Bars			sch4p4(6) Pers	onal Informatio	on	
Project:		re Installation an	d sampling		Sampled by: Date:	23-6-1	2020		
Location:	Agnes Water, Q	a		and the second second second	ALT PROVIDE AND ADDRESS OF ADDRES	620			
	WELL DETAILS			SAMPLING EQU		flow	GEO#		1
1	Well depth:	1.785) Sampling device Water meter	Peristantic (lov	v now)	YSI#		
DOIDS	Well diameter: Casing type:	50mm	A	Turbidity Meter			TM#	1	
00/00	Initial water leve			Interphase prob			IPH		
Amount purged	NAME AND ADDRESS OF TAXABLE PARTY.	Water Level	Temperature	DO	Sp. Conductiv		pH	ORP	Turbidity
Time (L)	purged (L)	(m)	'C	% sat	u\$/cm	PSU	Units	mV	NTU
				1					
						1		1 il	
	the second			1					
						.01			
			-	1					
						6			
						0			
	-					<u> </u>			
					100				
									_
· · · · · · · · · · · · · · · · · · ·						0			
	_				Contraction (Contraction)				
					$+ \cap$	<u> </u>			
Stabilisation Criteria (Breadings within ranges)	N/A	Drawdown <10cm	± 10%	± 10%	± 5%	± 10%	± 0.1	± 10mV	N/A
WELL DA	/	6		$\langle \rangle_{k}$					
		0							
		5		ty meter and turb on procedures foll		calibrated in accorda	ince with operating	manual and records	d? Yes
Observations during Sampling:	_		Samples Taker	n		Number	Duplicte: QA	Triplicate: QA	Order
eg. Odours, sheens, turbidity, wi			Metals Plastic'	£					
	\mathbf{O}				21.03				
				erved Inorganics	(1L)	-			
			Glass vials (40	rganics (250mL)					
			and the second se	npreserved (500	mL)				1000 M
				ts 60mL green/v					
				erved inorganics					
				nts 60mL light gre				-	
				npreserved (100					7.32-022-0
				erved Inorganics S SAMPLES FILTE					
			- DESIGNATE						
MONITORING WELL VOLUMES:	•		Torac						
Diameter of well casing:			mm						
Diameter of hole drilled: (1) Volume of casing only		0.00000	0 m3 (kL)		0.00 L per met	tre			
(2) Volume of drill-hole			0 m3 (kL)		0.00 L per met				
(3) Volume of annulus around	casing		0 m3 (kL)		0.00 L per met				
(4) Total Bore Volume = 0.3(3)		0.00000	0 m3 (kL)		0.00 L per met	tre			
(assuming 30% porosity in s	and/gravel pack)								

Fleid Technician #1



-josure Lor

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment Plant, Agnes Water

Appendix B-1: June 2020 Quarterly Results Summary Table

greencap.com.au

											0	3				
								Appendix	B: Results S	ummary T	able June 20					
					Field							Inorgani	ics			
LOR				ත් කි Electrical Conductivity (EC)	五 pH_Units	로 Oxidation Reduction Potential (O	ငံ Temperature	mg/L 0.01	mg/L T/	0. Kjeldahl Nitrogen Total	0.0 D≤S Nitrate (as N)	0.0 Mitrite (as N)	.0 D-D-D-D-D-D-D-D-D-D-D-D-D-D-D-D-D-D-D-	Dides of Nitrogen		L 曼 Sulphate as S
		Trigger Criteria	from	20% change from background	No change from background			20% change from background	from		20% change from background		20% change from background		20% change from background	from
Sample ID	Sampled Date	Lab_Report) /		1								
		Number														
STP1	24/06/2020	EB2016812	0.85	3,844	6.67		23.7	0.03	1,020	0.1	<0.01	<0.01	0.1	0.1	0.01	92
STP2	24/06/2020	EB2016812	0.49	12,069	6.5		26.3	0.03	3,850	0.3	<0.01	<0.01	0.4	0.4	0.07	369
STP1 Duplicate	24/06/2020	EB2016812	0.85	3,844	6.67		23.7	0.04	1020	0.1	<0.01	<0.01	0.1	<0.1	0.01	92
DESAL1	22/06/2020	EB2016548	0.18	343.1	4.1		24.5	0.12	77	1.1	0.3	<0.01	1.4	0.3	0.01	<1
DESAL2	22/06/2020	EB2016548	0.32	238.2	4.3		23.8	0.15	52	1	<0.01	<0.01	1	<0.1	0.14	<1
DESAL3	22/06/2020	EB2016548	0.34	202	5.07		26.3	0.47	47	1.2	<0.01	<0.01	1.2	<0.1	0.07	<1
DESAL 1 Duplicate	22/06/2020	EB2016548	0.18	343.1	4.1		24.5	0.13	78	1.1	<0.01	<0.01	1.4	0.31	0.01	<1

		ſ							Append	lix B: Resul	Its Summar	y Table June	e 2020						
									••		Metals	O							
			Aluminium	Aluminium (Filtered)	Arsenic	Arsenic (Filtered)	Boron	Cadmium	cadmium (Filtered)	Chromium (II+VI)	Chromium (II+VI) (Filtered)	Cobalt	Cobalt (Filtered)	copper	Copper (Filtered)	lron	tron (Filtered)	Ead	Lead (Filtered)
LOR			μg/L 10	μg/L 10	µg/L 1	µg/L 1	μg/L 50	μg/L 0.1	μg/L 0.1	µg/L	µg/L 1	µg/L 1	µg/L 1	µg/L 1	µg/L 1	μg/L 50	μg/L 50	µg/L 1	µg/L 1
		Trigger Criteria	55	55	13	13	No change from background	0.2	0.2	1	1	1.4	1.4	1.4	1.4	30	30	3.4	3.4
Sample ID S	Sampled Date	Lab_Report Number					0												
STP1 2	24/06/2020	EB2016812	<10	<10	1.0	1.0	<50	<0.1	<0.1	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	1,660	1,780	<1.0	<1.0
STP2 2	24/06/2020	EB2016812	<10	<10	2.0	2.0	<50	<0.1	<0.1	<1.0	<1.0	2.0	2.0	<1.0	<1.0	60	50	<1.0	<1.0
STP1 Duplicate 2	24/06/2020	EB2016812	<10	<10	1	<1.0	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1,630	1,760	<1.0	<1.0
DESAL1 2	22/06/2020	EB2016548	620	610	<1.0	<1.0	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	2.0	170	170	<1.0	<1.0
DESAL2 2	22/06/2020	EB2016548	620	590	<1.0	<1.0	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	0.001	2.0	760	740	<1.0	<1.0
DESAL3 2	22/06/2020	EB2016548	840	1,000	2	0.0	<50	<0.1	<0.1	3.0	3.0	<1.0	<1.0	<1.0	<1.0	3,000	3,000	<1.0	<1.0
DESAL 1 Duplicate 2	22/06/2020	EB2016548	0.61	1	<1.0	<1.0	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	160	170	<1.0	<1.0

		r								-			-					
								ŀ		Results Sun	nmary lab	le June 202	0					
									Me	etals							Microb	piological
			Manganese	S Manganese (Filtered)	i Mercury	i Mercury (Filtered)	Nickel M	š Nickel (Filtered)	s Silver	Silver (Filtered)	Selenium	selenium (Filtered)	E	Tin (Filtered)	ZInc	Zinc (Filtered)	Colli Colli	i processi processi processi i procesi i processi i processi i i i i i i i i i i i i i i i i i i
LOR			µg/L 1	µg/L 1	μg/L 0.1	μg/L 0.1	μg/L 1	µg/L	μg/L 0.01	μg/L 0.01	μg/L 10	μg/L 10	µg/L 1	µg/L 1	µg/L 5	μg/L 5	ciu/ 100 mi	ciu/ 100 mi
		Trigger Criteria	1900	1900	0.06	0.06	11	11	0.05	0.05	5	5			8	8	No change from background	No change from background
Sample ID	Sampled Date	Lab_Report Number				2												
STP1	24/06/2020	EB2016812	1,260	1,380	<0.1	<0.1	12.0	4.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	6.0	<1	<1
STP2	24/06/2020	EB2016812	121	116	<0.1	<0.1	3.0	4.0	0.02	0.02	<10	<10	<1.0	<1.0	17.0	<5.0	<1	<1
STP1 Duplicate	24/06/2020	EB2016812	1,280	1,380	<0.1	<0.1	<1.0	<1.0	<0.01	<0.1	<10	<10	<1.0	<1.0	<5.0	5.0	<1	<1
DESAL1	22/06/2020	EB2016548	13.0	14.0	<0.1	<0.1	<1.0	<1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	7.0	<1	<1
DESAL2	22/06/2020	EB2016548	12.0	26.0	<0.1	<0.1	<1.0	1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	9.0	<1	<1
DESAL3	22/06/2020	EB2016548	23	26	<0.1	<0.1	2.0	2.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	5.0	<1	<1
DESAL 1 Duplicate	22/06/2020	EB2016548	13	13	<0.1	<0.1	1.0	1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	5.0	<1	<1



-105Ure Lor

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment

Plant, Agnes Water

Appendix B-2: IWTP Annual Results Summary Table

greencap.com.au

												>				
				Field			Append	IX B: Results Sun	nmary Tabl	e July 2019 to June 2020		Inorgani	ics			
			CQ E E CQ E E C C E E E C C E E E C C E E E C C E E E C C E E E C C E E E C C E E E C C C E E E C C C E E C	天 夏 日et rical conductivity (EC)	[°] 권 pH_Units pH (pH_Units)	U representation version of the second secon	entre Tress C Temperature (°C)	N se epour mg/L mmonia as N (mg/l	Be CHART	ाह प्रमुख्य mg/L Ljeldahl Nitrogen Total (mg/L	() N (se) Mittate (as N) (mg/L Litrate (as N) (mg/	∭ ^m Nitrite (as N)	∭ Mitrogen (Total)	Big Septer mg/L Dxides of Nitrogen (mg/	di Si Si Si S	S se apato strong mg/L /fulphate as S (mg/L
Sample ID	Sampled Date	Lab_Report Number	Dissolved Oxygen (DO)	Electrical Conductivity (EC)	PH	Oxidation Reduction Potential (ORP)	Temperature	Ammonia as N	Chloride	Kjeldahi Nitrogen Total	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)	Oxides of Nitrogen	Total Phosphorus as P	Sulphate as S
DESAL 1	16/09/2019	EB1924392	0.13	239	3.92	306	32.4	0.15	56	0.7	0.11	<0.01	0.8	0.11	0.02	2
DESAL 1	16/12/2019	EB1933892	0.88	278	3.89	248	25.2	0.14	72	0.8	0.02	<0.01	1	0.02	0.02	<1.0
DESAL 1	15/04/2020	EB2010399	0.32	298.7	3.99	172.4	26.3	0.1	74	1.2	0.76	<0.01	2	0.76	<0.05	<5.0
DESAL 1	24/06/2020	EB2016548	0.18	343.1	4.1		24.5	0.12	77	1.1	0.3	< 0.05	1.4	0.3	0.01	<5
DESAL 2	16/09/2019	EB1924392	0.15	212	3.6	334	23	0.1	48	0.7	0.55	<0.01	1.2	0.55	0.01	1
DESAL 2	16/12/2019	EB1933892	0.98	194	3.71	292	23.9	0.08	46	1.3	0.07	< 0.01	1.3	0.07	0.1	<1.0
DESAL 2	15/04/2020	EB2010399	0.31	313.6	3.92	180.6	24.8	0.1	81	1.3	0.03	< 0.01	1.3	0.03	0.1	2
DESAL 2 DESAL 3	22/06/2020 16/09/2019	EB2016548 EB1924392	0.32	238.2	4.3	-171.8	23.8 25	0.15	52 56	1.5	<0.05 <0.01	<0.05 <0.01	1	<0.01 <0.01	0.14 0.06	<5 <1.0
DESAL 3 DESAL 3	16/09/2019	EB1924392 EB1933892	0.15	222	4.74	-1/1.8 -155	25	0.39	56	1.5	<0.01	<0.01	1.5	<0.01	0.06	<1.0
DESAL 3 DESAL 3	15/04/2020	EB1933892 EB2010399	0.44	208	4.72	-155	26.6	0.38	54 60	1.6	<0.01	<0.01	1.6	<0.01	0.09	<1.0
DESAL 3 DESAL 3	24/06/2020	EB2010399 EB2016548	0.34	202	5.07	-177.7	26.3	0.47	47	1.8	<0.01	<0.01	1.8	<0.01	0.21	<5
				6 _{No}		1										

									Appen	dix B: Results Sumr	mary Table July 2019 to		~ ⁰						
			بعاري ۱۹۹۲ - Haminium باuminium (uo/)	Huminium (filtered) 1997 1997	jug/L Jug/L Jug/L	ر Arsenic (Filtered) ۱۳۵۵ (۲۹۹۹) الماری ۱۳۵۹ (۱۳۹۹)	පි පිසි µg/L ioron (ua/	ر مولف المراجع Cadanium (۲۵۵/	Juny (Hered) Juny (Hered)	Joou (V-II) Log Ctromium Joou (V-II) Dummium (II+V)	Metals	tion tion tion tion tion tion tion tion	ر (filtered) المال (filtered) It (filtered)	Loopber Cobber Δ/μμ 1/cpu) readou	(Eiffered) Jyg/L 1000per (Filfered)	<u>5</u> µg/L Jron (ug/L)r	(f) Lugy (Liffered) (ugy (liffered)	pe ej µg/L Lead (ug/Lea	read (filtered) المراجع ad (filtered)
Sample ID	Sampled Date	Lab_Report Number	Aluminium	Aluminium (Filtered)	Arsenic	Arsenic (Filtered)	Boron	Cadmium	Cadmium (Filtered)	Chromium (III+VI)	Chromium (III+VI) (Filtered)	Cobalt	Cobalt (Filtered)	Copper	Copper (Filtered)	Iron	Iron (Filtered)	Lead	Lead (Filtered)
DESAL 1	16/09/2019	EB1924392	420	420	<1.0	<1.0	50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	290	250	<1.0	<1
DESAL 1	16/12/2019	EB1933892	560	470	<1.0	<1.0	<u><</u> 50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	240	200	<1.0	<1.0
DESAL 1	15/04/2020	EB2010399	590	480	<1.0	<1.0	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	180	140	<1.0	<1.0
DESAL 1	24/06/2020	EB2016548	620	610	< 0.001	<0.001	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	2	170	170	<1.0	<1.0
DESAL 2	16/09/2019	EB1924392	350	370	<1.0	<1.0	50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	350	330	<1.0	<1.0
DESAL 2	16/12/2019	EB1933892	510	450	<1.0	<1.0	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	460	390	<1.0	<1.0
DESAL 2	15/04/2020	EB2010399	1350	560	<1.0	<1.0	<50	<0.1	<0.1	3	<1.0	<1.0	<1.0	2	<1.0	670	570	1	<1.0
DESAL 2	22/06/2020	EB2016548	620	590	< 0.001	<0.001	<50	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	0.001	2	760	740	<1.0	<1.0
DESAL 3	16/09/2019	EB1924392	1030	800	1	1	<50	<0.1	<0.1	4	3	<1.0	<1.0	2	<1.0	4300	4280	<1.0	<1.0
DESAL 3	16/12/2019	EB1933892	870	1040	2	2	<50	<0.1	<0.1	3	3	<1.0	<1.0	<1.0	1	4290	3860	<1.0	1
DESAL 3	15/04/2020	EB2010399	920	730	1	1	<50	<0.1	<0.1	3	2	<1.0	<1.0	<1.0	<1.0	3990	3710	<1.0	<1.0
DESAL 3	24/06/2020	EB2016548	840	1000	0.002	0.002	<50	<0.1	<0.1	3	3	<1.0	<1.0	<1.0	<1.0	3000	3000	<1.0	<1.0
				2	J														

			Γ						Annendi	iy 8- Rosults Sum	mary Table	: July 2019 to June 20		00				
			езеневием µg/L /anganese (ug/l	() Jacobson () Jac	λη Doay μg/L /L/tercury (ua/)	Juni (Filtered) Juni (Filtered) Juni (Fastalia	vor) et al. 7/6H Nickel	nkel (Filtered)	년 Silver	Met (Jiner ed) Iner (Filter ed)	als Seleuirum µg/L	ታይ Selenium (Filtered)	ц µg/L	ng/L J/Ulitered)	егд µg/L L Zinc (ua/L)	التوريح الالتوريخ المراجع المراجع (Theread) المراجع المراجع	الم ق در (۲۵۵ ml	obiological
Sample ID	Sampled Date	Lab_Report Number	Manganese	Manganese (Filtered)	Mercury	Mercury (Filtered)	Nickel	Nickel (Filtered)	Silver	Silver (Filtered)	Selenium	Selenium (Filtered)	Tin	Tin (Filtered)	Zinc	Zinc (Filtered)	E. Coli	Enterococci
DESAL 1	16/09/2019	EB1924392	7	7	<0.1	<0.1	<0.1	<1.0	<0.01	<0.01	<10	<10	<1	<1	<5	<5	<1	<1
DESAL 1	16/12/2019	EB1924392 EB1933892	7	6	<0.1	<0.1	<1.0	<1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
DESAL 1 DESAL 1	15/04/2020	EB1933692 EB2010399	8	8	<0.1	<0.1	<1.0	<1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
DESAL 1	24/06/2020	EB2010399 EB2016548	13	14	<0.1	<0.1	<1.0	<1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
DESAL 1 DESAL 2	16/09/2019	EB2016548 EB1924392	5	0.014	<0.1	<0.1	<1.0	<1.0	<0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
			5		<0.1		<1.0	<1.0		<0.01	<10	<10		<1.0	<5.0			
DESAL 2	16/12/2019	EB1933892		6		<0.1			< 0.01				<1.0			<5.0	<1	<1
																		<1
																		<1
																		<2
																		<1
																		<1 <1
DESAL 2 DESAL 2 DESAL 2 DESAL 3 DESAL 3 DESAL 3	16/12/2019 15/04/2020 22/06/2020 16/09/2019 16/12/2019 15/04/2020 24/06/2020	EB1933892 EB2010399 EB2016548 EB1924392 EB1933892 EB2010399 EB2016548	7 30 12 33 33 28 23	6 28 26 36 30 29 26	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	<pre></pre>	<1.0 2 <1.0 4 3 3 2	< L01332	<0.01 0.04 <0.01 <0.01 <0.01 0.02 <0.01	<0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01	<10 <10 <10 <10 <10 <10 <10 <10	<10 <10 <10 <10 <10 <10 <10 <10	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<5.0 <5.0 <5.0 6 7 6 <5.0 <5.0	<5.0 7 9 <5.0 <5.0 8 5	त त द द त त	



-josure Lor

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment

Plant, Agnes Water

Appendix B-3: WwTP Annual Results Summary Table

greencap.com.au

			[Аррор	liv B: Doculto Sun	mary Tabli	E July 2019 to June 2020		>				
				Field			Append	IN D. RESULTS SUIT	inidi y i dDli	c July 2019 to Julie 2020	,	Inorgani	cs.			
			Disolved Oxygen (DO) ¹	6 Bectrical Conductivity (EC)	َتَح pH_Units	Z Oxidation Reduction Potential (C	් Temperature	mmonia as N	chloride mg/r	wK geldahi Nitrogen Tolal	W ⁶ Mitrate (as N)	V. Witrite (as N)	≅ Nitrogen (Total)	∭oxides of Nitrogen	ad Phosphorus as P	ba N Sulphate as S
				Electrical Conductivity (EC) (µS/cm)			Temperature (°C)									
Sample ID	Sampled Date	Lab_Report Number	Dissolved Oxygen (DO)	Electrical Conductivity (EC)	포	Oxidation Reduction Potential (ORP)	Temperature	Ammonia as N	Chloride	Kjeldahi Nitrogen Total	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)	Oxides of Nitrogen	Total Phosphorus as P	Sulphate as S
STP1	17/09/2019		0.25	3,848	6.68	10.7	23.5	0.05	1,030	<0.1	<0.1	<0.1	<0.1	<0.1	0.01	95
STP1 STP1	17/12/2019 15/04/2020		2.64 0.72	3,648 3,729	6.54	2.1	24	0.05	1,020	<0.1 0.3	<0.01 <0.01	<0.01 <0.01	<0.1	<0.01 <0.01	0.01	96 95
STP1	24/06/2020		0.85	3,844	6.67	*10.7	23.7	0.03	1,020	0.3	<0.01	<0.01	0.1	0.1	0.02	95
STP2	17/09/2019		0.83	12,364	6.5	121	23.3	0.04	3,940	<0.1	<0.1	<0.1	<0.1	<0.1	0.02	375
STP2	17/12/2019		3.24	11,708	6.35	111	23.5	0.01	4,020	<0.1	<0.01	<0.01	<0.1	<0.01	0.02	381
STP2	15/04/2020	EB2010933	1.13	11,732	6.53	85.5	24	0.18	3,850	0.3	<0.01	<0.01	0.3	<0.01	0.04	369
STP2	24/06/2020	EB2016812	0.49	12,069	5.07		26.3	0.03	3,850	0.3	<0.01	<0.01	0.4	0.4	0.07	369
				PUDI												

									Арреп		ary Table July 2019 to Ju		-0 ⁰						
			ት አሀመነስሀሙ	କୁ Aluminium (Filtered)	년 Arsenic	ja Arsenic (filter ed)	hð/r	Cadmium hidvr	ja ∳ Cadmium (filtered)	ර්ත්තාන්ත (II+VI)	Wetals Tromium (III+VI) (Fiftereed) کرم	7. மீவ்	토 Cobalt (Filtered)	ත් Copper 7/ර	ja Copper (Filtered)	no hð/r	ର୍ଜ୍ୟ ଜୁଣ ଅନେକରୀ)	lead Л	는 Lead (Filtered)
Sample ID	Sampled Date	Lab_Report Number	luminium (µg/l Alum iniu m	L Numinium (Filtered) (µg/ A luminium (Filtered)	/Lursenic (µg/l Arsenic	vrsenic (Filtered) (µg/L Arsenic (Filtered)	ioron (µg/l Boron	Cadmium (µg/	≳admium (Filtered) (µg/t Cadmium (Filtered)	:hromium (III+VI) (µg/L Chromium (III+VI) (III+VI)	hromium (III+VI) (Filtered) (µ Chromium (III+VI) (Filtered)	lg/Lobalt (µg/L Cobalt (µg/L	cobalt (Filtered) (µg/ Cobalt (Fillered)	Copper (µg/L Copp er	Copper (Filtered) (µg/L Copper (Fill Tered)	Iron (µg/L) Iron	ron (Filtered) (µg/ Iron (Filtered)	/Lead (µg/Lea ea d	ead (Filtered) (µg/L Lead (Filtered)
STP1 STP1 STP1 STP1 STP2 STP2 STP2 STP2 STP2 STP2 STP2 STP2 STP2	17/12/2019 15/04/2020 24/06/2020 17/09/2019 17/12/2019 15/04/2020	EB1924565 EB1934065 EB2010933 EB2016812 EB1924565 EB1934065 EB2010933 EB2016812	<10 10 <10 <10 <10 10 <10 <10 <10	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10	1.0 1.0 1.0 1.0 1.0 1.0 1.0 2.0	1.0 1.0 1.0 1.0 1.0 2.0 2.0	80 <50 <50 <50 <50 <50 <50 <50	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 1.0 1.0 1.0 2.0	<1.0 <1.0 <1.0 <1.0 1.0 1.0 2.0 2.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	1,680 1,830 1,820 1,660 <50 <50 <50 60	1,670 1,610 1,570 1,780 <50 <50 <50 <50 50	<1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0
				Q	j,														

									Append	fix R [.] Results Sum		July 2019 to June 202		00				
									. ipportu	Met							Mic	robiological
			Manganese	Manganese (Filtered)	Mercury	Mercury (Filtered)	Nickel	Nickel (Filtered)	Silver	Silver (filtered)	Selenium	Selenium (Filtered)	Tin	Tin (Filtered)	Zinc	Zinc (Filtered)	E. Coll	Enterococci
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L Lielenium (Filtered) (µg/L	µg/L	µg/L in (Filtorod) (va)	µg/L	µg/L	cfu/100 ml E. Coli (cfu/100 ml)	cfu/100 ml Enterococci (cfu/100 ml)
Sample ID	Sampled Date	Lab_Report Number	Manganese	Manganese (Filtered)	Mercury	Marcury (Filtered)	Nickel	Nickel (Filtered)	Silver	Silver (Filtered)	Selenium	Selenium (Filtered)	Tin	Tin (Filtered)	Zinc	Zinc (Filtered)	E. Coli	Enterococci
STP1 STP1	17/09/2019		1,340	1,310	<0.1	<0.1	<1.0	<1.0	< 0.01	<0.01	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
STP1 STP1	17/12/2019 15/04/2020		1,350	1,260	<0.1	<0.1 <0.1	<1.0 <1.0	<1.0 <1.0	<0.01	<0.01 <0.01	<10 <10	<10 <10	<1.0 <1.0	<1.0	<5.0 <5.0	<5.0 5.0	<1 <1	<1
STP1	24/06/2020	EB2016812	1,260	1,380	<0.1	<0.1	12.0	4.0	<0.01	<0.01	<10	<10	<10	<1.0	<5.0	6.0	<1	<1
STP2	17/09/2019	EB1924565	111	126	<0.1	<0.1	3.0	2.0	0.03	0.03	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
STP2	17/12/2019		109	105	<0.1	<0.1	2.0	2.0	0.03	0.02	<10	<10	<1.0	<1.0	<5.0	<5.0	<1	<1
STP2 STP2	15/04/2020 24/06/2020		113	111 116	<0.1	<0.1	3.0 3.0	3.0 4.0	0.02	0.01	<10 <10	<10 <10	<1.0 <10	<1.0	<5.0 17	5.0 <5.0	<1 <1	<1 <1
1011 2	271 001 2020	202010012	121			50.1	0.0	<u> </u> τ.υ	0.02	0.04	×10	1 519	~10	NI.W			1 21	



-josure Lor

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment

Plant, Agnes Water

Appendix C: Laboratory Results. COC and QA/QC Documentation

greencap.com.au



CERTIFICATE OF ANALYSIS

Work Order	EB1924392	Page	: 1 of 4
Client	: TRILITY Pty Ltd	Laboratory	Environmental Division Brisbane
Contact	:) Personal In	Contact	: Customer Services EB
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Australia 4053
	AGNES WATER QLD 4677		
Telephone	: 07 4974 7975	Telephone	7: +61-7-3243 7222
Project	: Groundwater Monitoring	Date Samples Received	: 17-Sep-2019 09:05
Order number	: 4500054738	Date Analysis Commenced	: 17-Sep-2019
C-O-C number		Issue Date	: 23-Sep-2019 17:18
Sampler	:6) Personal Info		Iac-MRA NATA
Site	:	\sim	
Quote number	: BN/222/16		Accreditation No. 825
No. of samples received	: 4		Accredited for compliance with
No. of samples analysed	: 4		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.

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.

4(6) Personal Inforn

Senior Inorganic Chemist Senior Inorganic Chemist Microbiologist

Brisbane Administration, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Microbiological, 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.
- MF = membrane filtration
- CFU = colony forming unit
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range
 of 10 100cfu.
- Microbiological Comment: Membrane filtration result is reported <2 CFU/100mL where 50mL sample was filtered because the sample was turbid, insufficient for filtration at higher volume and there were no target
 organisms confirmed.
- It is recognised that EG020T (Total Metals) is less than EG020F (Dissolved Metals) for some samples. However, the difference is within experimental variation of the methods.
- MW023 is ALS's internal code and is equivalent to AS4276.9.
- MW006 is ALS's internal code and is equivalent to AS4276.7.



Analytical Results

Matrix: WATER)				DESAL 1	DESAL 2	DESAL 3	DESAL 1 Duplicate	
				16-Sep-2019 09:15	16-Sep-2019 10:00	16-Sep-2019 10:40	16-Sep-2019 09:15	
				EB1924392-001	EB1924392-002	EB1924392-003	EB1924392-004	
				Result	Result	Result	Result	
D041G: Sulfate (Turbidimetric) as SO4 2	- by DA							
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2	1	<1	2	
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	56	48	56	58	
EG020F: Dissolved Metals by ICP-MS					2			
Aluminium	7429-90-5	0.01	mg/L	0.42	0.37	0.80	0.42	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.003	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.003	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.007	0.006	0.036	0.007	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	0.25	0.33	4.28	0.27	
G020T: Total Metals by ICP-MS			0					
Aluminium	7429-90-5	0.01	mg/L	0.42	0.35	1.03	0.53	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.004	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.002	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.004	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.006	0.009	
Manganese	7439-96-5	0.001	mg/L	0.007	0.005	0.033	0.006	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Boron	7440-42-8	0.05	mg/L	0.05	0.05	<0.05	<0.05	
Iron	7439-89-6	0.05	mg/L	0.29	0.35	4.30	0.30	
EG035F: Dissolved Mercury by FIMS								
Mercury 22-265	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	 age 135 of 321



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			DESAL 1	DESAL 2	DESAL 3	DESAL 1 Duplicate	
			16-Sep-2019 09:15	16-Sep-2019 10:00	16-Sep-2019 10:40	16-Sep-2019 09:15	
			EB1924392-001	EB1924392-002	EB1924392-003	EB1924392-004	
			Result	Result	Result	Result	
EG035T: Total Recoverable Mercury	v by FIMS						
Mercury	7439-97-6 0.	0001 mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
EG094F: Dissolved Metals in Fresh V	Nater by ORC-ICPMS						
Silver	7440-22-4).01 µg/L	<0.01	<0.01	<0.01	<0.01	
EG094T: Total metals in Fresh water	by ORC-ICPMS			2			
Silver	7440-22-4).01 µg/L	<0.01	<0.01	<0.01	<0.01	
EK055G: Ammonia as N by Discrete	Analyser			^c C [*]			
Ammonia as N).01 mg/L	0.15	0.10	0.39	0.14	
EK057G: Nitrite as N by Discrete An	alyser						
Nitrite as N).01 mg/L	<0.01	<0.01	<0.01	<0.01	
EK058G: Nitrate as N by Discrete Ar	nalyser						
Nitrate as N	14797-55-8).01 mg/L	0.11	0.55	<0.01	0.10	
EK059G: Nitrite plus Nitrate as N (N	Ox) by Discrete Analys	er					
Nitrite + Nitrate as N).01 mg/L	0.11	0.55	<0.01	0.10	
EK061G: Total Kjeldahl Nitrogen By	Discrete Analyser						
Total Kjeldahl Nitrogen as N		0.1 mg/L	0.7	0.7	1.5	0.8	
EK062G: Total Nitrogen as N (TKN +	NOx) by Discrete Analy	ser					
^ Total Nitrogen as N		0.1 mg/L	0.8	1.2	1.5	0.9	
EK067G: Total Phosphorus as P by I	Discrete Analyser						
Total Phosphorus as P).01 mg/L	0.02	0.01	0.06	0.01	
EN67: Field Tests							
Ø Electrical Conductivity (Non		1 µS/cm	239	212	222	239	
Compensated)							
Ø Dissolved Oxygen		0.1 mg/L	0.13	0.15	0.15	0.13	
Ø pH).01 pH Unit		3.60	4.74	3.92	
ø Redox Potential		0.1 mV	306	334	-171.8	306	
Ø Temperature		0.1 °C	23.4	23.0	25.0	23.4	
MW006: Faecal Coliforms & E.coli by							
Faecal Coliforms		1 CFU/100mL	<1	<1	<2	<1	
MW023: Enterococci by Membrane F	iltration						
Enterococci		1 CFU/100mL	<1	<1	<2	<1	



QUALITY CONTROL REPORT

Work Order	: EB1924392	Page	: 1 of 7
Client	: TRILITY Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	:6) Personal Info	Contact	: Customer Services EB
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Australia 4053
	AGNES WATER QLD 4677		2 . ▼
Telephone	: 07 4974 7975	Telephone	+61-7-3243 7222
Project	: Groundwater Monitoring	Date Samples Received	: 17-Sep-2019
Order number	: 4500054738	Date Analysis Commenced	: 17-Sep-2019
C-O-C number	:	Issue Date	23-Sep-2019
Sampler	6) Personal Info		Iac-MRA NATA
Site	·	. 6	
Quote number	: BN/222/16		The Column
No. of samples received	: 4		Accreditation No. 825 Accredited for compliance with
No. of samples analysed	: 4		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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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.

4(6) Personal Inform

Senior Inorganic Chemist Senior Inorganic Chemist Microbiologist

Brisbane Administration, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Microbiological, Stafford, QLD

Page	: 2 of 7
Work Order	: EB1924392
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



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

Key: Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

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

RPD = Relative Percentage Difference

= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

ub-Matrix: WATER				\sim		Laboratory	Duplicate (DUP) Report		
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
D041G: Sulfate (Tu	rbidimetric) as SO4 2- by D	A (QC Lot: 2590468)							
EB1924215-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2750	2800	1.77	0% - 20%
EB1924392-004	DESAL 1 Duplicate	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2	<1	0.00	No Limit
D045G: Chloride by	y Discrete Analyser (QC Lo	t: 2590470)	2						
B1924215-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	19700	19800	0.341	0% - 20%
B1924392-004	DESAL 1 Duplicate	ED045G: Chloride	16887-00-6	1	mg/L	58	58	0.00	0% - 20%
G020F: Dissolved I	Metals by ICP-MS (QC Lot: :	2588924)							
B1924238-010	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0005	<0.0005	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.012	0.012	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.025	<0.025	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.71	0.68	4.37	0% - 50%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.05	<0.05	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.05	0.05	0.00	No Limit
B1924238-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0005	<0.0005	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.010	0.011	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.005	<0.005	0.00	No Limit
22-265		EG020A-F: Copper	7440-50-8 File B	0.001	mg/L	<0.005	<0.005	0.00	No Limit 138 of 321

Page	: 3 of 7
Work Order	: EB1924392
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Sub-Matrix: WATER						Laboratory I	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
G020F: Dissolved	Metals by ICP-MS (QC	Lot: 2588924) - continued							
EB1924238-001	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.025	<0.025	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	1.61	1.61	0.00	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.05	<0.05	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
G020T: Total Meta	als by ICP-MS (QC Lot: 2	2588950)		10					
B1924238-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0005	<0.0005	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.010	0.011	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	< 0.005	<0.005	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.026	<0.026	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	2.07	2.06	0.632	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.05	<0.05	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	2.14	2.13	0.00	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.34	0.18	60.6	No Limit
B1924238-010	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0005	<0.0005	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.013	0.013	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.026	<0.026	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.86	0.84	1.35	0% - 50%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.05	<0.05	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	2.50	2.50	0.00	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.12	0.12	0.00	No Limit
G035F: D <u>issolved</u>	Mercury by FIMS (QC L								
B1924392-001	DESAL 1	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
B1924238-881265	Anonymous	EG035F: Mercury	Fil ç 439-97-6	0.0001	mg/L	< 0.0001	< 0.0001		139 of & Limit

Page	: 4 of 7
Work Order	: EB1924392
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Laboratory sample ID						Laboratory I	Duplicate (DUP) Report		
	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
EG035T: Total Recove	erable Mercury by FIMS(C	QC Lot: 2588954)							
EB1924238-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1924247-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG094F: Dissolved Me	etals in Fresh Water by OR	C-ICPMS (QC Lot: 2588935)				0			
EB1924392-001	DESAL 1	EG094-AgF: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EG094T: Total metals i	in Fresh water by ORC-ICF	PMS (QC Lot: 2588957)			.0				
EB1924392-001	DESAL 1	EG094-AgT: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EK055G: Ammonia as	N by Discrete Analyser (C	QC Lot: 2589379)		0					
EB1924227-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.01	<0.01	0.00	No Limit
EB1924417-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK057G: Nitrite as N t	by Discrete Analyser (QC	Lot: 2590469)		.U					
EB1924215-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1924392-004	DESAL 1 Duplicate	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus N	Nitrate as N (NOx) by Disc	rete Analyser (QC Lot: 2589380)		0					
EB1924227-001	Anonymous	EK059G: Nitrite + Nitrate as N	<u>, 6</u>	0.01	mg/L	0.02	0.02	0.00	No Limit
EB1924417-001	Anonymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	0.06	0.06	0.00	No Limit
EK061G: Total Kjeldah	I Nitrogen By Discrete Ana	alyser (QC Lot: 2592251)							
EB1900219-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	5.8	6.1	4.11	0% - 20%
EB1924392-001	DESAL 1	EK061G: Total Kjeldahl Nitrogen as N	<u> </u>	0.1	mg/L	0.7	0.8	0.00	No Limit
EK067G: Total Phosph	norus as P by Discrete Ana	alyser (QC Lot: 2592250)							
EB1900219-001	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	0.93	0.95	1.84	0% - 20%
EB1924392-001	DESAL 1	EK067G: Total Phosphorus as P		0.01	mg/L	0.02	0.02	0.00	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LCS) Report		
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	A (QCLot: 2590468)				6			
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	103	85.0	118
				<1	100 mg/L	100	85.0	118
ED045G: Chloride by Discrete Analyser (QCLot:	: 2590470)							
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	102	90.0	115
				<1	1000 mg/L	104	90.0	115
EG020F: Dissolved Metals by ICP-MS (QCLot: 2	588924)			5				
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.4	79.0	118
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	88.0	116
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	104	88.0	108
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	111	87.0	113
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	109	86.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	109	88.0	114
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.1	89.0	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	110	89.0	120
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	107	89.0	113
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	103	83.0	112
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	95.7	86.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	87.0	113
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	96.6	82.0	114
EG020T: Total Metals by ICP-MS (QCLot: 25889	50)							
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	96.4	80.0	114
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	93.1	88.0	112
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.7	88.0	111
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.6	89.0	115
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	92.0	89.0	115
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	92.4	88.0	116
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.6	89.0	112
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	96.4	88.0	114
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.7	88.0	116
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	95.0	79.0	111
EG020A-T: Tin	7440-31-5	0.001	mg/L	# 0.002	0.1 mg/L	99.5	86.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	91.4	84.0	114
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	96.8	82.0	128
EG020A-T: lr 22-265	7439-89-6	0.05	^{mg/L} File B	<0.05	0.5 mg/L	96.3	Page 141 o	f 321 118

Page	: 6 of 7
Work Order	: EB1924392
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Sub-Matrix: WATER			Method Blank (MB)	Laboratory Control Spike (LCS) Report				
			Report	Spike	Spike Recovery (%)	Recovery	Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG035F: Dissolved Mercury by FIMS (QCLot: 2588927)					\mathbf{A}			
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	104	84.0	118
EG035T: Total Recoverable Mercury by FIMS (QCLot: 25889	54)							
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	101	84.0	118
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (Q0	CLot: 258893	5)			5			
EG094-AgF: Silver	7440-22-4	0.01	μg/L	<0.01	0.2 µg/L	94.0	70.0	130
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot:	2588957)			S				
EG094-AgT: Silver	7440-22-4	0.01	μg/L	<0.01	0.2 µg/L	103	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 25893)	79)							
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	102	83.5	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 2590469)				NP O				
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	103	90.0	110
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyse	QCLot: 25	89380)						
EK059G: Nitrite + Nitrate as N		0.01	mg/L	<0.01	0.5 mg/L	95.1	85.7	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLc	ot: 2592251)							
EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	<0.1	1 mg/L	87.4	70.1	108
EK067G: Total Phosphorus as P by Discrete Analyser (QCLo	t: 2592250)		V N					
EK067G: Total Phosphorus as P		0.01	mg/L	<0.01	0.442 mg/L	88.2	79.2	105

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER Matrix Spike (MS) Report Spike SpikeRecovery(%) Recovery Limits (%) Laboratory sample ID Client sample ID CAS Number Concentration MS Low High Method: Compound ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2590468) EB1924215-003 Anonymous 14808-79-8 20 mg/L 70.0 130 ED041G: Sulfate as SO4 - Turbidimetric # Not Determined ED045G: Chloride by Discrete Analyser (QCLot: 2590470) EB1924215-003 Anonymous 16887-00-6 400 mg/L 70.0 130 ED045G: Chloride # Not Determined EG020F: Dissolved Metals by ICP-MS (QCLot: 2588924) EB1924238-002 Anonymous EG020A-F: Arsenic 7440-38-2 1 mg/L 101 70.0 130 7440-43-9 0.25 mg/L 99.2 70.0 130 EG020A-F: Cadmium 7440-47-3 70.0 130 EG020A-F: Chromium 1 mg/L 91.5 7440-48-4 1 mg/L 86.7 70.0 130 EG020A-F: Cobalt 22-265 Page 142 of 321 130 File B 7440-50-8 83.7 EG020A-F: Copper 1 mg/L

Page	: 7 of 7
Work Order	: EB1924392
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Sub-Matrix: WATER				M	atrix Spike (MS) Report		
				Spike	SpikeRecovery(%)	Recovery L	imits (%)
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolve	d Metals by ICP-MS (QCLot: 2588924) - continued		\diamond				
EB1924238-002	Anonymous	EG020A-F: Lead	7439-92-1	1 mg/L	93.0	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	93.5	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	91.4	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	85.0	70.0	130
EG020T: Total Me	tals by ICP-MS (QCLot: 2588950)						
EB1924238-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	97.6	70.0	130
		EG020A-T: Cadmium	7440-43-9	1.25 mg/L	101	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	92.1	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	90.4	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	88.9	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	95.5	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	93.9	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	87.1	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	90.9	70.0	130
EG035F: Dissolve	d Mercury by FIMS (QCLot: 2588927)						
EB1924238-002	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	87.0	70.0	130
G035T: Total Re	ecoverable Mercury by FIMS (QCLot: 2588954)						
EB1924238-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	85.2	70.0	130
EK055G: Ammoni	a as N by Discrete Analyser (QCLot: 2589379)						
EB1924234-001	Anonymous	EK055G: Ammonia as N	7664-41-7	20 mg/L	93.0	70.0	130
EK057G: Nitrite a	s N by Discrete Analyser (QCLot: 2590469)	0					
EB1924215-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	96.4	70.0	130
EK059G: Nitrite p	olus Nitrate as N (NOx) by Discrete Analyser (QCLot: 25	89380)					
EB1924234-001	Anonymous	EK059G: Nitrite + Nitrate as N		0.4 mg/L	95.3	70.0	130
EK061G: Tota <u>l Kj</u> e	eldahl Nitrogen By Discrete Analyser (QCLot: 2592251)						
EB1900219-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		5 mg/L	90.8	70.0	130
EK067G: Tot <u>al Ph</u>	osphorus as P by Discrete Analyser (QCLot: 2592250)						
EB1900219-002	Anonymous	EK067G: Total Phosphorus as P		1 mg/L	85.3	70.0	130
				5	1		



QA/QC Compliance Assessment to assist with Quality Review							
Work Order	EB1924392	Page	: 1 of 8				
Client	: TRILITY Pty Ltd	Laboratory	: Environmental Division Brisbane				
Contact	:5) Personal Infe	Telephone	: +61-7-3243 7222				
Project	: Groundwater Monitoring	Date Samples Received	: 17-Sep-2019				
Site	:	Issue Date	: 23-Sep-2019				
Sampler) Personal Inf	No. of samples received	No. of samples received				
Order number	: 4500054738	No. of samples analysed : 4					

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- <u>NO</u> Duplicate outliers occur.
- <u>NO</u> Laboratory Control outliers occur.
- Method Blank value outliers exist please see following pages for full details.
- Matrix Spike outliers exist please see following pages for full details.
- For all regular sample matrices, <u>NO</u> surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

• <u>NO</u> Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

<u>NO</u> Quality Control Sample Frequency Outliers exist.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number Data	Limits	Comment
Method Blank (MB) Values						
EG020T: Total Metals by ICP-MS	QC-MRG3-25889490	D	Tin	7440-31-5 0.002 mg/L	0.001 mg/L	Blank result exceeds permitted value
Matrix Spike (MS) Recoveries						
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EB1924215003	Anonymous	Sulfate as SO4 -	14808-79-8 Not		MS recovery not determined,
			Turbidimetric	Determined		background level greater than or
						equal to 4x spike level.
ED045G: Chloride by Discrete Analyser	EB1924215003	Anonymous	Chloride	16887-00-6 Not		MS recovery not determined,
				Determined		background level greater than or
						equal to 4x spike level.

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Evaluation: × = Holding time breach ; <	= Within holding time.	
---	------------------------	--

Matrix: WATER					Evaluation	n: × = Holding time	e breach ; ✓ = Withi	n holding time	
Method		Sample Date		Extraction / Preparation			Analysis		
Container / Client Sample ID(s)	0_	0	Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Clear Plastic Bottle - Natural (ED041G) DESAL 1, DESAL 3,	DESAL 2, DESAL 1 Duplicate	16-Sep-20	19			18-Sep-2019	14-Oct-2019	~	
ED045G: Chloride by Discrete Analyser									
Clear Plastic Bottle - Natural (ED045G) DESAL 1, DESAL 3,	DESAL 2, DESAL 1 Duplicate	16-Sep-20	19			18-Sep-2019	14-Oct-2019	~	
EG020F: Dissolved Metals by ICP-MS									
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG02	20A-F)								
DESAL 1, DESAL 3,	DESAL 2, DESAL 1 Duplicate	16-Sep-20	19			19-Sep-2019	14-Mar-2020	✓	
EG020T: Total Metals by ICP-MS									
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG	6020A-T)								
DESAL 1,	DESAL 2,	16-Sep-20	19 18-Sep-2019	14-Mar-2020	1	18-Sep-2019	14-Mar-2020	✓	
DESAL 3,	DESAL 1 Duplicate								

Page	: 3 of 8
Work Order	: EB1924392
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Matrix: WATER					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time.
Method		Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Mercury by FIMS				0				
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG035F)								
DESAL 1,	DESAL 2,	16-Sep-2019		0		19-Sep-2019	14-Oct-2019	✓
DESAL 3,	DESAL 1 Duplicate							
EG035T: Total Recoverable Mercury by FIMS			.01					
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG035T)								
DESAL 1,	DESAL 2,	16-Sep-2019				18-Sep-2019	14-Oct-2019	✓
DESAL 3,	DESAL 1 Duplicate		6					
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS			0					
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG094-Ag	;)							
DESAL 1,	DESAL 2,	16-Sep-2019				18-Sep-2019	14-Mar-2020	 ✓
DESAL 3,	DESAL 1 Duplicate		h					
EG094T: Total metals in Fresh water by ORC-ICPMS			\mathbf{S}					
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG094-A			7					
DESAL 1,	DESAL 2,	16-Sep-2019	18-Sep-2019	14-Mar-2020	1	18-Sep-2019	14-Mar-2020	✓
DESAL 3,	DESAL 1 Duplicate							
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
DESAL 1,	DESAL 2,	16-Sep-2019				18-Sep-2019	14-Oct-2019	✓
DESAL 3,	DESAL 1 Duplicate							
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
DESAL 1,	DESAL 2,	16-Sep-2019				18-Sep-2019	18-Sep-2019	✓
DESAL 3,	DESAL 1 Duplicate							
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Anal	yser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
DESAL 1,	DESAL 2,	16-Sep-2019				18-Sep-2019	14-Oct-2019	✓
DESAL 3,	DESAL 1 Duplicate							
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
DESAL 1,	DESAL 2,	16-Sep-2019	19-Sep-2019	14-Oct-2019	~	19-Sep-2019	14-Oct-2019	✓
DESAL 3,	DESAL 1 Duplicate							
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
DESAL 1,	DESAL 2,	16-Sep-2019	19-Sep-2019	14-Oct-2019	~	19-Sep-2019	14-Oct-2019	✓
DESAL 3,	DESAL 1 Duplicate							
MW006: Faecal Coliforms & E.coli by MF								
Sterile Plastic Bottle - Sodium Thiosulfate (MW006)								
DESAL 1,	DESAL 2,	16-Sep-2019				17-Sep-2019	17-Sep-2019	✓
DESAL 3,	DESAL 1 Duplicate							

Page 146 of 321

Page	: 4 of 8
Work Order	: EB1924392
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Matrix: WATER					Evaluation	n: × = Holding time	breach ; ✓ = Withi	n holding time
Method		Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
MW023: Enterococci by Membrane Filtration								
Sterile Plastic Bottle - Sodium Thiosulfate (MW023) DESAL 1, DESAL 3,	DESAL 2, DESAL 1 Duplicate	16-Sep-2019		02		17-Sep-2019	17-Sep-2019	~
	Published on Prink		SUIP					



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Aatrix: WATER Quality Control Sample Type		Count					not within specification ; \checkmark = Quality Control frequency within spe	
Analytical Methods	Method	<u>ງ</u>	Regular	Actual	Rate (%)	Evaluation	Quality Control Specification	
	Method	UL	Redular	Actual	Expected			
aboratory Duplicates (DUP) Ammonia as N by Discrete analyser	FKAFFO	2	20	40.00	40.00		NEPM 2013 B3 & ALS QC Standard	
	EK055G	2	11	10.00	10.00			
Chloride by Discrete Analyser	ED045G			18.18	10.00	 ✓ 	NEPM 2013 B3 & ALS QC Standard	
bissolved Mercury by FIMS	EG035F	2	14	14.29	10.00		NEPM 2013 B3 & ALS QC Standard	
issolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
RC-ICPMS								
bw-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
trite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
itrite as N by Discrete Analyser	EK057G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Mercury by FIMS	EG035T	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
aboratory Control Samples (LCS)								
mmonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
hloride by Discrete Analyser	ED045G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
issolved Mercury by FIMS	EG035F	V 1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
issolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
RC-ICPMS								
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	5.00	~	NEPM 2013 B3 & ALS QC Standard	
itrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
itrite as N by Discrete Analyser	EK057G	1	17	5.88	5.00	1	NEPM 2013 B3 & ALS QC Standard	
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	11	18.18	10.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Mercury by FIMS	EG035T	1	18	5.56	5.00	<u> </u>	NEPM 2013 B3 & ALS QC Standard	
otal Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard	
otal Phosphorus as P By Discrete Analyser	EK067G	1	20	5.00	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
lethod Blanks (MB)								
mmonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard	
hloride by Discrete Analyser	ED045G	1	11	9.09	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	1	14	7.14	5.00		NEPM 2013 B3 & ALS QC Standard	
issolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by DRC-ICPMS 22-265	EG094-AgF	1	4	25.00 e B	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	Page 148 of 321

Page	: 6 of 8
Work Order	: EB1924392
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



nalvtical Methods		Co	unt		Rate (%)		Quality Control Specification
	Method	QC	Reaular	Actual	Expected	Evaluation	
lethod Blanks (MB) - Continued						\sim	
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	5.00	1	NEPM 2013 B3 & ALS QC Standard
itrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard
itrite as N by Discrete Analyser	EK057G	1	17	5.88	5.00	\checkmark	NEPM 2013 B3 & ALS QC Standard
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	11	9.09	5.00	7.1	NEPM 2013 B3 & ALS QC Standard
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	~	NEPM 2013 B3 & ALS QC Standard
otal Mercury by FIMS	EG035T	1	18	5.56	5.00	1	NEPM 2013 B3 & ALS QC Standard
otal Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Phosphorus as P By Discrete Analyser	EK067G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
latrix Spikes (MS)				(
mmonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard
hloride by Discrete Analyser	ED045G	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
issolved Mercury by FIMS	EG035F	1	14	7.14	5.00	~	NEPM 2013 B3 & ALS QC Standard
issolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
itrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
itrite as N by Discrete Analyser	EK057G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Mercury by FIMS	EG035T	1	18	5.56	5.00	1	NEPM 2013 B3 & ALS QC Standard
otal Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Phosphorus as P By Discrete Analyser	EK067G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45u ions are converted to a barium sulfate suspension in an acetic acid medium with bariu absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 co by comparison of the reading with a standard curve. This method is compliant with NE	m chloride. Light oncentration is determined
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 CI - G. The thiocyanate ion is liberated from merco sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the the librated thiocynate forms highly-coloured ferric thiocynate which is measured at 48 seal method 2 017-1-L april 2003	ne presence of ferric ions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. S prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ioniz are then passed into a high vacuum mass spectrometer, which separates the analytes mass to charge ratios prior to their measurement by a discrete dynode ion detector.	ze selected elements. lons
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. T a highly efficient argon plasma to ionize selected elements. Ions are then passed into spectrometer, which separates the analytes based on their distinct mass to charge rat measurement by a discrete dynode ion detector.	a high vacuum mass
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Va Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless at A bromate/bromide reagent is used to oxidise any organic mercury compounds in the mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged in Quantification is by comparing absorbance against a calibration curve. This method is (2013) Schedule B(3)	omic absorption technique. filtered sample. The ionic to a heated quartz cell.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Va FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide any organic mercury compounds in the unfiltered sample. The ionic mercury is reduce mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification absorbance against a calibration curve. This method is compliant with NEPM (2013) S	reagent is used to oxidise ed online to atomic n is by comparing
Low-Level Dissolved Silver in Fresh Water by ORC-ICPMS	EG094-AqF	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filt ORC-ICPMS technique removes interfering species through a series of chemical reac lons are passed into a high vacuum mass spectrometer, which separates the analytes mass to charge ratios prior to measurement by a discrete dynode ion detector. This in NEPM (2013) Schedule B(3)	tions prior to ion detection. based on their distinct
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020. The ORC-ICPMS techn species through a series of chemical reactions prior to ion detection. Ions are passed is spectrometer, which separates the analytes based on their distinct mass to charge rate by a discrete dynode ion detector. This method is compliant with NEPM (2013) Scheder 10, 2013.	nto a high vacuum mass ios prior to measurement
22-265			File B	Page 150 of 321



Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3 This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Field Tests (performed by external sampler)	* EN67-B02	WATER	Field determinations as per methods described in APHA or supplied by client. The analysis is performed in the field by non-ALS samplers. ALS NATA accreditation does not apply for this service.
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7 2007
Enumeration of Enterococci by Membrane Filtration	MW023	WATER	AS4276.9: - 2007
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals - ORC	EN25-ORC	WATER	In house: Referenced to USEPA SW846-3005. This is an Ultrapure Nitric acid digestion procedure used to prepare surface and ground water samples for analysis by ORC- ICPMS. This method is compliant with NEPM (2013) Schedule B(3)



CERTIFICATE OF ANALYSIS

Work Order	EB1924565	Page	: 1 of 4
Client	TRILITY Pty Ltd	Laboratory	Environmental Division Brisbane
Contact	6) Personal Info	Contact	: Customer Services EB
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Australia 4053
	AGNES WATER QLD 4677		
Telephone	: 07 4974 7975	Telephone	7: +61-7-3243 7222
Project	: GROUNDWATER MONITORING	Date Samples Received	: 18-Sep-2019 08:40
Order number	: 45000 54738	Date Analysis Commenced	: 18-Sep-2019
C-O-C number	:	Issue Date	24-Sep-2019 13:39
Sampler	:6) Personal Info		24-Sep-2019 13:39
Site	:	C N	
Quote number	: BN/222/16	• 5	The Column
No. of samples received	: 3	\sim \sim	Accreditation No. Accredited for compliance v
No. of samples analysed	: 3		ISO/IEC 17025 - Test

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.

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.

o4(6) Personal Inform

Senior Inorganic Chemist Senior Inorganic Chemist Microbiologist

Brisbane Administration, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Microbiological, 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.

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society. Key:

LOR = Limit of reporting

A = This result is computed from individual analyte detections at or above the level of reporting

 ϕ = ALS is not NATA accredited for these tests.

- ~ = Indicates an estimated value.
- MF = membrane filtration .
- CFU = colony forming unit
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range . of 10 - 100cfu.
- samples... It is recognised that EG020T (Total Metals) is less than EG020F (Dissolved Metals) for some samples. However, the difference is within experimental variation of the methods. .
- MW023 is ALS's internal code and is equivalent to AS4276.9. .
- MW006 is ALS's internal code and is equivalent to AS4276.7. .

Page : 3 of 4 Work Order : EB1924565 Client : TRILITY Pty Ltd Project : GROUNDWATER MONITORING



Analytical Results

ub-Matrix: WATER Matrix: WATER)				STP1	STP2	STP1 Duplicate	
······				17-Sep-2019 10:50	17-Sep-2019 10:10	17-Sep-2019 10:50	
				EB1924565-001	EB1924565-002	EB1924565-010	
				Result	Result	Result	
D041G: Sulfate (Turbidimetric) as SO4 2	2- by DA						
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	95	375	95	
D045G: Chloride by Discrete Analyser							
Chloride	16887-00-6	1	mg/L	1030	3940	1030	
G020F: Dissolved Metals by ICP-MS					S		
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.002	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.002	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	
Manganese	7439-96-5	0.001	mg/L	1.31	0.126	1.33	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	1.67	<0.05	1.66	
G020T: Total Metals by ICP-MS							
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.003	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	
Manganese	7439-96-5	0.001	mg/L	1.34	0.111	1.28	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	
Boron	7440-42-8	0.05	mg/L	0.08	0.10	0.06	
Iron	7439-89-6	0.05	mg/L	1.68	<0.05	1.70	
G035F: Dissolved Mercury by FIMS							
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	 Page 154 of 321



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			STP1	STP2	STP1 Duplicate	
			17-Sep-2019 10:50	17-Sep-2019 10:10	17-Sep-2019 10:50	
			EB1924565-001	EB1924565-002	EB1924565-010	
			Result	Result	Result	
EG035T: Total Recoverable Mercury	/ by FIMS					
Mercury	7439-97-6 0.	0001 mg/L	<0.0001	<0.0001	<0.0001	
EG094F: Dissolved Metals in Fresh \	Water by ORC-ICPMS					
Silver	7440-22-4	0.01 µg/L	<0.01	0.03	<0.01	
EG094T: Total metals in Fresh water	by ORC-ICPMS					
Silver	7440-22-4	0.01 µg/L	<0.01	0.03	<0.01	
EK055G: Ammonia as N by Discrete	Analyser			CC'		
Ammonia as N	7664-41-7	0.01 mg/L	0.05	0.04	0.06	
EK057G: Nitrite as N by Discrete An	alyser					
Nitrite as N	14797-65-0	0.01 mg/L	<0.01	<0.01	<0.01	
EK058G: Nitrate as N by Discrete A	nalyser					
Nitrate as N	14797-55-8	0.01 mg/L	<0.01	<0.01	<0.01	
EK059G: Nitrite plus Nitrate as N (N	Ox) by Discrete Analys	er				
Nitrite + Nitrate as N		0.01 mg/L	<0.01	<0.01	<0.01	
EK061G: Total Kjeldahl Nitrogen By	Discrete Analyser					
Total Kjeldahl Nitrogen as N		0.1 mg/L	<0.1	<0.1	<0.1	
EK062G: Total Nitrogen as N (TKN +	NOx) by Discrete Analy	vser				
^ Total Nitrogen as N		0.1 mg/L	<0.1	<0.1	<0.1	
EK067G: Total Phosphorus as P by	Discrete Analyser					
Total Phosphorus as P		0.01 mg/L	0.01	0.02	0.02	
EN67: Field Tests						
Ø Electrical Conductivity (Non		1 µS/cm	3848	12364	3848	
Compensated)						
ø Dissolved Oxygen		0.1 mg/L	0.25	0.83	0.25	
Ø pH		0.01 pH Unit	6.68	6.50	6.68	
ø Redox Potential		0.1 mV	10.7	12.1	10.7	
Ø Temperature		0.1 °C	23.5	23.3	23.5	
MW006: Faecal Coliforms & E.coli by						
Faecal Coliforms		1 CFU/100mL	<1	<1	<1	
MW023: Enterococci by Membrane F	iltration					
Enterococci		1 CFU/100mL	<1	<1	<1	



QUALITY CONTROL REPORT

Work Order	: EB1924565	Page	: 1 of 9
Client	: TRILITY Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	:) Personal Int	Contact	: Customer Services EB
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Australia 4053
	AGNES WATER QLD 4677		2. ×
Telephone	: 07 4974 7975	Telephone	+61-7-3243 7222
Project	: GROUNDWATER MONITORING	Date Samples Received	: 18-Sep-2019
Order number	: 45000 54738	Date Analysis Commenced	: 18-Sep-2019
C-O-C number	:	Issue Date	24-Sep-2019
Sampler	:) Personal In	C	Iac-MRA NATA
Site	:	. 60	
Quote number	: BN/222/16		Accreditation No. 825
No. of samples received	: 3		Accreditation No. 825
No. of samples analysed	: 3		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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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.

(6) Personal Infor

Senior Inorganic Chemist Senior Inorganic Chemist Microbiologist

Brisbane Administration, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Microbiological, 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

Key: Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

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

RPD = Relative Percentage Difference

= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

ub-Matrix: WATER				\sim		Laboratory I	Duplicate (DUP) Report		
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
D041G: Sulfate (Tu	rbidimetric) as SO4 2-	by DA (QC Lot: 2591587)							
EB1924565-001	STP1	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	95	95	0.00	0% - 20%
B1924575-008	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit
D045G: Chloride by	/ Discrete Analyser (Q	IC Lot: 2591588)							
B1924565-001	STP1	ED045G: Chloride	16887-00-6	1	mg/L	1030	1030	0.457	0% - 20%
B1924575-008	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	34	34	0.00	0% - 20%
G020F: Dissolved I	Metals by ICP-MS (QC	Lot: 2592075)							
B1924565-001	STP1	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	1.31	1.33	1.51	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	1.67	1.67	0.00	0% - 20%
B1924573-006	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.003	0.003	0.00	No Limit
22-265		EG020A-F: Copper	7440-50-8 File B	0.001	mg/L	0.009	0.009	0.00	No Limit



Sub-Matrix: WATER						Laboratory I	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
EG020F: Dissolved I	Metals by ICP-MS (QC I	Lot: 2592075) - continued							
EB1924573-006	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.220	0.217	1.23	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.011	0.010	0.00	0% - 50%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.374	0.381	1.76	0% - 20%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.03	0.03	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.36	0.38	4.24	No Limit
G020T: Total Metal	s by ICP-MS (QC Lot: 2	2592122)							
EB1924370-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.015	0.016	0.00	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.047	0.049	4.63	0% - 20%
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.016	0.017	0.00	0% - 50%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.012	0.011	0.00	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.011	0.011	0.00	0% - 50%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	3.76	3.88	2.95	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.028	0.029	0.00	0% - 20%
		EG020A-T: Tin	7440-31-5	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.042	0.047	10.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	18.7	19.7	4.94	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	1.19	1.25	4.94	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	99.6	102	2.57	0% - 20%
B1924558-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0019	0.0018	0.00	0% - 50%
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.008	0.008	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.140	0.140	0.00	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.007	0.006	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.058	0.058	0.00	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.94	0.94	0.00	0% - 50%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.47	0.48	0.00	No Limit
G020T: Total Metal	s by ICP-MS (QC Lot: 2								
B1924565-002	STP2	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	< 0.0001	< 0.0001	0.00	No Limit
22-265		EG020A-T: Caomium EG020A-T: Arsenic	Fil g 440-38-2	0.001	mg/L	0.001	0.001		158 of & Limit

Page	: 4 of 9
Work Order	: EB1924565
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



Sub-Matrix: WATER						Laboratory I	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metal	s by ICP-MS (QC Lot: 25								
EB1924565-002	STP2	EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.111	0.109	1.28	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.002	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.10	0.10	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
EB1924573-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0003	0.0003	0.00	No Limit
	EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit	
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.028	0.028	0.00	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.034	0.034	0.00	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	6.14	6.30	2.59	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.013	0.013	0.00	0% - 50%
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.603	0.621	2.87	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.40	0.46	13.0	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.22	0.23	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.87	0.94	7.91	0% - 50%
EG035F: Dissolved	Mercury by FIMS (QC Lo	ot: 2592074)							
EB1924565-010	STP1 Duplicate	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1924558-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035T: Total Reco	overable Mercury by FIM	S (QC Lot: 2592127)							
EB1924558-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1924565-010	STP1 Duplicate	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
	•	ORC-ICPMS (QC Lot: 2591999)			5				
EB1924565-001	STP1	EG094-AgF: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		, , , , , , , , , , , , , , , , , , ,	122-4	0.01	P9'L	-0.01	-0.01	0.00	
		C-ICPMS (QC Lot: 2592009)	7440.00.4	0.01		10.01	-0.01	0.00	Nie Linsit
EB1924565-001	STP1	EG094-AgT: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit
	as N by Discrete Analyse	er (QC Lot: 2591301)							
EB1918165-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.12	0.11	9.58	0% - 50%
EB1924504-001265	Anonymous	EK055G: Ammonia as N	File 864-41-7	0.01	mg/L	4.64	4.56	^{1.8} ₽age	159 of <mark>03⁄21</mark> ^{20%}

Page	5 of 9
Work Order	: EB1924565
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



Sub-Matrix: WATER						Laboratory L	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EK057G: Nitrite as N	by Discrete Analyser (QC I	_ot: 2591586)							
EB1924565-001	STP1	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1924575-008	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus	Nitrate as N (NOx) by Discr	rete Analyser (QC Lot: 2591300)				<u> </u>			
EB1918165-001	Anonymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	15.2	16.0	5.44	0% - 20%
EB1924504-001	Anonymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	1.94	1.94	0.00	0% - 20%
EK061G: Total Kjelda	ahl Nitrogen By Discrete Ana	alyser (QC Lot: 2593968)							
EB1924435-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	0.6	0.6	0.00	No Limit
EB1924573-003	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	<0.5	<0.5	0.00	No Limit
EK067G: Total Phos	ohorus as P by Discrete Ana	lyser (QC Lot: 2593967)		20					
EB1924435-001	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	0.02	0.02	0.00	No Limit
EB1924573-003	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	0.33	0.31	6.77	No Limit

Published Rither Public



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LCS) Report		
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	A (QCLot: 2591587)				6			
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	103	85.0	118
				<1	100 mg/L	98.5	85.0	118
ED045G: Chloride by Discrete Analyser (QCLot:	: 2591588)							
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	97.4	90.0	115
				<1	1000 mg/L	103	90.0	115
EG020F: Dissolved Metals by ICP-MS (QCLot: 2	(592075)			5				
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	94.3	79.0	118
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	107	88.0	116
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	88.0	108
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.0	87.0	113
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	104	86.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	104	88.0	114
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	89.0	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	105	89.0	120
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	108	89.0	113
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	98.8	83.0	112
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	103	86.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	87.0	113
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	105	82.0	114
EG020T: Total Metals by ICP-MS (QCLot: 25921)	22)							
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.7	80.0	114
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	100	88.0	112
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.7	88.0	111
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.4	89.0	115
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	98.2	89.0	115
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.0	88.0	116
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.6	89.0	112
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	88.0	114
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.4	88.0	116
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	98.0	79.0	111
EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	105	86.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.9	84.0	114
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	96.9	82.0	128
EG020A-T: Ir 22- 265	7439-89-6	0.05	^{mg/L} File B	<0.05	0.5 mg/L	103	Page 161 o	f 321 118

Page	: 7 of 9
Work Order	: EB1924565
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



ub-Matrix: WATER				Method Blank (MB)	Laboratory Control Spike (LCS) Report				
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)	
Nethod: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
G020T: Total Metals by ICP-MS (QCLot: 2592126)					\wedge				
G020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	106	80.0	114	
G020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.7	88.0	112	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.2	88.0	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.0	89.0	115	
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.7	89.0	115	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	95.8	88.0	116	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.2	89.0	112	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	99.5	88.0	114	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.2	88.0	116	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	93.6	79.0	111	
EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	107	86.0	116	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.8	84.0	114	
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	111	82.0	128	
G020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	96.9	82.0	118	
EG035F: Dissolved Mercury by FIMS (QCLot: 25920)74)								
G035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	112	84.0	118	
EG035T: Total Recoverable Mercury by FIMS (QCL	ot: 2592127)		VN)					
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	101	84.0	118	
EG094F: Dissolved Metals in Fresh Water by ORC-I	CPMS (QCI of: 2591999								
G094-AgF: Silver	7440-22-4	0.01	µg/L	<0.01	0.2 µg/L	99.5	70.0	130	
EG094T: Total metals in Fresh water by ORC-ICPMS	(OCL at: 2592009)				10				
EG094-AqT: Silver	7440-22-4	0.01	µg/L	<0.01	0.2 µg/L	102	70.0	130	
		0.01	µg, =		0.= µg/=				
EK055G: Ammonia as N by Discrete Analyser (QCL EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	103	83.5	114	
		0.01	IIIg/L	~0.01	0.5 mg/L	105	05.5	114	
EK057G: Nitrite as N by Discrete Analyser (QCLot:		0.01		-0.01	0.5 mm/l	400	00.0	440	
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	90.0	110	
K059G: Nitrite plus Nitrate as N (NOx) by Discrete	Analyser (QCLot: 259								
K059G: Nitrite + Nitrate as N	·	0.01	mg/L	<0.01	0.5 mg/L	98.7	85.7	111	
K061G: Total Kjeldahl Nitrogen By Discrete Analys	ser (QCLot: 2593968)								
K061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	<0.1	10 mg/L	90.7	70.1	108	
EK067G: Total Phosphorus as P by Discrete Analys	er (QCLot: 2593967)								
K067G: Total Phosphorus as P		0.01	mg/L	<0.01	4.42 mg/L	89.9	79.2	105	

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recovery enges stated may be waived in the event of sample matrix interference.

Page	: 8 of 9
Work Order	EB1924565
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



ub-Matrix: WATER		Matrix Spike (MS) Report					
			Spike	SpikeRecovery(%)	Recovery L	.imits (%)	
boratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
D041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2591587)		\diamond				
B1924565-002	STP2	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	20 mg/L	# Not	70.0	130
					Determined		
D045G: Chloride	by Discrete Analyser (QCLot: 2591588)						
B1924565-002	STP2	ED045G: Chloride	16887-00-6	400 mg/L	# Not	70.0	130
				····g· =	Determined		
G020E: Dissolvo	d Metals by ICP-MS (QCLot: 2592075)				Dotominou		
		S	7440.00.0	4	101	70.0	100
B1924565-002	STP2	EG020A-F: Arsenic	7440-38-2	1 mg/L	104	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	98.4	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	97.4	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	97.9	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	93.5	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	95.7	70.0	130
		EG020A-F: Manganese	7439-96-5	1 mg/L	93.6	70.0	130
	EG020A-F: Nickel	7440-02-0	1 mg/L	94.9	70.0	130	
		EG020A-F: Zinc	7440-66-6	1 mg/L	94.0	70.0	130
G020T: Total Met	als by ICP-MS (QCLot: 2592122)						
EB1924370-002 Anonymous	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	110	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	105	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	104	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	106	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	106	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	96.8	70.0	130
	· C	EG020A-T: Manganese	7439-96-5	1 mg/L	103	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	103	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	106	70.0	130
G020T: Total Met	als by ICP-MS (QCLot: 2592126)						
B1924565-010	STP1 Duplicate	EG020A-T: Arsenic	7440-38-2	1 mg/L	97.7	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.5	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	96.0	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	98.8	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	90.3	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	105	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	108	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	89.9	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	93.4	70.0	130
			. 110 00 0	· · ···9/ E	00.1	, 0.0	100
	d Mercury by FIMS (QCLot: 2592074)						
EB1924558-002 22-265	Anonymous	EG035F: Mercury File B	7439-97-6	0.01 mg/L	96.3	70.0 Page 163 o	130

Page	: 9 of 9
Work Order	: EB1924565
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



ub-Matrix: WATER				M	atrix Spike (MS) Report		
				Spike	SpikeRecovery(%)	Recovery L	imits (%)
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Re	coverable Mercury by FIMS (QCLot: 2592127)		Ó				
EB1924558-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	89.8	70.0	130
EK055G: Ammonia	a as N by Discrete Analyser (QCLot: 2591301)						
EB1919652-001	Anonymous	EK055G: Ammonia as N	7664-41-7	40 mg/L	102	70.0	130
EK057G: Nitrite as	N by Discrete Analyser (QCLot: 2591586)		. CO				
EB1924565-002	STP2	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	99.4	70.0	130
EK059G: Nitrite p	us Nitrate as N (NOx) by Discrete Analyser (QCLot: 259	01300)					
EB1919652-001	Anonymous	EK059G: Nitrite + Nitrate as N		2 mg/L	112	70.0	130
EK061G: Total Kje	Idahl Nitrogen By Discrete Analyser (QCLot: 2593968)						
EB1924435-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		5 mg/L	96.3	70.0	130
EK067G: Total Pho	osphorus as P by Discrete Analyser (QCLot: 2593967)						
EB1924435-002	Anonymous	EK067G: Total Phosphorus as P		1 mg/L	98.2	70.0	130
	will'	ned on RTI Act L					
	PUP						



QA/QC Compliance Assessment to assist with Quality Review : EB1924565 Page : 1 of 7 : TBILITY Bty Ltd : Environmental Division Brishana

Client	: TRILITY Pty Ltd	Laboratory : Environmental Division Brisbane
Contact	:) Personal In	Telephone : +61-7-3243 7222
Project	GROUNDWATER MONITORING	Date Samples Received : 18-Sep-2019
Site	:	Issue Date : 24-Sep-2019
Sampler	:) Personal In	No. of samples received 3
Order number	: 45000 54738	No. of samples analysed : 3

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

IN LIFACE

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Work Order

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- <u>NO</u> Method Blank value outliers occur.
- <u>NO</u> Duplicate outliers occur.
- <u>NO</u> Laboratory Control outliers occur.
- Matrix Spike outliers exist please see following pages for full details.
- For all regular sample matrices, <u>NO</u> surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

• <u>NO</u> Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

• <u>NO</u> Quality Control Sample Frequency Outliers exist.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number Data	Limits	Comment
Matrix Spike (MS) Recoveries						
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EB1924565002	STP2	Sulfate as SO4 -	14808-79-8 Not		MS recovery not determined,
			Turbidimetric	Determined		background level greater than or
				.0.		equal to 4x spike level.
ED045G: Chloride by Discrete Analyser	EB1924565002	STP2	Chloride	16887-00-6 Not		MS recovery not determined,
				Determined		background level greater than or
				S		equal to 4x spike level.

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for <u>VOC in soils</u> vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: WATER			6			Evaluatior	n: × = Holding time	breach ; ✓ = Withi	n holding time
Method			Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Clear Plastic Bottle - Natural (ED041G) STP1, STP1 Duplicate	STP2,	Neo 4	17-Sep-2019				18-Sep-2019	15-Oct-2019	1
ED045G: Chloride by Discrete Analyser									
Clear Plastic Bottle - Natural (ED045G) STP1, STP1 Duplicate	STP2,		17-Sep-2019				18-Sep-2019	15-Oct-2019	1
EG020F: Dissolved Metals by ICP-MS									
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG020A-F STP1, STP1 Duplicate) STP2,		17-Sep-2019				19-Sep-2019	15-Mar-2020	~
EG020T: Total Metals by ICP-MS									
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG020A STP1, STP1 Duplicate	-T) STP2,		17-Sep-2019	19-Sep-2019	15-Mar-2020	~	19-Sep-2019	15-Mar-2020	~
EG035F: Dissolved Mercury by FIMS									
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG035F) STP1, STP1 Duplicate	STP2,		17-Sep-2019				20-Sep-2019	15-Oct-2019	~
22-265		File	В		!		!	Page 166 of 32	21

Page	: 3 of 7
Work Order	: EB1924565
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



Matrix: WATER						Evaluation	: × = Holding time	breach ; ✓ = With	in holding time.
Method			Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS									
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG035T STP1, STP1 Duplicate) STP2,		17-Sep-2019		02		20-Sep-2019	15-Oct-2019	~
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS				.01					
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG094-Ag STP1, STP1 Duplicate			17-Sep-2019	C .			20-Sep-2019	15-Mar-2020	~
EG094T: Total metals in Fresh water by ORC-ICPMS				5					
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG094-A STP1, STP1 Duplicate	AgT) STP2,		17-Sep-2019	20-Sep-2019	15-Mar-2020	1	20-Sep-2019	15-Mar-2020	~
EK055G: Ammonia as N by Discrete Analyser				0					
Clear Plastic Bottle - Sulfuric Acid (EK055G) STP1, STP1 Duplicate	STP2,	5	17-Sep-2019				18-Sep-2019	15-Oct-2019	~
EK057G: Nitrite as N by Discrete Analyser			XV						
Clear Plastic Bottle - Natural (EK057G) STP1, STP1 Duplicate	STP2,		17-Sep-2019				18-Sep-2019	19-Sep-2019	~
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ana	vser								
Clear Plastic Bottle - Sulfuric Acid (EK059G) STP1, STP1 Duplicate	STP2,	00 P	17-Sep-2019				18-Sep-2019	15-Oct-2019	~
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Clear Plastic Bottle - Sulfuric Acid (EK061G) STP1, STP1 Duplicate	STP2,	jis,	17-Sep-2019	20-Sep-2019	15-Oct-2019	~	20-Sep-2019	15-Oct-2019	~
EK067G: Total Phosphorus as P by Discrete Analyser									
Clear Plastic Bottle - Sulfuric Acid (EK067G) STP1, STP1 Duplicate	STP2,		17-Sep-2019	20-Sep-2019	15-Oct-2019	~	20-Sep-2019	15-Oct-2019	~
MW006: Faecal Coliforms & E.coli by MF									
Sterile Plastic Bottle - Sodium Thiosulfate (MW006) STP1, STP1 Duplicate	STP2,		17-Sep-2019				18-Sep-2019	18-Sep-2019	~
MW023: Enterococci by Membrane Filtration									
Sterile Plastic Bottle - Sodium Thiosulfate (MW023) STP1, STP1 Duplicate	STP2,		17-Sep-2019				18-Sep-2019	18-Sep-2019	~

Page 167 of 321



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: WATER	-			Evaluation	-	phtrol frequency i	not within specification ; \checkmark = Quality Cont	roi frequency within specificat
Quality Control Sample Type			Count		Rate (%)	Evaluation	Quality Control Specification	
Analytical Methods	Method	00	Reaular	Actual	Expected	Evaluation		
_aboratory Duplicates (DUP)					-	<u> </u>		
Ammonia as N by Discrete analyser	EK055G	2	17	11.76	10.00	\checkmark	NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Low-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
ORC-ICPMS					\mathcal{I}			
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Nitrite as N by Discrete Analyser	EK057G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Mercury by FIMS	EG035T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Metals by ICP-MS - Suite A	EG020A-T	4	30	13.33	10.00	~	NEPM 2013 B3 & ALS QC Standard	
Total Phosphorus as P By Discrete Analyser	EK067G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
aboratory Control Samples (LCS)								
Ammonia as N by Discrete analyser	EK055G	1	17	5.88	5.00	1	NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F		20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	3	33.33	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
DRC-ICPMS						-		
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Nitrite as N by Discrete Analyser	EK057G	1	19	5.26	5.00	1	NEPM 2013 B3 & ALS QC Standard	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	16	12.50	10.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	<u> </u>	NEPM 2013 B3 & ALS QC Standard	
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	1	NEPM 2013 B3 & ALS QC Standard	
Fotal Metals by ICP-MS - Suite A	EG020A-T	2	30	6.67	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
Fotal Phosphorus as P By Discrete Analyser	EK067G	1	19	5.26	5.00		NEPM 2013 B3 & ALS QC Standard	
Aethod Blanks (MB)								
Ammonia as N by Discrete analyser	EK055G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Low-Level Dissolved Silver in Fresh Water by DRC-ICPMS 22-265	EG094-AgF	1	3 Fil	33.33 e B	5.00	~	NEPM 2013 B3 & ALS QC Standard	Page 168 of 321

Page	5 of 7
Work Order	: EB1924565
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



atrix: WATER Nality Control Sample Type		0.0	ount		Poto (%)		not within specification ; \checkmark = Quality Control frequency within specific
Inalytical Methods	Method	00 00	Reaular	Actual	Rate (%)	Evaluation	Quality Control Specification
	Method	00	Redular	Actual	Expected		
1ethod Blanks (MB) - Continued ow-Level Total Silver in Fresh Water by ORC-ICPMS		1	2	33.33	5.00		NEPM 2013 B3 & ALS QC Standard
,	EG094-AgT	1	3 19			-	
litrite and Nitrate as N (NOx) by Discrete Analyser	EK059G		19	5.26	5.00		NEPM 2013 B3 & ALS QC Standard
itrite as N by Discrete Analyser	EK057G	1		5.26	5.00		NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	16	6.25	5.00	2√_	NEPM 2013 B3 & ALS QC Standard
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	 ✓ 	NEPM 2013 B3 & ALS QC Standard
otal Mercury by FIMS	EG035T	1	19	5.26	5.00	~	NEPM 2013 B3 & ALS QC Standard
otal Metals by ICP-MS - Suite A	EG020A-T	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Phosphorus as P By Discrete Analyser	EK067G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
latrix Spikes (MS)							
mmonia as N by Discrete analyser	EK055G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
nloride by Discrete Analyser	ED045G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
ssolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
issolved Metals by ICP-MS - Suite A	EG020A-F	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
itrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	5.26	5.00	1	NEPM 2013 B3 & ALS QC Standard
itrite as N by Discrete Analyser	EK057G	1	19	5.26	5.00	1	NEPM 2013 B3 & ALS QC Standard
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	~	NEPM 2013 B3 & ALS QC Standard
otal Mercury by FIMS	EG035T	1	19	5.26	5.00	~	NEPM 2013 B3 & ALS QC Standard
otal Metals by ICP-MS - Suite A	EG020A-T	2	30	6.67	5.00	~	NEPM 2013 B3 & ALS QC Standard
otal Phosphorus as P By Discrete Analyser	EK067G	10	19	5.26	5.00	1	NEPM 2013 B3 & ALS QC Standard
	Publishe	<u>}</u> 0	¢.				



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	ions are converted to a barium su absorbance of the BaSO4 suspen	500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ulfate suspension in an acetic acid medium with barium chloride. Light nsion is measured by a photometer and the SO4-2 concentration is determined h a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	sequestration of mercury by the o	500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions nly-coloured ferric thiocynate which is measured at 480 nm APHA 21st edition
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	prior to analysis. The ICPMS tec are then passed into a high vacu	125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered hnique utilizes a highly efficient argon plasma to ionize selected elements. Ions um mass spectrometer, which separates the analytes based on their distinct ir measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	a highly efficient argon plasma to	125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes i onize selected elements. Ions are then passed into a high vacuum mass he analytes based on their distinct mass to charge ratios prior to their de ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	Samples are 0.45µm filtered prior A bromate/bromide reagent is use mercury is reduced online to atom	D), APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) r to analysis. FIM-AAS is an automated flameless atomic absorption technique. ed to oxidise any organic mercury compounds in the filtered sample. The ionic nic mercury vapour by SnCl2 which is then purged into a heated quartz cell. psorbance against a calibration curve. This method is compliant with NEPM
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550 FIM-AAS is an automated flamele any organic mercury compounds mercury vapour by SnCl2 which i	b), APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) ess atomic absorption technique. A bromate/bromide reagent is used to oxidise in the unfiltered sample. The ionic mercury is reduced online to atomic is then purged into a heated quartz cell. Quantification is by comparing curve. This method is compliant with NEPM (2013) Schedule B(3)
Low-Level Dissolved Silver in Fresh Water by ORC-ICPMS	EG094-AqF	WATER	ORC-ICPMS technique removes lons are passed into a high vacu	125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The interfering species through a series of chemical reactions prior to ion detection. If mass spectrometer, which separates the analytes based on their distinct asurement by a discrete dynode ion detector. This method is compliant with
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	WATER	In house: Referenced to APHA 3 species through a series of chem spectrometer, which separates the	125; USEPA SW846 - 6020. The ORC-ICPMS technique removes interfering iical reactions prior to ion detection. Ions are passed into a high vacuum mass ine analytes based on their distinct mass to charge ratios prior to measurement r. This method is compliant with NEPM (2013) Schedule B(3)
22-265			File B	Page 170 of 321



Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3 This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Field Tests (performed by external sampler)	* EN67-B02	WATER	Field determinations as per methods described in APHA or supplied by client. The analysis is performed in the field by non-ALS samplers. ALS NATA accreditation does not apply for this service.
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7 2007
Enumeration of Enterococci by Membrane Filtration	MW023	WATER	AS4276.9: - 2007
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals - ORC	EN25-ORC	WATER	In house: Referenced to USEPA SW846-3005. This is an Ultrapure Nitric acid digestion procedure used to prepare surface and ground water samples for analysis by ORC- ICPMS. This method is compliant with NEPM (2013) Schedule B(3)

ALS	ALGELAIDE 21 Burnis Road Poerska SA 5936 UMACKAY 75 Harbour Road Mar Phr 07 A947 0177 E mackay@ab ALS Leboratory: please tick → UMACKAY 75 Harbour Road Mar Phr 07 A947 0177 E mackay@ab BGILADSTONE 48 CationonData Drive Claton QLD 4953 UMACKAY 75 Harbour Road Mar Phr 07 6043 7222 E samples mail DGLADSTONE 48 CationonData Drive Claton QLD 4953 UMUDGEE 1/29 Syoney Road M Phr 07 4978 7944 E: ALSErwire,gladstone@slaglobal.com			ilsgloba: com ad Springvule VIC elbourne@alsglo	591 dbm	Ph: 0 LINC Ph: 0 LIPE	WCASTLE 5 Ros 2 4968 9433 E1s WRA 4/13 Geary 12 4423 2063 E, n RTH 10 Nod Waj 8 9209 7655 E, s	amples newcast Place North No owra@alsglobal / Malena -WA 60	le⊜aisglobal.co wsa NSW 2541 com len	204 m	Ph: 02 6784 6 UTOWNSVIC Ph: 07 4796 0 DWD: LOM	77-289 Woodpark Road Simithials NSW 216- 1655 E. samples sydney@ahsglobal.com LLI 14-15 Desma Court Bohle QLD a813 1600 E. tamasvälle enwonnentigatigbabl.com 20146 99 Konry Straet Wallangong NSW 250 9125 E. vollongong@alsglobal.com			
CLIENT: TRILITY				ROUND REQUIREMENTS :	Stan	dard TAT (Lis	due date):				· · · · · · · · · · · · · · · · · · ·		RY USE ONLY (Circle)	
OFFICE: AGNES			(Standard e.g., Ultra 1	FAT may be longer for some tests Frace Organics)		Standard or u			te):			4	Custody Seal Intact?	Yes	No N
DRDER NUMBER:		PROJECT NO .:	1	OTE NO.: BN/222/16					COC SEC	UENCE NUM	BER (Circle)	Free ice / frozen ice b receipt?	vicks present upon Yes	No N
ROJECT MANAGER	PURCHASE ORDER NO	¥_¥		Y OF ORIGIN:				co	X: 1 2	3 4	56	1		perature on Receipt:	۰c
	4(6) Personal Informatio	CONTACT			.			······	F: 1 2	34	5 6	7	Other comment:		
OC Emailed to ALS	(-)	EDD FORM			RELINQU	SHED BY:		RE	CEIVED BY	(6) Pers	onal Infor	RELIN	QUISHED BY:	RECEIVED BY:	
····	Ona TRILITY.com.au; agneswatergr			un;	DATE/TIM	-									
······································	lefault to PM if no other addresses are lis		Øtrility.co	71.8H	17-4	። ት. 🙆	12.0		TE/TIME:	10 0	140	DATE/	TIME:	DATE/TIME:	
	HANDLING/STORAGE OR DISPOSAL				<u>F (/-</u>	1. (4				<u> </u>	0.140	<u> </u>		Environne entel 5	Neder
	1		o to, czipią	ja my.com.au; amcconneil@i	runy.com.	au; mupp@t	ility.com.	au; mhills(@trility.com.	2U				Environmental D Brisbane	JIVISION
ALS USE ONLY		DETAILS d(S) Water(W)		CONTAINER INFO	ORMATION	•	ANALY	SIS REQU	IRED includ	ing SUITES	(NB. Suite Co	des must	be listed to attract su	Work Order Refe	
							When	e Motals are re	quired, specify T	otal (unfiltered b	ottle required) o	Dissolved	i (field filtered bottle req	EB1924	565
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATI (refer to codes below		TOTAL BOTTLES	TABLE 1	ph Fierd	0.0 Fice	Temp Fiero	Low Frew		000	Telephone': + 61-7-3243 72	
1	STP1	10.50	w			5	<u> </u>	6.68	0.25	23.5	3848	10.7			4 P.a 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,
2	STP2	10.10	w			5	X	6.50	0.83			C			
3	97-01			20				6.10	0.83	25.3	12364	121			· · · · · · · · · · · · · · · · · · ·
4	97-2												-	Well Da	1
5	97-3			9					CONCERCION OF			 		well Va	1
6	97-4		\mathbf{O}^{\dagger}	······································					MIC	20		D		Well Ve	Ч
7	97-5								1811		L			- Well yr	y
8	007	÷								an a	an lan tangin di daga da			Well Ve	4
9	008													Well Ve	Ly
10	STPI Duplicate	10.50	W			5	X .	1.1.8	0.25	02.5	10-0			Well D	ଞ୍ ୟ
							· · ·	000	0.20	00.0	5848	10.7			
													++-		
	• • •	•	<u>L</u> .		TOTAL	15									
ter Container Codes: P	Autoreserved Plastic: N = Nitric Preserved P VB = VOA Vial Socilum Bisulphate Preserved; lottle; E = EDTA Preserved Bottles; ST = Sterile	lastic ORC = Nitric Preserved		odium Hustmuide Kad Deserve and Co		12								Page 172 of 32	01



CERTIFICATE OF ANALYSIS

Work Order	EB1933892	Page	: 1 of 4	
Client	TRILITY Pty Ltd	Laboratory	Environmental Division Brisbane	
Contact	(6) Personal Info	Contact	: Customer Services EB	
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Australia	4053
	AGNES WATER QLD 4677			
Telephone	: 07 4974 7975	Telephone	7 +61-7-3243 7222	
Project	: Groundwater Monitoring	Date Samples Received	: 17-Dec-2019 09:55	with,
Order number	: 4500056728	Date Analysis Commenced	: 17-Dec-2019	
C-O-C number	:	Issue Date	: 30-Dec-2019 16:00	NATA
Sampler	6) Personal Info		13	C-MRA NATA
Site		\mathbf{C}		
Quote number	: BN/222/16	i Sta	"hill	Accreditation No. 825
No. of samples received	: 4			Accredited for compliance with
No. of samples analysed	: 4			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.

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.

	Microbiologist	Brisbane Microbiological, Stafford, QLD	
	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD	
4(6) Personal Inform	Assistant Laboratory Manager	Brisbane Sampling, Stafford, QLD	
	Senior Chemist	Brisbane Inorganics, 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.

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society. Key:

LOR = Limit of reporting

A = 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.
- MF = membrane filtration .
- CFU = colony forming unit
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range . of 10 - 100cfu.
- It is recognised that EG020-T (Total Metals by ICP-MS) is less than EG020-F (Dissolved Metals by ICP-MS) for sample DESAL 3 (EB1933892-003). However, the difference is within experimental variation of the • methods.
- MW023 is ALS's internal code and is equivalent to AS4276.9. •
- MW006 is ALS's internal code and is equivalent to AS4276.7. .
- JOIISNEO Sampling of waters conducted in accordance with AS5667 and in-house EN/67B. .



Analytical Results

ub-Matrix: WATER Matrix: WATER)				DESAL 1	DESAL 2	DESAL 3	DESAL 1 Duplicate	
				16-Dec-2019 00:00	16-Dec-2019 00:00	16-Dec-2019 00:00	16-Dec-2019 00:00	
				EB1933892-001	EB1933892-002	EB1933892-003	EB1933892-004	
				Result	Result	Result	Result	
D041G: Sulfate (Turbidimetric) as SO4 2-	by DA							
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	<1	<1	
D045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	71	46	54	72	
G020F: Dissolved Metals by ICP-MS					2			
Aluminium	7429-90-5	0.01	mg/L	0.47	0.45	1.04	0.48	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.002	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.003	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.003	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.006	0.006	0.030	0.006	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	0.20	0.39	3.86	0.21	
G020T: Total Metals by ICP-MS			0					
Aluminium	7429-90-5	0.01	mg/L	0.56	0.51	0.87	0.62	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.002	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.003	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.003	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.007	0.008	
Manganese	7439-96-5	0.001	mg/L	0.007	0.007	0.033	0.008	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	
Iron	7439-89-6	0.05	mg/L	0.24	0.46	4.29	0.27	
G035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	 Page 175 of 321



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			DESAL 1	DESAL 2	DESAL 3	DESAL 1 Duplicate	
			16-Dec-2019 00:00	16-Dec-2019 00:00	16-Dec-2019 00:00	16-Dec-2019 00:00	
			EB1933892-001	EB1933892-002	EB1933892-003	EB1933892-004	
			Result	Result	Result	Result	
EG035T: Total Recoverable Mercury	y by FIMS						
Mercury	7439-97-6 0.	0001 mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
EG094F: Dissolved Metals in Fresh \	Water by ORC-ICPMS						
Silver	7440-22-4).01 µg/L	<0.01	<0.01	<0.01	<0.01	
EG094T: Total metals in Fresh water	by ORC-ICPMS			2			
Silver	7440-22-4).01 µg/L	<0.01	<0.01	<0.01	<0.01	
EK055G: Ammonia as N by Discrete	Analyser			C ¹			
Ammonia as N	7664-41-7).01 mg/L	0.12	0.08	0.38	0.14	
EK057G: Nitrite as N by Discrete An	nalyser						
Nitrite as N	14797-65-0).01 mg/L	<0.01	<0.01	<0.01	<0.01	
EK058G: Nitrate as N by Discrete A	nalyser						
Nitrate as N	14797-55-8).01 mg/L	0.02	0.07	<0.01	0.02	
EK059G: Nitrite plus Nitrate as N (N	Ox) by Discrete Analys	er					
Nitrite + Nitrate as N	().01 mg/L	0.02	0.07	<0.01	0.02	
EK061G: Total Kjeldahl Nitrogen By	Discrete Analyser						
Total Kjeldahl Nitrogen as N		0.1 mg/L	0.8	1.2	1.6	1.0	
EK062G: Total Nitrogen as N (TKN +	NOx) by Discrete Analy	ser					
^ Total Nitrogen as N		0.1 mg/L	0.8	1.3	1.6	1.0	
EK067G: Total Phosphorus as P by I	Discrete Analyser						
Total Phosphorus as P	().01 mg/L	0.02	0.10	0.09	0.02	
EN67: Field Tests							
рН	(0.01 pH Unit	3.89	3.71	4.72	3.89	
Electrical Conductivity (Non		0.1 µS/cm	278	194	208	278	
Compensated)							
Dissolved Oxygen		0.01 % saturation	0.88	0.98	1.51	0.88	
Temperature		0.1 °C	25.2	23.9	26.6	25.2	
Redox Potential		0.1 mV	248	292	<0.1	248	
MW006: Faecal Coliforms & E.coli by							
Faecal Coliforms		1 CFU/100mL	<1	<1	<1	<1	
MW023: Enterococci by Membrane F							
Enterococci		1 CFU/100mL	<1	<1	<1	<1	



QUALITY CONTROL REPORT

Work Order	: EB1933892	Page	: 1 of 7
Client	TRILITY Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	:) Personal In	Contact	: Customer Services EB
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Australia 4053
	AGNES WATER QLD 4677		2.
Telephone	: 07 4974 7975	Telephone	: +61-7-3243 7222
Project	: Groundwater Monitoring	Date Samples Received	: 17-Dec-2019
Order number	: 4500056728	Date Analysis Commenced	: 17-Dec-2019
C-O-C number	:	Issue Date	: 30-Dec-2019
Sampler	6) Personal Info	C	Hac-MRA NATA
Site		. 6	
Quote number	: BN/222/16		Accreditation No. 825
No. of samples received	: 4		Accreditation No. 825
No. of samples analysed	: 4		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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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.

4(6) Personal Inform

Microbiologist Senior Inorganic Chemist Assistant Laboratory Manager Senior Chemist

Brisbane Microbiological, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Sampling, Stafford, QLD Brisbane Inorganics, Stafford, QLD

Page	: 2 of 7
Work Order	: EB1933892
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



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

Key: Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

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

RPD = Relative Percentage Difference

= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

ub-Matrix: WATER				\sim		Laboratory L	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
D041G: Sulfate (Tu	rbidimetric) as SO4 2- by	DA (QC Lot: 2771161)							
EB1933809-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit
EB1933914-005	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	3	3	0.00	No Limit
D045G: Chloride by	y Discrete Analyser (QC	Lot: 2771159)							
B1933809-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	2390	2360	1.08	0% - 20%
B1933914-005	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	42	42	0.00	0% - 20%
G020F: Dissolved I	Metals by ICP-MS (QC Lo	ot: 2772369)							
B1933866-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.005	0.006	17.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.002	0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
31933898-007	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.005	0.005	0.00	No Limit
22-265		EG020A-F: Copper	7440-50-8 File B	0.001	mg/L	<0.001	<0.001	0.00 Page	No Limit

Page	: 3 of 7
Work Order	: EB1933892
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Sub-Matrix: WATER			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
G020F: Dissolved	Metals by ICP-MS (QC L	_ot: 2772369) - continued							
EB1933898-007	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.254	0.260	2.32	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	3.37	3.42	1.50	0% - 20%
G020T: Total Meta	als by ICP-MS (QC Lot: 2	772375)							
EB1933866-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.014	0.014	0.00	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.012	0.010	15.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.10	0.12	0.00	0% - 50%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.54	0.57	5.67	0% - 50%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.16	0.17	0.00	No Limit
EB1933898-007	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	< 0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.005	0.005	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.287	0.277	3.35	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.38	0.38	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	3.62	3.46	4.33	0% - 20%
G035F: D <u>issolved</u>	Mercury by FIMS (QC L								
B1933866-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
B1933898-887-265	Anonymous	EG035F: Mercury	Fil <i>q</i> 43 9-97-6	0.0001	mg/L	< 0.0001	< 0.0001		179 of & 1_Limit

Page	: 4 of 7
Work Order	: EB1933892
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



EG035T: Total Recoverab EB1933866-001 Ano	ble Mercury by FIMS(QC	Method: Compound ; Lot: 2772374)	CAS Number			Laboratory Duplicate (DUP) Report						
EB1933866-001 Ano		Lot: 2772374)		LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%			
	onymous											
EB1933898-004 Ano		EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit			
	onymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit			
EG094F: Dissolved Metals	s in Fresh Water by ORC	-ICPMS (QC Lot: 2787095)				5						
EB1933892-001 DES	SAL 1	EG094-AgF: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit			
EG094T: Total metals in F	Fresh water by ORC-ICPN	IS (QC Lot: 2772275)			.0							
EB1933892-001 DES	SAL 1	EG094-AgT: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit			
K055G: Ammonia as N b	by Discrete Analyser (QC	CLot: 2771465)		0								
EB1933665-001 Ano	onymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.05	0.04	24.2	No Limit			
EB1933843-005 Ano	onymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.15	0.16	8.27	0% - 50%			
EK057G: Nitrite as N by D	Discrete Analyser (QC Lo	ot: 2771160)		U								
EB1933809-002 Ano	onymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit			
EB1933914-005 Ano	onymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit			
EK059G: Nitrite plus Nitra	ate as N (NOx) by Discre	te Analyser (QC Lot: 2771466)										
EB1933665-001 Ano	onymous	EK059G: Nitrite + Nitrate as N	.6 7	0.01	mg/L	4.02	4.07	1.13	0% - 20%			
EB1933843-005 Ano	onymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	6.18	6.30	2.04	0% - 20%			
EK061G: Total Kjeldahl Ni	itrogen By Discrete Anal	yser (QC Lot: 2780179)										
EB1933892-001 DES	SAL 1	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	0.8	0.8	0.00	No Limit			
ET1903895-003 Ano	onymous	EK061G: Total Kjeldahl Nitrogen as N	· · · · ·	0.1	mg/L	2.4	2.4	0.00	No Limit			
EK067G: Total Phosphoru	us as P by Discrete Analy	/ser (QC Lot: 2780178)										
EB1933892-001 DES	SAL 1	EK067G: Total Phosphorus as P		0.01	mg/L	0.02	0.02	0.00	No Limit			
ET1903895-003 Ano	onymous	EK067G: Total Phosphorus as P		0.01	mg/L	0.44	0.43	0.00	No Limit			



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: WATER		Method Blank (MB)		Laboratory Control Spike (LCS) Report				
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	A (QCLot: 2771161)				6			
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	95.1	85.0	118
				<1	100 mg/L	100	85.0	118
ED045G: Chloride by Discrete Analyser (QCLot:	: 2771159)							
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	100	90.0	115
				<1	1000 mg/L	100	90.0	115
EG020F: Dissolved Metals by ICP-MS (QCLot: 2	772369)			5				
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	100	79.0	118
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.5	88.0	116
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.9	88.0	108
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	112	87.0	113
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	101	86.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	104	88.0	114
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.6	89.0	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	89.0	120
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	103	89.0	113
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	103	83.0	112
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	105	86.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	87.0	113
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	103	82.0	114
EG020T: Total Metals by ICP-MS (QCLot: 27723	75)							
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	103	80.0	114
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	88.0	112
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.0	88.0	111
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	108	89.0	115
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	104	89.0	115
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	102	88.0	116
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.0	89.0	112
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	111	88.0	114
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.9	88.0	116
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	107	79.0	111
EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	111	86.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.9	84.0	114
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	104	82.0	128
EG020A-T: Ir 22-265	7439-89-6	0.05	^{mg/L} File B	<0.05	0.5 mg/L	114	Page 181 o	f 321 118

Page	: 6 of 7
Work Order	: EB1933892
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LCS) Report	
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG035F: Dissolved Mercury by FIMS (QCLot: 2772372)					\mathbf{A}			
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	101	84.0	118
EG035T: Total Recoverable Mercury by FIMS (QCLot: 277237	' 4)							
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	100	84.0	118
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QC	Lot: 278709	5)			5			
EG094-AgF: Silver	7440-22-4	0.01	μg/L	<0.01	0.2 µg/L	84.0	70.0	130
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot:	2772275)			S				
EG094-AgT: Silver	7440-22-4	0.01	μg/L	<0.01	0.2 µg/L	92.4	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 277146	5)							
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	114	83.5	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 2771160)				Nº O				
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	101	90.0	110
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser	(QCLot: 277	71466)						
EK059G: Nitrite + Nitrate as N		0.01	mg/L	<0.01	0.5 mg/L	104	85.7	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLo	t: 2780179)							
EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	<0.1	10 mg/L	90.1	70.1	108
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot	: 2780178)		VN					
EK067G: Total Phosphorus as P		0.01	mg/L	<0.01	4.42 mg/L	97.5	79.2	105

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER		5		Ma	atrix Spike (MS) Report	1	
				Spike	SpikeRecovery(%)	Recovery L	imits (%)
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED041G: Sulfate (1	Furbidimetric) as SO4 2- by DA (QCLot: 2771161)						
EB1933914-003	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	20 mg/L	96.7	70.0	130
ED045G: Chloride	by Discrete Analyser (QCLot: 2771159)						
EB1933914-003	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	114	70.0	130
EG020F: Dissolved	d Metals by ICP-MS (QCLot: 2772369)						
EB1933866-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	93.4	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	98.0	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	91.9	70.0	130
		EG020A-F: Cobalt 7440-48-4		1 mg/L	96.3	70.0	130
		EG020A-F: Copper 7440-50-8		1 mg/L	98.4	70.0	130
00.005		EG020A-F: Lead	7439-92-1	1 mg/L	90.2	70.0	130
22-265		EG020A-F: Manganese File B	7439-96-5	1 mg/L	90.6	Page 182 o	132 130

Page	: 7 of 7
Work Order	: EB1933892
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Laboratory sample ID Client sample ID EG020F: Dissolved Metals by EB1933866-002 Anonymou	nple ID y ICP-MS(QCLot: 2772369) - continued	Method: Compound		Spike	SpikeRecovery(%)	Recovery L	mite (%)
EG020F: Dissolved Metals b		Method: Compound					11113 (70)
	y ICP-MS (QCLot: 2772369) - continued		CAS Number	Concentration	MS	Low	High
EB1933866-002 Anonymol			\diamond				
	us	EG020A-F: Nickel	7440-02-0	1 mg/L	95.3	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	103	70.0	130
G020T: Total Metals by ICP	P-MS (QCLot: 2772375)						
EB1933866-002 Anonymou	us	EG020A-T: Arsenic	7440-38-2	1 mg/L	101	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	103	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	103	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	100	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	101	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	102	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	106	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	100	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	104	70.0	130
G035F: Dissolved Mercury	by FIMS (QCLot: 2772372)	S O					
B1933866-002 Anonymou	us	EG035F: Mercury	7439-97-6	0.01 mg/L	96.8	70.0	130
G035T: Total Recoverable	Mercury by FIMS (QCLot: 2772374)						E I
EB1933866-002 Anonymou	us	EG035T: Mercury	7439-97-6	0.01 mg/L	99.8	70.0	130
K055G: Ammonia as N by I	Discrete Analyser (QCLot: 2771465)						
B1933666-001 Anonymou	us	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	96.0	70.0	130
K057G: Nitrite as N by Dis	crete Analyser (QCLot: 2771160)						E
EB1933914-003 Anonymou		EK057G: Nitrite as N	14797-65-0	0.4 mg/L	99.8	70.0	130
K059G: Nitrite plus Nitrate	as N (NOx) by Discrete Analyser (QCLot: 277	1466)					E
EB1933666-001 Anonymou	us	EK059G: Nitrite + Nitrate as N		0.4 mg/L	95.3	70.0	130
K061G: Total Kjelda <u>hl Nitro</u>	ogen By Discrete Analyser (QCLot: 2780179)						
EB1933892-002 DESAL 2		EK061G: Total Kjeldahl Nitrogen as N		5 mg/L	110	70.0	130
K067G: Total Phosphorus	as P by Discrete Analyser (QCLot: 2780178)						
B1933892-002 DESAL 2		EK067G: Total Phosphorus as P		1 mg/L	104	70.0	130



	QA/QC Complianc	e Assessment to assist wit	h Quality Review
Work Order	: EB1933892	Page	: 1 of 7
Client	TRILITY Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	(6) Personal Infor	Telephone	: +61-7-3243 7222
Project	: Groundwater Monitoring	Date Samples Received	: 17-Dec-2019
Site	·	Issue Date	: 30-Dec-2019
Sampler	(6) Personal Info	No. of samples received	
Order number	4500056728	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

on protik

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- <u>NO</u> Method Blank value outliers occur.
- <u>NO</u> Duplicate outliers occur.
- <u>NO</u> Laboratory Control outliers occur.
- <u>NO</u> Matrix Spike outliers occur.
- For all regular sample matrices, <u>NO</u> surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

• <u>NO</u> Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

• <u>NO</u> Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for <u>VOC in soils</u> vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive <u>or</u> Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: WATER					Evaluation	n: × = Holding time	breach ; ✓ = Within	n holding tim
Method		Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G) DESAL 1, DESAL 3.	DESAL 2, DESAL 1 Duplicate	16-Dec-2019	0			18-Dec-2019	13-Jan-2020	~
ED045G: Chloride by Discrete Analyser			5					
Clear Plastic Bottle - Natural (ED045G) DESAL 1, DESAL 3,	DESAL 2, DESAL 1 Duplicate	16-Dec-2019				18-Dec-2019	13-Jan-2020	~
EG020F: Dissolved Metals by ICP-MS		0						
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG020A-F DESAL 1, DESAL 3,) DESAL 2, DESAL 1 Duplicate	16-Dec-2019				19-Dec-2019	13-Jun-2020	~
EG020T: Total Metals by ICP-MS	0.2							
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG020A DESAL 1, DESAL 3,	-T) DESAL 2, DESAL 1 Duplicate	16-Dec-2019	20-Dec-2019	13-Jun-2020	~	20-Dec-2019	13-Jun-2020	√
EG035F: Dissolved Mercury by FIMS								
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG035F) DESAL 1, DESAL 3,	DESAL 2, DESAL 1 Duplicate	16-Dec-2019				19-Dec-2019	13-Jan-2020	✓
EG035T: Total Recoverable Mercury by FIMS								
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG035T DESAL 1, DESAL 3,) DESAL 2, DESAL 1 Duplicate	16-Dec-2019				20-Dec-2019	13-Jan-2020	1
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS								
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG094-Ag DESAL 1, DESAL 3,	F) DESAL 2, DESAL 1 Duplicate	16-Dec-2019				27-Dec-2019	13-Jun-2020	√
EG094T: Total metals in Fresh water by ORC-ICPMS								
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG094-/ DESAL 1, DESAL 3, 22-265	AgT) DESAL 2, DESAL 1 Duplicate File	16-Dec-2019 B	27-Dec-2019	13-Jun-2020	1	27-Dec-2019	13-Jun-2020 Page 185 of 32	√

Page	: 3 of 7
Work Order	: EB1933892
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



DESAL 1. DESAL 3. DESAL 3. DESAL 3. DESAL 3. DESAL 3. DESAL 4. DESAL 3. DESAL 4. DESAL 5. DESAL	Matrix: WATER			-		Evaluatior	n: 🗴 = Holding time	e breach ; ✓ = Withi	n holding time
EX835C: Ammonia as N by Discrete Analyser Image: Destine Suffice Acid (EX0556) DESAL 2, DESAL 2, DESAL 2, DESAL 2, DESAL 3, DESAL 2, DESAL 3, DESAL 2, DESAL 3, DESAL 3, DESAL 3, DESAL 1, DESAL 2, DESAL 1, DESAL 1, <td>Method</td> <td></td> <td>Sample Date</td> <td>Ex</td> <td>traction / Preparation</td> <td></td> <td></td> <td>Analysis</td> <td></td>	Method		Sample Date	Ex	traction / Preparation			Analysis	
Clear Plastic Bottle - Sulfuric Acid (EK085G) DESAL 2. DESAL 3. DESAL 1. Duplicate III-Dec.2019 IIII-Dec.2019 IIII-Dec.2019 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
DESAL 1. DESAL 3. DESAL 3. DESAL 3. DESAL 3. DESAL 3. DESAL 4. DESAL 3. DESAL 4. DESAL 5. DESAL	EK055G: Ammonia as N by Discrete Analyser								
DESAL 3, DESAL 1 Duplicate Image: Control of the stature of the stat	Clear Plastic Bottle - Sulfuric Acid (EK055G)				\sim				_
Eckological Analyser Clear Plastic Bottle - Natural (EK057G) DESAL 1, DESAL 3, DESAL 1, Delicate 16-Dec-2019 18-Dec-2019 18-Dec-2019 ✓ Clear Plastic Bottle - Natural (EK057G) DESAL 1, Delicate 16-Dec-2019 18-Dec-2019 18-Dec-2019 ✓ Clear Plastic Bottle - Sulfuric Acid (EK059G) DESAL 1, Delicate 16-Dec-2019 17-Dec-2019 13-Jan-2020 ✓ Clear Plastic Bottle - Sulfuric Acid (EK059G) DESAL 2, DESAL 3, DESAL 1 Duplicate 16-Dec-2019 13-Jan-2020 ✓ 23-Dec-2019 13-Jan-2020 ✓ Clear Plastic Bottle - Sulfuric Acid (EK061G) DESAL 2, DESAL 3, DESAL 1 Duplicate 16-Dec-2019 23-Dec-2019 13-Jan-2020 ✓ 23-Dec-2019 13-Jan-2020 ✓<		,	16-Dec-2019				17-Dec-2019	13-Jan-2020	✓
Clear Plastic Bottle - Natural (EK057G) DESAL 2 DESAL 3 DESAL 1 Duplicate 16-Dec-2019 18-Dec-2019 18-Dec-2019 DESAL 3 DESAL 1 Duplicate 16-Dec-2019 18-Dec-2019 18-Dec-2019 Clear Plastic Bottle - Suffuric Acid (EK059G) DESAL 2, DESAL 1 Duplicate 16-Dec-2019 17-Dec-2019 13-Jan-2020 DESAL 3, DESAL 1 Duplicate 16-Dec-2019 23-Dec-2019 13-Jan-2020	DESAL 3,	DESAL 1 Duplicate							
DESAL 1, DESAL 2, DESAL 3, DESAL 1 Duplicate 16-Dec-2019 18-Dec-2019									
DESAL 3. DESAL 1 Duplicate DESAL 1 Duplicate EK0363; Nitrite plus Nitrate as N (NOx) by Discrete Analyser Ife Daes 2019 Ife Daes 2019 Ife Daes 201			16 Dec 2010				19 Dec 2010	18 Dec 2010	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser Clear Plastic Bottle - Sulfuric Acid (EK059G) DESAL 3, DESAL 1 Duplicate 16-Dec-2019 17-Dec-2019 13-Jan-2020 ✓ Clear Plastic Bottle - Sulfuric Acid (EK061G) DESAL 1, DESAL 3, DESAL 2, DESAL 1 Duplicate 16-Dec-2019 23-Dec-2019 13-Jan-2020 ✓ 23-Dec-2019		,	10-Dec-2019				18-Dec-2019	10-Dec-2019	~
Clear Plastic Bottie - Sulfuric Acid (EK059G) DESAL 2, DESAL 3, DESAL 1, DESAL 3, 17.Dec-2019 13.Jan-2020 ✓ EK061G: Total Kjeldahi Nitrogen By Discrete Analyser DESAL 1, DESAL 3, DESAL 2, DESAL 1, 16.Dec-2019 23.Dec-2019 13.Jan-2020 ✓ 23.Dec-2019 13.Jan-2020 ✓ DESAL 3, DESAL 1, Duplicate 16.Dec-2019 23.Dec-2019 13.Jan-2020 ✓ 23.Dec-2019 13.Jan-2020 ✓ DESAL 3, DESAL 1, Duplicate 16.Dec-2019 23.Dec-2019 13.Jan-2020 ✓ 23.Dec-2019 13.Jan-2020 ✓ DESAL 1, Duplicate DESAL 1, Duplicate 16.Dec-2019 23.Dec-2019 13.Jan-2020 ✓ 23.Dec-2019 13.Jan-2020 ✓ ✓ DESAL 1, Duplicate DESAL 1, Duplicate 16.Dec-2019 13.Jan-2020 ✓ 23.Dec-2019 13.Jan-2020 ✓ DESAL 1, Duplicate DESAL 1 Duplicate 16.Dec-2019 18.Dec-2019 DESAL 10.Duplicate									
DESAL 1, DESAL 2, DESAL 3, DESAL 1 Duplicate DESAL 2, DESAL 3, DESAL 2, DESAL 3, DESAL 3, DESAL 1, DESAL 4, DESAL 4, DESAL 5, DESAL 5, DESAL 5, DESAL 5, DESAL 5, DESAL 1, DESAL 2, DESAL 5, DESAL 1, DESAL 2, DESAL 2, DESAL 3, DESAL 1, DESAL 2, DESAL 2, DESAL 3, DESAL 1, DESAL 2, DESAL 3, DESAL 1, DESAL 2, DESAL 3, DESAL 1, DESAL 2, DESAL 4, DESAL 4, DESAL 4, DESAL 5, DESAL 1, DESAL 5, DESAL 1, DESAL 2, DESAL 4, DESAL 4, DESAL 5, DESAL 1, DESAL 5, DESAL 1, DESAL 2, DESAL 5, DESAL 1, DESAL 2, DESAL 4, DESAL 1, DESAL 2, DESAL 4, DESAL 5, DESAL 1, DESAL 5, DESAL 1, DESAL 2, DESAL 4, DESAL 5, DESAL 5, DESAL 5, DESAL 5, DESAL 5, DESAL 5, DESAL 6, DESAL 6, DESAL 6, DESAL 6, DESAL 6, DESAL 1, DESAL 6, DESAL 1, DESAL 1, DESAL 1, DESAL 1, DESAL 2, DESAL 2, DESAL 2, DESAL 4, DESAL 4, DESAL 5, DESAL 5, D		alyser							
DESAL 3. DESAL 1 Duplicate Image: Constraint of the state of		DESAL 2	16-Dec-2019				17-Dec-2019	13-Jan-2020	1
EKo61G: Total Kjeldahl Nitrogen By Discrete Analyser Clear Plastic Bottle - Sulfuric Acid (EK061G) DESAL 2, DESAL 3, DESAL 1 Duplicate 23-Dec-2019 13-Jan-2020 ✓ 23-Dec-2019 13-Jan-2020 ✓ EK067G: Total Kjeldahl Nitrogen By Discrete Analyser DESAL 1 Duplicate 16-Dec-2019 23-Dec-2019 13-Jan-2020 ✓ ✓ DESAL 1, DESAL 2, DESAL 1, DESAL 1, DESAL 1, DESAL 2, DESAL 1, DESAL 1, DESAL 1, DESAL 1, DESAL 1, DESAL 1, DESAL 2, I6-Dec-2019 I7-Dec-2019 I7-Dec-2019 ✓ DESAL 1, DESAL 1, <td>,</td> <td>,</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>•</td>	,	,							•
Clear Plastic Bottle - Sulfuric Acid (EK061G) DESAL 2, DESAL 2, 18-Dec-2019 23-Dec-2019 13-Jan-2020 ✓ 23-Dec-2019 13-Jan-2020 ✓ DESAL 3, DESAL 1 Duplicate DESAL 2, DESAL 2, 18-Dec-2019 13-Jan-2020 ✓ 23-Dec-2019 13-Jan-2020 ✓ 13-Jan-2020 <td></td> <td></td> <td></td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td><u> </u></td>				0					<u> </u>
DESAL 1, DESAL 3, DESAL 1 Duplicate DESAL 2, DESAL 1 Duplicate 16-Dec-2019 23-Dec-2019 13-Jan-2020 ✓ 23-Dec-2019 13-Jan-2020 ✓ EK067C: Total Phosphorus as P by Discrete Analyser EK067G: DESAL 3, DESAL 1, DESAL 3, DESAL 1, DESAL 3, DESAL 1 Duplicate DESAL 2, DESAL 1, DESAL 2, DESAL 3, DESAL 1, DESAL 4, DESAL 4, DESAL 4, DESAL 4, DESAL 4, DESAL 5, DESAL 5, DESAL 5, DESAL 4, DESAL									
EK067G: Total Phosphorus as P by Discrete AnalyserClear Plastic Bottle - Sulfuric Acid (EK067G) DESAL 1, DESAL 3,DESAL 2, DESAL 1 Duplicate16-Dec-201923-Dec-201913-Jan-2020 \checkmark 23-Dec-201913-Jan-2020 \checkmark EN67: Field Tests Clear Plastic Bottle - Natural (EN67) DESAL 3, DESAL 1, DESAL 1, DESAL 2, DESAL 1 Duplicate16-Dec-201918-Dec-2019MW006: Faecal Coliforms & E.coli by MFDESAL 2, DESAL 1, DESAL 3,DESAL 2, DESAL 1, DESAL 2, DESAL 1, DESAL 3,16-Dec-201917-Dec-201917-Dec-2019 \checkmark MW006: Faecal Coliforms & E.coli by MFMESterile Plastic Bottle - Sodium Thiosulfate (MW006) DESAL 1, DESAL 3, DESAL 1, DESAL 1, DESAL 1, DESAL 2, DESAL 2,16-Dec-201917-Dec-2019 \checkmark MW003: Enterococci by Membrane Filtration DESAL 1, DESAL 2, DESAL 2,16-Dec-201917-Dec-2019 \checkmark		DESAL 2,	16-Dec-2019	23-Dec-2019	13-Jan-2020	1	23-Dec-2019	13-Jan-2020	1
Clear Plastic Bottle - Sulfuric Acid (EK067G) DESAL 2, DESAL 1, Duplicate 16-Dec-2019 23-Dec-2019 13-Jan-2020 ✓ 23-Dec-2019 13-Jan-2020 ✓ ENG7: Field Tests USAL 1, Duplicate DESAL 2, DESAL 2, DESAL 2, DESAL 2, DESAL 1, Duplicate Ife-Dec-2019 Ife-	DESAL 3,	DESAL 1 Duplicate	02						
DESAL 1, DESAL 3, DESAL 3, DESAL 1 Duplicate DESAL 2, DESAL 1 Duplicate DESAL 2, DESAL 2, DESAL 3, DESAL 1, DESAL 3, DESAL 1 Duplicate DESAL 2, DESAL 1 Duplicate DESAL 2, DESAL 1 Duplicate DESAL 2, DESAL 1 Duplicate DESAL 2, DESAL 1, DESAL 3, DESAL 1 Duplicate DESAL 2, DESAL 1, DESAL 3, DESAL 1, DESAL 3, DESAL 1, DESAL 3, DESAL 1, DESAL 3, DESAL 1, DESAL 3, DESAL 1, DESAL 1, DESAL 1, DESAL 3, DESAL 1, DESAL 1, DESAL 1, DESAL 1, DESAL 1, DESAL 2, DESAL 1, DESAL 2, DESAL 1, DESAL 2, DESAL 2, DESAL 1, DESAL 2, DESAL 2, DESAL 2, DESAL 1, DESAL 2, DESAL 2, DESAL 2, DESAL 3, DESAL 2, DESAL 1, DESAL 2, DESAL 2, DESAL 2, DESAL 3, DESAL 2, DESAL 1, DESAL 2, DESAL 2, DESAL 3, DESAL 2, DESAL 3, DESAL 3, DESA	EK067G: Total Phosphorus as P by Discrete Analyser		XV						
DESAL 3, DESAL 1 Duplicate DESAL 3, DESAL 1 Duplicate EN67: Field Tests Clear Plastic Bottle - Natural (EN67) DESAL 3, DESAL 2, DESAL 3, DESAL 1 Duplicate MW006: Faecal Coliforms & E.coli by MF Sterile Plastic Bottle - Sodium Thiosulfate (MW006) DESAL 2, DESAL 3, DESAL 2, DESAL 4, DESAL 2, DESAL 5, DESAL 1 Duplicate MW006: Faecal Coliforms & E.coli by MF Sterile Plastic Bottle - Sodium Thiosulfate (MW023) DESAL 3, DESAL 2, DESAL 3, DESAL 1 Duplicate MW023: Enterococci by Membrane Filtration Sterile Plastic Bottle - Sodium Thiosulfate (MW023) DESAL 1, DESAL 2, DESAL 1, DESAL 2, DESAL 3, DESAL 1 Duplicate	Clear Plastic Bottle - Sulfuric Acid (EK067G)								
EN67: Field Tests Clear Plastic Bottle - Natural (EN67) DESAL 1, DESAL 2, DESAL 3, DESAL 1 Duplicate MW006: Faecal Coliforms & E.coli by MF Sterile Plastic Bottle - Sodium Thiosulfate (MW006) DESAL 1, DESAL 2, DESAL 1, DESAL 2, DESAL 3, DESAL 2, DESAL 1, DESAL 2, DESAL 3, DESAL 1 Duplicate MW006: Faecal Coliforms & E.coli by MF Sterile Plastic Bottle - Sodium Thiosulfate (MW006) DESAL 1, DESAL 2, DESAL 1 Duplicate 16-Dec-2019 MW0023: Enterococci by Membrane Filtration Sterile Plastic Bottle - Sodium Thiosulfate (MW023) DESAL 1, DESAL 2, Inference 2019 Inference 2019 Inference 2019 DESAL 1, DESAL 2, DESAL 2, Inference 2019 Inference 2019			16-Dec-2019	23-Dec-2019	13-Jan-2020	1	23-Dec-2019	13-Jan-2020	✓
Clear Plastic Bottle - Natural (EN67) DESAL 1, DESAL 3,DESAL 2, DESAL 1 Duplicate16-Dec-201918-Dec-2019MW006: Faecal Coliforms & E.coli by MFSterile Plastic Bottle - Sodium Thiosulfate (MW006) DESAL 3,DESAL 2, DESAL 1 Duplicate16-Dec-201917-Dec-201917-Dec-2019√MW023: Enterococci by Membrane FiltrationDESAL 2, DESAL 1,DESAL 2,16-Dec-201917-Dec-201917-Dec-2019√Sterile Plastic Bottle - Sodium Thiosulfate (MW023) DESAL 3,DESAL 2,16-Dec-201917-Dec-201917-Dec-2019√	DESAL 3,	DESAL 1 Duplicate							
DESAL 1, DESAL 3, DESAL 1 Duplicate DESAL 2, DESAL 1 Duplicate 16-Dec-2019 18-Dec-2019 MW006: Faecal Coliforms & E.coli by MF Sterile Plastic Bottle - Sodium Thiosulfate (MW006) DESAL 1, DESAL 3, DESAL 1 Duplicate DESAL 2, DESAL 1 Duplicate 16-Dec-2019 17-Dec-2019 17-Dec-2019 ✓ MW023: Enterococci by Membrane Filtration DESAL 2, DESAL 2, 16-Dec-2019 17-Dec-2019 17-Dec-2019 ✓ Sterile Plastic Bottle - Sodium Thiosulfate (MW023) DESAL 1, DESAL 2, 16-Dec-2019 17-Dec-2019 17-Dec-2019 ✓	EN67: Field Tests								
DESAL 3, DESAL 1 Duplicate DESAL 1 Duplicate Image: Constraint of the state of the s	Clear Plastic Bottle - Natural (EN67)								
MW006: Faecal Coliforms & E.coli by MF Sterile Plastic Bottle - Sodium Thiosulfate (MW006) DESAL 1, DESAL 2, DESAL 1 Duplicate DESAL 2, DESAL 1 Duplicate 17-Dec-2019 17-Dec-2019 ✓ MW023: Enterococci by Membrane Filtration DESAL 2, DESAL 2			16-Dec-2019				18-Dec-2019		
Sterile Plastic Bottle - Sodium Thiosulfate (MW006) DESAL 1, DESAL 3, DESAL 1 Duplicate DESAL 2, DESAL 1 Duplicate 16-Dec-2019 17-Dec-2019 17-Dec-2019 ✓ MW023: Enterococci by Membrane Filtration DESAL 2, DESAL 2, DESAL 2, DESAL 2, 16-Dec-2019 III IIII IIII IIII IIII IIIII IIII IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		DESAL 1 Duplicate							
DESAL 1, DESAL 3, DESAL 1 Duplicate DESAL 2, DESAL 1 Duplicate 16-Dec-2019 17-Dec-2019 17-Dec-2019 √ MW023: Enterococci by Membrane Filtration DESAL 2, If-Dec-2019 If-Dec-2019 If-Dec-2019 If-Dec-2019 If-Dec-2019 √ Sterile Plastic Bottle - Sodium Thiosulfate (MW023) DESAL 1, DESAL 2, If-Dec-2019 If-Dec-2019 If-Dec-2019 If-Dec-2019 √								1	
DESAL 3, DESAL 1 Duplicate DESAL 1 Duplicate DESAL 1 Duplicate DESAL 3, DESAL 1 Duplicate DESAL 3, DESAL 1 Duplicate DESAL 1, DESAL 2, DES			16-Dec-2019				17-Dec-2019	17-Dec-2010	
MW023: Enterococci by Membrane Filtration Sterile Plastic Bottle - Sodium Thiosulfate (MW023) DESAL 1, DESAL 2, DESAL 2, DESAL 2, 16-Dec-2019 17-Dec-2019 17-Dec-2019 ✓			10-Dec-2013				17-Dec-2013	17-Dec-2013	•
Sterile Plastic Bottle - Sodium Thiosulfate (MW023) DESAL 2, 16-Dec-2019 17-Dec-2019 17-Dec-2019									
DESAL 1, DESAL 2, 16-Dec-2019 17-Dec-2019 17-Dec-2019									
		DESAL 2.	16-Dec-2019				17-Dec-2019	17-Dec-2019	1
	DESAL 3,	DESAL 1 Duplicate							•



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: WATER Quality Control Sample Type			ount	Lidduoi	Rate (%)	in or noquonoy i	not within specification ; \checkmark = Quality Control Specification	
Analytical Methods	Method	ງ ວດ	Regular	Actual	Expected	Evaluation		
Laboratory Duplicates (DUP)				Hotada	Exposition	0.		
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00		NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	2	15	13.33	10.00	1	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	2	19	10.53	10.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
Low-Level Dissolved Silver in Fresh Water by	EG094-AqF	1	4	25.00	10.00	<u> </u>	NEPM 2013 B3 & ALS QC Standard	
ORC-ICPMS	5				J.	-		
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Nitrite as N by Discrete Analyser	EK057G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Mercury by FIMS	EG035T	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Fotal Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
aboratory Control Samples (LCS)								
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	2	15	13.33	10.00		NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F		19	5.26	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
DRC-ICPMS						-		
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Nitrite as N by Discrete Analyser	EK057G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Fotal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Mercury by FIMS	EG035T	1	18	5.56	5.00	1	NEPM 2013 B3 & ALS QC Standard	
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
/lethod Blanks (MB)								
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by DRC-ICPMS 22-265	EG094-AgF	1	4 Fil	25.00 e B	5.00	1	NEPM 2013 B3 & ALS QC Standard	Page 187 of 321

Page	5 of 7
Work Order	: EB1933892
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Analytical MethodsMethodOCMethod Blanks (MB) - ContinuedLow-Level Total Silver in Fresh Water by ORC-ICPMSEG094-AgT1Nitrite and Nitrate as N (NOx) by Discrete AnalyserEK059G1Nitrite as N by Discrete AnalyserEK057G1Sulfate (Turbidimetric) as SO4 2- by Discrete AnalyserEE0041G1Total Kjeldahl Nitrogen as N By Discrete AnalyserEK061G1Total Mercury by FIMSEG035T11Total Metals by ICP-MS - Suite AEG020A-T11Total Phosphorus as P By Discrete AnalyserEK067G11Matrix Spikes (MS)Matrix Spikes (MS)EK055G11	Reaular Actual 4 25.00 20 5.00 18 5.56 15 6.67 19 5.26 18 5.56 20 5.00 20 5.00	Expected 5.00 5.00 5.00 5.00 5.00 5.00 5.00 5.0	Evaluation	NEPM 2013 B3 & ALS QC Standard NEPM 2013 B3 & ALS QC Standard
Low-Level Total Silver in Fresh Water by ORC-ICPMSEG094-AgT1Nitrite and Nitrate as N (NOx) by Discrete AnalyserEK059G1Nitrite as N by Discrete AnalyserEK057G1Sulfate (Turbidimetric) as SO4 2- by Discrete AnalyserED041G1Total Kjeldahl Nitrogen as N By Discrete AnalyserEK061G1Total Mercury by FIMSEG035T11Total Metals by ICP-MS - Suite AEG020A-T11Total Phosphorus as P By Discrete AnalyserEK067G11Matrix Spikes (MS)EK055G111	20 5.00 18 5.56 15 6.67 19 5.26 18 5.56 20 5.00	5.00 5.00 5.00 5.00 5.00 5.00 5.00		NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser EK059G 1 Nitrite as N by Discrete Analyser EK057G 1 Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser ED041G 1 Total Kjeldahl Nitrogen as N By Discrete Analyser EK061G 1 Total Mercury by FIMS EG035T 1 Total Metals by ICP-MS - Suite A EG020A-T 1 Total Phosphorus as P By Discrete Analyser EK067G 1 Matrix Spikes (MS) Ammonia as N by Discrete analyser EK055G 1	20 5.00 18 5.56 15 6.67 19 5.26 18 5.56 20 5.00	5.00 5.00 5.00 5.00 5.00 5.00 5.00		NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser EK057G 1 Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser ED041G 1 Total Kjeldahl Nitrogen as N By Discrete Analyser EK061G 1 Total Mercury by FIMS EG035T 1 Total Metals by ICP-MS - Suite A EG020A-T 1 Total Phosphorus as P By Discrete Analyser EK067G 1 Matrix Spikes (MS) Ammonia as N by Discrete analyser EK055G 1	18 5.56 15 6.67 19 5.26 18 5.56 20 5.00	5.00 5.00 5.00 5.00 5.00 5.00		NEPM 2013 B3 & ALS QC StandardNEPM 2013 B3 & ALS QC StandardNEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser ED041G 1 Fotal Kjeldahl Nitrogen as N By Discrete Analyser EK061G 1 Fotal Mercury by FIMS EG035T 1 Fotal Metals by ICP-MS - Suite A EG020A-T 1 Fotal Phosphorus as P By Discrete Analyser EK067G 1 Matrix Spikes (MS) EK055G 1	15 6.67 19 5.26 18 5.56 20 5.00	5.00 5.00 5.00 5.00		NEPM 2013 B3 & ALS QC Standard NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser EK061G 1 Total Mercury by FIMS EG035T 1 Total Metals by ICP-MS - Suite A EG020A-T 1 Total Phosphorus as P By Discrete Analyser EK067G 1 Matrix Spikes (MS) EK055G 1	19 5.26 18 5.56 20 5.00	5.00 5.00 5.00		NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS EG035T 1 Total Metals by ICP-MS - Suite A EG020A-T 1 Total Phosphorus as P By Discrete Analyser EK067G 1 Matrix Spikes (MS) Ammonia as N by Discrete analyser EK055G 1	18 5.56 20 5.00	5.00 5.00	✓	
Total Metals by ICP-MS - Suite A EG020A-T 1 Total Phosphorus as P By Discrete Analyser EK067G 1 Matrix Spikes (MS) Ammonia as N by Discrete analyser EK055G 1	20 5.00	5.00		NEPM 2013 B3 & ALS QC Standard
otal Phosphorus as P By Discrete Analyser EK067G 1 Iatrix Spikes (MS) mmonia as N by Discrete analyser EK055G 1			1	
Iatrix Spikes (MS) Immonia as N by Discrete analyser EK055G	20 5.00	5.00	-	NEPM 2013 B3 & ALS QC Standard
mmonia as N by Discrete analyser EK055G 1			✓	NEPM 2013 B3 & ALS QC Standard
mmonia as N by Discrete analyser EK055G 1		C		
	20 5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser ED045G 1	15 6.67	5.00	1	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS EG035F 1	19 5.26	5.00	1	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A EG020A-F 1	20 5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Vitrite and Nitrate as N (NOx) by Discrete Analyser EK059G 1	20 5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard
Vitrite as N by Discrete Analyser EK057G 1	18 5.56	5.00	1	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser ED041G 1	15 6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser EK061G 1	19 5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Mercury by FIMS EG035T 1	18 5.56	5.00	1	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A EG020A-T 1	20 5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser EK067G 1	20 5.00	5.00	~	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0 ions are converted to a barium sulfate suspension in an acetic acid medium with absorbance of the BaSO4 suspension is measured by a photometer and the SO4 by comparison of the reading with a standard curve. This method is compliant with	barium chloride. Light 1-2 concentration is determined
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 CI - G. The thiocyanate ion is liberated from sequestration of mercury by the chloride ion to form non-ionised mercuric chlorid the librated thiocynate forms highly-coloured ferric thiocynate which is measured seal method 2 017-1-L april 2003	e.in the presence of ferric ions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG02 prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to are then passed into a high vacuum mass spectrometer, which separates the ana mass to charge ratios prior to their measurement by a discrete dynode ion detect	o ionize selected elements. lons alytes based on their distinct
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG0 a highly efficient argon plasma to ionize selected elements. Ions are then passed spectrometer, which separates the analytes based on their distinct mass to charg measurement by a discrete dynode ion detector.	into a high vacuum mass
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Co Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flamele A bromate/bromide reagent is used to oxidise any organic mercury compounds in mercury is reduced online to atomic mercury vapour by SnCl2 which is then purg Quantification is by comparing absorbance against a calibration curve. This meth (2013) Schedule B(3)	ss atomic absorption technique. n the filtered sample. The ionic ed into a heated quartz cell.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Co FIM-AAS is an automated flameless atomic absorption technique. A bromate/bro any organic mercury compounds in the unfiltered sample. The ionic mercury is re mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantif absorbance against a calibration curve. This method is compliant with NEPM (20	mide reagent is used to oxidise educed online to atomic ication is by comparing
Low-Level Dissolved Silver in Fresh Water by ORC-ICPMS	EG094-AqF	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µ ORC-ICPMS technique removes interfering species through a series of chemical lons are passed into a high vacuum mass spectrometer, which separates the ana mass to charge ratios prior to measurement by a discrete dynode ion detector. The NEPM (2013) Schedule B(3)	reactions prior to ion detection. alytes based on their distinct
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020. The ORC-ICPMS species through a series of chemical reactions prior to ion detection. Ions are pass spectrometer, which separates the analytes based on their distinct mass to charge by a discrete dynode ion detector. This method is compliant with NEPM (2013) S	ssed into a high vacuum mass ge ratios prior to measurement
22-265	1		File B	Page 189 of 321



Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3 This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Field Tests	EN67	WATER	Field determinations as per methods described in APHA. The analysis is performed in the field by ALS samplers. ALS NATA accreditation applies for this service.
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7 2007
Enumeration of Enterococci by Membrane Filtration	MW023	WATER	AS4276.9: - 2007
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals - ORC	EN25-ORC	WATER	In house: Referenced to USEPA SW846-3005. This is an Ultrapure Nitric acid digestion procedure used to prepare surface and ground water samples for analysis by ORC- ICPMS. This method is compliant with NEPM (2013) Schedule B(3)

ALS)		LACE LACE 21 Huma Bend Ph. 27 83/9 (Max) L. Saearde LightsBARE 2 byth Street do Ph. 71 3043 72/25 Samples DGLADSTONE 48 Calemon Ph: 07 4978 7944 E: ALSErv	ලිමේන්තාවයා වැදේ බඩට 400 btsbureලිමාද dah Drive Cii r	 Pp. 07-4944 0177 8 insuetuy@al UME1 POURNE 2-4 Westail Real Obar com Ph. 03-8549 5609 E, samples me Oh 61 0480 UNITUREE 3-69 Sectors band band band band band band band band	sglobat.com d Springvale V Ibouthe@alsg hudoes NSM: 2	10 3171 10031.com	Philos Listov Philos Liefes	(CASTLE 5 Ros 4968 9433 Er ta VRA 410 Ceary 4423 2063 Er ta 174 10 Hod Way 19209 7055 Er ta	imples.nowcasti Place North Nor Swra@acsglobal 24 ware, Maada	%@aisgubai ya mu Na₩ 2541 com no	704 m	مىدىنىن (ا	Enviro Brisba	onmental Division
ENT: TRILITY ICE: AGNES V		ROJECT NO.:	(Standard]	AT may be longer for some tests INon S		ist due date) urgent TAT (i					Cus	R LA tody :		31933892
DER NUMBER:	PURCHASE ORDER NO.:			OF ORIGIN:					UENCE NUM	BER (Cincle	/ nece			
JECT MANAGER:		CONTACT P	<u>.</u>		·····		0F		3 4	5 6 5 8	7 Ran 7 Othe			
PLER: 4(6) F	Personal Inform	SAMPLER N	IOBILE:	p4(6) Personal Informa			RE	CEIVED BY:			RELINQU	-		
Emailed to ALS?		EDD FORM	T (or defa			nal Inform			6) Persoi	hai Inte			Telenhara	
	On@TRILITY.com.au; awatergroup@tr			DATE/TIM		- 13-14	Uni	TE/TIME:	HIR	9:55	DATE/TIN	E:	releprione	: + 61-7-3243 7222
	efault to PM if no other addresses are liste	d): accountspayable	gtrinty.co	1.80 27/09/2075	12	00 77		929 16				·····		
MENTS/SPECIAL	HANDLING/STORAGE OR DISPOSAL:	· · · · · · · · · · · · · · · · · · ·					·C							
ALS USE ONLY	SAMPLE E MATRIX: Solid(;			CONTAINER INFORMATION		1						isted to attract : Id filtered bottle n		Additional Information
lab id	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	. <u>.</u>	Eret O	mp Fiero	0255 0	A Freed	C. C. C.			Commonts on likely contaminant levels dilutions, or samples requiring specific analysis etc.
7	DESAL 1		w		5	× TABL	15 3.89	10	0.88	3 278	3 248			
2	DESAL 2		w	. O' X \	5	X		A 1 4		194	1			
3	DESAL 3		w	02	5	x	3.7	23.9	0.98		292		· · · · · · · · · · · · · · · · · · ·	
2.						<u> </u>	4.12	96-6	1.51	908	-131			
4	DESAL I aplicate		ω ·		5	×	3.89	<u>3≺,5</u>	0-88	278	248			
<u></u>					· · · · · · · · · · · · · · · · · · ·	<u> </u>		<u> </u>						
	·····							ļ						· · · · · · · · · · · · · · · · · · ·
					u									
											ИIC	RO	LA	2
													THE S T	
						<u> </u>			·					
	<u> </u>		1	TOTAL	20					reight Unpress clation trottle;				



CERTIFICATE OF ANALYSIS

Work Order	EB1934065	Page	: 1 of 4
Client	TRILITY Pty Ltd	Laboratory	Environmental Division Brisbane
Contact	: 6) Personal Info	Contact	: Customer Services EB
Address	LOT 40 SPRINGS ROAD AGNES WATER QLD 4677	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: 07 4974 7975	Telephone	C +61-7-3243 7222
Project	: GROUNDWATER MONITORING	Date Samples Received	: 18-Dec-2019 10:50
Order number	: 4500056928	Date Analysis Commenced	: 18-Dec-2019
C-O-C number	:	Issue Date	: 06-Jan-2020 14:15
Sampler	:) Personal Inf		Hac-MRA NATA
Site	:	-G ^N	
Quote number	: BN/222/16	· S	Accreditation No. 825
No. of samples received	: 3	\mathbf{O}	Accredited for compliance with
No. of samples analysed	: 3		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.

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.

4(6) Personal Infor

22-265

Senior Inorganic Chemist Senior Inorganic Chemist Microbiologist

Brisbane Inorganics, Stafford, QLD Brisbane Sampling, Stafford, QLD Brisbane Microbiological, 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.

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society. Key:

LOR = Limit of reporting

A = 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.
- MF = membrane filtration .
- CFU = colony forming unit
- ublished of Philipping Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range . of 10 - 100cfu.
- MW023 is ALS's internal code and is equivalent to AS4276.9. .
- MW006 is ALS's internal code and is equivalent to AS4276.7. .
- Sampling of waters conducted in accordance with AS5667 and in-house EN/67B. .



Analytical Results

ub-Matrix: WATER Matrix: WATER)				STP1	STP2	STP1 Duplicate	
				17-Dec-2019 10:30	17-Dec-2019 09:45	17-Dec-2019 10:30	
				EB1934065-001	EB1934065-002	EB1934065-003	
				Result	Result	Result	
D041G: Sulfate (Turbidimetric) as SO4 2	- by DA						
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	95	381	96	
D045G: Chloride by Discrete Analyser							
Chloride	16887-00-6	1	mg/L	1020	4020	1010	
G020F: Dissolved Metals by ICP-MS					2		
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.002	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	
Manganese	7439-96-5	0.001	mg/L	1.26	0.105	1.28	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	1.61	<0.05	1.65	
G020T: Total Metals by ICP-MS							
Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.03	
Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.002	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	
Manganese	7439-96-5	0.001	mg/L	1.35	0.109	1.31	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	
Boron	7440-42-8	0.05	mg/L	<0.05	0.06	<0.05	
Iron	7439-89-6	0.05	mg/L	1.83	<0.05	1.82	
G035F: Dissolved Mercury by FIMS							
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Π		STP1	STP2	STP1 Duplicate	
				17-Dec-2019 10:30	17-Dec-2019 09:45	17-Dec-2019 10:30	
				EB1934065-001	EB1934065-002	EB1934065-003	
				Result	Result	Result	
EG035T: Total Recoverable Mercury	/ by FIMS						
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	
EG094F: Dissolved Metals in Fresh V	Water by ORC-ICPMS						
Silver	7440-22-4	0.01	µg/L	<0.01	0.02	<0.01	
EG094T: Total metals in Fresh water	by ORC-ICPMS						
Silver	7440-22-4	0.01	µg/L	<0.01	0.03	<0.01	
EK055G: Ammonia as N by Discrete	Analyser				C.		
Ammonia as N	7664-41-7	0.01	mg/L	0.05	0.01	0.03	
EK057G: Nitrite as N by Discrete An	alyser						
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	
EK058G: Nitrate as N by Discrete Ar	nalyser						
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	<0.01	
EK059G: Nitrite plus Nitrate as N (N	Ox) by Discrete Anal	yser					
Nitrite + Nitrate as N		0.01	mg/L	<0.01	<0.01	<0.01	
EK061G: Total Kjeldahl Nitrogen By	Discrete Analyser						
Total Kjeldahl Nitrogen as N		0.1	mg/L	<0.1	<0.1	0.1	
EK062G: Total Nitrogen as N (TKN +	NOx) by Discrete Ana	alyser					
^ Total Nitrogen as N		0.1	mg/L	<0.1	<0.1	0.1	
EK067G: Total Phosphorus as P by I	Discrete Analyser						
Total Phosphorus as P		0.01	mg/L	0.01	0.02	0.01	
EN67: Field Tests							
рН		0.01	pH Unit	6.54	6.35	6.54	
Electrical Conductivity (Non		0.1	μS/cm	3650	11700	3650	
Compensated)		\mathbf{O}					
Dissolved Oxygen		0.01	% saturation	2.64	3.24	2.64	
Temperature		0.1	°C	24.0	23.5	24.0	
Redox Potential		0.1	mV	2.1	111	2.1	
MW006: Faecal Coliforms & E.coli by							
Faecal Coliforms		1	CFU/100mL	<1	<1	<1	
MW023: Enterococci by Membrane F	iltration						
Enterococci		1	CFU/100mL	<1	<1	<1	



QUALITY CONTROL REPORT

Work Order	: EB1934065	Page	: 1 of 7
Client	TRILITY Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	\$) Personal Inf	Contact	: Customer Services EB
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Australia 4053
	AGNES WATER QLD 4677		Q. *
Telephone	: 07 4974 7975	Telephone	+61-7-3243 7222
Project	: GROUNDWATER MONITORING	Date Samples Received	: 18-Dec-2019
Order number	: 4500056928	Date Analysis Commenced	: 18-Dec-2019
C-O-C number	:	Issue Date	: 06-Jan-2020
Sampler) Personal Inf	C	NATA
Site	·	. 6	
Quote number	: BN/222/16		Accreditation No. 825
No. of samples received	: 3		Accreditation No. 825
No. of samples analysed	: 3		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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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.

(6) Personal Info

Senior Inorganic Chemist Senior Inorganic Chemist Microbiologist

Brisbane Inorganics, Stafford, QLD Brisbane Sampling, Stafford, QLD Brisbane Microbiological, 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

Key: Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

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

RPD = Relative Percentage Difference

= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

ub-Matrix: WATER						Laboratory I	Duplicate (DUP) Report		
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
D041G: Sulfate (Tu	rbidimetric) as SO4 2- by D	A (QC Lot: 2773614)							
B1934074-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	83	82	1.47	0% - 20%
B1934011-005	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	78	80	2.47	0% - 20%
D045G: Chloride b	y Discrete Analyser (QC Lo	:: 2773615)	N						
B1934074-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	82	82	0.00	0% - 20%
B1934011-005	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	619	623	0.581	0% - 20%
G020F: Dissolved	Metals by ICP-MS (QC Lot: 2	2775286)							
B1934028-018	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.047	0.046	0.00	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.002	0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.012	0.011	0.00	0% - 50%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.010	0.010	0.00	0% - 50%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	0.003	0.004	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.048	0.047	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.16	0.15	0.00	0% - 50%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
31934075-007	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
22-265		EG020A-F: Copper	7440-50-8 File B	0.001	mg/L	<0.001	<0.001	0.00	No Limit 197 of 321



Sub-Matrix: WATER						Laboratory I	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved I	Metals by ICP-MS (QC I	Lot: 2775286) - continued							
EB1934075-007	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
EG020T: Total Metal	s by ICP-MS (QC Lot: 2	2775290)		10					
EB1933803-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.1 µg/L	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<1 µg/L	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	4 µg/L	0.004	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<1 µg/L	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	1170 µg/L	1.17	0.00	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	6 µg/L	0.006	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<10 µg/L	<0.01	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	1.67	1.65	0.797	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	2130 µg/L	2.09	1.76	0% - 20%
EB1933803-010	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.1 µg/L	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<1 µg/L	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	9 µg/L	0.010	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	3 µg/L	0.003	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	27 µg/L	0.028	0.00	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	12 µg/L	0.014	16.2	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	40 µg/L	0.06	29.4	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.29	0.30	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	130 µg/L	0.17	29.3	No Limit
G035F: Dissolved I	Mercury by FIMS (QC L								
EB1934028-018	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1934075-887265	Anonymous	EG035F: Mercury	Fil ç 439-97-6	0.0001	mg/L	<0.0001	<0.0001		198 of & 1

Page	: 4 of 7
Work Order	EB1934065
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



Original Result <0.5 μg/L <0.1 μg/L <0.01 <0.01 0.40 0.03 <0.01	Duplicate Result <0.0005 <0.0001 <0.01 <0.01 0.40 0.03	RPD (%) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Recovery Limits (% No Limit No Limit No Limit No Limit No Limit 0% - 20% No Limit
<0.1 µg/L <0.01 <0.01 0.40 0.03	<0.0001 <0.01 <0.01 0.40	0.00	No Limit No Limit No Limit 0% - 20%
<0.1 µg/L <0.01 <0.01 0.40 0.03	<0.0001 <0.01 <0.01 0.40	0.00	No Limit No Limit No Limit No Limit No Limit 0% - 20%
<0.01 <0.01 0.40 0.03	<0.01 <0.01 0.40	0.00	No Limit No Limit 0% - 20%
<0.01 0.40 0.03	<0.01	0.00	No Limit
<0.01 0.40 0.03	<0.01	0.00	No Limit
0.40	0.40	0.00	0% - 20%
0.40	0.40	0.00	0% - 20%
0.03			
0.03			
	0.03	0.00	No Limit
<0.01			
<0.01			
	<0.01	0.00	No Limit
<0.01	<0.01	0.00	No Limit
0.05	0.05	0.00	No Limit
0.03	0.03	0.00	No Limit
2.7	3.1	13.8	No Limit
42.8	44.8	4.64	0% - 20%
5.01	5.16	2.97	0% - 20%
3.37	3.49	3.37	0% - 20%
	42.8 5.01	42.8 44.8 5.01 5.16	42.8 44.8 4.64 5.01 5.16 2.97



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LCS) Report			
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	(QCLot: 2773614)				6				
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	97.7	85.0	118	
				<1	100 mg/L	102	85.0	118	
ED045G: Chloride by Discrete Analyser (QCLot:	2773615)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	96.3	90.0	115	
				<1	1000 mg/L	102	90.0	115	
EG020F: Dissolved Metals by ICP-MS (QCLot: 2	775286)			S					
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	97.0	79.0	118	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.5	88.0	116	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.4	88.0	108	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.2	87.0	113	
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.6	86.0	112	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.7	88.0	114	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.6	89.0	110	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	96.3	89.0	120	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.0	89.0	113	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	102	83.0	112	
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	102	86.0	112	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.9	87.0	113	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	97.4	82.0	114	
EG020T: Total Metals by ICP-MS (QCLot: 277529	90)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	104	80.0	114	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	103	88.0	112	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.7	88.0	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.8	89.0	115	
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	102	89.0	115	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	104	88.0	116	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	89.0	112	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	104	88.0	114	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	99.9	88.0	116	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	102	79.0	111	
EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	103	86.0	116	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.1	84.0	114	
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	106	82.0	128	
EG020A-T: lr 22-265	7439-89-6	0.05	^{mg/L} File B	<0.05	0.5 mg/L	108	Page 200 o	f 321 118	



Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LCS) Report				
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)		
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High		
EG035F: Dissolved Mercury by FIMS (QCLot: 2775287)					\mathbf{A}					
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	104	84.0	118		
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2775)	293)									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	102	84.0	118		
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (C	QCLot: 277541	1)			3					
EG094-AgF: Silver	7440-22-4	0.01	μg/L	<0.01	0.2 µg/L	84.0	70.0	130		
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot	: 2775143)			6						
EG094-AgT: Silver	7440-22-4	0.01	µg/L	<0.01	0.2 µg/L	99.8	70.0	130		
EK055G: Ammonia as N by Discrete Analyser (QCLot: 2776	021)									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	105	83.5	114		
EK057G: Nitrite as N by Discrete Analyser (QCLot: 2773613	;)			NP O						
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	98.8	90.0	110		
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyse	er (QCLot: 27	76022)								
EK059G: Nitrite + Nitrate as N		0.01	mg/L	<0.01	0.5 mg/L	96.4	85.7	111		
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCL	.ot: 2783909)									
EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	<0.1	1 mg/L	88.2	70.1	108		
EK067G: Total Phosphorus as P by Discrete Analyser (QCL	ot: 278390 <u>8)</u>		VN							
EK067G: Total Phosphorus as P		0.01	mg/L	<0.01	0.442 mg/L	95.4	79.2	105		

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER					Ма	atrix Spike (MS) Repor	1	
					Spike	SpikeRecovery(%)	Recovery L	imits (%)
Laboratory sample ID	Client sample ID		Method: Compound	CAS Number	Concentration	MS	Low	High
ED041G: Sulfate (1	Turbidimetric) as SO4 2- by DA	(QCLot: 2773614)						
EB1934011-002	Anonymous		ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	20 mg/L	93.8	70.0	130
ED045G: Chloride	by Discrete Analyser (QCLot: 2	2773615)						
EB1934011-002	Anonymous		ED045G: Chloride	16887-00-6	400 mg/L	75.5	70.0	130
EG020F: Dissolved	d Metals by ICP-MS(QCLot: 27	75286)						
EB1934047-003	Anonymous		EG020A-F: Arsenic	7440-38-2	1 mg/L	96.1	70.0	130
			EG020A-F: Cadmium	7440-43-9	0.25 mg/L	96.1	70.0	130
			EG020A-F: Chromium	7440-47-3	1 mg/L	95.6	70.0	130
			EG020A-F: Cobalt	7440-48-4	1 mg/L	100	70.0	130
			EG020A-F: Copper	7440-50-8	1 mg/L	95.4	70.0	130
00.005			EG020A-F: Lead	7439-92-1	1 mg/L	94.6	70.0	130
22-265			EG020A-F: Manganese File B	7439-96-5	1 mg/L	99.1	Page 201 o	132 130



Sub-Matrix: WATER				M	atrix Spike (MS) Report		
				Spike	SpikeRecovery(%)	Recovery L	imits (%)
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolve	d Metals by ICP-MS (QCLot: 2775286) - continued		\diamond				
EB1934047-003	Anonymous	EG020A-F: Nickel	7440-02-0	1 mg/L	97.0	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	99.0	70.0	130
EG020T: Total Me	tals by ICP-MS (QCLot: 2775290)						
EB1933803-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	102	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	100	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	97.9	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	96.2	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	90.0	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	93.4	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	98.2	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	89.8	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	89.0	70.0	130
EG035F: Dissolve	d Mercury by FIMS (QCLot: 2775287)	S S					
EB1934065-001	STP1	EG035F: Mercury	7439-97-6	0.01 mg/L	96.9	70.0	130
EG035T: Total Re	coverable Mercury by FIMS (QCLot: 2775293)						
EB1933803-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	94.4	70.0	130
EK055G: Ammoni	a as N by Discrete Analyser (QCLot: 2776021)						
EB1934011-002	Anonymous	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	# Not	70.0	130
					Determined		
EK057G: Nitrite a	s N by Discrete Analyser (QCLot: 2773613)						
EB1934011-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	98.3	70.0	130
EK059G: Nitrite p	lus Nitrate as N (NOx) by Discrete Analyser (QCLot: 27	76022)					
EB1934011-002	Anonymous	EK059G: Nitrite + Nitrate as N		0.4 mg/L	94.0	70.0	130
EK061G: Tota <u>l Kj</u> e	eldahl Nitrogen By Discrete Analyser (QCLot: 2783909)						
EB1933878-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		25 mg/L	84.9	70.0	130
EK067G: Total Ph	osphorus as P by Discrete Analyser (QCLot: 2783908)						
EB1933878-001	Anonymous	EK067G: Total Phosphorus as P		5 mg/L	98.5	70.0	130
	, nonymous	LINUTO. TUTAL FILOSPHOLUS AS F		0 mg/L	00.0	10.0	100



QA/QC Compliance Assessment to assist with Quality Review : EB1934065 Work Order Page : 1 of 7 : Environmental Division Brisbane Client TRILITY Ptv Ltd Laboratory +61-7-3243 7222 Contact b) Personal Inf Telephone : 18-Dec-2019 Project : GROUNDWATER MONITORING **Date Samples Received** Site **Issue Date** 06-Jan-2020 No. of samples received • 3 Sampler Personal Inf No. of samples analysed Order number 4500056928 : 3

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

ondract

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- <u>NO</u> Method Blank value outliers occur.
- NO Duplicate outliers occur.
- <u>NO</u> Laboratory Control outliers occur.
- Matrix Spike outliers exist please see following pages for full details.
- For all regular sample matrices, <u>NO</u> surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

• <u>NO</u> Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

<u>NO</u> Quality Control Sample Frequency Outliers exist.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Numbe	er	Data		Limits	Comment
Matrix Spike (MS) Recoveries						5			
EK055G: Ammonia as N by Discrete Analyser	EB1934011002	Anonymous	Ammonia as N	7664-41-7	7	Not			MS recovery not determined,
					D	etermin	ed		background level greater than or
				0					equal to 4x spike level.

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for <u>VOC in soils</u> vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: WATER			$n \sim 10^{\circ}$			Evaluation	: × = Holding time	breach ; ✓ = Within	holding time.
Method			Sample Date	E>	traction / Preparation			Analysis	
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Clear Plastic Bottle - Natural (ED041G) STP1, STP1 Duplicate	STP2,	01011	17-Dec-2019				18-Dec-2019	14-Jan-2020	~
ED045G: Chloride by Discrete Analyser									
Clear Plastic Bottle - Natural (ED045G) STP1, STP1 Duplicate	STP2,		17-Dec-2019				18-Dec-2019	14-Jan-2020	~
EG020F: Dissolved Metals by ICP-MS									
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG020A-F) STP1, STP1 Duplicate	STP2,		17-Dec-2019				23-Dec-2019	14-Jun-2020	~
EG020T: Total Metals by ICP-MS									
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG020A- STP1, STP1 Duplicate	T) STP2,		17-Dec-2019	21-Dec-2019	14-Jun-2020	1	21-Dec-2019	14-Jun-2020	✓
EG035F: Dissolved Mercury by FIMS									
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG035F) STP1, STP1 Duplicate	STP2,		17-Dec-2019				24-Dec-2019	14-Jan-2020	✓
EG035T: Total Recoverable Mercury by FIMS									
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG035T) STP1, STP1 Dupficate ⁶⁵	STP2,	File	17-Dec-2019 e B				23-Dec-2019	14-Jan-2020 Page 204 of 32	1

Page	: 3 of 7
Work Order	: EB1934065
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



Matrix: WATER						Evaluation	n: × = Holding time	breach ; ✓ = With	in holding time
Method			Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG094F: Dissolved Metals in Fresh Water by ORC-ICPI	MS								
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG094-A STP1, STP1 Duplicate	AgF) STP2,		17-Dec-2019		02		30-Dec-2019	14-Jun-2020	~
EG094T: Total metals in Fresh water by ORC-ICPMS				.01					
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG09 STP1, STP1 Duplicate	4-AgT) STP2,		17-Dec-2019	21-Dec-2019	14-Jun-2020	~	21-Dec-2019	14-Jun-2020	~
EK055G: Ammonia as N by Discrete Analyser				<u> </u>					
Clear Plastic Bottle - Sulfuric Acid (EK055G) STP1, STP1 Duplicate	STP2,		17-Dec-2019				19-Dec-2019	14-Jan-2020	~
EK057G: Nitrite as N by Discrete Analyser				\mathbf{O}					
Clear Plastic Bottle - Natural (EK057G) STP1, STP1 Duplicate	STP2,	5	17-Dec-2019				18-Dec-2019	19-Dec-2019	~
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete A	nalyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G) STP1, STP1 Duplicate	STP2,		17-Dec-2019				19-Dec-2019	14-Jan-2020	~
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Clear Plastic Bottle - Sulfuric Acid (EK061G) STP1, STP1 Duplicate	STP2,	0 P	17-Dec-2019	27-Dec-2019	14-Jan-2020	~	27-Dec-2019	14-Jan-2020	✓
EK067G: Total Phosphorus as P by Discrete Analyser									
Clear Plastic Bottle - Sulfuric Acid (EK067G) STP1, STP1 Duplicate	STP2,		17-Dec-2019	27-Dec-2019	14-Jan-2020	~	27-Dec-2019	14-Jan-2020	~
EN67: Field Tests									
Clear Plastic Bottle - Natural (EN67) STP1, STP1 Duplicate	STP2,		17-Dec-2019				18-Dec-2019		
MW006: Faecal Coliforms & E.coli by MF									
Sterile Plastic Bottle - Sodium Thiosulfate (MW006) STP1, STP1 Duplicate	STP2,		17-Dec-2019				18-Dec-2019	18-Dec-2019	~
MW023: Enterococci by Membrane Filtration									
Sterile Plastic Bottle - Sodium Thiosulfate (MW023) STP1, STP1 Duplicate	STP2,		17-Dec-2019				18-Dec-2019	18-Dec-2019	~

Page 205 of 321



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: WATER				Evaluation	-	ontrol frequency	not within specification ; \checkmark = Quality Cont	rol trequency within specifica
Quality Control Sample Type			count		Rate (%)		Quality Control Specification	
Analytical Methods	Method	00	Reaular	Actual	Expected	Evaluation		
Laboratory Duplicates (DUP)						0,		
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	\checkmark	NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
DRC-ICPMS					\mathcal{P}			
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	3	33.33	10.00	1	NEPM 2013 B3 & ALS QC Standard	
itrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	1	NEPM 2013 B3 & ALS QC Standard	
litrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	14	14.29	10.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Phosphorus as P By Discrete Analyser	EK067G	2	19	10.53	10.00	~	NEPM 2013 B3 & ALS QC Standard	
aboratory Control Samples (LCS)								
mmonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard	
hloride by Discrete Analyser	ED045G	2	14	14.29	10.00		NEPM 2013 B3 & ALS QC Standard	
issolved Mercury by FIMS	EG035F	\mathbf{O}_1	14	7.14	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
issolved Metals by ICP-MS - Suite A	EG020A-F	1	16	6.25	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	3	33.33	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
DRC-ICPMS	Loooringi		-			•		
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	3	33.33	5.00	1	NEPM 2013 B3 & ALS QC Standard	
litrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard	
itrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	14	14.29	10.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	 ✓	NEPM 2013 B3 & ALS QC Standard	
otal Mercury by FIMS	EG035T	1	20	5.00	5.00	 ✓	NEPM 2013 B3 & ALS QC Standard	
otal Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
otal Phosphorus as P By Discrete Analyser	EG020A-1 EK067G	1	19	5.26	5.00	 ✓	NEPM 2013 B3 & ALS QC Standard	
	ERU07G			0.20	0.00	v		
lethod Blanks (MB) mmonia as N by Discrete analyser	FKOSSO	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard	
hloride by Discrete Analyser	EK055G	1	14	5.00 7.14		✓	NEPM 2013 B3 & ALS QC Standard NEPM 2013 B3 & ALS QC Standard	
	ED045G	1	14		5.00	✓		
Dissolved Mercury by FIMS	EG035F		14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1		6.25	5.00	√	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by DRC-ICPMS ²²⁻²⁶⁵	EG094-AgF	1	3 Fil	33.33 e B	5.00	~	NEPM 2013 B3 & ALS QC Standard	Page 206 of 321

Page	5 of 7
Work Order	: EB1934065
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



Matrix: WATER Quality Control Sample Type		<u> </u>	ount		Rate (%)		Quality Control Specification
Analytical Methods	Method	00 00	Reaular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued		00	redular	Actual	Expected		
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	3	33.33	5.00		NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	14	7.14	5.00	2.1	NEPM 2013 B3 & ALS QC Standard
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard
otal Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	~	NEPM 2013 B3 & ALS QC Standard
otal Phosphorus as P By Discrete Analyser	EK067G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
latrix Spikes (MS)				(
mmonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
hloride by Discrete Analyser	ED045G	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
issolved Mercury by FIMS	EG035F	1	14	7.14	5.00	~	NEPM 2013 B3 & ALS QC Standard
issolved Metals by ICP-MS - Suite A	EG020A-F	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
litrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	~	NEPM 2013 B3 & ALS QC Standard
litrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Phosphorus as P By Discrete Analyser	EK067G	10	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
	Publishe		¢.				



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	ions are converted to a barium su absorbance of the BaSO4 suspen by comparison of the reading with	500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ulfate suspension in an acetic acid medium with barium chloride. Light nsion is measured by a photometer and the SO4-2 concentration is determined h a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	sequestration of mercury by the o	500 CI - G.The thiocyanate ion is liberated from mercuric thiocyanate through chloride ion to form non-ionised mercuric chloride in the presence of ferric ions nly-coloured ferric thiocynate which is measured at 480 nm APHA 21st edition
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	prior to analysis. The ICPMS tec are then passed into a high vacu	125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered hnique utilizes a highly efficient argon plasma to ionize selected elements. Ions um mass spectrometer, which separates the analytes based on their distinct ir measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	a highly efficient argon plasma to	125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes i onize selected elements. Ions are then passed into a high vacuum mass the analytes based on their distinct mass to charge ratios prior to their de ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	Samples are 0.45µm filtered prior A bromate/bromide reagent is us mercury is reduced online to ator	0, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) r to analysis. FIM-AAS is an automated flameless atomic absorption technique. ed to oxidise any organic mercury compounds in the filtered sample. The ionic nic mercury vapour by SnCl2 which is then purged into a heated quartz cell. psorbance against a calibration curve. This method is compliant with NEPM
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550 FIM-AAS is an automated flamele any organic mercury compounds mercury vapour by SnCI2 which i	b), APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) ess atomic absorption technique. A bromate/bromide reagent is used to oxidise in the unfiltered sample. The ionic mercury is reduced online to atomic is then purged into a heated quartz cell. Quantification is by comparing curve. This method is compliant with NEPM (2013) Schedule B(3)
Low-Level Dissolved Silver in Fresh Water by ORC-ICPMS	EG094-AqF	WATER	ORC-ICPMS technique removes lons are passed into a high vacu	125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The interfering species through a series of chemical reactions prior to ion detection. um mass spectrometer, which separates the analytes based on their distinct asurement by a discrete dynode ion detector. This method is compliant with
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	WATER	species through a series of chem spectrometer, which separates th	125; USEPA SW846 - 6020. The ORC-ICPMS technique removes interfering ical reactions prior to ion detection. Ions are passed into a high vacuum mass a analytes based on their distinct mass to charge ratios prior to measurement r. This method is compliant with NEPM (2013) Schedule B(3)
22-265			File B	Page 208 of 321



Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser.
			This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser.
			This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed
			by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate
			calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by
Analyser			Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013)
			Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high
Analyser			temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined
			colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3 This method is compliant with NEPM (2013) Schedule
Discrete Analyser			B(3)
Total Phosphorus as P By Discrete	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves
Analyser			sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate
			reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and
			its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013)
			Schedule B(3)
Field Tests	EN67	WATER	Field determinations as per methods described in APHA. The analysis is performed in the field by ALS
			samplers. ALS NATA accreditation applies for this service.
Thermotolerant Coliforms & E.coli by	MW006	WATER	AS 4276.7 2007
Membrane Filtration			
Enumeration of Enterococci by	MW023	WATER	AS4276.9: - 2007
Membrane Filtration		C ·	
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013)
			Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure
			used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant
			with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals -	EN25-ORC	WATER	In house: Referenced to USEPA SW846-3005. This is an Ultrapure Nitric acid digestion procedure used to
ORC			prepare surface and ground water samples for analysis by ORC- ICPMS. This method is compliant with NEPM
			(2013) Schedule B(3)

A-	CLIAINI OF						A CONTRACTOR	INDEN NO. /	1 1 1	G = f = f = f = f = f
	CHAIN OF CUS	TODY DADELADE 21 Burns	3 Rone Paorinka SA 3095	κ.						934065
(ALS)	ALS Laboratory: please tick	* (1000mmm) E &	Ph. 07 494	Y 78 Harbour Road Mackay Q 44 0177 E. mackay@alsglobal	LD 4740		*			
CLIENT: TRILITY			nples brisbane@iskolast		com	DNEWCASTLE 5 Ros Ph: 02 4935 9433 E 5 UNOWRA 4/13 Geory	e Gun Road Wareba	Pok NSW 2304		
		Ph: 07 4978 7944 E: AL	emondah Drive Clinton QLD 4680 DMUDGEE SEnviro,gladatone@alagtobal.com Ph. 03 854 Ph. 03 854	JRNE 2-4 Westall Road Spring 9 9600 E. samples melbourner 1/29 Sydney Road Mudgie N 2 6735 E. mudgee,mail@alsglo	@olsglebai.com	UNOWRA 4/13 Georg Ph 02 4423 2053 E in Olipeanu 49		isglobal com SW 254 t	USYDNEY 277-289 Ph CERTREEALAC	Woolpark Road Smithfield NSW 2764
	WATER		TURNAROUND REQUIRE		507 2050 Shai com	OPERTURAN	0		Enviro	nmental Division
ORDER NUMBER:	WATER MONITORING	PROJECT NO .:	e.g. Ultra Trace Organization		(List due date):		unpins perih@aisglot	al com	Drispaj	ne
ROJECT MANAGER	PURCHASE OR	The second	ALS QUOTE NO.	Non Standard	for urgent TAT (List du	38 datas-		FOR	Work	Order Bofesse
AMPLER:	GLEN ZIDE		COUNTRY OF OPICIN				Falsen	Custo	EB	1934065
C Emailed to	Personal Inforr		(07) 4974 797c			COC: 1 2	ENCE NUMBER	(Circle) Free i receit		N
mail Reports to prso			MOBILE: 4p4(6) Personal Inform	A RELINQUISHED R		OF: 1 2		6 7 Rande		
mali Invoice to (will de	fault to Chair	anergroup@trility.com.au	MAT (or de	C) Dereenel Inf		RECEIVED BY		6 7 Other		
MMENTS/SPECIAL	fault to PM if no other addresses	are listed): accountspayabl	a Marilia.	6) Personal Inf	<u>۲</u>	P4	(6) Persona			
	MANULING/STORAGE OR DISP	OSAL; Please email manthe	e unity.com.au	17-12-19	19 I	DATE/TIME:	8.12.1			እስለቁጣት እ ርመ ()
ALS USE ONLY	CA1	ante and	e@trility.com.au o to; <mark>rson@trility.com.au;</mark> personal@	trility.com	10.00	S. I	10.07		Telephone: +	61-7-3243 7222
	MATRIX	Solid(S) Water(W)		rson	gurliky.com.au; rso	netrility.com.au	464.2			
			CONTAINER INF	ORMATION	ANALYSIS REC	UIRED inclustion	CUITCO	e Codes must be listed to at		
					Where Metals ere	required, specify Total	SUITES (NB. Suit	e Codes must be listed to at	ract suite price)	
LABID					NIC		mmered bottle requin	e Codes must be listed to at	ttle required).	Additional Information
CABID	SAMPLE ID	DATE / TIME		G					1	Commente on liter
· · ·		PAIE / RME	MATRIX TYPE & PRESERVATA	VE TOTAL		9	0 0 ij	2		dilutions, or samples requiring specific QC
			(refer to codes below)	BOTTLES	9	1 5	Ū j			
		17-12.19			L I I	U U	11 L	Filero		
,	STP1		· · · · · · · · · · · · · · · · · · ·		ABLE	0	e			
2	STP2	10.30	W		N O	a	Temp Temp	3		
3		9.45	W	5	× 6.54	In C. T.		0		
	-97-01-			5		2.64 24	0 3648	2.1	┼──┼	
4			" well Dey		6-35	3.24 27.	5 11708	1	╄───┼-	
5	57-5-		W RILLI DE		X	T		111	l	
6			w Ju Vey		x					
7	रा-4		Well Day		x					
	97-5		Well Dy							
8	007	· · ·			X		1 +			
8		· N			x		++		No. and Lot a local and the	
	008	W	hell ply		x		+	Bar		Marine Marine mark
0 STP	Duplicate		Well Des	7	x			THEF	1.	71.1.1
		10.30 W							N. N. and Margaret	M15
				5 ×	16.5415	.69 24.0	tali		the state of the state of	
					Jarla	51 24.0	13648	2.1	1-	
			1	1			$\begin{bmatrix} & & \\ & & \end{bmatrix}$			
Codes: P = Unpreserv	ed Plastic; N = Nitric Preserved		TOT) = Sodium Hydroxide/Cd Preserved; S = Sodium iffelght Unpreserved Viat SG = Sulfuric Preserv te Solis; S = Unpreserved Bag; U = Lugols India	+						
Preserved Bottle; E = ED	TA Preserved Bottles: ST - Stored; VS	C ORC = Nitric Preserved ORC; SH = VOA Vial Sulfuric Preserved ORC; SH	= Socium Hydroxide/Cd D	15 ^{File I}	»					Page 210 of 321
M (20471)		ttle; ASS = Plastic Bag for Acid Sulphs	infreight Unpreserved Vial SG = Sulfuric Preserved	Hydroxide Preserved Plas	IC: AG = Amber Clas					



CERTIFICATE OF ANALYSIS

Work Order	EB2010399	Page	: 1 of 4	
Client	: TRILITY Pty Ltd	Laboratory	Environmental Division Brisba	ine
Contact	h4p4(6) Personal Informatio	Contact	: Customer Services EB	
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Au	istralia 4053
	AGNES WATER QLD 4677			
Telephone	: +61 08 84086500	Telephone	2 +61-7-3243 7222	
Project	: Groundwater Monitoring	Date Samples Received	: 16-Apr-2020 09:00	ANHIII.
Order number	: 4500059581	Date Analysis Commenced	: 16-Apr-2020	Multiple A
C-O-C number	:	Issue Date	23-Apr-2020 15:18	
Sampler	: Ip4(6) Personal Informa		·	Hac-MRA NATA
Site				
Quote number	: BN/222/16			The Column
No. of samples received	: 4			Accreditation No. 825 Accredited for compliance with
No. of samples analysed	: 4			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.

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.

4(6) Personal Inform

Senior Inorganic Chemist Senior Inorganic Chemist Microbiologist

Brisbane Administration, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Microbiological, Stafford, QLD



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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.

 \sim = Indicates an estimated value.

- EK067G (Total Phosphorus as P): Sample EB2010399_001 (DESAL 1) was diluted due to matrix interference. LOR adjusted accordingly.
- MF = membrane filtration
- CFU = colony forming unit
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range
 of 10 100cfu.
- It is recognised that EG020-T (Total Metals by ICP-MS) is less than EG020-F (Dissolved Metals by ICP-MS) for samples DESAL 2 (EB2010399-002) and DESAL 3 (EB2010399-003). However, the difference is within experimental variation of the methods.
- ED041G (Sulfate as SO4): Some samples were diluted due to matrix interference. LOR adjusted accordingly.
- MW023 is ALS's internal code and is equivalent to AS4276.9.
- MW006 is ALS's internal code and is equivalent to AS4276.7.



Analytical Results

ub-Matrix: WATER Matrix: WATER)				DESAL 1	DESAL 2	DESAL 3	DESAL 1 (Duplicate)	
				15-Apr-2020 12:05	15-Apr-2020 10:50	15-Apr-2020 09:20	15-Apr-2020 12:10	
				EB2010399-001	EB2010399-002	EB2010399-003	EB2010399-004	
				Result	Result	Result	Result	
D041G: Sulfate (Turbidimetric) as SO4 2	2- by DA							
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<5	2	<1	<5	
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	72	81	60	74	
EG020F: Dissolved Metals by ICP-MS					S			
Aluminium	7429-90-5	0.01	mg/L	0.48	0.56	0.73	0.51	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.002	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.001	0.003	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	0.007	0.008	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.008	0.028	0.029	0.008	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	0.14	0.57	3.71	0.16	
G020T: Total Metals by ICP-MS			6					
Aluminium	7429-90-5	0.01	mg/L	0.59	1.35	0.92	0.60	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	0.003	0.003	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.002	0.003	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.006	<0.005	0.006	0.006	
Manganese	7439-96-5	0.001	mg/L	0.008	0.030	0.028	0.008	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	
Iron	7439-89-6	0.05	mg/L	0.18	0.67	3.99	0.18	
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	 age 213 of 321



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Π		DESAL 1	DESAL 2	DESAL 3	DESAL 1 (Duplicate)	
([15-Apr-2020 12:05	15-Apr-2020 10:50	15-Apr-2020 09:20	15-Apr-2020 12:10	
				EB2010399-001	EB2010399-002	EB2010399-003	EB2010399-004	
				Result	Result	Result	Result	
EG035T: Total Recoverable Mercury	y by FIMS							
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
EG094F: Dissolved Metals in Fresh	Water by ORC-ICPMS							
Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	
EG094T: Total metals in Fresh water	r by ORC-ICPMS							
Silver	7440-22-4	0.01	µg/L	<0.01	0.04	0.02	<0.01	
EK055G: Ammonia as N by Discrete	Analyser				<u> </u>			
Ammonia as N	7664-41-7	0.01	mg/L	0.10	0.10	0.50	0.13	
EK057G: Nitrite as N by Discrete Ar	nalyser							
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
EK058G: Nitrate as N by Discrete A	nalyser							
Nitrate as N	14797-55-8	0.01	mg/L	0.76	0.03	<0.01	0.73	
EK059G: Nitrite plus Nitrate as N (N	Ox) by Discrete Ana	lyser						
Nitrite + Nitrate as N		0.01	mg/L	0.76	0.03	<0.01	0.73	
EK061G: Total Kjeldahl Nitrogen By	Discrete Analyser							
Total Kjeldahl Nitrogen as N		0.1	mg/L	1.2	1.3	1.6	1.2	
EK062G: Total Nitrogen as N (TKN +	NOx) by Discrete An	alyser						
^ Total Nitrogen as N		0.1	mg/L	2.0	1.3	1.6	1.9	
EK067G: Total Phosphorus as P by	Discrete Analyser							
Total Phosphorus as P		0.01	mg/L	<0.05	0.10	0.21	0.07	
EN67: Field Tests			19					
Ø Electrical Conductivity (Non		1	µS/cm	298.7	313.6	219.0	298.7	
Compensated)								
Ø Dissolved Oxygen		0.1	mg/L	0.32	0.31	0.44	0.32	
Ø pH		0.01	pH Unit	3.99	3.92	4.82	3.99	
Ø Temperature		0.1	°C	26.3	24.8	27.6	26.3	
Ø Reactive Phosphorus as P	14265-44-2	0.01	mg/L	172.4	180.6	-177.7	172.4	
MW006: Faecal Coliforms & E.coli b								
Faecal Coliforms		1	CFU/100mL	<1	<1	<1	<1	
MW023: Enterococci by Membrane I	Filtration							
Enterococci		1	CFU/100mL	<1	<1	<1	<1	



QUALITY CONTROL REPORT

Work Order	: EB2010399	Page	: 1 of 7	
Client	TRILITY Pty Ltd	Laboratory	: Environmental Division	Brisbane
Contact	ch4p4(6) Personal Informatio	Contact	: Customer Services EB	
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford C	LD Australia 4053
	AGNES WATER QLD 4677		2.	
Telephone	: +61 08 84086500	Telephone	+61-7-3243 7222	
Project	: Groundwater Monitoring	Date Samples Received	: 16-Apr-2020	AMULTIC.
Order number	: 4500059581	Date Analysis Commenced	: 16-Apr-2020	
C-O-C number	·	Issue Date	23-Apr-2020	
Sampler	4p4(6) Personal Informa			Hac-MRA NATA
Site		. 6		
Quote number	: BN/222/16			Accreditation No. 825
No. of samples received	: 4			Accredited for compliance with
No. of samples analysed	: 4			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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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.

(6) Personal Info

Senior Inorganic Chemist Senior Inorganic Chemist Microbiologist

Brisbane Administration, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Microbiological, Stafford, QLD





General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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

Key: Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

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

RPD = Relative Percentage Difference

= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

ub-Matrix: WATER				\sim		Duplicate (DUP) Report	DUP) Report		
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
D041G: Sulfate (Tu	rbidimetric) as SO4 2-	by DA (QC Lot: 2973523)							
B2010268-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	658000 μg/L	656	0.270	0% - 20%
B2010399-001	DESAL 1	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<5	<5	0.00	No Limit
D045G: Chloride by	y Discrete Analyser (Q	C Lot: 2973525)							
B2010399-001	DESAL 1	ED045G: Chloride	16887-00-6	1	mg/L	72	73	0.00	0% - 20%
B2010545-009	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	2420	2440	0.643	0% - 20%
G020F: Dissolved I	Metals by ICP-MS (QC	Lot: 2972357)							
EB2008355-001 Anony	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.006	0.005	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	1.03	1.01	2.16	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.018	0.019	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.10	0.10	0.00	No Limit
B2010262-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
22-265		EG020A-F: Copper	7440-50-8 File B	0.001	mg/L	<0.001	<0.001	0.00	No Limit 216 of 321

Page	: 3 of 7
Work Order	: EB2010399
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



ub-Matrix: WATER						Laboratory I	Duplicate (DUP) Report		
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
G020F: Dissolved	Metals by ICP-MS (QC L	_ot: 2972357) - continued							
B2010262-001	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.115	0.114	0.00	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
G020T: Total Meta	Is by ICP-MS (QC Lot: 2	972363)		10					
B2010188-005	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
	-	EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.005	0.005	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.01	<0.01	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	< 0.05	<0.05	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.10	<0.10	0.00	No Limit
32010262-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.050	0.050	0.00	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	31.5	31.5	0.0606	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	3.70	3.71	0.478	0% - 20%
G035F: D <u>issolved</u>	Mercury by FIMS (QC L	ot: 2972358)							
B2010378-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
B2008355-@@1265	Anonymous	EG035F: Mercury	Fil <i>ç</i> 439-97-6	0.0001	mg/L	< 0.0001	< 0.0001		217 of & 1_imit

Page	: 4 of 7
Work Order	: EB2010399
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Sub-Matrix: WATER						Laboratory I	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG035T: Total Rec	overable Mercury by FIMS(QC Lot: 2972368)							
EB2008355-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB2010085-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG094F: Dissolved	Metals in Fresh Water by OF	RC-ICPMS (QC Lot: 2972289)							
EB2010399-001	DESAL 1	EG094-AgF: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EG094T: Total meta	Is in Fresh water by ORC-IC	PMS (QC Lot: 2972282)			.05				
EB2010399-001	DESAL 1	EG094-AgT: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EK055G: Ammonia	as N by Discrete Analyser (QC Lot: 2977961)		(
EB2010399-001	DESAL 1	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.10	0.09	0.00	No Limit
EB2010482-005	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.05	0.06	0.00	No Limit
EK057G: Nitrite as	N by Discrete Analyser (QC			.U					
EB2010268-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<10 µg/L	<0.01	0.00	No Limit
EB2010399-001	DESAL 1	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plu	IS Nitrate as N (NOx) by Disc	crete Analyser (QC Lot: 2977962)		2					
EB2010399-001	DESAL 1	EK059G: Nitrite + Nitrate as N	.6 -	0.01	mg/L	0.76	0.72	4.65	0% - 20%
EB2010482-005	Anonymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	0.02	0.02	0.00	No Limit
EK061G: Total Kjelo	dahl Nitrogen By Discrete Ar	alyser (QC Lot: 2976603)							
EB2010376-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	2.7	2.3	15.9	No Limit
EB2010394-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	· · · · · ·	0.1	mg/L	31.1	30.5	2.03	0% - 20%
EK067G: Total Phos	sphorus as P by Discrete An	alyser (QC Lot: 2976602)							
EB2010376-001	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	1.35	1.31	2.78	0% - 20%
EB2010394-001	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	3.51	3.26	7.45	0% - 20%
EB2010394-001	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	3.51	3.26	7.45	0% - 20%



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LCS) Report		
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS		High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	A (QCLot: 2973523)				6			
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	107	85.0	118
				<1	100 mg/L	104	85.0	118
ED045G: Chloride by Discrete Analyser (QCLot:	: 2973525)							
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	98.6	90.0	115
				<1	1000 mg/L	102	90.0	115
EG020F: Dissolved Metals by ICP-MS (QCLot: 2	972357)			5				
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	100	79.0	118
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	103	88.0	116
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	100	88.0	108
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.2	87.0	113
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	102	86.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	100	88.0	114
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.6	89.0	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	97.0	89.0	120
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.5	89.0	113
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	102	83.0	112
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	99.3	86.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.3	87.0	113
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	102	82.0	114
EG020T: Total Metals by ICP-MS (QCLot: 29723)	63)							
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	95.9	80.0	114
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	100	88.0	112
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	88.0	111
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.3	89.0	115
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	99.2	89.0	115
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	95.2	88.0	116
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.7	89.0	112
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.9	88.0	114
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.0	88.0	116
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	97.9	79.0	111
EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	108	86.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	98.1	84.0	114
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	91.7	82.0	128
EG020A-T: lr <u>02-265</u>	7439-89-6	0.05	^{mg/L} File B	<0.05	0.5 mg/L	96.0	Page 219 o	f 321 118



Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LCS	ol Spike (LCS) Report		
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)	
Method: Compound C	AS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
EG035F: Dissolved Mercury by FIMS (QCLot: 2972358)					\mathbf{A}				
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	103	84.0	118	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 297236	8)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	118	84.0	118	
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS(QC	Lot: 297228	9)			5				
EG094-AgF: Silver	7440-22-4	0.01	μg/L	<0.01	0.2 µg/L	90.0	70.0	130	
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot: 2	2972282)			S					
EG094-AgT: Silver	7440-22-4	0.01	μg/L	<0.01	0.2 µg/L	106	70.0	130	
EK055G: Ammonia as N by Discrete Analyser (QCLot: 297796	1)			C.					
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	102	83.5	114	
EK057G: Nitrite as N by Discrete Analyser (QCLot: 2973522)				Nº O					
EK057G: Nitrite as N 14	4797-65-0	0.01	mg/L	<0.01	0.5 mg/L	90.0	90.0	110	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser	(QCLot: 297	7962)							
EK059G: Nitrite + Nitrate as N		0.01	mg/L	<0.01	0.5 mg/L	99.0	85.7	111	
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot	: 2976603)								
EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	<0.1	10 mg/L	88.5	70.1	108	
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot:	: 2976602)		VN						
EK067G: Total Phosphorus as P		0.01	mg/L	<0.01	4.42 mg/L	92.4	79.2	105	

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER				Ma	atrix Spike (MS) Repor	t	
				Spike	SpikeRecovery(%)	Recovery L	imits (%)
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED041G: Sulfate (urbidimetric) as SO4 2- by DA (QCLot: 2973523)					
EB2010268-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1000 mg/L	92.5	70.0	130
ED045G: Chloride	by Discrete Analyser (QCLot: 2973525)						
EB2010399-002	DESAL 2	ED045G: Chloride	16887-00-6	400 mg/L	107	70.0	130
EG020F: Dissolve	I Metals by ICP-MS (QCLot: 2972357)						
EB2008355-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	101	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	100	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	97.3	70.0	130
		EG020A-F: Cobalt	7440-48-4	1 mg/L	92.3	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	94.6	70.0	130
22.265		EG020A-F: Lead	7439-92-1	1 mg/L	94.1	70.0	f 221 ¹³⁰
22-265		EG020A-F: Manganese File B	7439-96-5	1 mg/L	95.4	Page 220 o	132 130

Page	: 7 of 7
Work Order	: EB2010399
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Sub-Matrix: WATER				M	atrix Spike (MS) Report		
				Spike	SpikeRecovery(%)	Recovery L	imits (%)
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolve	d Metals by ICP-MS (QCLot: 2972357) - continued		Ó				
EB2008355-002	Anonymous	EG020A-F: Nickel	7440-02-0	1 mg/L	93.1	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	98.8	70.0	130
G020T: Total Me	tals by ICP-MS (QCLot: 2972363)						
EB2010188-006	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	96.7	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.6	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	105	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	108	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	105	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	107	70.0	130
	EG020A-T: Manganese	7439-96-5	1 mg/L	106	70.0	130	
		EG020A-T: Nickel	7440-02-0	1 mg/L	99.4	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	95.7	70.0	130
G035F: Dissolve	d Mercury by FIMS (QCLot: 2972358)	S O					
EB2008355-002	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	88.1	70.0	130
G035T: Total Re	ecoverable Mercury by FIMS (QCLot: 2972368)						
B2008355-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	82.1	70.0	130
K055G: Ammoni	a as N by Discrete Analyser (QCLot: 2977961)						
EB2010399-002	DESAL 2	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	87.6	70.0	130
K057G: Nitrite a	s N by Discrete Analyser (QCLot: 2973522)						
EB2010268-002	Anonymous	EK057G: Nitrite as N	14797-65-0	4 mg/L	96.1	70.0	130
K059G: Nitrite p	olus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2	2977962)					
EB2010399-002	DESAL 2	EK059G: Nitrite + Nitrate as N		0.4 mg/L	89.6	70.0	130
K061G: Tota <mark>l Kj</mark> e	eldahl Nitrogen By Discrete Analyser (QCLot: 2976603						
EB2010393-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		5 mg/L	86.8	70.0	130
K067G: Tota <u>l Ph</u>	osphorus as P by Discrete Analyser (QCLot: 2976602						
EB2010393-001	Anonymous	EK067G: Total Phosphorus as P		1 mg/L	97.3	70.0	130
	-						L



QA/QC Compliance Assessment to assist with Quality Review : EB2010399 Work Order Page : 1 of 7 : Environmental Division Brisbane Client Laboratory : TRILITY Pty Ltd +61-7-3243 7222 Contact ch4p4(6) Personal Information Telephone : 16-Apr-2020 Project : Groundwater Monitoring **Date Samples Received** Site **Issue Date** 23-Apr-2020 No. of samples received Sampler p4(6) Personal Informa 4 No. of samples analysed Order number 4500059581 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability. on protive

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- <u>NO</u> Method Blank value outliers occur.
- NO Duplicate outliers occur. ۲
- NO Laboratory Control outliers occur.
- NO Matrix Spike outliers occur. ۰
- For all regular sample matrices, NO surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

• NO Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

• NO Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for <u>VOC in soils</u> vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: WATER					Evaluation	n: × = Holding time	breach ; ✓ = Withi	n holding tim
Method		Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA		-0						
Clear Plastic Bottle - Natural (ED041G) DESAL 1, DESAL 3,	DESAL 2, DESAL 1 (Duplicate)	15-Apr-2020	9			17-Apr-2020	13-May-2020	~
ED045G: Chloride by Discrete Analyser			9					
Clear Plastic Bottle - Natural (ED045G) DESAL 1, DESAL 3,	DESAL 2, DESAL 1 (Duplicate)	15-Apr-2020				17-Apr-2020	13-May-2020	~
EG020F: Dissolved Metals by ICP-MS		0						
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG020A DESAL 2,	-F) DESAL 3	15-Apr-2020				20-Apr-2020	12-Oct-2020	~
Clear Plastic Bottle - Natural (EG020A-F) DESAL 1,	DESAL 1 (Duplicate)	15-Apr-2020				20-Apr-2020	12-Oct-2020	~
EG020T: Total Metals by ICP-MS								
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG02 DESAL 1, DESAL 3,	DA-T) DESAL 2, DESAL 1 (Duplicate)	15-Apr-2020	21-Apr-2020	12-Oct-2020	1	21-Apr-2020	12-Oct-2020	~
EG035F: Dissolved Mercury by FIMS								
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG035F DESAL 2,) DESAL 3	15-Apr-2020				20-Apr-2020	13-May-2020	~
Clear Plastic Bottle - Natural (EG035F) DESAL 1,	DESAL 1 (Duplicate)	15-Apr-2020				20-Apr-2020	13-May-2020	1
EG035T: Total Recoverable Mercury by FIMS								
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG03) DESAL 1, DESAL 3,	5T) DESAL 2, DESAL 1 (Duplicate)	15-Apr-2020				21-Apr-2020	13-May-2020	~
EG094F: Dissolved Metals in Fresh Water by ORC-ICPI								
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG094-/ DESAL 2,		15-Apr-2020				20-Apr-2020	12-Oct-2020	~
Clear Plastic Bottle - Natural (EG094-AgF) DESAL 1,	DESAL 1 (Duplicate)	15-Apr-2020				20-Apr-2020	12-Oct-2020	~
22-265	File	еB					Page 223 of 32	21

Page	: 3 of 7
Work Order	: EB2010399
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Matrix: WATER						Evaluatior	n: × = Holding time	breach ; ✓ = With	n holding time
Method			Sample Date	E	traction / Preparation			Analysis	
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG094T: Total metals in Fresh water by ORC-ICPMS					0				
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG09									
DESAL 1,	DESAL 2,		15-Apr-2020	20-Apr-2020	12-Oct-2020	~	20-Apr-2020	12-Oct-2020	✓
DESAL 3,	DESAL 1 (Duplicate)								
EK055G: Ammonia as N by Discrete Analyser				. (7)					
Clear Plastic Bottle - Sulfuric Acid (EK055G)									
DESAL 1,	DESAL 2,		15-Apr-2020				21-Apr-2020	13-May-2020	✓
DESAL 3,	DESAL 1 (Duplicate)			5					
EK057G: Nitrite as N by Discrete Analyser				0					
Clear Plastic Bottle - Natural (EK057G)			C						
DESAL 1,	DESAL 2,		15-Apr-2020				17-Apr-2020	17-Apr-2020	✓
DESAL 3,	DESAL 1 (Duplicate)			h					
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete A	nalyser			5					
Clear Plastic Bottle - Sulfuric Acid (EK059G)				<u> </u>					
DESAL 1,	DESAL 2,	6	15-Apr-2020				21-Apr-2020	13-May-2020	✓
DESAL 3,	DESAL 1 (Duplicate)								
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser			XV						
Clear Plastic Bottle - Sulfuric Acid (EK061G)			C						
DESAL 1,	DESAL 2,		15-Apr-2020	21-Apr-2020	13-May-2020	1	21-Apr-2020	13-May-2020	✓
DESAL 3,	DESAL 1 (Duplicate)								
EK067G: Total Phosphorus as P by Discrete Analyser									
Clear Plastic Bottle - Sulfuric Acid (EK067G)									
DESAL 1,	DESAL 2,		15-Apr-2020	21-Apr-2020	13-May-2020	1	21-Apr-2020	13-May-2020	 ✓
DESAL 3,	DESAL 1 (Duplicate)								
MW006: Faecal Coliforms & E.coli by MF									
Sterile Plastic Bottle - Sodium Thiosulfate (MW006)									
DESAL 1,	DESAL 2,		15-Apr-2020				16-Apr-2020	16-Apr-2020	✓
DESAL 3,	DESAL 1 (Duplicate)								
MW023: Enterococci by Membrane Filtration									
Sterile Plastic Bottle - Sodium Thiosulfate (MW023)									
DESAL 1,	DESAL 2,		15-Apr-2020				16-Apr-2020	16-Apr-2020	✓
DESAL 3,	DESAL 1 (Duplicate)								



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: WATER	-			Evaluation		ontrol frequency	not within specification ; \checkmark = Quality Cont	ol frequency within specificat
Quality Control Sample Type			Count		Rate (%)		Quality Control Specification	
Analytical Methods	Method	OC	Reaular	Actual	Expected	Evaluation		
Laboratory Duplicates (DUP)						0,		
Ammonia as N by Discrete analyser	EK055G	2	15	13.33	10.00	\checkmark	NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Low-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
ORC-ICPMS								
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Metals by ICP-MS - Suite A	EG020A-T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Phosphorus as P By Discrete Analyser	EK067G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
aboratory Control Samples (LCS)								
Ammonia as N by Discrete analyser	EK055G	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	2	16	12.50	10.00	<u> </u>	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F		16	6.25	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Low-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	4	25.00	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
DRC-ICPMS						•		
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	√	NEPM 2013 B3 & ALS QC Standard	
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00		NEPM 2013 B3 & ALS QC Standard	
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	18	5.56	5.00		NEPM 2013 B3 & ALS QC Standard	
Total Mercury by FIMS	EG035T	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard	
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	5.26	5.00	 ✓	NEPM 2013 B3 & ALS QC Standard	
Total Phosphorus as P By Discrete Analyser	EK067G	1	19	5.26	5.00	 ✓	NEPM 2013 B3 & ALS QC Standard	
Method Blanks (MB)								
Ammonia as N by Discrete analyser	EK055G	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	1	16	6.25	5.00	 ✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	1	16	6.25	5.00	 ✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	18	5.56	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
Low-Level Dissolved Silver in Fresh Water by	EG020A-P EG094-AgF	1	4	25.00	5.00	 ✓	NEPM 2013 B3 & ALS QC Standard	
ORC-ICPMS ²²⁻²⁶⁵	LG094-Ayr	•		e B	0.00	v		Page 225 of 321

Page	: 5 of 7
Work Order	: EB2010399
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



nalytical Methods		Cc	ount		Rate (%)		Quality Control Specification
	Method	00	Reaular	Actual	Expected	Evaluation	
lethod Blanks (MB) - Continued						Ċ	
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	5.00	1	NEPM 2013 B3 & ALS QC Standard
litrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard
litrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	\checkmark	NEPM 2013 B3 & ALS QC Standard
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	7.1	NEPM 2013 B3 & ALS QC Standard
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	18	5.56	5.00	~	NEPM 2013 B3 & ALS QC Standard
otal Mercury by FIMS	EG035T	1	20	5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard
otal Metals by ICP-MS - Suite A	EG020A-T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Phosphorus as P By Discrete Analyser	EK067G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
latrix Spikes (MS)				(
mmonia as N by Discrete analyser	EK055G	1	15	6.67	5.00	1	NEPM 2013 B3 & ALS QC Standard
hloride by Discrete Analyser	ED045G	1	16	6.25	5.00	1	NEPM 2013 B3 & ALS QC Standard
issolved Mercury by FIMS	EG035F	1	16	6.25	5.00	~	NEPM 2013 B3 & ALS QC Standard
issolved Metals by ICP-MS - Suite A	EG020A-F	1	18	5.56	5.00	1	NEPM 2013 B3 & ALS QC Standard
litrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
litrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Metals by ICP-MS - Suite A	EG020A-T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Phosphorus as P By Discrete Analyser	EK067G	1	19	5.26	5.00	1	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.44 ions are converted to a barium sulfate suspension in an acetic acid medium with ba absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 by comparison of the reading with a standard curve. This method is compliant with the standard curve.	ium chloride. Light concentration is determined
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 CI - G. The thiocyanate ion is liberated from me sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the librated thiocynate forms highly-coloured ferric thiocynate which is measured at seal method 2 017-1-L april 2003	the presence of ferric ions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to io are then passed into a high vacuum mass spectrometer, which separates the analym mass to charge ratios prior to their measurement by a discrete dynode ion detector.	nize selected elements. lons
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. a highly efficient argon plasma to ionize selected elements. Ions are then passed in spectrometer, which separates the analytes based on their distinct mass to charge measurement by a discrete dynode ion detector.	o a high vacuum mass
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless A bromate/bromide reagent is used to oxidise any organic mercury compounds in the mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged Quantification is by comparing absorbance against a calibration curve. This method (2013) Schedule B(3)	atomic absorption technique. e filtered sample. The ionic into a heated quartz cell.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromic any organic mercury compounds in the unfiltered sample. The ionic mercury is redu mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantifica absorbance against a calibration curve. This method is compliant with NEPM (2013)	le reagent is used to oxidise iced online to atomic tion is by comparing
Low-Level Dissolved Silver in Fresh Water by ORC-ICPMS	EG094-AqF	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm ORC-ICPMS technique removes interfering species through a series of chemical re- lons are passed into a high vacuum mass spectrometer, which separates the analytimass to charge ratios prior to measurement by a discrete dynode ion detector. This NEPM (2013) Schedule B(3)	actions prior to ion detection. es based on their distinct
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020. The ORC-ICPMS tec species through a series of chemical reactions prior to ion detection. Ions are passe spectrometer, which separates the analytes based on their distinct mass to charge to by a discrete dynode ion detector. This method is compliant with NEPM (2013) Sch	d into a high vacuum mass atios prior to measurement
22-265	1		File B	Page 227 of 321



Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser.
	EK0570	WATER	This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3 This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Field Tests (performed by external sampler)	* EN67-B02	WATER	Field determinations as per methods described in APHA or supplied by client. The analysis is performed in the field by non-ALS samplers. ALS NATA accreditation does not apply for this service.
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7 2007
Enumeration of Enterococci by Membrane Filtration	MW023	WATER	AS4276.9: - 2007
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals - ORC	EN25-ORC	WATER	In house: Referenced to USEPA SW846-3005. This is an Ultrapure Nitric acid digestion procedure used to prepare surface and ground water samples for analysis by ORC- ICPMS. This method is compliant with NEPM (2013) Schedule B(3)

												1 3			B	4		· · · · ·
ALS	CHAIN OF CUSTOD ALS Laboratory: please tick →	Y		2 E: samples.b	ADELAIDE 21 Burn Hock Av 78 Ph: 08 8359 0690 E. diverial digitality ford QLD 4053 DMELBOURNE risbane@alsglobal.comPh: 08 8569 960 h Drive Cilimon QLD 46500MUDGEE 1/2 gladatone@alsglobal.dbmD2 6372 873	2-4 Westall Road 0 E. samples.melb	Springvale VIC iourne@alsglob	3171 bai com		Ph: 02 4968 1 DNOWRA Ph: 02 443 DPERTH 10	9433 E: samples 4/13 Geary Pla 23 2063 E. nown 24 Hod Way Mala	Road Warabroc .newcastle@als cc North Nowra a@alsglobal.con ga WA 6090 is.perth@alsglob	global.com NSW 2541 n	Ph: 02 8 Litowns Ph: 07 47 LiWoLL0	784 8555 E: san WILLE 14-15 De 96 9609 E: towne MGONG 99 Kes	odpark Road Smithfle iplos.sydney@atsglot isma Court Bohle OL iswille environmental@a iny Street Wollongon orgong@atsglobal.co	sal.com 0.4818 Ilsgiobal.com g NSW 2500	
LIENT: TRILITY					OUND REQUIREMENTS :	Standa	rd TAT (Lis	t due date):				-	FOR	LABORA	ORY USE (ONLY (Circle)		
FFICE: AGNES W/	TER				AT may be longer for some tests race Organics)	Non St	andard or u	rgent TAT (L	st due dat	e):				ody Seal Inter		Ye	s No	N
ROJECT: GROUNDW	TER MONITORING	PROJECT		ALS QUO						COC SEQU	ENCE NUMB	ER (Circle)	nacei	pt?	e bricks prese	r te		N
RDER NUMBER:	PURCHASE ORDER	NO.: 4500059			Y OF ORIGIN:		-		C0		3 4	56			emperature o	n Receipt:	°C	
ROJECT MANAGER:	(6) Personal Infor		SAMPLER N		31 7 49757975 M:6) Persor	RELINCUIS	HED DV		AP RE	EIVED BY:				SHED BY:	······	PECEN	ED BY:	
AMPLER: 6) Persor OC Emailed to ALS? (and the second s		EDD FORMA					nal Inforn		GENTED 01.	(6) Perso	nal Info	ILLINGO					
	Connell; awatergroup@trility.c	om.au			uicy.	DATE/TIME	· ·			TE/TIME:			DATE/TIM	E:		DATE/T	IME:	
	ault to PM if no other addresses and	·····	countspayable	@trility.co	m.au	15/04/2020	14	00		16	14/70	10 9:0	10					
OMMENTS/SPECIAL H	ANDLING/STORAGE OR DISPO	SAL:		<u> </u>	· · · · · · · · · · · · · · · · · · ·		<u> </u>		I		1 4 2-	<u>, </u>	1,					
ALS USE ONLY	SAMP	LE DETAILS Solid(S) Water(w)	- - -	CONTAINER INF	ORMATION				IRED includi	-				• •	Addit	tional Informat	tion
LABID	SAMPLE ID	DAT	e / TIME	MATRIX	, TYPE & PRESERVA (refer to codes belo		TOTAL BOTTLES	TABLE 1	pH Field	Temp Field	D.O. Field	Cond Field Juston	ORP Field			dilutions, or sam analysis etc. Please add field		
1	DESAL 1	15/04/2020	1205	w	~		5	x	3.99	26.3	0.32	298:7	17.4			Order Refer		
2	DESAL 2	15/04/2020	1050	w			5	x	2,99	24.8	0-31	arash	170.6	1	EE	82010	399	
3	DESAL 3	15/04/2020	0920	w		2	5	x	4.87	77.6	0-44	912.0	-177.7				P	
4	DESAL 1 (Duplicate)	15/04/2020	(w			5	x	3,99	010	10 11	[1	T				
	*		1210						7719	26-3	0-32	298.7	112.4				?	
			·		2)					· · · · ·
				\mathbf{O}											Telephone	+ 61-7-3243 72	22	
									,									
				F										+	+			,
			•															<u> </u>
													i and a first first of a second s	an ann aite an an Annaich. An Annaiche ann an Annaiche an An	n an trait Mart			
	÷												R A	1000	1 8			
	,,,,,,,			1	· · · · · · · · · · · · · · · · · · ·					1	1	1	IVİ			. S. Long		
												<u> </u>		an a	e e el contration ago			
					ļ,							<u> </u>		<u> </u>				
						TOTAL	20				1							
Vater Container Codes: P / = VOA Vial HCI Preserved B : = Zinc Acetate Preserved B EFM (20011)	Unpreserved Plastic; N = Nitric Preser KB = VOA Viał Sodium Bisulphate Prese vitie; E = EDTA Preserved Bottles; ST =	ved Plastic; ORC arved; VS = VOA \ Sterile Bottle; AS	C = Nitric Preserved Alai Sulfuric Preser S = Plastic Bag for	ved; AV = Air Acid Sulphat	Sodium Hydroxide/Cd Preserved, freight Unpreserved Vial SG = Sui le Soils; B = Unpreserved Bag; U =	furic Preserved Lugois Iodine P	droxide Press Amber Glass reserved Bol	erved Plastic; / s; H = HCI pr ttles; STT = St	G = Ambe served Pla rile Sodjun	r Glass Unprese stic; HS = HCI n Thiosulfate Pr	erved; AP - Air preserved Sp aserved Bottle	freight Unpres sciation bottle; s.	erved Plastic SP = Sulfuric	Preserved P	lastic; F = Fo	mal telyde P229	Approved Date: 27/08/2013	

~ .



CERTIFICATE OF ANALYSIS

Work Order	EB2010933	Page	: 1 of 4		
Client	: TRILITY Pty Ltd	Laboratory	: Environmental Division B	risbane	
Contact	:4(6) Personal Infor	Contact	: Customer Services EB		
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QL	D Australia 4053	
	AGNES WATER QLD 4677				
Telephone	:	Telephone	+61-7-3243 7222		
Project	: Groundwater Monitoring	Date Samples Received	: 22-Apr-2020 08:10	WHITE .	
Order number	: 4500059581	Date Analysis Commenced	: 22-Apr-2020	Multin Marine	
C-O-C number	:	Issue Date	28-Apr-2020 10:40		NATA
Sampler	: 4p4(6) Personal Informa			Hac-MRA	NATA
Site	:			The second second	
Quote number	: BN/222/16	· S		The Column	Accreditation No. 825
No. of samples received	: 3			Accredi	ted for compliance with
No. of samples analysed	: 3				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.

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.

 (6) Personal Infor
 Senior Inorganic Chemist
 Brisbane Inorganics, Stafford, QLD

 Microbiologist
 Brisbane Sampling, Stafford, QLD



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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.

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society. Key:

LOR = Limit of reporting

A = This result is computed from individual analyte detections at or above the level of reporting

 ϕ = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

It is recognised that EG020-T (Total Metals by ICP-MS) is less than EG020-F (Dissolved Metals by ICP-MS) for some samples. However, the difference is within experimental variation of the methods. .

- MF = membrane filtration
- CFU = colony forming unit .

.ation ..67B. • Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range of 10 - 100cfu

- MW023 is ALS's internal code and is equivalent to AS4276.9. •
- MW006 is ALS's internal code and is equivalent to AS4276.7. .
- Sampling of waters conducted in accordance with AS5667 and in-house EN/67B. •



Analytical Results

ub-Matrix: WATER Matrix: WATER)				STP1	STP2	STP1 Duplicate	
				21-Apr-2020 10:15	21-Apr-2020 11:20	21-Apr-2020 10:20	
				EB2010933-001	EB2010933-002	EB2010933-003	
				Result	Result	Result	
D041G: Sulfate (Turbidimetric) as SO4 2	- by DA						
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	95	369	95	
D045G: Chloride by Discrete Analyser							
Chloride	16887-00-6	1	mg/L	1020	3850	1020	
G020F: Dissolved Metals by ICP-MS					2		
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.001	0.002	0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.002	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.003	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.005	0.005	0.006	
Manganese	7439-96-5	0.001	mg/L	1.24	0.111	1.26	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	1.57	<0.05	1.60	
G020T: Total Metals by ICP-MS			6				
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.003	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	
Manganese	7439-96-5	0.001	mg/L	1.39	0.113	1.39	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	<0.05	
Iron	7439-89-6	0.05	mg/L	1.82	<0.05	1.82	
G035F: Dissolved Mercury by FIMS							
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	 Page 232 of 321



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				STP1	STP2	STP1 Duplicate	
	[]			21-Apr-2020 10:15	21-Apr-2020 11:20	21-Apr-2020 10:20	
				EB2010933-001	EB2010933-002	EB2010933-003	
				Result	Result	Result	
EG035T: Total Recoverable Mercury	/ by FIMS						
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	
EG094F: Dissolved Metals in Fresh V	Nater by ORC-ICPMS						
Silver	7440-22-4	0.01	µg/L	<0.01	0.01	<0.01	
EG094T: Total metals in Fresh water	by ORC-ICPMS						
Silver	7440-22-4	0.01	µg/L	<0.01	0.02	<0.01	
EK055G: Ammonia as N by Discrete	Analyser				C'		
Ammonia as N	7664-41-7	0.01	mg/L	0.25	0.18	0.06	
EK057G: Nitrite as N by Discrete An	alyser						
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	
EK058G: Nitrate as N by Discrete Ar	nalyser						
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	<0.01	
EK059G: Nitrite plus Nitrate as N (N	Ox) by Discrete Anal	yser					
Nitrite + Nitrate as N		0.01	mg/L	<0.01	<0.01	<0.01	
EK061G: Total Kjeldahl Nitrogen By	Discrete Analyser						
Total Kjeldahl Nitrogen as N		0.1	mg/L	0.3	0.3	0.1	
EK062G: Total Nitrogen as N (TKN +	NOx) by Discrete An	alyser					
^ Total Nitrogen as N		0.1	mg/L	0.3	0.3	0.1	
EK067G: Total Phosphorus as P by I	Discrete Analyser						
Total Phosphorus as P		0.01	mg/L	0.02	0.04	0.03	
EN67: Field Tests							
рН		0.01	pH Unit	6.71	6.53	6.71	
Electrical Conductivity (Non		0.1	μS/cm	3730	11700	3730	
Compensated)		O^{\sim}					
Dissolved Oxygen		0.01	mg/L	0.72	1.13	0.72	
Temperature		0.1	°C	24.1	24.0	24.1	
Redox Potential		0.1	mV	<0.1	85.5	<0.1	
MW006: Faecal Coliforms & E.coli by							
Faecal Coliforms		1	CFU/100mL	<1	<1	<1	
MW023: Enterococci by Membrane F	iltration						
Enterococci		1	CFU/100mL	<1	<1	<1	



QUALITY CONTROL REPORT

Work Order	: EB2010933	Page	: 1 of 7		
Client	TRILITY Pty Ltd	Laboratory	: Environmental Division Brisb	ane	
Contact	4(6) Personal Inforr	Contact	: Customer Services EB		
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD A	ustralia 4053	
	AGNES WATER QLD 4677	(>. ~		
Telephone	:	Telephone	: +61-7-3243 7222		
Project	: Groundwater Monitoring	Date Samples Received	: 22-Apr-2020	MIHU	
Order number	: 4500059581	Date Analysis Commenced	: 22-Apr-2020	antill Martin	
C-O-C number	:	Issue Date	: 28-Apr-2020		NATA
Sampler	4p4(6) Personal Informa	C		Hac-MRA	NAIA
Site	:	. 6		SIONS	No. of Concession, Name
Quote number	: BN/222/16			"In a later	Accreditation No. 825
No. of samples received	: 3				ed for compliance with
No. of samples analysed	: 3			J	SO/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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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

p4(6) Personal Inform

Position

Senior Inorganic Chemist Senior Inorganic Chemist Microbiologist

Accreditation Category

Brisbane Inorganics, Stafford, QLD Brisbane Sampling, Stafford, QLD Brisbane Microbiological, Stafford, QLD



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

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

RPD = Relative Percentage Difference

= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

ub-Matrix: WATER				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method : Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%		
			S' O	N							
EB2010587-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	34	34	0.00	0% - 20%		
EB2010590-010	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit		
						·					
B2010587-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	454	452	0.284	0% - 20%		
B2010590-010	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	<1	<1	0.00	No Limit		
EB2010930-006	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit		
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.002	0.00	No Limit		
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.257	0.264	2.43	0% - 20%		
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.005	0.005	0.00	No Limit		
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.012	0.011	0.00	No Limit		
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit		
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit		
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.20	0.20	0.00	No Limit		
						·					
B2010430-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit		
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
22-265		EG020A-T: Cobalt	File B	0.001	mg/L	<0.001	< 0.001	0.00	235 of 321 ^{−imit}		



QA/QC Compliance Assessment to assist with Quality Review									
Work Order	: EB2010933	Page	: 1 of 7						
Client	TRILITY Pty Ltd	Laboratory	: Environmental Division Brisbane						
Contact	(6) Personal Infor	Telephone	: +61-7-3243 7222						
Project	Groundwater Monitoring	Date Samples Received	: 22-Apr-2020						
Site	:	Issue Date	: 28-Apr-2020						
Sampler	:p4(6) Personal Inform	No. of samples received	3						
Order number	: 4500059581	No. of samples analysed	: 3						

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

m Dr Act.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- <u>NO</u> Method Blank value outliers occur.
- NO Duplicate outliers occur.
- <u>NO</u> Laboratory Control outliers occur.
- Matrix Spike outliers exist please see following pages for full details.
- For all regular sample matrices, NO surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

• <u>NO</u> Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

• <u>NO</u> Quality Control Sample Frequency Outliers exist.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: WATER

Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
				5		
EB2010587003	Anonymous	Chloride	16887-00-6	Not		MS recovery not determined,
			De	etermined		background level greater than or
			.0.			equal to 4x spike level.
ļ		Laboratory Sample ID Client Sample ID EB2010587003 Anonymous		EB2010587003 Anonymous Chloride 16887-00-6		EB2010587003 Anonymous Chloride 16887-00-6 Not

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

-

Matrix: WATER	α	Evaluation: * = Holding time breach ; ✓ = Within holding time								
Method			Sample Date	Ex	traction / Preparation			Analysis		
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA			0							
Clear Plastic Bottle - Natural (ED041G) STP1, STP1 Duplicate	STP2,	706 V/ K	21-Apr-2020				22-Apr-2020	19-May-2020	✓	
ED045G: Chloride by Discrete Analyser										
Clear Plastic Bottle - Natural (ED045G) STP1, STP1 Duplicate	STP2,		21-Apr-2020				22-Apr-2020	19-May-2020	~	
EG020F: Dissolved Metals by ICP-MS										
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG020A-F) STP1, STP1 Duplicate	STP2,		21-Apr-2020				23-Apr-2020	18-Oct-2020	✓	
EG020T: Total Metals by ICP-MS										
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG020A STP1, STP1 Duplicate	T) STP2,		21-Apr-2020	23-Apr-2020	18-Oct-2020	1	23-Apr-2020	18-Oct-2020	✓	
EG035F: Dissolved Mercury by FIMS										
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG035F) STP1, STP1 Duplicate	STP2,		21-Apr-2020				23-Apr-2020	19-May-2020	~	
EG035T: Total Recoverable Mercury by FIMS										
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG035T) STP1, STP1 Dupficate STP1 Dupficate	STP2,	File	21-Apr-2020 B				23-Apr-2020	19-May-2020 Page 237 of 32	1	

Page	: 3 of 7
Work Order	: EB2010933
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Matrix: WATER						Evaluation	: × = Holding time	breach ; ✓ = With	n holding time
Method			Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG094F: Dissolved Metals in Fresh Water by ORC-ICPN	IS				Ó				
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG094-A STP1.	. gF) STP2,		21-Apr-2020		02		23-Apr-2020	18-Oct-2020	1
STP1 Duplicate	o <u>-</u> ,		• • •						
EG094T: Total metals in Fresh water by ORC-ICPMS				.01					
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG094								40.0.1.0000	
STP1, STP1 Duplicate	STP2,		21-Apr-2020	23-Apr-2020	18-Oct-2020	~	23-Apr-2020	18-Oct-2020	-
EK055G: Ammonia as N by Discrete Analyser			. (55			1		<u> </u>
Clear Plastic Bottle - Sulfuric Acid (EK055G)									
STP1,	STP2,		21-Apr-2020				23-Apr-2020	19-May-2020	✓
STP1 Duplicate									
EK057G: Nitrite as N by Discrete Analyser Clear Plastic Bottle - Natural (EK057G)							1		
STP1,	STP2,	C	21-Apr-2020	P			22-Apr-2020	23-Apr-2020	1
STP1 Duplicate		1.2	02						
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete An	alyser		x						
Clear Plastic Bottle - Sulfuric Acid (EK059G)								40 May 2020	
STP1, STP1 Duplicate	STP2,		21-Apr-2020				23-Apr-2020	19-May-2020	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser Clear Plastic Bottle - Sulfuric Acid (EK061G)									
STP1,	STP2,	-0 Q_{-}	21-Apr-2020	24-Apr-2020	19-May-2020	1	24-Apr-2020	19-May-2020	✓
STP1 Duplicate									
EK067G: Total Phosphorus as P by Discrete Analyser									
Clear Plastic Bottle - Sulfuric Acid (EK067G) STP1,	STP2,	(S)	21-Apr-2020	24-Apr-2020	19-May-2020	1	24-Apr-2020	19-May-2020	,
STP1, STP1 Duplicate	51P2,		21-Api-2020	24-Api-2020	19-1viay-2020	~	24-Api-2020	19-10ay-2020	-
EN67: Field Tests									
Clear Plastic Bottle - Natural (EN67)									
STP1,	STP2,		21-Apr-2020				24-Apr-2020		
STP1 Duplicate									
MW006: Faecal Coliforms & E.coli by MF									
Sterile Plastic Bottle - Sodium Thiosulfate (MW006) STP1.	STP2,		21-Apr-2020				22-Apr-2020	22-Apr-2020	1
STP1, STP1 Duplicate	0172,		21-701-2020				22-701-2020		v
MW023: Enterococci by Membrane Filtration									!
Sterile Plastic Bottle - Sodium Thiosulfate (MW023)									
STP1,	STP2,		21-Apr-2020				22-Apr-2020	22-Apr-2020	✓
STP1 Duplicate									

Page 238 of 321



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: WATER				Evaluation	-	ontrol frequency	not within specification ; \checkmark = Quality Cont	rol frequency within specific
Quality Control Sample Type			Count		Rate (%)		Quality Control Specification	
Analytical Methods	Method	00	Reaular	Actual	Expected	Evaluation		
aboratory Duplicates (DUP)						0		
mmonia as N by Discrete analyser	EK055G	2	17	11.76	10.00	\sim	NEPM 2013 B3 & ALS QC Standard	
chloride by Discrete Analyser	ED045G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
issolved Mercury by FIMS	EG035F	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
issolved Metals by ICP-MS - Suite A	EG020A-F	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
RC-ICPMS					\mathcal{P}			
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	3	33.33	10.00	1	NEPM 2013 B3 & ALS QC Standard	
itrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	18	11.11	10.00	1	NEPM 2013 B3 & ALS QC Standard	
itrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Mercury by FIMS	EG035T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	~	NEPM 2013 B3 & ALS QC Standard	
aboratory Control Samples (LCS)								
mmonia as N by Discrete analyser	EK055G	1	17	5.88	5.00	1	NEPM 2013 B3 & ALS QC Standard	
hloride by Discrete Analyser	ED045G	2	16	12.50	10.00		NEPM 2013 B3 & ALS QC Standard	
issolved Mercury by FIMS	EG035F		6	16.67	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
issolved Metals by ICP-MS - Suite A	EG020A-F	1	6	16.67	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	3	33.33	5.00		NEPM 2013 B3 & ALS QC Standard	
RC-ICPMS	,							
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	3	33.33	5.00	1	NEPM 2013 B3 & ALS QC Standard	
itrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	5.56	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
itrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard	
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	19	10.53	10.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
otal Mercury by FIMS	EG035T	1	19	5.26	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
otal Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	 ✓	NEPM 2013 B3 & ALS QC Standard	
otal Phosphorus as P By Discrete Analyser	EK067G	1	20	5.00	5.00	 ✓	NEPM 2013 B3 & ALS QC Standard	
lethod Blanks (MB)						V		
mmonia as N by Discrete analyser	EK055G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	1	16	6.25	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
hissolved Mercury by FIMS	EG035F	1	6	16.67	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
issolved Metals by ICP-MS - Suite A	EG020A-F	1	6	16.67	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
-		1	3	33.33	5.00	 ✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by DRC-ICPMS 22-265	EG094-AgF		-	зз.зз е В	5.00	√		Page 239 of 321

Page	: 5 of 7
Work Order	: EB2010933
Client	: TRILITY Pty Ltd
Project	: Groundwater Monitoring



Quality Control Sample Type		Со	unt		Rate (%)		Quality Control Specification
Analytical Methods	Method	QQ	Reaular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued						Ċ	
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	3	33.33	5.00	1	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	5.56	5.00		NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	\checkmark	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	19	5.26	5.00	7.1	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	~	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	~	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)				(-		
Ammonia as N by Discrete analyser	EK055G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	10	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
	Publishe	<u>,</u>	8		· · · · ·		



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45ur ions are converted to a barium sulfate suspension in an acetic acid medium with bariur absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 co by comparison of the reading with a standard curve. This method is compliant with NEI	n chloride. Light ncentration is determined
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 CI - G. The thiocyanate ion is liberated from mercurs equestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the librated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 seal method 2 017-1-L april 2003	e presence of ferric ions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. S prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ioniz are then passed into a high vacuum mass spectrometer, which separates the analytes mass to charge ratios prior to their measurement by a discrete dynode ion detector.	e selected elements. lons
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The highly efficient argon plasma to ionize selected elements. Ions are then passed into a spectrometer, which separates the analytes based on their distinct mass to charge ratio measurement by a discrete dynode ion detector.	a high vacuum mass
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vap Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless ato A bromate/bromide reagent is used to oxidise any organic mercury compounds in the f mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into Quantification is by comparing absorbance against a calibration curve. This method is (2013) Schedule B(3)	mic absorption technique. iltered sample. The ionic o a heated quartz cell.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Va FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide i any organic mercury compounds in the unfiltered sample. The ionic mercury is reduce mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification absorbance against a calibration curve. This method is compliant with NEPM (2013) So	eagent is used to oxidise d online to atomic n is by comparing
Low-Level Dissolved Silver in Fresh Water by ORC-ICPMS	EG094-AqF	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filte ORC-ICPMS technique removes interfering species through a series of chemical react lons are passed into a high vacuum mass spectrometer, which separates the analytes mass to charge ratios prior to measurement by a discrete dynode ion detector. This m NEPM (2013) Schedule B(3)	ons prior to ion detection. based on their distinct
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020. The ORC-ICPMS techni species through a series of chemical reactions prior to ion detection. Ions are passed in spectrometer, which separates the analytes based on their distinct mass to charge ratio by a discrete dynode ion detector. This method is compliant with NEPM (2013) Sched	nto a high vacuum mass os prior to measurement
22-265			File B	Page 241 of 321



Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3 This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Field Tests	EN67	WATER	Field determinations as per methods described in APHA. The analysis is performed in the field by ALS samplers. ALS NATA accreditation applies for this service.
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7 2007
Enumeration of Enterococci by Membrane Filtration	MW023	WATER	AS4276.9: - 2007
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals - ORC	EN25-ORC	WATER	In house: Referenced to USEPA SW846-3005. This is an Ultrapure Nitric acid digestion procedure used to prepare surface and ground water samples for analysis by ORC- ICPMS. This method is compliant with NEPM (2013) Schedule B(3)

	CHAIN OF CUSTODY ALS Laboratory: please tick →	CIBR Ph: 8 DGL	Ph; 06 8359 SBANE 2 Byth Stre 7 3243 7222 E: sam ADSTONE 48 Caller	0990 E, adala el Statford OLE ples.br.sbaneg nondah Drive	Ide@alsglobar.com Prc 07 4944 017 D 4658 DMELBOURNE @alsglobal.com Ph: 03 8549 860	arbour Road Madday (2004) 7 E. mackay@alsgluba: com 24 Westall Road Springvals 6 E. somples.melbour (= @alsg Sydney Road Madger, NSW) 5 E. mudgee mail@alsglobal (//C 3171 Jocal com 1850	CLF	Ph/ 02 4968 943	3 El semples n ky Plage North , nowr&@aisgio ay Malaga -WA	ead Warebrook N envirastle@etaglot Lowra NSW 254 bal.com eb90 @etaglobai.com	al port	Pr: 02 8764 83 TOWNSVELE Ph: 07 4796 366 LIWOIA 01/S01	, 14-15 Desma C 0 E' townesville 8 NG 99 Kanny Sti	Rua: Shanfield NSW 216 ydney@alsglobal.com ourt Bohle OL:D 4518 iwixonmental@alsglobal.com reet Wolkingong NSW 2500 j@alsglobal.com	
ENT: TRILITY FICE: AGNES V	VATER			(Standard T	OUND REQUIREMENTS : AT may be longer for some tests race Organics)	Standard TAT (L		st due date)	:			Custor	LABORATOR		Yes	No
	NATER MONITORING	PROJECT N	D.;	ALS QUO					COC SEQUE	NCE NUMBI	ER (Circle)	receipt		-	163	No
DER NUMBER:	PURCHASE ORDER N	IO.: 4500059	581	COUNTR	Y OF ORIGIN:			coc:	12	34	56	7 Rando	m Sample Temp	enature on Re-	ceipt:	°C
OJECT MANAGER	(6) Personal Info				1 7 49757975 M:) Perso			OF:	1 2	3 4	5 6		comment:			
MPLER: D. McCo	nnell		SAMPLER N	OBILE:	Personal Ir	RELINOUSPED-BY		REC	EIVED BY:	(6) Perso	onal Info	RELINQUIS	SHED BY:		RECEIVED BY:	
G Emailed to ALS?			EDD FORM/	T (or defa	ult):	4p4(6) Persor	al Informat				N.IC.	DATE/TIME	·.		DATE/TIME:	
	ersonal petrility.com.au; awatergr		·····			DATE/TIME:	aa 14	. <u>.</u> .	E/TIME: 9/2016 7	2/4/20	1	JAIC/ IMC			DATE AME.	
	efault to PM if no other addresses are		ountspayable			21-4-	20 11	2010	, 2010 C	-14/0				<u></u>		
MMENTS/SPECIAL	HANDLING/STORAGE OR DISPOS	AL: Consig	nment Note: N	IYT'F13452	16 ·			6						p		
ALS USE ONLY SAMPLE DETAILS MATRIX: Solid(S) Water(W)			A)		CONTAINER INI	ORMATION	ION ANALYSIS REQUIRED including SUITES (NB. Su Where Metals are required, specify Total (unfiltered bottle requ							Additional In	formation	
LAB ID	SAMPLE ID STP1 STP2 97-01 97-2	DATE 21/04/2020 21/04/2020	1015 1020	MATRIX W W W	TYPE & PRESERVA (refer to codes belo			PIPIL Ha 6-53	Do Field 1.13	Lemp field	225 EC Field Lift One	16 2000 Fleid		∣™ Bris W	alysis etc. ease add field results to irronmental D bane Ork Order Refe B2010	Division P933
	97-3	1		W								Sector 2	The state of the s	and the state of the state	· · · ·	
	97-4			w		***						, A	83 m			
		<u>.</u>						-	1	~	<u> </u>		THE F		ART	
	97-5			W	ļ						<u> </u>	š Šer namo	C .			
•	007			W							<u> </u>				anandramati yang terdenang anggo yang s	
	008		_	w												
3 1	STP1 Duplicate	21/04/2020	1020	w		5	x	6.71	0-72	29-1	3729	-16.7				
			<u></u>		-4 -4			-			1					
	<u> </u>			<u> </u>		TOTAL 15					-				<u> </u>	
						IUTAL 10		1	1	1						

•

5 ł



CERTIFICATE OF ANALYSIS

Work Order	EB2016548	Page	: 1 of 4
Client	: TRILITY Pty Ltd	Laboratory	Environmental Division Brisbane
Contact	4(6) Personal Inform	Contact	: Customer Services EB
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Australia 4053
	AGNES WATER QLD 4677		
Telephone	:	Telephone	2 +61-7-3243 7222
Project	: GROUNDWATER MONITORING	Date Samples Received	: 23-Jun-2020 10:50
Order number	: 4500061046	Date Analysis Commenced	: 23-Jun-2020
C-O-C number	:	Issue Date	: 29-Jun-2020 10:24
Sampler	: 4p4(6) Personal Informa	20	129-Jun-2020 10:24
Site	:	\sim	
Quote number	: BN/222/16		Accreditation No. 825
No. of samples received	: 4	\cap	Accreditation No. 825 Accredited for compliance with
No. of samples analysed	: 4		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.

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.

:h4p4(6) Personal Informatio

Microbiologist Senior Inorganic Chemist Senior Inorganic Chemist

Brisbane Microbiological, Stafford, QLD Brisbane Administration, Stafford, QLD Brisbane Inorganics, Stafford, QLD



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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.

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society. Key:

LOR = Limit of reporting

A = This result is computed from individual analyte detections at or above the level of reporting

 ϕ = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- It is recognised that EG020-T (Total Metals by ICP-MS) is less than EG020-F (Dissolved Metals by ICP-MS) for some samples. However, the difference is within experimental variation of the methods. .
- ED041G (Sulfate as SO4 2-) / EK057G (Nitrite as N): Some samples were diluted due to matrix interference. LOR adjusted accordingly.
- MF = membrane filtration .
- CFU = colony forming unit

.ation result. Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range • of 10 - 100cfu.

- MW023 is ALS's internal code and is equivalent to AS4276.9. .
- MW006 is ALS's internal code and is equivalent to AS4276.7. .

Page : 3 of 4 Work Order : EB2016548 Client : TRILITY Pty Ltd Project : GROUNDWATER MONITORING



Analytical Results

ıb-Matrix: WATER /atrix: WATER)				DESAL 1	DESAL 2	DESAL 3	DESAL 1 Duplicate	
			III II III II III II	22-Jun-2020 10:40	22-Jun-2020 12:10	22-Jun-2020 13:00	22-Jun-2020 10:45	
				EB2016548-001	EB2016548-002	EB2016548-003	EB2016548-004	
				Result	Result	Result	Result	
D041G: Sulfate (Turbidimetric) as SO4 2	- by DA							
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<5	<5	<5	<5	
D045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	77	52	47	78	
G020F: Dissolved Metals by ICP-MS					2			
Aluminium	7429-90-5	0.01	mg/L	0.61	0.59	0.78	0.60	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.002	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.003	<0.001	
Copper	7440-50-8	0.001	mg/L	0.002	0.002	<0.001	0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.001	0.002	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.007	0.009	0.005	0.005	
Manganese	7439-96-5	0.001	mg/L	0.014	0.014	0.026	0.013	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	0.17	0.74	3.46	0.17	
G020T: Total Metals by ICP-MS			0					
Aluminium	7429-90-5	0.01	mg/L	0.62	0.63	0.84	0.61	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.003	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	0.001	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.002	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.013	0.012	0.023	0.013	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	
Iron	7439-89-6	0.05	mg/L	0.17	0.76	3.36	0.16	
G035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	 Page 246 of 321



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		[DESAL 1	DESAL 2	DESAL 3	DESAL 1 Duplicate	
				22-Jun-2020 10:40	22-Jun-2020 12:10	22-Jun-2020 13:00	22-Jun-2020 10:45	
				EB2016548-001	EB2016548-002	EB2016548-003	EB2016548-004	
				Result	Result	Result	Result	
EG035T: Total Recoverable Mercur	y by FIMS							
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
EG094F: Dissolved Metals in Fresh	Water by ORC-ICPMS	3						
Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	
EG094T: Total metals in Fresh wate	er by ORC-ICPMS							
Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	
EK055G: Ammonia as N by Discrete	e Analyser				C'			
Ammonia as N	7664-41-7	0.01	mg/L	0.12	0.15	0.47	0.13	
EK057G: Nitrite as N by Discrete A	nalyser							
Nitrite as N	14797-65-0	0.01	mg/L	<0.05	<0.05	<0.05	<0.05	
EK058G: Nitrate as N by Discrete A	nalyser							
Nitrate as N	14797-55-8	0.01	mg/L	0.30	<0.05	<0.05	0.31	
EK059G: Nitrite plus Nitrate as N (N	NOx) by Discrete Ana	lyser						
Nitrite + Nitrate as N		0.01	mg/L	0.30	<0.01	<0.01	0.31	
EK061G: Total Kjeldahl Nitrogen By	/ Discrete Analyser							
Total Kjeldahl Nitrogen as N		0.1	mg/L	1.1	1.0	1.2	1.1	
EK062G: Total Nitrogen as N (TKN ·	+ NOx) by Discrete Ar	nalyser						
∖ Total Nitrogen as N		0.1	mg/L	1.4	1.0	1.2	1.4	
EK067G: Total Phosphorus as P by	Discrete Analyser							
Total Phosphorus as P		0.01	mg/L	0.01	0.14	0.07	0.01	
EN67: Field Tests								
Ø Electrical Conductivity (Non		1	µS/cm	343.1	238.2	202.0	343.1	
Compensated)								
Ø Dissolved Oxygen		0.1	mg/L	0.18	0.32	0.34	0.18	
ø pH		0.01	pH Unit	4.10	4.30	5.07	4.10	
Ø Temperature		0.1	°C	24.5	23.8	26.3	24.5	
Ø Reactive Phosphorus as P	14265-44-2	0.01	mg/L	149.6	30.0	-117.0	149.6	
MW006: Faecal Coliforms & E.coli b								
Faecal Coliforms		1	CFU/100mL	<1	<1	<1	<1	
MW023: Enterococci by Membrane	Filtration							
Enterococci		1	CFU/100mL	<1	<1	<1	<1	



QUALITY CONTROL REPORT

Work Order	: EB2016548	Page	: 1 of 7
Client	; TRILITY Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	4(6) Personal Inform	Contact	: Customer Services EB
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Australia 4053
Tolonhono	AGNES WATER QLD 4677	Tolophono	2104 7 0040 7000
Telephone		Telephone	C: +61-7-3243 7222
Project	: GROUNDWATER MONITORING	Date Samples Received	: 23-Jun-2020
Order number	: 4500061046	Date Analysis Commenced	: 23-Jun-2020
C-O-C number	:	Issue Date	29-Jun-2020
Sampler	: 4p4(6) Personal Informa	C	Hac-MRA INAIA
Site	· · · · · · · · · · · · · · · · · · ·	. 6	
Quote number	: BN/222/16		Accreditation No. 825
No. of samples received	: 4		Accredited for compliance with
No. of samples analysed	: 4		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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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.

14p4(6) Personal Informat

Microbiologist Senior Inorganic Chemist Senior Inorganic Chemist

Brisbane Microbiological, Stafford, QLD Brisbane Administration, Stafford, QLD Brisbane Inorganics, Stafford, QLD





General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

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

RPD = Relative Percentage Difference

= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

ub-Matrix: WATER		\sim	Laboratory Duplicate (DUP) Report						
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
D041G: Sulfate (Tu	rbidimetric) as SO4 2- by DA	(QC Lot: 3097754)							
B2016492-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	40	40	0.00	0% - 20%
B2016510-008	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2	2	0.00	No Limit
D045G: Chloride b	y Discrete Analyser (QC Lot	: 3097755)	2						
B2016492-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	550	552	0.459	0% - 20%
B2016510-008	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	10	10	0.00	0% - 50%
G020F: Dissolved	Metals by ICP-MS (QC Lot: 3	8097528)							
EB2016555-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.014	0.014	0.00	0% - 50%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.04	<0.01	127	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
32016512-017	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
22-265		EG020A-F: Copper	7440-50-8 File B	0.001	mg/L	<0.001	<0.001	0.00	249 of 321



ub-Matrix: WATER									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
G020F: Dissolved	Metals by ICP-MS (QC	Lot: 3097528) - continued							
B2016512-017	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.108	0.108	0.00	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
G020T: Total Metal	Is by ICP-MS (QC Lot:	3097518)							
B2016512-013	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.015	0.016	0.00	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.018	0.020	9.22	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.60	0.56	7.69	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.69	0.66	4.67	0% - 50%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	1.92	2.00	4.34	0% - 20%
B2016565-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.1 µg/L	0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	7 μg/L	0.007	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	49 µg/L	0.050	2.48	0% - 20%
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	44 µg/L	0.044	0.00	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	67 µg/L	0.068	1.74	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	40 µg/L	0.041	0.00	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	772 µg/L	0.753	2.48	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	51 µg/L	0.051	0.00	0% - 20%
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	137 µg/L	0.132	3.61	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	40400 µg/L	42.3	4.76	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<10 µg/L	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	50 µg/L	0.05	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	38800 µg/L	39.1	0.983	0% - 20%
G035F: Dissolved	Mercury by FIMS (QC I	_ot: 3097527)							
B2016512-017	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
CO25T. T22-265	overable Mercury by Fli	,	File B		,				250 of 321

Page	: 4 of 7
Work Order	: EB2016548
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



Sub-Matrix: WATER									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
EG035T: Total Reco	overable Mercury by FIM	S (QC Lot: 3097531) - continued							
EB2016512-013	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB2016548-004	DESAL 1 Duplicate	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG094F: Dissolved	Metals in Fresh Water by	ORC-ICPMS (QC Lot: 3097537)				0			
EB2016548-001	DESAL 1	EG094-AgF: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EG094T: Total meta	Is in Fresh water by ORC	C-ICPMS (QC Lot: 3097539)			. (2)				
EB2016548-001	DESAL 1	EG094-AgT: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EK055G: Ammonia	as N by Discrete Analyse	er (QC Lot: 3102325)			-0-				
EB2016623-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB2016534-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.08	0.08	0.00	No Limit
K057G: Nitrite as	N by Discrete Analyser	(QC Lot: 3097753)		U.					
EB2016492-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB2016510-008	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plu	s Nitrate as N (NOx) by	Discrete Analyser (QC Lot: 3102324)							
EB2016623-001	Anonymous	EK059G: Nitrite + Nitrate as N	<u> </u>	0.01	mg/L	0.16	0.16	0.00	0% - 50%
EB2016534-001	Anonymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK061G: Total Kjeld	ahl Nitrogen By Discrete	Analyser (QC Lot: 3101497)							
EB2016444-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	0.5	0.5	0.00	No Limit
EB2016548-001	DESAL 1	EK061G: Total Kjeldahl Nitrogen as N	· · · · ·	0.1	mg/L	1.1	1.3	16.6	0% - 50%
K067G: Total Phos	phorus as P by Discrete	Analyser (QC Lot: 3101498)							
EB2016444-001	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	0.04	0.04	0.00	No Limit
EB2016548-001	DESAL 1	EK067G: Total Phosphorus as P		0.01	mg/L	0.01	0.03	86.1	No Limit
		Publishe							



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LCS) Report		
			Report	Spike	Spike Recovery (%)	Recovery	Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	A (QCLot: 3097754)				6			
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	101	85.0	118
				<1	100 mg/L	106	85.0	118
ED045G: Chloride by Discrete Analyser (QCLot:	: 3097755)							
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	96.6	90.0	115
				<1	1000 mg/L	102	90.0	115
EG020F: Dissolved Metals by ICP-MS (QCLot: 3	097528)			5				
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	101	79.0	118
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	111	88.0	116
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	104	88.0	108
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	105	87.0	113
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	112	86.0	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	110	88.0	114
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	100	89.0	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	89.0	120
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	105	89.0	113
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	108	83.0	112
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	103	86.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	108	87.0	113
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	104	82.0	114
EG020T: Total Metals by ICP-MS (QCLot: 30975	18)							
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.5	80.0	114
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	88.0	112
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	96.7	88.0	111
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	100	89.0	115
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	103	89.0	115
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.0	88.0	116
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.8	89.0	112
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	99.4	88.0	114
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	101	88.0	116
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	98.9	79.0	111
EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	107	86.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	84.0	114
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	103	82.0	128
EG020A-T: lr 22-265	7439-89-6	0.05	^{mg/L} File B	<0.05	0.5 mg/L	103	Page 252 o	f 321 118



Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LCS	5) Report	
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG035F: Dissolved Mercury by FIMS (QCLot: 3097527)					\mathbf{A}			
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	99.3	84.0	118
EG035T: Total Recoverable Mercury by FIMS (QCLot: 30975	531)							
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.6	84.0	118
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (C	QCLot: 309753	7)			3			
EG094-AgF: Silver	7440-22-4	0.01	µg/L	<0.01	0.2 µg/L	95.0	70.0	130
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot	:: 3097539)			S				
EG094-AgT: Silver	7440-22-4	0.01	µg/L	<0.01	0.2 µg/L	98.2	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 3102)	325)							
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	103	83.5	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 3097753	5)			NP O				
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.0	90.0	110
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyse	er (QCLot: 31	02324)						
EK059G: Nitrite + Nitrate as N		0.01	mg/L	<0.01	0.5 mg/L	89.9	85.7	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCL	.ot: 3101497)							
EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	<0.1	10 mg/L	94.0	70.1	108
EK067G: Total Phosphorus as P by Discrete Analyser (QCL	ot: 3101498)		VN					
EK067G: Total Phosphorus as P		0.01	mg/L	<0.01	4.42 mg/L	97.4	79.2	105

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER					M	atrix Spike (MS) Report	t	
					Spike	SpikeRecovery(%)	Recovery L	imits (%)
aboratory sample ID	Client sample ID	N N	Method: Compound	CAS Number	Concentration	MS	Low	High
ED041G: Sulfate (T	urbidimetric) as SO4 2- by DA(QCL	.ot: 3097754)						
EB2016509-001	Anonymous		ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	20 mg/L	# Not	70.0	130
						Determined		
D045G: Chloride	by Discrete Analyser (QCLot: 30977	55)						
EB2016509-001	Anonymous		ED045G: Chloride	16887-00-6	400 mg/L	99.0	70.0	130
EG020F: Dissolved	Metals by ICP-MS(QCLot: 3097528	3)						
EB2016512-018	Anonymous		EG020A-F: Arsenic	7440-38-2	1 mg/L	110	70.0	130
			EG020A-F: Cadmium	7440-43-9	0.25 mg/L	101	70.0	130
			EG020A-F: Chromium	7440-47-3	1 mg/L	100	70.0	130
			EG020A-F: Cobalt	7440-48-4	1 mg/L	106	70.0	130
00.005			EG020A-F: Copper	7440-50-8	1 mg/L	99.5	70.0	130
22-265			EG020A-F: Lead File B	7439-92-1	1 mg/L	96.6	Page 253 of	³²¹ 130



ub-Matrix: WATER				M	atrix Spike (MS) Report		
				Spike	SpikeRecovery(%)	Recovery L	imits (%)
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
G020F: Dissolve	d Metals by ICP-MS (QCLot: 3097528) - continued		Ó				
EB2016512-018	Anonymous	EG020A-F: Manganese	7439-96-5	1 mg/L	98.3	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	103	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	106	70.0	130
EG020T: Total Me	tals by ICP-MS (QCLot: 3097518)		0				
EB2016512-014	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	104	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	101	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	106	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	111	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	106	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	105	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	106	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	101	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	102	70.0	130
G035F: Dissolve	d Mercury by FIMS (QCLot: 3097527)						
EB2016512-018	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	85.1	70.0	130
G035T: Total Re	coverable Mercury by FIMS (QCLot: 3097531)						
EB2016512-014	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	86.3	70.0	130
K055G: Ammoni	a as N by Discrete Analyser (QCLot: 3102325)						
EB2016548-001	DESAL 1	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	90.1	70.0	130
EK057G: Nitrite a	s N by Discrete Analyser (QCLot: 3097753)						
EB2016509-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	104	70.0	130
EK059G: Nitrite p	lus Nitrate as N (NOx) by Discrete Analyser (QCLot: 31	02324)					
EB2016548-001	DESAL 1	EK059G: Nitrite + Nitrate as N		0.4 mg/L	79.7	70.0	130
EK061G: Tota <u>l Kj</u> e	eldahl Nitrogen By Discrete Analyser (QCLot: 3101497)						
EB2016444-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		5 mg/L	92.3	70.0	130
EK067G: Tota <u>l Ph</u>	osphorus as P by Discrete Analyser (QCLot: 3101498)						
EB2016444-002	Anonymous	EK067G: Total Phosphorus as P		1 mg/L	102	70.0	130
							1



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EB2016548	Page	: 1 of 7
Client	TRILITY Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	4(6) Personal Infor	Telephone	: +61-7-3243 7222
Project	GROUNDWATER MONITORING	Date Samples Received	: 23-Jun-2020
Site	:	Issue Date	: 29-Jun-2020
Sampler	1p4(6) Personal Informa	No. of samples received	4
Order number	: 4500061046	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

on UF Act's

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- <u>NO</u> Method Blank value outliers occur.
- NO Duplicate outliers occur.
- <u>NO</u> Laboratory Control outliers occur.
- Matrix Spike outliers exist please see following pages for full details.
- For all regular sample matrices, NO surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

• <u>NO</u> Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

<u>NO</u> Quality Control Sample Frequency Outliers exist.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data		Limits	Comment
Matrix Spike (MS) Recoveries				(3			
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EB2016509001	Anonymous	Sulfate as SO4 -	14808-79-8	Not			MS recovery not determined,
			Turbidimetric		Determi	ned		background level greater than or
				.0,				equal to 4x spike level.

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for <u>VOC in soils</u> vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: WATER			02			Evaluation	n: × = Holding time	breach ; 🗸 = Withi	n holding tim
Method			Sample Date	E>	traction / Preparation			Analysis	
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Clear Plastic Bottle - Natural (ED041G)									
DESAL 1,	DESAL 2,		22-Jun-2020				24-Jun-2020	20-Jul-2020	 ✓
DESAL 3,	DESAL 1 Duplicate								
ED045G: Chloride by Discrete Analyser									
Clear Plastic Bottle - Natural (ED045G)									
DESAL 1,	DESAL 2,		22-Jun-2020				24-Jun-2020	20-Jul-2020	✓
DESAL 3,	DESAL 1 Duplicate								
EG020F: Dissolved Metals by ICP-MS									
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG020A-F									
DESAL 1,	DESAL 2,		22-Jun-2020				25-Jun-2020	19-Dec-2020	✓
DESAL 3,	DESAL 1 Duplicate								
EG020T: Total Metals by ICP-MS									
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG020A	-T)								
DESAL 1,	DESAL 2,		22-Jun-2020	24-Jun-2020	19-Dec-2020	1	24-Jun-2020	19-Dec-2020	 ✓
DESAL 3,	DESAL 1 Duplicate								
EG035F: Dissolved Mercury by FIMS									
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG035F)									
DESAL 1,	DESAL 2,		22-Jun-2020				25-Jun-2020	20-Jul-2020	 ✓
DESAL 3,	DESAL 1 Duplicate								
EG035T: Total Recoverable Mercury by FIMS									
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG035T)								
DESAL 1,	DESAL 2,		22-Jun-2020				24-Jun-2020	20-Jul-2020	√ √
DESAL 3, 22-265	DESAL 1 Duplicate	File	В					Page 256 of 32	<u>(</u> 1

Page	: 3 of 7
Work Order	: EB2016548
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



Matrix: WATER						Evaluation	n: × = Holding time	breach ; ✓ = Withi	n holding time
Method			Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG094F: Dissolved Metals in Fresh Water by ORC-ICPN	IS				0				
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG094-A DESAL 1,	DESAL 2,		22-Jun-2020		02		24-Jun-2020	19-Dec-2020	~
DESAL 3,	DESAL 1 Duplicate								
EG094T: Total metals in Fresh water by ORC-ICPMS									
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG094 DESAL 1, DESAL 3,	DESAL 2,		22-Jun-2020	24-Jun-2020	19-Dec-2020	1	24-Jun-2020	19-Dec-2020	✓
	DESAL 1 Duplicate								
EK055G: Ammonia as N by Discrete Analyser							1		
Clear Plastic Bottle - Sulfuric Acid (EK055G) DESAL 1,	DESAL 2,		22-Jun-2020				26-Jun-2020	20-Jul-2020	1
DESAL 3,	DESAL 1 Duplicate								
EK057G: Nitrite as N by Discrete Analyser									
Clear Plastic Bottle - Natural (EK057G)	DEOM 0		22-Jun-2020	D			24-Jun-2020	24-Jun-2020	,
DESAL 1, DESAL 3.	DESAL 2, DESAL 1 Duplicate	5	22-Jun-2020				24-Jun-2020	24-Jun-2020	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete An	alyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G) DESAL 1,	DESAL 2,		22-Jun-2020				26-Jun-2020	20-Jul-2020	1
DESAL 3.	DESAL 1 Duplicate								•
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							1		1
Clear Plastic Bottle - Sulfuric Acid (EK061G)									
DESAL 1,	DESAL 2,		22-Jun-2020	26-Jun-2020	20-Jul-2020	1	26-Jun-2020	20-Jul-2020	✓
DESAL 3,	DESAL 1 Duplicate								
EK067G: Total Phosphorus as P by Discrete Analyser									
Clear Plastic Bottle - Sulfuric Acid (EK067G)	:5								
DESAL 1,	DESAL 2,		22-Jun-2020	26-Jun-2020	20-Jul-2020	~	26-Jun-2020	20-Jul-2020	✓
DESAL 3,	DESAL 1 Duplicate								
MW006: Faecal Coliforms & E.coli by MF									
Sterile Plastic Bottle - Sodium Thiosulfate (MW006)								00 km 0000	
DESAL 1,	DESAL 2,		22-Jun-2020				23-Jun-2020	23-Jun-2020	✓
DESAL 3,	DESAL 1 Duplicate								
MW023: Enterococci by Membrane Filtration									
Sterile Plastic Bottle - Sodium Thiosulfate (MW023) DESAL 1,	DESAL 2,		22-Jun-2020				23-Jun-2020	23-Jun-2020	
DESAL 1, DESAL 3.	DESAL 2, DESAL 1 Duplicate		22-Juli-2020				23-3011-2020	20-001-2020	✓
DLOAL J,									



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: WATER				Evaluation		introl frequency	not within specification ; \checkmark = Quality Cont	ol frequency within specific
Quality Control Sample Type			Count		Rate (%)		Quality Control Specification	
Analytical Methods	Method	00	Reaular	Actual	Expected	Evaluation		
Laboratory Duplicates (DUP)						0		
Ammonia as N by Discrete analyser	EK055G	2	16	12.50	10.00		NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
DRC-ICPMS					\mathcal{P}			
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	10.00	~	NEPM 2013 B3 & ALS QC Standard	
itrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
litrite as N by Discrete Analyser	EK057G	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Mercury by FIMS	EG035T	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Metals by ICP-MS - Suite A	EG020A-T	2	15	13.33	10.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
aboratory Control Samples (LCS)								
mmonia as N by Discrete analyser	EK055G	1	16	6.25	5.00	1	NEPM 2013 B3 & ALS QC Standard	
hloride by Discrete Analyser	ED045G	2	20	10.00	10.00	<u> </u>	NEPM 2013 B3 & ALS QC Standard	
issolved Mercury by FIMS	EG035F	\mathbf{O}_1	9	11.11	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
issolved Metals by ICP-MS - Suite A	EG020A-F	1	11	9.09	5.00	 ✓ 	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	4	25.00	5.00		NEPM 2013 B3 & ALS QC Standard	
DRC-ICPMS						•		
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	5.00	~	NEPM 2013 B3 & ALS QC Standard	
litrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
litrite as N by Discrete Analyser	EK057G	1	18	5.56	5.00	<u> </u>	NEPM 2013 B3 & ALS QC Standard	
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard	
otal Mercury by FIMS	EG035T	1	12	8.33	5.00		NEPM 2013 B3 & ALS QC Standard	
otal Metals by ICP-MS - Suite A	EG020A-T	1	15	6.67	5.00		NEPM 2013 B3 & ALS QC Standard	
otal Phosphorus as P By Discrete Analyser	EK067G	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard	
lethod Blanks (MB)								
mmonia as N by Discrete analyser	EK055G	1	16	6.25	5.00	1	NEPM 2013 B3 & ALS QC Standard	
hloride by Discrete Analyser	ED045G	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00		NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	11	9.09	5.00		NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by DRC-ICPMS22-265	EG020A-1 EG094-AgF	1	4	25.00 e B	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	Page 258 of 321

Page	5 of 7
Work Order	: EB2016548
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



Quality Control Sample Type		С	ount		Rate (%)		Quality Control Specification
Analytical Methods	Method	00	Reaular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued						Ċ	
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	5.00	1	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	5.26	5.00		NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	18	5.56	5.00		NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	0.1	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	 ✓ 	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	12	8.33	5.00	1	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	6.67	5.00	1	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					-		
Ammonia as N by Discrete analyser	EK055G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	5.00	5.00	~	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	10	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
	Publishe		¢.				



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	ions are converted to a barium su absorbance of the BaSO4 suspen	500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ulfate suspension in an acetic acid medium with barium chloride. Light nsion is measured by a photometer and the SO4-2 concentration is determined h a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	sequestration of mercury by the o	500 CI - G.The thiocyanate ion is liberated from mercuric thiocyanate through chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions aly-coloured ferric thiocynate which is measured at 480 nm APHA 21st edition
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	prior to analysis. The ICPMS tec are then passed into a high vacu	125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered hnique utilizes a highly efficient argon plasma to ionize selected elements. Ions um mass spectrometer, which separates the analytes based on their distinct ir measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	a highly efficient argon plasma to	125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes i onize selected elements. Ions are then passed into a high vacuum mass the analytes based on their distinct mass to charge ratios prior to their de ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	Samples are 0.45µm filtered prior A bromate/bromide reagent is use mercury is reduced online to atom	D, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) r to analysis. FIM-AAS is an automated flameless atomic absorption technique. ed to oxidise any organic mercury compounds in the filtered sample. The ionic nic mercury vapour by SnCl2 which is then purged into a heated quartz cell. psorbance against a calibration curve. This method is compliant with NEPM
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550 FIM-AAS is an automated flamele any organic mercury compounds mercury vapour by SnCl2 which i	D, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) ess atomic absorption technique. A bromate/bromide reagent is used to oxidise in the unfiltered sample. The ionic mercury is reduced online to atomic is then purged into a heated quartz cell. Quantification is by comparing curve. This method is compliant with NEPM (2013) Schedule B(3)
Low-Level Dissolved Silver in Fresh Water by ORC-ICPMS	EG094-AaF	WATER	ORC-ICPMS technique removes lons are passed into a high vacu	125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The interfering species through a series of chemical reactions prior to ion detection. um mass spectrometer, which separates the analytes based on their distinct asurement by a discrete dynode ion detector. This method is compliant with
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	WATER	species through a series of chem spectrometer, which separates the	125; USEPA SW846 - 6020. The ORC-ICPMS technique removes interfering ical reactions prior to ion detection. Ions are passed into a high vacuum mass a analytes based on their distinct mass to charge ratios prior to measurement r. This method is compliant with NEPM (2013) Schedule B(3)
22-265			File B	Page 260 of 321



Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3 This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Field Tests (performed by external sampler)	* EN67-B02	WATER	Field determinations as per methods described in APHA or supplied by client. The analysis is performed in the field by non-ALS samplers. ALS NATA accreditation does not apply for this service.
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7 2007
Enumeration of Enterococci by Membrane Filtration	MW023	WATER	AS4276.9: - 2007
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals - ORC	EN25-ORC	WATER	In house: Referenced to USEPA SW846-3005. This is an Ultrapure Nitric acid digestion procedure used to prepare surface and ground water samples for analysis by ORC- ICPMS. This method is compliant with NEPM (2013) Schedule B(3)

PROJECT: GROUNDWATE	R		UGLADSTONE /	??? 문 seauples b	, birreton e@eleyscesh card 10,00 8048 SBs	E 2-4 Westall Roai 60 E: samplas.me	elbourne@attiglu	. 3171 balloora		26-02-496 	272E S Rose Gu 8 9433 (* samp) 24 423 (Seary P 423 (1965 E. nov	esiner on Beffe Inte North News FR@alogicbal co	Sgløbal.com n NS/k 2641	U7088h Ph: 674	SVILLE 14-15 De /66-0600 5 mm	nples.oyanay@abayabai.com isana Caael Boldy CLD 4818 http://www.wata.org/community.com	
OFFICE: AGNES WATE PROJECT: GROUNDWATE	R		Ph: 87 4978 794/		lah Drive Clinton QLD 46603/20GEE 15 ro.gladistone@alsgiobal.comp7 677 a7	78 Dyaney Road A 785 El mudgee ny	संग्रह्मक मिल्लिय स मालिवांड्युक्टकवी दर	865 m			- (O Hod Way Ma 99 7855 E' Serg	iaga WA (1080 iek perth@a sqi	obal core	112400,1 Ph 02-4	CNGCNO 59 Ke 326 3175 E. Not	nry Sreer Wallangang (USW 1999) angang Galag-Ibal ara	
PROJECT: GROUNDWATE	78		·····		ROUND REQUIREMENTS :	Stand	dard TAT (Lis	st due date):					F	OR LABORA	TORY USE (DNLY (Circle)	
				e.g., Uitra T	TAT may be longer for some tests Trace Organics)		Standard or u	Argent TAT (L	lst due da	ite):	······································			ustody Seal Iniz		Yes N	to N/
		PROJECT N			OTE NO.: BN/222/16					COC SE	UENCE NUM	BER (Circle		ee ice / frozen i ceipt?	ice bricks prese	atupon Yes N	No N#
ORDER NUMBER:	PURCHASE ORDER N	IO.: 4500061		1	RY OF ORIGIN:				CO	C: 1 2	34	56	7 R	andom Sample	Temperature o	n Receipt: °C	;
PROJECT MANAGER:) Personal Inf				51 7 49757975 M:)) Persor				OF	·········		56	7 01	her comment:			
SAMPLER: 6) Persona	· · · · · · · · · · · · · · · · · · ·				Personal In	RELINCU				CEIVED BY	(6) Perso		RELING	UISHED BY		RECEIVED BY:	-
COC Emailed to ALS? (YE			EDD FORMA	√T (or defar	.uit):		(6) Persor	nal Inform									
Email Reports to : Person				<u> </u>		DATE/TIME				TEATIME:	- 7	~ ~	DATE/T	IME:		DATE/TIME:	
	It to PM if no other addresses are I	·····	ccountspayable	Btrility.con	n.au	22/06/2020	<u>, 14</u>	00	(3/6/2	<u>) 010 (</u>	<u>0;50</u>					
COMMENTS/SPECIAL HAN	IDLING/STORAGE OR DISPOSAL	L:								3.							
ALS USE ONLY		LE DETAILS olid(S) Water(V	(W)		CONTAINER IN	FORMATION								e listed to attrac		Additional Inform	lation
LAB ID	SAMPLE ID DESAL 1	DATE 22/06/2020	е / тіме , 1040	MATRIX	TYPE & PRESERVA (refer to codes belo		TOTAL BOTTLES	× TABLE1	24-5	Do Fleid	mover play of	PH Field	ORP Field	6		Comments on likely contarriting s dilutions or samples requiring s analysis etc. Please add field results to COA Brisbane Work Order Ref	Division
ź '	DESAL 2	22/06/2020	1210	w		$\langle \rangle$	5	x	23-8	0.32	238.2	4-30	30.0			EB2016	5548
3	DESAL 3	22/06/2020	1300	w	0 (2	5	x			202.0	1	1		1-		···
4	DESAL 1 Duplicate	22/06/2020		w							1	1		A			₿ €₩
			1045	Ň			5	x	245	50.18	3431	4.10	149.1	6	<u>+</u>		
					· · · · · · · · · · · · · · · · · · ·											Telephone · + 61-7-3243 72	22?
	-			<u> </u>												L	
				1													
				1											-		
				ł						+					1		
				L]								$k_{A[C]}$	1000		R		
ł	1	1		t						1		IVII~	<u>5 c∼</u>	, 1 1			
		· · ·			744-844					+	Estera	Contraction of the second		and per other to be be the			
					······································	TOTAL	20										

.



CERTIFICATE OF ANALYSIS

Work Order	EB2016812	Page	: 1 of 4	
Client	TRILITY Pty Ltd	Laboratory	Environmental Division Brisbane	
Contact	4(6) Personal Infor	Contact	: Customer Services EB	
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Australia 4053	
Telephone	AGNES WATER QLD 4677	Telephone	: +61-7-3243 7222	
Project	: GROUNDWATER MONITORING	Date Samples Received	: 25-Jun-2020 08:40	
Order number	: 4500061046	Date Analysis Commenced	: 25-Jun-2020	
C-O-C number	<u></u>	Issue Date	: 02-Jul-2020 14:27	BLATA
Sampler	4(6) Personal Inform		Hac-MRA	NATA
Site	· · · · · ·	- GN		
Quote number	: BN/222/16	- 5	and the state of t	Accreditation No. 825
No. of samples received	: 4	\mathbf{O}		ted for compliance with
No. of samples analysed	: 4			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.

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.

(6) Personal Info

Senior Inorganic Chemist Senior Inorganic Chemist Senior Inorganic Chemist Microbiologist

Brisbane Administration, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Microbiological, Stafford, QLD



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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.

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society. Key:

LOR = Limit of reporting

A = This result is computed from individual analyte detections at or above the level of reporting

 ϕ = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EK061G (Total Kjeldahl Nitrogen as N): Sample EB2016812 002 (STP2) was diluted due to matrix interference. LOR adjusted accordingly .
- MF = membrane filtration
- CFU = colony forming unit .
- . Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range of 10 - 100cfu
- It is recognised that EG020T (Total Metals) is less than EG020F (Dissolved Metals) for some samples. However, the difference is within experimental variation of the methods. •
- MW023 is ALS's internal code and is equivalent to AS4276.9. .
- uplished + MW006 is ALS's internal code and is equivalent to AS4276.7. .

Page : 3 of 4 Work Order : EB2016812 Client : TRILITY Pty Ltd Project : GROUNDWATER MONITORING



Analytical Results

ub-Matrix: WATER Matrix: WATER)		Π		STP1	STP2	97-01	STP1 Duplicate	
				24-Jun-2020 11:15	24-Jun-2020 09:20	24-Jun-2020 10:10	24-Jun-2020 11:20	
				EB2016812-001	EB2016812-002	EB2016812-003	EB2016812-004	
				Result	Result	Result	Result	
D041G: Sulfate (Turbidimetric) as SO4 2	- by DA							
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	92	369	16	92	
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	1020	3850	231	1020	
G020F: Dissolved Metals by ICP-MS					S			
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.08	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.001	0.002	<0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.002	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.004	0.004	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.006	<0.005	<0.005	<0.005	
Manganese	7439-96-5	0.001	mg/L	1.38	0.116	0.006	1.38	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Iron	7439-89-6	0.05	mg/L	1.78	0.05	<0.05	1.76	
G020T: Total Metals by ICP-MS			0					
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.16	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.001	0.002	<0.001	0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.002	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	<0.001	<0.001	
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.002	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.012	0.003	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	<0.005	0.017	<0.005	<0.005	
Manganese	7439-96-5	0.001	mg/L	1.26	0.121	0.012	1.28	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.18	<0.05	
Iron	7439-89-6	0.05	mg/L	1.66	0.06	0.08	1.63	
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
22-265	-			File	В		·	age 265 of 321



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		[STP1	STP2	97-01	STP1 Duplicate	
			<i>u</i>	24-Jun-2020 11:15	24-Jun-2020 09:20	24-Jun-2020 10:10	24-Jun-2020 11:20	
				EB2016812-001	EB2016812-002	EB2016812-003	EB2016812-004	
				Result	Result	Result	Result	
EG035T: Total Recoverable Mercu	iry by FIMS							
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
EG094F: Dissolved Metals in Fresh	n Water by ORC-ICPMS	5						
Silver	7440-22-4	0.01	µg/L	<0.01	0.02	<0.01	<0.01	
EG094T: Total metals in Fresh wat	er by ORC-ICPMS							
Silver	7440-22-4	0.01	µg/L	<0.01	0.02	<0.01	<0.01	
EK055G: Ammonia as N by Discre	te Analyser				C'			
Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.03	0.04	0.04	
EK057G: Nitrite as N by Discrete A	Analyser							
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	
EK058G: Nitrate as N by Discrete	Analyser							
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	0.15	<0.01	
EK059G: Nitrite plus Nitrate as N ((NOx) by Discrete Ana	lyser						
Nitrite + Nitrate as N		0.01	mg/L	<0.01	<0.01	0.15	<0.01	
EK061G: Total Kjeldahl Nitrogen B	y Discrete Analyser							
Total Kjeldahl Nitrogen as N		0.1	mg/L	0.1	<0.5	0.3	0.1	
EK062G: Total Nitrogen as N (TKN	+ NOx) by Discrete An	alyser						
` Total Nitrogen as N		0.1	mg/L	0.1	<0.5	0.4	0.1	
EK067G: Total Phosphorus as P by	y Discrete Analyser							
Total Phosphorus as P		0.01	mg/L	0.01	0.07	0.02	0.01	
EN67: Field Tests								
Ø Electrical Conductivity (Non		1	µS/cm	3844	12069	781	3844	
Compensated)								
Ø Dissolved Oxygen		0.1	mg/L	0.85	0.49	2.46	0.85	
ø pH		0.01	pH Unit	6.67	6.50	5.56	6.67	
Ø Temperature		0.1	°C	23.7	23.8	19.5	23.7	
Ø Reactive Phosphorus as P	14265-44-2	0.01	mg/L	1.0	80.0	148.1	1.0	
MW006: Faecal Coliforms & E.coli								
Faecal Coliforms		1	CFU/100mL	<1	<1	~65	<1	
MW023: Enterococci by Membrane	Filtration							
Enterococci		1	CFU/100mL	<1	<1	21	<1	



QUALITY CONTROL REPORT

Work Order	: EB2016812	Page	: 1 of 7
Client	: TRILITY Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	: (6) Personal Infor	Contact	: Customer Services EB
Address	LOT 40 SPRINGS ROAD	Address	: 2 Byth Street Stafford QLD Australia 4053
	AGNES WATER QLD 4677	(Σ
Telephone	:	Telephone	: +61-7-3243 7222
Project	: GROUNDWATER MONITORING	Date Samples Received	: 25-Jun-2020
Order number	: 4500061046	Date Analysis Commenced	: 25-Jun-2020
C-O-C number	·	Issue Date	: 02-Jul-2020
Sampler	I(6) Personal Infor		IC-JUI-2020
Site	·	. 60	
Quote number	: BN/222/16		The Autor
No. of samples received	: 4		Accredited for compliance with
No. of samples analysed	: 4		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 Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

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.

6) Personal Inf

Senior Inorganic Chemist Senior Inorganic Chemist Senior Inorganic Chemist Microbiologist

Brisbane Administration, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Microbiological, Stafford, QLD





General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

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

RPD = Relative Percentage Difference

= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

ub-Matrix: WATER						Laboratory I	Duplicate (DUP) Report		
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
D041G: Sulfate (Tu	rbidimetric) as SO4 2- by DA	A (QC Lot: 3102812)							
B2016756-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	57	56	0.00	0% - 20%
B2016813-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	78	78	0.00	0% - 20%
D045G: Chloride b	y Discrete Analyser (QC Lot	:: 3102813)							
B2016756-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	142	141	0.770	0% - 20%
B2016813-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	1400	1390	0.250	0% - 20%
G020F: Dissolved I	Metals by ICP-MS (QC Lot: 3	3102731)							
B2016807-005	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.003	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.001	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
32016805-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.036	0.036	0.00	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.00	No Limit
22-265		EG020A-F: Copper	7440-50-8 File B	0.001	mg/L	0.002	0.002	0.00	No Limit 268 of 321



Sub-Matrix: WATER						Laboratory I	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
G020F: Dissolved	Metals by ICP-MS (QC	Lot: 3102731) - continued							
EB2016805-004	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.006	0.006	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.81	0.88	9.02	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	0.04	0.04	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.08	0.09	0.00	No Limit
G020T: Total Metal	Is by ICP-MS (QC Lot: 3	3102676)							
B2016736-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.048	0.048	0.00	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.013	0.013	0.00	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.013	0.013	0.00	0% - 50%
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.075	0.077	2.22	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.10	0.10	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.09	0.09	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.20	0.19	0.00	No Limit
B2016807-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	< 0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.132	0.134	1.35	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	< 0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.43	0.37	14.2	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.05	0.05	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.56	0.54	3.82	0% - 50%
G035F: Dissolved	Mercury by FIMS (QC L								
B2016793-030	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
B2016807-885265	Anonymous	EG035F: Mercury	Fil ç 439-97-6	0.0001	mg/L	<0.0001	<0.0001		269 of Re1Limit

Page	: 4 of 7
Work Order	: EB2016812
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



Sub-Matrix: WATER						Laboratory L	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
EG035T: Total Reco	verable Mercury by FIM	IS (QC Lot: 3102674)							
EB2016736-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB2016807-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG094F: Dissolved M	letals in Fresh Water b	y ORC-ICPMS (QC Lot: 3102645)				5			
EB2016812-001	STP1	EG094-AgF: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EG094T: Total metals	s in Fresh water by OR	C-ICPMS (QC Lot: 3102651)			.0				
EB2016812-001	STP1	EG094-AgT: Silver	7440-22-4	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EK055G: Ammonia a	s N by Discrete Analys	er (QC Lot: 3109117)		0					
EB2016703-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB2016807-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.05	0.05	0.00	No Limit
EK057G: Nitrite as N	by Discrete Analyser	(QC Lot: 3102814)		U.					
EB2016756-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.04	0.04	0.00	No Limit
EB2016813-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus	Nitrate as N (NOx) by	Discrete Analyser (QC Lot: 3109116)		~0.					
EB2016703-001	Anonymous	EK059G: Nitrite + Nitrate as N	<u>, 6 – 7</u>	0.01	mg/L	0.02	0.02	0.00	No Limit
EB2016807-003	Anonymous	EK059G: Nitrite + Nitrate as N		0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK061G: Total Kjelda	ahl Nitrogen By Discret	e Analyser (QC Lot: 3108936)							
EB2016796-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	41.5	43.1	3.83	0% - 20%
EB2016812-002	STP2	EK061G: Total Kjeldahl Nitrogen as N	· · · · ·	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EK067G: Total Phos	phorus as P by Discrete	e Analyser (QC Lot: 3108935)							
EB2016796-001	Anonymous	EK067G: Total Phosphorus as P		0.01	mg/L	6.07	6.20	2.03	0% - 20%
EB2016812-002	STP2	EK067G: Total Phosphorus as P		0.01	mg/L	0.07	<0.05	31.9	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LC	Laboratory Control Spike (LCS) Report			
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)		
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High		
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	A (QCLot: 3102812)				6					
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	99.8	85.0	118		
				<1	100 mg/L	95.7	85.0	118		
ED045G: Chloride by Discrete Analyser (QCLot	: 3102813)									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	96.8	90.0	115		
				<1	1000 mg/L	103	90.0	115		
EG020F: Dissolved Metals by ICP-MS (QCLot: 3	102731)			5						
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	96.1	79.0	118		
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	103	88.0	116		
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	103	88.0	108		
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.4	87.0	113		
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	99.5	86.0	112		
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.6	88.0	114		
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	89.0	110		
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.2	89.0	120		
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.1	89.0	113		
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	103	83.0	112		
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	103	86.0	112		
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.7	87.0	113		
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	97.5	82.0	114		
EG020T: Total Metals by ICP-MS(QCLot: 31026	76)									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.0	80.0	114		
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	105	88.0	112		
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	104	88.0	111		
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	89.0	115		
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	107	89.0	115		
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	107	88.0	116		
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.5	89.0	112		
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	88.0	114		
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	104	88.0	116		
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	99.0	79.0	111		
EG020A-T: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	104	86.0	116		
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.0	84.0	114		
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	102	82.0	128		
EG020A-T: lr <u>02-265</u>	7439-89-6	0.05	^{mg/L} File B	<0.05	0.5 mg/L	101	Page 271 o	f 321 118		



Sub-Matrix: WATER				Method Blank (MB)		Laboratory Control Spike (LCS	6) Report	
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG035F: Dissolved Mercury by FIMS (QCLot: 3102729)					\mathbf{A}			
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	105	84.0	118
EG035T: Total Recoverable Mercury by FIMS (QCLot: 310267	74)							
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	110	84.0	118
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QC	CLot: 310264	l5)			5			
EG094-AgF: Silver	7440-22-4	0.01	μg/L	<0.01	0.2 µg/L	98.5	70.0	130
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot:	3102651)			S				
EG094-AgT: Silver	7440-22-4	0.01	μg/L	<0.01	0.2 µg/L	104	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 310911	17)							
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	102	83.5	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 3102814)				Nº O				
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.0	90.0	110
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser	QCLot: 31	09116)						
EK059G: Nitrite + Nitrate as N		0.01	mg/L	<0.01	0.5 mg/L	98.9	85.7	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLo	ot: 3108936)							
EK061G: Total Kjeldahl Nitrogen as N		0.1	mg/L	<0.1	1 mg/L	86.5	70.1	108
EK067G: Total Phosphorus as P by Discrete Analyser (QCLo	t: 3108935)		VN)				
EK067G: Total Phosphorus as P		0.01	mg/L	<0.01	0.442 mg/L	91.7	79.2	105

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER	o-Matrix: WATER					atrix Spike (MS) Repor	t	
					Spike	SpikeRecovery(%)	Recovery L	imits (%)
Laboratory sample ID	Client sample ID		Method: Compound CAS Number		Concentration	MS	Low	High
ED041G: Sulfate (1	Furbidimetric) as SO4 2- by DA (QCLot: 31	02812)						
EB2016812-001	STP1		ED041G: Sulfate as SO4 - Turbidimetric 14808-79-8		20 mg/L	# Not	70.0	130
						Determined		
ED045G: Chloride	by Discrete Analyser (QCLot: 3102813)							
EB2016812-001	STP1		ED045G: Chloride	16887-00-6	400 mg/L	77.5	70.0	130
EG020F: Dissolved	I Metals by ICP-MS (QCLot: 3102731)							
EB2016805-003	Anonymous		EG020A-F: Arsenic	7440-38-2	1 mg/L	98.2	70.0	130
			EG020A-F: Cadmium	7440-43-9	0.25 mg/L	102	70.0	130
			EG020A-F: Chromium	7440-47-3	1 mg/L	98.6	70.0	130
			EG020A-F: Cobalt	7440-48-4	1 mg/L	103	70.0	130
00.005			EG020A-F: Copper	7440-50-8	1 mg/L	98.0	70.0	130
22-265			EG020A-F: Lead File B	7439-92-1	1 mg/L	108	Page 272 of	1321



ub-Matrix: WATER				M	Matrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Recovery L	.imits (%)		
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High		
G020F: Dissolve	d Metals by ICP-MS (QCLot: 3102731) - continued		\sim						
EB2016805-003	Anonymous	EG020A-F: Manganese	7439-96-5	1 mg/L	99.6	70.0	130		
		EG020A-F: Nickel	7440-02-0	1 mg/L	94.9	70.0	130		
		EG020A-F: Zinc	7440-66-6	1 mg/L	95.2	70.0	130		
EG020T: Total Me	tals by ICP-MS (QCLot: 3102676)	· · · · · · · · · · · · · · · · · · ·	6						
EB2016736-002	Anonymous	EG020A-T: Arsenic	7440-38-2	5 mg/L	104	70.0	130		
		EG020A-T: Cadmium	7440-43-9	1.25 mg/L	102	70.0	130		
		EG020A-T: Chromium	7440-47-3	5 mg/L	85.7	70.0	130		
		EG020A-T: Cobalt	7440-48-4	5 mg/L	100	70.0	130		
		EG020A-T: Copper	7440-50-8	5 mg/L	98.8	70.0	130		
		EG020A-T: Lead	7439-92-1	5 mg/L	94.2	70.0	130		
		EG020A-T: Manganese	7439-96-5	5 mg/L	79.4	70.0	130		
		EG020A-T: Nickel	7440-02-0	5 mg/L	101	70.0	130		
		EG020A-T: Zinc	7440-66-6	5 mg/L	97.9	70.0	130		
G035F: Dissolve	d Mercury by FIMS (QCLot: 3102729)								
EB2016807-002	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	95.2	70.0	130		
G035T: Total Re	ecoverable Mercury by FIMS (QCLot: 3102674)								
EB2016736-002	Anonymous	EG035T: Mercury	7439-97-6	0.05 mg/L	73.4	70.0	130		
K055G: Ammoni	a as N by Discrete Analyser (QCLot: 3109117)								
EB2016703-002	Anonymous	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	98.4	70.0	130		
EK057G: Nitrite a	s N by Discrete Analyser (QCLot: 3102814)								
EB2016812-001	STP1	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	99.0	70.0	130		
EK059G: Nitrite p	lus Nitrate as N (NOx) by Discrete Analyser (QCLot: 31								
EB2016703-002	Anonymous	EK059G: Nitrite + Nitrate as N		0.4 mg/L	94.0	70.0	130		
K061G: Total Kie	eldahl Nitrogen By Discrete Analyser (QCLot: 3108936)								
EB2016796-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N		5 mg/L	100	70.0	130		
-K067G: Total Ph	osphorus as P by Discrete Analyser (QCLot: 3108935)								
EB2016796-002	Anonymous	EK067G: Total Phosphorus as P		1 mg/L	106	70.0	130		
	, alony mode	LINUTO. TOTAL FILOSPHOLUS as F		1	100	10.0	100		



QA/QC Compliance Assessment to assist with Quality Review

Work Order	EB2016812	Page	: 1 of 7
Client	: TRILITY Pty Ltd	Laboratory	: Environmental Division Brisbane
Contact	:4(6) Personal Infor	Telephone	: +61-7-3243 7222
Project	GROUNDWATER MONITORING	Date Samples Received	: 25-Jun-2020
Site	:	Issue Date	: 02-Jul-2020
Sampler	4(6) Personal Inforr	No. of samples received	. 4
Order number	: 4500061046	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

on UF Act's

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- <u>NO</u> Method Blank value outliers occur.
- <u>NO</u> Duplicate outliers occur.
- <u>NO</u> Laboratory Control outliers occur.
- Matrix Spike outliers exist please see following pages for full details.
- For all regular sample matrices, <u>NO</u> surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

• NO Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

• <u>NO</u> Quality Control Sample Frequency Outliers exist.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data		Limits	Comment
Matrix Spike (MS) Recoveries				(\mathbf{S}			
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EB2016812001	STP1	Sulfate as SO4 -	14808-79-8	Not			MS recovery not determined,
			Turbidimetric		Determine	d		background level greater than or
				.0.				equal to 4x spike level.

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: WATER		,5				Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding time
Method			Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED041G: Sulfate (Turbidimetric) as SO4 2- by D	A		0						
Clear Plastic Bottle - Natural (ED041G) STP1, 97-01,	STP2, STP1 Duplicate	, 0° Y</td <td>24-Jun-2020</td> <td></td> <td></td> <td></td> <td>26-Jun-2020</td> <td>22-Jul-2020</td> <td>~</td>	24-Jun-2020				26-Jun-2020	22-Jul-2020	~
ED045G: Chloride by Discrete Analyser									
Clear Plastic Bottle - Natural (ED045G) STP1, 97-01,	STP2, STP1 Duplicate	0	24-Jun-2020				26-Jun-2020	22-Jul-2020	1
EG020F: Dissolved Metals by ICP-MS									
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (STP1, 97-01,	EG020A-F) STP2, STP1 Duplicate		24-Jun-2020				29-Jun-2020	21-Dec-2020	~
EG020T: Total Metals by ICP-MS									
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified STP1, 97-01,	d (EG020A-T) STP2, STP1 Duplicate		24-Jun-2020	27-Jun-2020	21-Dec-2020	✓	27-Jun-2020	21-Dec-2020	1
EG035F: Dissolved Mercury by FIMS									
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (STP1, 97-01,	EG035F) STP2, STP1 Duplicate		24-Jun-2020				30-Jun-2020	22-Jul-2020	1
EG035T: Total Recoverable Mercury by FIMS									
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified STP1, 97-01, 22-265	d (EG035T) STP2, STP1 Duplicate	File	24-Jun-2020 B				29-Jun-2020	22-Jul-2020 Page 275 of 32	21 🗸

Page	: 3 of 7
Work Order	EB2016812
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



Matrix: WATER						Evaluation	n: × = Holding time	breach ; 🗸 = With	in holding time
Method			Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG094F: Dissolved Metals in Fresh Water by ORC-ICF	PMS				0				
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG094 STP1, 97-01,			24-Jun-2020		0		29-Jun-2020	21-Dec-2020	~
EG094T: Total metals in Fresh water by ORC-ICPMS				.0.					
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG0	94-AqT)								
STP1,	STP2,		24-Jun-2020	27-Jun-2020	21-Dec-2020	1	27-Jun-2020	21-Dec-2020	 ✓
97-01,	STP1 Duplicate			G					
EK055G: Ammonia as N by Discrete Analyser				5					
Clear Plastic Bottle - Sulfuric Acid (EK055G)									
STP1,	STP2,		24-Jun-2020				30-Jun-2020	22-Jul-2020	 ✓
97-01,	STP1 Duplicate								
EK057G: Nitrite as N by Discrete Analyser				9					
Clear Plastic Bottle - Natural (EK057G)				D					
STP1,	STP2,	. 6	24-Jun-2020				26-Jun-2020	26-Jun-2020	✓
97-01,	STP1 Duplicate								
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete A	Analyser		X						
Clear Plastic Bottle - Sulfuric Acid (EK059G)	0750		24-Jun-2020				00.1	22-Jul-2020	
STP1,	STP2,		24-Jun-2020				30-Jun-2020	22-Jui-2020	✓
97-01,	STP1 Duplicate								
EK061G: Total Kjeldahl Nitrogen By Discrete Analyse	r								
Clear Plastic Bottle - Sulfuric Acid (EK061G)	CTD2	Δ	24-Jun-2020	30-Jun-2020	22-Jul-2020		30-Jun-2020	22-Jul-2020	,
STP1,	STP2,		24-Jun-2020	30-Jun-2020	22-JUI-2020	~	30-Jun-2020	22-Jui-2020	✓
97-01,	STP1 Duplicate								
EK067G: Total Phosphorus as P by Discrete Analyser									
Clear Plastic Bottle - Sulfuric Acid (EK067G) STP1.	STP2,		24-Jun-2020	30-Jun-2020	22-Jul-2020	1	30-Jun-2020	22-Jul-2020	1
97-01.	STP2, STP1 Duplicate		24-5011-2020	30-3011-2020	22-301-2020	~	30-301-2020	22-301-2020	✓
	STPT Duplicate								
MW006: Faecal Coliforms & E.coli by MF			1						
Sterile Plastic Bottle - Sodium Thiosulfate (MW006) STP1.	STP2,		24-Jun-2020				25-Jun-2020	25-Jun-2020	1
97-01.	STP1 Duplicate								•
MW023: Enterococci by Membrane Filtration								I	
Sterile Plastic Bottle - Sodium Thiosulfate (MW023)									
Sterne Plastic Bottle - Socium Thiosunate (MW023) STP1,	STP2,		24-Jun-2020				25-Jun-2020	25-Jun-2020	1
97-01.	STP1 Duplicate								
	- · ·								



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: WATER				Evaluation		ntrol frequency	not within specification ; \checkmark = Quality Cont	rol frequency within specifica
Quality Control Sample Type			Count		Rate (%)		Quality Control Specification	
Analytical Methods	Method	00	Reaular	Actual	Expected	Evaluation		
_aboratory Duplicates (DUP)						0		
Ammonia as N by Discrete analyser	EK055G	2	18	11.11	10.00	\checkmark	NEPM 2013 B3 & ALS QC Standard	
Chloride by Discrete Analyser	ED045G	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	2	12	16.67	10.00	\checkmark	NEPM 2013 B3 & ALS QC Standard	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
DRC-ICPMS					\mathcal{P}			
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
itrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
litrite as N by Discrete Analyser	EK057G	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Metals by ICP-MS - Suite A	EG020A-T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
otal Phosphorus as P By Discrete Analyser	EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
aboratory Control Samples (LCS)								
mmonia as N by Discrete analyser	EK055G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
hloride by Discrete Analyser	ED045G	2	15	13.33	10.00	1	NEPM 2013 B3 & ALS QC Standard	
issolved Mercury by FIMS	EG035F		12	8.33	5.00	√	NEPM 2013 B3 & ALS QC Standard	
issolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
DRC-ICPMS						-		
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
litrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
itrite as N by Discrete Analyser	EK057G	1	16	6.25	5.00	1	NEPM 2013 B3 & ALS QC Standard	
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	19	10.53	10.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Mercury by FIMS	EG035T	1	20	5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	1	NEPM 2013 B3 & ALS QC Standard	
otal Phosphorus as P By Discrete Analyser	EK067G	1	20	5.00	5.00	<u> </u>	NEPM 2013 B3 & ALS QC Standard	
lethod Blanks (MB)								
mmonia as N by Discrete analyser	EK055G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
hloride by Discrete Analyser	ED045G	1	15	6.67	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
Dissolved Mercury by FIMS	EG035F	1	12	8.33	5.00		NEPM 2013 B3 & ALS QC Standard	
issolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard	
ow-Level Dissolved Silver in Fresh Water by	EG094-AgF	1	4	25.00	5.00	√	NEPM 2013 B3 & ALS QC Standard	Page 277 of 321
DRC-ICPMS ²²⁻²⁶⁵			Fil	e B				Page 277 of 321

Page	: 5 of 7
Work Order	: EB2016812
Client	: TRILITY Pty Ltd
Project	: GROUNDWATER MONITORING



atrix: WATER				Evaluation		ntrol frequency	not within specification ; \checkmark = Quality Control frequency within specification
uality Control Sample Type		Co			Rate (%)	F (1) (1)	Quality Control Specification
nalytical Methods	Method	QC	Reaular	Actual	Expected	Evaluation	
ethod Blanks (MB) - Continued						Ċ	
ow-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	1	4	25.00	5.00		NEPM 2013 B3 & ALS QC Standard
trite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00		NEPM 2013 B3 & ALS QC Standard
trite as N by Discrete Analyser	EK057G	1	16	6.25	5.00	\checkmark	NEPM 2013 B3 & ALS QC Standard
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	19	5.26	5.00	0, 1	NEPM 2013 B3 & ALS QC Standard
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	✓ ✓	NEPM 2013 B3 & ALS QC Standard
tal Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
tal Phosphorus as P By Discrete Analyser	EK067G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
atrix Spikes (MS)				(
nmonia as N by Discrete analyser	EK055G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
nloride by Discrete Analyser	ED045G	1	15	6.67	5.00	~	NEPM 2013 B3 & ALS QC Standard
ssolved Mercury by FIMS	EG035F	1	12	8.33	5.00	~	NEPM 2013 B3 & ALS QC Standard
ssolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
trite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
trite as N by Discrete Analyser	EK057G	1	16	6.25	5.00	~	NEPM 2013 B3 & ALS QC Standard
ulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	5.00	5.00	~	NEPM 2013 B3 & ALS QC Standard
otal Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
otal Metals by ICP-MS - Suite A	EG020A-T	1	20	5.00	5.00	~	NEPM 2013 B3 & ALS QC Standard
otal Phosphorus as P By Discrete Analyser	EK067G	10	20	5.00	5.00	~	NEPM 2013 B3 & ALS QC Standard
	Publishe	<u>,0</u>	¢.				



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions	
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	ions are converted to a barium su absorbance of the BaSO4 susper	500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate Ilfate suspension in an acetic acid medium with barium chloride. Light nsion is measured by a photometer and the SO4-2 concentration is determined a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	sequestration of mercury by the c	500 CI - G.The thiocyanate ion is liberated from mercuric thiocyanate through chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions ly-coloured ferric thiocynate which is measured at 480 nm APHA 21st edition
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	prior to analysis. The ICPMS tec are then passed into a high vacu	125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered hnique utilizes a highly efficient argon plasma to ionize selected elements. Ions um mass spectrometer, which separates the analytes based on their distinct ir measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	a highly efficient argon plasma to	125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes ionize selected elements. Ions are then passed into a high vacuum mass e analytes based on their distinct mass to charge ratios prior to their de ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	Samples are 0.45µm filtered prior A bromate/bromide reagent is use mercury is reduced online to atom	APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) r to analysis. FIM-AAS is an automated flameless atomic absorption technique. ed to oxidise any organic mercury compounds in the filtered sample. The ionic nic mercury vapour by SnCl2 which is then purged into a heated quartz cell. psorbance against a calibration curve. This method is compliant with NEPM
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550 FIM-AAS is an automated flamele any organic mercury compounds mercury vapour by SnCl2 which i	b), APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) ess atomic absorption technique. A bromate/bromide reagent is used to oxidise in the unfiltered sample. The ionic mercury is reduced online to atomic s then purged into a heated quartz cell. Quantification is by comparing curve. This method is compliant with NEPM (2013) Schedule B(3)
Low-Level Dissolved Silver in Fresh Water by ORC-ICPMS	EG094-AqF	WATER	ORC-ICPMS technique removes lons are passed into a high vacuu	125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The interfering species through a series of chemical reactions prior to ion detection. If mass spectrometer, which separates the analytes based on their distinct asurement by a discrete dynode ion detector. This method is compliant with
Low-Level Total Silver in Fresh Water by ORC-ICPMS	EG094-AgT	WATER	In house: Referenced to APHA 3 species through a series of chem spectrometer, which separates the	125; USEPA SW846 - 6020. The ORC-ICPMS technique removes interfering ical reactions prior to ion detection. Ions are passed into a high vacuum mass is analytes based on their distinct mass to charge ratios prior to measurement This method is compliant with NEPM (2013) Schedule B(3)
22-265			File B	Page 279 of 321



Analytical Methods	Method	Matrix	Method Descriptions
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3 This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Field Tests (performed by external sampler)	* EN67-B02	WATER	Field determinations as per methods described in APHA or supplied by client. The analysis is performed in the field by non-ALS samplers. ALS NATA accreditation does not apply for this service.
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7 2007
Enumeration of Enterococci by Membrane Filtration	MW023	WATER	AS4276.9: - 2007
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals - ORC	EN25-ORC	WATER	In house: Referenced to USEPA SW846-3005. This is an Ultrapure Nitric acid digestion procedure used to prepare surface and ground water samples for analysis by ORC- ICPMS. This method is compliant with NEPM (2013) Schedule B(3)



closure Loc

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment

Plant, Agnes Water

Appendix D: Groundwater Contours

greencap.com.au

Adelaide | Auckland | Brisbane | Canberra | Darwin | Melbourne | Newcastle | Perth | Sydney | Wollongong



7320900

7321000

22-265

Page 282 of 321

GREENCAP

terlJ163599-01_Sept_2019_QR\mxd\FIG_6_1_IWTP_GW_Level_07_2019_191014.mxd

itv) and accept no liai



terlJ163599-01_Sept_2019_QR\mxd\FIG_6_2_IWTP_GW_Level_08_2019_191014.mxd

22-265

Page 283 of 321



390000

7321000

22-265

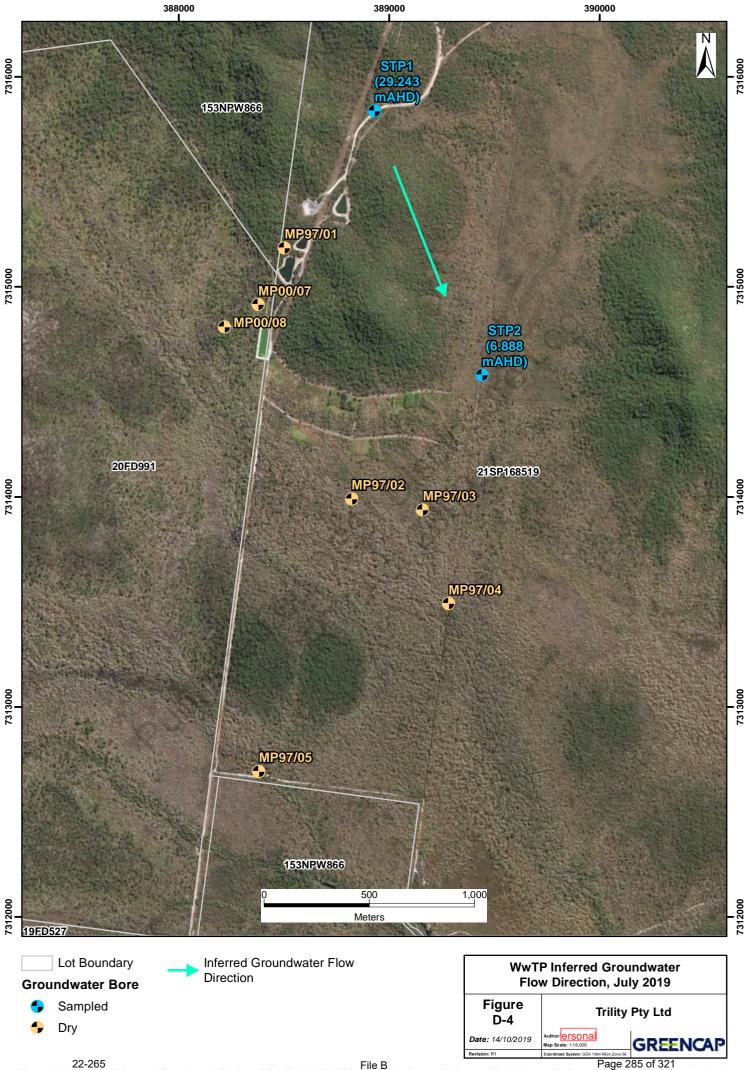
sterU163599-01_Sept_2019_QR\mxd\FIG_6_3_IWTP_GW_Level_09_2019_191014.mxd

7320900

GREENCAP

Page 284 of 321

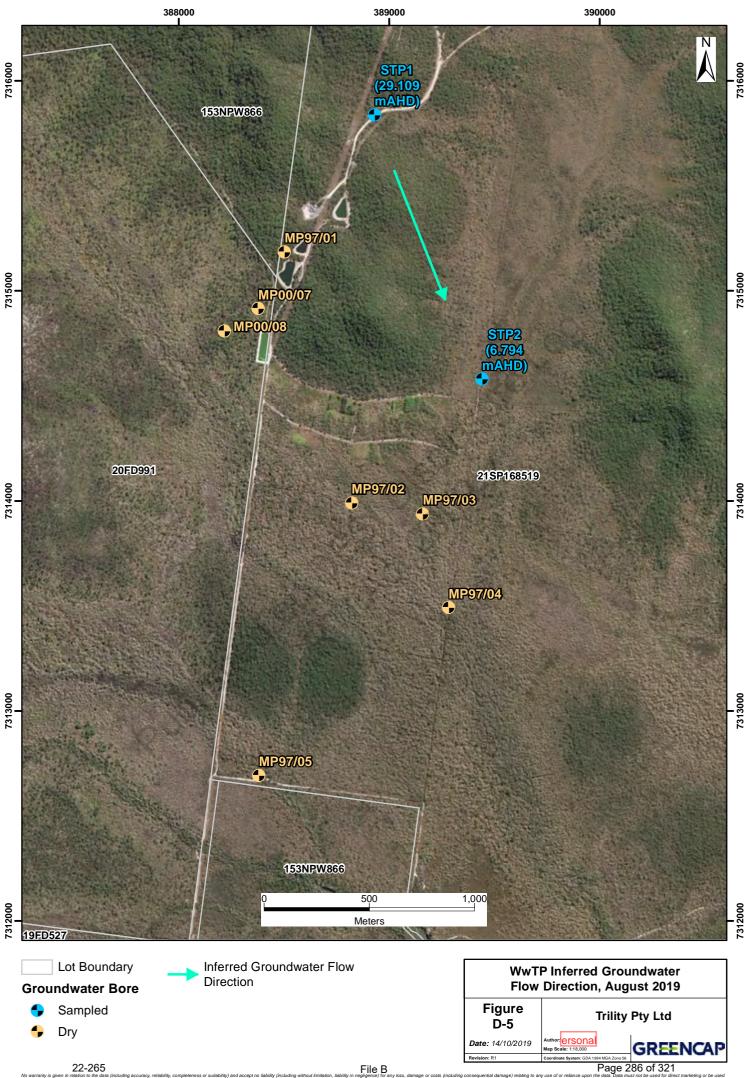
7321000



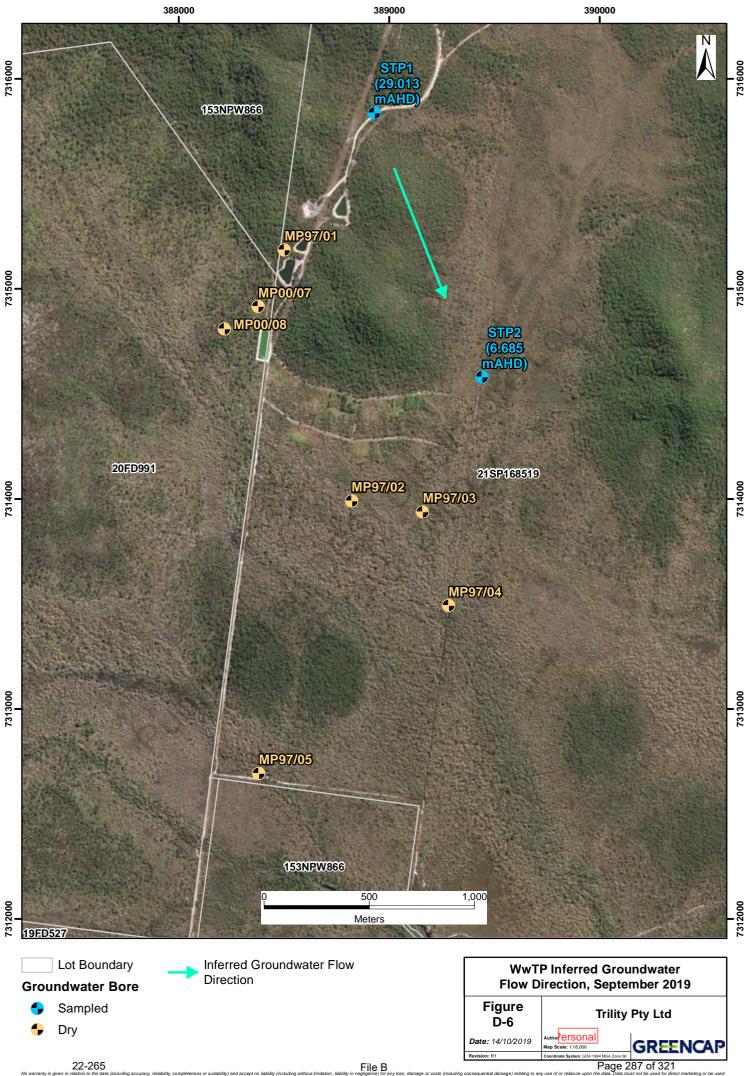
No w in bre R:_F

Page 285 of 321

File B



Page 286 of 321



No w in bre R:_F

Page 287 of 321



Page 288 of 321

GREENCAP

7321000

7320900

ary: 343_Trility Pty LtdIGIS\Agnes WaterU163599-02_Dec_2019_QR\mxdlFIG_6_1_IWTP_GW_Level_10_2019_200115.mxd

22-265



File B

ss or suitability) and accept no liability (including w nes Water\J163599-02_Dec_2019_QR\mxd\FlG_6_2_IWTP_GW_Level_11_2019_200115.mxd Date: 15/01/2020

390000

22-265

ry: 143_Trillity Pty Ltd\GIS\Agr

7320900

GREENCAP

Page 289 of 321

7321000



File B

ss or suitability) and accept no liability (including wit

ry: H3_Trillity Pty Ltd\GIS\Agnes Water\J163599-02_Dec_2019_QR\mxd\FIG_6_3_IWTP_GW_Level_12_2019_200115.mxd

390000

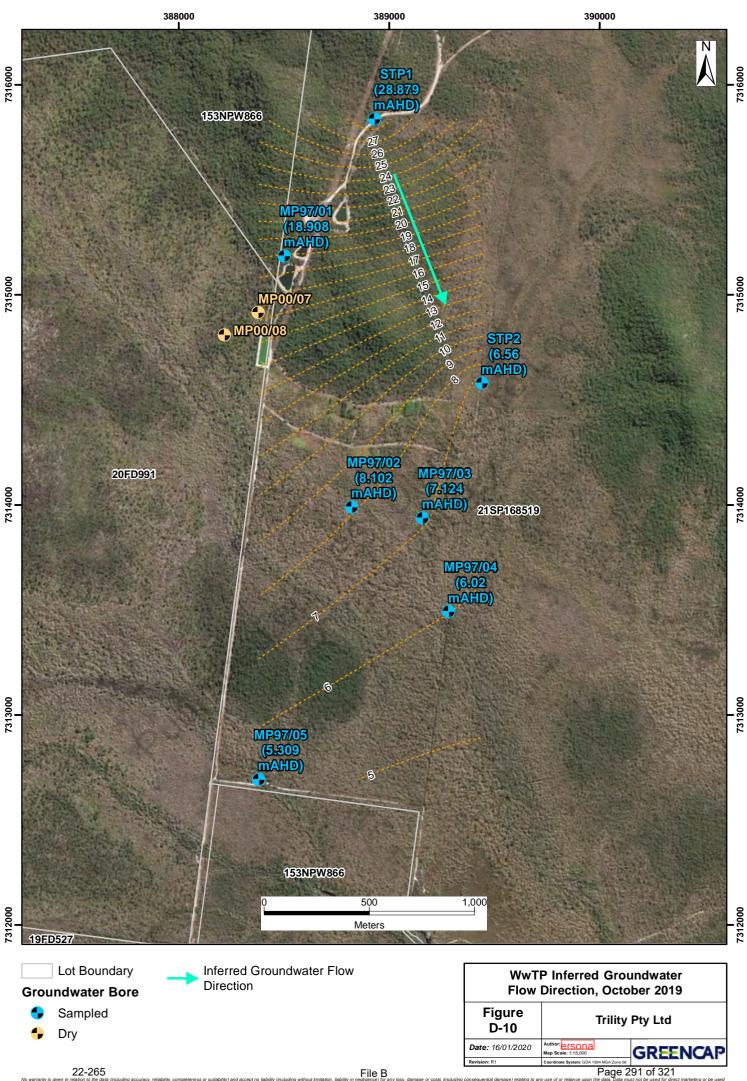
22-265

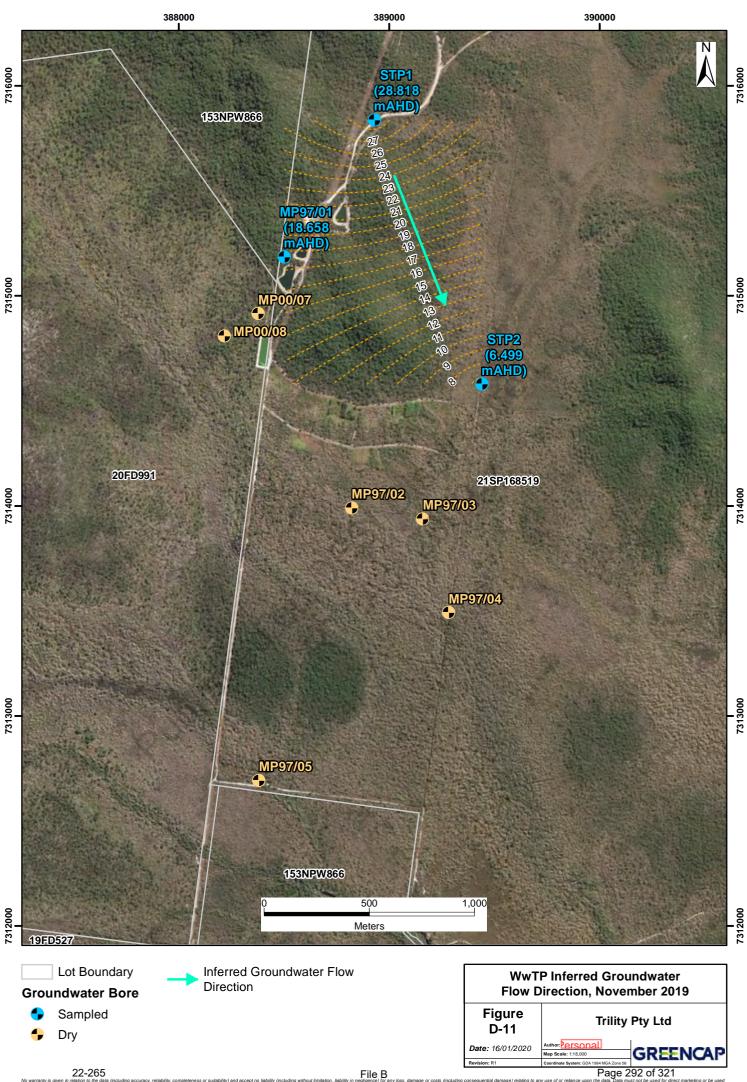
7320900

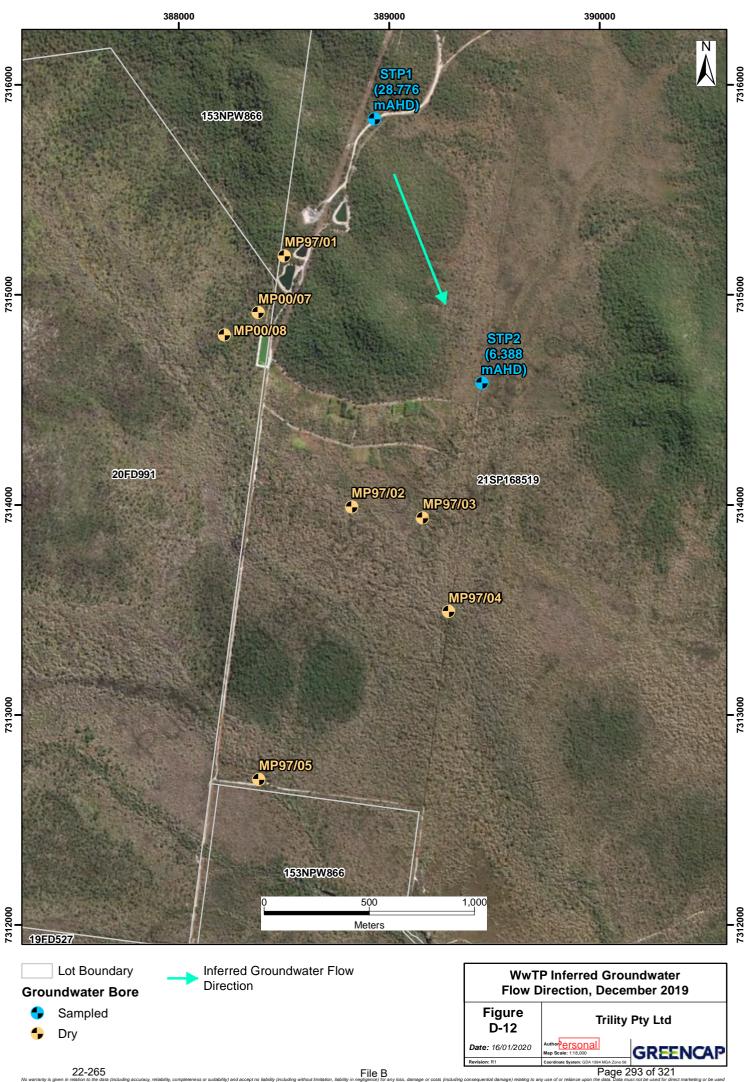
GREENCAP

Page 290 of 321

7321000









390000

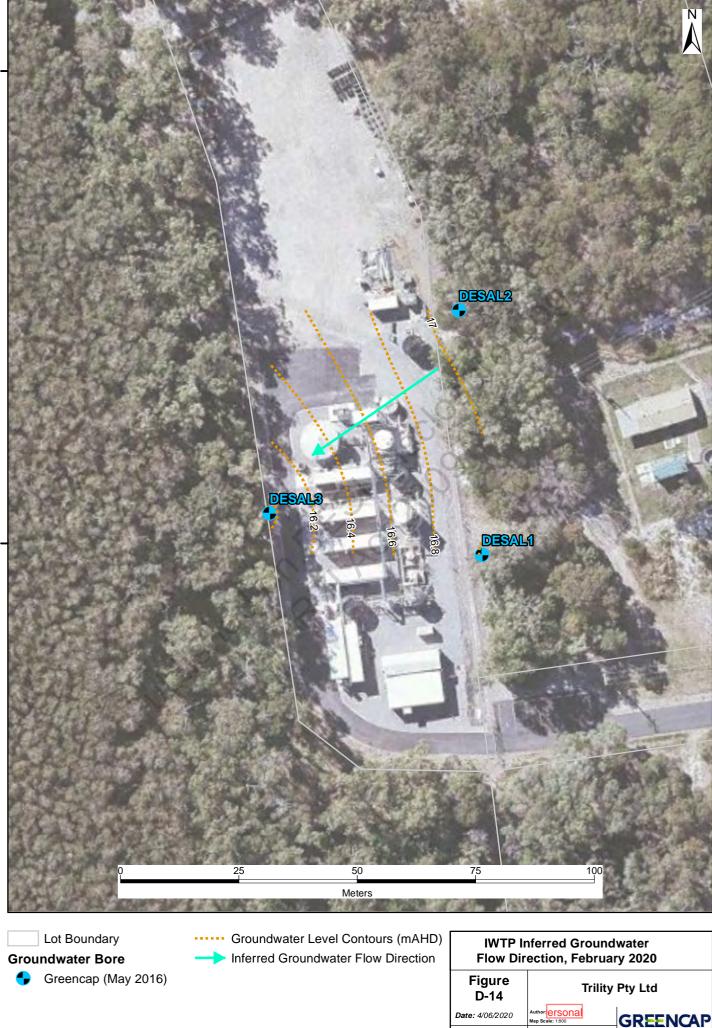
7320900

7321000

Page 294 of 321

a1 - Agnes WaterU163599-03_Apr_2020_QR\mxdlFlG_6_1_IWTP_GW_Level_01_2020_200604.mxd

22-265



390000

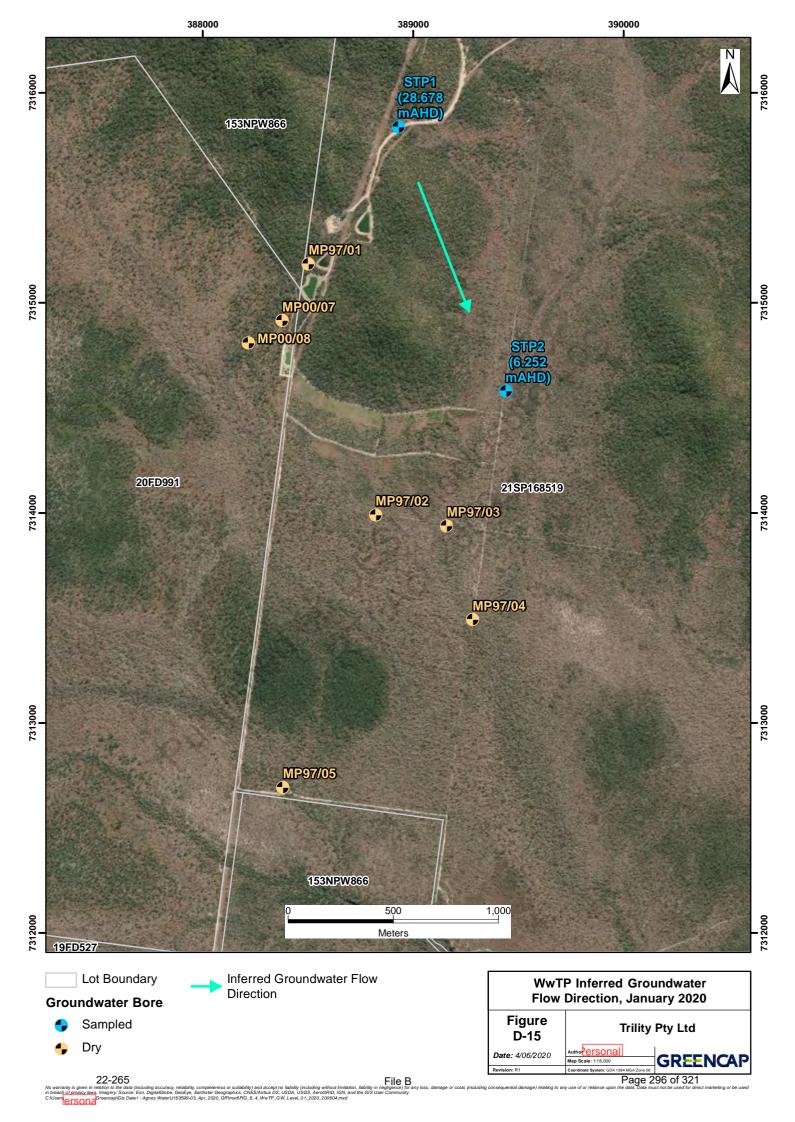
7320900

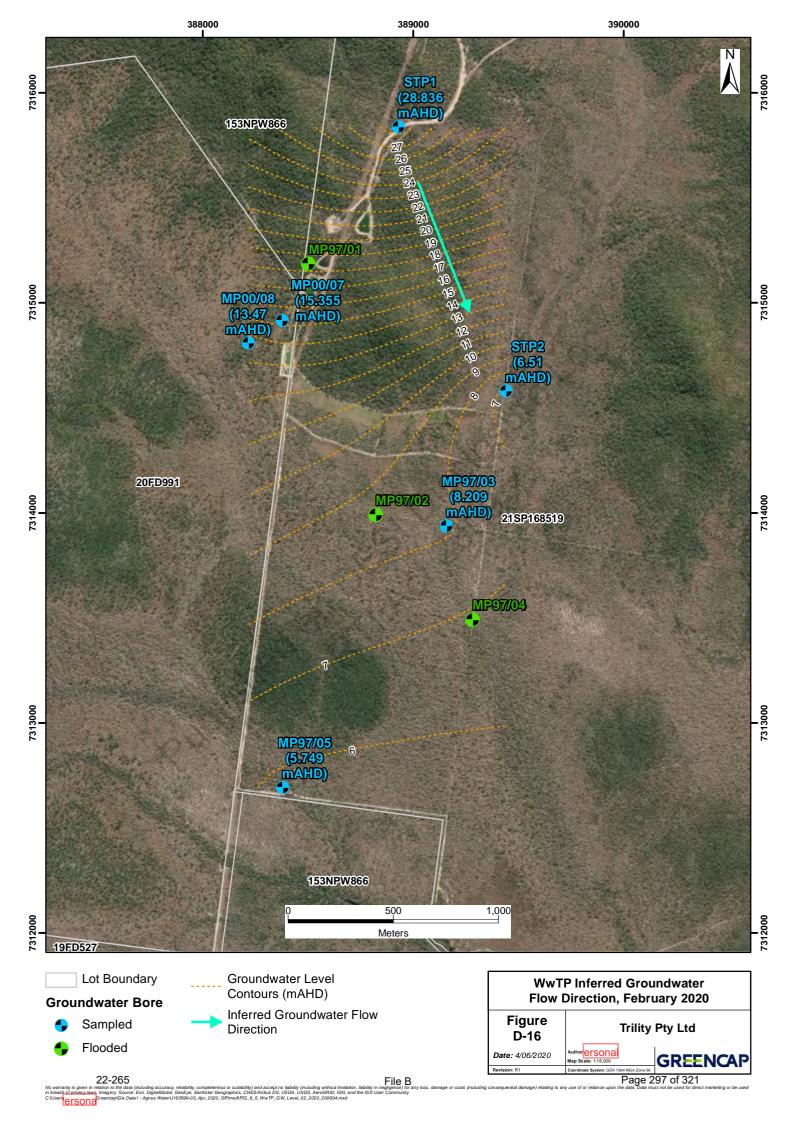
ven in relation to the data (including accuracy, reliability, completeness or suitability) and accept no liability (including without limita accuracy imaginy. On the superscription Data 1 - Agnes Water/163599-03. Apr. 2020, OR/mxdTHG_6.2, JWTP_GW_Level, 02, 2020, 200604.mxd

22-265

Page 295 of 321

or reliance upon the data. Data must not be used for di







-105Ure 109

Level 8 / 133 Mary Street Brisbane QLD 4000 Australia

JUNE 2020 ANNUAL REPORT Trility Pty Ltd

Integrated Water Treatment Plant and Wastewater Treatment

Plant, Agnes Water

Appendix E: Graphs

greencap.com.au

Adelaide | Auckland | Brisbane | Canberra | Darwin | Melbourne | Newcastle | Perth | Sydney | Wollongong

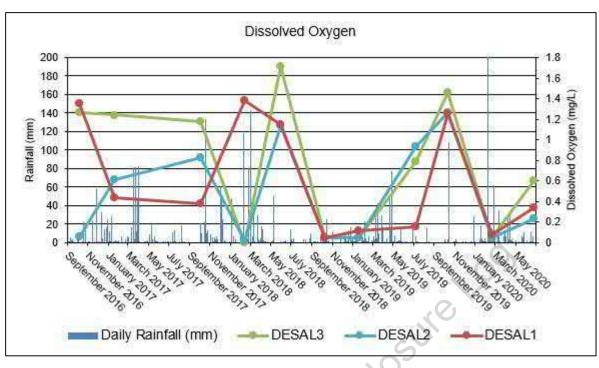


Figure 1 IWTP Dissolved Oxygen, September 2016 – June 2020

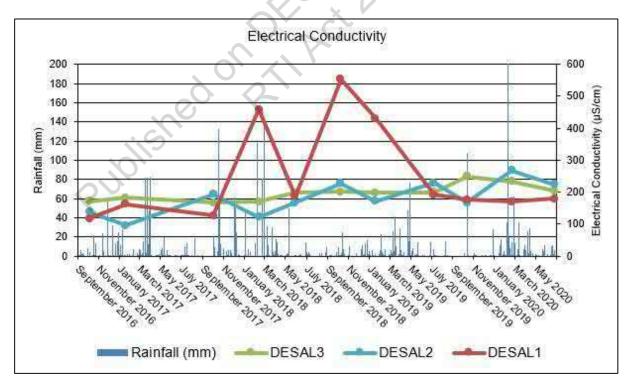


Figure 2 IWTP Electrical Conductivity, September 2016 – June 2020

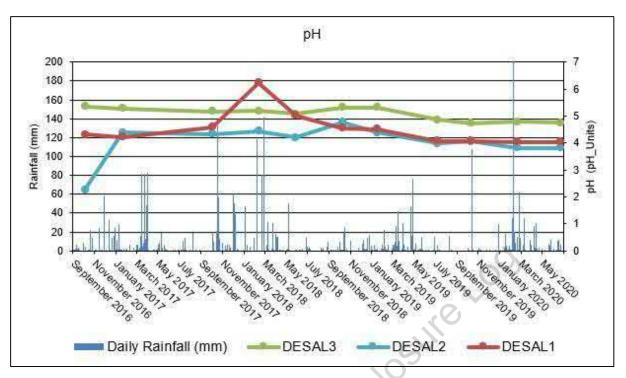


Figure 3 IWTP pH, September 2016 – June 2020

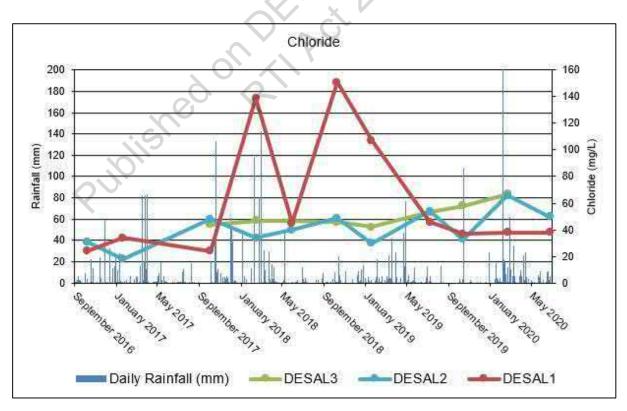
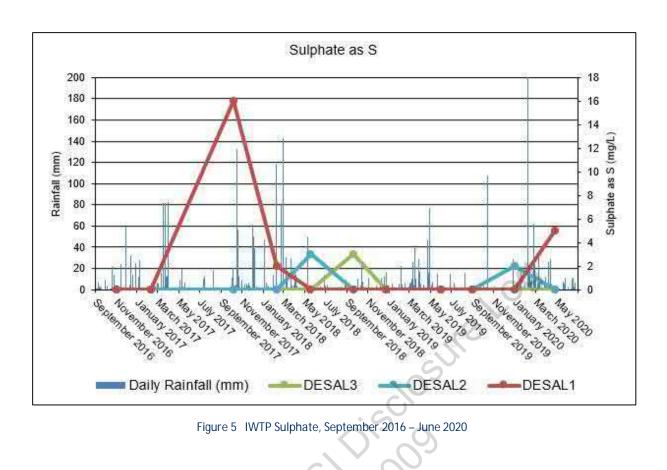


Figure 4 IWTP Chloride, September 2016 – June 2020



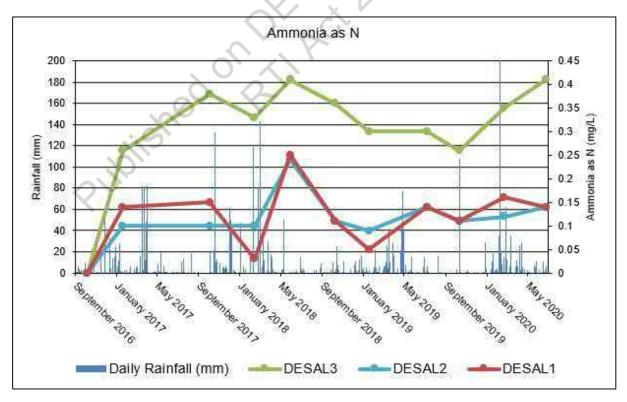


Figure 6 IWTP Ammonia, September 2016 – June 2020

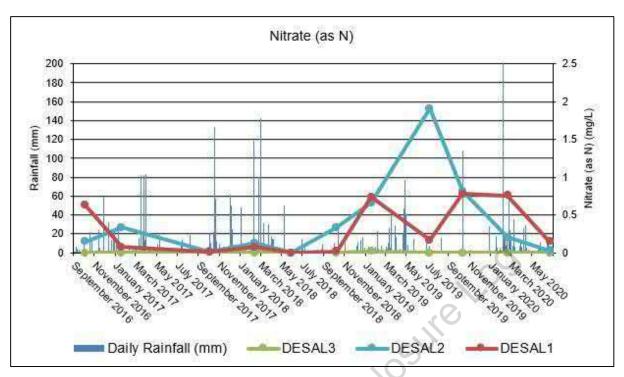


Figure 7 IWTP Nitrate, September 2016 – June 2020

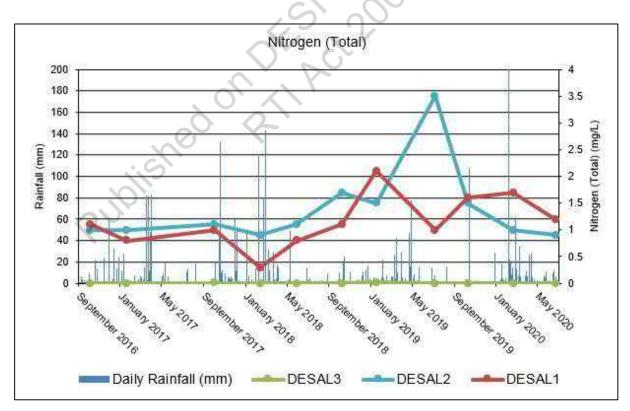


Figure 8 IWTP Total Nitrogen, September 2016 – June 2020

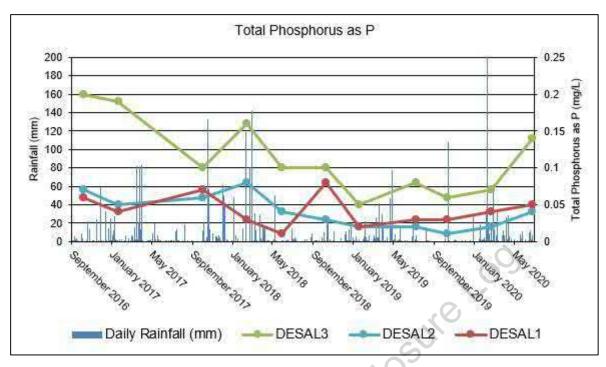


Figure 9 IWTP Total Phosphorus, September 2016 – June 2020

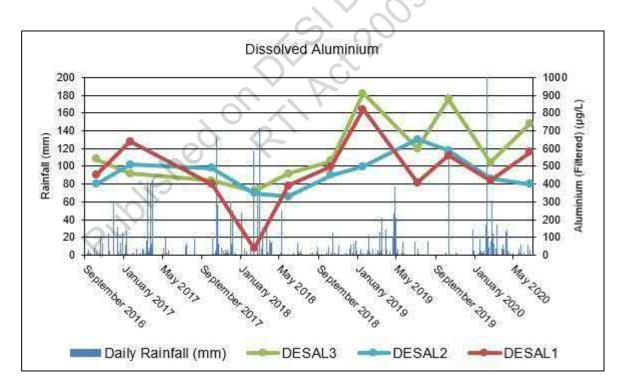


Figure 10 IWTP Dissolved Aluminium, September 2016 – June 2020

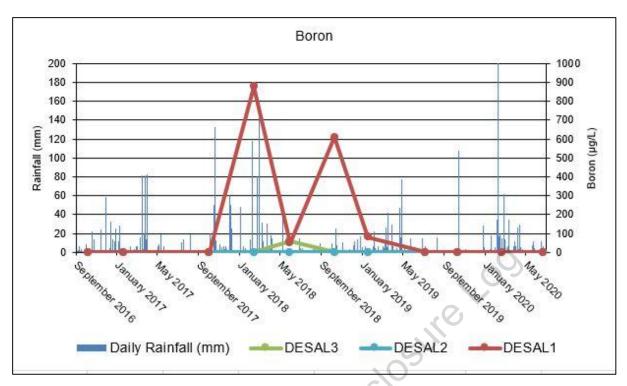


Figure 11 IWTP Total Boron, September 2016 – June 2020

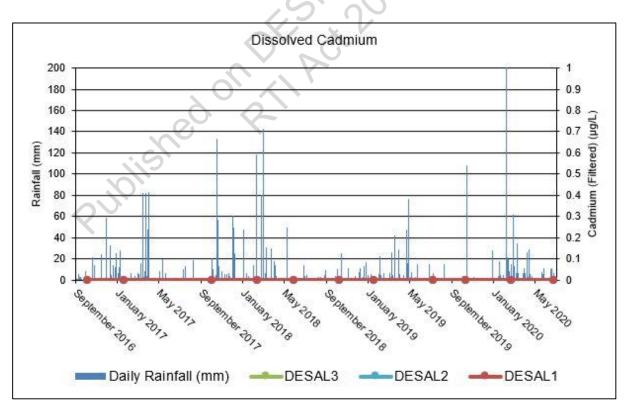


Figure 12 IWTP Dissolved Cadmium, September 2016 – June 2020

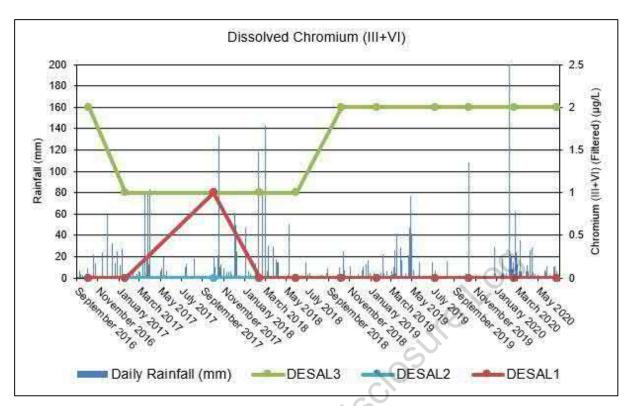


Figure 13 IWTP Dissolved Chromium, September 2016 – June 2019

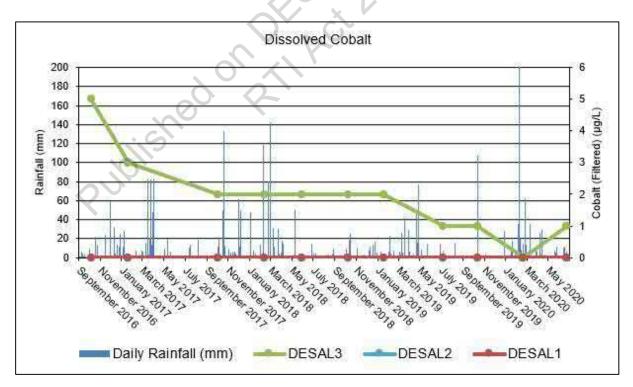


Figure 14 IWTP Dissolved Cobalt, September 2016 – June 2020

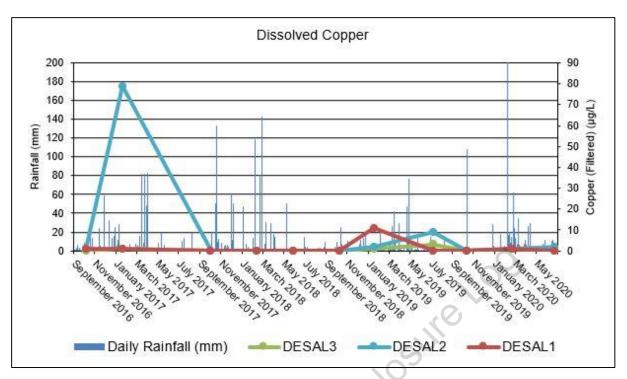


Figure 15 IWTP Dissolved Copper, September 2016 – June 2020

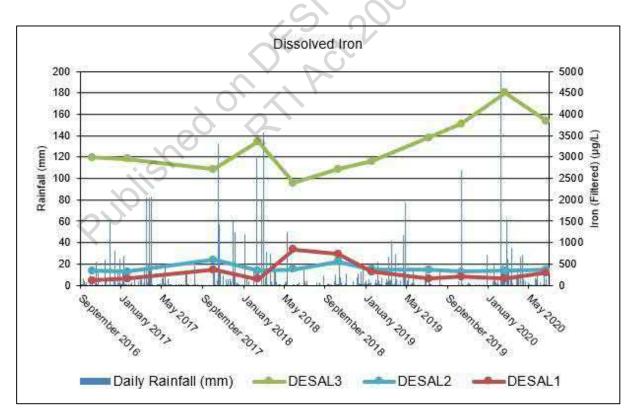


Figure 16 IWTP Dissolved Iron, September 2016 – June 2020

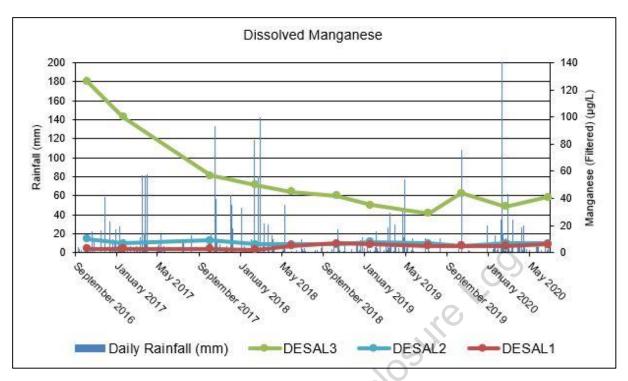


Figure 17 IWTP Dissolved Manganese, September 2016 – June 2020

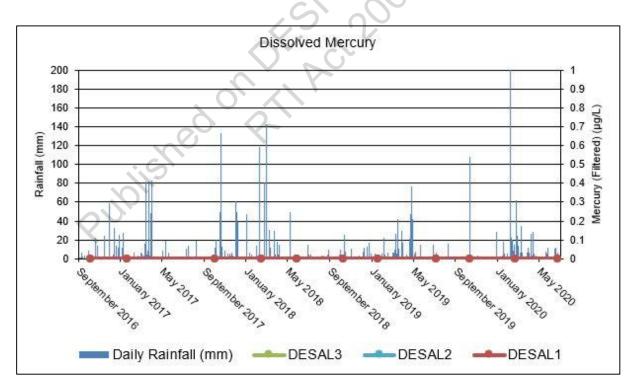


Figure 18 IWTP Dissolved Mercury, September 2016 – June 2020

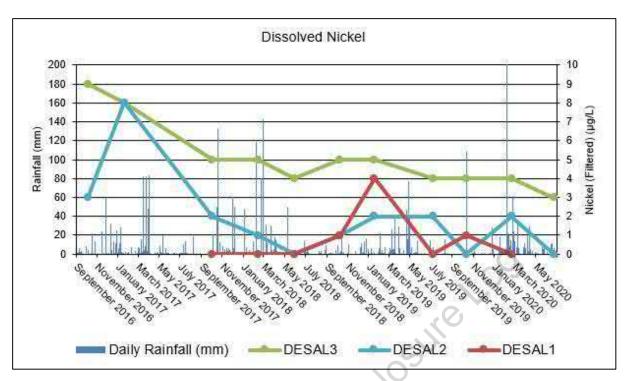


Figure 19 IWTP Dissolved Nickel, September 2016 – June 2020

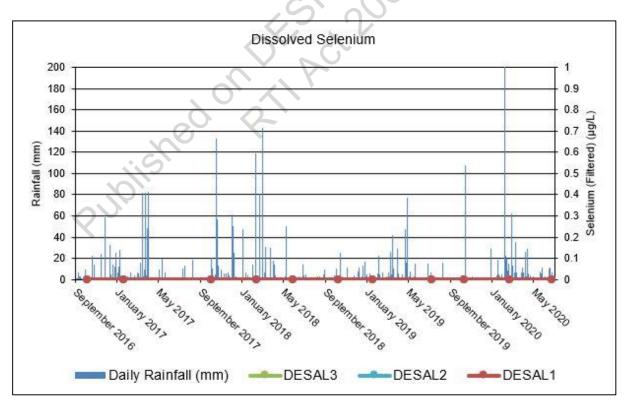


Figure 20 IWTP Dissolved Selenium, September 2016 – June 2020

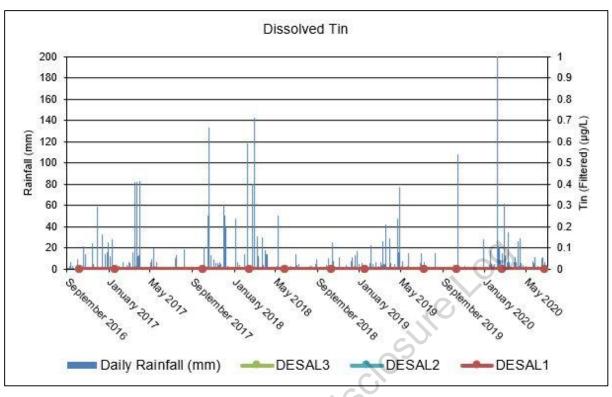


Figure 21 IWTP Dissolved Tin, September 2016 – June 2020

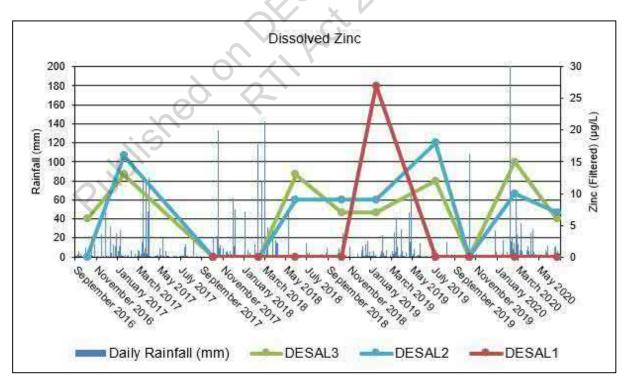


Figure 22 IWTP Dissolved Zinc, September 2016 – June 2020

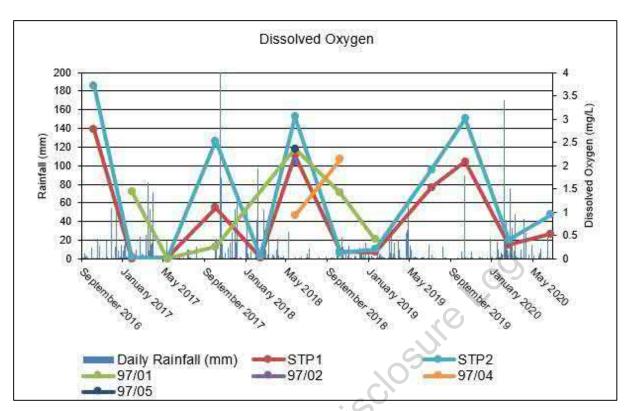


Figure 23 WwTP Dissolved Oxygen, September 2016 – June 2020

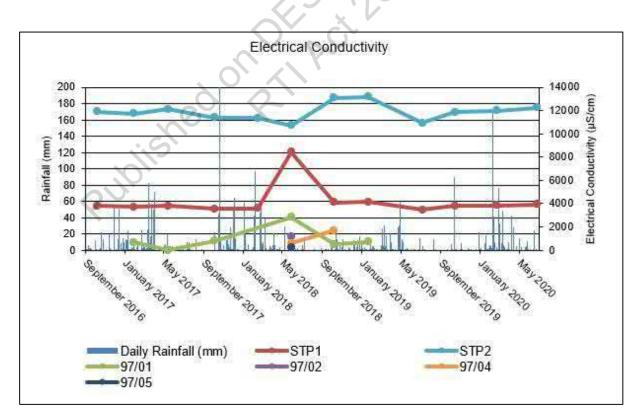


Figure 24 WwTP Electrical Conductivity, September 2016 – June 2020

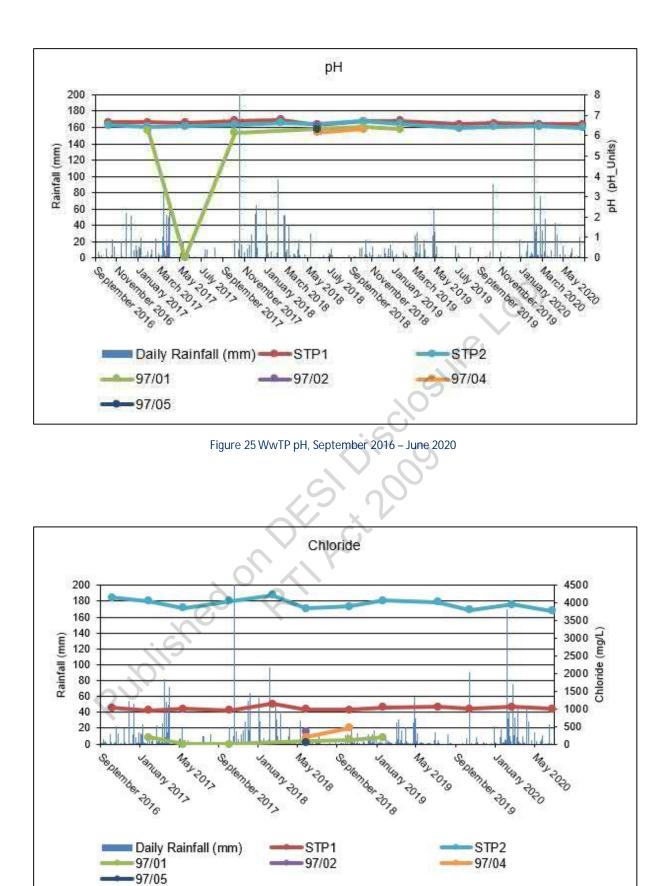


Figure 26 WwTP Chloride, September 2016 – June 2020

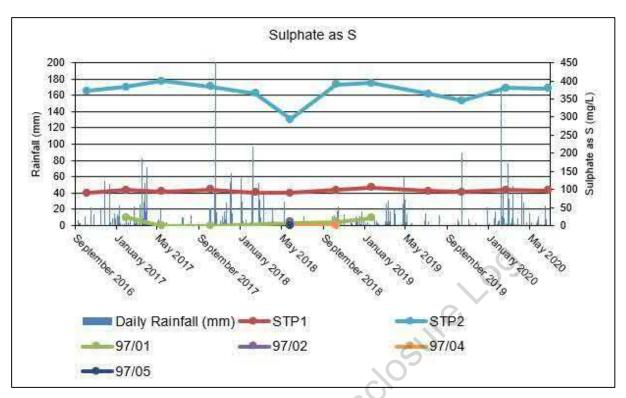


Figure 27 WwTP Sulphate, September 2016 – June 2020

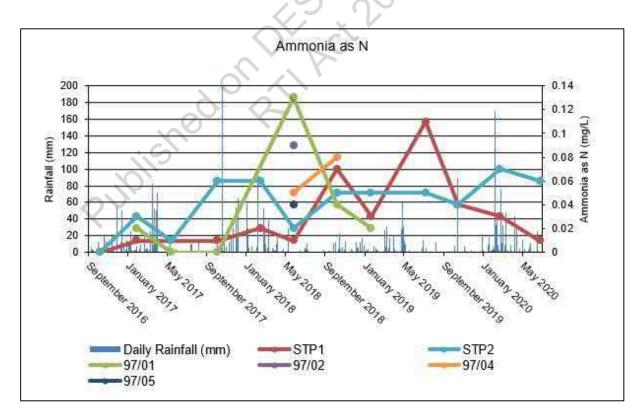


Figure 28 WwTP Ammonia, September 2016 – June 2020

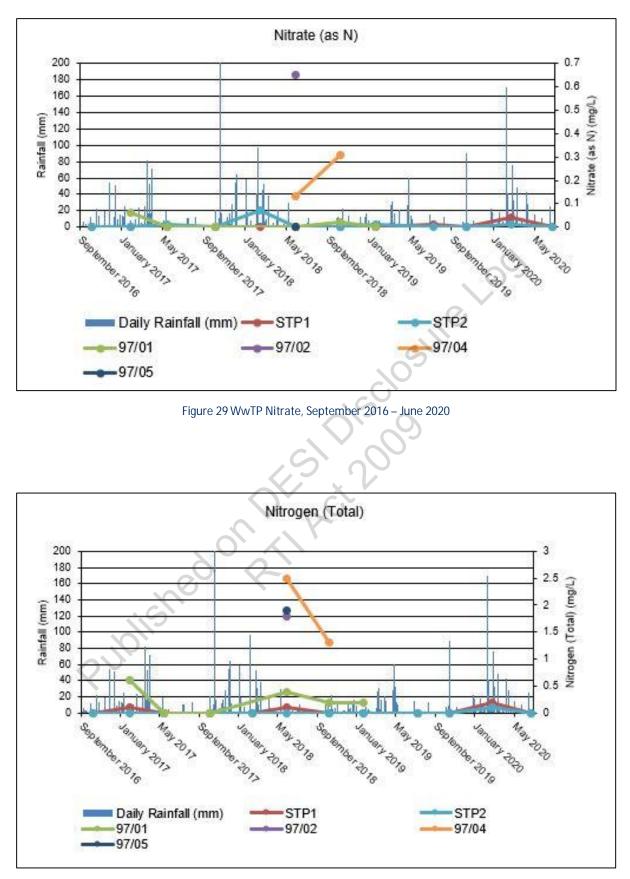


Figure 30 WwTP Total Nitrogen, September 2016 – June 2020

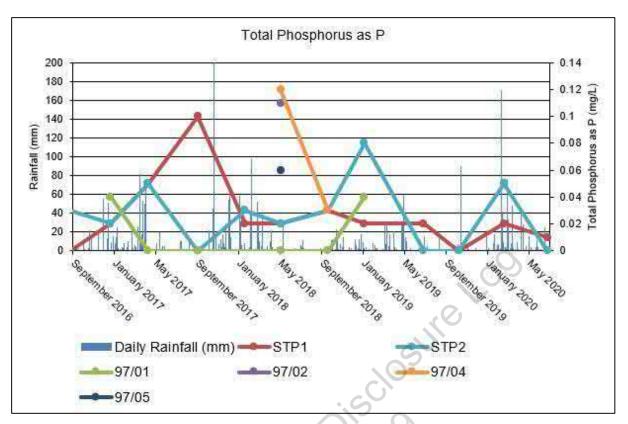


Figure 31 WwTP Total Phosphorus, September 2016 – June 2020

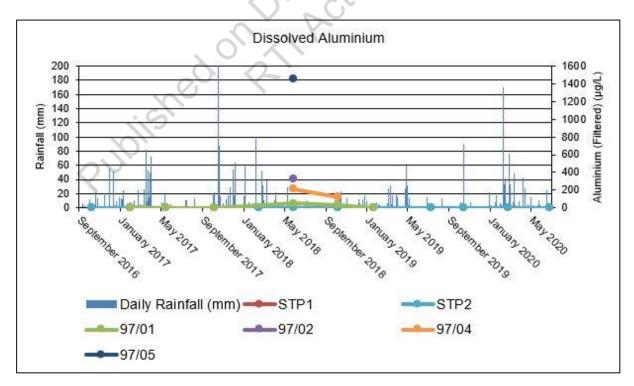


Figure 32 WwTP Dissolved Aluminium, September 2016 – June 2020

22-265

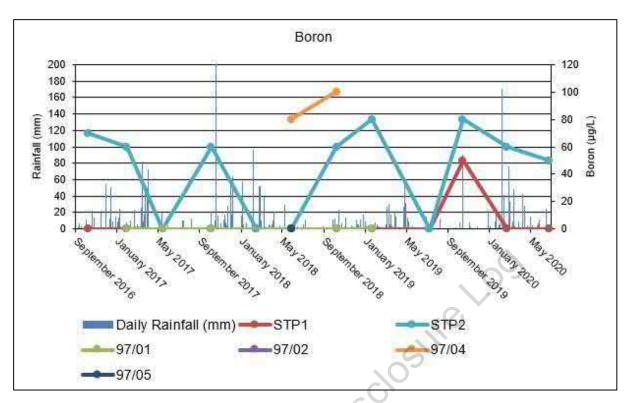


Figure 33 WwTP Total Boron, September 2016 – June 2020

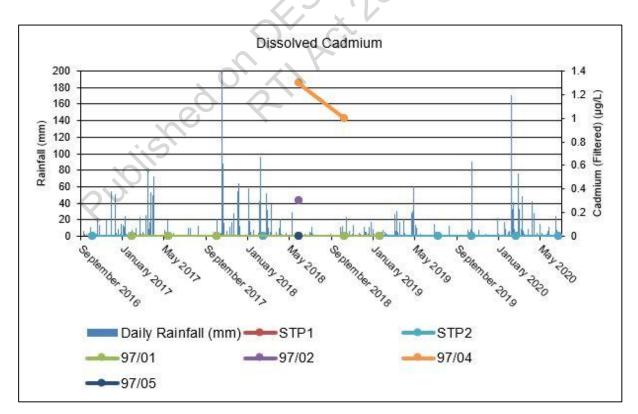


Figure 34 WwTP Dissolved Cadmium, September 2016 – June 2020

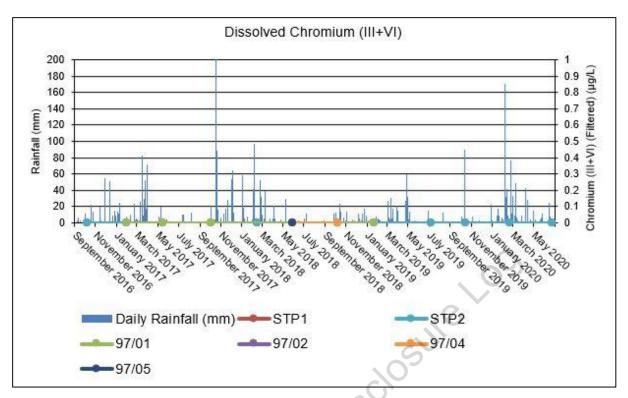


Figure 35 WwTP Dissolved Chromium, September 2016 – June 2020

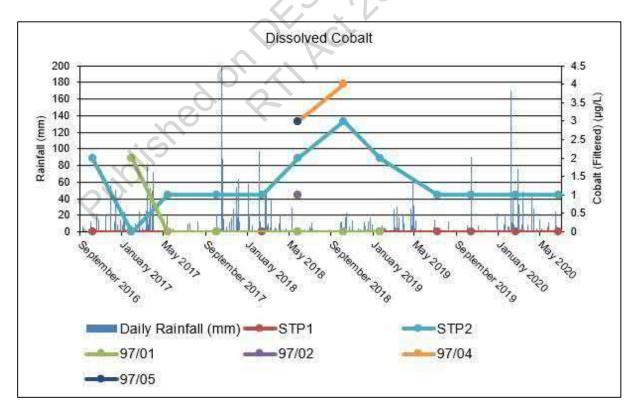


Figure 36 WwTP Dissolved Cobalt, September 2016 – June 2020

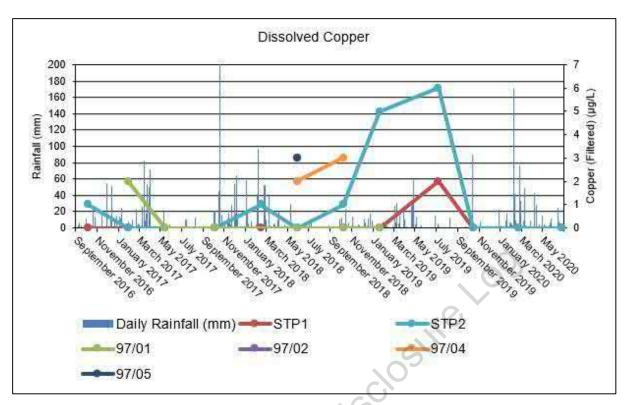


Figure 37 WwTP Dissolved Copper, September 2016 – June 2020

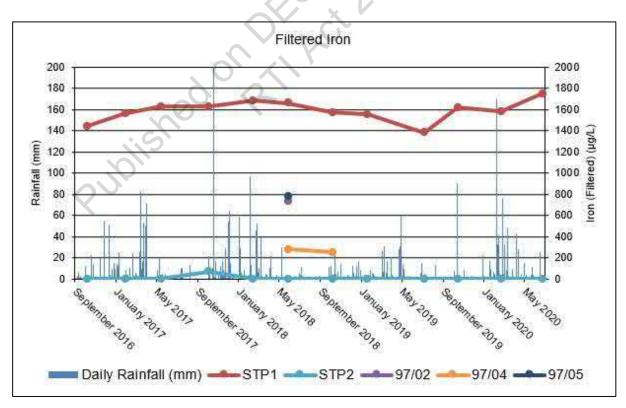


Figure 38 WwTP Filtered Iron, September 2016 – June 2020

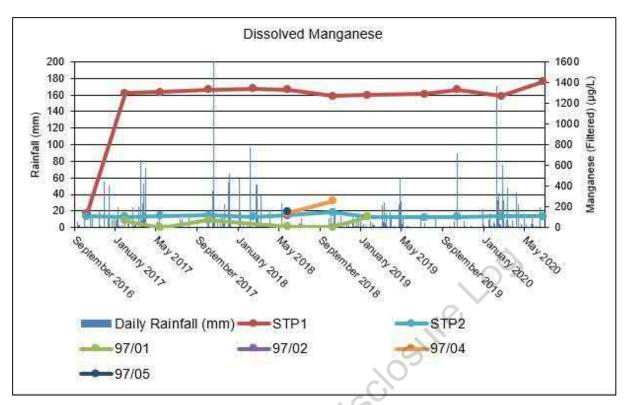


Figure 39 WwTP Dissolved Manganese, September 2016 – June 2020

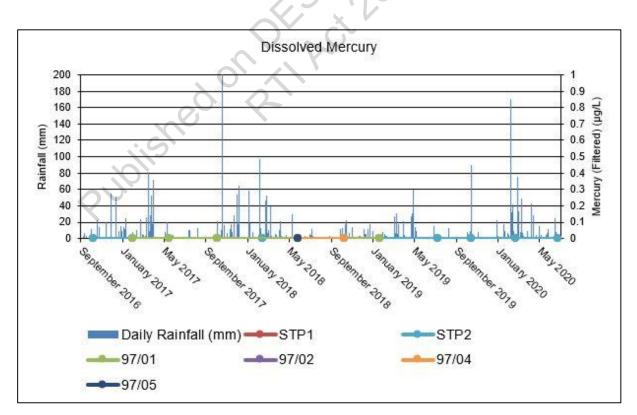


Figure 40 WwTP, Dissolved Mercury, September 2016 – June 2020

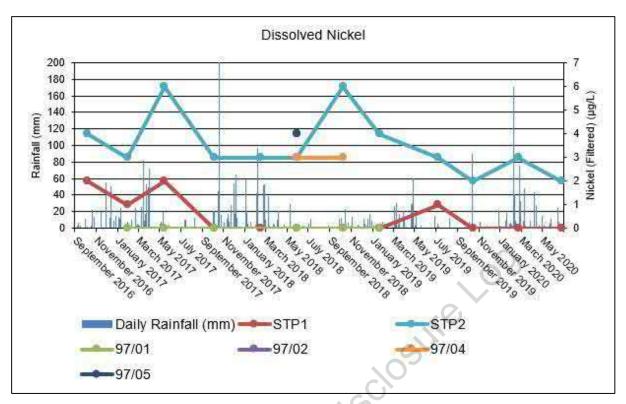


Figure 41 WwTP Dissolved Nickel, September 2016 – June 2020

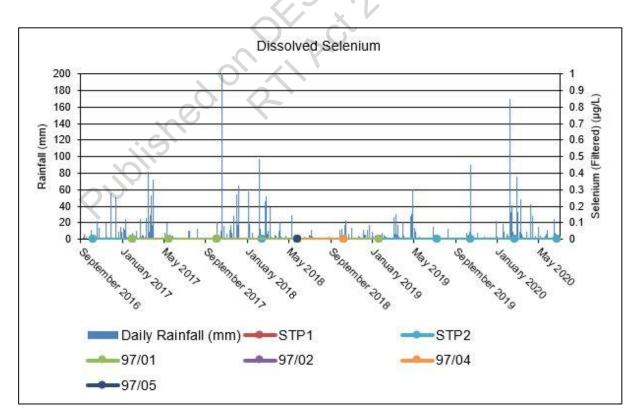


Figure 42 WwTP Dissolved Selenium, September 2016 – June 2020

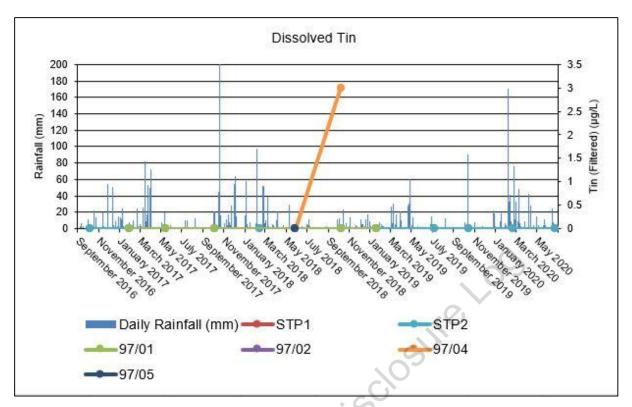


Figure 43 WwTP Dissolved Tin, September 2016 – June 2020

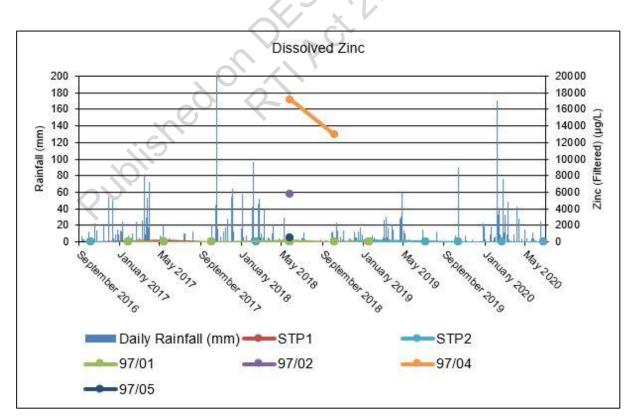


Figure 44 WwTP Dissolved Zinc, September 2016 – June 2020

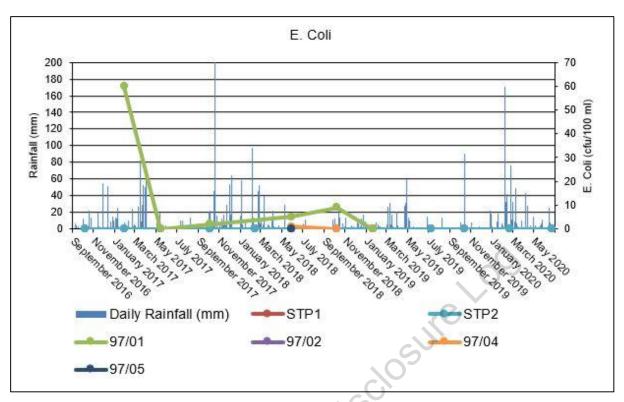


Figure 45 WwTP E.Coli, September 2016 – June 2020

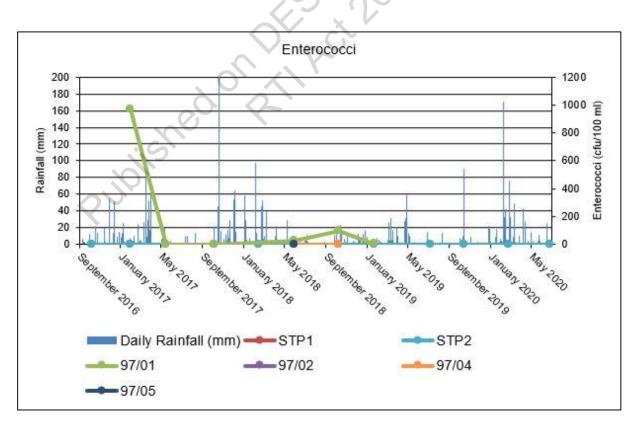


Figure 46 WwTP Enterococci, September 2016 – June 2020