OBERONQUARRIES

WATER MANAGEMENT PLAN

Oberon Quarries Pty Ltd

V5 May 2025

Document Status

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	Name	**Date**	**Name**	**Date**
1	Emma Mudford (Umwelt (Australia) Pty Limited)	May 2016	Peter Jamieson (Umwelt (Australia) Pty Limited)	May 2016
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4	Rod Williams (Umwelt (Australia) Pty Limited)	August 2017	Luke Bettridge (Umwelt (Australia) Pty Limited)	August 2017
5	Emma Terracini (Oberon Quarries Pty Ltd)	May 2025	Neil Hargraves (Oberon Quarries Pty Ltd)	May 2025

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1.0 Introduction

1.1 Background

Oberon Quarries Pty Ltd (Oberon Quarries) operates Oberon Quarry, an existing hard rock quarry located approximately 4 kilometres south of Oberon, New South Wales (NSW) (refer to **Figure 1.1**). Oberon Quarries has been operating at the site since 1995.The original Oberon Quarries Development Consent (DA92/164) was granted on 1 October 1993 by the NSW Minister for Planning and was surrendered on 2 December 2015. The existing operations have been developed in accordance with DA92/164 (incorporating the 2000, 2002, 2004, 2007 and 2013 modifications) and Environment Protection Licence (EPL) 4442.

On 14 September 2015, Oberon Quarries was granted approval of the Oberon Quarry Continuation Project Development Consent (SSD_6333) (Development Consent) by the NSW Minister for Planning to extend the life of the quarry for an additional 30 years.

The Development Consent allows for continued operations of the Oberon Quarry across a broader area which will enable the extraction of additional basalt resources. The Development Consent provides for a maximum production level of 400,000 tonnes per annum (tpa) and the transport of upto 3,000 tonnes per day of quarry product from the quarry.

Oberon Quarries is committed to implementing continued quarrying operations in the context of updated and contemporary environmental management requirements. This Water Management Plan (WMP) has been prepared in accordance with Schedule 3, Condition 16 of the Development Consent.

1.2 Project Description

The Oberon Quarries Development Consent (SSD_6333) provides for the following:

- continued quarrying operations within the approved project area as defined by SSD_6333 until 30 August 2045
- maximum production level of 400,000 tpa and transport of upto 3,000 tonnes per day of product from the quarry
- replacement of some of the existing screening plant, reconfiguration of the alignment of screens and the inclusion of an additional cone crusher
- inclusion of a second diesel fuel storage tank of approximately 28,000 L capacity
- inclusion of a 1.0 ha extension to the existing extraction area to avoid the sterilisation of approximately 500,000 t of high quality basalt resource
- inclusion of a Finlay 750e Hydrasander (or equivalent) to separate silt and clay from sand size particles in the crusher fines
- duplication of approximately a 180 m section of the internal haul road to improve road safety and
- continued extraction of the high quality basalt from the existing extraction areas as required, with extraction at times occurring on the upper and lower benches.

1.3 Purpose and Scope

The purpose of this WMP is to provide a description of the measures to be implemented by Oberon Quarries Pty Ltd to manage surface water and groundwater at Oberon Quarry and to detail the water monitoring requirements associated with the operation. This WMP also provides a mechanism for assessing water monitoring results against the relevant water quality requirements and operating conditions.

This WMP addresses the requirements detailed in the Development Consent. The Development Consent conditions and Statement of Commitments relevant to this plan is provided in **Sections 2.1** and **2.2** respectively, including a checklist of where each condition has been addressed within this document.

This plan outlines the control measures to be implemented as part of the continued operations at Oberon Quarry to minimise the potential surface water and groundwater impacts on the environment and the local community.

1.4 Objectives

The objectives of this WMP include the following:

- provide a detailed description of the surface water management system on site (refer to **Section 3.0**)
- detail the site water balance including water uses on site in addition to detailing strategies and procedures to be implemented to ensure that all environmental impacts associated with site water management are minimised (refer to **Section 4**)
- define a program to monitor and assess impacts on surface water (refer to **Section 5**)
- define a program to monitor and assess impacts on groundwater (refer to **Section 6**)
- define how Oberon Quarries Pty Ltd will mitigate and respond to potential impacts on surface water and groundwater impacts (refer to **Section 7**)
- provide management commitments and strategies for dealing with water related issues and
- to detail the review process for reporting exceedances of water quality criteria to relevant stakeholders.

1.5 Preparation of the Water Management Plan

In accordance with Schedule 3, Condition 16 of the Development Consent, Oberon Quarries Pty Ltd received notification from the Secretary of NSW Department of Planning and Infrastructure (DP&I) that Peter Jamieson, Director at Umwelt (Australia) Pty Limited, has been appointed as the suitably qualified and experienced person to prepare the WMP (refer to **Appendix 1**).

This WMP has been prepared by Peter Jamieson of Anditi (previously Umwelt (Australia) Pty Limited) in consultation with Oberon Quarries Pty Ltd.

FIGURE 1.1 **Locality Plan**

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1.6 Preparation of the water management plan

In accordance with Condition 16 of Schedule 3 of the Development Consent, Oberon Quarries received notification from the Secretary of NSW Department of Planning and Infrastructure (DP&I) that Peter Jamieson, Director at Umwelt (Australia) Pty Limited (now Founder and Managing Director of Anditi), has been appointed as the suitably qualified and experienced person to prepare the WMP (refer to **Appendix 1** for correspondence).

This WMP has been prepared by Peter Jamieson of Anditi (previous Director at Umwelt (Australia) Pty Limited) in consultation with Oberon Quarries.

2.0 Regulatory Requirements

2.1 Development Consent

The Development Consent for the Oberon Quarry Continuation Project was assessed under the *Environmental Planning and Assessment Act 1979* (EP&A Act). Approval for the project was granted by the Minister for Planning on 14 September 2015. The requirement for this WMP arises from Schedule 3, Conditions 14 to 16 of the Oberon Quarry Development Consent. The requirements from the Development Consent relating to water management, and where these requirements are addressed within this document, are provided in **Table 2.1**.

Table 2.1 Development Consent Conditions

Conditions		Addressed in Section
Schedule 3 – Environmental Performance Conditions Water Supply		
14.	The Applicant shall ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of operations under the consent to match its available water supply, to the satisfaction of the Secretary. Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Applicant is required to obtain the necessary water licences for the development, including in respect of the extraction and/or interception of groundwater	**Noted**
Schedule 3 – Environmental Performance Conditions Water Pollution		
15.	Unless an EPL authorises otherwise, the Applicant shall comply with Section 120 of the POEO Act.	**Section 1.1**
Schedule 3 – Environmental Performance Conditions Water Management Plan		
16.	The Applicant shall prepare and implement a Water Management Plan for the development to the satisfaction of the Secretary. This plan must:	
	(a) be prepared by a suitability qualified person/s approved by the Secretary;	**Appendix 1**
	(b) be prepared in consultation with the EPA and DPI-Water;	**Section 2.3**; **Appendix 2** and **3**
	(c) be submitted to the Secretary for approval within 6 months of the date of this consent, unless otherwise agreed by the Secretary;	**Appendix 1** and **4**
	(d) include a:	

Conditions		Addressed in Section

	i) Site Water Balance that includes:
	• details of:
	  ○ sources and security of water supply;
	  ○ water use and management on site;
	  ○ any off-site water transfers; and
	  ○ reporting procedures.
	• measures that would be implemented to minimise clean water use on site;
		Section 4.0

	ii) Surface Water Management Plan, that includes:
	• detailed baseline data on surface water flows and quality in water bodies that could potentially be affected by the development;
	• a detailed description of the surface water management system on site including the;
	  ○ clean water diversion system;
	  ○ erosion and sediment controls;
	  ○ dirty water management system; and water storages; and
	• a program to monitor and report on:
	  ○ any surface water dischargers;
	  ○ the effectiveness of the water management system;
	  ○ maintaining sufficient dirty water storage capacity to avoid discharges of sediment-laden water; and
	  ○ surface water flows and quality in local watercourses;
		Section 3.0

	iii) Groundwater Management Plan, that includes: • Baseline data on groundwater levels, yield and quality in local aquifers and privately-owned groundwater bores that could potentially be affected by the development; • a program to monitor and report on groundwater inflows to the quarry pit and the impacts of the development on surrounding aquifers and privately-owned groundwater bores; and • an analysis of the monitoring results to predict long-term water levels within the quarry void; and	**Section 5.0**
	iv) Surface and Ground Water Contingency Strategy, that includes:	**Section 7.0**

Conditions		Addressed in Section
	• a protocol for the investigation, notification and mitigation of identified impacts on surface water flows and quality in water bodies and/or groundwater levels, yield and quality in local aquifers and privately-owned groundwater bores that could be potentially affected by the development; and • the procedures that would be followed if any unforeseen impacts are detected during the development.	
Schedule 5 – Environmental Management, Reporting and Auditing Management Plan Requirements		
2.	The Applicant shall ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:	
	(a) detailed baseline data;	**Sections 3.1** and **5.1**
	(b) a description of: • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; and • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;	**Sections 2.0**, **3.4** and **5.3**
	(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	**Section 3.2**
	(d) a program to monitor and report on the: • impacts and environmental performance of the development; and • effectiveness of any management measures (see (c) above);	**Sections 3.3** and **5.2**
	(e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	**Sections 6.2.1** and **7.0**
	(f) a program to investigate and implement ways to improve the environmental performance of the development over time;	**Section 8.0**
	(g) a protocol for managing and reporting any: • incidents;	**Section 6.0**

Conditions		Addressed in Section
	• complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and	
	(h) a protocol for periodic review of the plan.	**Section 8.0**
Schedule 5 – Environmental Management, Reporting and Auditing **Annual Review**		
9.	By the end of March each year, or other timing as may be agreed by the Secretary, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must:	**Section 6.1**
	(a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year;	
	(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the: • relevant statutory requirements, limits or performance measures/criteria; • requirements of any plan or program required under this consent; • monitoring results of previous years; and • relevant predictions in the EIS;	
	(c) identify any non-compliance over the past calendar year, and describe what actions were (or are being) taken to ensure compliance;	
	(d) identify any trends in the monitoring data over the life of the development;	
	(e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and	
	(f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the development.	

Conditions		Addressed in Section
Schedule 5 – Environmental Management, Reporting and Auditing **Access to Information**		
12.	Within 6 months of the date of this consent, the Applicant shall:	
	(a) make the following information publicly available on its website: • the documents listed in condition 2 of Schedule 2; • current statutory approvals for the development; • all approved strategies, plans and programs required under the conditions of consent; • a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of the consent, or any approved plans and programs; • a complaints register, updated monthly; • the annual reviews of the development; • any independent environmental audit, and the Applicant's response to the recommendations in any audit; and • any other matter required by the Secretary; and	**Section 6.0**
	• keep this information up-to-date, to the satisfaction of the Secretary.	**Section 8.0**

2.2 Statement of Commitments

The Statement of Commitments relevant to the WMP, and where they are addressed in this document, is detailed in **Table 2.2**.

Table 2.2 Statement of Commitments

Commitment	Addressed in Section
Erosion and Sediment Control Current site infrastructure and management practices successfully manage sediment and erosion control for the operation. Surface water management infrastructure at the quarry has been established and fully operational since 1995. The existing water management system at the site includes diversion drains, catch dams and sedimentation dams. Diversion drains and embankments have been constructed around the disturbance area and are vegetated. Catch drains have been constructed with rock weirs and convey sediment-laden runoff from the extraction area to a series of sedimentation dams.	**Section 3.2.2**

Commitment	Addressed in Section
In addition to the diversion drains and sedimentation ponds, Oberon Quarries implements localised sediment and erosion controls, as required, in accordance with *Managing Urban Stormwater – Soils and Construction* (Landcom, 2001) to reduce the impacts on the water quality in the quarry's dirty water management system.	
Surface Water The existing water management system including diversion drains, catch drains and sedimentation dams will continue to be managed as per current operations. The system can and will be readily augmented to allow for the additional 1.0 hectare extension area. Oberon Quarries holds a surface water licence (80SI05018, WAL 34279) that allows extraction of water from Racecourse Creek. No other water licensing will be required for the continued operation of the quarry. In addition Oberon Quarries will continue to implement localised sediment and erosion controls, as required, in accordance with *Managing Urban Stormwater – Soils and Construction* (Landcom, 2001) to reduce the impacts on the water quality in the quarry's dirty water management system. Surface water monitoring will continue in accordance with Condition 26 of DA 92/164, and EPL Condition P1.3, surface water quality is monitoring at two sites on Racecourse Creek (refer to **Figure 3.2**): • W1 – upstream of the quarry; and • W2 – downstream of the quarry. The samples are analysed of pH, conductivity, turbidity, non-filterable residue (NFR), total nitrogen (TKN), total phosphorus (TP), and total petroleum hydrocarbons (TPH). EPL condition M2.1 requires the monitoring of Oil & Grease, Total Suspended Solids (TSS) and pH. TPH has been used at the quarry for many years as a suitable measurement for Oil & Grease.	**Section 3.2**
Groundwater Groundwater will continue to be monitored in accordance with Condition 26 of DA 92/164. Oberon Quarries undertakes groundwater monitoring to determine any potential impacts as a result of quarry operations. Groundwater is monitored for pH and conductivity at a spring-fed dam (GW1) at 'Langley Heights', downslope of the quarry on Racecourse Hill (refer to **Figure 3.2**).	**Section 5.2**

2.3 Stakeholder Consultation

In accordance with Schedule 3, Condition 16 (b) of the Development Consent, comments received from the DPI-Water (**Appendix 2**) and Environment Protection Authority (EPA) (**Appendix 3**) for inclusion in this WMP were considered during the preparation. A copy of this WMP was provided to the Department of Planning and Environment (DP&E) for comment on 31 May 2016. The DP&E's comments are included in **Appendix 4** and were incorporated into the final version of the plan. The WMP was approved by the DP&E on 2 August 2016 (refer to **Appendix 4**).

2.4 Water Licensing

Oberon Quarries previous surface water licence (80SL051088) has been converted to the *Water Management Act 2000* and is now licensed under Water Access Licence number 80AL 716303 (WAL 34729) under the Water Sharing Plan for the Macquarie Bogan Unregulated and Alluvial Water Sources 2012 and Water Supply Work Approval 80WA716304. This Licence allows for the extraction of water from Racecourse Creek which forms part of the Fish River water source. Water is pumped to the quarry on rare occasions when needed from Racecourse Creek. The volume of water extracted from Racecourse Creek will be recorded.

3.0 Surface Water Management Plan

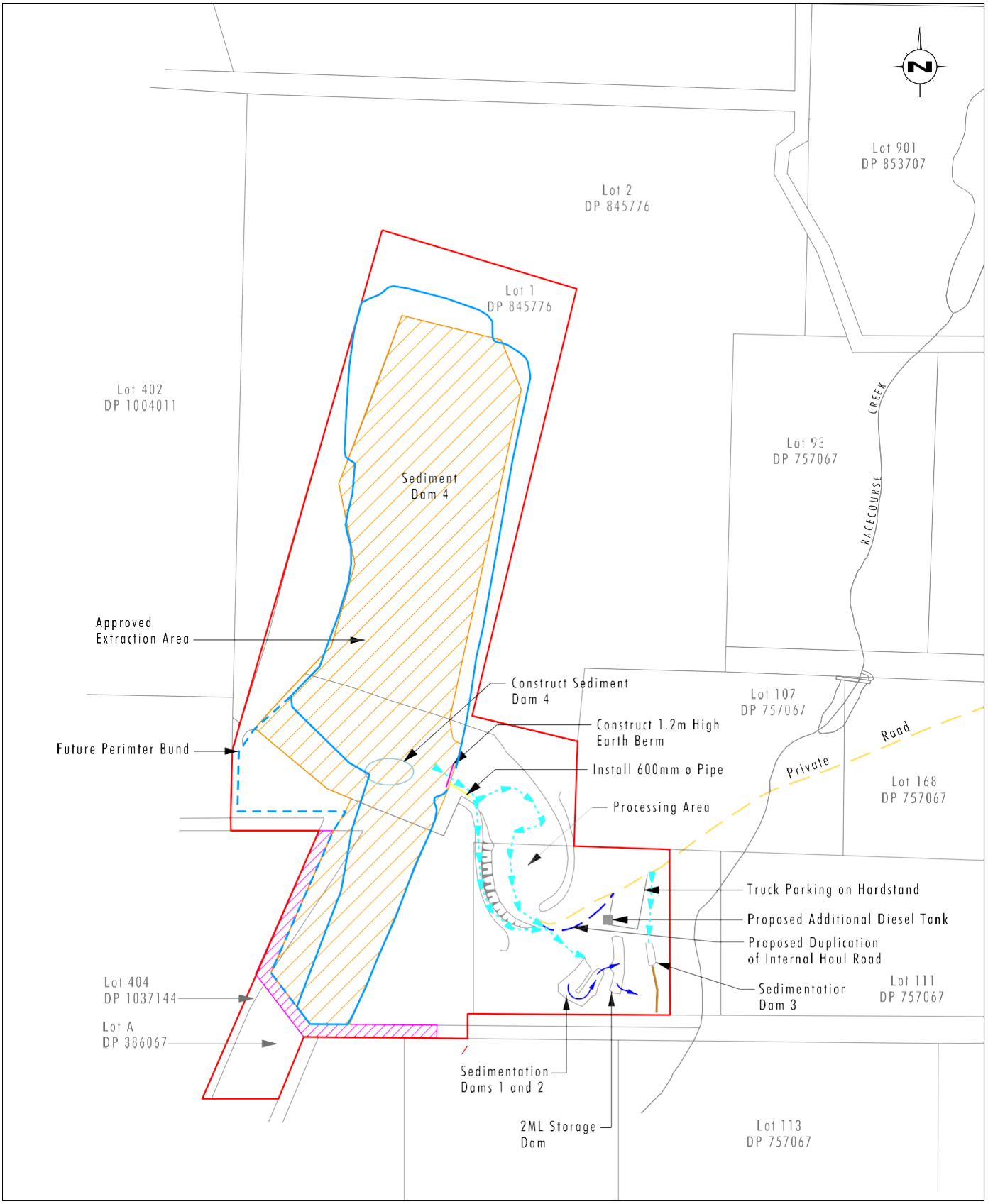
3.1 Surface Water Context and Baseline Data Summary

Surface water management infrastructure at the quarry has been established and fully operational since 1995. The water management system includes a series of clean water diversion drains, catch drains and sedimentation dams as shown on **Figure 3.1**.

Water quality in Racecourse Creek has remained within the normal range of values since monitoring began in 1996. A summary of monitoring results since monitoring began in 1996 is presented in **Table 3.1**. Water quality at W2, downstream from the quarry influence, shows no deterioration compared with water quality at W1, upstream of the quarry influence. These results indicate that the quarry operations are not having a measurable impact on the quality of water in Racecourse Creek.

Based on the nature of the Project and the ability of the current water management system to be augmented to include changes as part of the Project, it is unlikely that water quality will be impacted as a result of the Project.

Oberon Quarries will continue to undertake surface water monitoring for the life of the Project as discussed in **Section 3.3**.



Legend

- Project Area
- Crown Road Reserve
- Approved Extraction Area
- Right of Carriageway (12m wide)
- Proposed Duplication of Internal Haul Road
- Perimeter Bund
- Future Perimeter Bund
- Catch Drain
- Level Spreaders
- Direction of Flow
- Earth Berm
- Pipe
- Sediment Dam

FIGURE 3.1

Existing and Proposed
Water Management System

File Name (A4): R48/1296_187.dgn
20160527 10.13

Table 3.1 Summary of water quality monitoring in Racecourse Creek

Year		1996–2009		2010		2011		2012		2013		2014		2015	
Site		W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2
pH	Min	5.2	6.2	6.5	6.5	6.7	6.8	6.6	6.6	6.1	6.2	6.8	6.9	6.8	6.4
	Max	8.4	8.3	7.7	7.6	8.2	8.2	8.2	8.2	7.3	7.3	7.2	7.2	7.3	7.3
Conductivity (µS/cm)	Min	54	60	75	70	70	70	73	71	13	80	90	90	70	70
	Max	280	280	230	240	100	100	120	120	125	130	180	180	150	150
Turbidity (NTU)	Min	2	1.1	3.9	4	3.4	3.2	3.4	3.2	5	5.1	2.2	4.4	6.9	6.4
	Max	45	50	15 (310)1	24 (170)1	60 (450)2	60 (450)2	30 (110)3	26 (120)3	110	55	55	60	220	270
NFR (mg/L)	Min	<2	<2	<2	<2	<2	<2	<2	<2	3	4	2	2	2	2
	Max	44	25	14 (470)1	25 (230)1	25 (230)2	28 (270)2	34 (93)3	31 (96)3	420	40	35	29	260	320
TKN (mg/L)	Min	<0.4	<0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	0.1	0.1	0.2	0.4
	Max	2.7	2.1	0.8 (4.5)1	1.5	1.5	1.7	1.3	1.3	2.8	<0.1	1.3	1.0	3.8	4.3
Total P (mg/L)	Min	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Max	0.26	0.42	0.71	0.59	0.56	0.48	0.22	0.27	0.53	0.3	0.4	0.2	0.8	0.7
Total Petroleum Hydrocarbons (mg/L)	Min	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Max	<0.1	1	<0.5 (2.8)4	<0.5 (1.5)4	<0.5 (4.8)4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Note: Turbidity and NFR results for January and March 2010[1], March and May 2011[2,] as well as September and November 2013[3] were well outside the normal range of results. It was confirmed with the monitoring contractor that the increase in Turbidity and NFR were due to storms, the creek being stirred by livestock, or other non-quarry related occurrences.

[4]Recorded TPH was confirmed with monitoring contractor to not be caused by quarrying operations

3.2 Water Management System

3.2.1 Clean Water Diversion System

The quarry is located within the perimeter of Racecourse Hill. Racecourse Hill is a plateau and the quarry extraction area and associated topsoil stockpiles and bunds occupy the majority of the top of the plateau at the northern end where the quarry is located. As a result, there is negligible catchment area on top of the northern part of Racecourse Hill that is outside or upslope of the perimeter of the quarry water management system. The existing water management system includes grass bunds around the perimeter of the excavation to prevent runoff from the surrounding plateau entering the quarry water management system. Any runoff from the area outside of the quarry management system drains around or away from the Quarry.

3.2.2 Erosion and Sediment Controls

Current site infrastructure and management practices successfully manage sediment and erosion control for the operation. Surface water management infrastructure at the quarry has been established and fully operational since 1995. The existing water management system at the site includes diversion drains, catch drains and sedimentation dams. Diversion drains and embankments have been constructed around the disturbance area and are vegetated. Catch drains have been constructed with rock weirs and convey sediment-laden runoff from the extraction area to a series of sedimentation dams.

In addition to the diversion drains and sedimentation ponds, Oberon Quarries implements localised sediment and erosion controls, as required, in accordance with *Managing Urban Stormwater – Soils and Construction* (Landcom, 2001) to reduce the impacts on the water quality in the quarry's dirty water management system.

The location of the quarry in relation to Racecourse Creek, together with the erosion and sedimentation control measures implemented by Oberon Quarries provides a high level of protection to the existing water quality in Racecourse Creek and Lake Oberon.

It is noted improvements to the rock weirs feeding Sediment Dams 1-3 were made throughout 2024.

3.2.3 Dirty Water Management System

Catch drains have been constructed within the perimeter of the quarry management system to convey potentially sediment laden runoff to the sediment dams. Catch drains have also been established and vegetated along the sides of the haul road when it was first being established in 1994. These catch drains include rock weirs at regular intervals that are now well vegetated and maintained in a stable condition.

The location of the diversion drains, catch drains and sedimentation dams that comprise the quarry water management system are shown on **Figure 3.1**. As can be seen from **Figure 3.1**, all runoff from within the perimeter of the quarry water management system is conveyed to the sediment dams which have been constructed in series. Sediment Dams 1 and 2 are located down slope of the processing plant area. Both Sediment Dams 1 and 2 can be drawndown by a siphon system and constant flow devices to provide approximately 1 m depth or approximately 1600 m^3 of surcharge capacity. A third Sedimentation Dam is located immediately downslope of the truck parking area and collects and treats runoff from this area. Sedimentation Dam 3 overflows to the 100 m long level spreader upslope of Racecourse Creek.

Runoff from the quarry floor is controlled through a series of excavations, low berm and pipes to provide detention storage within the quarry during periods of heavy rainfall. The quarry floor and associated flow controls effectively provide the detention and settling capacity that will be provided by Sediment Dam 4 once it is constructed on the final quarry floor. A low berm is maintained at the entrance to the extraction

area to provide additional surcharge capacity during extreme rainfall events. Flow controls within the quarry floor enable contained runoff to drain at a controlled rate from the quarry floor through the processing plant area to Sedimentation Dams 1 and 2.

The processing area has also been designed to act as a detention basin during significant storm events with the ability to detain up to approximately 0.9 m depth of water.

As presented in **Table 3.2**, the quarry water management system provides a capacity of approximately 8150 KL of storage for sediment laden runoff with stored water being utilised and used for dust suppression. This is the equivalent of approximately 40 mm of runoff from the entire 21 ha Quarry and processing plant area. In addition, the dams system has been designed to provide in excess of 33,600 KL of surcharge capacity making a total capacity equivalent to approximately 220 mm of runoff.

Sedimentation Dams 1 and 2 in series with the 2 ML Storage Dam have been designed and constructed to provide sufficient retention time to allow sediment entrained within runoff from the quarry to settle out before the water is discharged to a 100 m long grassed level spreader. The level spreader dissipates concentrated flows and is located parallel to Racecourse Creek and approximately 120 m upslope. The level spreader also serves as the overflow spillway for Sediment Dam 3. Discharges from the level spreader occur as sheet flow over the 120 m grassed section between the level spreader and Racecourse Creek. This provides further sediment settling, nutrient uptake and water quality treatment before any discharges enter the Racecourse Creek system.

3.2.4 Water Storages

Dam sizes and surcharge capacity of each dam are provided in **Table 3.2**. As per the 2015 EIS (Umwelt, 2015), the system has been designed to contain runoff from in excess of a 1 in 100 year 24 hour rainfall event which is 154 mm of rainfall. The sediment and storage dam capacity at the quarry is capable of holding a 5 day, 95% rainfall event which is 56.4 mm for Oberon/Lithgow area (a third of what the system is designed for). In addition, the existing water management system was designed in 1993 to accommodate runoff from a Probable Maximum Precipitation rainfall event of 380 mm in 1 hour. Dams are cleaned out as required to maintain capacity in accordance with *Managing Urban Stormwater – Soils and Construction* (Landcom, 2001) and as a result uncontrolled discharges from the 2 ML Storage Dam are likely to be infrequent and small. No discharges from the 2ML Storage Dam have been observed over the 20 year period that the quarry has been operating.

Table 3.2 Sediment and Storage Dam Characteristics

Dam	Length	Width	Depth	Storage Volume (KL)	Surcharge Volume (KL)	Top Water Level (mAHD)	Construction Type
SD1	62	20	2.5	890	800	1,109.5	Homogenous earth wall with cut-off trench
SD2	65	20	2.5	950	800	1,109.0	Homogenous earth wall with cut-off trench
SD3	30	7	2.0	210	0	1,097.5	Homogenous earth wall

Dam	Length	Width	Depth	Storage Volume (KL)	Surcharge Volume (KL)	Top Water Level (mAHD)	Construction Type
Quarry floor/ SD4	80	25	2.0	4,100	32,000+	Quarry Floor	Excavation and earth bunds that are progressively modified to facilitate quarrying. Once quarrying within the second lower layer of basalt opens a sufficient section of the quarry floor, a 1.2 m high earth bund will be established across the entrance to the quarry to provide additional detention capacity within the quarry.
2 ML Storage Dam	84	17	2.0	2,000	0 to 2000	1,106.5	Homogenous earth wall
Total	-	-	-	8,150	33,600+	-	-

3.3 Surface Water Monitoring Program

Surface water monitoring is required to be undertaken monthly as per EPL Condition M2.3. In accordance with EPL Condition M2.3 and the Development Consent, water quality in Racecourse Creek will continue to be monitored both upstream and downstream of the quarry at two sites (refer to **Figure 3.2**) unless otherwise agreed with DP&E and EPA:

- W1 – upstream of the quarry and
- W2 – downstream of the quarry.

Surface water samples will be analysed for pH, conductivity, turbidity, non-filterable residue (NFR), total kjeldahl nitrogen (TKN), total phosphorus (TP) and total petroleum hydrocarbons (TPH). A summary of monitoring results since monitoring began in 1996 is presented in **Section 3.1**.

EPL Condition M2.1 requires the monitoring of Oil & Grease, Total Suspended Solids (TSS) and pH. It has been assumed that TPH is a suitable measurement for Oil & Grease.

The Sedimentation Dams, 2 ML Storage Dam and associated water management system was completed in 1995 and since that time has functioned with a very high level of control with limited potential significant discharges (refer to **Section 3.2.3**). No overflows or discharges from the system to Racecourse Creek have been observed over the last 20 years. Water quality monitoring over this period demonstrates that the quarry is not adversely impacting on water quality in Racecourse Creek (refer to **Section 3.1**).

Monitoring since 1995 has shown that the quarry operations are not adversely impacting on water quality in Racecourse Creek. As the water management system is not likely to significantly change in response to continuing quarry operations, it is considered unlikely that future quarry operations will have an adverse impact on water quality in Racecourse Creek.

Oberon Quarries has been in discussion with the EPA (Andrew Helms pers. comm) who has recommended that future monitoring at the quarry be based on discharge events from the quarry water management system with monitoring being undertaken for discharges from the 2 ML dam rather than upstream and downstream in Racecourse Creek as historically occurred. However, Oberon Quarries will continue to monitor sites W1 and W2 until approval from the EPA and DP&E to vary monitoring requirements in EPL 4442 and the Development Consent are granted. This WMP will be updated to reflect changes to the monitoring program if an EPL variation is approved. If monitoring of discharges from 2 ML Dam indicates that water quality in the discharge water exceeds or is likely to exceed the following, monitoring of Racecourse Creek upstream and downstream of the quarry will be resumed for a period of three months to help monitor possible impacts and the extent of these impacts.

It is noted on 13th February 2024 the site lodged an application for variation of Licence No. 4442 in respect to the issue of watering monitoring at Point 7 (discharge point of Dam 3) and its related conditions.

The reason stated for the variation was as follows:

The dam was originally established to service sediment laden runoff from the former truck parking area while it was being constructed in 1994. Since that time the area surrounding the former truck parking area has been stabilized and vegetated. For the last two decades, the dam which is located in a paddock adjacent to the Quarry, has functioned as a farm dam providing water to stock. This is at odds with Condition O.4.1 which requires the dam to be drawn within 5 days of rainfall.

The EPA approved the variation request and issued a Licence Variation on 6th May 2024 with the following variations made to the licence:

- Removal of Condition P 1.2 and P 1.3 which refer to the water quality monitoring discharge point (Discharge pipe from 'Sedimentation Dam 3)

- Removal of L2 Concentration Limits associated with the discharge point listed in P1.3. Reference to condition to L2.1, L2.2, L2.3, L2.4 have been removed.

- Removal of condition M2.3 Water and/or Land Monitoring Requirements

- Removal of conditions O5.1 and O5.2 which refer operating conditions related to discharge point 7

The full updated Licence is available on site and can be viewed via the Oberon Quarries website here: https://oberonquarries.com.au/wp-content/uploads/2025/05/EPA_Licence_4442_May_24.pdf

In this case, Oberon Quarries continues to monitor sites W1 and W2.

All water monitoring results are published with 14 days of the site receiving the results from the lab on the company website and can be viewed here:

https://oberonquarries.com.au/environmental-monitoring-results/

The results at the time of reviewing this document can be viewed here:

https://oberonquarries.com.au/wp-content/uploads/2025/04/April-2025.pdf

3.4 Surface Water Trigger Assessment Protocol

Monitoring results will be compared against historical data (refer to **Table 3.1**) to determine any potential trends in surface water quality and as such potential impacts on surface water resources. The recorded trends in surface water quality will be reported in the Oberon Quarry Annual Review (refer to **Section 6.1**). If water monitoring indicates water quality is trending outside of the range of values recorded in Racecourse Creek since 1996, the cause of these changes to water quality will be explored and reported on.

If the following trigger levels are exceeded in Racecourse Creek for more than two consecutive sampling periods, an investigation will be undertaken into what is causing the observed changes in water quality:

- pH > 8.5
- Conductivity > 300 µS/cm
- Turbidity > 450 NTU
- Total Phosphorus > 0.8 mg/L
- TKN > 4.5 mg/L
- TPH > 5 mg/L

Historically elevated levels in water quality in Racecourse Creek have been directly related to farming and grazing activities in the surrounding area. If it is found that quarry operations are potentially impacting on water quality in Racecourse Creek, appropriate mitigation measures will be explored and implemented. A report outlining the cause of potential impacts and the mitigation measures to be implemented will be provided to EPA and DP&E for comment within four weeks of receiving monitoring results that show that trigger levels have been exceeded. Identified mitigation measures will be implemented with four weeks of receiving comments from EPA and DP&E.

Data source: Oberon Quarries Pty Ltd 2021 | Image source: Google 2023

0 0.25 0.5 0.75 1 km

SCALE 1 : 13 000

Legend

- Project Area
- Processing Area
- Right of Carriageway (12m Wide)
- Residence owned by Oberon Quarries/Associated with Oberon Quarry
- Private Residences
- Groundwater monitoring location
- Surface water monitoring location

FIGURE 3.2

Water Monitoring Locations

4.0 Site Water Balance

4.1 Sources and Security of Water Supply

Average annual rainfall at Oberon is approximately 870 mm/year. As set out in Section 5.7.1 of the 1992 EIS (Resource Planning, 1992) average annual yield from the 416 ha Racecourse Creek catchment immediately downstream of the site, is estimated to be approximately 645 ML/year corresponding to a long term average runoff coefficient of 18%.

As discussed in **Section 2.4**, the quarry is located within the Fish River Water Source and is within the catchment of Lake Oberon. Oberon Quarries currently holds Water Access Licence number 80AL 716303 (WAL 34729) under the *Water Management Act 2000* for the extraction of water from Racecourse Creek. Water, if required, is pumped from Racecourse Creek at a flow rate of approximately 2 L/s. Water was last pumped from Racecourse Creek for quarry operations in approximately 2010. There are no off-site water transfers.

Annual runoff from an undisturbed area equivalent in size to the 21 ha quarry water management system would be approximately 36 ML assuming runoff is equal to 18 per cent of annual rainfall.

Runoff from the 21 ha disturbed quarry water management system catchment, if it was maintained as free draining, would be higher than from the natural catchment and is estimated to be approximately 75% of annual rainfall or approximately 150 ML/year. This is approximately 114 ML/year more than for an undisturbed catchment of the same size. On this basis, on average the quarry would have in excess of approximately 100 ML of water per year available for on-site usage if required.

In addition to the dirty water system storage dams, there are several excavations in the quarry floor that store surface runoff from the disturbed quarry area. These excavations have an estimated combined capacity of approximately 100 ML. Since these excavations were constructed in approximately 2011, there has been no water pumped from Racecourse Creek with all water for quarry operations been drawn from the on-site storages.

The Quarry will continue to operate using on-site water resources in the first instance. It is envisaged that it is unlikely that water will need to be pumped from racecourse creek in the future. If it is required to pump water from Racecourse Creek the volume of water pumped will be monitored.

4.2 Water Use and Water Balance

Water demand for crushing, processing and dust suppression for current operations is up to approximately 30 KL/day during summer periods which equates to a maximum water usage of less than 9 ML/year. The addition of a Hydrasander is unlikely to significantly increase water demand as it will use a closed system and recycle water used in the washing process. It is estimated that at a maximum production rate of 400,000 tpa, maximum water usage will be up to 60 KL/day with maximum annual usage of up to 18 ML/year. This is approximately 20% of the estimated average runoff from the disturbed quarry area of 150 ML/year.

As set out in **Table 3.2**, sedimentation and storage dams on-site are designed to have a combined capacity of approximately 8.15 ML. This is augmented by the additional water that is stored in excavations within the quarry floor which have an estimated storage capacity of approximately 100 ML. As result the quarry typically has three years to five years of water operations needs available on-site at any time, ensuring that there will be adequate water supply available for dust suppression and processing at all times. **Table 4.1** outlines each component of water inputs and outputs at Oberon Quarry.

It is noted that runoff from the quarry floor is controlled through a series of excavations which have an estimated combined capacity of approximately 100 ML. Flow controls within the quarry floor enable contained runoff to drain at a controlled rate from the quarry floor through the processing plant area to Sedimentation Dams 1 and 2. Sedimentation Dams 1 and 2 in series with the 2 ML Storage Dam have been designed and constructed to provide sufficient retention time to allow sediment entrained within runoff from the quarry to settle out before the water is discharged to a 100 m long grassed level spreader. No discharges from the 2ML Storage Dam have been observed over the 20 year period that the quarry has been operating.

Table 4.1 Oberon Quarry water inputs and outputs

Component	Volume (ML/year)
Inputs	
Rainfall/runoff	150
Total inflows	150
Outputs	
Quarry Operations (crushing, processing, dust suppression)	9
Evaporation	21.7*
Total outputs	30.7

** Calculation based off the mean daily evaporation - Bathurst Agricultural Station 063005.*

4.3 Reporting Procedures

Water use including the extraction from Racecourse Creek and management of water consumption will be reported in the Oberon Quarry Annual Review. Monitoring results from W1 and W2 will be compared against historical data (refer to **Section 3.1**) to determine any potential trends in surface water quality and as such potential impacts. The recorded trends in surface water quality will be reported in the Oberon Quarry Annual Review (refer to **Section 6.1**).

4.4 Measures to Minimise Clean Water Use On Site

As noted in **Section 4.2**, the Hydrasander is a closed system and recycled water is used in the washing process. As such, there are minimal opportunities to further minimise clean water use on site as all water used on-site is recycled from the dirty water system under all but extreme dry conditions. Any opportunities to reduce clean water will be reported in the Annual Review.

5.0 Groundwater Management Plan

5.1 Groundwater Context and Baseline Data Summary

Several small springs are located towards the base of Racecourse Hill in the Tertiary gravel layer that is located between the basalt and the underlying less pervious granitic material. Springs to the north and west of the site are located at approximately 40 m below the top of Racecourse Hill at 1100 m AHD and are thought to be fed by water infiltrating to the alluvial gravel sediments that occur between the basalt and granite.

At the northern end of the approved extraction area, Oberon Quarries has constructed a temporary dam on the floor of the upper quarry bench of the quarry to help contain runoff from the quarry excavation area. The resulting void has filled with runoff that is now increasing the supply of water to a network of fractures in the lower layer of basalt. This water drains to quarry water management system via the fractured rock and over a much longer period to the springs that are located around the perimeter of the quarry.

Drilling of the upper bench as part of blasting operations has not encountered groundwater within the drill holes that extend down approximately 11 m from the surface. As quarry progresses into the lower bench, it is expected that groundwater associated with the jointing in the basalt will be intercepted and drain to the quarry water management system. It is estimated that groundwater inflow will be less than 2 ML/year.

Oberon Quarries has undertaken groundwater monitoring since 1996. A summary of results since the program began is presented in **Table 5.1**. Groundwater is monitored for pH and conductivity at a spring-fed dam (GW1) at 'Langley Heights', downslope of the quarry on Racecourse Hill (refer to **Figure 3.2**). Monitoring results show that the range of values for pH and conductivity has been consistent over the period 1996 to 2015 indicating that operation of the quarry is not adversely impacting on groundwater quality at the monitoring point.

Table 5.1 Summary of Oberon Quarry Groundwater Monitoring

Year	pH range	Conductivity range (mS/cm)
1996	6.8 – 7.5	130 – 270
1997	6.8 – 7.2	180 – 290
1998	6.8 – 9.1	72 – 280
1999	6.6 – 8.9	210 – 450
2000	6.9 – 8.0	110 - 270
2001	6.7 – 8.1	140 - 260
2003	6.4 – 7.2	140 - 300
2004	6.8 – 8.9	150 - 200
2005	6.7 – 7.2	130 - 205
2006	6.9 – 7.5	140 - 300

Year	pH range	Conductivity range (mS/cm)
2007	6.1 – 7.1	105 – 250
2008	6.8 – 7.3	225 – 270
2009	6.3 – 7.4	100 – 270
2010	6.4 – 7.3	88 – 270
2011	6.8 – 8.2	80 – 270
2012	6.6 – 8.2	90 – 310
2013	6.1 - 90	95 – 345
2014	6.8 – 8.7	170 - 315
2015	6.9 – 8.2	155 - 310
2016	6.70 – 8.70	125 – 320
2017	6.8 – 8.9	220 – 350
2018	7.0 – 7.5	150 – 300
2019	7.0 – 7.4	170 - 250
2020	6.8 – 7.3	180 – 320
2021	6.5 – 7.6	120 – 280
2022	6.9 – 7.4	170 – 370
2023	6.8 – 7.3	230 – 400
2024	6.8 – 7.5	230 - 330

5.2 Groundwater Monitoring Program

Groundwater will continue to be sampled monthly from a spring-fed dam (GW1) at 'Langley Heights', downslope of the quarry on Racecourse Hill (refer to **Figure 3.2**).

Groundwater will be analysed for pH and conductivity. A summary of monitoring results since monitoring began in 1996 is presented in **Table 5.1**.

5.3 Groundwater Trigger Assessment Protocol

Monitoring results will be compared against historical data (refer to **Table 5.1**) to determine any potential trends in groundwater quality and as such potential impacts on groundwater resources. The recorded trends in groundwater quality will be reported in the Oberon Quarry Annual Review (refer to **Section 6.1**).

In the event that the monitoring program identifies potential impacts on the groundwater system, the

Trigger Action Response Plan (TARP) as outlined in **Table 5.2** shall be implemented.

Table 5.2 Impacts on Groundwater TARP

TARP	Impacts on groundwater
Trigger	Groundwater monitoring indicates continuous decreasing trend in groundwater quality over three consecutive sampling periods. Trigger values for further assessment are as follows: • pH > 9.2 • Conductivity > 450 µS/cm
Action	• Notify the Oberon Quarry Manager • Review recent monitoring results against historical monitoring data • Investigate the potential cause of any decrease in groundwater quality • Determine if an incident has potentially occurred • Report any Environment Incidents in accordance with the reporting obligations detailed in EPL 4442 and the Development Consent
Response	• Conduct an investigation into the impact on the groundwater system • Undertake additional monitoring if necessary • Develop corrective/preventative actions based on the outcomes of the investigation and/or additional monitoring
Plan	• Prioritise actions based on the risk to the environment and likelihood of a repeat incident • Monitor the completion of actions to ensure they have been effective

6.0 Reporting

6.1 External Reporting

A summary of surface and groundwater monitoring results will be provided in the Oberon Quarry Annual Review. The following information will be reported in the Annual Review in accordance with Schedule 5, Condition 9 of the Development Consent.

By the end of March each year Oberon Quarries shall review the environmental performance of the development to the satisfaction of the Secretary. The requirements of the review are detailed in **Table 2.1.**

In addition, in accordance with *Protection of the Environment Legislation Amendment Act 2011* (Amendment Act) and Schedule 5, Condition 12 of the Development Consent, Oberon Quarries will also publish surface and groundwater monitoring results on the Oberon Quarries website (http://www.oberonquarries.com.au).

6.2 Surface and Groundwater Incident Reporting Protocol

Surface and groundwater trends will be monitored over the life of the Project. If a monitoring result is obtained outside of the trigger levels outlined in **Sections 3.4** and **5.3**, the result will be treated as environmental incident and will be managed in accordance with the Oberon Quarry Environmental Management Strategy (EMS) (Umwelt, 2016) which includes a procedure for the management of environmental incidents and community complaints. In accordance with this procedure, all environmental incidents will be investigated to a level commensurate to their risk level by the Quarry Manager in consultation with environmental personnel from Oberon Quarries. Additional controls will be implemented where required, based on the outcomes of the investigation. All environmental incidents/exceedances will be reported annually in the Annual Review.

Incidents that have caused, or threaten to cause material harm to the environment will be reported to the Department, EPA and relevant stakeholders immediately once Oberon Quarries becomes aware of the incident in accordance with Oberon Quarry's Pollution Incident Response Management Plan (PIRMP). Reporting for material harm incidents will be undertaken in accordance with Schedule 5, Condition 7 of the Development Consent.

6.2.1 Adaptive Management

In accordance with Schedule 5, Condition 6 of the Development Consent, Oberon Quarries will assess and manage water quality related risks.

Where a surface or groundwater impact has occurred, Oberon Quarries, at the earliest opportunity will:

- take all reasonable and feasible steps to ensure the impact ceases and does not reoccur
- consider all reasonable and feasible options for mitigation and remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action and
- implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.

6.3 Complaint Response

Complaints relating to noise from Oberon Quarry will be managed in accordance with the requirements of the Oberon Quarry EMS (Umwelt, 2016) and Complaints Management Policy & Procedure. In accordance with Condition M5 of EPL 4442, a community complaints line is operated by Oberon Quarries Pty Ltd during the hours of operation. The complaints line is displayed on Oberon Quarries website (http://oberonquarries.com.au/).

The Complaints Line number is (02) 6336 0259.

The Complaints line has been operational for many years and provides the community with a mechanism by which to raise any concerns that they have with operations at Oberon Quarry. The Quarry Manager is responsible for the implementation of the complaints management process and will ensure a timely initial response to any complaints received and then, as appropriate, will provide a more detailed response outlining any complaint investigation findings and corrective actions implemented.

Records of complaints will be kept for a minimum of four years in a register to be maintained by the Quarry Manager, the complaints register is available on Oberon Quarries Pty Ltd website. This register will be updated when/if a genuine notifiable complaint is received. The community complaints will also be reported annually in the Annual Review.

6.4 Emergency Procedures

Oberon Quarries have developed a PIRMP. This document details the procedures for notification of pollution incidents resulting in or having the potential to cause material harm to the environment. The PIRMP can be found on Oberon Quarries website (https://oberonquarries.com.au/management-plans-and-programs/).

7.0 Surface and Groundwater Contingency Strategy

In the event of unforeseen impacts associated with surface water or groundwater at Oberon Quarry, the following protocol will be implemented:

- conduct a preliminary review of the nature of the impact, including:
    - any relevant monitoring data and
    - current quarry activities and land use practices.
- commission an investigation into the impact to confirm cause and effect and consider relevant options for amelioration of impact(s) as appropriate
- prepare an action plan in consultation with the appropriate regulatory agency
- mitigate causal factors where possible and
- implement additional monitoring as necessary to measure the effectiveness of the controls implemented.

The outcomes of the investigations into any unforeseen impacts and the controls/remediation actions implemented will be undertaken in consultation with the DP&E and relevant stakeholders and will be reported in the Annual Review (refer to **Section 6.1**).

9.0 Review and Improvement

Ongoing monitoring and review on the performance and implementation of this WMP will be undertaken in accordance with Oberon Quarry EMS (Umwelt, 2016).

In accordance with Schedule 5, Condition 5 of the Development Consent, Oberon Quarries shall review, and if necessary revise, the strategies, plans, and programs required under Development Consent to the satisfaction of Secretary, within three months of the submission of an:

(a) *incident report under condition 7 below;*
(b) *annual review under condition 9 below;*
(c) *audit report under condition 10 below; and*
(d) *any modifications of this consent,*

the Applicant shall review the strategies, plans, and programs required under this consent, to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Secretary.

The Quarry Manager and Oberon Quarries environmental personnel will review and if necessary, revise this WMP and resubmit to DP&E every year or earlier if required.

Any changes made to the WMP as a result of the review will be made in consultation with relevant stakeholders. A copy of the revised WMP will be supplied to the Secretary for approval. The WMP will reflect changes in environmental requirements, technology and operational procedures. Updated versions of the approved WMP will be made publicly available on the Oberon Quarries website (https://oberonquarries.com.au/management-plans-and-programs/).

Continuous improvement will also occur through independent review as a result of the three-yearly compliance audit, which is required in accordance with Schedule 5, Condition 10 of the Development Consent.

9.0 Accountabilities

Relevant roles and responsibilities associated with this WMP are presented in **Table 9.1** below.

Table 9.1 Accountabilities

Role	Accountabilities for this document
Quarry Manager	Implementation of water quality control measures, monitoring and reporting.

10.0 References

Landcom, 2001. Managing Urban Stormwater – Soils and Construction.

Resource Planning Pty Limited, 1992. Environmental Impacts Statement for Hard Rock Quarry 'Langly Heights' Oberon NSW.

Umwelt (Australia) Pty Limited, 2016. Environmental Management Strategy. Report prepared for Oberon Quarries Pty Limited

Umwelt (Australia) Pty Limited, 2015. Environmental Impact Statement – Proposed Extended Life of Operations and Development Changes to Oberon Quarry.

Appendix 1: Approval of suitably qualified person to prepare the Water Management Plan

Planning & Environment

Planning Services
Resource Assessments
Phone: (02) 9228 6419
Fax: (02) 9228 6466
Email: Jessie.evans@planning.nsw.gov.au
23-33 Bridge Street
GPO Box 39
SYDNEY NSW 2001

Peter Jamieson
Director
Umwelt (Australia) Pty Limited
75 York Street
TERALBA NSW 2284

Dear Mr Jamieson

Oberon Quarry Continuation Project (SSD 6333)
Extension of Time

I refer to your emails dated 14 and 18 March 2016 seeking:
(a) approval for a suitably qualified person/s to prepare the Water Management Plan, required under condition 16 of Schedule 3 of the development consent for the Oberon Quarry Continuation Project; and
(b) a two month extension of time to submit this plan.

The Department has reviewed your attached CV and is satisfied that you are suitably qualified to prepare the Water Management Plan. Consequently, I can advise that the Secretary has approved your appointment.

The Department notes that the request for an extension of time is a consequence of unforeseen time constraints. I also acknowledge that the Environmental Management Strategy and management plans for Noise, Blasting, Air Quality, Transport, and Landscape and Rehabilitation have been submitted on time.

The Department considers the request to be reasonable and would like to advise you that the Secretary has granted an extension of time, for the Water Management Plan to now be submitted for approval no later than 31 May 2016.

Should you have any enquiries in relation to this matter, please contact Jessie Evans on the details above.

Yours sincerely,

Howard Reed 18-3-16
Director
Resource Assessments
As nominee of the Secretary

Appendix 2: DPI Water Correspondence

From: Emma Mudford
To: "Tim Baker"
Cc: Peter Jamieson
Subject: RE: Oberon Quarry - Water Management Plan
Date: Friday, 27 May 2016 1:57:00 PM

Hi Tim,

Thank you for your feedback.

Your comments will be considered during the preparation of the Plan.

Have a great weekend.

Emma Mudford
Environmental Scientist

Umwelt (Australia) Pty Limited
75 York Street
Teralba, NSW 2284

Phone: (02) 4950 5322 (Reception)
Mobile: 0429 689 594

www.umwelt.com.au

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Newcastle ph. 02 4950 5322 | **Perth** ph. 08 6260 0700 | **Canberra** ph. 02 6262 9484 | **Sydney** ph. 1300 793 267 | **Brisbane** ph. 1300 793 267

From: Tim Baker [mailto:tim.baker@dpi.nsw.gov.au]
Sent: Tuesday, 24 May 2016 2:01 PM
To: Emma Mudford
Cc: Tim.Baker@water.nsw.gov.au; Peter Jamieson; Luke Bettridge
Subject: Re: Oberon Quarry - Water Management Plan

Hi Emma,

In response to your email, the requirements in Condition 16(d) are supported by DPI Water with the following key areas of interest:

- Site Water balance - water sources, licensing, site management including water storage and conveying infrastructure, water use/losses, water metering (gross volume from each source) and reporting against each water access licence where relevant. Use a schematic accompanied by a table outlining each of the components of water inputs/outputs.
- Surface Water Mgt Plan - baseline data, separation of clean and dirty, erosion and sediment control, monitoring and reporting. Develop consistently with the

requirements of Landcom (2004).
- Groundwater Mgt Plan - baseline data, monitoring and reporting.
- Surface and Groundwater Contingency strategy - triggers and protocols for managing and mitigating impacts.

Please give me a call if you need to discuss further.

Regards
Tim

Tim Baker | Senior Water Regulation Officer
NSW Department of Primary Industries | Water
209 Cobra St | Dubbo NSW 2830 | PO Box 2830, Dubbo NSW 2830
T: 02 6841 7403 | F: 02 6884 0096 | M: 0428 162 097 | E: Tim.Baker@dpi.nsw.gov.au
W: www.water.nsw.gov.au | www.dpi.nsw.gov.au

On 23 May 2016 at 17:38, Emma Mudford <emudford@umwelt.com.au> wrote:
Hi Tim,

As per Condition 16 (b) of Oberon Quarries Development Consent (SSD_6333), Oberon is required to consult with the with DPI-Water during the preparation of the Water Management Plan.

Could you please provide comments on any specific information that DPI-Water have for consideration in the development of the plan?

If you have any questions please call myself or Peter Jamieson on the numbers below.

Regards

Emma Mudford
Environmental Scientist

Umwelt (Australia) Pty Limited
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Teralba, NSW 2284

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Appendix 3: EPA Correspondence

From: Emma Mudford
To: "Andrew Helms"
Cc: Peter Jamieson
Subject: RE: Oberon Quarry - Water Management Plan
Date: Friday, 27 May 2016 1:47:00 PM

Hi Andrew,

Thank you for your feedback.

The capacities of the storage dams and site water balance will be discussed within the WMP.

I have contacted the DP&E regarding the replacement of upstream and downstream surface water monitoring with a 'monthly during discharge' monitoring point.

It will keep you updated on their response and we can go from there.

Have a great weekend, will be in touch.

Emma Mudford
Environmental Scientist

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Teralba, NSW 2284

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Newcastle ph. 02 4950 5322 | **Perth** ph. 08 6260 0700 | **Canberra** ph. 02 6262 9484 | **Sydney** ph. 1300 793 267 | **Brisbane** ph. 1300 793 267

From: Andrew Helms [mailto:Andrew.Helms@epa.nsw.gov.au]
Sent: Tuesday, 24 May 2016 10:50 AM
To: Emma Mudford
Cc: Peter Jamieson
Subject: RE: Oberon Quarry - Water Management Plan

Hi Emma,

Condition 16(d) of Oberon Quarry's consent is quite detailed regarding Planning's requirements for the Water Management Plan and I'd agree with that information requirement.

I would only add that it would be a good opportunity to formally state what the dirty water/sediment storage capacity is at the premises and whether these structures are capable of holding (and managed such that these capacities are maintained) a 5 day, 95% rainfall event (56.4 mm for Oberon/Lithgow area) as per the guidance material "*Managing Urban Stormwater – Soils and Construction; Vol 2E: Mines and Quarries*". The capacities of these dams (and any sumps/ponds within the quarry itself) may need to be surveyed to allow you to determine whether the required capacity exists on site.

Furthermore, I'd like to see the historical arrangement of upstream and downstream monitoring for pollutants being replaced by monitoring from a discharge point at the final sediment dam (a 'monthly on discharge' requirement) to align the site with what is required at most quarries and mines across the state. We can discuss this with Neil in due course.

Regards,

Andrew Helms
Regional Operations Officer – Central West
NSW Environment Protection Authority – South Branch
(02) 6332 7604 – 0427 069 568
andrew.helms@epa.nsw.gov.au www.epa.nsw.gov.au @EPA_NSW
Report pollution and environmental incidents 131 555 (NSW only)

From: Emma Mudford [mailto:emudford@umwelt.com.au]
Sent: Monday, 23 May 2016 5:40 PM
To: Andrew Helms <Andrew.Helms@epa.nsw.gov.au>
Cc: Peter Jamieson <pjamieson@umwelt.com.au>; Luke Bettridge <lbettridge@umwelt.com.au>
Subject: Oberon Quarry - Water Management Plan

Hi Andrew,

As per Condition 16 (b) of Oberon Quarries Development Consent (SSD_6333), Oberon is required to consult with the with the EPA during the preparation of the Water Management Plan.

Could you please provide comments on any specific information that the EPA have for consideration in the development of the plan?

If you have any questions please call myself or Peter Jamieson on the numbers below.

Regards

Emma Mudford
Environmental Scientist

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APPENDIX 4 Water Management Plan Approval and Correspondence

NSW GOVERNMENT | Department of Primary Industries

OUT16/24715

Jessie Evans
Resource Assessment and Compliance
NSW Department of Planning and Environment
GPOBox39
SYDNEY NSW 2001

Jessie.evans@planning_nsw_gov_au

Dear Jessie

Oberon Quarry (*SSD 6333)*
Comment on the **Water Management Plan**

I refer to your email dated 2 June 2016 to the Department of Primary Industries in respect to the above matter. Comment has been sought from relevant divisions of DPL Any further referrals to DPI can be sent by email to landuse.enquiries@dpi.nsw.gov.au

DPI has reviewed the WMP for this project and provides the following comment:

- Section 4.3 refers to *"the following information will be reported"* in relation to water use and management, however no detail on the infonnation to be reported is listed. It is recommended this section be expanded to detail each of the water use and management points on site to be monitored and lhe information to be reported.
- Section 2.4 and 4_1 refers to a former Water Act licence (80SL051088)_ DPI Water advises this licence has been converted to the Water Management Act 2000 and is now licensed under Water Access Licence number BOAL 716303 (WAL 34729), with 2 unit shares of unregulated river category entitlement in the Fish River water source under the *Water Sharing Plan for the Macquarie Bogan Unregulated and Alluvial Water Sources 2012,* and Water Supply Work Approval 80WA716304_

Yours sincerely

Mitchell Isaacs
Director, Planning Policy & Assessment
Advice 29 June 2016

Cc. Melanie Hollis, DP&E

Planning & Environment

Planning Services
Resource Assessments
Contact: Melanie Hollis
Phone: (02) 9228 2043
Email: melanie.hollis@planning.nsw.gov.au

Mr Peter Jamieson
Director
Umwelt (Australia) Pty Limited
75 York Street
Teralba NSW 2284

Dear Mr. Jamieson

Oberon Quarry (55D 6333)
Approval of Water Management Plan

I refer to your email of 29 July 2016 and the enclosed revised Water Management Plan (WMP) for Oberon Quarry (SSD 6333) prepared to satisfy condition 16 of Schedule 3 of the above development consent.

The Department has reviewed the management plan and considers that it adequately addresses the relevant requirements of SSD 6333 and the Department's advice provided on 1 July 2016. Consequently, the Secretary has approved the WMP.

Should you have any enquiries in relation to this matter, please contact Melanie Hollis on the details above.

Yours sincerely,

Howard Reed
Director
Resource Assessments
As nominee of the Secretary

Planning Services
Resource Assessments
Contact: Philip Nevill
Phone: (02) 8275 1036
Email: philip.nevill@planning.nsw.gov.au

Planning & Environment

(Ctrl)

Neil Hargraves
Oberon Quarries Pty Ltd
315 Commercial Road
VINEYARD NSW 2765

Email: neil@oberonquarry.com.au

SENT BY EMAIL

Dear Neil

Oberon Quarry Continuation Project (SSD 6333)
Environmental Management Strategy and Management Plans

The Department has reviewed the revised management plans and strategies for the Oberon Quarry, which have been prepared in accordance with the Oberon Quarry Continuation Project (SSD 6333). The Department has reviewed the following plans:

- Noise Management Plan dated March 2017 (condition 5, Schedule 3);
- Blast Management Plan dated August 2017 (condition 9, Schedule 3);
- Air Quality Management Plan dated August 2017 (condition 12, Schedule 3);
- Water Management Plan dated August 2017 (condition 16, Schedule 3);
- Transport Management Plan dated August 2017 (condition 21, Schedule 3);
- Landscape and Rehabilitation Management Plan dated August 2017 (condition 24, Schedule 3); and
- Environmental Management Strategy (EMS) dated August 2017 (condition 1, Schedule 5).

The Secretary has approved the Blast, Water and Transport Management Plans and the Environmental Management Strategy.

The Department considers that the remaining plans have not adequately addressed the relevant requirements of the project approval. The Department's comments on these documents are enclosed in **Attachment A.**

The Department therefore requests that these documents be re-submitted once the comments have been addressed, by no later than **22 March 2018.**

Should you have any enquiries in relation to this matter, please contact Philip Nevill on the details above.

Yours sincerely,

Howard Reed 22.2.18
Howard Reed
Director
Resource Assessments
As nominee of the Secretary

Cc: Rod Williams; rwilliams@umwelt.com.au