

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: 25th July 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: 4th June 2018 – 2nd July 2018

Date Obtained: 20th July 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	15.2*	1.6	0.5	0.3

*High level of contamination (such as bird droppings) in DG3 sample during this period.

High Volume Air Sampling

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

Frequency: Weekly

	Monitoring Point 14 - HVAS 1 (Steel River) (Obtained 20 th July 2018)			Monitoring Point 15 - HVAS 2 (Crebert Street) (Obtained 20 th July 2018)			
	TSP	PM10		TSP		PM10	
1-June 18	30	1-June 18	14	6-June 18	15	6-June 18	8
07-June 18	52	07-June 18	18	12-June 18	24	12-June 18	11
13-June 18	37	13-June 18	18	18-June 18	21	18-June 18	8
19-June 18	13	19-June 18	12	24-June 18	22	24-June 18	15
25-June 18	44	25-June 18	18	30-June 18	31	30-June 18	18

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

Discharge Quality Monitoring – Point 34**Sample Date:** 20th June 2018**Results Received:** 2nd July 2018**Units of Measure:** pH units; milligrams per litre (mg/L)

Pollutant	Units of Measure	Frequency	Recorded Value
Oil and Grease	mg/L	monthly during discharge	<5
pH	pH units	monthly during discharge	7.60
Total Suspended Solids	mg/L	monthly during discharge	11

Ambient Water Monitoring – Point 35**Sample Date:** 20th June 2018**Results Received:** 2nd July 2018**Units of Measure:** pH units; milligrams per litre (mg/L)

Pollutant	Units of Measure	Frequency	Recorded Value
Oil and Grease	mg/L	Special Frequency 2*	<5
pH	pH units	Special Frequency 2*	7.94
Total Suspended Solids	mg/L	Special Frequency 2*	24

* For the purposes of the table(s) above Special Frequency 2 means the collection of samples on an outgoing/ebb tide when monitoring is required at Point 34.

6 Monthly Groundwater Monitoring

Results Received: 20th July 2018

Date Published: 1st August 2018

Groundwater Sampling Point 1 (GW1)

Sample Date: 15th June 2018

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
pH	pH units	Every 6 Months	7.44
Conductivity	μ S/cm	Every 6 Months	13100
Bromide	mg/L	Every 6 Months	11.2
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	0.011
Iron	mg/L	Every 6 Months	<0.05
Total PAH	μ g/L	Every 6 Months	<0.5
TPH C6-9 Fraction	μ g/L	Every 6 Months	<20
TPH C10-14 Fraction	μ g/L	Every 6 Months	<50
TPH C15-28 Fraction	μ g/L	Every 6 Months	<100
TPH C29-36 Fraction	μ g/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:** 14th June 2018**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	10.92
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	986
Bromide	mg/L	Every 6 Months	0.826
Aluminium	mg/L	Every 6 Months	0.35
Arsenic	mg/L	Every 6 Months	0.006
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	0.003
Zinc	mg/L	Every 6 Months	<0.005
Iron	mg/L	Every 6 Months	0.07
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	95.7
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	370
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	590
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	140
Cyanide (free)	mg/L	Every 6 Months	<0.004
Cyanide (total)	mg/L	Every 6 Months	0.316

Groundwater Sampling Point 39 (BH21D)**Sample Date:** 14th June 2018**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	7.12
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	16300
Bromide	mg/L	Every 6 Months	14.6
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	0.406
Nickel	mg/L	Every 6 Months	<0.001
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	18.8
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	0.062

Groundwater Sampling Point 20 (K9/3N)**Sample Date:** 14th June 2018**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	6.97	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	27400	Yes
Bromide	mg/L	Every 6 Months	24.5	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	1.22	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	0.12	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:** 14th June 2018**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	7.94	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	2840	No
Bromide	mg/L	Every 6 Months	2.11	No
Aluminium	mg/L	Every 6 Months	<0.01	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	0.052	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	0.06	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	<0.004	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:** 15th June 2018**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	7.32	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	1630	No
Bromide	mg/L	Every 6 Months	1.07	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	0.947	No
Nickel	mg/L	Every 6 Months	0.001	No
Zinc	mg/L	Every 6 Months	0.021	No
Iron	mg/L	Every 6 Months	0.08	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:** 15th June 2018**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	7.83	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	12600	No
Bromide	mg/L	Every 6 Months	12.5	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	0.149	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	0.06	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	0.007	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.

Groundwater Sampling Point 36 (BH20S)**Sample Date:** 14th June 2018**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	6.79	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	1500	No
Bromide	mg/L	Every 6 Months	0.278	No
Aluminium	mg/L	Every 6 Months	<0.01	No
Arsenic	mg/L	Every 6 Months	0.002	No
Cadmium	mg/L	Every 6 Months	0.0002	No
Copper	mg/L	Every 6 Months	0.003	No
Manganese	mg/L	Every 6 Months	2.34	No
Nickel	mg/L	Every 6 Months	0.006	No
Zinc	mg/L	Every 6 Months	0.068	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	60	No
TPH C15-28 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	460	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	100	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:** 14th June 2018**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	6.53	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	4990	No
Bromide	mg/L	Every 6 Months	62.2	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	6.58	No
Nickel	mg/L	Every 6 Months	<0.010	No
Zinc	mg/L	Every 6 Months	<0.050	No
Iron	mg/L	Every 6 Months	16.9	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 40 (BH23S)**Sample Date:** 27th June 2018**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	8.09	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	630	No
Bromide	mg/L	Every 6 Months	<0.010	No
Aluminium	mg/L	Every 6 Months	0.05	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	0.269	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	0.97	No
Total PAH	$\mu\text{g}/\text{L}$	Every 6 Months	13.9	Yes
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	220	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	0.082	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:** 27th June 2018**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	6.78	No
Conductivity	$\mu\text{S}/\text{cm}$	Every 6 Months	25000	No
Bromide	mg/L	Every 6 Months	21.2	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	1	No
Nickel	mg/L	Every 6 Months	<0.001	No
Zinc	mg/L	Every 6 Months	0.024	No
Iron	mg/L	Every 6 Months	14.5	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	310	No
TPH C29-36 Fraction	$\mu\text{g}/\text{L}$	Every 6 Months	250	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	0.082	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.

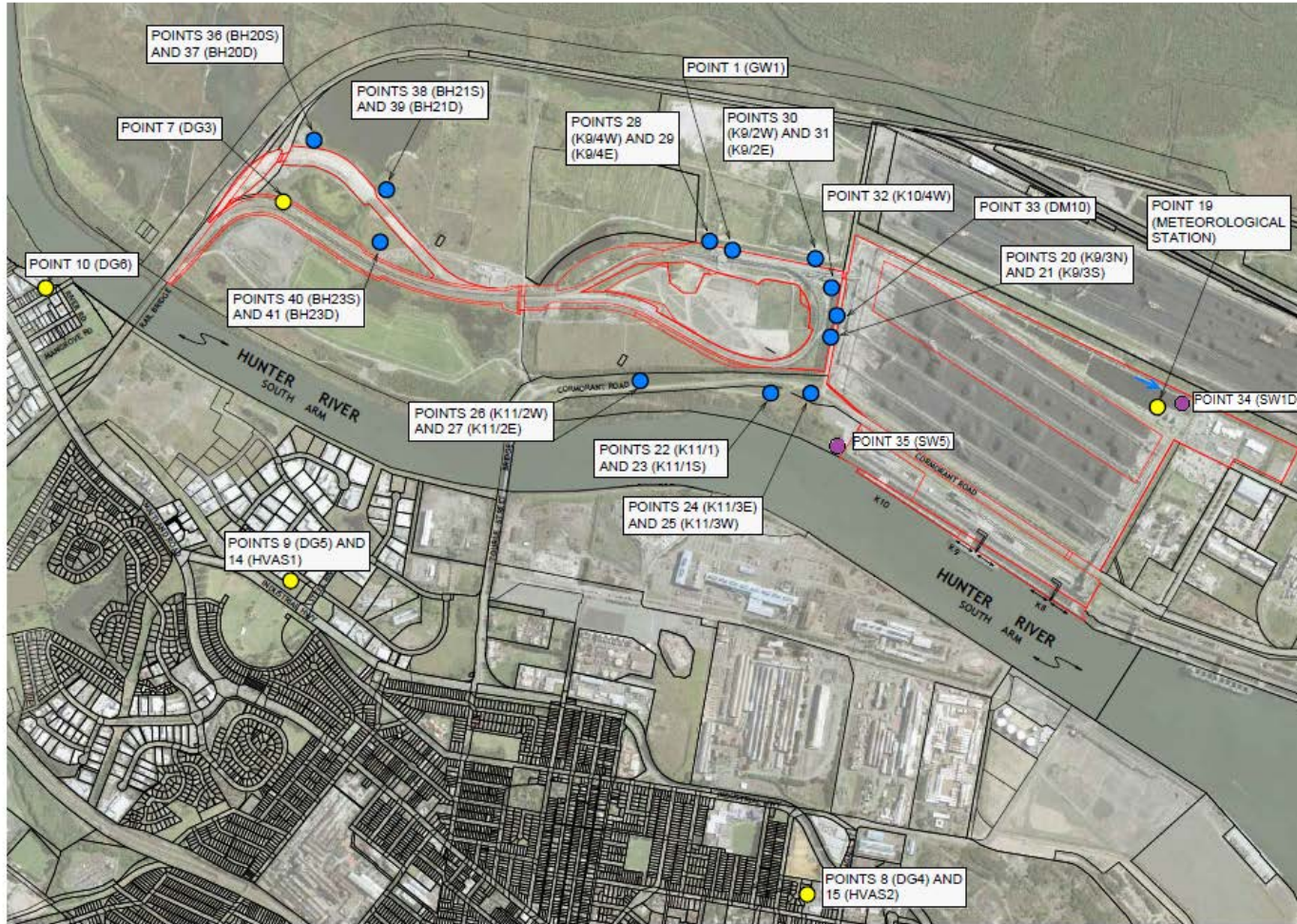


Figure 1: Groundwater, Surface Water and Additional Ambient Air Quality Monitoring Locations.