

Dunloe Quarterly Environmental Report

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Holcim Planning & Environment Team

Title: Quarter 4 Environmental Report
(October-December).

Company: Holcim Dunloe Sand Quarry

1. Introduction

Dunloe Sand is located at Pottsville, within the Tweed Shire, NSW. The site produces a very high quality, fine concrete sand as well as a variety of other sand products including plasterer sand, bunker sand and fill sand.

To ensure compliance with the conditions of the Project Approval the site undertakes quarterly environmental reports and makes copies available on the Holcim Dunloe webpage (in accordance with the condition below).

11. During the project, the Proponent shall:

(a) make a summary of monitoring results required under this approval publicly available at the Proponent's regional office; and

(b) update these results regularly (at least every 3 months), to the satisfaction of the Director-General.

A summary of the results for Quarter 4 (October- December 2016) are detailed in the tables below:

2. Water Quality

2.1. Surface Water (In situ Pond)

<u>Date</u>	<u>pH</u>	<u>EC</u>	<u>Dissolved O2</u>	<u>Turbidity</u>	<u>Oil & Grease</u>
27/10/2016	4.0	684	8.4	7.2	<2
29/11/2016	3.8	714	8.0	1.7	<2
20/12/2016	3.5	742	7.3	2.8	<2

2.2. Surface Water (Quarterly Lake- Chemical Analysis)

<u>Date</u>	<u>Test</u>	<u>Result</u>
20/12/2016	Chlorophyll "a"	2
	Ammonia	0.03
	Calcium	73
	Total Phosphorous	<0.02
	Total N	0.19
	Magnesium	9.3
	Sodium	29
	Potassium	7
	Sulfate	251
	Aluminium (total)	4.01
	Arsenic (total)	0.001
	Iron (total)	0.71
	Manganese	0.476

2.3. Surface Water (Quarterly Lake Vertical Profile)

<u>Date</u>	<u>Test</u>	<u>Lake 2m</u>	<u>Lake 3m</u>	<u>Lake 4m</u>	<u>Lake 5m</u>	<u>Lake 6m</u>
20/12/2016	pH	3.5	3.6	3.6	3.6	3.6
	Conductivity	742	742	742	742	740
	Dissolved O2	7.4	7.7	7.7	7.6	7.4

2.4. Surface Water- Lake (Blue Green Algae)

<u>Test</u>	<u>20/12/2016</u>
Cyanophyta (cells/mL)	No cells identified
Chlorophyta (cells/mL)	10,830

2.5. Groundwater (Monthly)

<u>Sample Date</u>	<u>Sample Location</u>	<u>pH</u>	<u>EC</u>	<u>DO</u>	<u>*Redox Potential</u>
27/10/2016	DLP 1	4.0	151	2.5	+366
	DLP 3	6.1	7313	399	1738
	DLP 5	4.4	399	2.5	+285
	DLP 6	3.8	1738	1.9	+189
	DLP 7	7.2	3558	2.4	+44
29/11/2016	DLP 1	4.7	116	1.9	+108
	DLP 3	6.1	7376	1.8	+67
	DLP 5	5.4	5.4	1.6	+74
	DLP 6	3.8	3.8	2.3	+182
	DLP 7	7.1	7.1	2.4	+20
20/12/2016	DLP 1	4.7	131	5.2	+307.1
	DLP 3	6.0	7673	4.0	+315.9
	DLP 5	5.2	298	3.3	+244.5
	DLP 6	3.7	1752	2.1	+274.7
	DLP 7	6.9	3527	4.5	+229.3

2.6. Groundwater (Quarterly Chemical Analysis)

<u>Sample Date</u>	<u>Analysis</u>	<u>DLP 3</u>	<u>DLP 5</u>	<u>DLP 6</u>	<u>DLP 7</u>
20/12/2017	Alkalinity	121	5	<1	372
	Bicarbonate	121	5	NP	372
	Chloride	2,700	68	200	1,700
	Calcium	75	2.3	21	18
	Magnesium	114	2.8	22	38
	Sodium	1,280	47	16	648
	Potassium	43	<5	9	25
	Sulfur (Sulfate)	182	21	1080	263
	Aluminium	0.07	0.25	60.2	0.36
	Arsenic	0.001	0.001	0.030	0.001
	Iron	2.40	4.55	259	1.85
	Manganese	0.541	0.012	1.96	0.082

2.7. Surface Water Quarterly (Surrounding Environment)

<u>Sample Date</u>	<u>Analysis</u>	<u>SW3</u>	<u>SW4</u>	<u>SW9</u>	<u>SW10</u>
10/1/2016	pH	6.7	6.9	6.8	6.9
	EC	38, 914	37, 551	35, 815	35, 928
	DO	6.1	9.6	7.4	6.9
	Turbidity	5.4	22	16	15
	Susp Solids	5.6	66	35	36
	Phosphorous	<0.02	0.03	0.04	0.04
	Total- N	0.31	0.49	0.82	0.81

3. Air Quality

Dust deposition monitoring was undertaken at Dunloe Quarry throughout Q3 of 2016. A copy of the results are listed in the table below:

Date	Sample Location	Result (mg/m²/month)	Result (PASS/ FAIL)
October	D1	0.8	PASS
	D2	0.5	PASS
	D3	0.4	PASS
	D4	0.3	PASS
November	D1	0.4	PASS
	D2	1.9	PASS
	D3	0.3	PASS
	D4	0.4	PASS
December	D1	0.5	PASS
	D2	1.7	PASS
	D3	0.6	PASS
	D4	0.5	PASS

4. Vegetation Monitoring