



Karuah East Quarry (PA 09_0175)

Company Report & Overview

Community Consultative Committee

4 March 2019

1. Progress of the Quarry



As of 4 March 2019, Karuah East Quarry is still non-operational. It is anticipated that normal operations will recommence in late March 2019.

Management Area	Task	Status
Extraction	General	<ul style="list-style-type: none"> Stripping of overburden recommenced in February 2019. No rock has been extracted in past six months. Approximately 1000m² of additional vegetation has been cleared in February 2019 in the upper extraction.
	Blasting	Blasting was not undertaken in the past six months. Last blasting event at KEQ was on 19 July 2018.
Production & Sales	Volume (tonnes)	<ul style="list-style-type: none"> Quarry products have not been extracted and processed since August 2018. A total of only 74 tonnes of material was sold and transported from the KEQ site since September 2018.
	Truck Movements	Since September 2018, KEQ has not been operating. Only 4 laden truck loads carrying quarried product left the KEQ site since the end of August 2018.
Construction	Stage 2 of Crushing Plant	<ul style="list-style-type: none"> Construction commenced in July 2018. Stage 2 is anticipated to be completed by the end of March 2019.
	Acoustic enclosure (Jaw Crusher)	<ul style="list-style-type: none"> An acoustic enclosure of the main jaw crusher commenced at the end of 2018. Enclosure is anticipated to be completed by the end of March 2019.
Section 75(W) Modifications	MOD1	<ul style="list-style-type: none"> MOD1 of the Project Approval was granted by the DPE on 27 April 2018. To meet obligations under the EPBC 2014/7282 approval, the Federal Department of the Environment & Energy (DotEE) requested for the Biodiversity Offset Area Management Plan and the <i>Tetratheca juncea</i> Translocation Management Plan to be updated and submitted to the DotEE for review. Both the BOAMP and the TjTMP have been submitted to the DotEE for review.
	MOD2	<ul style="list-style-type: none"> MOD2 of the Project Approval was granted by the DPE on 19 December 2018. All MP's relating to the KEQ Project Approval will be updated accordingly as per the requirements of this Modification.
Reporting	2017/2018 EPL Annual Return	<ul style="list-style-type: none"> The 2017/2018 Environmental Protection Licence 20611 annual return was completed and submitted to the EPA in October 2018.
	2018 Annual Review	<ul style="list-style-type: none"> The 2018 Annual Review is currently being drafted. The Annual Review is due to be submitted to the DPE by the 31 March 2019.

1. Progress of the Quarry (cont.)



Management Area	Task	Status
Biodiversity	Annual Monitoring	<ul style="list-style-type: none">• Annual monitoring of the Biodiversity Offset Area was undertaken in October 2018. Final report pending.• Annual monitoring of the <i>Tetratheca juncea</i> translocation was undertaken in September 2018. Final report pending.

1. Progress of the Quarry (cont.)

Jaw crusher with enclosure frame.



Crushing plant as of 14 February 2019

2. Construction & Operational Schedule



Quarry operations at Karuah East Quarry was reduced and it is expected that normal operations will not recommence until late March 2019.

It is anticipated the following activities will occur over the next 6 months:

- Construction of stage 2 of the Crushing Plant will be completed by the end of March 2019;
- Construction of an acoustic enclosure over the main Jaw Crusher will be completed by the end of March 2019;
- Stripping of overburden and topsoil will occur in the extraction area in order to expose more rock; and
- Civil works on internal haul roads and drains.

3. Monitoring & Environmental Performance



- a) Air Quality Monitoring
- b) Blast Monitoring
- c) Noise Monitoring
- d) Surface Water Monitoring
- e) Groundwater Monitoring

3a Air Quality Monitoring



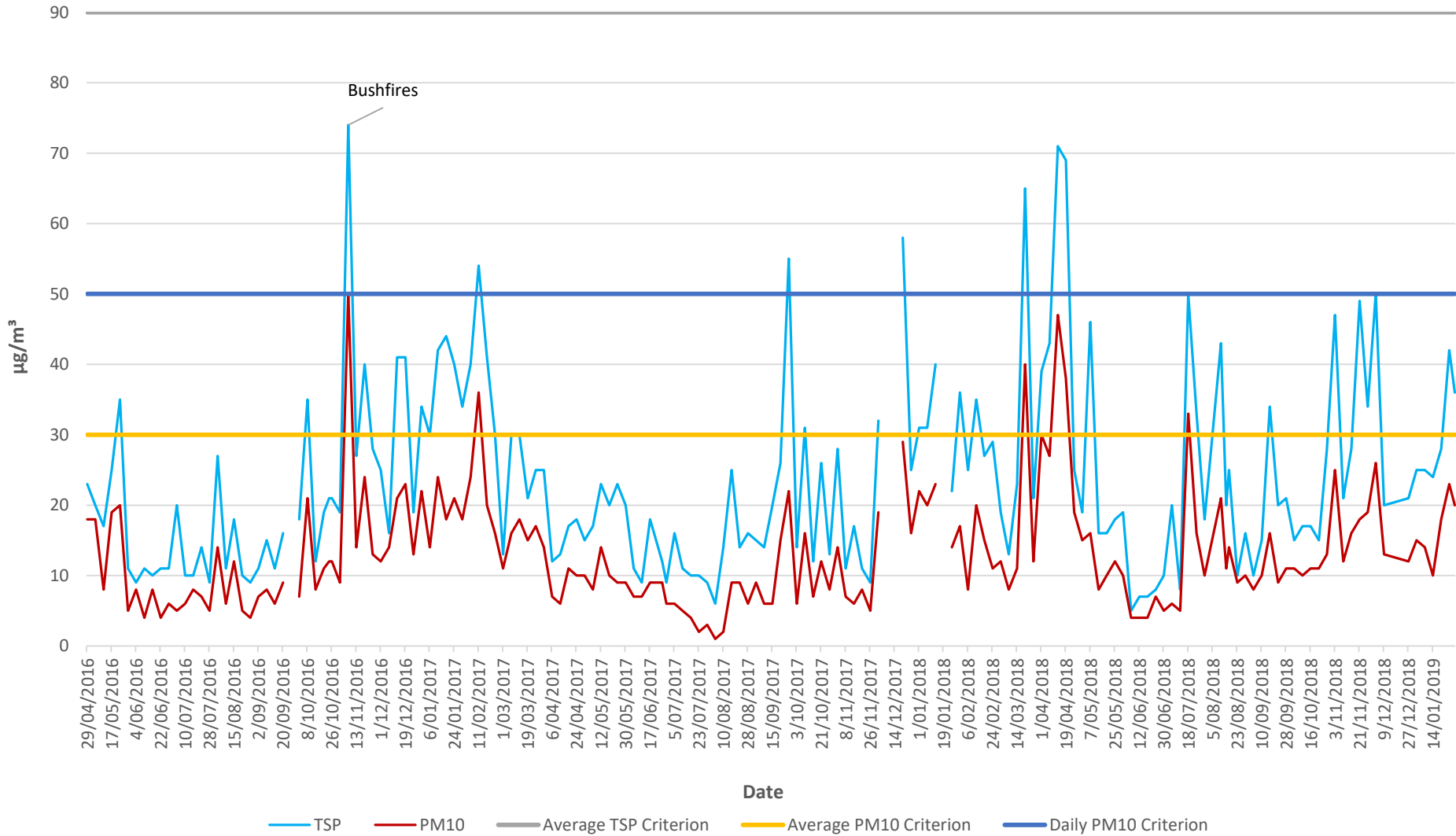
High Volume Air Sampling (TSP & PM10)

Date	TSP ($\mu\text{g}/\text{m}^3$)	PM10 ($\mu\text{g}/\text{m}^3$)
11/08/2018	43	21
15/08/2018	20	11
17/08/2018	25	14
23/08/2018	10	9
29/08/2018	16	10
4/09/2018	10	8
10/09/2018	15	10
16/09/2018	34	16
22/09/2018	20	9
28/09/2018	21	11
4/10/2018	15	11
10/10/2018	17	10
16/10/2018	17	11
22/10/2018	15	11
28/10/2018	28	13
3/11/2018	47	25
9/11/2018	21	12
15/11/2018	28	16
21/11/2018	49	18
27/11/2018	34	19
3/12/2018	50	26
9/12/2018	20	13
27/12/2018	21	12
2/01/2019	25	15
8/01/2019	25	14
14/01/2019	24	10
20/01/2019	28	18
26/01/2019	42	23
30/01/2019	36	20
Year-to-date Average	26	14
Limit	90	30

3a Air Quality Monitoring (cont.)



High Volume Air Sampling - TSP & PM10



3a Air Quality Monitoring (cont.)



Insoluble Solids (g/m²/month)

Date	DDG 1	DDG 2	DDG 3	DDG 4	DDG 5
18/01/2017 to 16/02/2017	1.3	0.9	1.2	1.2	1.9
16/02/2017 to 20/03/2017	0.4	1.4	0.5	3.8	1.3
20/03/2017 to 21/04/2017	0.6	0.7	0.5	0.8	1.3
21/04/2017 to 23/05/2017	0.6	0.6	1.1	0.8	0.8
23/05/2017 to 20/06/2017	0.5	1.3	0.9	1.6	0.5
20/06/2017 to 18/07/2017	0.4	0.2	0.5	1.2	0.4
18/07/2017 to 17/08/2017	0.6	0.5	0.6	0.5	0.8
17/08/2017 to 14/09/2017	1.4	0.2	1.4	1.5	0.7
14/09/2017 to 12/10/2017	1.1	0.1	1.2	1.8	1.5
12/10/2017 to 9/11/2017	1.7	0.5	0.9	1.0	1.2
9/11/2017 to 7/12/2017	1.0	1.8	0.7	1.8	2.1
7/12/2017 to 8/01/2018	1.3	0.6	1.1	1.7	1.3
8/01/2018 to 5/02/2018	1.5	0.8	1.3	1.0	0.7
5/02/2018 to 5/03/2018	1.6	1.0	1.5	1.5	2.0
5/03/2018 to 3/04/2018	0.6	0.6	1.1	2.6	0.9
3/04/2018 to 1/05/2018	0.8	1.0	1.0	1.7	0.7
1/05/2018 to 30/05/2018	0.9	0.5	0.7	1.1	0.3
30/05/2018 to 27/06/2018	0.6	0.5	0.4	0.9	0.5
27/06/2018 to 26/07/2018	0.7	0.6	0.6	1.2	0.6
26/07/2018 to 23/08/2018	0.9	0.9	0.9	1.3	0.8
23/08/2018 to 20/09/2018	1.6	1.0	0.6	0.7	0.9
20/09/2018 to 26/10/2018	1.2	0.9	0.6	1.0	1.0
26/10/2018 to 23/11/2018	1.5	3.4	1.1	1.1	2.1
23/11/2018 to 21/12/2018	1.3	0.6	0.1	3.0	1.2
21/12/2018 to 18/01/2019	0.8	0.4	2.2	0.2	0.9
¹ Rolling Annual Average	1.3	1.3	0.9	1.2	1.2
² Annual Average Criteria	4.0	4.0	4.0	4.0	4.0

Note ¹: Rolling annual average from EPL 20611 anniversary date of 26 August.

Note ²: Maximum criteria as specified in EPL 20611.

3b Blast Monitoring



Blasting at KEQ was not undertaken in the past six months. The 2018 blasting results are shown below.

Date and time	Overpressure and vibration	Nearest Resident (Location B)
2/02/2018 12:53 PM	Overpressure dB(L)	103.9
	Vibration (mm/s)	0.42
2/03/2018 9:58 AM	Overpressure dB(L)	Below detection limits
	Vibration (mm/s)	Below detection limits
13/03/2018 12:43 PM	Overpressure dB(L)	108.1
	Vibration (mm/s)	0.29
27/03/2018 12:28 PM	Overpressure dB(L)	107.0
	Vibration (mm/s)	0.40
17/04/2018 12:32 PM	Overpressure dB(L)	Below detection limits
	Vibration (mm/s)	Below detection limits
10/05/2018	Overpressure dB(L)	Below detection limits
	Vibration (mm/s)	Below detection limits
13/06/2018 12:34 PM	Overpressure dB(L)	113.5
	Vibration (mm/s)	0.91
19/07/2018 1:27 PM	Overpressure dB(L)	110.0
	Vibration (mm/s)	0.55

3c Noise Monitoring



2018 Q4 Monitoring Results

Location	Date/Start Time/ Weather	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
		L _{Amax}	L _{A1}	L _{A10}	L _{A90}	L _{Aeq}	
F Lot 50 DP 1036893	22/11/2018 08:59 W = 2m/s SSW Temp = 25°C	84	69	47	40	57	Local road traffic 63 to 84 dBA
		Karuah East Quarry inaudible					Pacific Highway 38 to 40 dBA Birds 40 to 44 dBA Karuah East Project inaudible
G Lot 3 DP 1032636	22/11/2018 08:25 W = 2.5m/s WSW Temp = 23°C	66	57	49	32	46	Birds 32 to 47 dBA Dogs 45 to 66 dBA Pacific Highway 33 to 35 dBA
		Karuah East Quarry inaudible					Karuah East Project inaudible

2019 Q1 Monitoring Results

Location	Date/Start Time/ Weather	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emissions and Typical Maximum Noise Levels (dBA)
		L _{Amax}	L _{A1}	L _{A10}	L _{A90}	L _{Aeq}	
F Lot 50 DP 1036893	14/2/2019 07:45 W = 2.5m/s ESE Temp = 21°C	79	57	51	46	52	Local Traffic 60 - 79 dBA Pacific Highway 50 – 52 dBA Birds 47-50 dBA Plane 49 dBA
		Karuah East Quarry inaudible					Karuah East Project Inaudible
G Lot 3 DP 1032636	6/2/2019 10:48 W = 1.5m/s SE Temp = 21°C	54	43	37	32	35	Residential Construction 33 – 34 dBA Pacific Highway 29 – 32 dBA Birds 54 dBA Insects 34 – 35 dBA
		Karuah East Quarry inaudible					Karuah East Project Inaudible

3d Surface Water Monitoring



Monthly Monitoring Results – Sediment Dams

Date	LDP001 (Dam 1)				LDP002 (Dam 2)				LDP003 (Dam 3)			
	pH (Lab)	TSS	Oil & Grease	EC	pH (Lab)	TSS	Oil & Grease	EC	pH (Lab)	TSS	Oil & Grease	EC
EPL Criterion	6.50–8.50	40	5	-	6.50–8.50	40	5	-	6.50–8.50	40	5	-
19/01/2018	7.29	9	<5	665	7.29	37	<5	434	7.08	10	6	925
16/02/2018	7.71	9	<5	662	6.48	22	<5	548	7.21	16	<5	1075
20/03/2018	6.95	19	<5	574	6.81	6	<5	535	7.37	27	<5	788
18/04/2018	6.40	5	<5	529	7.70	17	<5	490	7.10	17	<5	830
18/05/2018	5.86	12	<5	555	5.80	4	<5	345	6.48	21	<5	654
19/06/2018	7.33	76	<5	496	7.51	828	<5	171	7.28	418	<5	347
20/07/2018	6.50	12	<5	600	6.80	5	<5	540	7.40	63	<5	570
17/08/2018	6.71	12	<5	553	6.64	5	<5	604	7.16	14	<5	622
14/09/2018	7.09	33	<5	508	6.37	7	<5	405	6.94	6	<5	520
19/10/2018	6.78	81	<5	593	6.77	191	<5	268	8.07	38	<5	688
15/11/2018	7.42	76	<5	1035	6.76	14	<5	470	8.01	23	<5	833
18/12/2018	7.20	98	<5	543	4.62	162	<5	193	7.57	341	<5	758
18/01/2019	7.13	10	<5	975	6.55	17	<5	533	8.15	43	<5	975

Units: pH in pH units, Total Suspended Solids (TSS) in mg/L, Oil & Grease in mg/L, Electrical Conductivity (EC) in $\mu\text{S}/\text{cm}$

Note: EPL Criterion is for discharge limits.

3d Surface Water Monitoring (cont.)



Monthly Monitoring Results – Creeks

Date	SW1 (Bulga Creek)				SW2 (Bulga Creek)				SW3 (Yalimbah Creek)				SW4 (Yalimbah Creek)			
	pH (Lab)	TSS	Oil & Grease	EC	pH (Lab)	TSS	Oil & Grease	EC	pH (Lab)	TSS	Oil & Grease	EC	pH (Lab)	TSS	Oil & Grease	EC
19/01/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/02/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/04/2018	-	-	-	-	6.60	9	<5	550	-	-	-	-	-	-	-	-
18/05/2018	-	-	-	-	5.75	5	<5	536	5.55	12	<5	331	-	-	-	-
19/06/2018	-	-	-	-	7.10	72	<5	255	7.00	270	<5	112	6.55	61	<5	259
20/07/2018	-	-	-	-	6.50	14	<5	410	-	-	-	-	-	-	-	-
17/08/2018	-	-	-	-	6.52	16	<5	385	-	-	-	-	-	-	-	-
14/09/2018	-	-	-	-	6.72	10	<5	304	-	-	-	-	-	-	-	-
19/10/2018	-	-	-	-	6.34	20	<5	533	-	-	-	-	-	-	-	-
15/11/2018	-	-	-	-	6.57	19	<5	568	-	-	-	-	-	-	-	-
19/12/2018	-	-	-	-	6.45	63	<5	448	-	-	-	-	-	-	-	-
18/01/2018	-	-	-	-	6.86	24	<5	533	-	-	-	-	-	-	-	-

Units: pH in pH units, Total Suspended Solids (TSS) in mg/L, Oil & Grease in mg/L, Electrical Conductivity (EC) in $\mu\text{S}/\text{cm}$

3e Groundwater Monitoring



Groundwater Levels

Date	Unit	² BH205	³ BH207	BH208	BH303
30/03/2016	¹ metres	22.83	12.38	19.54	29.93
04/10/2016	¹ metres	24.00	9.61	19.77	30.45
04/04/2017	¹ metres	25.30	9.39	19.99	30.66
05/10/2017	¹ metres	22.87	8.88	19.90	30.60
17/01/2018	¹ metres	21.98	9.12	20.27	30.67
18/04/2018	¹ metres	21.69	9.20	20.47	30.80
26/07/2018	¹ metres	20.46	8.89	20.49	30.86
30/10/2018	¹ metres	20.40	9.30	19.98	30.80
18/01/2019	¹ metres	20.11	9.21	20.44	30.96

- Note:**
1. Groundwater levels are measured in metres below ground level.
 2. BH205 was relocated on 26 September 2016.
 3. BH207 was relocated on 13 March 2017.

4. Community Complaints



No complaints have been received in the last three months.

Complaints relating to the Karuah East project can be made via telephone or through the Hunter Quarries website. Once a complaint has been received, the following procedure is followed:

- The details of the complaint will be recorded and investigated once received;
- Acknowledgement of the complaint will be made to the complainant within 24 hours of receiving the complaint;
- The complainant will receive notification within 3 working days of the outcome of the investigation; and
- Where applicable, a written response will be provided within 10 working days.

All complaints are recorded and kept for at least 4 years in accordance with Condition M5 of the EPL. A complaints register is also provided on the website, which is updated quarterly in accordance with the Project Approval.

5. Information provided to the Community and Feedback



- In 2018, KEQ was liaising with residents of Halloran and Hunterview Road in regards to noise issues. The concerns regarding the excess noise have been acknowledged and KEQ has developed a plan to mitigate the noise and to meet consented noise levels.
- A register of contacts for anyone wishing to be notified prior to blasting events was developed in December 2016. Following a complaint received after a blast in June 2018, KEQ have now included all residents on Halloran and Hunterview Road to the register. The blast register is for anyone living in the vicinity of Karuah or Karuah East Quarry. If anyone wishes to be added to the register, they can phone the Weighbridge office on 4997 5966 or email Tim.Grugeon@hunterquarries.com.au.
- Since Project Approval, the following information has been made publicly available:
 - Approvals, including Mod 1 (April 2018) and Mod 2 (December 2018)
 - Environmental Management Plans
 - Environmental Assessment Reports
 - Complaints Register
 - Environmental Monitoring Reports
 - Community Consultative Committee meetings and related documents

All the above information can be downloaded from the following webpage.

<http://hunterquarries.com.au/karuah-east-documents/>