



## July 2016 Water Quality Summary Report

### Barangaroo South – Remediation Works

**Licence Number: 13336**

**Licensee: Barangaroo Delivery Authority**

**Licensee Address: Level 21, 201 Kent Street, Sydney**

**Sampling period: 1 to 31 July 2016**

**Date provided to Licensee: 26 August 2016**

**Date published: 29 August 2016**

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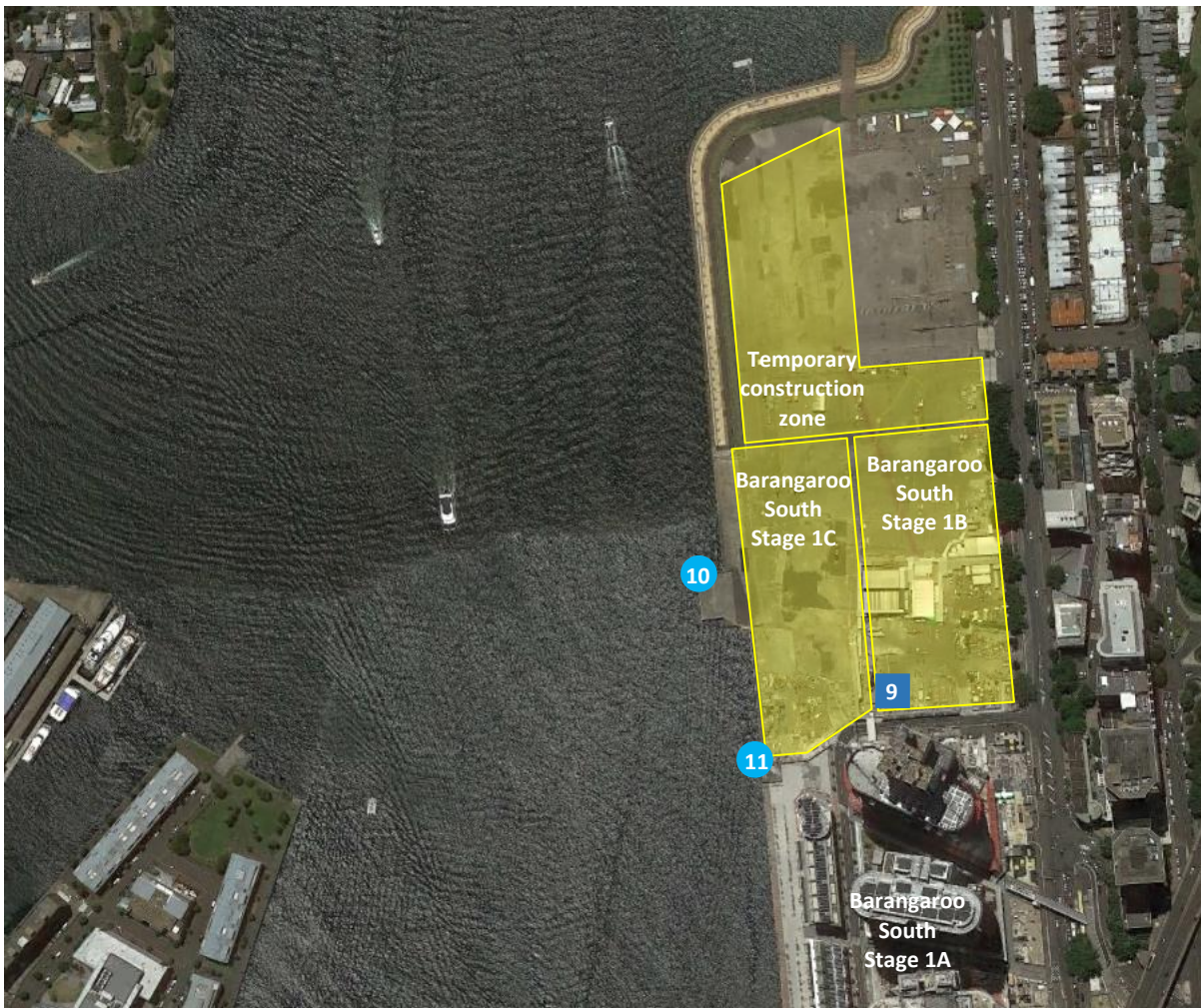
This report has been compiled to summarise results of water quality monitoring at Barangaroo South in July 2016 in accordance with [EPL number 13336](#). This data is for samples taken from 1 to 31 July 2016. The data was provided to the Barangaroo Delivery Authority (the Licencee) on 23 August 2016.

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
- X 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 9 is the discharge point for the Perimeter Retention Wall (PRW) water treatment plant (WTP).



## Monitoring results

### WTP Discharge – EPL Point 9

Pollutant	Units of measure	Monitoring frequency required by licence	Limit	Min. Value	Max. Value	Exceedence (yes/no)	No. of Samples:	
							Required	Completed
Volume	kL	Daily	260	79	79	No	1	1
Ammonia(N)	µg/L	Varies*	910	38	38	No	1	1
Conductivity	µS/cm	Varies*	N/A	980	980	N/A	1	1
Cyanide (total)	µg/L	Varies*	4	ND	ND	No	1	1
Dissolved Oxygen	mg/L	Varies*	N/A	8.8	8.8	N/A	1	1
Oil & Grease	mg/L	Varies*	10	ND	ND	No	1	1
pH	pH	Varies*	6.5 - 8.5	7.5	7.5	No	1	1
Sulphate (S)	mg/L	Varies*	N/A	100	100	N/A	1	1
Suspended Solids	mg/L	Varies*	50	ND	ND	No	1	1
Turbidity (NTU)	NTU	Varies*	N/A	1.1	1.1	N/A	1	1
Benzene	µg/L	Varies*	500	ND	ND	No	1	1
Toluene	µg/L	Varies*	180	ND	ND	No	1	1
Ethylbenzene	µg/L	Varies*	80	ND	ND	No	1	1
Total m+p-Xylenes	µg/L	Varies*	75	ND	ND	No	1	1
o-Xylene	µg/L	Varies*	350	ND	ND	No	1	1
Arsenic (filtered)	µg/L	Varies*	2.3	1.0	1.0	No	1	1
Cadmium (filtered)	µg/L	Varies*	0.7	ND	ND	No	1	1
Copper (filtered)	µg/L	Varies*	1.3	ND	ND	No	1	1
Lead (filtered)	µg/L	Varies*	4.4	ND	ND	No	1	1
Mercury (filtered)	µg/L	Varies*	0.1	ND	ND	No	1	1
Nickel (filtered)	µg/L	Varies*	7	2	2	No	1	1
Zinc (filtered)	µg/L	Varies*	15	6	6	No	1	1
Chromium (hexavalent)	µg/L	Varies*	27	1	1	No	1	1
Chromium (trivalent)	µg/L	Varies*	4.4	ND	ND	No	1	1
Acenaphthene	µg/L	Varies*	2	ND	ND	No	1	1
Acenaphthylene	µg/L	Varies*	2	ND	ND	No	1	1
Anthracene	µg/L	Varies*	2	ND	ND	No	1	1
Benz(a)anthracene	µg/L	Varies*	2	ND	ND	No	1	1
Benzo(a)pyrene	µg/L	Varies*	2	ND	ND	No	1	1
Benzo(b)fluoranthene	µg/L	Varies*	2	ND	ND	No	1	1
Benzo(g,h,i)perylene	µg/L	Varies*	2	ND	ND	No	1	1
Benzo(k)fluoranthene	µg/L	Varies*	2	ND	ND	No	1	1
Chrysene	µg/L	Varies*	2	ND	ND	No	1	1
Dibenz(a,h)anthracene	µg/L	Varies*	2	ND	ND	No	1	1
Fluoranthene	µg/L	Varies*	2	ND	ND	No	1	1
Fluorene	µg/L	Varies*	2	ND	ND	No	1	1
Indeno(1,2,3-cd)pyrene	µg/L	Varies*	2	ND	ND	No	1	1
Naphthalene	µg/L	Varies*	50	ND	ND	No	1	1
Phenanthrene	µg/L	Varies*	2	ND	ND	No	1	1
Pyrene	µg/L	Varies*	2	ND	ND	No	1	1
Total PCB	µg/L	Varies*	N/A	ND	ND	N/A	1	1
Phenol	µg/L	Varies*	400	ND	ND	No	1	1
TRH C6-C9	µg/L	Varies*	20	ND	ND	No	1	1
TRH C10-C14	µg/L	Varies*	50	ND	ND	No	1	1
TRH C15-C28	µg/L	Varies*	100	ND	ND	No	1	1
TRH C29-C36	µg/L	Varies*	50	ND	ND	No	1	1

N/A – no licence limit, monitoring requirement only

ND – not detected

\* Once prior to discharge during batch operation; once daily during intermittent continuous operation; once daily for the first fourteen days of continuous operation, then weekly. Currently undertaken per batch.



During July 2016, there were no exceedances of turbidity criteria for ambient water quality monitoring in Darling Harbour.

### Turbidity

Monitoring Parameter	EPL Point 10 (NTU)	EPL Point 11 (NTU)
Minimum	3.2	0.0
Maximum	15.3	8.7
Mean	4.3	0.9
Limit	63	63

### Conductivity

Monitoring Parameter	EPL Point 10 (mS/cm)	EPL Point 11 (mS/cm)
Minimum	49.5	41.0
Maximum	52.7	52.7
Mean	51.7	51.2
Limit	No licence limit, monitoring requirement only	

### pH

Monitoring Parameter	EPL Point 10	EPL Point 11
Minimum	8.14	7.94
Maximum	8.23	8.24
Mean	8.19	8.06
Limit	No licence limit, monitoring requirement only	

### Temperature

Monitoring Parameter	EPL Point 10 (°C)	EPL Point 11 (°C)
Minimum	14.54	14.70
Maximum	16.45	16.50
Mean	15.63	15.69
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	99.8%	100.0%
pH Samples Collected & Analysed	100.0%	100.0%
Conductivity Samples Collected & Analysed	100.0%	100.0%
Temperature Samples Collected & Analysed	100.0%	100.0%