Quarry Solutions Water Monitoring Results

Doonbah Quarry

499 Woodburn Evans Head Road, Evans Head

EPL no. 21242 http://www.epa.nsw.gov.au/prpoeoapp

May 2019 to January 2022

Water Monitoring – Point 1 – Discharges from Premises

Sampling at Point 1 is to be undertaken as soon as practicable, and no more than 12 hours, after overflow commences, and before any controlled discharge from the sediment basin**.**

Month for Summary	100 Percentile concentration								Compliant (yes or no) - comments
	pH (pH Units)	Compliance limit	TSS (mg/L)	Compliance limit	Visible oil and grease	Nil	No. of days discharging / no. of samples required	No. samples taken	
May 19	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Jun 19	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Jul 19	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Aug 19	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Sep 19	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Oct 19	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Nov 19	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Dec 19	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Jan 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Feb 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Mar 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Apr 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
May 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Jun 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Jul 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Aug 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Sep 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Oct 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Nov 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Dec 20	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Jan 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Feb 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Mar 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Apr 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling

May 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Jun 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Jul 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Aug 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Sep 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Oct 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Nov 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Dec 21	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling
Jan 22	-	6.5-8.5	-	50	-	Nil	0	0	No discharge, no sampling

Water Monitoring – Point 2 – Groundwater Monitoring

Groundwater Monitoring is to be undertaken at 9 Monitoring locations and 18 Bores (see Map) on a quarterly basis.

Location MW1

Date of sampling	Date data Obtained	Sampling bore	100 Percentile concentration					Compliance Limit
			Electrical Conductivity (µS/cm)	pH (pH Units)	Standing Water Level (mBTOC)	Sulfate (mg/L)	Chloride (mg/L)	
11-07-19	25-07-19	Shallow	91	5.1	2.65	14	9	Not specified
		Deep	142	5.3	2.65	<1	30	
09-10-19	21-9-19	Shallow	93	4.9	3.15	13	13	Not specified
		Deep	141	5.1	3.15	<1	30	
09-01-20	17-01-20	Shallow	106	5.3	3.42	17	11	Not specified
		Deep	147	5.7	3.43	<1	31	
08-04-2020	20-04-20	Shallow	89	5.2	1.48	10	12	Not specified
		Deep	136	5.2	1.48	<1	37	
14-07-2020	22-07-20	Shallow	67	4.5	1.57	8	9	Not specified
		Deep	115	5.0	1.57	<5	31	
13-10-20	20-10-20	Shallow	75	6.0	1.77	9	17	Not specified
		Deep	118	6.8	1.83	<1	33	
11-01-21	21-01-21	Shallow	106	5.5	1.08	11	17	Not specified
		Deep	102	6.9	1.07	<1	31	
09-04-2021	16-04-21	Shallow	246	5.3	0.58	16	60	Not specified
		Deep	143	5.5	0.58	<1	37	
07-07-2021	15-07-21	Shallow	44	5.9	1.39	3	8	Not specified
		Deep	118	5.4	1.39	<5	33	
21-10-2021	02-11-21	Shallow	108	6.7	2.07	2	29	Not specified
		Deep	149	5.8	2.07	<5	43	
05-01-2022	13-01-22	Shallow	121	5.8	2.41	9	15	Not specified
		Deep	120	5.1	2.42	<1	34	

Location MW2

Date of sampling	Date data Obtained	Sampling bore	100 Percentile concentration					Compliance Limit
			Electrical Conductivity (µS/cm)	pH (pH Units)	Standing Water Level (mBTOC)	Sulfate (mg/L)	Chloride (mg/L)	
11-07-19	25-07-19	Shallow	258	3.6	2.60	30	42	Not specified
		Deep	241	4.8	3.12	<1	66	
09-10-19	21-9-19	Shallow	272	3.5	3.37	<5	52	Not specified
		Deep	304	4.7	3.67	<1	84	
09-01-20	17-01-20	Shallow	334	3.5	3.60	10	45	Not specified
		Deep	422	4.9	3.79	<1	99	
11-05-20	19-05-20	Shallow	263	3.8	1.37	<1	48	Not specified
08-04-20	20-04-20	Deep	212	5.1	1.81	<1	61	
14-07-20	22-07-20	Shallow	231	3.5	1.20	<5	48	Not specified
		Deep	181	4.9	1.76	<1	51	
13-10-20	20-10-20	Shallow	207	3.7	1.52	13	46	Not specified
		Deep	154	4.8	1.85	<1	44	
11-01-21	21-01-21	Shallow	218	3.7	1.00	<10	41	Not specified
		Deep	158	5.0	1.58	1	40	
09-04-2021	16-04-21	Shallow	163	4.0	0.58	<10	31	Not specified
		Deep	168	5.2	1.04	<1	44	
07-07-2021	15-07-21	Shallow	141	4.0	1.71	<20	35	Not specified
		Deep	217	5.0	2.82	<5	71	
21-10-2021	02-11-21	Shallow	207	3.8	1.56	<5	5	Not specified
		Deep	412	5.0	2.19	<1	144	
05-01-2022	13-01-22	Shallow	157	3.7	1.77	<10	27	Not specified
		Deep	382	4.8	3.16	2	130	

Location MW3

Date of sampling	Date data Obtained	Sampling bore	100 Percentile concentration					Compliance Limit
			Electrical Conductivity (µS/cm)	pH (pH Units)	Standing Water Level (mBTOC)	Sulfate (mg/L)	Chloride (mg/L)	
11-07-19	25-07-19	Shallow	170	5.3	2.42	5	32	Not specified
		Deep	161	5	2.60	<1	34	
09-10-19	21-9-19	Shallow	117	5.2	2.87	1	22	Not specified
		Deep	144	4.9	3.12	<1	30	
09-01-20	17-01-20	Shallow	162	5.3	3.14	3	37	Not specified
		Deep	177	5	3.40	0.5	42	
11-05-20	19-05-20	Shallow	199	5.9	1.37	5	46	Not specified
08-04-20	20-04-20	Deep	145	5.4	1.50	<1	43	
14-07-20	22-07-20	Shallow	191	5.6	1.22	10	48	Not specified
		Deep	161	4.9	1.46	<5	43	
13-10-20	20-10-20	Shallow	174	6.2	1.57	8	47	Not specified
		Deep	140	5.3	1.76	2	37	
11-01-21	21-01-21	Shallow	202	5.0	1.17	8	49	Not specified
		Deep	161	5.0	1.74	<1	38	
22-04-2021	04-05-21	Shallow	160	7.2	0.76	6	40	Not specified
		Deep	162	5.7	1.0	<1	46	
07-07-2021	15-07-21	Shallow	195	6.7	0.86	14	52	Not specified
		Deep	160	5.4	1.06	<5	47	
21-10-2021	02-11-21	Shallow	245	6.5	1.64	2	78	Not specified
		Deep	168	5.4	1.69	<5	46	
05-01-2022	13-01-22	Shallow	370	5.0	1.31	6	109	Not specified
		Deep	200	5.0	1.51	2	53	

Location MW4

Date of sampling	Date data Obtained	Sampling bore	100 Percentile concentration					Compliance Limit
			Electrical Conductivity (µS/cm)	pH (pH Units)	Standing Water Level (mBTOC)	Sulfate (mg/L)	Chloride (mg/L)	
11-07-19	25-07-19	Shallow	223	4.9	1.57	45	29	Not specified
		Deep	237	4.8	1.62	16	49	
09-10-19	21-9-19	Shallow	308	4.6	2.06	63	42	Not specified
		Deep	255	4.7	2.06	13	59	
09-01-20	17-01-20	Shallow	224	4.8	2.50	32	38	Not specified
		Deep	270	4.8	2.50	21	62	
08-04-20	20-04-20	Shallow	180	5.6	0.76	25	32	Not specified
		Deep	300	5.0	0.76	47	52	
14-07-20	22-07-20	Shallow	139	6.0	0.68	30	26	Not specified
		Deep	279	4.9	0.70	47	53	
13-10-20	20-10-20	Shallow	171	6.9	1.01	28	35	Not specified
		Deep	256	5.3	1.07	37	60	
11-01-21	21-01-21	Shallow	202	5.9	0.75	28	32	Not specified
		Deep	262	5.4	0.80	8	66	
22-04-2021	04-05-21	Shallow	176	7.0	0.27	29	31	Not specified
		Deep	238	5.9	0.27	10	65	
07-07-2021	15-07-21	Shallow	149	7.5	0.34	27	31	Not specified
		Deep	211	5.8	0.37	10	61	
21-10-2021	02-11-21	Shallow	173	7.0	1.28	28	31	Not specified
		Deep	218	5.6	1.28	10	58	
05-01-2022	13-01-22	Shallow	189	5.2	0.64	31	25	Not specified
		Deep	259	4.8	0.68	9	68	

Location MW5

Date of sampling	Date data Obtained	Sampling bore	100 Percentile concentration					Compliance Limit
			Electrical Conductivity (µS/cm)	pH (pH Units)	Standing Water Level (mBTOC)	Sulfate (mg/L)	Chloride (mg/L)	
11-07-19	25-07-19	Shallow	536	3.7	1.94	198	36	Not specified
		Deep	228	4.5	1.94	33	37	
09-10-19	21-9-19	Shallow	332	4.1	2.39	77	38	Not specified
		Deep	194	4.4	2.39	30	32	
09-01-20	17-01-20	Shallow	431	3.9	2.95	111	42	Not specified
		Deep	210	5.2	2.95	29	38	
08-04-20	20-04-20	Shallow	408	4.1	1.28	107	37	Not specified
		Deep	150	4.7	1.28	44	43	
14-07-20	22-07-20	Shallow	432	4.0	1.24	151	36	Not specified
		Deep	250	4.5	1.24	53	41	
13-10-20	20-10-20	Shallow	293	5.1	1.52	93	45	Not specified
		Deep	250	4.8	1.56	60	44	
11-01-21	21-01-21	Shallow	392	4.0	1.24	108	34	Not specified
		Deep	270	4.4	1.21	52	39	
09-04-2021	16-04-21	Shallow	333	4.6	0.60	89	41	Not specified
		Deep	265	4.6	0.60	68	40	
07-07-2021	15-07-21	Shallow	311	4.3	0.91	89	44	Not specified
		Deep	246	4.5	0.92	56	42	
21-10-2021	02-11-21	Shallow	367	4.1	1.81	118	37	Not specified
		Deep	265	4.6	1.81	48	42	
05-01-2022	13-01-22	Shallow	402	3.9	1.08	125	34	Not specified
		Deep	302	4.5	1.09	64	41	

Location MW6

Date of sampling	Date data Obtained	Sampling bore	100 Percentile concentration					Compliance Limit
			Electrical Conductivity (µS/cm)	pH (pH Units)	Standing Water Level (mBTOC)	Sulfate (mg/L)	Chloride (mg/L)	
11-07-19	25-07-19	Shallow	207	5.0	2.88	28	24	Not specified
		Deep	258	5.1	2.10	10	58	
09-10-19	21-9-19	Shallow	183	5.1	2.36	26	27	Not specified
		Deep	279	5.2	2.57	15	67	
09-01-20	17-01-20	Shallow	187	5.0	2.87	24	38	Not specified
		Deep	250	5.1	3.07	8	69	
11-05-20	19-05-20	Shallow	192	5.9	1.40	28	18	Not specified
08-04-20	20-04-20	Deep	240	5.4	1.38	10	59	
14-07-20	22-07-20	Shallow	107	5.9	1.14	8	7	Not specified
		Deep	240	5.3	1.30	10	67	
13-10-20	20-10-20	Shallow	185	5.6	1.55	31	33	Not specified
		Deep	239	5.3	1.80	16	63	
11-01-21	21-01-21	Shallow	114	5.8	1.23	8	12	Not specified
		Deep	269	5.4	1.41	18	64	
22-04-2021	04-05-21	Shallow	171	6.4	0.87	6	9	Not specified
		Deep	249	5.7	0.94	21	61	
07-07-2021	15-07-21	Shallow	127	6.6	0.83	10	11	Not specified
		Deep	238	5.6	1.03	24	64	
21-10-2021	02-11-21	Shallow	90	6.8	1.78	8	10	Not specified
		Deep	228	5.6	1.94	23	53	
05-01-2022	13-01-22	Shallow	126	5.5	0.95	11	10	Not specified
		Deep	186	5.1	1.19	20	43	

Location MW7

Date of sampling	Date data Obtained	Sampling bore	100 Percentile concentration					Compliance Limit
			Electrical Conductivity (µS/cm)	pH (pH Units)	Standing Water Level (mBTOC)	Sulfate (mg/L)	Chloride (mg/L)	
11-07-19	25-07-19	Shallow	138	4.9	2.87	13	25	Not specified
		Deep	147	4.9	2.19	13	26	
09-10-19	21-9-19	Shallow	130	4.9	2.06	10	30	Not specified
		Deep	145	4.9	2.58	13	28	
09-01-20	17-01-20	Shallow	157	4.9	3.02	11	31	Not specified
		Deep	144	5.2	3.12	10	36	
08-04-20	20-04-20	Shallow	119	5.6	1.47	8	17	Not specified
		Deep	140	5.3	1.47	9	31	
14-07-20	22-07-20	Shallow	112	5.6	1.35	7	21	Not specified
		Deep	168	5.0	1.47	6	46	
13-10-20	20-10-20	Shallow	139	5.8	1.74	21	25	Not specified
		Deep	162	4.7	1.83	38	41	
11-01-21	21-01-21	Shallow	110	5.7	1.48	5	15	Not specified
		Deep	176	5.3	1.62	35	34	
22-04-2021	04-05-21	Shallow	122	6.1	0.99	6	15	Not specified
		Deep	318	5.8	1.01	80	44	
07-07-2021	15-07-21	Shallow	120	6.6	1.03	8	17	Not specified
		Deep	317	5.5	1.15	91	45	
21-10-2021	02-11-21	Shallow	100	6.6	1.83	9	18	Not specified
		Deep	301	5.8	2.03	75	43	
05-01-2022	13-01-22	Shallow	105	5.2	1.08	8	14	Not specified
		Deep	333	4.5	1.23	87	38	

Location MW8

Date of sampling	Date data Obtained	Sampling bore	100 Percentile concentration					Compliance Limit
			Electrical Conductivity (µS/cm)	pH (pH Units)	Standing Water Level (mBTOC)	Sulfate (mg/L)	Chloride (mg/L)	
11-07-19	25-07-19	Shallow	61	4.9	2.05	3	12	Not specified
		Deep	249	5.2	2.10	24	46	
09-10-19	21-9-19	Shallow	70	4.9	2.60	3	14	Not specified
		Deep	273	5.2	2.58	28	50	
09-01-20	17-01-20	Shallow	114	6.7	3.40	5	23	Not specified
		Deep	256	5.6	3.50	21	53	
08-04-20	20-04-20	Shallow	103	6.1	1.17	4	27	Not specified
		Deep	243	5.5	1.27	29	50	
14-07-20	22-07-20	Shallow	62	5.0	1.27	3	13	Not specified
		Deep	239	5.4	1.32	34	47	
13-10-20	20-10-20	Shallow	60	6.9	1.64	3	12	Not specified
		Deep	228	6.0	1.71	33	48	
11-01-21	21-01-21	Shallow	69	6.5	1.43	4	13	Not specified
		Deep	244	5.7	1.34	27	46	
09-04-2021	16-04-21	Shallow	72	6.4	0.62	5	14	Not specified
		Deep	237	5.5	0.66	29	47	
07-07-2021	15-07-21	Shallow	59	6.5	0.94	6	12	Not specified
		Deep	234	5.6	1.03	37	48	
21-10-2021	02-11-21	Shallow	63	6.5	1.66	6	11	Not specified
		Deep	219	5.5	1.81	28	47	
05-01-2022	13-01-22	Shallow	88	4.8	0.99	6	16	Not specified
		Deep	247	5.1	1.12	30	44	

Location MW9

Date of sampling	Date data Obtained	Sampling bore	100 Percentile concentration					Compliance Limit
			Electrical Conductivity (µS/cm)	pH (pH Units)	Standing Water Level (mBTOC)	Sulfate (mg/L)	Chloride (mg/L)	
11-07-19	25-07-19	Shallow	120	5.3	2.22	14	20	Not specified
		Deep	249	5.2	2.30	27	43	
09-10-19	21-9-19	Shallow	114	5.6	2.76	11	20	Not specified
		Deep	234	5.3	2.76	26	43	
09-01-20	17-01-20	Shallow	118	5.7	3.20	17	24	Not specified
		Deep	240	5.3	3.22	31	40	
08-04-20	20-04-20	Shallow	116	6.2	1.38	14	21	Not specified
		Deep	239	5.4	1.48	32	41	
14-07-20	22-07-20	Shallow	110	6.1	1.47	16	18	Not specified
		Deep	223	5.3	1.55	31	40	
13-10-20	20-10-20	Shallow	89	6.7	1.87	22	14	Not specified
		Deep	182	6.2	1.94	36	37	
11-01-21	21-01-21	Shallow	112	6.9	1.53	15	15	Not specified
		Deep	234	6.1	1.55	37	36	
09-04-2021	16-04-21	Shallow	129	6.2	0.82	16	18	Not specified
		Deep	226	5.5	0.82	36	36	
07-07-2021	15-07-21	Shallow	123	6.7	1.16	17	24	Not specified
		Deep	209	5.7	1.26	35	39	
21-10-2021	02-11-21	Shallow	102	6.1	1.80	14	16	Not specified
		Deep	209	5.5	2.02	35	36	
05-01-2022	13-01-22	Shallow	107	5.4	1.25	15	12	Not specified
		Deep	224	5.1	1.37	34	32	

Water Monitoring – Point 3 – Return Water

Daily during discharge

Month for Summary	100 Percentile concentration				Compliant (yes or no) - comments
	pH (pH Units)	Compliance limit	No. of days discharging / no. of samples required	No. samples taken	
May 19	-				Not operating – no water for sampling
Jun 19	4.2	5.0-7.0	0	1	works undertaken to treat water, no discharge so no pollution harm anticipated, proactive sampling only
Jul 19	4.3	5.0-7.0	0	1	works undertaken to treat water, no discharge so no pollution harm anticipated, proactive sampling only
Aug 19	4.8	5.0-7.0	0	1	works undertaken to treat water, no discharge so no pollution harm anticipated, proactive sampling only
Sep 19	-				Not operating – no water for sampling
Oct 19	-				Not operating – no water for sampling
Nov 19	5.0	5.0-7.0	0	1	no discharge, proactive sampling only
Dec 19	4.4	5.0-7.0	0	1	works undertaken to treat water, no discharge so no pollution harm anticipated, proactive sampling only
Jan 20	5.03	5.0-7.0	0	1	Yes, treatment of return water
Feb 20	-				Not operating
Mar 20	6.07	5.0-7.0	0	1	Yes, treatment of return water
Apr 20	-				Not operating
May 20	-				Not operating
Jun 20	-				Not operating
Jul 20	-				Not operating
Aug 20	-				Not operating
Sep 20	-				Not operating
Oct 20	-				Not operating
Nov 20	-				Not operating
Dec 20	-				Not operating
Jan 21	-				Not operating
Feb 21	-				Not operating

Mar 21	-	Not operating
Apr 21	-	Not operating
May 21	-	Not operating
Jun 21	-	Not operating
Jul 21	-	Not operating
Aug 21	-	Not operating
Sep 21	-	Not operating
Oct 21	-	Not operating
Nov 21	-	Not operating
Dec 21	-	Not operating
Jan 22	-	Not operating

Water Monitoring – Point 4 – Inline Water

Daily during discharge

Month for Summary	100 Percentile concentration			
	pH (pH Units)	Compliance limit	No. of days discharging / no. of samples required	No. samples taken
May 19	Not operating – no sampling required		0	0
Jun 19	4.0	None specified	0	1
Jul 19	4.1	None specified	0	1
Aug 19	4.7	None specified	0	1
Sep 19	Not operating – no sampling required	None specified	0	0
Oct 19	3.8	None specified	0	1
Nov 19	4.1	None specified	0	1
Dec 19	7.0	None specified	0	1
Jan 20	3.75	None specified	0	1
Feb 20	5.6	None specified	0	1
Mar 20	4.7	None specified	0	1
Apr 20	Not operating – no sampling required	None specified	0	0
May 20	Not operating – no sampling required	None specified	0	0
Jun 20	6.6	None specified	0	1
Jul 20	Not operating – no sampling required	None specified	0	0
Aug 20	Not operating – no sampling required	None specified	0	0
Sep 20	Not operating – no sampling required	None specified	0	0
Oct 20	Not operating – no sampling required	None specified	0	0
Nov 20	Not operating – no sampling required	None specified	0	0

Dec 20	Not operating – no sampling required	None specified	0	0
Jan 21	Not operating – no sampling required	None specified	0	0
Feb 21	Not operating – no sampling required	None specified	0	0
Mar 21	Not operating – no sampling required	None specified	0	0
Apr 21	Not operating – no sampling required	None specified	0	0
May 21	Not operating – no sampling required	None specified	0	0
Jun 21	Not operating – no sampling required	None specified	0	0
Jul 21	Not operating – no sampling required	None specified	0	0
Aug 21	Not operating – no sampling required	None specified	0	0
Sep 21	Not operating – no sampling required	None specified	0	0
Oct 21	Not operating – no sampling required	None specified	0	0
Nov 21	Not operating – no sampling required	None specified	0	0
Dec 21	Not operating – no sampling required	None specified	0	0
Jan 22	Not operating – no sampling required	None specified	0	0