



Attachment 4.1H - Environmental Monitoring Worksheet

Period: 16/10/2018 - 31/10/2018

Location	Test	Freq	Limit	Units	Sample Date	NSW Environment Protection Licence Requirement	Date Sample Transferred to Laboratory	Date Sample Results Received by Holcim	Date of Remote Data Download	Result	Comments
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min max

NRR = No Result Recorded

Site: Albion Park Quarry

Environment Protection Licence No.	122
Site Name (As it appears on the licence)	Albion Park Quarry
Site Address (As it appears on the licence)	Albion Park Quarry Woollybutt Drive ALBION PARK RAIL NSW 2527
Link to Licence on EPA Website	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=54925&SYSUID=1&LICID=122

Water

Point 1	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	
Point 2	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	
Point 1	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	
Point 2	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	
Point 1	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	
Point 2	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	

Air

Point 3	Ash	Monthly		90		Y				NRR	
Point 4	Ash	Monthly		90		Y				NRR	
Point 5	Ash	Monthly		90		Y				NRR	
Point 6	Ash	Monthly		90		Y				NRR	

Blasting

						Time of Blast					
Old Quarry	Per Blast		5	mm/s	Y					NRR	
	Per Blast		115	dB	Y					NRR	
	Per Blast		5	mm/s	Y					0.3	
	Per Blast		115	dB	Y					98.5	
	Per Blast		5	mm/s	Y					0.64	
	Per Blast		115	dB	Y					103.1	
	Per Blast		5	mm/s	Y					2.7	
	Per Blast		115	dB	Y					100.3	
	Per Blast		5	mm/s	Y					NRR	

Site: "Johnniefelds" Marulan Quarry

Environment Protection Licence No.	1371
Site Name (As it appears on the licence)	Marulan Quarry
Site Address (As it appears on the licence)	Marulan Quarry Brayton Road MARULAN NSW 2579



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			min max								NRR = No Result Recorded
						Link to Licence on EPA Website	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32923&SYSUID=1&LICID=1371				
Blasting						Time of Blast					
Underdowns	Overpressure	Per Blast		115	dB	Y				NRR	
	Vibration	Per Blast		5	mm/s	Y				NRR	
Underdowns	Overpressure	Per Blast		115	dB	Y				NRR	
	Vibration	Per Blast		5	mm/s	Y				NRR	
Underdowns	Overpressure	Per Blast		115	dB	Y				NRR	
	Vibration	Per Blast		5	mm/s	Y				NRR	
Underdowns	Overpressure	Per Blast		115	dB	Y				NRR	

Site:		Lynwood Quarry										
						Environment Protection Licence No.	12939					
						Site Name (As it appears on the licence)	Lynwood Quarry					
						Site Address (As it appears on the licence)	Lynwood Quarry 278 Stoney Creek Road, MARULAN NSW 2579					
						Link to Licence on EPA Website	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=105521&SYSUID=1&LICID=12939					

Air											
DD 5	Insoluble Solids	Monthly	0	4	mg/m2/month	23/10/18	Y	25/10/18	30/10/18		12/31/1899
DD 8	Insoluble Solids	Monthly	0	4	mg/m2/month	23/10/18	Y	25/10/18	30/10/18		12/30/1899
DD 11	Insoluble Solids	Monthly	0	4	mg/m2/month	23/10/18	Y	25/10/18	30/10/18		12/31/1899
DD 12	Insoluble Solids	Monthly	0	4	mg/m2/month	23/10/18	Y	25/10/18	30/10/18		12/30/1899
DD 13	Insoluble Solids	Monthly	0	4	mg/m2/month	23/10/18	Y	25/10/18	30/10/18		1.40
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m3	22/10/18	Y	25/10/18	30/10/18		3.40
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m3		Y				NRR
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m3		Y				NRR
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m3	22/10/18	Y	25/10/18	30/10/18		5.70
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m3		Y				NRR
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m3		Y				NRR

Blasting											
						Time of Blast					
B4 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	16/10/2018	Y	1:46:00 PM			0.00
B4 - Resident	Overpressure	Per Blast	0	115	dB	16/10/2018	Y	1:46:00 PM			0.00
B5 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	16/10/2018	Y	1:46:00 PM			0.00
B5 - Resident	Overpressure	Per Blast	0	115	dB	16/10/2018	Y	1:46:00 PM			0.00
B6 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	16/10/2018	Y	1:46:00 PM			0.00
B6 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	16/10/2018	Y	1:46:00 PM			0.00
B4 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	17/10/2018	Y	11:44:00 AM			0.00
B4 - Resident	Overpressure	Per Blast	0	115	dB	17/10/2018	Y	11:44:00 AM			0.00
B5 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	17/10/2018	Y	11:44:00 AM			0.00
B5 - Resident	Overpressure	Per Blast	0	115	dB	17/10/2018	Y	11:44:00 AM			0.00
B6 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	17/10/2018	Y	11:44:00 AM			0.00
B6 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	17/10/2018	Y	11:44:00 AM			0.00
B4 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	18/10/2018	Y	12:02:00 PM			0.00
B4 - Resident	Overpressure	Per Blast	0	115	dB	18/10/2018	Y	12:02:00 PM			0.00
B5 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	18/10/2018	Y	12:02:00 PM			0.00
B5 - Resident	Overpressure	Per Blast	0	115	dB	18/10/2018	Y	12:02:00 PM			12/30/1899
B6 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	18/10/2018	Y	12:02:00 PM			12/30/1899



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			min	max								
NRR = No Result Recorded												
B6 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	18/10/2018	Y	12:02:00 PM			12/30/1899	
B4 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	23/10/2018	Y	11:06:00 AM			12/30/1899	
B4 - Resident	Overpressure	Per Blast	0	115	dB	23/10/2018	Y	11:06:00 AM			12/30/1899	
B5 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	23/10/2018	Y	11:06:00 AM			12/30/1899	
B5 - Resident	Overpressure	Per Blast	0	115	dB	23/10/2018	Y	11:06:00 AM			12/30/1899	
B6 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	23/10/2018	Y	11:06:00 AM			12/30/1899	
B6 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	23/10/2018	Y	11:06:00 AM			12/30/1899	
B4 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	24/10/2018	Y	11:04:00 AM			12/30/1899	
B4 - Resident	Overpressure	Per Blast	0	115	dB	24/10/2018	Y	11:04:00 AM			12/30/1899	
B5 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	24/10/2018	Y	11:04:00 AM			12/30/1899	
B5 - Resident	Overpressure	Per Blast	0	115	dB	24/10/2018	Y	11:04:00 AM			12/30/1899	
B6 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	24/10/2018	Y	11:04:00 AM			12/30/1899	
B6 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	24/10/2018	Y	11:04:00 AM			12/30/1899	
B4 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	25/10/2018	Y	1:38:00 PM			12/30/1899	
B4 - Resident	Overpressure	Per Blast	0	115	dB	25/10/2018	Y	1:38:00 PM			12/30/1899	
B5 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	25/10/2018	Y	1:38:00 PM			12/30/1899	
B5 - Resident	Overpressure	Per Blast	0	115	dB	25/10/2018	Y	1:38:00 PM			12/30/1899	
B6 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	25/10/2018	Y	1:38:00 PM			12/31/1899	
B6 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	25/10/2018	Y	1:38:00 PM			12/31/1899	
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			#REF!	
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			#REF!	
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!			#REF!	

Site: Cooma Road Quarry

Environment Protection Licence No.	1453
Site Name (As it appears on the licence)	Cooma Road Quarry
Site Address (As it appears on the licence)	Cooma Road Quarry Cooma Road Queanbeyan NSW 2620
Link to Licence on EPA Website	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32932&SYSUID=1&LICID=1453

Water

Barracks Creek	pH	Monthly	6.5	8.5	pH		Y				NRR	
	Total O&G	Monthly	0	10	mg/L		Y				NRR	
	Susp. Solids	Monthly	0	50	mg/L		Y				NRR	

Blasting

Time of Blast												
Heffernans House	Overpressure	Per blast	0	115	dB	24/10/18	Y	12/30/1899			106.4	
	Vibration	Per blast	0	5	mm/s	24/10/18	Y	12/30/1899			0.64	
Heffernans House	Overpressure	Per blast	0	115	dB		Y				NRR	
	Vibration	Per blast	0	5	mm/s		Y				NRR	
Heffernans House	Overpressure	Per blast	0	115	dB		Y				NRR	
	Vibration	Per blast	0	5	mm/s		Y				NRR	
Heffernans House	Overpressure	Per blast	0	115	dB		Y				NRR	
	Vibration	Per blast	0	5	mm/s		Y				NRR	

Site: Dubbo Quarry

Environment Protection Licence No.	2212
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min max

NRR = No Result Recorded

Site Name
(As it appears on the licence)

Dubbo Quarry

Site Address
(As it appears on the licence)

Sheraton Road, Dubbo, NSW,2830

Link to Licence on EPA Website

<http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=42179&SYSUID=1&LICID=2212>

Blasting

Time of Blast

WARRENS HOUSE	Overpressure	Per blast	120	dB	Y					NRR	
	Vibration	Per blast	10	mm/s	Y					NRR	
WARRENS HOUSE	Overpressure	Per blast	120	dB	Y					NRR	
	Vibration	Per blast	10	mm/s	Y					NRR	
WARRENS HOUSE	Overpressure	Per blast	120	dB	Y					NRR	
	Vibration	Per blast	10	mm/s	Y					NRR	
WARRENS HOUSE	Overpressure	Per blast	120	dB	Y					NRR	
	Vibration	Per blast	10	mm/s	Y					NRR	

Site:

Dunloe Sands Quarry

Environment Protection Licence No.

13077

Site Name
(As it appears on the licence)

Dunloe Sands Quarry

Site Address
(As it appears on the licence)

Pottsville-Mooball Road, Mooball NSW 2483

Link to Licence on EPA Website

<http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=134905&SYSUID=1&LICID=13077>

Water - *Frequency is as per 'Special Frequency 1' referred to in Condition M2.3 of EPL

Silt Pond discharge monitoring point	Discharge pH	<24 hours prior to overflow event*	6.5	8.5	pH	Y				NRR	
	Discharge pH	Overflow (Day 1)*	6.5	8.5	pH	Y				NRR	
	Discharge pH	Overflow (Day 2)*	6.5	8.5	pH	Y				NRR	
	Discharge pH	Overflow (Day 3)*	6.5	8.5	pH	Y				NRR	
	Discharge pH	Overflow (Day 4)*	6.5	8.5	pH	Y				NRR	
	Discharge pH	Overflow (Day 5)*	6.5	8.5	pH	Y				NRR	
	Discharge TSS	<24 hours prior to overflow event*	0	50	mg/L	Y				NRR	
	Discharge TSS	Overflow (Day 1)*	0	50	mg/L	Y				NRR	
	Discharge TSS	Overflow (Day 2)*	0	50	mg/L	Y				NRR	
	Discharge TSS	Overflow (Day 3)*	0	50	mg/L	Y				NRR	
Dredge Pond discharge monitoring point	Discharge pH	<24 hours prior to overflow event*	6.5	8.5	pH	Y				NRR	
	Discharge pH	Overflow (Day 1)*	6.5	8.5	pH	Y				NRR	
	Discharge pH	Overflow (Day 2)*	6.5	8.5	pH	Y				NRR	
	Discharge pH	Overflow (Day 3)*	6.5	8.5	pH	Y				NRR	
	Discharge pH	Overflow (Day 4)*	6.5	8.5	pH	Y				NRR	
	Discharge pH	Overflow (Day 5)*	6.5	8.5	pH	Y				NRR	
	Oil and Grease	<24 hours prior to overflow event*	0	0	0=Not Visible; 1=Visible	Y				NRR	
	Oil and Grease	Overflow (Day 1)*	0	0	0=Not Visible; 1=Visible	Y				NRR	
	Oil and Grease	Overflow (Day 2)*	0	0	0=Not Visible; 1=Visible	Y				NRR	
	Oil and Grease	Overflow (Day 3)*	0	0	0=Not Visible; 1=Visible	Y				NRR	



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			min	max							NRR = No Result Recorded	
	Discharge TSS	<24 hours prior to overflow event*	0	50	mg/L		Y				NRR	
	Discharge TSS	Overflow (Day 1)*	0	50	mg/L		Y				NRR	
	Discharge TSS	Overflow (Day 2)*	0	50	mg/L		Y				NRR	
	Discharge TSS	Overflow (Day 3)*	0	50	mg/L		Y				NRR	
	Discharge TSS	Overflow (Day 4)*	0	50	mg/L		Y				NRR	
	Discharge TSS	Overflow (Day 5)*	0	50	mg/L		Y				NRR	
	Oil and Grease	<24 hours prior to overflow event*	0	0	0=Not Visible; 1=Visible		Y				NRR	
	Oil and Grease	Overflow (Day 1)*	0	0	0=Not Visible; 1=Visible		Y				NRR	
	Oil and Grease	Overflow (Day 2)*	0	0	0=Not Visible; 1=Visible		Y				NRR	
	Oil and Grease	Overflow (Day 3)*	0	0	0=Not Visible; 1=Visible		Y				NRR	
	Oil and Grease	Overflow (Day 4)*	0	0	0=Not Visible; 1=Visible		Y				NRR	
	Oil and Grease	Overflow (Day 5)*	0	0	0=Not Visible; 1=Visible		Y				NRR	
Groundwater												
DLP1	Ammonia	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
	Chloride	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
	Electrical conductivity	Yearly	-	-	µm/cm	5/10/2018	Y		5/10/2018	24/10/2018	5/22/1900	
	Oil and Grease	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	<-0.01	
	pH	Yearly	-	-	pH	5/10/2018	Y		5/10/2018	24/10/2018	1/3/1900	
	Standing Water Level	Yearly	-	-	m	5/10/2018	Y		5/10/2018	24/10/2018	1.73m	
	Sulfate	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
			-	-			Y					
			-	-			Y					
			-	-			Y					
			-	-			Y					
			-	-			Y					
			-	-			Y					
			-	-			Y					
DLP3	Ammonia	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
	Chloride	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
	Electrical conductivity	Yearly	-	-	µm/cm	5/10/2018	Y		5/10/2018	24/10/2018	8/22/1920	
	Oil and Grease	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	<-0.01	
	pH	Yearly	-	-	pH	5/10/2018	Y		5/10/2018	24/10/2018	1/4/1900	
	Standing Water Level	Yearly	-	-	m	5/10/2018	Y		5/10/2018	24/10/2018	1.39m	
	Sulfate	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
DLP5	Ammonia	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
	Chloride	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
	Electrical conductivity	Yearly	-	-	µm/cm	5/10/2018	Y		5/10/2018	24/10/2018	7/19/1900	
	Oil and Grease	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	<-0.01	
	pH	Yearly	-	-	pH	5/10/2018	Y		5/10/2018	24/10/2018	1/3/1900	
	Standing Water Level	Yearly	-	-	m	5/10/2018	Y		5/10/2018	24/10/2018	1.43m	
	Sulfate	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
DLP6	Ammonia	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
	Chloride	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
	Electrical conductivity	Yearly	-	-	µm/cm	5/10/2018	Y		5/10/2018	24/10/2018	10/2/1901	
	Oil and Grease	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	<-0.01	
	pH	Yearly	-	-	pH	5/10/2018	Y		5/10/2018	24/10/2018	1/2/1900	
	Standing Water Level	Yearly	-	-	m	5/10/2018	Y		5/10/2018	24/10/2018	1.73m	
	Sulfate	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
DLP7	Ammonia	Yearly	-	-	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	



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	Chloride	Yearly	- -	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	
	Electrical conductivity	Yearly	- -	µm/cm	5/10/2018	Y		5/10/2018	24/10/2018	2/21/1909	
	Oil and Grease	Yearly	- -	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	<0.01	
	pH	Yearly	- -	pH	5/10/2018	Y		5/10/2018	24/10/2018	1/5/1900	
	Standing Water Level	Yearly	- -	m	5/10/2018	Y		5/10/2018	24/10/2018	1.64m	
	Sulfate	Yearly	- -	mg/L	5/10/2018	Y		5/10/2018	24/10/2018	NRR	

Site: Humes - Blacktown

Environment Protection Licence No.	1310
Site Name (As it appears on the licence)	Humes Blacktown
Site Address (As it appears on the licence)	Humes Blacktown Lot 1 Woodstock Ave ROOTY HILL NSW 2766
Link to Licence on EPA Website	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=35038&SYSUID=1&LICID=1310

Water											
Sediment Basin	TSS	Daily During Discharge		50	mg/L	16/10/18	Y				73
	pH	Daily During Discharge	6.5	8.5	pH	16/10/18	Y				7.48
Sediment Basin	TSS	Daily During Discharge		50	mg/L	22/10/18	Y				43
	pH	Daily During Discharge	6.5	8.5	pH	22/10/18	Y				8.36
Sediment Basin	TSS	Daily During Discharge		50	mg/L	24/10/18	Y				32
	pH	Daily During Discharge	6.5	8.5	pH	24/10/18	Y				7.41
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR

Site: Teven Quarry

Environment Protection Licence No.	3293
Site Name (As it appears on the licence)	Readymix Teven Quarry
Site Address (As it appears on the licence)	Stokers Lane Teven NSW 2478
Link to Licence on EPA Website	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=85921&SYSUID=1&LICID=3293



Attachment 4.1H - Environmental Monitoring Worksheet

Period: 16/10/2018 - 31/10/2018

Location	Test	Freq	Limit		Units	Sample Date	NSW Environment Protection Licence Requirement	Date Sample Transferred to Laboratory	Date Sample Results Received by Holcim	Date of Remote Data Download	Result	Comments
			min	max								
NRR = No Result Recorded												
Water												
Discharge Point 1	pH	Special Frequency 1	6.5	8.5	pH	17/10/18	Y				1/6/1900	
Discharge Point 1	Oil&Grease	Special Frequency 1	0	1	Visible	17/10/18	Y				12/30/1899	
Discharge Point 1	TSS	Special Frequency 1	0	50	mg/L	17/10/18	Y				1/2/1900	
Licensed Discharge Point 2	pH	Special Frequency 1	6.5	8.5	pH	17/10/18	Y				1/6/1900	
Licensed Discharge Point 2	Oil&Grease	Special Frequency 1	0	1	Visible	17/10/18	Y				12/30/1899	
Licensed Discharge Point 2	TSS	Special Frequency 1	0	50	mg/L	17/10/18	Y				1/3/1900	
Discharge Point 1	pH	Special Frequency 1	6.5	8.5	pH	18/10/18	Y				1/6/1900	
Discharge Point 1	Oil&Grease	Special Frequency 1	0	1	Visible	18/10/18	Y				12/30/1899	
Discharge Point 1	TSS	Special Frequency 1	0	50	mg/L	18/10/18	Y				1/9/1900	
Licensed Discharge Point 2	pH	Special Frequency 1	6.5	8.5	pH	18/10/18	Y				1/6/1900	
Licensed Discharge Point 2	Oil&Grease	Special Frequency 1	0	1	Visible	18/10/18	Y				12/30/1899	
Licensed Discharge Point 2	TSS	Special Frequency 1	0	50	mg/L	18/10/18	Y				1/4/1900	
Discharge Point 1	pH	Special Frequency 1	6.5	8.5	pH	19/10/18	Y				1/6/1900	
Discharge Point 1	Oil&Grease	Special Frequency 1	0	1	Visible	19/10/18	Y				12/30/1899	
Discharge Point 1	TSS	Special Frequency 1	0	50	mg/L	19/10/18	Y				1/2/1900	
Licensed Discharge Point 2	pH	Special Frequency 1	6.5	8.5	pH	19/10/18	Y				1/6/1900	
Licensed Discharge Point 2	Oil&Grease	Special Frequency 1	0	1	Visible	19/10/18	Y				12/30/1899	
Licensed Discharge Point 2	TSS	Special Frequency 1	0	50	mg/L	19/10/18	Y				1/2/1900	
Discharge Point 1	pH	Special Frequency 1	6.5	8.5	pH	22/10/18	Y				1/6/1900	
Discharge Point 1	Oil&Grease	Special Frequency 1	0	1	Visible	22/10/18	Y				12/30/1899	
Discharge Point 1	TSS	Special Frequency 1	0	50	mg/L	22/10/18	Y				12/31/1899	
Licensed Discharge Point 2	pH	Special Frequency 1	6.5	8.5	pH	22/10/18	Y				1/6/1900	
Licensed Discharge Point 2	Oil&Grease	Special Frequency 1	0	1	Visible	22/10/18	Y				12/30/1899	
Licensed Discharge Point 2	TSS	Special Frequency 1	0	50	mg/L	22/10/18	Y				12/31/1899	
Discharge Point 1	pH	Special Frequency 1	6.5	8.5	pH	23/10/18	Y				1/6/1900	
Discharge Point 1	Oil&Grease	Special Frequency 1	0	1	Visible	23/10/18	Y				12/30/1899	
Discharge Point 1	TSS	Special Frequency 1	0	50	mg/L	23/10/18	Y				12/31/1899	
Licensed Discharge Point 2	pH	Special Frequency 1	6.5	8.5	pH	23/10/18	Y				1/6/1900	
Licensed Discharge Point 2	Oil&Grease	Special Frequency 1	0	1	Visible	23/10/18	Y				12/30/1899	
Licensed Discharge Point 2	TSS	Special Frequency 1	0	50	mg/L	23/10/18	Y				12/31/1899	
Discharge Point 1	pH	Special Frequency 1	6.5	8.5	pH	24/10/18	Y				1/6/1900	
Discharge Point 1	Oil&Grease	Special Frequency 1	0	1	Visible	24/10/18	Y				12/30/1899	
Discharge Point 1	TSS	Special Frequency 1	0	50	mg/L	24/10/18	Y				12/31/1899	
Licensed Discharge Point 2	pH	Special Frequency 1	6.5	8.5	pH	24/10/18	Y				1/5/1900	
Licensed Discharge Point 2	Oil&Grease	Special Frequency 1	0	1	Visible	24/10/18	Y				12/30/1899	
Licensed Discharge Point 2	TSS	Special Frequency 1	0	50	mg/L	24/10/18	Y				12/31/1899	
Discharge Point 1	pH	Special Frequency 1	6.5	8.5	pH	25/10/18	Y				1/6/1900	
Discharge Point 1	Oil&Grease	Special Frequency 1	0	1	Visible	25/10/18	Y				12/30/1899	
Discharge Point 1	TSS	Special Frequency 1	0	50	mg/L	25/10/18	Y				12/31/1899	
Licensed Discharge Point 2	pH	Special Frequency 1	6.5	8.5	pH	25/10/18	Y				1/6/1900	



Attachment 4.1H - Environmental Monitoring Worksheet

Period: 16/10/2018 - 31/10/2018

Location	Test	Freq	Limit		Units	Sample Date	NSW Environment Protection Licence Requirement	Date Sample Transferred to Laboratory	Date Sample Results Received by Holcim	Date of Remote Data Download	Result	Comments
			min	max								
NRR = No Result Recorded												
Licensed Discharge Point 2	Oil&Grease	Special Frequency 1	0	1	Visible	25/10/18	Y				12/30/1899	
Licensed Discharge Point 2	TSS	Special Frequency 1	0	50	mg/L	25/10/18	Y				12/31/1899	
Discharge Point 1	pH	Special Frequency 1	6.5	8.5	pH	26/10/18	Y				1/6/1900	
Discharge Point 1	Oil&Grease	Special Frequency 1	0	1	Visible	26/10/18	Y				12/30/1899	
Discharge Point 1	TSS	Special Frequency 1	0	50	mg/L	26/10/18	Y				12/31/1899	
Licensed Discharge Point 2	pH	Special Frequency 1	6.5	8.5	pH	26/10/18	Y				1/5/1900	
Licensed Discharge Point 2	Oil&Grease	Special Frequency 1	0	1	Visible	26/10/18	Y				12/30/1899	
Licensed Discharge Point 2	TSS	Special Frequency 1	0	50	mg/L	26/10/18	Y				12/31/1899	
Licensed Discharge Point 2	pH	Special Frequency 1	6.5	8.5	pH	31/10/18	Y				1/6/1900	
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
Licensed Discharge Point	pH	Special Frequency 1	6.5	8.5	pH		Y				NRR	
Licensed Discharge Point	Oil&Grease	Special Frequency 1	0	1	Visible		Y				NRR	
Licensed Discharge Point	TSS	Special Frequency 1	0	50	mg/L		Y				NRR	

Noise												
168 Weller's Road, Teven (or Receiver No. 2 in Consent)	Daytime - LAeq (15 min)	Yearly	0	37	dB (A)		Y				NRR	
168 Weller's Road, Teven (or Receiver No. 2 in Consent)	Evening (6am-10pm Mon - Sun) - LAeq (15 min)	Yearly	0	35	dB (A)		Y				NRR	

Blasting												
Time of Blast												
Any point <1 metre of any affected residential property boundary or other sensitive noise location.	Overpressure	Per Blast	0	115	dB		Y				NRR	
Any point <1 metre of any affected residential property boundary or other sensitive noise location.	Peak Particle Velocity	Per Blast	0	5	mm/sec		Y				NRR	
Any point <1 metre of any affected residential property boundary or other sensitive noise location.	Overpressure	Per Blast	0	115	dB		Y				NRR	
Any point <1 metre of any affected residential property boundary or other sensitive noise location.	Peak Particle Velocity	Per Blast	0	5	mm/sec		Y				NRR	

Site: Boambee Quarry

Environment Protection Licence No.	7094
Site Name (As it appears on the licence)	Boambee Quarry
Site Address (As it appears on the licence)	Boambee Quarry North Boambee Road BOAMBE NSW 2450
Link to Licence on EPA Website	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=108484&SYSUID=1&LICID=7094

Blasting (M4 & L2.1 - To determine compliance with L3, measurements to be taken at any point within 1 metre of residential boundary)												
Time of Blast												
Overpressure	Per blast	0	120	dB		Y					NRR	
Vibration	Per blast	0	10	mm/s		Y					NRR	
Overpressure	Per blast	0	120	dB		Y					NRR	



Attachment 4.1H - Environmental Monitoring Worksheet

Period: 16/10/2018 - 31/10/2018

Location	Test	Freq	Limit		Units	Sample Date	NSW Environment Protection Licence Requirement	Date Sample Transferred to Laboratory	Date Sample Results Received by Holcim	Date of Remote Data Download	Result	Comments
			min	max								
												NRR = No Result Recorded
	Vibration	Per blast	0	10	mm/s		Y					NRR
	Overpressure	Per blast	0	120	dB		Y					NRR
	Vibration	Per blast	0	10	mm/s		Y					NRR
	Overpressure	Per blast	0	120	dB		Y					NRR
	Vibration	Per blast	0	10	mm/s		Y					NRR

Site: Tuncurry Sand

Environment Protection Licence No.	13359
Site Name (As it appears on the licence)	Tuncurry Sand Quarry
Site Address (As it appears on the licence)	Tip Road Tuncurry NSW 2428
Link to Licence on EPA Website	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=47350&SYSUID=1&LICID=13359

Water

ID	Location	Test	Freq	Limit	Units	Sample Date	NSW Environment Protection Licence Requirement	Date Sample Transferred to Laboratory	Date Sample Results Received by Holcim	Date of Remote Data Download	Result	Comments
ID#2	Surface H2O "Lake 1"	Arsenic	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.001	
		Conductivity	Quarterly	0	µS/cm	9/25/2018	Y	9/25/2018	11/9/2018		194	
		Copper	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.002	
		Iron	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.21	
		pH	Quarterly	0	pH	9/25/2018	Y	9/25/2018	11/9/2018		7.81	
		Zinc	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.005	
ID#3	Surface H2O "Lake 2"	Arsenic	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.002	
		Conductivity	Quarterly	0	µS/cm	9/25/2018	Y	9/25/2018	11/9/2018		307	
		Copper	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.001	
		Iron	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.68	
		pH	Quarterly	0	pH	9/25/2018	Y	9/25/2018	11/9/2018		8.03	
		Zinc	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.005	
ID#4	Surface H2O "Lake 3"	Arsenic	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.008	
		Conductivity	Quarterly	0	µS/cm	9/25/2018	Y	9/25/2018	11/9/2018		344	
		Copper	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.002	
		Iron	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		2.97	
		pH	Quarterly	0	pH	9/25/2018	Y	9/25/2018	11/9/2018		8.12	
		Zinc	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.008	
ID#5	Surface H2O "Lake 4"	Arsenic	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.003	
		Conductivity	Quarterly	0	µS/cm	9/25/2018	Y	9/25/2018	11/9/2018		420	
		Copper	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.001	
		Iron	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.21	
		pH	Quarterly	0	pH	9/25/2018	Y	9/25/2018	11/9/2018		8.31	
		Zinc	Quarterly	0	mg/L	9/25/2018	Y	9/25/2018	11/9/2018		0.005	
Air												
ID #1	Deposited Matter	Monthly	0	4	g/m2/month	9/25/2018	Y	9/25/2018	11/9/2018		1.9	

Site: Jandra Quarry

Environment Protection Licence No.	2796
Site Name (As it appears on the licence)	Jandra Quarry



Attachment 4.1H - Environmental Monitoring Worksheet

Period: 16/10/2018 - 31/10/2018

Location	Test	Freq	Limit	Units	Sample Date	NSW Environment Protection Licence Requirement	Date Sample Transferred to Laboratory	Date Sample Results Received by Holcim	Date of Remote Data Download	Result	Comments
			min max								NRR = No Result Recorded
						Site Address (As it appears on the licence)	Pacific Highway Possum Brush NSW 2430				
						Link to Licence on EPA Website	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOlicence.aspx?DOCID=87197&SYSUID=1&LICID=2796				
Water											
ID #1	Discharge pH	Each overflow event	6.5	8.5	pH	Y				NRR	
ID #1	Discharge TSS	2 X Daily during discharge	0	50	mg/L	Y				NRR	
ID #1	Discharge TSS	2 X Daily during discharge	0	50	mg/L	Y				NRR	
ID #1	Discharge Turbidity	2 X Daily during discharge	0		ntu	Y				NRR	
ID #1	Discharge Turbidity	2 X Daily during discharge	0		ntu	Y				NRR	
ID #1	Discharge pH	Each overflow event	6.5	8.5	pH	Y				NRR	
ID #1	Discharge TSS	2 X Daily during discharge	0	50	mg/L	Y				NRR	
ID #1	Discharge TSS	2 X Daily during discharge	0	50	mg/L	Y				NRR	
ID #1	Discharge Turbidity	2 X Daily during discharge	0		ntu	Y				NRR	
ID #1	Discharge Turbidity	2 X Daily during discharge	0		ntu	Y				NRR	
ID #1	Discharge pH	Each overflow event	6.5	8.5	pH	Y				NRR	
DD 1	Insoluble Solids	Monthly	0	4		Y				0.3	
DD 2	Insoluble Solids	Monthly	0	4	mg/m2/month	Y	10/22/2018	10/29/2018	10/29/2018	0.9	
DD 3	Insoluble Solids	Monthly	0	4	mg/m2/month	Y	10/22/2018	10/29/2018	10/29/2018	0.4	
DD 4	Insoluble Solids	Monthly	0	4	mg/m2/month	Y	10/22/2018	10/29/2018	10/29/2018	0.2	
HVAS 1	Insoluble Solids	Monthly	0	4	mg/m2/month	Y	10/22/2018	10/29/2018	10/29/2018	15.6	
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m3	Y	8/29/2018	10/29/2018	11/9/2018	5.9	
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m3	Y	9/4/2018	10/29/2018	11/9/2018	12.9	
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m3	Y	9/10/2018	10/29/2018	11/9/2018	14.8	
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m3	Y	9/28/2018	10/29/2018	11/9/2018	29.9	
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m3	Y	10/16/2018	10/29/2018	11/9/2018		
Blasting (To determine compliance with L3, measurements to be taken at any point within 1 metre of residential boundary)											
	Overpressure	Per blast	0	120	dB	Y				NRR	
	Vibration	Per blast	0	10	mm/s	Y				NRR	
	Overpressure	Per blast	0	120	dB	Y				NRR	
	Vibration	Per blast	0	10	mm/s	Y				NRR	
	Overpressure	Per blast	0	120	dB	Y				NRR	
	Vibration	Per blast	0	10	mm/s	Y				NRR	
	Overpressure	Per blast	0	120	dB	Y				NRR	
	Vibration	Per blast	0	10	mm/s	Y				NRR	
Annual Blasting Requirements (Calculated each month on a cumulative basis)											
	Overpressure	Monthly (Cumulative)	115	120	dB	Y				NRR	
	Vibration	Monthly (Cumulative)	5	10	mm/s	Y				NRR	