



November 2017 Water Quality Summary Report

One Sydney Harbour – Remediation Works

Licence Number: 13336

Licensee: Barangaroo Delivery Authority

Licensee Address: Level 21, 201 Kent Street, Sydney

Sampling period: 1 to 30 November 2017

Date provided to Licensee: 20 December 2017

Date published: 20 December 2017

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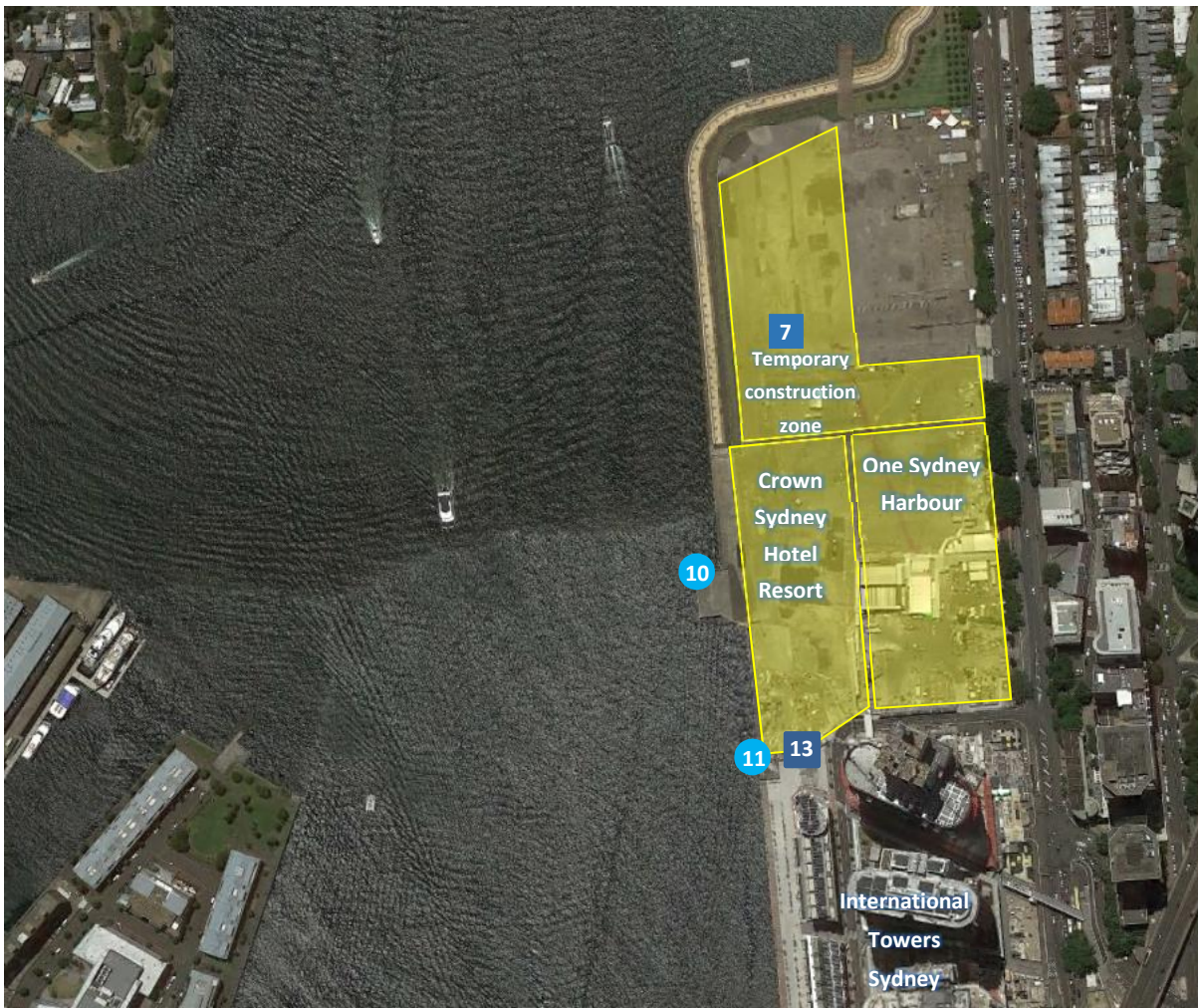
This report has been compiled to summarise results of water quality monitoring at Barangaroo South in November 2017 in accordance with [EPL number 13336](#). This data is for samples taken from 1 to 30 November 2017. The data was provided to the Barangaroo Delivery Authority (the Licencee) on 20 December 2017.

Lend Lease conducts water quality monitoring at Barangaroo South to measure water quality and assist the construction team implement appropriate environmental controls on site.

Water quality monitoring is carried out in accordance with all relevant authority and statutory requirements. Ambient monitoring in Darling Harbour measures conductivity, pH, temperature and turbidity.

Water quality monitoring locations

Water quality monitoring locations are located as shown below:



Approximate location of water quality monitoring equipment

Legend

- Ambient Water Quality Monitoring Location
- WTP Water Discharge Point
- X EPL point number

EPL Point 10 is the Nearfield 1 (NF1) location, and EPL Point 11 is the Nearfield 2 (NF2) location. EPL Point 13 is the discharge point for the Interim water treatment plant (WTP). EPL Point 7 is the discharge point for the Crown Development WTP.



Monitoring results

WTP Discharge

During November, the Water Treatment Plant treated and discharged 2,643 kL of water to EPL Point 13.

EPL Point 13

Pollutant	Units of measure	Monitoring frequency required by licence	Limit		Min. Value	Max. Value	Median Value	Compliant	No. of Samples:	
			100 th %ile	50 th %ile					Required	Completed
Volume	kL	Daily	1037	-	0	703	121	Yes	Daily	Daily
Acenaphthene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Acenaphthylene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Ammonia as N	µg/L	Varies*	1700	910	20	150	70	Yes	4	15
Anthracene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Arsenic	mg/L	Varies*	0.0232	0.0023	0.003	0.003	0.0005	Yes	4	16
Benzene	µg/L	Varies*	500		ND	ND	0.5	Yes	4	16
Benz(a)anthracene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Benzo(a) pyrene	µg/L	Varies*	2		ND	ND	0.25	Yes	4	16
Benzo(b+j)fluoranthene	mg/L	Varies*	2		ND	ND	0.0005	Yes	4	16
Benzo(k)fluoranthene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Benzo(g,h,i)perylene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Cadmium	mg/L	Varies*	0.0007		ND	ND	0.00005	Yes	4	16
Chromium (Trivalent)	mg/L	Varies*	0.027		0.001	0.003	0.0005	Yes	4	15
Chromium (hexavalent)	mg/L	Varies*	0.0044		0.001	0.009	0.008	No**	4	16
Chrysene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Copper	mg/L	Varies*	0.0048	0.0013	ND	ND	0.0005	Yes	4	16
Cyanide Total	mg/L	Varies*	0.014	0.004	ND	ND	0.0005	Yes	4	16
Dibenz(a,h)anthracene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Ethylbenzene	µg/L	Varies*	80		ND	ND	1	Yes	4	16
Fluoranthene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Fluorene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Indeno(1,2,3-c,d)pyrene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Lead	mg/L	Varies*	0.012	0.0044	ND	ND	0.0005	Yes	4	16
Xylene (m & p)	µg/L	Varies*	75		ND	ND	1	Yes	4	16
Mercury	mg/L	Varies*	0.0001		ND	ND	0.00005	Yes	4	16
Naphthalene	µg/L	Varies*	50		ND	ND	0.5	Yes	4	16
Nickel	mg/L	Varies*	0.074		ND	ND	0.0005	Yes	4	16
Oil and Grease	mg/L	Varies*	10		ND	ND	2.5	Yes	4	15
Xylene (o)	µg/L	Varies*	350		ND	ND	1	Yes	4	16
pH (Lab)	pH_Units	Varies*	6.5-8.5		7.36	7.94	7.7	Yes	4	16
Phenanthrene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Phenol	µg/L	Varies*	400		ND	ND	0.5	Yes	4	4
Pyrene	µg/L	Varies*	2		ND	ND	0.5	Yes	4	16
Toluene	µg/L	Varies*	180		ND	ND	1	Yes	4	16
TSS	mg/L	Varies*	50		6	6	2.5	Yes	4	15
TPH C10-C14	mg/L	Varies*	0.05		ND	ND	0.025	Yes	4	4
TPH C15-C28	mg/L	Varies*	0.1		ND	ND	0.05	Yes	4	16
TPH C29-C36	mg/L	Varies*	0.05		ND	ND	0.025	Yes	4	4
TRH C6 - C9	µg/L	Varies*	20		ND	ND	10	Yes	4	16
Zinc	mg/L	Varies*	0.043	0.015	0.005	0.012	0.0025	Yes	4	4
Dissolved Oxygen	mg/L	Varies*			0.1	0.2	0.2	N/A	4	16
Turbidity	mg/L	Varies*			7.9	9	8.6	N/A	4	16
Electrical conductivity	NTU	Varies*			7070	9440	8705	N/A	4	16
PCBs	uS/cm	Varies*			ND	ND	0.5	N/A	4	9

N/A – no licence limit, monitoring requirement only ND – not detected # – Mean used in place of Median

* Once prior to discharge during batch operation; or Once prior to discharge for fourteen consecutive batch sampling events that meet the discharge limits, then weekly (where there has been a discharge). Currently undertaken weekly.

** Exceedance on 18th November

Environment Protection Licence number: 13336

Licencee: Barangaroo Delivery Authority, Level 21, AON/Maritime Trade Towers, 201 Kent Street, Sydney, 2000

These results have been made available in accordance with Environment Protection Authority requirements for publishing pollution monitoring data



There were no exceedances of turbidity criteria for ambient water quality monitoring in Darling Harbour during the month.

Turbidity

Monitoring Parameter	EPL Point 10 (NTU)	EPL Point 11 (NTU)
Minimum	0.0	1.1
Maximum	7.1	13.8
Mean	1.8	2.0
Limit	63	63

Conductivity

Monitoring Parameter	EPL Point 10 (mS/cm)	EPL Point 11 (mS/cm)
Minimum	50.0	51.5
Maximum	54.2	55.2
Mean	53.2	53.7
Limit	No licence limit, monitoring requirement only	

pH

Monitoring Parameter	EPL Point 10	EPL Point 11
Minimum	7.75	7.82
Maximum	8.17	8.14
Mean	7.99	8.05
Limit	No licence limit, monitoring requirement only	

Temperature

Monitoring Parameter	EPL Point 10 (°C)	EPL Point 11 (°C)
Minimum	19.88	19.81
Maximum	22.61	22.65
Mean	21.20	21.22
Limit	No licence limit, monitoring requirement only	

Frequency

Monitoring Parameter	EPL Point 10 (NF1)	EPL Point 11 (NF2)
Monitoring frequency required by licence	Every 15 minutes	
NTU Samples Collected & Analysed	90.8%	99.8%
pH Samples Collected & Analysed	99.3%	99.8%
Conductivity Samples Collected & Analysed	84.1%	99.8%
Temperature Samples Collected & Analysed	99.3%	99.8%