



# Tritton and Girilambone Operations

## Monthly Environmental Monitoring Report [June] [2020]

### **Environmental Protection License 11254**

TRITTON COPPER MINE

YARRANDALE ROAD, HERMIDALE, NSW, 2831

<http://www.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=11254&id=11254&option=licence&searchrange=licence&range=POEO licence&prp=no&status=Issued>

### **Environmental Protection License 4501**

TRITTON COPPER MINE

BOORAMUGGA ROAD, GIRILAMBONE, NSW, 2831

<http://www.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=4501&id=4501&option=licence&searchrange=licence&range=POEO licence&prp=no&status=Issued>

**[JUNE] [2020] – GROUNDWATER MONITORING REPORT**  
**TRITTON OPERATIONS LICENCE NO.11254**

Licensee: TRITTON RESOURCES LIMITED EPL No. 11254					
Sample Point	Monitoring Frequency	Date	Parameter	Measurement	Unit
EPA ID No. 12 - PZH001	Quarterly	Sampled:  Obtained:  Published: 17/07/2020	Arsenic		mg/L <sup>1</sup>
			Barium		mg/L
			Beryllium		mg/L
			Cadmium		mg/L
			Chloride		mg/L
			Chromium		mg/L
			Cobalt		mg/L
			Conductivity (EC)		µS/cm <sup>2</sup>
			Copper		mg/L
			Iron		mg/L
			Lead		mg/L
			Manganese		mg/L
			Mercury		mg/L
			Nickel		mg/L
			pH		pH Unit
			Sulfate		mg/L
			Vanadium		mg/L
Zinc		mg/L			
SWL		m <sup>3</sup>			
EPA ID No. 13 - PZH002	Quarterly	Sampled:  Obtained:  Published: 17/07/2020	Arsenic		mg/L
			Barium		mg/L
			Beryllium		mg/L
			Cadmium		mg/L
			Chloride		mg/L
			Chromium		mg/L
			Cobalt		mg/L
			Conductivity (EC)		µS/cm
			Copper		mg/L
			Iron		mg/L
			Lead		mg/L
			Manganese		mg/L
			Mercury		mg/L
			Nickel		mg/L
			pH		pH Unit

<sup>1</sup> Milligrams per litre

<sup>2</sup> Microsiemens per centimetre

<sup>3</sup> Metres

			Sulfate Vanadium Zinc SWL		mg/L mg/L mg/L m
EPA ID No. 14 - PZH003	Quarterly	Sampled:  Obtained:  Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL		mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 15 - PZH004	Quarterly	Sampled:  Obtained:  Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL		mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 16 - PZH005	Quarterly	Sampled:  Obtained:	Arsenic Barium Beryllium Cadmium		mg/L mg/L mg/L mg/L

		Published: 17/07/2020	Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL		mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 17 - PZH006	Quarterly	Sampled:  Obtained:  Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL		mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 18 - PZH007	Quarterly	Sampled: 17/6/20 Obtained: 26/6/20 Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese	0.003 0.125 0.001 0.001 2760 0.002 0.01 11000 0.089 2.03 0.012 0.182	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L

			Mercury	0.0001	mg/L
			Nickel	0.04	mg/L
			pH	7.42	pH Unit
			Sulfate	1760	mg/L
			Vanadium	0.01	mg/L
			Zinc	0.118	mg/L
			SWL	46.29	m
EPA ID No. 19 - PZH008	Quarterly	Sampled: 17/6/20 Obtained: 26/6/20 Published: 17/07/2020	Arsenic	0.001	mg/L
			Barium	0.049	mg/L
			Beryllium	0.001	mg/L
			Cadmium	0.0009	mg/L
			Chloride	4560	mg/L
			Chromium	0.001	mg/L
			Cobalt	0.004	mg/L
			Conductivity (EC)	13900	µS/cm
			Copper	0.04	mg/L
			Iron	0.06	mg/L
			Lead	0.001	mg/L
			Manganese	0.128	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.013	mg/L
			pH	7.56	pH Unit
			Sulfate	1980	mg/L
			Vanadium	0.01	mg/L
			Zinc	0.092	mg/L
			SWL	19.96	m
EPA ID No. 20 - PZH009	Quarterly	Sampled: 17/6/20 Obtained: 26/6/20 Published: 17/07/2020	Arsenic	0.009	mg/L
			Barium	0.02	mg/L
			Beryllium	0.001	mg/L
			Cadmium	0.0002	mg/L
			Chloride	5330	mg/L
			Chromium	0.001	mg/L
			Cobalt	0.001	mg/L
			Conductivity (EC)	17700	µS/cm
			Copper	0.014	mg/L
			Iron	0.05	mg/L
			Lead	0.001	mg/L
			Manganese	0.032	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.001	mg/L
			pH	7.61	pH Unit
			Sulfate	2440	mg/L
			Vanadium	0.01	mg/L
			Zinc	0.053	mg/L
			SWL	16.42	m

EPA ID No. 22 - PZH013	Quarterly	Sampled: 17/6/20 Obtained: DRY Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL		mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L mg/L m
EPA ID No. 23 - PZH014	Quarterly	Sampled: 18/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.002 0.006 0.001 0.0003 4720 0.006 0.001 12900 0.008 0.25 0.001 0.005 0.0001 0.005 7.54 1660 0.01 0.018 47.58	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L mg/L m
EPA ID No. 24 - PZH015	Quarterly	Sampled: 18/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC)	0.003 0.01 0.001 0.0002 5310 0.098 0.003 15700	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm



			Vanadium Zinc SWL		mg/L mg/L m
EPA ID No. 27 - PZH019	Quarterly	Sampled:  Obtained:  Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL		mg/L mg/L mg/L mg/L mg/L mg/L mg/L μS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 28 - PZH020	Quarterly	Sampled:  Obtained:  Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL		mg/L mg/L mg/L mg/L mg/L mg/L mg/L μS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 29 - PZH021	Quarterly	Sampled:  Obtained:  Published:	Arsenic Barium Beryllium Cadmium Chloride		mg/L mg/L mg/L mg/L mg/L



		17/07/2020	Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL		mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 30 - PZH022	Quarterly	Sampled:  Obtained:  Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL		mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 31 - PZH023	Quarterly	Sampled:  Obtained:  Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury		mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L

			Nickel pH Sulfate Vanadium Zinc SWL		mg/L pH Unit mg/L mg/L mg/L m
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**[JUNE] [2020] – GROUNDWATER MONITORING REPORT**  
**GIRILAMBONE OPERATIONS LICENCE NO.4501**

Licensee: TRITTON RESOURCES LIMITED					
EPL No. 4501					
Sample Point	Monitoring Frequency	Date	Parameter	Measurement	Unit
EPA ID No. 2 - GIP224	Monthly	Sampled: 26/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic	0.01	mg/L
			Barium	0.024	mg/L
			Beryllium	0.01	mg/L
			Cadmium	0.0013	mg/L
			Chloride	8800	mg/L
			Chromium	0.01	mg/L
			Cobalt	0.013	mg/L
			Conductivity (EC)	27200	µS/cm
			Copper	0.041	mg/L
			Iron	0.1	mg/L
			Lead	0.01	mg/L
			Manganese	0.266	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.019	mg/L
			pH	7.46	pH Unit
			Sulfate	4100	mg/L
			Vanadium	0.1	mg/L
Zinc	0.097	mg/L			
SWL	10.04	m			
EPA ID No. 3 - GIP225	Monthly	Sampled: 26/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic	0.01	mg/L
			Barium	0.01	mg/L
			Beryllium	0.01	mg/L
			Cadmium	0.001	mg/L
			Chloride	6610	mg/L
			Chromium	0.01	mg/L
			Cobalt	0.01	mg/L
			Conductivity (EC)	28000	µS/cm
			Copper	0.033	mg/L
			Iron	0.1	mg/L
			Lead	0.01	mg/L
			Manganese	0.168	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.01	mg/L
			pH	7.26	pH Unit
			Sulfate	12500	mg/L
			Vanadium	0.1	mg/L
Zinc	0.052	mg/L			
SWL	13.58	m			





			Vanadium Zinc SWL	18.35	mg/L mg/L m
EPA ID No. 9 - GIP278	Quarterly	Sampled: 22/6/20 Obtained  Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	25.94	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 10 - GIP279A	Quarterly	Sampled: 22/6/20 Obtained:  Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	24.97	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 11 - GIP280A	Quarterly	Sampled: 22/6/20 Obtained:	Arsenic Barium Beryllium Cadmium Chloride		mg/L mg/L mg/L mg/L mg/L

		Published: 17/07/2020	Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	22.94	mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 12 - GIP290	Monthly	Sampled: 23/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.001 0.012 0.001 0.0348 3710 0.001 0.175 14600 0.05 0.11 0.004 8.3 0.0001 0.015 6.99 3880 0.01 0.385 16.85	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 13 - GIP291	Monthly	Sampled: 22/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury	0.001 0.031 0.001 0.0003 8100 0.007 0.026 24500 0.006 1.1 0.002 0.702 0.0001	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L

			Nickel	0.013	mg/L
			pH	7.32	pH Unit
			Sulfate	2510	mg/L
			Vanadium	0.01	mg/L
			Zinc	0.028	mg/L
			SWL	13.76	m
EPA ID No. 14 - GIP292A	Monthly	Sampled: 11/6/20 Obtained: 26/6/20 Published: 17/07/2020	Arsenic	0.04	mg/L
			Barium	0.001	mg/L
			Beryllium	0.113	mg/L
			Cadmium	3.4	mg/L
			Chloride	1980	mg/L
			Chromium	0.231	mg/L
			Cobalt	51.4	mg/L
			Conductivity (EC)	31300	µS/cm
			Copper	235	mg/L
			Iron	132	mg/L
			Lead	0.001	mg/L
			Manganese	482	mg/L
			Mercury	0.0001	mg/L
			Nickel	17.6	mg/L
			pH	3.63	pH Unit
			Sulfate	32900	mg/L
			Vanadium	0.14	mg/L
			Zinc	252	mg/L
			SWL	11.19	m
EPA ID No. 16 - GIP292AS	Monthly	Sampled: 11/6/20 Obtained: DRY Published: 17/07/2020	Arsenic		mg/L
			Barium		mg/L
			Beryllium		mg/L
			Cadmium		mg/L
			Chloride		mg/L
			Chromium		mg/L
			Cobalt		mg/L
			Conductivity (EC)		µS/cm
			Copper		mg/L
			Iron		mg/L
			Lead		mg/L
			Manganese		mg/L
			Mercury		mg/L
			Nickel		mg/L
			pH		pH Unit
			Sulfate		mg/L
			Vanadium		mg/L
			Zinc		mg/L
			SWL	10.31	m



EPA ID No. 17 - GIP293	Monthly	Sampled: 22/6/20 Obtained: 8/7/20  Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.016 0.01 0.01 1.24 5750 0.015 15 33500 21.5 0.3 0.01 271 0.0003 5.49 4.44 29500 0.1 56.9 18.91	mg/L mg/L mg/L mg/L mg/L mg/L mg/L μS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L mg/L m
EPA ID No. 18 - GIP294	Monthly	Sampled: 23/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.01 0.035 0.01 0.782 2460 0.01 9.5 29800 24.3 0.47 0.01 67.3 0.0001 3.11 6.52 24700 0.1 50.5 18.93	mg/L mg/L mg/L mg/L mg/L mg/L mg/L μS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 19 - GIP295	Monthly	Sampled: 22/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC)	0.002 0.046 0.001 0.0001 9240 0.001 0.002 27100	mg/L mg/L mg/L mg/L mg/L mg/L mg/L μS/cm

			Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.008 0.05 0.001 0.428 0.0001 0.004 7.3 2780 0.01 0.013 19.04	mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 20 - GIP296	Monthly	Sampled: 22/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.001 0.016 0.001 0.0004 1560 0.001 0.005 12800 0.042 0.05 0.001 0.075 0.0001 0.006 7.45 5660 0.01 0.057 13.88	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 21 - GIP297	Monthly	Sampled: 24/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate	0.006 0.001 0.001 0.0002 101 0.001 0.003 1110 0.022 0.05 0.001 0.057 0.0001 0.002 7.7 213	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L

			Vanadium	0.01	mg/L
			Zinc	0.036	mg/L
			SWL	27.81	m
EPA ID No. 22 - GIP298	Monthly	Sampled: 23/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic	0.01	mg/L
			Barium	0.01	mg/L
			Beryllium	0.01	mg/L
			Cadmium	0.001	mg/L
			Chloride	9710	mg/L
			Chromium	0.01	mg/L
			Cobalt	0.01	mg/L
			Conductivity (EC)	28000	µS/cm
			Copper	0.016	mg/L
			Iron	0.1	mg/L
			Lead	0.01	mg/L
			Manganese	0.114	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.01	mg/L
			pH	7.35	pH Unit
			Sulfate	2980	mg/L
			Vanadium	0.1	mg/L
Zinc	0.05	mg/L			
SWL	23.16	m			
EPA ID No. 23 - GIP299	Monthly	Sampled: 22/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic	0.01	mg/L
			Barium	0.01	mg/L
			Beryllium	0.01	mg/L
			Cadmium	0.0028	mg/L
			Chloride	6740	mg/L
			Chromium	0.01	mg/L
			Cobalt	0.01	mg/L
			Conductivity (EC)	28900	µS/cm
			Copper	0.01	mg/L
			Iron	0.33	mg/L
			Lead	0.01	mg/L
			Manganese	0.396	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.01	mg/L
			pH	7.34	pH Unit
			Sulfate	12400	mg/L
			Vanadium	0.1	mg/L
Zinc	0.05	mg/L			
SWL	33.03	m			
EPA ID No. 24 - GIP300	Monthly	Sampled: 22/6/20 Obtained: 8/7/20 Published:	Arsenic	0.01	mg/L
			Barium	0.064	mg/L
			Beryllium	0.01	mg/L
			Cadmium	0.0018	mg/L
			Chloride	10100	mg/L

		17/07/2020	Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.344 0.014 29500 0.033 1.8 0.019 0.244 0.0001 0.673 7.58 3700 0.1 0.052 23.83	mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 25 - GIP301	Monthly	Sampled: 23/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.001 0.02 0.001 0.0024 1260 0.002 0.001 6510 0.04 0.09 0.001 0.436 0.0001 0.015 7.44 1160 0.01 0.11 17.67	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 26 - GIP302	Monthly	Sampled: 23/6/20 Obtained: 8/7/20 Published: 17/07/2020	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury	0.01 0.01 0.01 0.0328 6710 0.05 0.187 25700 0.595 0.39 0.01 12.4 0.0001	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L

			Nickel	0.635	mg/L
			pH	7.15	pH Unit
			Sulfate	9420	mg/L
			Vanadium	0.1	mg/L
			Zinc	0.545	mg/L
			SWL	21.92	m