



**Aeris**  
TRITTON OPERATIONS

# Tritton and Girilambone Operations

## Monthly Environmental Monitoring Report

January 2017

### **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>*

**JANUARY 2017 – 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. 25 - PZH017	Quarterly	Sampled: 12/01/17	Arsenic	0.005	mg/L
			Barium	0.036	mg/L
			Beryllium	<0.001	mg/L
		Obtained: 31/01/17	Cadmium	<0.0001	mg/L
			Chloride	3290	mg/L
			Chromium	<0.001	mg/L
		Published: 13/02/2017	Cobalt	<0.001	mg/L
			Conductivity (EC)	11800	µS/cm
			Copper	0.001	mg/L
			Iron	3.42	mg/L
			Lead	<0.001	mg/L
			Manganese	0.107	mg/L
			Mercury	<0.0001	mg/L
			Nickel	<0.001	mg/L
			pH	7.69	pH Unit
			Sulfate	837	mg/L
			Vanadium	<0.01	mg/L
Zinc	0.008	mg/L			
SWL	47.96	m			
EPA ID No. 26 - PZH018	Quarterly	Sampled: 12/01/17	Arsenic	0.007	mg/L
			Barium	0.027	mg/L
			Beryllium	<0.001	mg/L
		Obtained: 31/01/17	Cadmium	0.0003	mg/L
			Chloride	7900	mg/L
			Chromium	0.002	mg/L
		Published: 13/02/2017	Cobalt	0.006	mg/L
			Conductivity (EC)	25600	µS/cm
			Copper	0.014	mg/L
			Iron	0.5	mg/L
			Lead	<0.001	mg/L
			Manganese	0.238	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.008	mg/L
			pH	7.47	pH Unit
			Sulfate	2360	mg/L
			Vanadium	<0.01	mg/L
Zinc	0.04	mg/L			
SWL	22.21	m			

EPA ID No. 27 - PZH019	Quarterly	Sampled: 12/01/17	Arsenic	0.009	mg/L
			Barium	0.023	mg/L
			Beryllium	<0.001	mg/L
		Obtained: 31/01/17	Cadmium	<0.0001	mg/L
			Chloride	3050	mg/L
			Chromium	<0.001	mg/L
		Published: 13/02/2017	Cobalt	0.002	mg/L
			Conductivity (EC)	10800	µS/cm
			Copper	0.003	mg/L
			Iron	0.32	mg/L
			Lead	<0.001	mg/L
			Manganese	0.044	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.01	mg/L
			pH	7.32	pH Unit
Sulfate	790	mg/L			
Vanadium	<0.01	mg/L			
Zinc	0.014	mg/L			
SWL	101.51	m			
EPA ID No. 28 - PZH020	Quarterly	Sampled: 12/01/17	Arsenic	0.004	mg/L
			Barium	0.018	mg/L
			Beryllium	<0.001	mg/L
		Obtained: 31/01/17	Cadmium	0.0004	mg/L
			Chloride	3620	mg/L
			Chromium	<0.001	mg/L
		Published: 13/02/2017	Cobalt	<0.001	mg/L
			Conductivity (EC)	13000	µS/cm
			Copper	0.021	mg/L
			Iron	0.09	mg/L
			Lead	<0.001	mg/L
			Manganese	0.028	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.004	mg/L
			pH	7.42	pH Unit
Sulfate	1040	mg/L			
Vanadium	<0.01	mg/L			
Zinc	0.079	mg/L			
SWL	71.67	m			
EPA ID No. 29 - PZH021	Quarterly	Sampled: 12/01/17	Arsenic	0.003	mg/L
			Barium	0.07	mg/L
			Beryllium	<0.001	mg/L
		Obtained: 31/01/17	Cadmium	<0.0001	mg/L
			Chloride	5220	mg/L
			Chromium	<0.001	mg/L
Published: 13/02/2017	Cobalt	<0.001	mg/L		
	Conductivity (EC)	15700	µS/cm		

			Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.002 3.76 <0.001 1.26 <0.0001 <0.001 7.37 1470 <0.01 0.007 58.29	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: 12/01/17  Obtained: 31/01/17  Published: 13/02/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	DRY	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. 31 - PZH023	Quarterly	Sampled: 12/01/17  Obtained: 31/01/17  Published: 13/02/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate	DRY	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

			Vanadium Zinc SWL		mg/L mg/L m
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**JANUARY 2017 – 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: 18/01/17	Arsenic	<0.010	mg/L
			Barium	0.026	mg/L
			Beryllium	<0.010	mg/L
		Obtained: 31/01/17	Cadmium	<0.0010	mg/L
			Chloride	7990	mg/L
			Chromium	<0.010	mg/L
		Published: 13/02/2017	Cobalt	<0.010	mg/L
			Conductivity (EC)	31400	µS/cm
			Copper	0.018	mg/L
			Iron	<0.10	mg/L
			Lead	<0.010	mg/L
			Manganese	0.084	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.031	mg/L
			pH	6.91	pH Unit
			Sulfate	4010	mg/L
			Vanadium	<0.10	mg/L
Zinc	<0.050	mg/L			
SWL	3.79	m			
EPA ID No. 3 - GIP225	Monthly	Sampled: 18/01/17	Arsenic	<0.010	mg/L
			Barium	<0.010	mg/L
			Beryllium	<0.010	mg/L
		Obtained: 31/01/17	Cadmium	<0.0010	mg/L
			Chloride	5240	mg/L
			Chromium	<0.010	mg/L
		Published: 13/02/2017	Cobalt	<0.010	mg/L
			Conductivity (EC)	34800	µS/cm
			Copper	0.019	mg/L
			Iron	<0.10	mg/L
			Lead	<0.010	mg/L
			Manganese	0.068	mg/L
			Mercury	<0.0001	mg/L
			Nickel	<0.010	mg/L
			pH	6.39	pH Unit
			Sulfate	15800	mg/L
			Vanadium	<0.10	mg/L
Zinc	<0.050	mg/L			
SWL	9.83	m			

EPA ID No. 4 - GIP234	Quarterly	Sampled: 06/01/17  Obtained: 20/01/17  Published: 13/02/2017	SWL	24.87	m
EPA ID No. 5 - GIP273	Quarterly	Sampled: 06/01/17  Obtained: 20/01/17  Published: 13/02/2017	SWL	16.81	m
EPA ID No. 7 - GIP274	Monthly	Sampled: 18/01/17 Obtained: 31/01/17  Published: 13/02/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	<0.010 0.02 <0.010 0.0012 8890 <0.010 <0.010 32700 0.019 <0.10 <0.010 0.059 <0.0001 0.01 6.69 3020 <0.10 <0.050 17.16	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. 6 - GIP276	Quarterly	Sampled: 06/01/17  Obtained: 20/01/17  Published: 13/02/2017	SWL	20.69	m
EPA ID No. 8 - GIP277	Quarterly	Sampled: 09/01/17	SWL	16.66	m

		<p>Obtained: 20/01/17</p> <p>Published: 13/02/2017</p>			
EPA ID No. 9 - GIP278	Quarterly	<p>Sampled: 06/01/17</p> <p>Obtained: 20/01/17</p> <p>Published: 13/02/2017</p>	SWL	25.01	m
EPA ID No. 10 - GIP279A	Quarterly	<p>Sampled: 06/01/17</p> <p>Obtained: 20/01/17</p> <p>Published: 13/02/2017</p>	SWL	24.02	m
EPA ID No. 11 - GIP280A	Quarterly	<p>Sampled: 05/01/17</p> <p>Obtained: 20/01/17</p> <p>Published: 13/02/2017</p>	SWL	21.73	m
EPA ID No. 12 - GIP290	Monthly	<p>Sampled: 17/01/17</p> <p>Obtained: 31/01/17</p> <p>Published: 13/02/2017</p>	<p>Arsenic</p> <p>Barium</p> <p>Beryllium</p> <p>Cadmium</p> <p>Chloride</p> <p>Chromium</p> <p>Cobalt</p> <p>Conductivity (EC)</p> <p>Copper</p> <p>Iron</p> <p>Lead</p> <p>Manganese</p> <p>Mercury</p> <p>Nickel</p> <p>pH</p> <p>Sulfate</p> <p>Vanadium</p>	<p>0.008</p> <p>0.014</p> <p>&lt;0.001</p> <p>0.029</p> <p>3200</p> <p>&lt;0.001</p> <p>0.16</p> <p>16800</p> <p>0.082</p> <p>&lt;0.05</p> <p>&lt;0.001</p> <p>10.2</p> <p>&lt;0.0001</p> <p>0.017</p> <p>6.29</p> <p>4210</p> <p>&lt;0.01</p>	<p>mg/L</p> <p>mg/L</p> <p>mg/L</p> <p>mg/L</p> <p>mg/L</p> <p>mg/L</p> <p>mg/L</p> <p>µS/cm</p> <p>mg/L</p> <p>mg/L</p> <p>mg/L</p> <p>mg/L</p> <p>mg/L</p> <p>mg/L</p> <p>pH Unit</p> <p>mg/L</p> <p>mg/L</p>



			Zinc SWL	0.258 14.58	mg/L m
EPA ID No. 13 - GIP291	Monthly	Sampled: 10/01/17  Obtained: 20/01/17  Published: 13/02/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.01 0.023 <0.001 0.0008 7200 <0.001 0.006 26800 0.039 <0.05 <0.001 0.091 <0.0001 0.006 6.57 2830 <0.01 0.037 8.94	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 mg/L m
EPA ID No. 14 - GIP292A	Monthly	Sampled: 05/01/17  Obtained: 20/01/17  Published: 13/02/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.053 <0.010 0.08 3.09 2470 0.267 46.3 34200 210 33 <0.010 501 <0.0001 15.9 3.88 33600 <0.10 190 4.98	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. 16 - GIP292AS	Monthly	Sampled: 05/01/17  Obtained: 20/01/17	Arsenic Barium Beryllium Cadmium Chloride Chromium	0.258 <0.010 0.426 6.4 1380 0.153	mg/L mg/L mg/L mg/L mg/L mg/L

		Published: 13/02/2017	Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	80 34000 592 1110 <0.010 515 0.0001 26.3 3.52 48400 1.13 383 4.52	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. 17 - GIP293	Monthly	Sampled: 10/01/17  Obtained: 31/01/17  Published: 13/02/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.05 <0.010 0.026 2.81 3810 0.01 38.6 42500 90.3 0.46 0.016 584 0.0002 13.6 4.02 35400 <0.10 155 11.96	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. 18 - GIP294	Monthly	Sampled: 10/01/17  Obtained: 31/01/17  Published: 13/02/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel	0.013 <0.010 <0.010 2.9 1620 <0.010 32.6 51200 169 0.75 <0.010 253 0.0003 11.2	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	5.17	pH Unit
			Sulfate	49100	mg/L
			Vanadium	<0.10	mg/L
			Zinc	183	mg/L
			SWL	11.53	m
EPA ID No. 19 - GIP295	Monthly	Sampled: 05/01/17	Arsenic	<0.010	mg/L
			Barium	0.047	mg/L
			Beryllium	<0.010	mg/L
		Obtained: 20/01/17	Cadmium	0.0013	mg/L
			Chloride	8760	mg/L
			Chromium	<0.010	mg/L
		Published: 13/02/2017	Cobalt	<0.010	mg/L
			Conductivity (EC)	30700	µS/cm
			Copper	0.06	mg/L
			Iron	<0.10	mg/L
			Lead	<0.010	mg/L
			Manganese	0.601	mg/L
			Mercury	<0.0001	mg/L
			Nickel	<0.010	mg/L
			pH	7.02	pH Unit
Sulfate	2790	mg/L			
Vanadium	<0.10	mg/L			
Zinc	0.128	mg/L			
SWL	18.09	m			
EPA ID No. 20 - GIP296	Monthly	Sampled: 10/01/17	Arsenic	<0.001	mg/L
			Barium	0.015	mg/L
			Beryllium	<0.001	mg/L
		Obtained: 31/01/17	Cadmium	0.0009	mg/L
			Chloride	1370	mg/L
			Chromium	0.001	mg/L
		Published: 13/02/2017	Cobalt	0.005	mg/L
			Conductivity (EC)	18000	µS/cm
			Copper	0.027	mg/L
			Iron	<0.05	mg/L
			Lead	<0.001	mg/L
			Manganese	0.071	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.007	mg/L
			pH	6.73	pH Unit
Sulfate	7630	mg/L			
Vanadium	<0.01	mg/L			
Zinc	0.04	mg/L			
SWL	6.46	m			
EPA ID No. 21 - GIP297	Monthly	Sampled: 05/01/17	Arsenic	0.006	mg/L
			Barium	<0.001	mg/L
			Beryllium	<0.001	mg/L

		Obtained: 20/01/17  Published: 13/02/2017	Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.0005 45 <0.001 0.009 903 0.061 0.11 <0.001 0.062 <0.0001 0.002 8.98 175 <0.01 0.05 25.01	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 mg/L m
EPA ID No. 22 - GIP298	Monthly	Sampled: 09/01/17  Obtained: 20/01/17  Published: 13/02/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	<0.010 0.015 <0.010 0.0026 9260 <0.010 0.053 32300 0.428 1.55 <0.010 0.648 <0.0001 0.019 6.7 2980 <0.10 0.288 20.52	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L mg/L m
EPA ID No. 23 - GIP299	Monthly	Sampled: 09/01/17  Obtained: 20/01/17  Published: 13/02/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead	<0.010 <0.010 <0.010 0.0033 6940 <0.010 0.01 32000 0.073 0.14 <0.010	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L

			Manganese	0.102	mg/L
			Mercury	<0.0001	mg/L
			Nickel	<0.010	mg/L
			pH	6.53	pH Unit
			Sulfate	8640	mg/L
			Vanadium	<0.10	mg/L
			Zinc	0.088	mg/L
			SWL	27.95	m
EPA ID No. 24 - GIP300	Monthly	Sampled: 09/01/17  Obtained: 20/01/17  Published: 13/02/2017	Arsenic	<0.010	mg/L
			Barium	0.016	mg/L
			Beryllium	<0.010	mg/L
			Cadmium	0.0028	mg/L
			Chloride	5400	mg/L
			Chromium	<0.010	mg/L
			Cobalt	<0.010	mg/L
			Conductivity (EC)	36200	µS/cm
			Copper	0.039	mg/L
			Iron	<0.10	mg/L
			Lead	<0.010	mg/L
			Manganese	0.032	mg/L
			Mercury	0.0002	mg/L
			Nickel	<0.010	mg/L
			pH	6.46	pH Unit
			Sulfate	18100	mg/L
			Vanadium	<0.10	mg/L
			Zinc	<0.050	mg/L
			SWL	19.01	m
EPA ID No. 25 - GIP301	Monthly	Sampled: 09/01/17  Obtained: 20/01/17  Published: 13/02/2017	Arsenic	<0.001	mg/L
			Barium	0.034	mg/L
			Beryllium	<0.001	mg/L
			Cadmium	0.0004	mg/L
			Chloride	5350	mg/L
			Chromium	<0.001	mg/L
			Cobalt	0.022	mg/L
			Conductivity (EC)	20400	µS/cm
			Copper	0.017	mg/L
			Iron	<0.05	mg/L
			Lead	<0.001	mg/L
			Manganese	0.822	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.012	mg/L
			pH	6.74	pH Unit
			Sulfate	2070	mg/L
			Vanadium	<0.01	mg/L
			Zinc	0.034	mg/L
			SWL	14.05	m

EPA ID No. 26 - GIP302	Monthly	Sampled: 10/01/17	Arsenic	<0.010	mg/L
		Obtained: 31/01/17	Barium	0.017	mg/L
			Beryllium	<0.010	mg/L
			Cadmium	0.0075	mg/L
		Published: 13/02/2017	Chloride	5990	mg/L
			Chromium	<0.010	mg/L
			Cobalt	0.15	mg/L
			Conductivity (EC)	30300	µS/cm
			Copper	0.158	mg/L
			Iron	<0.10	mg/L
			Lead	<0.010	mg/L
			Manganese	20	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.154	mg/L
		pH	6.24	pH Unit	
		Sulfate	8550	mg/L	
		Vanadium	<0.10	mg/L	
Zinc	0.098	mg/L			
SWL	15.21	m			