

Monthly Monitoring Data

Environmental Protection Licence Number: 12693

link to EPL12693 on EPA Public Register: [Click Here](#)

Licensee: Newcastle Coal Infrastructure Group Pty Ltd, Locked Bag 6003, Hunter Region Mail Centre NSW 2310

Premises: Newcastle Coal Infrastructure Group, Cormorant Road, Kooragang NSW 2304

Date Published: 8th February 2018

Note: On the 25th of August 2017 an amendment was made to the NCIG Environmental Protection Licence (EPL12693) which removed the requirement for ambient air quality monitoring at Points 7-10 and 14-15. However, NCIG will continue to publish ambient air quality data for these locations previously listed in EPL12693 for the interest of the public.

Depositional Dust Monitoring

Sample Period: 6th December 2017 – 5th January 2018

Date Obtained: 19th January 2018

Units of Measure: grams per square metre per month (g/m²/month)

Frequency: Monthly

	Monitoring Point 7 - DG3 (Kooragang Island)	Monitoring Point 8 - DG4 (Mayfield Sport Rec Club)	Monitoring Point 9 - DG5 (Mayfield West)	Monitoring Point 10 - DG6 (Sandgate)
Depositional Dust	0.9	1.5	1.5	1.8

High Volume Air Sampling

Units of measure: micrograms per cubic metre (µg/m³)

Frequency: Weekly

	Monitoring Point 14 - HVAS 1 (Steel River) (Obtained 19 th January 2018)		Monitoring Point 15 - HVAS 2 (Crebert Street) (Obtained 19 th January 2018)	
	TSP	PM10	TSP	PM10
2-Dec	33	8	65	27
8-Dec	72	26	66	34
14-Dec	116	50	115	44
20-Dec	106	36	120	42
26-Dec	36	17	46	5

NB. Sample period is a 24 hour period on each of the above dates | TSP = Total Suspended Particulates | PM10 = Particulate Matter <10 microns

Groundwater Sampling Point 1 (GW1)**Sample Date:** 6th December 2017**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	7.42
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	13000
Bromide	mg/L	Every 6 Months	10.4
Aluminium	mg/L	Every 6 Months	<0.01
Arsenic	mg/L	Every 6 Months	<0.001
Cadmium	mg/L	Every 6 Months	<0.0001
Copper	mg/L	Every 6 Months	<0.001
Manganese	mg/L	Every 6 Months	0.203
Nickel	mg/L	Every 6 Months	<0.001
Zinc	mg/L	Every 6 Months	0.007
Iron	mg/L	Every 6 Months	<0.05
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50
Cyanide (free)	mg/L	Every 6 Months	<0.004
Cyanide (total)	mg/L	Every 6 Months	<0.004

Groundwater Sampling Point 38 (BH21S)**Sample Date:** 6th December 2017**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	11.15
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	1310
Bromide	mg/L	Every 6 Months	0.898
Aluminium	mg/L	Every 6 Months	0.5
Arsenic	mg/L	Every 6 Months	0.004
Cadmium	mg/L	Every 6 Months	<0.0001
Copper	mg/L	Every 6 Months	<0.001
Manganese	mg/L	Every 6 Months	<0.001
Nickel	mg/L	Every 6 Months	0.004
Zinc	mg/L	Every 6 Months	<0.005
Iron	mg/L	Every 6 Months	0.06
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	135
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	190
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	470
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	280
Cyanide (free)	mg/L	Every 6 Months	<0.004
Cyanide (total)	mg/L	Every 6 Months	0.284

Groundwater Sampling Point 39 (BH21D)**Sample Date:** 6th December 2017**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	7.11
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	14900
Bromide	mg/L	Every 6 Months	14
Aluminium	mg/L	Every 6 Months	<0.01
Arsenic	mg/L	Every 6 Months	0.001
Cadmium	mg/L	Every 6 Months	<0.0001
Copper	mg/L	Every 6 Months	<0.001
Manganese	mg/L	Every 6 Months	0.437
Nickel	mg/L	Every 6 Months	0.002
Zinc	mg/L	Every 6 Months	<0.005
Iron	mg/L	Every 6 Months	0.11
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	23.3
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50
Cyanide (free)	mg/L	Every 6 Months	<0.004
Cyanide (total)	mg/L	Every 6 Months	0.076

Groundwater Sampling Point 20 (K9/3N)**Sample Date:** 5th December 2017**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (yes/no)*
pH	pH units	Every 6 Months	7.06	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	26300	No
Bromide	mg/L	Every 6 Months	20.8	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	<0.001	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	1.53	No
Nickel	mg/L	Every 6 Months	0.002	No
Zinc	mg/L	Every 6 Months	0.008	No
Iron	mg/L	Every 6 Months	<0.05	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	<0.004	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round- value not shown in table.

Groundwater Sampling Point 21 (K9/3S)**Sample Date:** 5th December 2017**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (yes/no)*
pH	pH units	Every 6 Months	8.1	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	5730	No
Bromide	mg/L	Every 6 Months	4.61	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	0.003	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	0.238	No
Nickel	mg/L	Every 6 Months	0.001	No
Zinc	mg/L	Every 6 Months	<0.005	No
Iron	mg/L	Every 6 Months	<0.5	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	<0.004	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round- value not shown in table.

Groundwater Sampling Point 22 (K11/1)**Sample Date:** 6th December 2017**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (yes/no)*
pH	pH units	Every 6 Months	7.12	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	954	No
Bromide	mg/L	Every 6 Months	0.176	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	<0.001	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	0.972	No
Nickel	mg/L	Every 6 Months	<0.001	No
Zinc	mg/L	Every 6 Months	0.008	No
Iron	mg/L	Every 6 Months	<0.05	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	<0.004	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round- value not shown in table.

Groundwater Sampling Point 23 (K11/1S)**Sample Date:** 6th December 2017**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (yes/no)*
pH	pH units	Every 6 Months	7.65	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	13100	No
Bromide	mg/L	Every 6 Months	11.2	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	<0.001	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	0.191	No
Nickel	mg/L	Every 6 Months	0.003	No
Zinc	mg/L	Every 6 Months	<0.005	No
Iron	mg/L	Every 6 Months	0.06	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	0.006	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round- value not shown in table.

Groundwater Sampling Point 36 (BH20S)**Sample Date:** 6th December 2017**Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (yes/no)*
pH	pH units	Every 6 Months	7.18	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	3440	No
Bromide	mg/L	Every 6 Months	0.687	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	0.003	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	7.17	No
Nickel	mg/L	Every 6 Months	0.004	No
Zinc	mg/L	Every 6 Months	0.015	No
Iron	mg/L	Every 6 Months	0.61	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	9	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	800	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	470	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	<0.004	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round- value not shown in table.

Groundwater Sampling Point 37 (BH20D)**Sample Date: 6th December 2017****Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre (μ S/cm); micrograms per litre (μ g/L)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (yes/no)*
pH	pH units	Every 6 Months	6.47	No
Conductivity	μ S/cm	Every 6 Months	476000	No
Bromide	mg/L	Every 6 Months	42.1	No
Aluminium	mg/L	Every 6 Months	<0.10	No
Arsenic	mg/L	Every 6 Months	<0.010	No
Cadmium	mg/L	Every 6 Months	<0.0010	No
Copper	mg/L	Every 6 Months	<0.010	No
Manganese	mg/L	Every 6 Months	6.73	No
Nickel	mg/L	Every 6 Months	0.013	Yes
Zinc	mg/L	Every 6 Months	<0.050	No
Iron	mg/L	Every 6 Months	23	No
Total PAH	μ g/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	μ g/L	Every 6 Months	<20	No
TPH C10-14 Fraction	μ g/L	Every 6 Months	<50	No
TPH C15-28 Fraction	μ g/L	Every 6 Months	<100	No
TPH C29-36 Fraction	μ g/L	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	<0.004	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round- value not shown in table.

Groundwater Sampling Point 40 (BH23S)

Sample Date:

Units of Measure: pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (yes/no)*
pH	pH units	Every 6 Months	7.37	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	632	No
Bromide	mg/L	Every 6 Months	0.306	No
Aluminium	mg/L	Every 6 Months	0.03	No
Arsenic	mg/L	Every 6 Months	0.004	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	0.463	No
Nickel	mg/L	Every 6 Months	0.002	No
Zinc	mg/L	Every 6 Months	<0.005	No
Iron	mg/L	Every 6 Months	0.14	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	0.061	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round- value not shown in table.

Groundwater Sampling Point 41 (BH23D)**Sample Date: 5th December 2017****Units of Measure:** pH units; milligrams per litre (mg/L); microSiemens per centimetre ($\mu\text{S}/\text{cm}$); micrograms per litre ($\mu\text{g}/\text{L}$)

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (yes/no)*
pH	pH units	Every 6 Months	6.85	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	22300	No
Bromide	mg/L	Every 6 Months	24.9	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	<0.001	No
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	1.14	No
Nickel	mg/L	Every 6 Months	0.003	No
Zinc	mg/L	Every 6 Months	0.008	No
Iron	mg/L	Every 6 Months	0.78	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	<0.5	No
TPH C6-9 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<20	No
TPH C10-14 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<100	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	0.007	No

Note: If trigger level is exceeded, actions listed in Condition E1.2 of EPL12693 are to be followed. These actions include notifying the EPA and resampling the location to confirm the elevated concentration.

* Trigger Condition 1 and 2 recalculated each sampling round- value not shown in table.

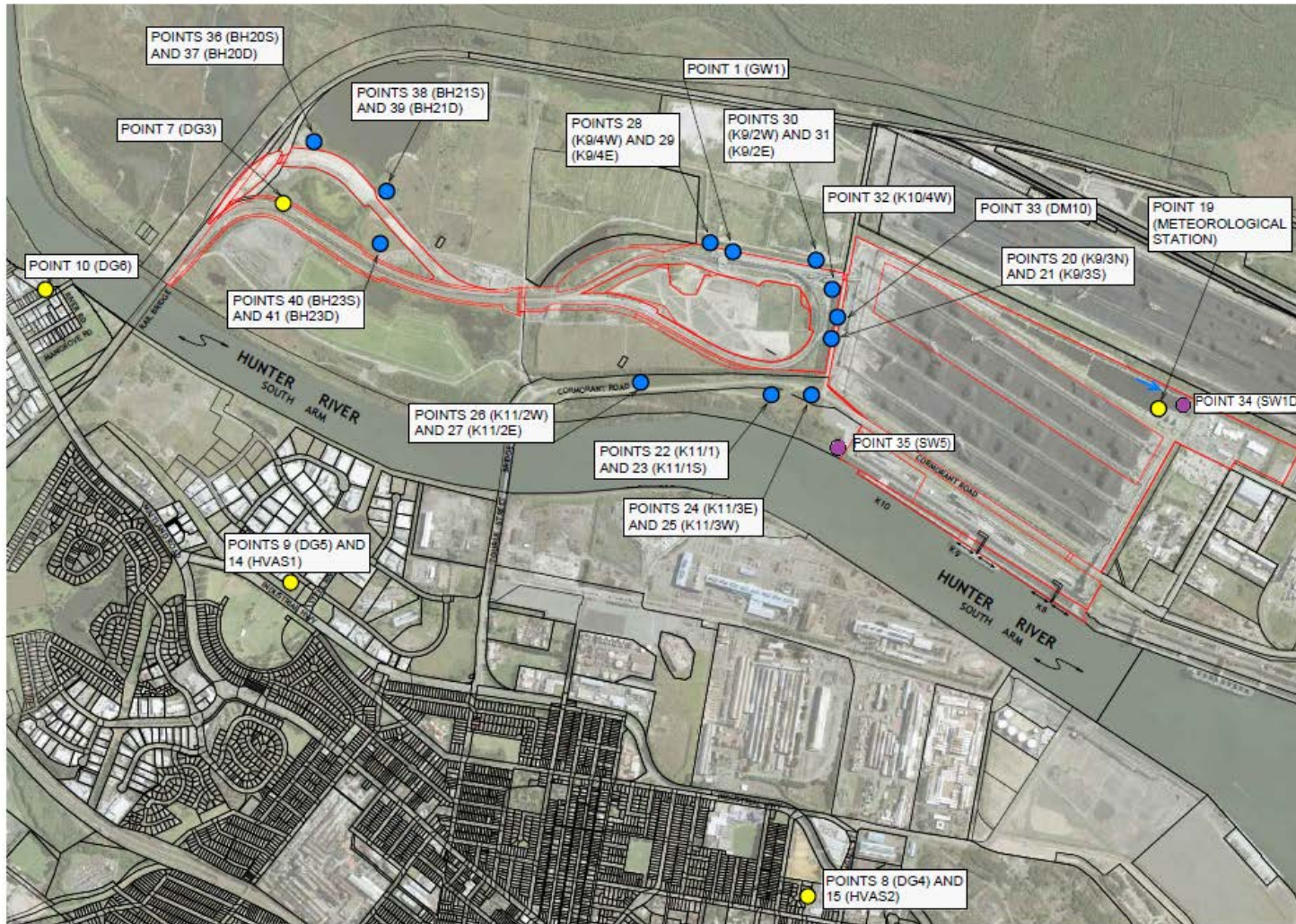


Figure 1: Groundwater, Surface Water and Additional Ambient Air Quality Monitoring Locations.