Environmental Monitoring Data

May 2018

EPL No: 11912
Licensee: Evolution Mining (Cowal) Pty Limited
Address: PO Box 210 West Wyalong NSW 2671
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Dust

Monitoring Point: 1 <McLintocks Shed>
Dust monitoring, Dust gauge located on private property to the west of ML1535 boundary

Frequency	Date Sampled	Date Obtained	Date Published	Particulates (g/m^2/mth)	Comments
Monthly	05/01/2018	20/02/2018	20/02/2018	9.2	Some bugs
Monthly	28/02/2018	16/03/2018	20/03/2018	1.8	
Monthly	28/03/2018	19/04/2018	19/04/2018	-	Sample broken in transit by courier
Monthly	01/05/2018	15/05/2018	20/06/2018	2.0	
Monthly					
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Monthly					
Number of Samples Collected				3	
Lowest Value				1.8	
Mean of Sample				4.3	
Highest Sample Value				9.2	
Median				2.0	

Monitoring Point: 2 <Site Office>
Dust monitoring, Dust gauge located on private property to the south of ML1535 boundary

Frequency	Date Sampled	Date Obtained	Date Published	Particulates (g/m^2/mth)	Comments
Monthly	05/01/2018	20/02/2018	20/02/2018	6.0	Some Algae
Monthly	28/02/2018	16/03/2018	20/03/2018	1.8	
Monthly	28/03/2018	19/04/2018	19/04/2018	11.7	Dark brown, some bugs
Monthly	01/05/2018	15/05/2018	20/06/2018	2.2	
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Number of Samples Collected				4	
Lowest Value				1.8	
Mean of Sample				5.4	
Highest Sample Value				11.7	
Median				4.1	

Monitoring Point: 3 <DG06>
Dust monitoring, Dust gauge located on private property to the east of ML1535 boundary

Frequency	Date Sampled	Date Obtained	Date Published	Particulates (g/m^2/mth)	Comments
Monthly	05/01/2018	20/02/2018	20/02/2018	3.8	
Monthly	28/02/2018	16/03/2018	20/03/2018	1.5	
Monthly	28/03/2018	19/04/2018	19/04/2018	3.5	
Monthly	30/04/2018	15/05/2018	20/06/2018	1.3	
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Number of Samples Collected				4	
Lowest Value				1.3	
Mean of Sample				2.5	
Highest Sample Value				3.8	
Median				2.5	

Monitoring Point: 4 <DG09>
Dust monitoring, Dust gauge located on private property to the south of ML1535 boundary

Frequency	Date Sampled	Date Obtained	Date Published	Particulates (g/m^2/mth)	Comments
Monthly	05/01/2018	20/02/2018	20/02/2018	5.0	
Monthly	28/02/2018	16/03/2018	20/03/2018	1.5	
Monthly	28/03/2018	19/04/2018	19/04/2018	1.6	
Monthly	30/04/2018	15/05/2018	20/06/2018	2.0	
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Number of Samples Collected				4	
Lowest Value				1.5	
Mean of Sample				2.5	
Highest Sample Value				5.0	
Median				1.8	

Monitoring Point: 5 <Site 52>
Dust monitoring, Dust gauge located within ML1535 and north of the open pit

Frequency	Date Sampled	Date Obtained	Date Published	Particulates (g/m^2/mth)	Comments
Monthly	05/01/2018	20/02/2018	20/02/2018	10.7	Algae
Monthly	01/03/2018	16/03/2018	20/03/2018	4.0	
Monthly	28/03/2018	19/04/2018	19/04/2018	2.3	
Monthly	02/05/2018	15/05/2018	20/06/2018	1.9	
Monthly					

Dust

Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Number of Samples Collected				4	
Lowest Value				1.9	
Mean of Sample				4.7	
Highest Sample Value				10.7	
Median				3.2	

Monitoring Point: 6 <DG01>
Dust monitoring, Dust gauge located on private property to the north of ML1535 boundary

Frequency	Date Sampled	Date Obtained	Date Published	Particulates ($g/m^2/mth$)	Comments
Monthly	05/01/2018	20/02/2018	20/02/2018	3.3	
Monthly	28/02/2018	16/03/2018	20/03/2018	1.2	
Monthly	28/03/2018	19/04/2018	19/04/2018	1.4	
Monthly	01/05/2018	15/05/2018	20/06/2018	1.5	
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Monthly					
Number of Samples Collected				4	
Lowest Value				1.2	
Mean of Sample				1.8	
Highest Sample Value				3.3	
Median				1.4	

Monitoring Point: 6 <HV1>
Dust monitoring, High volume sampler located on private property to the north of ML1535 boundary

Frequency	Date Sampled	Date Obtained	Date Published	Total Suspended Particles ($\mu g/m^3$)	Comments
Every 7 days	05/01/2018	25/01/2018	20/03/2018	85.6	Unit fault, run time - 12hr
Every 7 days	12/01/2018	27/02/2018	20/03/2018	-	Power outage/surge tripped breaker, unit did not run
Every 7 days	19/01/2018	27/02/2018	20/03/2018	142	Unit fault, run time - 9.35hr
Every 7 days	26/01/2018	27/02/2018	20/03/2018	50.5	Unit fault, run time - 9.9hr
Every 7 days	02/02/2018	27/02/2018	20/03/2018	31.7	Unit fault, run time - 21hr
Every 7 days	09/02/2018	27/02/2018	20/03/2018	207	Unit fault, run time - 4.7hr
Every 7 days	16/02/2018	19/03/2018	20/03/2018	150	Unit fault, run time - 11.5hr
Every 7 days	23/02/2018	19/03/2018	20/03/2018	113	Unit fault, run time - 8.4hr
Every 7 days	02/03/2018	19/03/2018	20/03/2018	75.9	Rental unit in place, fault run time - 15hr
Every 7 days	09/03/2018	24/03/2018	21/05/2018	40.4	Run time: 2894
Every 7 days	16/03/2018	24/03/2018	21/05/2018	84.6	Run time: 4113
Every 7 days	23/03/2018	24/03/2018	21/05/2018	162.0	Power outage, run tmie: 4759
Every 7 days	30/03/2018	24/03/2018	21/05/2018	93.9	Run time: 5797
Every 7 days	06/04/2018	15/05/2018	21/05/2018	74.3	
Every 7 days	13/04/2018	15/05/2018	21/05/2018	126.0	High winds and dust storm recorded on the 13/04
Every 7 days	20/04/2018	15/05/2018	21/05/2018	47.3	
Every 7 days	27/04/2018	15/05/2018	21/05/2018	77.0	
Every 7 days	04/05/2018	04/06/2018	20/06/2018	65.2	
Every 7 days	11/05/2018	04/06/2018	20/06/2018	23.3	
Every 7 days	18/05/2018	04/06/2018	20/06/2018	38.3	
Every 7 days	25/05/2018	04/06/2018	20/06/2018	69.3	Run time - 21.2hr
Every 7 days					
Every 7 days					
Every 7 days					
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Every 7 days					
Number of Samples Collected				20	
Lowest Value				23.3	
Mean of Sample				87.9	
Highest Sample Value				207.0	
Median				76.5	

Surface Water

Monitoring Point: 12 <D1>
Stormwater quality monitoring, Northern waste emplacement contained water storage

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Comments
Monthly	10/01/2017	10/01/2017	20/02/2018	8.2	6814	17	
Monthly	07/02/2018	07/02/2018	20/03/2018	8.2	7416	24	
Monthly	12/03/2018	19/03/2018	19/04/2018	8.4	8440	24	
Monthly	09/04/2018	09/04/2018	21/05/2018	8.6	9660	93	Water level low - 0.9m
Monthly	16/05/2018	16/05/2018	20/06/2018	8.6	9860	53	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				8.2	6814	17	
Mean of Sample				8.4	8438	42	
Highest Sample Value				8.6	9860	93	
Median				8.4	8440	24	

Monitoring Point: 13 <D4>
Stormwater quality monitoring, Southern waste emplacement contained water storage

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Comments
Monthly	10/01/2017	10/01/2017	20/02/2018	8.5	2728	18	
Monthly	07/02/2018	07/02/2018	20/03/2018	8.4	3170	14	
Monthly	12/03/2018	19/03/2018	19/04/2018	8.8	4250	18	
Monthly	09/04/2018	09/04/2018	21/05/2018	9.4	5833	12	Water level low - 0.4m
Monthly	16/05/2018	16/05/2018	20/06/2018	9.0	8270	57	Water level low
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				8.4	2728	12	
Mean of Sample				8.8	4850	24	
Highest Sample Value				9.4	8270	57	
Median				8.8	4250	18	

Lake Water

Monitoring Point: 14 <P1>
Ambient water quality monitoring, Surface water point within ML1535 on Lake Cowal

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Comments
Weekly	02/01/2018	02/01/2018	20/02/2018	8.71	529	29	
Weekly	10/01/2018	10/01/2018	20/02/2018	8.29	570	80	
Weekly	18/01/2018	18/01/2018	20/02/2018	8.43	571.9	68	
Weekly	23/01/2018	23/01/2018	20/02/2018	8.1	648	66	
Weekly	02/02/2018	02/12/2018	20/03/2018	8.66	615	376	
Weekly	06/02/2018	07/02/2018	20/03/2018	8.14	604	32	
Weekly	13/02/2018	13/02/2018	20/03/2018	7.73	665	95	
Weekly	21/02/2018	21/02/2018	20/03/2018	7.84	685	278	
Weekly	01/03/2018	01/03/2018	19/04/2018	7.59	682.1	176	
Weekly	05/03/2018	05/03/2018	19/04/2018	8.51	706.4	105	
Weekly	13/03/2018	13/03/2018	19/04/2018	8.87	758	131	
Weekly	20/03/2018	20/03/2018	19/04/2018	8.54	670	64	
Weekly	27/03/2018	27/03/2018	19/04/2018	9.18	614	106	
Weekly	04/04/2018	04/04/2018	21/05/2018	9.01	459	51	
Weekly	-	-	-	-	-	-	Lake Level below 204.5 AHD, monitoring no longer required
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Weekly							
Number of Samples Collected				14	14	14	
Lowest Value				7.6	459.0	29.0	
Mean of Sample				8.4	626.9	118.4	
Highest Sample Value				9.2	758.0	376.0	
Median				8.5	631.3	87.5	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Total Suspended Solids (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	22/01/2018	20/02/2018	204	<0.001	0.008	<0.0001	0.003	<0.001	<0.001	0.003	<0.01	80	<0.005	
Quarterly	04/04/2018	12/04/2018	21/05/2018	191	<0.001	0.011	<0.0001	0.002	<0.001	0.002	0.003	<0.01	51	<0.005	
Quarterly															
Quarterly															

Monitoring Point: 15 <P2>
Ambient water quality monitoring, Surface water point within ML1535 on Lake Cowal

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Comments
Monthly	10/01/2018	10/01/2018	20/02/2018	8.28	579	
Monthly	06/02/2018	07/02/2018	20/03/2018	8.34	604	
Monthly	13/03/2018	13/03/2018	19/04/2018	8.83	763	
Monthly	04/04/2018	04/04/2018	21/05/2018	9.17	468	
Monthly	-	-	-	-	-	Lake Level below 204.5 AHD, monitoring no longer required
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Number of Samples Collected				4	4	
Lowest Value				8.3	468.0	
Mean of Sample				8.7	603.5	
Highest Sample Value				9.2	763.0	
Median				8.6	591.5	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Total Suspended Solids (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	22/01/2018	20/02/2018	202	<0.001	0.008	<0.0001	0.002	<0.001	<0.001	0.003	<0.01	79	<0.005	
Quarterly	04/04/2018	12/04/2018	21/05/2018	191	<0.001	0.012	<0.0001	0.002	<0.001	0.002	0.002	<0.01	53	<0.005	
Quarterly															
Quarterly															

Monitoring Point: 16 <P3>
Ambient water quality monitoring, Surface water point within ML1535 on Lake Cowal

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Comments
Weekly	02/01/2018	02/01/2018	20/02/2018	8.72	550	73	
Weekly	10/01/2018	10/01/2018	20/02/2018	8.27	579	84	
Weekly	18/01/2018	18/01/2018	20/02/2018	8.54	569.4	46	
Weekly	23/01/2018	23/01/2018	20/02/2018	8.16	635.7	65	
Weekly	02/02/2018	02/12/2018	20/03/2018	8.50	621	293	
Weekly	06/02/2018	07/02/2018	20/03/2018	8.39	604	71	
Weekly	13/02/2018	13/02/2018	20/03/2018	8.36	655.9	93	
Weekly	21/02/2018	21/02/2018	20/03/2018	8.41	688	243	
Weekly	01/03/2018	01/03/2018	19/04/2018	8.64	685.1	155	
Weekly	05/03/2018	05/03/2018	19/04/2018	8.67	706.3	103	
Weekly	13/03/2018	13/03/2018	19/04/2018	8.88	771	137	
Weekly	20/03/2018	20/03/2018	19/04/2018	8.95	672	77	
Weekly	27/03/2018	27/03/2018	19/04/2018	9.30	600	101	
Weekly	04/04/2018	04/04/2018	21/05/2018	9.14	465	59	
Weekly	-	-	-	-	-	-	Lake Level bellow 204.5 AHD, monitoring no longer required
Weekly							
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Weekly							
Number of Samples Collected				14	14	14	
Lowest Value				8.2	465.0	46.0	
Mean of Sample				8.6	628.7	114.3	
Highest Sample Value				9.3	771.0	293.0	
Median				8.6	628.2	88.5	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Total Suspended Solids (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	22/01/2018	20/02/2018	202	<0.001	0.008	<0.0001	0.002	<0.001	<0.001	0.003	<0.01	84	<0.005	
Quarterly	04/04/2018	12/04/2018	21/05/2018	223	<0.001	0.013	<0.0001	0.004	<0.001	0.002	0.003	<0.01	59	<0.005	
Quarterly															
Quarterly															

Lake Water

Monitoring Point: 17 <B1>
Ambient water quality monitoring, Surface water point within ML1535 on Lake Cowal

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Comments
Monthly	10/01/2018	10/01/2018	20/02/2018	8.20	574	
Monthly	06/02/2018	07/02/2018	20/03/2018	8.45	599	
Monthly	13/03/2018	13/03/2018	19/04/2018	8.9	738	
Monthly	04/04/2018	04/04/2018	21/05/2018	9.19	454	
Monthly	-			-	-	Lake Level below 204.5 AHD, monitoring no longer required
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Number of Samples Collected				4	4	
Lowest Value				8.2	454.0	
Mean of Sample				8.7	591.3	
Highest Sample Value				9.2	738.0	
Median				8.7	586.5	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Total Suspended Solids (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	22/01/2018	20/02/2018	219	<0.001	0.008	<0.0001	0.002	<0.001	<0.001	0.003	<0.01	84	<0.005	
Quarterly	04/04/2018	12/04/2018	21/05/2018	180	<0.001	0.012	<0.0001	0.003	<0.001	0.003	0.004	<0.01	51	<0.005	
Quarterly															
Quarterly															

Monitoring Point: 18 <B6>
Ambient water quality monitoring, Surface water point on Lake Cowal to the south-east of ML1535 boundary

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Comments
Monthly	10/01/2018	10/01/2018	20/02/2018	8.10	533	
Monthly	06/02/2018	07/02/2018	20/03/2018	8.55	528	
Monthly	13/03/2018	13/03/2018	19/04/2018	8.9	750	
Monthly	04/04/2018	-	-	-	-	Unable to safely access due to low lake level <204.5 AHD
Monthly	-	-	-	-	-	Lake Level bellow 204.5 AHD, monitoring no longer required
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Number of Samples Collected				3	3	
Lowest Value				8.1	528.0	
Mean of Sample				8.5	603.7	
Highest Sample Value				8.9	750.0	
Median				8.6	533.0	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Total Suspended Solids (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	22/01/2018	20/02/2018	192	<0.001	0.007	<0.0001	0.002	<0.001	<0.001	0.003	<0.01	59	<0.005	
Quarterly	04/04/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	Unable to safely access due to low lake level <204.5 AHD
Quarterly															
Quarterly															

Groundwater

Monitoring Point: 19 <P555A-R>
Groundwater quality monitoring, Piezometer located up gradient of southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	04/01/2018	04/01/2018	20/02/2018	6.7	29480	20.917	
Monthly	08/02/2018	08/02/2018	20/03/2018	6.89	31030	20.915	
Monthly	12/03/2018	12/03/2018	19/04/2018	6.72	31108	20.899	
Monthly	06/04/2018	06/04/2018	21/05/2018	6.7	31249	20.894	
Monthly	08/05/2018	08/05/2018	20/06/2017	6.59	29760	20.883	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.6	29480	20.883	
Mean of Sample				6.7	30525	20.902	
Highest Sample Value				6.9	31249	20.917	
Median				6.7	31030	20.899	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	04/01/2018	19/01/2018	02/02/2018	835	<0.0005	<0.0005	0.0006	329	9640	0.001	<0.005	0.016	<0.0002	880	0.161	0.0016	0.0174	25	0.003	6790	2700	22200	4440	0.007	
Quarterly	06/04/2018	17/05/2018	21/05/2018	872	<0.0005	<0.0005	0.0005	308	10400	0.001	<0.005	0.030	<0.0002	753	0.239	0.0038	0.0097	23	0.002	5880	2580	20400	3870	0.007	
Quarterly																									
Quarterly																									

Monitoring Point: 21 <P558A-R>
Groundwater quality monitoring, Piezometer located up gradient of northern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	04/01/2018	04/01/2018	20/02/2018	6.68	33320	20.194	
Monthly	08/02/2018	08/02/2018	20/03/2018	6.75	33880	19.224	
Monthly	06/03/2018	06/03/2018	19/04/2018	6.58	34488	19.216	
Monthly	06/04/2018	06/04/2018	21/05/2018	6.64	34926	19.196	
Monthly	08/05/2018	08/05/2018	20/06/2017	6.51	33989	19.221	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.5	33320	19.196	
Mean of Sample				6.6	34121	19.410	
Highest Sample Value				6.8	34926	20.194	
Median				6.6	33989	19.221	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	04/01/2018	19/01/2018	02/02/2018	803	<0.0005	<0.0005	<0.0002	318	10600	0.041	<0.005	3.24	<0.0002	879	0.161	0.0128	1.16	28	0.006	7960	3340	22900	4410	<0.005	
Quarterly	06/04/2018	17/05/2018	21/05/2018	797	<0.0005	<0.0005	<0.0002	295	11700	0.050	<0.005	4.46	<0.0002	740	0.229	0.0206	1.57	26	0.005	6960	3330	23600	3780	<0.005	
Quarterly																									
Quarterly																									

Monitoring Point: 22 <P412A-R>
Groundwater quality monitoring, Piezometer located down gradient of southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	04/01/2018	04/01/2018	20/02/2018	6.54	40260	9.838	
Monthly	08/02/2018	08/02/2018	20/03/2018	6.69	39780	9.872	
Monthly	12/03/2018	12/03/2018	19/04/2018	6.54	42887	10.032	
Monthly	09/04/2018	09/04/2018	21/05/2018	6.66	43761	9.965	
Monthly	14/05/2018	14/05/2018	20/06/2017	6.44	42893	9.986	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.4	39780	9.838	
Mean of Sample				6.6	41916	9.939	
Highest Sample Value				6.7	43761	10.032	
Median				6.5	42887	9.965	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	04/01/2018	19/01/2018	02/02/2018	518	<0.0005	0.0009	0.0007	800	13600	0.001	<0.005	0.097	0.0003	1420	0.0313	0.0014	0.0588	46	0.003	8780	3800	27500	7840	<0.005	
Quarterly	09/04/2018	17/05/2018	21/05/2018	546	<0.0005	0.0007	0.0008	751	14900	0.001	<0.005	0.107	<0.0002	1410	0.028	0.0014	0.0657	45	0.002	8100	3760	31400	7680	<0.005	
Quarterly																									
Quarterly																									

Monitoring Point: 23 <P412A>
Groundwater quality monitoring, Piezometer located down gradient of southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	04/01/2018	04/01/2018	20/02/2018	6.64	41640	11.392	
Monthly	26/02/2018	26/02/2018	20/03/2018	6.64	41891	11.293	
Monthly	12/03/2018	12/03/2018	19/04/2018	6.59	42503	11.31	
Monthly	09/04/2018	09/04/2018	21/05/2018	6.68	43514	11.269	
Monthly	14/05/2018	14/05/2018	20/06/2017	6.52	42216	11.288	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.5	41640	11.269	
Mean of Sample				6.6	42353	11.310	
Highest Sample Value				6.7	43514	11.392	
Median				6.6	42216	11.293	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	04/01/2018	19/01/2018	02/02/2018	461	<0.0005	<0.0005	<0.0002	823	13700	0.001	<0.005	0.114	0.0003	1570	0.0055	0.0012	0.039	71	0.003	8810	3650	30600	8520	<0.005	
Quarterly	09/04/2018	17/05/2018	21/05/2018	479	<0.0005	<0.0005	<0.0002	708	14900	0.001	<0.005	0.058	<0.0002	1440	0.0054	0.0006	0.0392	62	0.003	7610	3560	31500	7700	<0.005	
Quarterly																									
Quarterly																									

Groundwater

Monitoring Point: 24 <P414A>
Groundwater quality monitoring, Piezometer located down gradient of southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	05/01/2018	05/01/2018	20/02/2018	6.67	39830	11.909	
Monthly	12/02/2018	12/02/2018	20/03/2018	6.65	38810	11.708	
Monthly	12/03/2018	12/03/2018	19/04/2018	6.64	40981	11.803	
Monthly	06/04/2018	06/04/2018	21/05/2018	6.66	41594	11.752	
Monthly	03/05/2018	03/05/2018	20/06/2017	6.45	40519	11.724	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.5	38810	11.708	
Mean of Sample				6.6	40347	11.779	
Highest Sample Value				6.7	41594	11.909	
Median				6.7	40519	11.752	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	05/01/2018	19/01/2018	02/02/2018	610	<0.0005	<0.0005	<0.0002	577	13600	<0.001	<0.005	0.01	<0.0002	1420	0.0032	0.0005	0.0249	40	0.015	8530	3330	27900	7290	<0.005	
Quarterly	06/04/2018	17/05/2018	21/05/2018	635	<0.0005	<0.0005	<0.0002	576	14200	<0.001	<0.005	0.009	<0.00020	1500	0.0024	0.0004	0.0206	40	0.014	8350	3040	29300	7620	<0.005	
Quarterly																									
Quarterly																									

Monitoring Point: 25 <P414B>
Groundwater quality monitoring, Piezometer located down gradient of southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	17/01/2018	17/01/2018	20/02/2018	6.7	40450	10.686	
Monthly	26/02/2018	26/02/2018	20/03/2018	6.89	42297	11.872	
Monthly	26/03/2018	26/03/2018	19/04/2018	6.72	40477	11.817	
Monthly	11/04/2018	11/04/2018	21/05/2018	6.76	41450	11.834	
Monthly	24/05/2018	24/05/2018	20/06/2017	7.05	40976	11.809	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.7	40450	10.686	
Mean of Sample				6.8	41130	11.604	
Highest Sample Value				7.1	42297	11.872	
Median				6.8	40976	11.817	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	17/01/2018	31/02/18	02/02/2018	517	<0.0005	<0.0005	<0.0002	439	13700	<0.001	<0.005	<0.005	<0.0002	1390	0.071	0.0004	0.0009	27	0.004	8750	2930	32600	6820	0.01	
Quarterly	11/04/2018	24/04/2018	21/05/2018	490	<0.0005	0.0005	<0.0002	410	13000	<0.001	<0.005	0.023	<0.0002	1290	0.0511	0.0003	0.0022	21	0.003	8380	2780	32500	6340	0.01	
Quarterly																									
Quarterly																									

Monitoring Point: 26 <PP03>
Groundwater quality monitoring, Piezometer located near the processing plant area

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	19/01/2018	19/01/2018	20/02/2018	7.8	2100	16.501	
Monthly	27/02/2018	27/02/2018	20/03/2018	7.71	1989	16.323	
Monthly	26/03/2018	26/03/2018	19/04/2018	7.05	3616	15.233	
Monthly	13/04/2018	13/04/2018	21/05/2018	7.69	4495	15.283	
Monthly	24/05/2018	24/05/2018	20/06/2017	7.22	4526	15.635	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				7.1	1989	15.233	
Mean of Sample				7.5	3345	15.795	
Highest Sample Value				7.8	4526	16.501	
Median				7.7	3616	15.635	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	19/01/2018	06/02/2018	02/02/2018	193	0.0006	0.001	0.00005	98	841	0.0034	<0.004	0.004	0.0002	55	<0.0005	0.007	0.0005	9	0.0009	558	472	2000	471	0.002	
Quarterly	13/04/2018	24/04/2018	21/05/2018	198	<0.0005	0.0013	<0.0002	106	850	0.0050	<0.004	<0.005	<0.0002	58	<0.0005	0.008	0.0009	9	<0.002	569	512	2240	504	0.005	
Quarterly																									
Quarterly																									

Monitoring Point: 27 <PP04>
Groundwater quality monitoring, Piezometer located near the processing plant area

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	19/01/2018	19/01/2018	20/02/2018	6.71	47600	15.887	
Monthly	27/02/2018	27/02/2018	20/03/2018	6.56	45150	15.675	
Monthly	26/03/2018	26/03/2018	19/04/2018	6.45	47194	14.784	
Monthly	13/04/2018	13/04/2018	21/05/2018	6.78	47670	14.661	
Monthly	24/05/2018	24/05/2018	20/06/2017	6.36	46342	14.517	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.4	45150	14.517	
Mean of Sample				6.6	46791	15.105	
Highest Sample Value				6.8	47670	15.887	
Median				6.6	47194	14.784	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	19/01/2018	06/02/2018	02/02/2018	524	<0.0005	<0.0005	<0.0002	812	17200	<0.001	<0.005	<0.005	0.0009	1630	0.0009	0.0012	0.0048	50	0.01	9660	3480	39000	8740	<0.005	
Quarterly	13/04/2018	24/04/2018	21/05/2018	555	<0.0005	<0.0005	<0.0002	891	17400	<0.001	<0.004	<0.005	0.0009	1740	0.001	0.0009	0.0057	48.00	0.011	10000	3850	56100	9390	<0.005	
Quarterly																									
Quarterly																									

Groundwater

Monitoring Point: 30 <P417A>
Groundwater quality monitoring, Piezometer located down gradient of southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	08/01/2018	08/01/2018	20/02/2018	6.49	42660	12.420	
Monthly	13/02/2018	13/02/2018	20/03/2018	6.52	42410	12.392	
Monthly	13/03/2018	13/03/2018	19/04/2018	6.49	40981	12.373	
Monthly	10/04/2018	10/04/2018	21/05/2018	6.65	45638	12.376	
Monthly	15/05/2018	15/05/2018	20/06/2017	6.31	44403	12.381	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.3	40981	12.373	
Mean of Sample				6.5	43218	12.388	
Highest Sample Value				6.7	45638	12.420	
Median				6.5	42660	12.381	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	08/01/2018	22/01/2018	02/02/2018	522	<0.0005	<0.0005	0.0007	720	14900	<0.001	<0.005	0.005	<0.0002	1550	0.0497	0.0013	0.0128	34	0.005	9100	3340	35600	8180	<0.005	
Quarterly	10/04/2018	17/05/2018	21/05/2018	529	<0.0005	0.0005	0.0009	677	14400	<0.001	<0.005	0.007	<0.0002	1560	0.0391	0.0011	0.0104	31	0.006	8750	3320	22200	8110	<0.005	
Quarterly																									
Quarterly																									

Monitoring Point: 31 <P417B>

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	17/01/2018	17/01/2018	20/02/2018	6.7	39890	11.989	
Monthly	27/02/2018	27/02/2018	20/03/2018	6.49	39851	12.374	
Monthly	26/03/2018	26/03/2018	19/04/2018	6.62	40651	12.318	
Monthly	11/04/2018	11/04/2018	21/05/2018	6.64	41510	12.536	
Monthly	24/05/2018	24/05/2018	20/06/2017	7.04	40374	12.328	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.5	39851	11.989	
Mean of Sample				6.7	40455	12.309	
Highest Sample Value				7.0	41510	12.536	
Median				6.6	40374	12.328	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	17/01/2018	31/01/2018	02/02/2018	252	<0.0005	<0.0005	<0.0002	605	13600	<0.001	<0.005	<0.005	0.0002	1460	<0.0005	0.0003	0.0006	23	0.008	8490	2510	31200	7520	0.009	
Quarterly	11/04/2018	24/04/2018	21/05/2018	266	<0.0005	0.0007	<0.0002	565	13200	<0.001	<0.005	0.014	<0.0002	1330	0.0006	0.0003	0.0017	19	0.01	7920	2860	37400	6890	0.009	
Quarterly																									
Quarterly																									

Monitoring Point: 32 <P418A>
Groundwater quality monitoring, Piezometer located down gradient of northern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	05/01/2018	05/01/2018	20/02/2018	6.51	48010	9.839	
Monthly	08/02/2018	08/02/2018	20/03/2018	6.62	46430	9.809	
Monthly	12/03/2018	12/03/2018	19/04/2018	6.46	46862	9.787	
Monthly	06/04/2018	06/04/2018	21/05/2018	6.48	47199	9.769	
Monthly	18/05/2018	18/05/2018	20/06/2017	6.45	46012	9.777	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.5	46012	9.769	
Mean of Sample				6.5	46903	9.796	
Highest Sample Value				6.6	48010	9.839	
Median				6.5	46862	9.787	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	05/01/2018	22/01/2018	02/02/2018	639	<0.0005	<0.0005	<0.0002	553	15200	0.002	<0.005	0.008	<0.0002	1450	0.211	0.0007	0.0098	23	0.005	10500	4730	37800	7350	<0.005	
Quarterly	06/04/2018	17/05/2018	21/05/2018	647	<0.0005	<0.0005	<0.0002	514	16200	<0.001	<0.005	<0.005	<0.0002	1450	0.126	0.0012	0.0082	23	0.004	9610	4820	33200	7250	<0.005	
Quarterly																									
Quarterly																									

Monitoring Point: 33 <P418B>
Groundwater quality monitoring, Piezometer located down gradient of northern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	05/01/2018	05/01/2018	20/02/2018	6.47	41280	9.81	
Monthly	08/02/2018	08/02/2018	20/03/2018	6.58	40270	9.784	
Monthly	12/03/2018	12/03/2018	19/04/2018	6.58	42123	9.749	
Monthly	06/04/2018	06/04/2018	21/05/2018	6.64	42505	9.734	
Monthly	18/05/2018	18/05/2018	20/06/2017	6.64	41678	9.745	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.5	40270	9.734	
Mean of Sample				6.6	41571	9.764	
Highest Sample Value				6.6	42505	9.810	
Median				6.6	41678	9.749	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	05/01/2018	19/01/2018	02/02/2018	619	<0.0005	<0.0005	<0.0002	334	12800	0.048	<0.005	0.49	<0.0002	1200	0.102	0.0076	0.813	10	0.003	9750	4250	31000	5780	<0.005	
Quarterly	06/04/2018	17/05/2018	21/05/2018	612	<0.0005	<0.0005	<0.0002	315	14000	0.018	<0.005	0.176	<0.0002	1140	0.0371	0.0028	0.378	11	0.002	8690	4080	30000	5480	<0.005	
Quarterly																									
Quarterly																									

Groundwater

Monitoring Point: 34 <TSFNA>
Groundwater quality monitoring, Piezometer located down gradient of northern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	22/01/2018	22/01/2018	20/02/2018	6.62	47120	11.549	
Monthly	13/02/2018	13/02/2018	20/03/2018	6.58	44930	12.011	
Monthly	28/03/2018	28/03/2018	19/04/2018	6.57	48406	11.198	
Monthly	18/04/2018	18/04/2018	21/05/2018	6.61	48803	11.423	
Monthly	25/05/2018	25/05/2018	20/06/2017	6.48	47440	11.156	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.5	44930	11.156	
Mean of Sample				6.6	47340	11.467	
Highest Sample Value				6.6	48803	12.011	
Median				6.6	47440	11.423	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	22/01/2018	31/01/2018	02/02/2018	551	<0.0005	0.0011	<0.0002	605	15200	<0.001	<0.005	0.037	<0.0002	1610	1.73	0.003	0.0047	32	<0.002	11300	4370	30400	8140	<0.005	
Quarterly	18/04/2018	26/04/2018	21/05/2018	603	<0.0005	0.0016	0.0004	640	16100	<0.001	<0.005	0.268	<0.0002	1460	4.17	0.0048	0.0124	23	<0.002	9570	4620	50000	7610	0.023	
Quarterly																									
Quarterly																									

Monitoring Point: 36 <PDB1A>
Groundwater quality monitoring, Pit dewatering bore

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	10/01/2018	10/01/2018	20/02/2018	6.38	50970	15.718	
Monthly	12/02/2018	12/02/2018	20/03/2018	6.50	54198	15.774	
Monthly	13/03/2018	13/03/2018	19/04/2018	6.40	52354	16.319	
Monthly	10/04/2018	10/04/2018	21/05/2018	6.55	52948	15.913	
Monthly	14/05/2018	14/05/2018	20/06/2017	6.37	51778	16.005	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.4	50970	15.718	
Mean of Sample				6.4	52450	15.946	
Highest Sample Value				6.6	54198	16.319	
Median				6.4	52354	15.913	

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	22/01/2018	02/02/2018	<0.0005	<0.0005	0.002	950	16900	<0.001	<0.005	<0.0002	1950	2.06	0.0008	0.0547	37	<0.002	12000	4370	44000	10400	<0.005	
Quarterly	10/04/2018	17/04/2018	21/05/2018	<0.0005	0.0008	0.0043	1010	16900	<0.001	0.014	<0.0002	1870	3.18	0.0018	0.0482	25	0.002	10500	4140	27300	10200	<0.005	
Quarterly																							
Quarterly																							

Monitoring Point: 38 <PDB3A>
Groundwater quality monitoring, Pit dewatering bore

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	30/01/2018	30/01/2018	20/02/2018	6.73	47720	82.203	
Monthly	27/02/2018	27/02/2018	20/03/2018	6.75	47721	82.287	
Monthly	27/03/2018	27/03/2018	19/04/2018	6.51	51897	82.206	
Monthly	18/04/2018	18/04/2018	21/05/2018	6.51	53297	82.286	
Monthly	24/05/2018	24/05/2018	20/06/2017	7.24	52459	83.270	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.5	47720	82.203	
Mean of Sample				6.7	50619	82.450	
Highest Sample Value				7.2	53297	83.270	
Median				6.7	51897	82.286	

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	30/01/2018	06/02/2018	02/02/2018	0.0015	0.002	0.0004	482	4320	0.002	0.011	<0.0002	486	0.09	0.0097	<0.0005	35	0.020	2610	3170	12200	3200	<0.005	Results off trend for bore, potential lab error/sample contamination
Quarterly	18/04/2018	26/04/2018	21/05/2018	0.0009	0.0016	0.0061	1160	18200	0.01	0.008	<0.0002	1830	1.29	0.0081	0.0186	48	0.003	9210	4040	55800	10400	0.720	Results trending with historic monitorng
Quarterly																							
Quarterly																							

Monitoring Point: 40 <PDB5A>
Groundwater quality monitoring, Pit dewatering bore

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	16/01/2018	16/01/2018	20/02/2018	6.68	53670	30.484	
Monthly	27/02/2018	27/02/2018	20/03/2018	6.77	53104	30.614	
Monthly	16/03/2018	16/03/2018	19/04/2018	6.57	51525	30.951	
Monthly	11/04/2018	11/04/2018	21/05/2018	6.87	51997	30.642	
Monthly	15/05/2018	15/05/2018	20/06/2017	6.72	49829	30.619	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.6	49829	30.484	
Mean of Sample				6.7	52025	30.662	
Highest Sample Value				6.9	53670	30.951	
Median				6.7	51997	30.619	

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	16/01/2018	31/01/2018	02/02/2018	<0.0005	0.0037	0.0096	868	17900	0.001	0.008	<0.0002	1860	0.0294	0.0055	0.0291	44.0	0.004	9380	3110	43300	9830	0.052	
Quarterly	11/04/2018	24/04/2018	21/05/2018	<0.0005	0.0052	0.0084	854	16900	0.011	0.01	<0.0002	1890	0.0386	0.0074	0.0472	38.0	0.006	9740	3480	51100	9920	0.081	
Quarterly																							
Quarterly																							

Groundwater

Monitoring Point: 44 <MON01A>
Groundwater quality monitoring, Groundwater monitoring bore located to the east of the northern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	04/01/2018	04/01/2018	20/02/2018	6.47	45360	10.881	
Monthly	14/02/2018	14/02/2018	20/03/2018	6.44	44150	10.908	
Monthly	13/03/2018	13/03/2018	19/04/2018	6.47	46681	10.656	
Monthly	09/04/2018	09/04/2018	21/05/2018	6.55	47442	10.547	
Monthly	24/05/2018	24/05/2018	20/06/2017	6.59	45843	10.424	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.4	44150	10.424	
Mean of Sample				6.5	45895	10.683	
Highest Sample Value				6.6	47442	10.908	
Median				6.5	45843	10.656	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	04/01/2018	19/01/2018	02/02/2018	333	<0.0005	0.0015	0.0005	515	14400	<0.001	<0.005	0.246	<0.0002	1420	1.59	0.0006	0.0226	25	<0.002	9850	4590	36000	7130	<0.005	
Quarterly	09/04/2018	17/04/2018	21/05/2018	346	<0.0005	<0.0005	0.0009	553	16100	<0.001	<0.005	0.232	<0.0002	1500	0.472	0.0009	0.0591	26	<0.002	9990	4590	34100	7560	<0.005	
Quarterly																									
Quarterly																									

Monitoring Point: 45 <MON02A>
Groundwater quality monitoring, Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	10/01/2018	10/01/2018	20/02/2018	6.67	37760	9.301	
Monthly	14/02/2018	14/02/2018	20/03/2018	6.69	38730	9.283	
Monthly	13/03/2018	13/03/2018	19/04/2018	6.64	40361	9.285	
Monthly	10/04/2018	10/04/2018	21/05/2018	6.7	40828	9.277	
Monthly	17/05/2018	17/05/2018	20/06/2017	6.52	39732	9.243	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.5	37760	9.243	
Mean of Sample				6.6	39482	9.278	
Highest Sample Value				6.7	40828	9.301	
Median				6.7	39732	9.283	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	22/01/2018	02/02/2018	722	<0.0005	<0.0005	<0.0002	486	12500	0.003	<0.005	0.021	<0.0002	1200	0.0383	0.0018	0.103	48	0.009	8060	3040	31200	6160	<0.005	
Quarterly	10/04/2018	17/04/2018	21/05/2018	790	<0.0005	0.0005	0.0002	494	12600	<0.001	<0.005	0.010	<0.0002	1220	0.0246	0.0019	0.143	40	0.010	8310	3370	20700	6260	<0.005	
Quarterly																									
Quarterly																									

Monitoring Point: 50 <TSFNB>
Groundwater quality monitoring, Piezometer located down gradient of northern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	10/01/2018	10/01/2018	20/02/2018	6.40	43880	12.292	
Monthly	13/02/2018	13/02/2018	20/03/2018	6.39	42290	12.424	
Monthly	28/03/2018	28/03/2018	19/04/2018	6.38	45396	12.108	
Monthly	18/04/2018	18/04/2018	21/05/2018	6.38	46002	12.204	
Monthly	25/05/2018	25/05/2018	20/06/2017	6.32	44972	12.196	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.3	42290	12.108	
Mean of Sample				6.4	44508	12.245	
Highest Sample Value				6.4	46002	12.424	
Median				6.4	44972	12.204	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	22/01/2018	02/02/2018	239	<0.0005	<0.0005	0.0005	466	14800	0.097	<0.005	<0.005	<0.00020	1550	0.41	0.0779	2.39	60	0.005	10900	4300	31000	7550	<0.005	
Quarterly	18/04/2018	26/04/2018	21/05/2018	233	<0.0005	<0.0005	0.0004	464	15300	0.174	<0.005	12.100	<0.00020	1370	0.527	0.091	2.89	45	0.004	8860	4350	46400	6800	<0.005	
Quarterly																									
Quarterly																									

Monitoring Point: 51 <TSFNC>
Groundwater quality monitoring, Piezometer located down gradient of northern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	10/01/2018	10/01/2018	20/02/2018	6.07	41450	12.716	
Monthly	13/02/2018	13/02/2018	20/03/2018	5.94	41920	12.695	
Monthly	28/03/2018	28/03/2018	19/04/2018	6.3	47026	12.624	
Monthly	18/04/2018	18/04/2018	21/05/2018	6.42	47548	12.648	
Monthly	25/05/2018	25/05/2018	20/06/2017	6.4	47009	12.626	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				5.9	41450	12.624	
Mean of Sample				6.2	44991	12.662	
Highest Sample Value				6.4	47548	12.716	
Median				6.3	47009	12.648	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	22/01/2018	02/02/2018	131	<0.0005	<0.0005	0.0006	477	13900	0.010	<0.005	0.039	<0.0002	1460	0.049	0.0086	0.393	58	0.002	10200	4280	34800	7200	0.070	
Quarterly	18/04/2018	26/04/2018	21/05/2018	141	<0.0005	<0.0005	0.0006	548	15700	0.008	<0.005	0.411	<0.0002	1480	0.084	0.0124	0.357	48	<0.002	9140	4660	49500	7460	0.081	
Quarterly																									
Quarterly																									

Groundwater

Monitoring Point: 52 <PDB1B>
Groundwater quality monitoring, Pit dewatering bore

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	10/01/2018	10/01/2018	20/02/2018	6.16	46640	5.349	
Monthly	12/02/2018	12/02/2018	20/03/2018	6.13	45900	5.504	
Monthly	13/03/2018	13/03/2018	19/04/2018	6.24	49762	5.662	
Monthly	10/04/2018	10/04/2018	21/05/2018	6.47	49842	5.801	
Monthly	14/05/2018	14/05/2018	20/06/2017	6.24	48974	5.967	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.1	45900	5.349	
Mean of Sample				6.2	48224	5.657	
Highest Sample Value				6.5	49842	5.967	
Median				6.2	48974	5.662	

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	22/01/2018	02/02/2018	<0.0005	<0.0005	<0.0002	823	16100	<0.001	0.045	<0.0002	1850	0.517	0.0002	0.0079	27	<0.002	10900	4610	42000	9670	<0.005	
Quarterly	10/04/2018	17/04/2018	21/05/2018	<0.0005	0.0006	<0.0002	880	15800	<0.001	1.28	<0.0002	1810	0.548	0.0003	0.0091	19	<0.002	9660	3950	26100	9650	0.006	
Quarterly																							
Quarterly																							

Monitoring Point: 53 <PDB3B>
Groundwater quality monitoring, Pit dewatering bore

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	30/01/2018	30/01/2018	20/02/2018	6.13	47660	21.44	
Monthly	27/02/2018	27/02/2018	20/03/2018	6.58	52723	21.385	
Monthly	27/03/2018	27/03/2018	19/04/2018	6.31	50350	21.300	
Monthly	18/04/2018	18/04/2018	21/05/2018	6.23	51938	21.314	
Monthly	24/05/2018	24/05/2018	20/06/2017	6.44	50800	23.290	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.1	47660	21.300	
Mean of Sample				6.3	50694	21.746	
Highest Sample Value				6.6	52723	23.290	
Median				6.3	50800	21.385	

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	30/01/2018	06/02/2018	02/02/2018	<0.0005	<0.0005	0.0007	1110	16900	<0.001	0.007	0.0002	2270	0.021	0.0002	0.0016	65	0.016	9830	5050	44800	12100	<0.005	
Quarterly	18/04/2018	26/04/2018	21/05/2018	<0.0005	<0.0005	0.0007	1130	17200	<0.001	0.011	<0.0002	2060	0.0432	0.0002	0.0053	44	0.018	8820	5270	56400	11300	<0.005	
Quarterly																							
Quarterly																							

Monitoring Point: 54 <PDB5B>
Groundwater quality monitoring, Pit dewatering bore

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	16/01/2018	16/01/2018	20/02/2018	5.91	46270	14.854	
Monthly	27/02/2018	27/02/2018	20/03/2018	6.17	50321	14.758	
Monthly	16/03/2018	16/03/2018	19/04/2018	6.05	48924	14.737	
Monthly	11/04/2018	11/04/2018	21/05/2018	6.16	49662	14.397	
Monthly	15/05/2018	15/05/2018	20/06/2017	5.96	48304	15.143	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				5.9	46270	14.397	
Mean of Sample				6.1	48696	14.778	
Highest Sample Value				6.2	50321	15.143	
Median				6.1	48924	14.758	

Frequency	Date Sampled	Date Obtained	Date Published	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	16/01/2018	31/01/2018	02/02/2018	<0.0005	0.0013	0.0014	856	16200	0.004	<0.005	<0.0002	1810	0.0172	0.0017	0.0332	48	<0.002	8970	3180	41100	9590	<0.005	
Quarterly	11/04/2018	24/04/2018	21/05/2018	<0.0005	0.0020	0.0014	840	15800	<0.001	0.019	<0.0002	1820	0.0167	0.0008	0.019	39	<0.002	9210	3590	42000	9590	0.005	
Quarterly																							
Quarterly																							

Monitoring Point: 55 <MON01B>
Groundwater quality monitoring, Groundwater monitoring bore located to the east of the northern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	17/01/2018	17/01/2018	20/02/2018	6.71	40150	12.849	
Monthly	26/02/2018	26/02/2018	20/03/2018	6.71	44063	12.822	
Monthly	26/03/2018	26/03/2018	19/04/2018	6.02	42150	12.763	
Monthly	11/04/2018	11/04/2018	21/05/2018	6.67	43724	12.824	
Monthly	24/05/2018	24/05/2018	20/06/2017	6.16	47008	13.822	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.0	40150	12.763	
Mean of Sample				6.5	43419	13.016	
Highest Sample Value				6.7	47008	13.822	
Median				6.7	43724	12.824	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	17/01/2018	31/01/2018	02/02/2018	42	<0.0005	0.0007	0.0005	523	14200	0.002	<0.005	<0.005	0.0020	1510	0.658	0.0002	0.0192	43	<0.002	9780	3950	35600	7520	0.036	
Quarterly	11/04/2018	24/04/2018	21/05/2018	38	<0.0005	0.001	0.0005	489	14000	0.002	<0.005	0.013	0.0020	1430	0.713	0.0001	0.0287	34	<0.002	9330	4730	31200	7110	0.046	
Quarterly																									
Quarterly																									

Groundwater

Monitoring Point: 56 <MON028>
Groundwater quality monitoring, Groundwater monitoring bore located to the south of the southern tailings storage facility

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	SWL (m)	Comments
Monthly	19/01/2018	19/01/2018	20/02/2018	6.65	36430	8.026	
Monthly	14/02/2018	14/02/2018	20/03/2018	6.63	37650	7.884	
Monthly	16/03/2018	16/03/2018	19/04/2018	6.62	39110	8.613	
Monthly	10/04/2018	10/04/2018	21/05/2018	6.62	39777	7.774	
Monthly	17/05/2018	17/05/2018	20/06/2017	6.48	38812	7.740	
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Monthly							
Number of Samples Collected				5	5	5	
Lowest Value				6.5	36430	7.740	
Mean of Sample				6.6	38356	8.007	
Highest Sample Value				6.7	39777	8.613	
Median				6.6	38812	7.884	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Cyanide WAD (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)	Total Hardness (mg/L)	Zinc (mg/L)	Comments
Quarterly	19/01/2018	31/01/2018	02/02/2018	881	<0.0005	<0.0005	<0.0002	439	13500	0.003	<0.005	0.041	<0.0002	1280	0.0381	0.0047	0.299	73	0.013	8070	3140	33600	6370	<0.005	
Quarterly	10/04/2018	17/04/2018	21/05/2018	902	<0.0005	<0.0005	<0.0002	433	12400	0.005	<0.005	0.062	<0.0002	1300	0.0621	0.0046	0.422	56	0.012	7950	3090	20400	6430	<0.005	
Quarterly																									
Quarterly																									

Waste Rock Leachate

Monitoring Point: 41 <Northern Waste Emplacement>
Northern Waste Emplacement leachate quality monitoring

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Comments
Monthly	10/01/2018	10/01/2018	20/02/2018	-	-	No water present in toe drain
Monthly	26/02/2018	26/02/2018	20/03/2018	-	-	No water present in toe drain
Monthly	12/03/2018	12/03/2018	19/04/2018	-	-	No water present in toe drain
Monthly	10/04/2018	10/04/2018	21/05/2018	-	-	No water present in toe drain
Monthly	16/05/2018	16/05/2018	20/06/2018	-	-	No water present in toe drain
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Number of Samples Collected				0	0	
Lowest Value				0.0	0	
Mean of Sample				0.0	0	
Highest Sample Value				0.0	0	
Median				0.0	0	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	Total Hardness (mg/L)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	10/01/2018	20/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No water present in toe drain
Quarterly	10/04/2018	10/04/2018	21/05/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No water present in toe drain
Quarterly																									
Quarterly																									

Monitoring Point: 42 <Southern Waste Emplacement>
Southern Waste Emplacement leachate quality monitoring

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Comments
Monthly	15/02/2018	10/01/2018	20/02/2018	7.78	11684.2	
Monthly	26/02/2018	26/02/2018	20/03/2018	7.58	11240	
Monthly	12/03/2018	12/03/2018	19/04/2018	7.45	12380	
Monthly	10/04/2018	10/04/2018	21/05/2018	7.69	13150	
Monthly	16/05/2018	16/05/2018	20/06/2018	7.45	13260	
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Number of Samples Collected				5	5	
Lowest Value				7.5	11240	
Mean of Sample				7.6	12343	
Highest Sample Value				7.8	13260	
Median				7.6	12380	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	Total Hardness (mg/L)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	10/01/2018	20/02/2018	282	<0.00050	<0.00050	0.0048	487	3360	0.002	<0.00500	<0.00020	391	0.283	0.0032	0.0007	25	0.003	1880	2110	-	9090	2	0.139	
Quarterly	10/04/2018	10/04/2018	21/05/2018	305	<0.00050	<0.00050	0.0041	494	4140	<0.00100	<0.00500	<0.00020	400	0.0013	0.0024	0.0005	25	0.003	1900	2290	-	9850	32	0.084	
Quarterly																									
Quarterly																									

Monitoring Point: 43 <Perimeter Waste Emplacement>
Perimeter Waste Emplacement leachate quality monitoring

Frequency	Date Sampled	Date Obtained	Date Published	Field - pH (units)	Field - Electrical Conductivity (µS/cm)	Comments
Monthly	15/02/2018	10/01/2018	20/02/2018	-	-	No water present in toe drain
Monthly	26/02/2018	26/02/2018	20/03/2018	-	-	No water present in toe drain
Monthly	12/03/2018	12/03/2018	19/04/2018	-	-	No water present in toe drain
Monthly	10/04/2018	10/04/2018	21/05/2018	-	-	No water present in toe drain
Monthly	16/05/2018	16/05/2018	20/06/2018	-	-	No water present in toe drain
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Monthly						
Number of Samples Collected				0	0	
Lowest Value				0.0	0	
Mean of Sample				0.0	0	
Highest Sample Value				0.0	0	
Median				0.0	0	

Frequency	Date Sampled	Date Obtained	Date Published	Alkalinity (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)	Total Hardness (mg/L)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)	Zinc (mg/L)	Comments
Quarterly	10/01/2018	10/01/2018	20/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No water present in toe drain
Quarterly	10/04/2018	10/04/2018	21/05/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No water present in toe drain
Quarterly																									
Quarterly																									

Ambient Noise

Q1 Noise Monitoring

Daytime Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01	07/02/2018	22/02/2018	20/03/2018	25	23	-	
N11	07/02/2018	22/02/2018	20/03/2018	<20	<20	39	
N09	07/02/2018	22/02/2018	20/03/2018	<20	<20	39	
N10	07/02/2018	22/02/2018	20/03/2018	<20	<20	38	
N12	07/02/2018	22/02/2018	20/03/2018	<20	<20	38	
N15	07/02/2018	22/02/2018	20/03/2018	<20	<20	38	
N17	07/02/2018	22/02/2018	20/03/2018	<20	<20	37	
N16	07/02/2018	22/02/2018	20/03/2018	<20	<20	37	

Evening Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01	07/02/2018	22/02/2018	20/03/2018	20	22	-	
N11	06/02/2018	22/02/2018	20/03/2018	<20	<20	39	
N09	06/02/2018	22/02/2018	20/03/2018	<20	<20	39	
N10	06/02/2018	22/02/2018	20/03/2018	<20	<20	38	
N12	06/02/2018	22/02/2018	20/03/2018	<20	<20	38	
N15	07/02/2018	22/02/2018	20/03/2018	<20	<20	38	
N17	06/02/2018	22/02/2018	20/03/2018	<20	<20	37	
N16	07/02/2018	22/02/2018	20/03/2018	20	<20	37	

Night time Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01	07/02/2018	22/02/2018	20/03/2018	28	26	-	
N11	06/02/2018	22/02/2018	20/03/2018	<20	<20	39	
N09	07/02/2018	22/02/2018	20/03/2018	20	20	39	
N10	06/02/2018	22/02/2018	20/03/2018	<20	<20	38	
N12	07/02/2018	22/02/2018	20/03/2018	<20	<20	38	
N15	08/02/2017	22/02/2018	20/03/2018	23	24	38	
N17	06/02/2018	22/02/2018	20/03/2018	<20	<20	37	
N16	08/02/2017	22/02/2018	20/03/2018	18	20	37	

n/a - Mine noise emission not discernible

Q2 Noise Monitoring

Daytime Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01	10/05/2018	29/05/2018	20/06/2018	46	44	-	
N11	10/05/2018	29/05/2018	20/06/2018	<20	<20	39	
N09	11/05/2018	29/05/2018	20/06/2018	<20	<20	39	
N10	10/05/2018	29/05/2018	20/06/2018	25	<20	38	
N12	11/05/2018	29/05/2018	20/06/2018	<20	<20	38	
N15	10/05/2018	29/05/2018	20/06/2018	<20	<20	38	
N17	10/05/2018	29/05/2018	20/06/2018	<20	<20	37	
N16	10/05/2018	29/05/2018	20/06/2018	<20	<20	37	

Evening Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01	10/05/2018	29/05/2018	20/06/2018	42	44	-	
N11	09/05/2018	29/05/2018	20/06/2018	<20	<20	39	
N09	09/05/2018	29/05/2018	20/06/2018	<20	<20	39	
N10	09/05/2018	29/05/2018	20/06/2018	<20	24	38	
N12	09/05/2018	29/05/2018	20/06/2018	<20	<20	38	
N15	10/05/2018	29/05/2018	20/06/2018	<20	<20	38	
N17	09/05/2018	29/05/2018	20/06/2018	22	<20	37	
N16	10/05/2018	29/05/2018	20/06/2018	21	<20	37	

Night time Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01	10/05/2018	29/05/2018	20/06/2018	42	42	-	
N11	09/05/2018	29/05/2018	20/06/2018	<20	<20	39	
N09	09/05/2018	29/05/2018	20/06/2018	<20	<20	39	
N10	09/05/2018	29/05/2018	20/06/2018	22	<20	38	
N12	09/05/2018	29/05/2018	20/06/2018	<20	<20	38	
N15	10/05/2018	29/05/2018	20/06/2018	23	20	38	
N17	11/08/2018	29/05/2018	20/06/2018	<20	<20	37	
N16	11/05/2018	29/05/2018	20/06/2018	<20	<20	37	

N/A - Mine noise emission not discernible

Ambient Noise

Q3 Noise Monitoring

Daytime Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01						-	
N11						39	
N09						39	
N10						38	
N12						38	
N15						38	
N17						37	
N16						37	

Evening Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01						-	
N11						39	
N09						39	
N10						38	
N12						38	
N15						38	
N17						37	
N16						37	

Night time Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01						-	
N11						39	
N09						39	
N10						38	
N12						38	
N15						38	
N17						37	
N16						37	

N/A - Mine noise emission not discernible

Q4 Noise Monitoring

Daytime Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01						-	
N11						39	
N09						39	
N10						38	
N12						38	
N15						38	
N17						37	
N16						37	

Evening Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01						-	
N11						39	
N09						39	
N10						38	
N12						38	
N15						38	
N17						37	
N16						37	

Night time Mine Operating Intrusive Noise Levels (dBA re 20 µPa)

Location	Date Sampled	Date Obtained	Date Published	Mine Contributed $LA_{eq(15minute)}$ - dBA		Noise Criteria $LA_{eq(15minute)}$ - dBA	Comments
				Survey 1	Survey 2		
N01						-	
N11						39	
N09						39	
N10						38	
N12						38	
N15						38	
N17						37	
N16						37	

Blasting & Ground Vibration

Monitoring Point: BM01

Blast monitoring, Airblast overpressure and ground vibration peak particle velocity recorded at private residence to the south-east of ML1535 boundary

					Trigger Threshold		BM01 at Blast Time		
Blast Number	**Day/Date**	**Time**	**Date Obtained**	**Date Published**	**Ground Vibration (mm/s)**	**Airblast Overpressure (dB(L))**	**Ground Vibration (mm/s)**	**Airblast Overpressure (dB(L))**	**Comments**
JANUARY									
876-30	Wednesday, 3 January 2018	12:25:51	05/02/2018	20/02/2018	5	115	0.10	91.5	
876-32	Thursday, 4 January 2018	15:07:17	05/02/2018	20/02/2018	5	115	0.10	88.0	
876-33	Monday, 8 January 2018	10:19:38	05/02/2018	20/02/2018	5	115	0.10	94.0	
876-34	Tuesday, 9 January 2018	12:27:08	05/02/2018	20/02/2018	5	115	0.10	91.5	
876-35	Wednesday, 10 January 2018	12:29:00	05/02/2018	20/02/2018	5	115	0.10	88.0	
876-40	Thursday, 11 January 2018	12:31:52	05/02/2018	20/02/2018	5	115	0.10	91.5	
876-29	Saturday, 13 January 2018	12:35:54	05/02/2018	20/02/2018	5	115	0.10	107.5	
867-2	Tuesday, 16 January 2018	15:13:29	05/02/2018	20/02/2018	5	115	0.10	88.0	
876-28	Tuesday, 16 January 2018	15:18:42	05/02/2018	20/02/2018	5	115	0.10	91.5	
867-12	Friday, 19 January 2018	12:30:10	05/02/2018	20/02/2018	5	115	0.10	88.0	
867-3	Monday, 22 January 2018	12:23:32	05/02/2018	20/02/2018	5	115	0.10	88.0	
867-513	Wednesday, 24 January 2018	12:56:24	05/02/2018	20/02/2018	5	115	0.10	102.8	
867-14	Thursday, 25 January 2018	12:30:28	05/02/2018	20/02/2018	5	115	0.10	91.5	
867-15	Sunday, 28 January 2018	12:29:39	05/02/2018	20/02/2018	1	95	0.10	91.5	
867-512	Tuesday, 30 January 2018	12:25:32	05/02/2018	20/02/2018	5	115	0.10	97.5	
867-16	Tuesday, 30 January 2018	12:25:32	05/02/2018	20/02/2018	5	115	0.10	97.5	
FEBRUARY									
867-509	Thursday, 1 February 2018	12:24:54	06/03/2018	20/03/2018	5	115	0.10	94.0	
867-17	Friday, 2 February 2018	12:31:37	06/03/2018	20/03/2018	5	115	0.13	91.5	
867-510a	Tuesday, 6 February 2018	12:35:33	06/03/2018	20/03/2018	5	115	0.10	95.9	
867-511a	Tuesday, 6 February 2018	12:35:33	06/03/2018	20/03/2018	5	115	0.10	95.9	
867-4	Tuesday, 6 February 2018	12:38:58	06/03/2018	20/03/2018	5	115	0.10	91.5	
867-27	Thursday, 8 February 2018	12:26:37	06/03/2018	20/03/2018	5	115	0.10	94.0	
867-516	Saturday, 10 February 2018	12:31:30	06/03/2018	20/03/2018	5	115	0.10	98.8	
867-6	Monday, 12 February 2018	12:26:56	06/03/2018	20/03/2018	5	115	0.11	91.5	
867-515	Monday, 12 February 2018	12:26:56	06/03/2018	20/03/2018	5	115	0.11	91.5	
867-18	Tuesday, 13 February 2018	12:31:42	06/03/2018	20/03/2018	5	115	0.10	91.5	
867-514	Tuesday, 13 February 2018	12:31:42	06/03/2018	20/03/2018	5	115	0.10	91.5	
867-7-13	Thursday, 15 February 2018	12:54:32	06/03/2018	20/03/2018	5	115	0.10	91.5	
867-26	Saturday, 17 February 2018	12:28:04	06/03/2018	20/03/2018	5	115	0.10	88.0	
867-25	Tuesday, 20 February 2018	12:36:18	06/03/2018	20/03/2018	1	115	0.10	104.9	
867-508	Tuesday, 20 February 2018	12:36:18	06/03/2018	20/03/2018	5	115	0.10	104.9	
867-10-11	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.10	94.0	
867-502	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.10	94.0	
867-503	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.10	94.0	
867-504	Friday, 23 February 2018	12:21:36	06/03/2018	20/03/2018	5	115	0.11	95.9	
867-28	Saturday, 24 February 2018	12:19:44	06/03/2018	20/03/2018	5	115	0.11	95.9	
867-24	Monday, 26 February 2018	12:31:13	06/03/2018	20/03/2018	5	115	0.10	101.9	
867-507	Monday, 26 February 2018	12:31:13	06/03/2018	20/03/2018	5	115	0.10	101.9	
867-501	Wednesday, 28 February 2018	12:29:42	06/03/2018	20/03/2018	5	115	0.10	88.0	
867-5	Wednesday, 28 February 2018	12:29:42	06/03/2018	20/03/2018	5	115	0.10	88.0	
MARCH									
867-23	Friday, 2 March 2018	12:30:28	09/04/2018	19/04/2018	5	115	0.10	88.0	
867-506	Friday, 2 March 2018	12:30:28	09/04/2018	19/04/2018	5	115	0.10	88.0	
867-505	Saturday, 3 March 2018	12:23:00	09/04/2018	19/04/2018	5	115	0.10	101.9	
867-9	Saturday, 3 March 2018	12:23:14	09/04/2018	19/04/2018	5	115	0.10	101.9	
867-19	Monday, 5 March 2018	12:21:18	09/04/2018	19/04/2018	5	115	0.11	88.0	
867-21	Wednesday, 7 March 2018	12:20:12	09/04/2018	19/04/2018	5	115	0.11	91.5	
867-8a	Thursday, 8 March 2018	12:39:11	09/04/2018	19/04/2018	5	115	0.10	88.0	
867-22	Friday, 9 March 2018	12:30:01	09/04/2018	19/04/2018	5	115	0.10	88.0	
867-20	Monday, 12 March 2018	12:33:16	09/04/2018	19/04/2018	5	115	0.10	88.0	
858-1	Tuesday, 13 March 2018	12:32:15	09/04/2018	19/04/2018	5	115	0.11	95.9	
867-39	Friday, 16 March 2018	12:35:04	09/04/2018	19/04/2018	5	115	0.10	88.0	
867-511b	Tuesday, 20 March 2018	12:30:55	09/04/2018	19/04/2018	5	115	0.11	91.5	
858-2	Wednesday, 21 March 2018	12:24:59	09/04/2018	19/04/2018	5	115	0.10	108.0	
867-40	Friday, 23 March 2018	12:26:24	09/04/2018	19/04/2018	5	115	0.11	88.0	
858-5	Thursday, 29 March 2018	12:28:04	09/04/2018	19/04/2018	5	115	0.10	88.0	
867-41	Saturday, 31 March 2018	12:23:50	09/04/2018	19/04/2018	5	115	0.11	88.0	
APRIL									
867-38	Tuesday, 3 April 2018	12:28:28	04/05/2018	21/05/2018	5	115	0.11	88.0	
867-36-37	Tuesday, 10 April 2018	12:28:06	04/05/2018	21/05/2018	5	115	0.12	91.5	
858-3	Tuesday, 10 April 2018	12:28:08	04/05/2018	21/05/2018	5	115	0.12	91.5	
867-42	Thursday, 12 April 2018	12:33:45	04/05/2018	21/05/2018	5	115	0.10	102.8	
858-4	Saturday, 14 April 2018	12:24:17	04/05/2018	21/05/2018	5	115	0.10	103.5	
867-8b	Monday, 16 April 2018	12:29:27	04/05/2018	21/05/2018	5	115	0.11	91.5	
867-29	Tuesday, 17 April 2018	12:33:35	04/05/2018	21/05/2018	5	115	0.10	88.0	
858-7-8	Monday, 9 April 2018	12:36:35	04/05/2018	21/05/2018	5	115	0.10	91.5	
867-30	Tuesday, 24 April 2018	12:27:30	04/05/2018	21/05/2018	5	115	0.11	88.0	
849-516	Tuesday, 24 April 2018	12:27:30	04/05/2018	21/05/2018	5	115	0.11	88.0	
867-35	Thursday, 26 April 2018	12:31:08	04/05/2018	21/05/2018	5	115	0.10	91.5	
858-6	Thursday, 26 April 2018	12:31:08	04/05/2018	21/05/2018	5	115	0.10	91.5	
858-9	Saturday, 28 April 2018	12:28:22	04/05/2018	21/05/2018	5	115	0.10	91.5	
May									
858-10	Tuesday, 1 May 2018	12:27:50	06/06/2018	20/06/2018	5	115	0.10	88.0	
867-31	Tuesday, 1 May 2018	12:31:31	06/06/2018	20/06/2018	5	115	0.10	88.0	
1155-58	Wednesday, 2 May 2018	12:38:49	06/06/2018	20/06/2018	5	115	0.10	95.9	
867-32	Friday, 4 May 2018	12:30:46	06/06/2018	20/06/2018	5	115	0.10	104.9	
858-20	Sunday, 6 May 2018	12:30:24	06/06/2018	20/06/2018	1	95	0.10	97.5	Local Environmental Factor
849-511	Monday, 7 May 2018	12:56:35	06/06/2018	20/06/2018	5	115	0.10	97.5	
849-515	Tuesday, 8 May 2018	12:25:37	06/06/2018	20/06/2018	5	115	0.10	88.0	
858-21	Wednesday, 9 May 2018	15:06:40	06/06/2018	20/06/2018	5	115	0.10	88.0	
858-11-12	Friday, 11 May 2018	15:11:16	06/06/2018	20/06/2018	5	115	0.10	108.8	
1146-84	Saturday, 12 May 2018	12:46:38	06/06/2018	20/06/2018	5	115	0.10	101.9	
867-33	Monday, 14 May 2018	12:38:43	06/06/2018	20/06/2018	5	115	0.10	91.5	
1146-85	Tuesday, 15 May 2018	12:45:48	06/06/2018	20/06/2018	5	115	0.10	95.9	
1146-86	Thursday, 17 May 2018	12:27:58	06/06/2018	20/06/2018	5	115	0.10	97.5	
858-13	Friday, 18 May 2018	12:30:28	06/06/2018	20/06/2018	5	115	0.14	88.0	
1146-87	Saturday, 19 May 2018	12:59:11	06/06/2018	20/06/2018	5	115	0.10	97.5	
858-14	Monday, 21 May 2018	12:31:37	06/06/2018	20/06/2018	5	115	0.10	91.5	
858-19	Tuesday, 22 May 2018	15:20:03	06/06/2018	20/06/2018	5	115	0.09	91.5	
867-34	Tuesday, 22 May 2018	15:20:03	06/06/2018	20/06/2018	5	115	0.09	91.5	
849-513	Monday, 28 May 2018	12:26:52	06/06/2018	20/06/2018	5	115	0.10	94.0	
849-512	Wednesday, 30 May 2018	11:30:22	06/06/2018	20/06/2018	5	115	0.10	91.5	

Monitoring Point: BM02

Blast monitoring, Airblast overpressure and ground vibration peak particle velocity recorded to the south of ML1535 boundary

					Trigger Threshold		BM02 at Blast Time		
Blast Number	**Day/Date**	**Time**	**Date Obtained**	**Date Published**	**Ground Vibration (mm/s)**	**Airblast Overpressure (dB(L))**	**Ground Vibration (mm/s)**	**Airblast Overpressure (dB(L))**	**Comments**
JANUARY									
876-30	Wednesday, 3 January 2018	12:25:51	05/02/2018	20/02/2018	5	115	0.12	88.0	
876-32	Thursday, 4 January 2018	15:07:17	05/02/2018	20/02/2018	5	115	0.10	95.9	
876-33	Monday, 8 January 2018	10:19:38	05/02/2018	20/02/2018	5	115	1.24	113.8	
876-34	Tuesday, 9 January 2018	12:27:08	05/02/2018	20/02/2018	5	115	0.10	103.5	
876-35	Wednesday, 10 January 2018	12:29:00	05/02/2018	20/02/2018	5	115	0.12	97.5	
876-40	Thursday, 11 January 2018	12:31:52	05/02/2018	20/02/2018	5	115	0.12	98.8	
876-29	Saturday, 13 January 2018	12:35:54	05/02/2018	20/02/2018	5	115	0.12	107.0	
867-2	Tuesday, 16 January 2018	15:13:29	05/02/2018	20/02/2018	5	115	0.15	91.5	
876-28	Tuesday, 16 January 2018	15:18:42	05/02/2018	20/02/2018	5	115	0.10	88.0	
867-12	Friday, 19 January 2018	12:30:10	05/02/2018	20/02/2018	5	115	0.14	88.0	
867-3	Monday, 22 January 2018	12:23:32	05/02/2018	20/02/2018	5	115	0.12	95.9	
867-513	Wednesday, 24 January 2018	12:56:24	05/02/2018	20/02/2018	5	115	0.12	97.5	
867-14	Thursday, 25 January 2018	12:30:28	05/02/2018	20/02/2018	5	115	0.13	95.9	
867-15	Sunday, 28 January 2018	12:29:39	05/02/2018	20/02/2018	1	95	0.11	88.0	
867-512	Tuesday, 30 January 2018	12:25:32	05/02/2018	20/02/2018	5	115	0.14	91.5	
867-16	Tuesday, 30 January 2018	12:25:32	05/02/2018	20/02/2018	5	115	0.14	91.5	
FEBRUARY									
867-509	Thursday, 1 February 2018	12:24:54	06/03/2018	20/03/2018	5	115	0.12	95.9	
867-17	Friday, 2 February 2018	12:31:37	06/03/2018	20/03/2018	5	115	0.15	88.0	
867-510a	Tuesday, 6 February 2018	12:35:33	06/03/2018	20/03/2018	5	115	0.10	94.0	
867-511a	Tuesday, 6 February 2018	12:35:33	06/03/2018	20/03/2018	5	115	0.10	94.0	
867-4	Tuesday, 6 February 2018	12:38:58	06/03/2018	20/03/2018	5	115	0.11	91.5	
867-27	Thursday, 8 February 2018	12:26:37	06/03/2018	20/03/2018	5	115	0.12	101.0	
867-516	Saturday, 10 February 2018	12:31:30	06/03/2018	20/03/2018	5	115	0.09	91.5	
867-6	Monday, 12 February 2018	12:26:56	06/03/2018	20/03/2018	5	115	0.11	94.0	
867-515	Monday, 12 February 2018	12:26:56	06/03/2018	20/03/2018	5	115	0.11	94.0	
867-18	Tuesday, 13 February 2018	12:31:42	06/03/2018	20/03/2018	5	115	0.10	94.0	
867-514	Tuesday, 13 February 2018	12:31:42	06/03/2018	20/03/2018	5	115	0.10	94.0	
867-7-13	Thursday, 15 February 2018	12:54:32	06/03/2018	20/03/2018	5	115	0.11	95.9	
867-26	Saturday, 17 February 2018	12:28:04	06/03/2018	20/03/2018	5	115	0.11	94.0	
867-25	Tuesday, 20 February 2018	12:36:18	06/03/2018	20/03/2018	1	115	0.14	97.5	
867-508	Tuesday, 20 February 2018	12:36:18	06/03/2018	20/03/2018	5	115	0.14	97.5	
867-10-11	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.13	98.8	
867-502	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.13	98.8	
867-503	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.13	98.8	
867-504	Friday, 23 February 2018	12:21:36	06/03/2018	20/03/2018	5	115	0.17	98.8	
867-28	Saturday, 24 February 2018	12:19:44	06/03/2018	20/03/2018	5	115	0.11	95.9	
867-24	Monday, 26 February 2018	12:31:13	06/03/2018	20/03/2018	5	115	0.12	105.5	
867-507	Monday, 26 February 2018	12:31:13	06/03/2018	20/03/2018	5	115	0.12	105.5	
867-501	Wednesday, 28 February 2018	12:29:42	06/03/2018	20/03/2018	5	115	0.10	101.9	
867-5	Wednesday, 28 February 2018	12:29:42	06/03/2018	20/03/2018	5	115	0.10	101.9	
MARCH									
867-23	Friday, 2 March 2018	12:30:28	09/04/2018	19/04/2018	5	115	0.11	91.5	
867-506	Friday, 2 March 2018	12:30:28	09/04/2018	19/04/2018	5	115	0.11	91.5	
867-505	Saturday, 3 March 2018	12:23:00	09/04/2018	19/04/2018	5	115	0.11	97.5	
867-9	Saturday, 3 March 2018	12:23:14	09/04/2018	19/04/2018	5	115	0.12	94.0	
867-19	Monday, 5 March 2018	12:21:18	09/04/2018	19/04/2018	5	115	0.11	94.0	
867-21	Wednesday, 7 March 2018	12:20:12	09/04/2018	19/04/2018	5	115	0.12	100.0	
867-8a	Thursday, 8 March 2018	12:39:11	09/04/2018	19/04/2018	5	115	0.12	97.5	
867-22	Friday, 9 March 2018	12:30:01	09/04/2018	19/04/2018	5	115	0.10	91.5	
867-20	Monday, 12 March 2018	12:33:16	09/04/2018	19/04/2018	5	115	0.12	95.9	
858-1	Tuesday, 13 March 2018	12:32:15	09/04/2018	19/04/2018	5	115	0.16	88.0	
867-39	Friday, 16 March 2018	12:35:04	09/04/2018	19/04/2018	5	115	0.10	88.0	
867-511b	Tuesday, 20 March 2018	12:30:55	09/04/2018	19/04/2018	5	115	0.12	88.0	
858-2	Wednesday, 21 March 2018	12:24:59	09/04/2018	19/04/2018	5	115	0.14	106.5	
867-40	Friday, 23 March 2018	12:26:24	09/04/2018	19/04/2018	5	115	0.12	95.9	
858-5	Thursday, 29 March 2018	12:28:04	09/04/2018	19/04/2018	5	115	0.12	88.0	
867-41	Saturday, 31 March 2018	12:23:50	09/04/2018	19/04/2018	5	115	0.10	88.0	
APRIL									
867-38	Tuesday, 3 April 2018	12:28:28	04/05/2018	21/05/2018	5	115	0.10	97.5	
867-36-37	Tuesday, 10 April 2018	12:28:06	04/05/2018	21/05/2018	5	115	0.11	88.0	
858-3	Tuesday, 10 April 2018	12:28:08	04/05/2018	21/05/2018	5	115	0.11	88.0	
867-42	Thursday, 12 April 2018	12:33:45	04/05/2018	21/05/2018	5	115	0.10	106.0	
858-4	Saturday, 14 April 2018	12:24:17	04/05/2018	21/05/2018	5	115	0.16	111.2	
867-8b	Monday, 16 April 2018	12:29:27	04/05/2018	21/05/2018	5	115	0.13	100.0	
867-29	Tuesday, 17 April 2018	12:33:35	04/05/2018	21/05/2018	5	115	0.12	88.0	
858-7-8	Monday, 9 April 2018	12:36:35	04/05/2018	21/05/2018	5	115	0.16	91.5	
867-30	Tuesday, 24 April 2018	12:27:30	04/05/2018	21/05/2018	5	115	0.11	88.0	
849-516	Tuesday, 24 April 2018	12:27:30	04/05/2018	21/05/2018	5	115	0.11	88.0	
867-35	Thursday, 26 April 2018	12:31:08	04/05/2018	21/05/2018	5	115	0.13	97.5	
858-6	Thursday, 26 April 2018	12:31:08	04/05/2018	21/05/2018	5	115	0.13	97.5	
858-9	Saturday, 28 April 2018	12:28:22	04/05/2018	21/05/2018	5	115	0.13	88.0	
May									
858-10	Tuesday, 1 May 2018	12:27:50	06/06/2018	20/06/2018	5	115	0.11	88.0	
867-31	Tuesday, 1 May 2018	12:31:31	06/06/2018	20/06/2018	5	115	0.13	88.0	
1155-58	Wednesday, 2 May 2018	12:38:49	06/06/2018	20/06/2018	5	115	0.13	97.5	
867-32	Friday, 4 May 2018	12:30:46	06/06/2018	20/06/2018	5	115	0.13	103.5	
858-20	Sunday, 6 May 2018	12:30:24	06/06/2018	20/06/2018	1	95	0.13	88.0	
849-511	Monday, 7 May 2018	12:56:35	06/06/2018	20/06/2018	5	115	0.12	101.0	
849-515	Tuesday, 8 May 2018	12:25:37	06/06/2018	20/06/2018	5	115	0.13	91.5	
858-21	Wednesday, 9 May 2018	15:06:40	06/06/2018	20/06/2018	5	115	0.11	88.0	
858-11-12	Friday, 11 May 2018	15:11:16	06/06/2018	20/06/2018	5	115	0.15	102.8	
1146-84	Saturday, 12 May 2018	12:46:38	06/06/2018	20/06/2018	5	115	0.14	101.9	
867-33	Monday, 14 May 2018	12:38:43	06/06/2018	20/06/2018	5	115	0.13	91.5	
1146-85	Tuesday, 15 May 2018	12:45:48	06/06/2018	20/06/2018	5	115	0.14	91.5	
1146-86	Thursday, 17 May 2018	12:27:58	06/06/2018	20/06/2018	5	115	0.12	88.0	
858-13	Friday, 18 May 2018	12:30:28	06/06/2018	20/06/2018	5	115	0.15	91.5	
1146-87	Saturday, 19 May 2018	12:59:11	06/06/2018	20/06/2018	5	115	0.15	88.0	
858-14	Monday, 21 May 2018	12:31:37	06/06/2018	20/06/2018	5	115	0.14	98.8	
858-19	Tuesday, 22 May 2018	15:20:03	06/06/2018	20/06/2018	5	115	0.14	104.9	
867-34	Tuesday, 22 May 2018	15:20:03	06/06/2018	20/06/2018	5	115	0.14	104.9	
849-513	Monday, 28 May 2018	12:26:52	06/06/2018	20/06/2018	5	115	0.13	106.0	
849-512	Wednesday, 30 May 2018	11:30:22	06/06/2018	20/06/2018	5	115	0.15	91.5	

Monitoring Point: BM03

Blast monitoring, Airblast overpressure and ground vibration peak particle velocity recorded at private residence to the north of ML1535 boundary

					Trigger Threshold		BM03 at Blast Time		
Blast Number	**Day/Date**	**Time**	**Date Obtained**	**Date Published**	**Ground Vibration (mm/s)**	**Airblast Overpressure (dB(L))**	**Ground Vibration (mm/s)**	**Airblast Overpressure (dB(L))**	**Comments**
JANUARY									
876-30	Wednesday, 3 January 2018	12:25:51	05/02/2018	20/02/2018	5	115	0.12	88.0	
876-32	Thursday, 4 January 2018	15:07:17	05/02/2018	20/02/2018	5	115	0.13	91.5	
876-33	Monday, 8 January 2018	10:19:38	05/02/2018	20/02/2018	5	115	0.13	88.0	
876-34	Tuesday, 9 January 2018	12:27:08	05/02/2018	20/02/2018	5	115	0.13	91.5	
876-35	Wednesday, 10 January 2018	12:29:00	05/02/2018	20/02/2018	5	115	0.12	88.0	
876-40	Thursday, 11 January 2018	12:31:52	05/02/2018	20/02/2018	5	115	0.12	94.0	
876-29	Saturday, 13 January 2018	12:35:54	05/02/2018	20/02/2018	5	115	0.12	91.5	
867-2	Tuesday, 16 January 2018	15:13:29	05/02/2018	20/02/2018	5	115	0.15	91.5	
876-28	Tuesday, 16 January 2018	15:18:42	05/02/2018	20/02/2018	5	115	0.12	94.0	
867-12	Friday, 19 January 2018	12:30:10	05/02/2018	20/02/2018	5	115	0.17	91.5	
867-3	Monday, 22 January 2018	12:23:32	05/02/2018	20/02/2018	5	115	0.16	91.5	
867-513	Wednesday, 24 January 2018	12:56:24	05/02/2018	20/02/2018	5	115	0.13	95.9	
867-14	Thursday, 25 January 2018	12:30:28	05/02/2018	20/02/2018	5	115	0.12	88.0	
867-15	Sunday, 28 January 2018	12:29:39	05/02/2018	20/02/2018	1	95	0.14	91.5	
867-512	Tuesday, 30 January 2018	12:25:32	05/02/2018	20/02/2018	5	115	0.18	91.5	
867-16	Tuesday, 30 January 2018	12:25:32	05/02/2018	20/02/2018	5	115	0.18	91.5	
FEBRUARY									
867-509	Thursday, 1 February 2018	12:24:54	06/03/2018	20/03/2018	5	115	0.11	104.2	
867-17	Friday, 2 February 2018	12:31:37	06/03/2018	20/03/2018	5	115	0.17	91.5	
867-510a	Tuesday, 6 February 2018	12:35:33	06/03/2018	20/03/2018	5	115	0.14	91.5	
867-511a	Tuesday, 6 February 2018	12:35:33	06/03/2018	20/03/2018	5	115	0.14	91.5	
867-4	Tuesday, 6 February 2018	12:38:58	06/03/2018	20/03/2018	5	115	0.15	88.0	
867-27	Thursday, 8 February 2018	12:26:37	06/03/2018	20/03/2018	5	115	0.15	88.0	
867-516	Saturday, 10 February 2018	12:31:30	06/03/2018	20/03/2018	5	115	0.13	88.0	
867-6	Monday, 12 February 2018	12:26:56	06/03/2018	20/03/2018	5	115	0.13	101.9	
867-515	Monday, 12 February 2018	12:26:56	06/03/2018	20/03/2018	5	115	0.13	101.9	
867-18	Tuesday, 13 February 2018	12:31:42	06/03/2018	20/03/2018	5	115	0.14	91.5	
867-514	Tuesday, 13 February 2018	12:31:42	06/03/2018	20/03/2018	5	115	0.14	91.5	
867-7-13	Thursday, 15 February 2018	12:54:32	06/03/2018	20/03/2018	5	115	0.14	91.5	
867-26	Saturday, 17 February 2018	12:28:04	06/03/2018	20/03/2018	5	115	0.13	91.5	
867-25	Tuesday, 20 February 2018	12:36:18	06/03/2018	20/03/2018	1	115	0.12	102.8	
867-508	Tuesday, 20 February 2018	12:36:18	06/03/2018	20/03/2018	5	115	0.12	102.8	
867-10-11	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.14	91.5	
867-502	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.14	91.5	
867-503	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.14	91.5	
867-504	Friday, 23 February 2018	12:21:36	06/03/2018	20/03/2018	5	115	0.13	88.0	
867-28	Saturday, 24 February 2018	12:19:44	06/03/2018	20/03/2018	5	115	0.14	94.0	
867-24	Monday, 26 February 2018	12:31:13	06/03/2018	20/03/2018	5	115	0.12	102.8	
867-507	Monday, 26 February 2018	12:31:13	06/03/2018	20/03/2018	5	115	0.12	102.8	
867-501	Wednesday, 28 February 2018	12:29:42	06/03/2018	20/03/2018	5	115	0.13	91.5	
867-5	Wednesday, 28 February 2018	12:29:42	06/03/2018	20/03/2018	5	115	0.13	91.5	
MARCH									
867-23	Friday, 2 March 2018	12:30:28	09/04/2018	19/04/2018	5	115	0.13	91.5	
867-506	Friday, 2 March 2018	12:30:28	09/04/2018	19/04/2018	5	115	0.13	91.5	
867-505	Saturday, 3 March 2018	12:23:00	09/04/2018	19/04/2018	5	115	0.12	88.0	
867-9	Saturday, 3 March 2018	12:23:14	09/04/2018	19/04/2018	5	115	0.13	91.5	
867-19	Monday, 5 March 2018	12:21:18	09/04/2018	19/04/2018	5	115	0.13	88.0	
867-21	Wednesday, 7 March 2018	12:20:12	09/04/2018	19/04/2018	5	115	0.11	88.0	
867-8a	Thursday, 8 March 2018	12:39:11	09/04/2018	19/04/2018	5	115	0.13	88.0	
867-22	Friday, 9 March 2018	12:30:01	09/04/2018	19/04/2018	5	115	0.12	88.0	
867-20	Monday, 12 March 2018	12:33:16	09/04/2018	19/04/2018	5	115	0.16	91.5	
858-1	Tuesday, 13 March 2018	12:32:15	09/04/2018	19/04/2018	5	115	0.15	88.0	
867-39	Friday, 16 March 2018	12:35:04	09/04/2018	19/04/2018	5	115	0.12	88.0	
867-511b	Tuesday, 20 March 2018	12:30:55	09/04/2018	19/04/2018	5	115	0.12	100.0	
858-2	Wednesday, 21 March 2018	12:24:59	09/04/2018	19/04/2018	5	115	0.15	101.0	
867-40	Friday, 23 March 2018	12:26:24	09/04/2018	19/04/2018	5	115	0.12	91.5	
858-5	Thursday, 29 March 2018	12:28:04	09/04/2018	19/04/2018	5	115	0.13	91.5	
867-41	Saturday, 31 March 2018	12:23:50	09/04/2018	19/04/2018	5	115	0.13	88.0	
APRIL									
867-38	Tuesday, 3 April 2018	12:28:28	04/05/2018	21/05/2018	5	115	0.12	88.0	
867-36-37	Tuesday, 10 April 2018	12:28:06	04/05/2018	21/05/2018	5	115	0.18	88.0	
858-3	Tuesday, 10 April 2018	12:28:08	04/05/2018	21/05/2018	5	115	0.18	88.0	
867-42	Thursday, 12 April 2018	12:33:45	04/05/2018	21/05/2018	5	115	0.13	98.8	
858-4	Saturday, 14 April 2018	12:24:17	04/05/2018	21/05/2018	5	115	0.16	91.5	
867-8b	Monday, 16 April 2018	12:29:27	04/05/2018	21/05/2018	5	115	0.13	91.5	
867-29	Tuesday, 17 April 2018	12:33:35	04/05/2018	21/05/2018	5	115	0.12	88.0	
858-7-8	Monday, 9 April 2018	12:36:35	04/05/2018	21/05/2018	5	115	0.16	88.0	
867-30	Tuesday, 24 April 2018	12:27:30	04/05/2018	21/05/2018	5	115	0.13	88.0	
849-516	Tuesday, 24 April 2018	12:27:30	04/05/2018	21/05/2018	5	115	0.13	88.0	
867-35	Thursday, 26 April 2018	12:31:08	04/05/2018	21/05/2018	5	115	0.12	97.5	
858-6	Thursday, 26 April 2018	12:31:08	04/05/2018	21/05/2018	5	115	0.12	97.5	
858-9	Saturday, 28 April 2018	12:28:22	04/05/2018	21/05/2018	5	115	0.15	94.0	
May									
858-10	Tuesday, 1 May 2018	12:27:50	06/06/2018	20/06/2018	5	115	0.13	88.0	
867-31	Tuesday, 1 May 2018	12:31:31	06/06/2018	20/06/2018	5	115	0.12	88.0	
1155-58	Wednesday, 2 May 2018	12:38:49	06/06/2018	20/06/2018	5	115	0.12	97.5	
867-32	Friday, 4 May 2018	12:30:46	06/06/2018	20/06/2018	5	115	0.11	88.0	
858-20	Sunday, 6 May 2018	12:30:24	06/06/2018	20/06/2018	1	95	0.12	97.5	Local Environmental Factor
849-511	Monday, 7 May 2018	12:56:35	06/06/2018	20/06/2018	5	115	0.12	88.0	
849-515	Tuesday, 8 May 2018	12:25:37	06/06/2018	20/06/2018	5	115	0.11	88.0	
858-21	Wednesday, 9 May 2018	15:06:40	06/06/2018	20/06/2018	5	115	0.12	88.0	
858-11-12	Friday, 11 May 2018	15:11:16	06/06/2018	20/06/2018	5	115	0.15	88.0	
1146-84	Saturday, 12 May 2018	12:46:38	06/06/2018	20/06/2018	5	115	0.12	106.0	
867-33	Monday, 14 May 2018	12:38:43	06/06/2018	20/06/2018	5	115	0.12	88.0	
1146-85	Tuesday, 15 May 2018	12:45:48	06/06/2018	20/06/2018	5	115	0.13	88.0	
1146-86	Thursday, 17 May 2018	12:27:58	06/06/2018	20/06/2018	5	115	0.12	91.5	
858-13	Friday, 18 May 2018	12:30:28	06/06/2018	20/06/2018	5	115	0.13	88.0	
1146-87	Saturday, 19 May 2018	12:59:11	06/06/2018	20/06/2018	5	115	0.12	88.0	
858-14	Monday, 21 May 2018	12:31:37	06/06/2018	20/06/2018	5	115	0.12	91.5	
858-19	Tuesday, 22 May 2018	15:20:03	06/06/2018	20/06/2018	5	115	0.12	91.5	
867-34	Tuesday, 22 May 2018	15:20:03	06/06/2018	20/06/2018	5	115	0.12	91.5	
849-513	Monday, 28 May 2018	12:26:52	06/06/2018	20/06/2018	5	115	0.12	97.5	
849-512	Wednesday, 30 May 2018	11:30:22	06/06/2018	20/06/2018	5	115	0.12	101.0	

Monitoring Point: BM08.1 <Cowal North>

Blast monitoring, Airblast overpressure and ground vibration peak particle velocity recorded at private residence to the north, north east of ML1535 boundary

					Trigger Threshold		BM08.1 at Blast Time		
Blast Number	**Day/Date**	**Time**	**Date Obtained**	**Date Published**	**Ground Vibration (mm/s)**	**Airblast Overpressure (dB(L))**	**Ground Vibration (mm/s)**	**Airblast Overpressure (dB(L))**	**Comments**
JANUARY									
876-30	Wednesday, 3 January 2018	12:25:51	05/02/2018	20/02/2018	5	115	0.02	91.5	
876-32	Thursday, 4 January 2018	15:07:17	05/02/2018	20/02/2018	5	115	0.03	91.5	
876-33	Monday, 8 January 2018	10:19:38	05/02/2018	20/02/2018	5	115	0.03	94.0	
876-34	Tuesday, 9 January 2018	12:27:08	05/02/2018	20/02/2018	5	115	0.03	97.5	
876-35	Wednesday, 10 January 2018	12:29:00	05/02/2018	20/02/2018	5	115	0.03	91.5	
876-40	Thursday, 11 January 2018	12:31:52	05/02/2018	20/02/2018	5	115	0.01	94.0	
876-29	Saturday, 13 January 2018	12:35:54	05/02/2018	20/02/2018	5	115	0.03	100.0	
867-2	Tuesday, 16 January 2018	15:13:29	05/02/2018	20/02/2018	5	115	0.07	91.5	
876-28	Tuesday, 16 January 2018	15:18:42	05/02/2018	20/02/2018	5	115	0.02	91.5	
867-12	Friday, 19 January 2018	12:30:10	05/02/2018	20/02/2018	5	115	0.07	91.5	
867-3	Monday, 22 January 2018	12:23:32	05/02/2018	20/02/2018	5	115	0.05	94.0	
867-513	Wednesday, 24 January 2018	12:56:24	05/02/2018	20/02/2018	5	115	0.07	101.0	
867-14	Thursday, 25 January 2018	12:30:28	05/02/2018	20/02/2018	5	115	0.03	88.0	
867-15	Sunday, 28 January 2018	12:29:39	05/02/2018	20/02/2018	1	95	0.03	91.5	
867-512	Tuesday, 30 January 2018	12:25:32	05/02/2018	20/02/2018	5	115	0.08	91.5	
867-16	Tuesday, 30 January 2018	12:25:32	05/02/2018	20/02/2018	5	115	0.08	91.5	
FEBRUARY									
867-509	Thursday, 1 February 2018	12:24:54	06/03/2018	20/03/2018	5	115	0.02	91.5	
867-17	Friday, 2 February 2018	12:31:37	06/03/2018	20/03/2018	5	115	0.07	88.0	
867-510a	Tuesday, 6 February 2018	12:35:33	06/03/2018	20/03/2018	5	115	0.01	88.0	
867-511a	Tuesday, 6 February 2018	12:35:33	06/03/2018	20/03/2018	5	115	0.01	88.0	
867-4	Tuesday, 6 February 2018	12:38:58	06/03/2018	20/03/2018	5	115	0.06	88.0	
867-27	Thursday, 8 February 2018	12:26:37	06/03/2018	20/03/2018	5	115	0.06	101.9	
867-516	Saturday, 10 February 2018	12:31:30	06/03/2018	20/03/2018	5	115	0.02	94.0	
867-6	Monday, 12 February 2018	12:26:56	06/03/2018	20/03/2018	5	115	0.05	98.8	
867-515	Monday, 12 February 2018	12:26:56	06/03/2018	20/03/2018	5	115	0.05	98.8	
867-18	Tuesday, 13 February 2018	12:31:42	06/03/2018	20/03/2018	5	115	0.06	95.9	
867-514	Tuesday, 13 February 2018	12:31:42	06/03/2018	20/03/2018	5	115	0.06	95.9	
867-7-13	Thursday, 15 February 2018	12:54:32	06/03/2018	20/03/2018	5	115	0.06	91.5	
867-26	Saturday, 17 February 2018	12:28:04	06/03/2018	20/03/2018	5	115	0.05	91.5	
867-25	Tuesday, 20 February 2018	12:36:18	06/03/2018	20/03/2018	1	115	0.05	94.0	
867-508	Tuesday, 20 February 2018	12:36:18	06/03/2018	20/03/2018	5	115	0.05	94.0	
867-10-11	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.03	94.0	
867-502	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.03	94.0	
867-503	Thursday, 22 February 2018	12:34:02	06/03/2018	20/03/2018	5	115	0.03	94.0	
867-504	Friday, 23 February 2018	12:21:36	06/03/2018	20/03/2018	5	115	0.03	94.0	
867-28	Saturday, 24 February 2018	12:19:44	06/03/2018	20/03/2018	5	115	0.04	100.0	
867-24	Monday, 26 February 2018	12:31:13	06/03/2018	20/03/2018	5	115	0.04	97.5	
867-507	Monday, 26 February 2018	12:31:13	06/03/2018	20/03/2018	5	115	0.04	97.5	
867-501	Wednesday, 28 February 2018	12:29:42	06/03/2018	20/03/2018	5	115	0.04	105.5	
867-5	Wednesday, 28 February 2018	12:29:42	06/03/2018	20/03/2018	5	115	0.04	105.5	
MARCH									
867-23	Friday, 2 March 2018	12:30:28	09/04/2018	19/04/2018	5	115	0.02	88.0	
867-506	Friday, 2 March 2018	12:30:28	09/04/2018	19/04/2018	5	115	0.03	88.0	
867-505	Saturday, 3 March 2018	12:23:00	09/04/2018	19/04/2018	5	115	0.01	88.0	
867-9	Saturday, 3 March 2018	12:23:14	09/04/2018	19/04/2018	5	115	0.05	88.0	
867-19	Monday, 5 March 2018	12:21:18	09/04/2018	19/04/2018	5	115	0.03	94.0	
867-21	Wednesday, 7 March 2018	12:20:12	09/04/2018	19/04/2018	5	115	0.02	91.5	
867-8a	Thursday, 8 March 2018	12:39:11	09/04/2018	19/04/2018	5	115	0.04	94.0	
867-22	Friday, 9 March 2018	12:30:01	09/04/2018	19/04/2018	5	115	0.02	94.0	
867-20	Monday, 12 March 2018	12:33:16	09/04/2018	19/04/2018	5	115	0.03	91.5	
858-1	Tuesday, 13 March 2018	12:32:15	09/04/2018	19/04/2018	5	115	0.09	94.0	
867-39	Friday, 16 March 2018	12:35:04	09/04/2018	19/04/2018	5	115	0.03	94.0	
867-511b	Tuesday, 20 March 2018	12:30:55	09/04/2018	19/04/2018	5	115	0.02	95.9	
858-2	Wednesday, 21 March 2018	12:24:59	09/04/2018	19/04/2018	5	115	0.07	101.9	
867-40	Friday, 23 March 2018	12:26:24	09/04/2018	19/04/2018	5	115	0.03	95.9	
858-5	Thursday, 29 March 2018	12:28:04	09/04/2018	19/04/2018	5	115	0.04	94.0	
867-41	Saturday, 31 March 2018	12:23:50	09/04/2018	19/04/2018	5	115	0.03	94.0	
APRIL									
867-38	Tuesday, 3 April 2018	12:28:28	04/05/2018	21/05/2018	5	115	0.02	94.0	
867-36-37	Tuesday, 10 April 2018	12:28:06	04/05/2018	21/05/2018	5	115	0.06	94.0	
858-3	Tuesday, 10 April 2018	12:28:08	04/05/2018	21/05/2018	5	115	0.06	94.0	
867-42	Thursday, 12 April 2018	12:33:45	04/05/2018	21/05/2018	5	115	0.06	103.5	
858-4	Saturday, 14 April 2018	12:24:17	04/05/2018	21/05/2018	5	115	0.07	94.0	
867-8b	Monday, 16 April 2018	12:29:27	04/05/2018	21/05/2018	5	115	0.05	100.0	
867-29	Tuesday, 17 April 2018	12:33:35	04/05/2018	21/05/2018	5	115	0.26	94.0	
858-7-8	Monday, 9 April 2018	12:36:35	04/05/2018	21/05/2018	5	115	0.07	91.5	
867-30	Tuesday, 24 April 2018	12:27:30	04/05/2018	21/05/2018	5	115	0.04	94.0	
849-516	Tuesday, 24 April 2018	12:27:30	04/05/2018	21/05/2018	5	115	0.04	94.0	
867-35	Thursday, 26 April 2018	12:31:08	04/05/2018	21/05/2018	5	115	0.04	94.0	
858-6	Thursday, 26 April 2018	12:31:08	04/05/2018	21/05/2018	5	115	0.04	94.0	
858-9	Saturday, 28 April 2018	12:28:22	04/05/2018	21/05/2018	5	115	0.05	94.0	
May									
858-10	Tuesday, 1 May 2018	12:27:50	06/06/2018	20/06/2018	5	115	0.07	94.0	
867-31	Tuesday, 1 May 2018	12:31:31	06/06/2018	20/06/2018	5	115	0.04	94.0	
1155-58	Wednesday, 2 May 2018	12:38:49	06/06/2018	20/06/2018	5	115	0.05	91.5	
867-32	Friday, 4 May 2018	12:30:46	06/06/2018	20/06/2018	5	115	0.07	102.8	
858-20	Sunday, 6 May 2018	12:30:24	06/06/2018	20/06/2018	1	95	0.06	97.5	Local Environmental Factor
849-511	Monday, 7 May 2018	12:56:35	06/06/2018	20/06/2018	5	115	0.07	106.5	
849-515	Tuesday, 8 May 2018	12:25:37	06/06/2018	20/06/2018	5	115	0.02	94.0	
858-21	Wednesday, 9 May 2018	15:06:40	06/06/2018	20/06/2018	5	115	0.04	88.0	
858-11-12	Friday, 11 May 2018	15:11:16	06/06/2018	20/06/2018	5	115	0.11	98.8	
1146-84	Saturday, 12 May 2018	12:46:38	06/06/2018	20/06/2018	5	115	0.03	101.9	
867-33	Monday, 14 May 2018	12:38:43	06/06/2018	20/06/2018	5	115	0.02	95.9	
1146-85	Tuesday, 15 May 2018	12:45:48	06/06/2018	20/06/2018	5	115	0.03	94.0	
1146-86	Thursday, 17 May 2018	12:27:58	06/06/2018	20/06/2018	5	115	0.03	94.0	
858-13	Friday, 18 May 2018	12:30:28	06/06/2018	20/06/2018	5	115	0.06	94.0	
1146-87	Saturday, 19 May 2018	12:59:11	06/06/2018	20/06/2018	5	115	0.02	94.0	
858-14	Monday, 21 May 2018	12:31:37	06/06/2018	20/06/2018	5	115	0.05	101.9	
858-19	Tuesday, 22 May 2018	15:20:03	06/06/2018	20/06/2018	5	115	0.04	100.0	
867-34	Tuesday, 22 May 2018	15:20:03	06/06/2018	20/06/2018	5	115	0.04	100.0	
849-513	Monday, 28 May 2018	12:26:52	06/06/2018	20/06/2018	5	115	0.02	88.0	
849-512	Wednesday, 30 May 2018	11:30:22	06/06/2018	20/06/2018	5	115	0.03	95.9	
Compliance Summary – Overpressure level from blasting operations must not exceeded more than 5% of the total number of blasts over a period of 12 months					**Toatl Number of blasts**	356	**Percentage of exceedances over 12 month period**	0%	

Cyanide

Monitoring Point: 48
Water quality monitoring, automated sampler located at the processing plant

			Total Cyanide (mg/L)				
Frequency	**Month**	**No Sampled during Month**	**Minimum**	**Mean**	**Median**	**Maximum**	**Comments**
Weekly	January	5	19.1	45.7	49.9	63.7	
Weekly	February	4	12.8	31.4	32.9	46.9	
Weekly	March	4	24.1	33.2	31.7	45.3	
Weekly	April	5	8.9	31.4	33.6	50.0	
Weekly	May	4	22.9	31.4	33.7	35.1	
Weekly	June						
Weekly	July						
Weekly	August						
Weekly	September						
Weekly	October						
Weekly	November						
Weekly	December						

			WAD Cyanide (mg/L)		Concentration Limits		
Frequency	**Month**	**No Sampled during Month**	**Minimum**	**Maximum**	**90th Percentile**	**100th Percentile**	**Comments**
Twice daily	January	62	1.2	13.8	20ppm	30ppm	
Twice daily	February	56	1.1	10.6	20ppm	30ppm	
Twice daily	March	49	0.3	14.0	20ppm	30ppm	Samples were not collected due to mill shutdown between: 03/03/17 (Evening) and the 07/03/17 (Evening)
Twice daily	April	58	1.1	11.2	20ppm	30ppm	Samples were not collected due to mill shutdown between: 21/04/17 (Evening) and the 22/04/17 (Day)
Twice daily	May	58	1.1	11.2	20ppm	30ppm	
Twice daily	June				20ppm	30ppm	
Twice daily	July				20ppm	30ppm	
Twice daily	August				20ppm	30ppm	
Twice daily	September				20ppm	30ppm	
Twice daily	October				20ppm	30ppm	
Twice daily	November				20ppm	30ppm	
Twice daily	December				20ppm	30ppm	

EPL Exceedances

EPL Correction Log

Monitoring Point	Monitoring Point Type	Date Sampled	Date Obtained	Date Originally Published	Parameter	Original	Correction	Comments