# PHYTOPLANKTON ANALYSIS REPORT



Sydney WATER

| | | | |
|---|---|---|---|
| *Report no:* | *286398* | *Depth :* | **N/A** |
| ***Supercedes Report No:*** | | *Chlorophyll a:* | **NA** |
| | | *Microcystin equivalents:* | **NA** |
| | | *Date analysed:* | **13/06/2023** |
| ***Lims No:*** **L23044639** | ***Date Sampled:*** | **25/05/2023** | *Analyst:* [redacted] |
| **Client ID: 234296** | ***Address:*** | [redacted] | |
| ***Site:*** | | | |

***Client:*** **Department of Planning and Environment**

***Method:*** **MA71CENT**

***Issued By : Sydney Water Laboratory Services***
***Issued On : 17/06/2023***

***Disclaimer: Samples analysed as received.***

## TAXA

| | Cells/ mL | Significance | ASU/ mL | Biovolum mm3/L |
|---|---|---|---|---|
| **Cyanophyta (Blue green)** | | | | |
| *Anagnostidinema* | **40558** | | **1,224.85** | **0.715** |
| *Coccoid Blue Green Picoplankton* | **1410660** | **Filter clogging?** | **2,680.25** | **0.636** |
| *Cuspidothrix issatschenkoi* | **8103** | | **413.25** | **0.439** |
| *Dolichospermum affine* | **2498** | | **101.66** | **0.116** |
| *Dolichospermum cf planctonicum/smithii* | **1734** | **Taste & Odour** | **198.19** | **0.439** |
| *Merismopedia* | **14822** | | **14.82** | **0.124** |
| *Microcystis* | **798** | **Potentially toxic, taste & odour** | **22.42** | **0.022** |
| *Pseudanabaena* | **71973** | | **575.78** | **0.719** |
| *Raphidiopsis* | **1734** | **Potentially toxic** | **104.56** | **0.116** |
| *Raphidiopsis raciborskii* | **5883** | **Potentially toxic, taste & odour** | **222.37** | **0.172** |
| ***Subtotal*** | **1558763** | | **5,558.15** | **3.498** |

| | Cells/ mL | ASU/ mL | Biovolume mm3/L |
|---|---|---|---|
| **Total Blue Green** | **1559000** | **5558.00** | **3.500** |
| *** Potentially Toxic Blue Green** | **6680** | **244.80** | **0.194** |

**Comment:**
**Debris present in the sample.**

*Taxa with potential to produce toxins.
ASU : One ASU (Area Standard Unit) equals 400µm² of algal cells (as cross sectional area)
Biovolume : Biovolume is calculated from cell linear dimensions. Guidelines based on Biovolume.
Coccoid Blue Green Picoplankton: *Aphanocapsa; Aphanothece; Cyanogranis; Cyanonephron; Cyanocatena; Gloeocapsa; Gloeothece ; Cyanodictyon*

**SWC,** [redacted]
**(PO Box 73) West Ryde NSW 2114**

**Phycology**

**Sydney Water Approved Signatory:**

[redacted], Analyst [redacted], Analyst ,
[redacted], Analyst

Where a result is required to meet a compliance limit or specification the associated uncertainty must be considered.
Uncertainty estimates are available for all accredited test results.

**Accreditation No.:** 610 Biological testing
Accredited for compliance with ISO/IEC 17025

# PHYTOPLANKTON ANALYSIS REPORT

Sydney WATER

| | | | |
|---|---|---|---|
| *Report no:* | *286398* | *Depth :* | **N/A** |
| ***Supercedes Report No:*** | | *Chlorophyll a:* | **NA** |
| | | *Microcystin equivalents:* | **NA** |
| | | *Date analysed:* | **13/06/2023** |
| ***Lims No:*** **L23044640** | ***Date Sampled:*** | **25/05/2023** | *Analyst:* [redacted] |
| **Client ID: 234297** | ***Address:*** | [redacted] | |
| ***Site:*** | | | |

***Client:*** **Department of Planning and Environment**

***Method:*** **MA71CENT**

***Issued By : Sydney Water Laboratory Services***
***Issued On : 17/06/2023***

***Disclaimer: Samples analysed as received.***

## TAXA

| | Cells/ mL | Significance | ASU/ mL | Biovolum mm3/L |
|---|---|---|---|---|
| **Cyanophyta (Blue green)** | | | | |
| *Anabaenopsis* | **833** | **Potentially toxic** | **57.47** | **0.098** |
| *Anagnostidinema* | **17698** | | **534.47** | **0.312** |
| *Aphanizomenon gracile* | **1596** | **Taste & Odour** | **78.52** | **0.080** |
| *Aphanizomenonaceae* | **1943** | **Potentially toxic, taste & odour** | **130.18** | **0.202** |
| *Coccoid Blue Green Picoplankton* | **849018** | **Filter clogging?** | **1,613.13** | **0.383** |
| *Cuspidothrix issatschenkoi* | **2151** | | **109.70** | **0.116** |
| *Microcystis* | **2489** | **Potentially toxic, taste & odour** | **69.94** | **0.069** |
| *Planktolyngbya* | **119574** | **Filter clogging** | **1,195.74** | **9.565** |
| *Pseudanabaena* | **5911** | | **47.28** | **0.059** |
| *Raphidiopsis* | **6388** | **Potentially toxic** | **385.19** | **0.430** |
| *Raphidiopsis raciborskii* | **4787** | **Potentially toxic, taste & odour** | **180.94** | **0.140** |
| *Spirulina* | **2212** | | **33.18** | **0.008** |
| *Synechococcus cf* | **1659** | | **20.40** | **0.011** |
| ***Subtotal*** | **1016259** | | **4,456.14** | **11.473** |

| | Cells/ mL | ASU/ mL | Biovolume mm3/L |
|---|---|---|---|
| **Total Blue Green** | **1016000** | **4456.00** | **11.470** |
| *** Potentially Toxic Blue Green** | **10050** | **438.50** | **0.509** |

**Comment:**
**Debris present in the sample.**

**SWC,** [redacted]
**(PO Box 73) West Ryde NSW 2114**

*Taxa with potential to produce toxins.
ASU : One ASU (Area Standard Unit) equals 400µm² of algal cells (as cross sectional area)
Biovolume : Biovolume is calculated from cell linear dimensions. Guidelines based on Biovolume.
Coccoid Blue Green Picoplankton: *Aphanocapsa; Aphanothece; Cyanogranis; Cyanonephron; Cyanocatena; Gloeocapsa; Gloeothece ; Cyanodictyon*

**Phycology**

**Sydney Water Approved Signatory:**

[redacted], Analyst [redacted], Analyst ,
[redacted], Analyst

Where a result is required to meet a compliance limit or specification the associated uncertainty must be considered.
Uncertainty estimates are available for all accredited test results.

**Accreditation No.:** 610 Biological testing
Accredited for compliance with ISO/IEC 17025

# PHYTOPLANKTON ANALYSIS REPORT

| | | | |
|---|---|---|---|
| *Report no:* | *286398* | *Depth :* | **N/A** |
| ***Supercedes Report No:*** | | *Chlorophyll a:* | **NA** |
| | | *Microcystin equivalents:* | **NA** |
| | | *Date analysed:* | **16/06/2023** |
| ***Lims No:*** **L23044641** | ***Date Sampled:*** | **25/05/2023** | *Analyst:* [redacted] |
| **Client ID: 234298** | ***Address:*** | [redacted] | |
| ***Site:*** | | | |

***Client:*** **Department of Planning and Environment**

***Method:*** **MA71CENT**

***Issued By : Sydney Water Laboratory Services***
***Issued On : 17/06/2023***

***Disclaimer: Samples analysed as received.***

## TAXA

| | Cells/ mL | Significance | ASU/ mL | Biovolum mm3/L |
|---|---|---|---|---|
| **Cyanophyta (Blue green)** | | | | |
| *Anabaenopsis* | **572** | **Potentially toxic** | **39.46** | **0.067** |
| *Anagnostidinema* | **1561** | | **47.14** | **0.027** |
| *Coccoid Blue Green Picoplankton* | **579529** | **Filter clogging?** | **1,101.10** | **0.261** |
| *Cuspidothrix issatschenkoi* | **1263** | | **64.41** | **0.068** |
| *Dolichospermum affine* | **796** | | **32.39** | **0.036** |
| *Merismopedia* | **7079** | | **7.07** | **0.059** |
| *Pseudanabaena* | **83182** | | **665.45** | **0.831** |
| *Raphidiopsis raciborskii* | **2465** | **Potentially toxic, taste & odour** | **93.17** | **0.072** |
| *Sphaerospermopsis aphanizomenoides* | **1856** | | **55.68** | **0.069** |
| *Sphaerospermopsis reniformis* | **260** | **Taste & Odour** | **10.42** | **0.012** |
| *Synechococcus cf* | **885** | | **10.88** | **0.005** |
| ***Subtotal*** | **679448** | | **2,127.17** | **1.507** |

| | Cells/ mL | ASU/ mL | Biovolume mm3/L |
|---|---|---|---|
| **Total Blue Green** | **679400** | **2127.00** | **1.510** |
| *** Potentially Toxic Blue Green** | **3040** | **132.60** | **0.139** |

**Comment:**
**Debris present in the sample.**

*Taxa with potential to produce toxins.
ASU : One ASU (Area Standard Unit) equals 400µm² of algal cells (as cross sectional area)
Biovolume : Biovolume is calculated from cell linear dimensions. Guidelines based on Biovolume.
Coccoid Blue Green Picoplankton: *Aphanocapsa; Aphanothece; Cyanogranis; Cyanonephron; Cyanocatena; Gloeocapsa; Gloeothece ; Cyanodictyon*

**Phycology**

**Sydney Water Approved Signatory:**

[redacted], Analyst [redacted], Analyst ,
[redacted], Analyst

Where a result is required to meet a compliance limit or specification the associated uncertainty must be considered.
Uncertainty estimates are available for all accredited test results.

**Accreditation No.:** 610 Biological testing
Accredited for compliance with ISO/IEC 17025

# PHYTOPLANKTON ANALYSIS REPORT

Sydney WATER

| | | | |
|---|---|---|---|
| *Report no:* | *286398* | *Depth :* | **N/A** |
| ***Supercedes Report No:*** | | *Chlorophyll a:* | **NA** |
| | | *Microcystin equivalents:* | **NA** |
| | | *Date analysed:* | **13/06/2023** |
| ***Lims No:*** **L23044642** | ***Date Sampled:*** | **25/05/2023** | *Analyst:* [redacted] |
| **Client ID: 234299** | ***Address:*** | [redacted] | |
| ***Site:*** | | | |

***Client:*** **Department of Planning and Environment**

***Method:*** **MA71CENT**

***Issued By : Sydney Water Laboratory Services***
***Issued On : 17/06/2023***

***Disclaimer: Samples analysed as received.***

## TAXA

| | Cells/ mL | Significance | ASU/ mL | Biovolum mm3/L |
|---|---|---|---|---|
| **Cyanophyta (Blue green)** | | | | |
| *Anabaena* | **278** | **Taste & Odour** | **40.86** | **0.029** |
| *Anabaenopsis* | **208** | **Potentially toxic** | **14.35** | **0.024** |
| *Coccoid Blue Green Picoplankton* | **718549** | **Filter clogging?** | **1,365.24** | **0.324** |
| *Cuspidothrix issatschenkoi* | **5645** | | **287.89** | **0.306** |
| *Microcystis* | **555** | **Potentially toxic, taste & odour** | **15.59** | **0.015** |
| *Non toxic Aphanizomenonaceae* | **1335** | **Taste & Odour** | **54.73** | **0.059** |
| *Pseudanabaena* | **39821** | | **318.56** | **0.398** |
| *Raphidiopsis* | **260** | **Potentially toxic** | **15.67** | **0.017** |
| *Raphidiopsis raciborskii* | **2137** | **Potentially toxic, taste & odour** | **80.77** | **0.062** |
| *Sphaerospermopsis aphanizomenoides* | **624** | | **18.72** | **0.023** |
| ***Subtotal*** | **769412** | | **2,212.38** | **1.257** |

| | Cells/ mL | ASU/ mL | Biovolume mm3/L |
|---|---|---|---|
| **Total Blue Green** | **769400** | **2212.00** | **1.260** |
| *** Potentially Toxic Blue Green** | **2900** | **110.70** | **0.101** |

**Comment:**
**Debris present in the sample.**

*Taxa with potential to produce toxins.
ASU : One ASU (Area Standard Unit) equals 400µm² of algal cells (as cross sectional area)
Biovolume : Biovolume is calculated from cell linear dimensions. Guidelines based on Biovolume.
Coccoid Blue Green Picoplankton: *Aphanocapsa; Aphanothece; Cyanogranis; Cyanonephron; Cyanocatena; Gloeocapsa; Gloeothece ; Cyanodictyon*

**SWC,** [redacted]
**(PO Box 73) West Ryde NSW 2114**

**Phycology**

**Sydney Water Approved Signatory:**

[redacted], Analyst [redacted], Analyst ,
[redacted], Analyst

Where a result is required to meet a compliance limit or specification the associated uncertainty must be considered.
Uncertainty estimates are available for all accredited test results.

**Accreditation No.:** 610 Biological testing
Accredited for compliance with ISO/IEC 17025

# PHYTOPLANKTON ANALYSIS REPORT

Sydney WATER

| | | | |
|---|---|---|---|
| *Report no:* | *286398* | *Depth :* | **N/A** |
| ***Supercedes Report No:*** | | *Chlorophyll a:* | **NA** |
| | | *Microcystin equivalents:* | **NA** |
| | | *Date analysed:* | **13/06/2023** |
| ***Lims No:*** **L23044643** | ***Date Sampled:*** | **25/05/2023** | *Analyst:* [redacted] |
| **Client ID: 234300** | ***Address:*** | [redacted] | |
| ***Site:*** | | | |

***Client:*** **Department of Planning and Environment**

***Method:*** **MA71CENT**

***Issued By : Sydney Water Laboratory Services***
***Issued On : 17/06/2023***

***Disclaimer: Samples analysed as received.***

## TAXA

| | Cells/ mL | Significance | ASU/ mL | Biovolum mm3/L |
|---|---|---|---|---|
| **Cyanophyta (Blue green)** | | | | |
| *Anabaenopsis* | **364** | **Potentially toxic** | **25.11** | **0.043** |
| *Anagnostidinema* | **8825** | | **266.51** | **0.155** |
| *Aphanizomenonaceae* | **451** | **Potentially toxic, taste & odour** | **30.21** | **0.046** |
| *Coccoid Blue Green Picoplankton* | **554840** | **Filter clogging?** | **1,054.19** | **0.250** |
| *Cuspidothrix issatschenkoi* | **5371** | | **273.92** | **0.291** |
| *Dolichospermum affine* | **2518** | | **102.48** | **0.117** |
| *Merismopedia* | **8849** | | **8.84** | **0.074** |
| *Microcystis* | **2212** | **Potentially toxic, taste & odour** | **62.15** | **0.061** |
| *Planktolyngbya* | **11061** | **Filter clogging** | **110.61** | **0.884** |
| *Pseudanabaena* | **86500** | | **692.00** | **0.865** |
| *Raphidiopsis* | **728** | **Potentially toxic** | **43.89** | **0.049** |
| *Raphidiopsis raciborskii* | **694** | **Potentially toxic, taste & odour** | **26.23** | **0.020** |
| *Sphaerospermopsis aphanizomenoides* | **1110** | | **33.30** | **0.041** |
| ***Subtotal*** | **683523** | | **2,729.44** | **2.896** |

| | Cells/ mL | ASU/ mL | Biovolume mm3/L |
|---|---|---|---|
| **Total Blue Green** | **683500** | **2729.00** | **2.900** |
| *** Potentially Toxic Blue Green** | **3720** | **143.70** | **0.170** |

**Comment:**
**Debris present in the sample.**

**SWC,** [redacted]
**(PO Box 73) West Ryde NSW 2114**

*Taxa with potential to produce toxins.
ASU : One ASU (Area Standard Unit) equals 400µm² of algal cells (as cross sectional area)
Biovolume : Biovolume is calculated from cell linear dimensions. Guidelines based on Biovolume.
Coccoid Blue Green Picoplankton: *Aphanocapsa; Aphanothece; Cyanogranis; Cyanonephron; Cyanocatena; Gloeocapsa; Gloeothece ; Cyanodictyon*

**Phycology**

**Sydney Water Approved Signatory:**

[redacted], Analyst [redacted], Analyst ,
[redacted], Analyst

Where a result is required to meet a compliance limit or specification the associated uncertainty must be considered.
Uncertainty estimates are available for all accredited test results.

**Accreditation No.:** 610 Biological testing
Accredited for compliance with ISO/IEC 17025