

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: 14 August 2020

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: 5 June 2020 – 6 July 2020

Date Obtained: 28 July 2020

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

Frequency: Monthly

	DG 2 (Stockton)	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	0.8	0.5	0.6	0.7	1.8

High Volume Air Sampling

Date Obtained: 28 July 2020

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

Frequency: Weekly

	Monitoring Point 14 - HVAS 1 (Steel River)				Monitoring Point 15 - HVAS 2 (Crebert Street)			
	TSP		PM10		TSP		PM10	
1-Jun-20	39	1-Jun-20	15	1-Jun-20	40	1-Jun-20	19	
7-Jun-20	30	7-Jun-20	19	7-Jun-20	34	7-Jun-20	24	
13-Jun-20	25	13-Jun-20	15	13-Jun-20	27	13-Jun-20	14	
19-Jun-20	28	19-Jun-20	13	19-Jun-20	31	19-Jun-20	15	
25-Jun 20	23	25-Jun 20	9	25-Jun 20	19	25-Jun 20	5	

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

6 Monthly Groundwater Monitoring

Results Received: 28 July 2020

Date Published: 14 Aug 2020

Sampling Point 1, 38, 39 (Background Monitoring Wells)

Groundwater Sampling Point 1 (GW1)

Sample Date: 15 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	8.08
Conductivity	µS/cm	Every 6 Months	8350
Bromide	mg/L	Every 6 Months	7.37
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	0.125
Nickel	mg/L	Every 6 Months	0.002
Zinc	mg/L	Every 6 Months	0.013
Iron	mg/L	Every 6 Months	<0.05
Total PAH	µg/L	Every 6 Months	<0.5
TPH C6-9 Fraction	µg/L	Every 6 Months	<20
TPH C10-14 Fraction	µg/L	Every 6 Months	<50
TPH C15-28 Fraction	µg/L	Every 6 Months	<100
TPH C29-36 Fraction	µg/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: 15 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	11.27
Conductivity	µS/cm	Every 6 Months	1170
Bromide	mg/L	Every 6 Months	0.71
Aluminium	mg/L	Every 6 Months	0.5
Arsenic	mg/L	Every 6 Months	0.002
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	0.002
Zinc	mg/L	Every 6 Months	<0.005
Iron	mg/L	Every 6 Months	<0.05
Total PAH	µg/L	Every 6 Months	200
TPH C6-9 Fraction	µg/L	Every 6 Months	<20
TPH C10-14 Fraction	µg/L	Every 6 Months	260
TPH C15-28 Fraction	µg/L	Every 6 Months	160
TPH C29-36 Fraction	µg/L	Every 6 Months	<50
Cyanide (free)	mg/L	Every 6 Months	<0.004
Cyanide (total)	mg/L	Every 6 Months	0.25

Groundwater Sampling Point 39 (BH21D)

Sample Date: 15 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	9.46
Conductivity	µS/cm	Every 6 Months	3140
Bromide	mg/L	Every 6 Months	1.53
Aluminium	mg/L	Every 6 Months	0.12
Arsenic	mg/L	Every 6 Months	0.003
Cadmium	mg/L	Every 6 Months	0.0001
Copper	mg/L	Every 6 Months	<0.001
Manganese	mg/L	Every 6 Months	0.018
Nickel	mg/L	Every 6 Months	0.004
Zinc	mg/L	Every 6 Months	<0.005
Iron	mg/L	Every 6 Months	0.07
Total PAH	µg/L	Every 6 Months	165
TPH C6-9 Fraction	µg/L	Every 6 Months	<20
TPH C10-14 Fraction	µg/L	Every 6 Months	260
TPH C15-28 Fraction	µg/L	Every 6 Months	120
TPH C29-36 Fraction	µg/L	Every 6 Months	<50
Cyanide (free)	mg/L	Every 6 Months	<0.004
Cyanide (total)	mg/L	Every 6 Months	0.345

Sampling Point 20,21,22,23,36,37,40,41 (Regular Monitoring Wells)

Groundwater Sampling Point 20 (K9/3N)

Sample Date: 15 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.43	No
Conductivity	µS/cm	Every 6 Months	2080	No
Bromide	mg/L	Every 6 Months	17	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	0.608	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	<0.05	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/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.

Groundwater Sampling Point 21 (K9/3S)

Sample Date: 15 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	8.02	No
Conductivity	µS/cm	Every 6 Months	3500	No
Bromide	mg/L	Every 6 Months	2.31	No
Aluminium	mg/L	Every 6 Months	0.01	No
Arsenic	mg/L	Every 6 Months	0.006	Yes
Cadmium	mg/L	Every 6 Months	<0.0001	No
Copper	mg/L	Every 6 Months	<0.001	No
Manganese	mg/L	Every 6 Months	0.087	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	<0.05	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/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.

Groundwater Sampling Point 22 (K11/1)

Sample Date: 16 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.64	Yes
Conductivity	µS/cm	Every 6 Months	1870	No
Bromide	mg/L	Every 6 Months	0.982	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	1.03	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	0.87	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	70	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/L	Every 6 Months	150	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.

Groundwater Sampling Point 23 (K11/1S)

Sample Date: 16 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.91	No
Conductivity	µS/cm	Every 6 Months	9920	No
Bromide	mg/L	Every 6 Months	7.09	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	0.09	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	<0.05	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/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.

Groundwater Sampling Point 36 (BH20S)

Sample Date: 15 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	6.74	No
Conductivity	µS/cm	Every 6 Months	2780	No
Bromide	mg/L	Every 6 Months	0.573	No
Aluminium	mg/L	Every 6 Months	0.03	No
Arsenic	mg/L	Every 6 Months	0.007	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	4.96	No
Nickel	mg/L	Every 6 Months	0.003	No
Zinc	mg/L	Every 6 Months	0.009	No
Iron	mg/L	Every 6 Months	7.5	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/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.

Groundwater Sampling Point 37 (BH20D)

Sample Date: 15 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	6.34	Yes
Conductivity	µS/cm	Every 6 Months	454	No
Bromide	mg/L	Every 6 Months	41	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	9.72	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	41.7	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/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.

Groundwater Sampling Point 40 (BH23S)

Sample Date: N/A

Note: Sampling Point 40 (BH23S) was unable to be sampled due to damaged sustained to the bore as a result of earth work activities associated with the KIWEF capping remediation works on Kooragang Island. NCIG is currently liaising with the land manager to re-instate this bore.

Groundwater Sampling Point 41 (BH23D)

Sample Date: 3 July 2020

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.0	No
Conductivity	µS/cm	Every 6 Months	17000	No
Bromide	mg/L	Every 6 Months	1100	Yes
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	0.776	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	11	No
Total PAH	µg/L	Every 6 Months	<0.5	No
TPH C6-9 Fraction	µg/L	Every 6 Months	<20	No
TPH C10-14 Fraction	µg/L	Every 6 Months	<50	No
TPH C15-28 Fraction	µg/L	Every 6 Months	<100	No
TPH C29-36 Fraction	µg/L	Every 6 Months	<50	No
Cyanide (free)	mg/L	Every 6 Months	<0.004	No
Cyanide (total)	mg/L	Every 6 Months	0.014	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.

Sampling Point 24,25,26,27,28,29,30,31,32,33 (Additional Contingency Wells)

Groundwater Sampling Point BHe23S (Note: BHe23S has been used as a substitute to Monitoring Point 24 (K11/3E), which could not be located in previous monitoring, likely destroyed due to earthworks in the area).

Sample Date: N/A

Note: Sampling Point BHe23S was unable to be sampled in this monitoring round as the well was dry.

Groundwater Sampling Point BHe23D (Note: BHe23D has been used as a substitute to Monitoring Point 25 (K11/3W), which could not be located in previous monitoring, likely destroyed due to earthworks in the area).

Sample Date: 30 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.21
Conductivity	µS/cm	Special Frequency 1	15400
Bromide	mg/L	Special Frequency 1	14.9
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	<0.001
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	1.39
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	0.53
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	120
TPH C29-36 Fraction	µg/L	Special Frequency 1	100
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 26 (K11/2W)

Sample Date: 30 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.6
Conductivity	µS/cm	Special Frequency 1	9020
Bromide	mg/L	Special Frequency 1	7.96
Aluminium	mg/L	Special Frequency 1	0.02
Arsenic	mg/L	Special Frequency 1	<0.001
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.067
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	<0.05
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 27 (K11/2E)**Sample Date:** 30 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.29
Conductivity	µS/cm	Special Frequency 1	1720
Bromide	mg/L	Special Frequency 1	0.511
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	0.008
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.829
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	0.01
Iron	mg/L	Special Frequency 1	13.5
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	90
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 28 (K9/4W)

Sample Date: 1 July 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.33
Conductivity	µS/cm	Special Frequency 1	11500
Bromide	mg/L	Special Frequency 1	9.25
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	<0.001
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.192
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	2.84
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 29 (K9/4E)

Sample Date: 1 July 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.32
Conductivity	µS/cm	Special Frequency 1	11800
Bromide	mg/L	Special Frequency 1	11.2
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	0.002
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	1.28
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	<0.05
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 30 (K9/2W)**Sample Date:** 1 July 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.62
Conductivity	µS/cm	Special Frequency 1	9660
Bromide	mg/L	Special Frequency 1	9.31
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	0.01
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.412
Nickel	mg/L	Special Frequency 1	0.004
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	0.19
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point 31 (K9/2E)

Sample Date: 30 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.32
Conductivity	µS/cm	Special Frequency 1	28200
Bromide	mg/L	Special Frequency 1	30.7
Aluminium	mg/L	Special Frequency 1	0.02
Arsenic	mg/L	Special Frequency 1	0.001
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.61
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	0.042
Iron	mg/L	Special Frequency 1	0.34
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point BHe29D (Note: BHe29D has been used as a substitute to Monitoring Point 32 (K10/4W), which could not be located in previous monitoring, likely destroyed due to earthworks in the area).

Sample Date: 30 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.92
Conductivity	µS/cm	Special Frequency 1	4650
Bromide	mg/L	Special Frequency 1	3.67
Aluminium	mg/L	Special Frequency 1	0.01
Arsenic	mg/L	Special Frequency 1	<0.001
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.062
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	0.018
Iron	mg/L	Special Frequency 1	<0.05
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

Groundwater Sampling Point BHe26S (Note: BHe26S has been used as a substitute to Monitoring Point 33 (DM10), which could not be located in previous monitoring, likely destroyed due to earthworks in the area).

Sample Date: 30 June 2020

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	8.15
Conductivity	µS/cm	Special Frequency 1	3250
Bromide	mg/L	Special Frequency 1	2.08
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	0.006
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.159
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	<0.05
Total PAH	µg/L	Special Frequency 1	<0.5
TPH C6-9 Fraction	µg/L	Special Frequency 1	<20
TPH C10-14 Fraction	µg/L	Special Frequency 1	<50
TPH C15-28 Fraction	µg/L	Special Frequency 1	<100
TPH C29-36 Fraction	µg/L	Special Frequency 1	<50
Cyanide (free)	mg/L	Special Frequency 1	<0.004
Cyanide (total)	mg/L	Special Frequency 1	<0.004

Note: For the purposes of the table(s) above Special Frequency 1 means the collection of samples on a six monthly basis if trigger conditions specified in condition E1.1 of EPL12693 are exceeded.

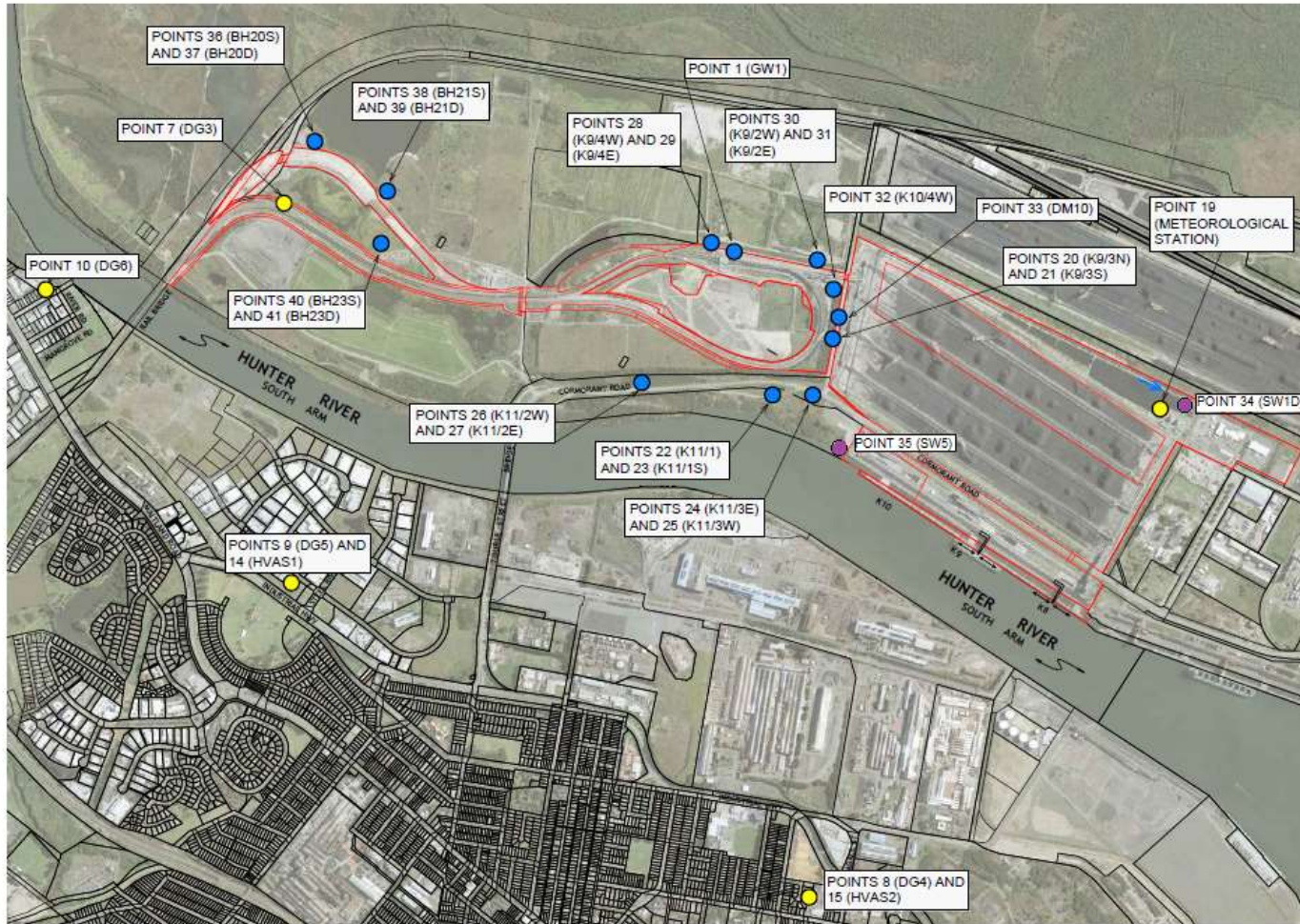


Figure 1: Groundwater, Surface Water and Additional Ambient Air Quality Monitoring Locations.