



**Aeris**  
TRITTON OPERATIONS

# Tritton and Girilambone Operations

## Monthly Environmental Monitoring Report

March 2016

### **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>*

**MARCH 2016 – 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: 21/03/2016	Arsenic	<0.001	mg/L
			Barium	0.041	mg/L
			Beryllium	0.005	mg/L
		Obtained: 07/04/2016	Cadmium	0.0005	mg/L
			Chloride	3450	mg/L
			Chromium	<0.001	mg/L
		Published: 12/04/2016	Cobalt	<0.001	mg/L
			Conductivity (EC)	11500	µS/cm
			Copper	0.006	mg/L
			Iron	2.11	mg/L
			Lead	<0.001	mg/L
			Manganese	0.138	mg/L
			Mercury	<0.0001	mg/L
			Nickel	<0.001	mg/L
			pH	7.83	pH Unit
			Sulfate	892	mg/L
			Vanadium	<0.01	mg/L
Zinc	0.095	mg/L			
SWL	48.82	m			
EPA ID No. 26 - PZH018	Quarterly	Sampled: 1/03/2016	Arsenic	<0.001	mg/L
			Barium	0.002	mg/L
			Beryllium	<0.001	mg/L
		Obtained: 11/03/2016	Cadmium	0.0003	mg/L
			Chloride	8300	mg/L
			Chromium	<0.001	mg/L
		Published: 12/04/2016	Cobalt	<0.001	mg/L
			Conductivity (EC)	28900	µS/cm
			Copper	0.018	mg/L
			Iron	<0.05	mg/L
			Lead	<0.001	mg/L
			Manganese	0.007	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.001	mg/L
			pH	6.65	pH Unit
			Sulfate	3300	mg/L
			Vanadium	<0.01	mg/L
Zinc	0.029	mg/L			
SWL	22.61	m			

EPA ID No. 27 - PZH019	Quarterly	Sampled: 21/03/2016	Arsenic	0.001	mg/L
		Obtained: 07/04/2016	Barium	0.028	mg/L
			Beryllium	<0.001	mg/L
			Cadmium	0.0021	mg/L
			Chloride	3060	mg/L
			Chromium	<0.001	mg/L
			Cobalt	0.004	mg/L
			Conductivity (EC)	10500	µS/cm
			Copper	0.015	mg/L
			Iron	0.06	mg/L
			Lead	<0.001	mg/L
			Manganese	0.055	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.014	mg/L
			pH	9.04	pH Unit
Sulfate	854	mg/L			
Vanadium	<0.01	mg/L			
Zinc	0.22	mg/L			
SWL	103.55	m			
EPA ID No. 28 - PZH020	Quarterly	Sampled: 24/03/2016	Arsenic	<0.001	mg/L
		Obtained: 07/04/2016	Barium	0.023	mg/L
			Beryllium	<0.001	mg/L
			Cadmium	0.0004	mg/L
			Chloride	3590	mg/L
			Chromium	<0.001	mg/L
			Cobalt	<0.001	mg/L
			Conductivity (EC)	12600	µS/cm
			Copper	0.024	mg/L
			Iron	<0.05	mg/L
			Lead	<0.001	mg/L
			Manganese	0.034	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.005	mg/L
			pH	8.39	pH Unit
Sulfate	1140	mg/L			
Vanadium	<0.01	mg/L			
Zinc	0.1	mg/L			
SWL	72.16	m			
EPA ID No. 29 - PZH021	Quarterly	Sampled: 1/03/2016	Arsenic	0.002	mg/L
		Obtained: 11/03/2016	Barium	0.063	mg/L
			Beryllium	<0.001	mg/L
			Cadmium	0.0003	mg/L
			Chloride	4250	mg/L
			Chromium	<0.001	mg/L
Published: 12/04/2016	Cobalt	0.002	mg/L		
Conductivity (EC)	15700	µS/cm			

			Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.049 2.6 <0.001 1.68 <0.0001 0.004 7.21 1660 <0.01 0.027 58.51	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	Published: 12/04/2016		Dry	
EPA ID No. 31 - PZH023	Quarterly	Published: 12/04/2016		Dry	

**MARCH 2016 – 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: 22/03/2016	Arsenic	<0.001	mg/L
			Barium	0.031	mg/L
			Beryllium	<0.001	mg/L
		Obtained: 07/04/2016	Cadmium	0.0009	mg/L
			Chloride	8970	mg/L
			Chromium	0.001	mg/L
		Published: 12/04/2016	Cobalt	0.007	mg/L
			Conductivity (EC)	30500	µS/cm
			Copper	0.06	mg/L
			Iron	0.07	mg/L
			Lead	0.002	mg/L
			Manganese	0.117	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.012	mg/L
			pH	6.95	pH Unit
			Sulfate	3770	mg/L
			Vanadium	<0.01	mg/L
Zinc	0.079	mg/L			
SWL	5.3	m			
EPA ID No. 3 - GIP225	Monthly	Sampled: 22/03/2016	Arsenic	<0.001	mg/L
			Barium	0.057	mg/L
			Beryllium	<0.001	mg/L
		Obtained: 07/04/2016	Cadmium	<0.0001	mg/L
			Chloride	6150	mg/L
			Chromium	0.003	mg/L
		Published: 12/04/2016	Cobalt	0.016	mg/L
			Conductivity (EC)	32400	µS/cm
			Copper	0.01	mg/L
			Iron	0.71	mg/L
			Lead	0.004	mg/L
			Manganese	0.513	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.022	mg/L
			pH	8.15	pH Unit
			Sulfate	17200	mg/L
			Vanadium	<0.01	mg/L
Zinc	0.096	mg/L			
SWL	11.14	m			

EPA ID No. 7 - GIP274	Monthly	Sampled: 15/03/2016  Obtained: 07/04/2016  Published: 12/04/2016	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 <0.0010 10100 <0.010 0.012 31800 <0.010 <0.10 <0.010 0.075 <0.0001 <0.010 6.91 2940 <0.10 <0.050 17.71	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. 12 - GIP290	Monthly	Sampled: 15/03/2016  Obtained: 07/04/2016  Published: 12/04/2016	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	<0.001 0.022 <0.001 0.0282 3800 <0.001 0.137 16400 0.212 0.07 0.007 12.9 0.0001 0.029 6.7 3740 <0.01 0.56 15.21	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. 13 - GIP291	Monthly	Sampled: 15/03/2016  Obtained: 07/04/2016  Published: 12/04/2016	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC)	<0.001 0.028 <0.001 0.0008 8190 0.003 0.006 26300	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	0.037 0.13 0.002 0.107 <0.0001 0.005 6.8 2580 <0.01 0.044 9.62	mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 14 - GIP292A	Monthly	Sampled: 16/03/2016  Obtained: 07/04/2016  Published: 12/04/2016	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.055 <0.010 0.078 3.06 2730 0.06 57 32500 260 130 <0.010 421 <0.0001 15.3 4.05 34700 <0.10 248 6.16	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. 16 - GIP292AS	Monthly	Sampled: 16/03/2016  Obtained: 07/04/2016  Published: 12/04/2016	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate	0.306 <0.010 0.608 9.09 1530 0.247 142 35400 1220 1760 0.019 580 0.0001 45.2 3.46 53800	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	1.5	mg/L
			Zinc	764	mg/L
			SWL	6.17	m
EPA ID No. 17 - GIP293	Monthly	Sampled: 3/03/2016	Arsenic	0.027	mg/L
			Barium	<0.010	mg/L
			Beryllium	<0.010	mg/L
		Obtained: 11/03/2016	Cadmium	2.36	mg/L
			Chloride	4160	mg/L
			Chromium	<0.010	mg/L
		Published: 12/04/2016	Cobalt	30.1	mg/L
			Conductivity (EC)	42800	µS/cm
			Copper	34.1	mg/L
			Iron	0.19	mg/L
			Lead	<0.010	mg/L
			Manganese	529	mg/L
			Mercury	0.0006	mg/L
			Nickel	10.1	mg/L
			pH	4.23	pH Unit
			Sulfate	35600	mg/L
			Vanadium	<0.10	mg/L
Zinc	104	mg/L			
SWL	12.73	m			
EPA ID No. 18 - GIP294	Monthly	Sampled: 3/03/2016	Arsenic	0.011	mg/L
			Barium	<0.010	mg/L
			Beryllium	<0.010	mg/L
		Obtained: 11/03/2016	Cadmium	3.48	mg/L
			Chloride	1970	mg/L
			Chromium	<0.010	mg/L
		Published: 12/04/2016	Cobalt	40.6	mg/L
			Conductivity (EC)	50400	µS/cm
			Copper	161	mg/L
			Iron	0.1	mg/L
			Lead	0.011	mg/L
			Manganese	288	mg/L
			Mercury	0.0005	mg/L
			Nickel	12.8	mg/L
			pH	4.90	pH Unit
			Sulfate	48800	mg/L
			Vanadium	<0.10	mg/L
Zinc	232	mg/L			
SWL	13.06	m			
EPA ID No. 19 - GIP295	Monthly	Sampled: 22/03/2016	Arsenic	<0.001	mg/L
			Barium	0.058	mg/L
		Obtained: 07/04/2016	Beryllium	<0.001	mg/L
			Cadmium	0.0005	mg/L
			Chloride	9270	mg/L



		Published: 12/04/2016	Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	<0.001 0.004 29600 0.035 <0.05 <0.001 0.746 <0.0001 0.006 6.93 2520 <0.01 0.041 18.25	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. 20 - GIP296	Monthly	Sampled: 2/03/2016  Obtained: 11/03/2016  Published: 12/04/2016	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	<0.001 0.014 <0.001 0.002 2600 <0.001 0.011 19800 0.066 <0.05 <0.001 0.075 <0.0001 0.007 6.68 6840 <0.01 0.094 8.14	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: 22/03/2016  Obtained: 07/04/2016  Published: 12/04/2016	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury	0.006 <0.001 <0.001 <0.0001 74 <0.001 0.002 969 0.012 0.15 <0.001 0.014 <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	0.001	mg/L
			pH	8.17	pH Unit
			Sulfate	184	mg/L
			Vanadium	<0.01	mg/L
			Zinc	0.022	mg/L
			SWL	25.59	m
EPA ID No. 22 - GIP298	Monthly	Sampled: 2/03/2016  Obtained: 11/03/2016  Published: 12/04/2016	Arsenic	<0.010	mg/L
			Barium	<0.010	mg/L
			Beryllium	<0.010	mg/L
			Cadmium	<0.0010	mg/L
			Chloride	9480	mg/L
			Chromium	<0.010	mg/L
			Cobalt	<0.010	mg/L
			Conductivity (EC)	31800	µS/cm
			Copper	0.019	mg/L
			Iron	<0.10	mg/L
			Lead	<0.010	mg/L
			Manganese	0.086	mg/L
			Mercury	<0.0001	mg/L
			Nickel	<0.010	mg/L
			pH	6.66	pH Unit
			Sulfate	3270	mg/L
			Vanadium	<0.10	mg/L
			Zinc	<0.050	mg/L
			SWL	21.25	m
EPA ID No. 23 - GIP299	Monthly	Sampled: 22/03/2016  Obtained: 07/04/2016  Published: 12/04/2016	Arsenic	0.002	mg/L
			Barium	0.007	mg/L
			Beryllium	<0.001	mg/L
			Cadmium	0.0045	mg/L
			Chloride	7500	mg/L
			Chromium	<0.001	mg/L
			Cobalt	0.017	mg/L
			Conductivity (EC)	31100	µS/cm
			Copper	0.064	mg/L
			Iron	0.08	mg/L
			Lead	<0.001	mg/L
			Manganese	0.232	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.011	mg/L
			pH	6.61	pH Unit
			Sulfate	9240	mg/L
			Vanadium	<0.01	mg/L
			Zinc	0.105	mg/L
			SWL	27.37	m
EPA ID No. 24 -	Monthly	Sampled: 3/03/2016	Arsenic	<0.010	mg/L
			Barium	0.016	mg/L

GIP300		<p>Obtained: 11/03/2016</p> <p>Published: 12/04/2016</p>	<p>Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL</p>	<p>&lt;0.010 0.0033 6060 &lt;0.010 &lt;0.010 35200 0.025 &lt;0.10 &lt;0.010 0.095 &lt;0.0001 0.013 6.38 14800 &lt;0.10 &lt;0.050 19.37</p>	<p>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</p>
EPA ID No. 25 - GIP301	Monthly	<p>Sampled: 1/03/2016</p> <p>Obtained: 11/03/2016</p> <p>Published: 12/04/2016</p>	<p>Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL</p>	<p>&lt;0.001 0.036 &lt;0.001 0.0006 5630 &lt;0.001 0.025 20500 0.05 &lt;0.05 &lt;0.001 0.999 &lt;0.0001 0.01 6.71 2490 &lt;0.01 0.035 14.98</p>	<p>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</p>
EPA ID No. 26 - GIP302	Monthly	<p>Sampled: 2/03/2016</p> <p>Obtained: 11/03/2016</p> <p>Published: 12/04/2016</p>	<p>Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron</p>	<p>&lt;0.001 0.019 &lt;0.001 0.0024 6410 &lt;0.001 0.074 31000 0.034 0.06</p>	<p>mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L</p>

			Lead	<0.001	mg/L
			Manganese	11.1	mg/L
			Mercury	<0.0001	mg/L
			Nickel	0.074	mg/L
			pH	6.21	pH Unit
			Sulfate	10800	mg/L
			Vanadium	<0.01	mg/L
			Zinc	0.052	mg/L
			SWL	15.19	m