

St Marys Water Quality Monitoring Report



Licensee: Sydney Water Corporation
PO Box 399
Parramatta NSW 2124

St Marys Water Resource Recovery Facility EPL1729 August - September 2024

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Site	Description	Frequency	Latitude	Longitude
SMPREFF	Combined St Marys and Penrith effluent channel	Every 3 weeks	-33.7350	150.7680
NS242	Unnamed Creek upstream of St Marys WRRF	Every 3 weeks	-33.7385	150.7736
NS241	Unnamed Creek downstream of St Marys WRRF	Every 3 weeks	-33.7285	150.7663
NS26	South Creek upstream of confluence with Unnamed Creek	Every 3 weeks	-33.7415	150.7572
NS23A	South Creek downstream of confluence with Unnamed Creek	Every 3 weeks	-33.7197	150.7640

SMPREFF

Combined St Marys and Penrith effluent channel

Analyte	Units	Count	Min	Median	Average	Max
Conductivity	us/cm	3	1001	1006	1029.7	1082
Dissolved Oxygen	mg/L	3	7.7	9	8.7	9.4
Percent Dissolved Oxygen	%sat	3	98.9	99.4	99.2	99.4
Temperature	Deg C	3	19.1	20.2	20.2	21.4
pH	pH units	3	7.18	7.23	7.25	7.35
Turbidity	NTU	3	0.5	0.6	0.6	0.7
Total Suspended Solids	mg/L	3	<2	<2	<2	<2
DOC	mg/L	3	9.2	9.8	9.8	10.3
Chlorophyll - a	mg/m3	3	0.5	1.2	1	1.4
Ammonia NH3-N	mg/L	3	0.03	0.04	0.04	0.06
Oxidised Nitrogen	mg/L	3	4	4.26	4.48	5.19
Soluble Reactive Phosphorus	mg/L	3	0.005	0.011	0.011	0.017
Total Nitrogen	mg/L	3	4.96	5.5	5.56	6.21
Total Phosphorus	mg/L	3	0.042	0.044	0.049	0.06
Filterable Aluminium	ug/L	3	42	46	45.3	48
Filterable Cobalt	ug/L	3	0.6	0.6	0.7	0.8
Filterable Copper	ug/L	3	6.9	7.3	8.1	9.99
Filterable Iron	ug/L	3	61	69	73.7	91
Filterable Nickel	ug/L	3	2.9	3.5	3.5	4
Filterable Zinc	ug/L	3	26	29	28.7	31
Total Aluminium	ug/L	3	81	92	89	94
Total Cobalt	ug/L	3	0.6	0.7	0.7	0.8
Total Copper	ug/L	3	7.5	7.5	8.3	9.99
Total Iron	ug/L	3	78	82	92.3	117
Total Nickel	ug/L	3	3	3.5	3.5	4
Total Zinc	ug/L	3	27	30	29.3	31

NS242

Unnamed Creek upstream of St Marys WRRF

Analyte	Units	Count	Min	Median	Average	Max
Conductivity	us/cm	3	1480	1772	1713.7	1889
Dissolved Oxygen	mg/L	2	3.9	3.95	4	4
Percent Dissolved Oxygen	%sat	2	35.4	37.7	37.7	40
Temperature	Deg C	3	12	14.4	14.2	16.2
pH	pH units	3	7.46	7.6	7.59	7.71
Turbidity	NTU	3	3.8	5.5	5.9	8.4
Total Suspended Solids	mg/L	3	5	9	26	64
DOC	mg/L	3	6.9	8.8	8.4	9.4
Chlorophyll - a	mg/m3	3	1.9	3	17.9	48.7
Ammonia NH3-N	mg/L	3	24.4	37.6	39.7	57.1
Oxidised Nitrogen	mg/L	3	0.33	0.35	0.35	0.36
Soluble Reactive Phosphorus	mg/L	3	0.058	0.135	0.127	0.188
Total Nitrogen	mg/L	3	24.7	37.9	40.13	57.8
Total Phosphorus	mg/L	3	0.237	0.391	0.398	0.565
Filterable Aluminium	ug/L	3	<5	<5	<5	7
Filterable Cobalt	ug/L	3	0.4	0.5	0.5	0.5
Filterable Copper	ug/L	3	<0.5	<0.5	<0.5	<0.5
Filterable Iron	ug/L	3	47	147	146	244
Filterable Nickel	ug/L	3	0.6	0.7	0.7	0.9
Filterable Zinc	ug/L	3	8	9	10	13
Total Aluminium	ug/L	3	24	82	117.7	247
Total Cobalt	ug/L	3	0.5	0.6	0.7	0.9
Total Copper	ug/L	3	0.7	1.6	1.9	3.3
Total Iron	ug/L	3	765	1080	1201.7	1760
Total Nickel	ug/L	3	0.8	1.1	1.1	1.4
Total Zinc	ug/L	3	12	30	32.7	56

NS241

Unnamed Creek downstream of St Marys WRRF

Analyte	Units	Count	Min	Median	Average	Max
Conductivity	us/cm	3	1002	1021	1041.3	1101
Dissolved Oxygen	mg/L	3	8.1	8.9	8.7	9.1
Percent Dissolved Oxygen	%sat	3	95.3	96.2	97.5	101
Temperature	Deg C	3	18.9	21	20.4	21.2
pH	pH units	3	7.39	7.41	7.42	7.47
Turbidity	NTU	3	0.9	0.9	1	1.3
Total Suspended Solids	mg/L	3	<2	<2	<2	<2
DOC	mg/L	3	9.5	11.1	13.8	20.7
Chlorophyll - a	mg/m3	3	0.5	0.6	0.6	0.8
Ammonia NH3-N	mg/L	3	0.02	0.02	0.02	0.03
Oxidised Nitrogen	mg/L	3	4.03	4.31	4.57	5.37
Soluble Reactive Phosphorus	mg/L	3	0.007	0.013	0.012	0.015
Total Nitrogen	mg/L	3	4.92	5.13	5.37	6.07
Total Phosphorus	mg/L	3	0.034	0.045	0.042	0.046
Filterable Aluminium	ug/L	3	39	41	41	43
Filterable Cobalt	ug/L	3	0.5	0.5	0.6	0.7
Filterable Copper	ug/L	3	7	7.3	8	9.6
Filterable Iron	ug/L	3	68	73	71.7	74
Filterable Nickel	ug/L	3	3.1	3.3	4.3	6.4
Filterable Zinc	ug/L	3	25	25	25.3	26
Total Aluminium	ug/L	3	60	62	61.7	63
Total Cobalt	ug/L	3	0.5	0.6	0.6	0.8
Total Copper	ug/L	3	7.3	9.8	10	12.9
Total Iron	ug/L	3	91	92	105.3	133
Total Nickel	ug/L	3	3.1	3.3	4.4	6.7
Total Zinc	ug/L	3	25	25	26	28

NS26

South Creek upstream of confluence with Unnamed Creek



Analyte	Units	Count	Min	Median	Average	Max
Conductivity	us/cm	3	1428	1985	1821	2050
Dissolved Oxygen	mg/L	3	8.2	9.2	9.2	10.3
Percent Dissolved Oxygen	%sat	3	85.5	94.1	92.1	96.7
Temperature	Deg C	3	12	16.5	15.1	16.9
pH	pH units	3	7.63	7.64	7.69	7.79
Turbidity	NTU	3	20	24	25.3	32
Total Suspended Solids	mg/L	3	13	30	26.3	36
DOC	mg/L	3	8.9	10.7	10.2	11
Chlorophyll - a	mg/m3	3	32.1	47.5	63.1	109.6
Ammonia NH3-N	mg/L	3	<0.01	<0.01	<0.01	<0.01
Oxidised Nitrogen	mg/L	3	<0.01	0.13	0.28	0.72
Soluble Reactive Phosphorus	mg/L	3	0.003	0.004	0.005	0.007
Total Nitrogen	mg/L	3	1.03	1.24	1.33	1.73
Total Phosphorus	mg/L	3	0.073	0.092	0.095	0.119
Filterable Aluminium	ug/L	3	<5	<5	<5	5
Filterable Cobalt	ug/L	3	0.5	0.8	0.7	0.9
Filterable Copper	ug/L	3	1.6	2.5	2.4	3
Filterable Iron	ug/L	3	22	26	25.3	28
Filterable Nickel	ug/L	3	1.6	1.7	1.7	1.9
Filterable Zinc	ug/L	3	3	4	3.7	4
Total Aluminium	ug/L	3	206	266	295.3	414
Total Cobalt	ug/L	3	0.9	1	1	1.1
Total Copper	ug/L	3	2.4	3.1	2.9	3.3
Total Iron	ug/L	3	594	602	765.3	1100
Total Nickel	ug/L	3	1.9	2	2	2.2
Total Zinc	ug/L	3	7	8	8.7	11

NS23A

South Creek downstream of confluence with Unnamed Creek

Analyte	Units	Count	Min	Median	Average	Max
Conductivity	us/cm	3	1085	1137	1159.7	1257
Dissolved Oxygen	mg/L	3	8.4	8.9	9	9.7
Percent Dissolved Oxygen	%sat	3	90.6	93.6	94.3	98.6
Temperature	Deg C	3	14.5	19	18	20.4
pH	pH units	3	7.52	7.59	7.58	7.63
Turbidity	NTU	3	6.4	6.8	9.1	14
Total Suspended Solids	mg/L	3	5	6	7.3	11
DOC	mg/L	3	9.4	9.6	10.2	11.5
Chlorophyll - a	mg/m3	3	7	9.1	15.8	31.3
Ammonia NH3-N	mg/L	3	0.01	0.03	0.03	0.04
Oxidised Nitrogen	mg/L	3	2.39	3.54	3.35	4.12
Soluble Reactive Phosphorus	mg/L	3	0.004	0.017	0.013	0.017
Total Nitrogen	mg/L	3	3.31	4.57	4.29	5
Total Phosphorus	mg/L	3	0.06	0.062	0.062	0.064
Filterable Aluminium	ug/L	3	18	32	27.3	32
Filterable Cobalt	ug/L	3	0.5	0.6	0.6	0.6
Filterable Copper	ug/L	3	5.8	6	6.1	6.5
Filterable Iron	ug/L	3	49	64	60	67
Filterable Nickel	ug/L	3	2.4	2.9	2.8	3
Filterable Zinc	ug/L	3	16	22	20.7	24
Total Aluminium	ug/L	3	99	164	164.3	230
Total Cobalt	ug/L	3	0.6	0.6	0.7	0.8
Total Copper	ug/L	3	6.1	6.1	6.3	6.7
Total Iron	ug/L	3	152	248	299.3	498
Total Nickel	ug/L	3	2.4	2.6	2.7	3
Total Zinc	ug/L	3	22	23	23	24