

# Penrith Wastewater Treatment Plant

## 2020-21 Pollution monitoring yearly limit summaries



### EPL 1409

Summary period: 01-07-2020 to 30-06-2021

Date published: 13-08-2021

**Licensee:** Sydney Water Corporation

PO Box 399

PARRAMATTA NSW 2124

| 50 percentile yearly summary    |                 |                                                               |                   |                |                |                     |                     |               |
|---------------------------------|-----------------|---------------------------------------------------------------|-------------------|----------------|----------------|---------------------|---------------------|---------------|
| EPA Point 5<br>Site code PR0005 |                 | Point description: At the outlet of the chlorine contact tank |                   |                |                |                     |                     |               |
| pollutant                       | unit of measure | sampling frequency                                            | number of samples | minimum result | maximum result | 50 percentile limit | 50 percentile value | within limits |
| biochemical oxygen demand       | mg/L            | every 6 days                                                  | 51                | <2             | <2             | 10                  | <2                  | yes           |
| nitrogen (ammonia)              | mg/L            | every 6 days                                                  | 61                | <0.01          | 5.06           | 0.9                 | 0.03                | yes           |
| nitrogen (total)                | mg/L            | every 6 days                                                  | 61                | 2.37           | 7.73           | 10                  | 4.07                | yes           |
| phosphorus (total)              | mg/L            | every 6 days                                                  | 61                | 0.04           | 0.57           | 0.2                 | 0.06                | yes           |
| total suspended solids          | mg/L            | every 6 days                                                  | 61                | <2             | 13             | 5                   | <2                  | yes           |

| 80 percentile yearly summary    |                 |                                                               |                   |                |                |                     |                     |               |
|---------------------------------|-----------------|---------------------------------------------------------------|-------------------|----------------|----------------|---------------------|---------------------|---------------|
| EPA Point 5<br>Site code PR0005 |                 | Point description: At the outlet of the chlorine contact tank |                   |                |                |                     |                     |               |
| pollutant                       | unit of measure | sampling frequency                                            | number of samples | minimum result | maximum result | 80 percentile limit | 80 percentile value | within limits |
| faecal coliforms                | CFU/100mL       | every 6 days                                                  | 61                | <1             | 100            | 200                 | 31                  | yes           |

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#### 90 percentile yearly summary

| EPA Point 5<br>Site code PR0005 |                 | Point description: At the outlet of the chlorine contact tank |                   |                |                |                     |                     |               |
|---------------------------------|-----------------|---------------------------------------------------------------|-------------------|----------------|----------------|---------------------|---------------------|---------------|
| pollutant                       | unit of measure | sampling frequency                                            | number of samples | minimum result | maximum result | 90 percentile limit | 90 percentile value | within limits |
| aluminium                       | ug/L            | monthly                                                       | 12                | 111            | 285            | 270                 | 264                 | yes           |
| arsenic                         | ug/L            | monthly                                                       | 2                 | <0.2           | 0.3            | -                   | 0.3                 | n/a           |
| cadmium                         | ug/L            | monthly                                                       | 12                | <0.1           | 0.2            | 0.2                 | <0.1                | yes           |
| biochemical oxygen demand       | mg/L            | every 6 days                                                  | 51                | <2             | <2             | 15                  | <2                  | yes           |
| cobalt                          | ug/L            | monthly                                                       | 2                 | 0.8            | 0.8            | 2                   | 0.8                 | yes           |
| copper                          | ug/L            | monthly                                                       | 12                | 1.5            | 6.2            | -                   | 4.2                 | n/a           |
| hydrogen sulphide (unionised)   | ug/L            | monthly                                                       | 12                | <30            | <30            | 60                  | <30                 | yes           |
| iron                            | ug/L            | monthly                                                       | 12                | 106            | 159            | 350                 | 140                 | yes           |
| nickel                          | ug/L            | monthly                                                       | 2                 | 1.6            | 2.5            | -                   | 2.5                 | n/a           |
| nitrogen (ammonia)              | mg/L            | every 6 days                                                  | 61                | <0.01          | 5.06           | 1.4                 | 1.03                | yes           |
| nitrogen (total)                | mg/L            | every 6 days                                                  | 61                | 2.37           | 7.73           | 15                  | 4.99                | yes           |
| phosphorus (total)              | mg/L            | every 6 days                                                  | 61                | 0.04           | 0.57           | 0.4                 | 0.08                | yes           |
| total suspended solids          | mg/L            | every 6 days                                                  | 61                | <2             | 13             | 10                  | <2                  | yes           |
| zinc                            | ug/L            | monthly                                                       | 12                | 18             | 30             | 180                 | 26                  | yes           |

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#### Average yearly summary

| EPA Point 5<br>Site code PR0005 |                 | Point description: At the outlet of the chlorine contact tank |                   |                |                |               |               |               |
|---------------------------------|-----------------|---------------------------------------------------------------|-------------------|----------------|----------------|---------------|---------------|---------------|
| pollutant                       | unit of measure | sampling frequency                                            | number of samples | minimum result | maximum result | Average Limit | Average value | within limits |
| aluminium                       | ug/L            | monthly                                                       | 12                | 111            | 285            | 200           | 174           | yes           |
| arsenic                         | ug/L            | monthly                                                       | 2                 | <0.2           | 0.3            | -             | <0.2          | n/a           |
| cadmium                         | ug/L            | monthly                                                       | 12                | <0.1           | 0.2            | 0.2           | <0.1          | yes           |
| cobalt                          | ug/L            | monthly                                                       | 2                 | 0.8            | 0.8            | -             | 0.8           | n/a           |
| copper                          | ug/L            | monthly                                                       | 12                | 1.5            | 6.2            | 8             | 4             | yes           |
| hydrogen sulphide (unionised)   | ug/L            | monthly                                                       | 12                | <30            | <30            | 30            | <30           | yes           |
| iron                            | ug/L            | monthly                                                       | 12                | 106            | 159            | 330           | 121           | yes           |
| nickel                          | ug/L            | monthly                                                       | 2                 | 1.6            | 2.5            | -             | 2             | n/a           |
| zinc                            | ug/L            | monthly                                                       | 12                | 18             | 30             | 60            | 23            | yes           |

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| 90 percentile yearly summary     |                 |                                                                                            |                   |                |                |                     |                     |               |
|----------------------------------|-----------------|--------------------------------------------------------------------------------------------|-------------------|----------------|----------------|---------------------|---------------------|---------------|
| EPA Point 21<br>Site code PR0021 |                 | Point description: Downstream of the St Marys Advanced Water Treatment Plant return stream |                   |                |                |                     |                     |               |
| pollutant                        | unit of measure | sampling frequency                                                                         | number of samples | minimum result | maximum result | 90 percentile limit | 90 percentile value | within limits |
| chlorine (total residual)        | mg/L            | every 6 days                                                                               | 61                | <0.04          | 0.6            | 0.1                 | <0.04               | yes           |

| 50 percentile yearly summary             |                 |                                                                                          |                   |                |                |                     |                     |               |
|------------------------------------------|-----------------|------------------------------------------------------------------------------------------|-------------------|----------------|----------------|---------------------|---------------------|---------------|
| EPA Point 21<br>Site code PR0022         |                 | Point description: Upstream of the St Marys Advanced Water Treatment Plant return stream |                   |                |                |                     |                     |               |
| pollutant                                | unit of measure | sampling frequency                                                                       | number of samples | minimum result | maximum result | 50 percentile limit | 50 percentile value | within limits |
| Ceriodaphnia dubia immobilisation (EC50) | % Effluent/Vol  | monthly                                                                                  | 12                | 8.4            | 100            | 50                  | 100                 | yes           |

Note: Sydney Water commenced monitoring of biochemical oxygen demand from 1st September 2020. Historically, carbonaceous biochemical oxygen demand was monitored.

Effluent quality monitoring results obtained from EPA Points 5, 21 and 22 are used to indicate the quality of water discharged at EPA Point 1 (discharge to waters).