

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 Data Obtained: 29 July 2021

Date Published: 13 August 2021

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: 11 June 2020 – 12 July 2021

Units of Measure: Insoluble Solids (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	0.3	0.4	0.4	1.3

High Volume Air Sampling

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

Frequency: Weekly

	Monitoring Point 14 - HVAS 1 (Steel River, Mayfield West)				Monitoring Point 15 - HVAS 2 (Crebert Street, Mayfield)			
	TSP		PM10		TSP		PM10	
02-Jun-21	37	02-Jun-21	21	02-Jun-21	49	02-Jun-21	25	
08-Jun-21	31	08-Jun-21	15	08-Jun-21	38	08-Jun-21	20	
14-Jun-21	16	14-Jun-21	10	14-Jun-21	17	14-Jun-21	12	
20-Jun-21	10	20-Jun-21	6	20-Jun-21	14	20-Jun-21	5	
26-Jun-21	15	26-Jun-21	7	26-Jun-21	18	26-Jun-21	9	

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: 29 July 2021

Date Published: 13 August 2021

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

Groundwater Sampling Point 1 (GW1)

Sample Date: 21 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	7.13
Conductivity	µS/cm	Every 6 Months	17900
Bromide	mg/L	Every 6 Months	17.1
Aluminium	mg/L	Every 6 Months	0.05
Arsenic	mg/L	Every 6 Months	<0.001
Cadmium	mg/L	Every 6 Months	<0.0001
Copper	mg/L	Every 6 Months	0.002
Manganese	mg/L	Every 6 Months	0.262
Nickel	mg/L	Every 6 Months	0.002
Zinc	mg/L	Every 6 Months	0.039
Iron	mg/L	Every 6 Months	1.75
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: 21 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	11
Conductivity	µS/cm	Every 6 Months	1440
Bromide	mg/L	Every 6 Months	1.62
Aluminium	mg/L	Every 6 Months	0.39
Arsenic	mg/L	Every 6 Months	0.003
Cadmium	mg/L	Every 6 Months	0.0002
Copper	mg/L	Every 6 Months	<0.001
Manganese	mg/L	Every 6 Months	0.014
Nickel	mg/L	Every 6 Months	<0.001
Zinc	mg/L	Every 6 Months	<0.005
Iron	mg/L	Every 6 Months	0.07
Total PAH	µg/L	Every 6 Months	91
TPH C6-9 Fraction	µg/L	Every 6 Months	<20
TPH C10-14 Fraction	µg/L	Every 6 Months	240
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	0.22

Groundwater Sampling Point 39 (BH21D)

Sample Date: 22 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Every 6 Months	9.27
Conductivity	µS/cm	Every 6 Months	3190
Bromide	mg/L	Every 6 Months	3.47
Aluminium	mg/L	Every 6 Months	0.1
Arsenic	mg/L	Every 6 Months	0.003
Cadmium	mg/L	Every 6 Months	0.0003
Copper	mg/L	Every 6 Months	<0.001
Manganese	mg/L	Every 6 Months	0.061
Nickel	mg/L	Every 6 Months	0.004
Zinc	mg/L	Every 6 Months	<0.005
Iron	mg/L	Every 6 Months	0.35
Total PAH	µg/L	Every 6 Months	119
TPH C6-9 Fraction	µg/L	Every 6 Months	<20
TPH C10-14 Fraction	µg/L	Every 6 Months	180
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	0.134

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

Groundwater Sampling Point 20 (K9/3N)

Sample Date: 22 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.35	No
Conductivity	µS/cm	Every 6 Months	19800	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	0.834	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 21 (K9/3S)

Sample Date: 22 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	8.1	No
Conductivity	µS/cm	Every 6 Months	2560	No
Bromide	mg/L	Every 6 Months	1.76	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	0.124	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: 22 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.41	No
Conductivity	µS/cm	Every 6 Months	756	No
Bromide	mg/L	Every 6 Months	0.284	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	0.794	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	0.15	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 23 (K11/1S)

Sample Date: 22 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	7.96	No
Conductivity	µS/cm	Every 6 Months	7920	No
Bromide	mg/L	Every 6 Months	7.98	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	0.11	No
Nickel	mg/L	Every 6 Months	0.003	Yes
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: 22 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	6.99	No
Conductivity	µS/cm	Every 6 Months	1160	No
Bromide	mg/L	Every 6 Months	0.286	No
Aluminium	mg/L	Every 6 Months	<0.01	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	1.94	No
Nickel	mg/L	Every 6 Months	0.001	No
Zinc	mg/L	Every 6 Months	0.013	No
Iron	mg/L	Every 6 Months	1.72	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: 21 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	6.31	No
Conductivity	µS/cm	Every 6 Months	39800	No
Bromide	mg/L	Every 6 Months	53.1	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	8.11	No
Nickel	mg/L	Every 6 Months	0.016	No
Zinc	mg/L	Every 6 Months	<0.050	No
Iron	mg/L	Every 6 Months	40.8	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: 21 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	8.63	No
Conductivity	µS/cm	Every 6 Months	968	Yes
Bromide	mg/L	Every 6 Months	0.565	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	0.336	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	<0.05	No
Total PAH	µg/L	Every 6 Months	4.3	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 41 (BH23D)

Sample Date: 21 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value	Exceedance (Yes/No)*
pH	pH units	Every 6 Months	6.95	No
Conductivity	µS/cm	Every 6 Months	16400	No
Bromide	mg/L	Every 6 Months	20.9	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	0.966	No
Nickel	mg/L	Every 6 Months	<0.001	No
Zinc	mg/L	Every 6 Months	0.011	No
Iron	mg/L	Every 6 Months	9.48	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.

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 no longer exists due to previous impacts to the bore).

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 no longer exists due to previous impacts to the bore).

Sample Date: 22 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.29
Conductivity	µS/cm	Special Frequency 1	14100
Bromide	mg/L	Special Frequency 1	15
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	1.19
Nickel	mg/L	Special Frequency 1	0.002
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 26 (K11/2W)

Sample Date: 22 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	8.02
Conductivity	µS/cm	Special Frequency 1	4890
Bromide	mg/L	Special Frequency 1	3.34
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	0.049
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: 22 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.78
Conductivity	µS/cm	Special Frequency 1	874
Bromide	mg/L	Special Frequency 1	0.326
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	0.403
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	0.23
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 28 (K9/4W)

Sample Date: 21 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.4
Conductivity	µS/cm	Special Frequency 1	6360
Bromide	mg/L	Special Frequency 1	4.5
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	0.15
Nickel	mg/L	Special Frequency 1	<0.001
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	1.23
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: 21 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.75
Conductivity	µS/cm	Special Frequency 1	5930
Bromide	mg/L	Special Frequency 1	5.31
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	0.003
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	1.16
Nickel	mg/L	Special Frequency 1	0.002
Zinc	mg/L	Special Frequency 1	0.008
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: 22 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	8.02
Conductivity	µS/cm	Special Frequency 1	2800
Bromide	mg/L	Special Frequency 1	1.82
Aluminium	mg/L	Special Frequency 1	<0.01
Arsenic	mg/L	Special Frequency 1	0.011
Cadmium	mg/L	Special Frequency 1	<0.0001
Copper	mg/L	Special Frequency 1	<0.001
Manganese	mg/L	Special Frequency 1	0.286
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 31 (K9/2E)

Sample Date: 22 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.45
Conductivity	µS/cm	Special Frequency 1	19400
Bromide	mg/L	Special Frequency 1	22.3
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	0.543
Nickel	mg/L	Special Frequency 1	0.002
Zinc	mg/L	Special Frequency 1	<0.005
Iron	mg/L	Special Frequency 1	0.16
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 no longer exists due to previous impacts to the bore).

Sample Date: 21 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.7
Conductivity	µS/cm	Special Frequency 1	5040
Bromide	mg/L	Special Frequency 1	4.49
Aluminium	mg/L	Special Frequency 1	0.03
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	0.08
Nickel	mg/L	Special Frequency 1	0.002
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 BHe26S (Note: BHe26S has been used as a substitute to Monitoring Point 33 (DM10), which no longer exists due to previous impacts to the bore).

Sample Date: 21 June 2021

Pollutant	Units of Measure	Frequency	Recorded Value
pH	pH units	Special Frequency 1	7.95
Conductivity	µS/cm	Special Frequency 1	2390
Bromide	mg/L	Special Frequency 1	1.56
Aluminium	mg/L	Special Frequency 1	0.02
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	0.192
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.

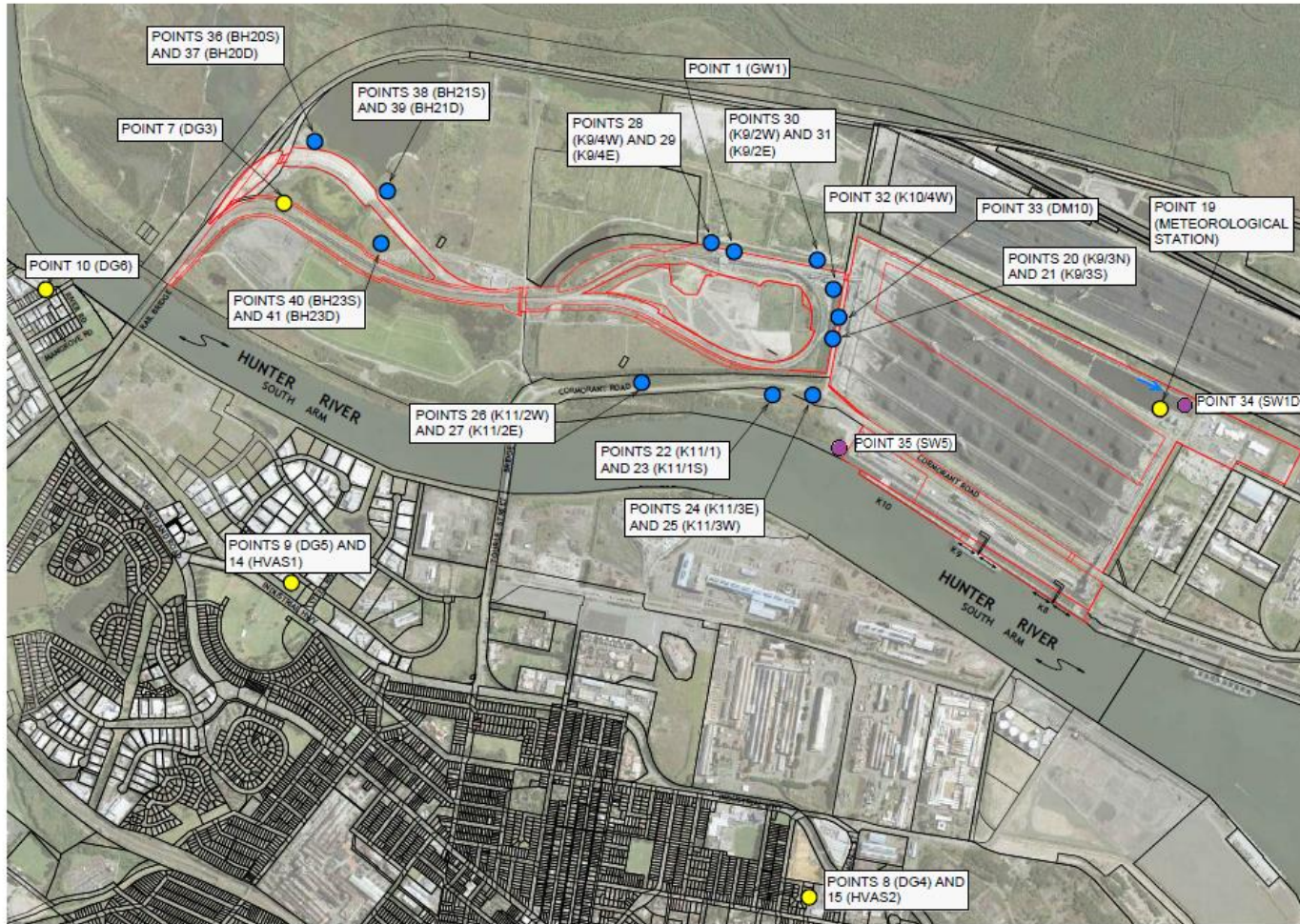


Figure 1: Groundwater, Surface Water and Additional Ambient Air Quality Monitoring Locations.