

Champions Quarry Expansion

ANNUAL REVIEW 2017

Name of Operation	Champions Quarry
Name of Operator	Champions Quarry 2 Pty Ltd
Project Approval Number	09_0080
Annual Review Start Date	1 January 2016
Annual Review End Date	31 December 2016

Contents	<i>i</i>
Glossary	<i>ii</i>

1 BACKGROUND AND OVERVIEW	1
1.1 BACKGROUND	1
1.2 HISTORY	1
2 PREVIOUS AND FUTURE DEVELOPMENT	1
2.1 DEVELOPMENT CARRIED OUT DURING 2016.....	1
2.2 PROPOSED DEVELOPMENT CARRIED OUT/TO BE CARRIED OUT DURING 2017 ...	2
3 REVIEW OF MONITORING RESULTS	3
3.1 NOISE MONITORING.....	3
3.2 SOIL AND WATER MONITORING.....	4
3.3 AIR QUALITY MONITORING	7
4 REVIEW OF COMPLAINTS RECORDS.....	7
5 AREAS OF NON-COMPLIANCE.....	7
5.1 STATEMENT OF COMPLIANCE	7
5.2 OPERATING HOURS.....	8
5.3 NOISE MANAGEMENT	8
5.4 SOIL AND WATER MANAGEMENT	8
6 TRENDS IN MONITORING DATA OVER THE LIFE OF THE PROJECT	8
7 DISCREPANCIES BETWEEN PREDICTED AND ACTUAL IMPACTS OF THE PROJECT	9
8 INDEPENDENT ENVIRONMENTAL AUDIT 2015.....	9
9 MEASURES TO BE IMPLEMENTED TO IMPROVE ENVIRONMENTAL PERFORMANCE	9
10 PRODUCTION DATA	9
11 MONITORING OF PRODUCT TRANSPORT	9
12 REVISIONS OF STRATEGIES PLANS AND PROGRAMS	10
13 RECOMMENDED INCLUSIONS IN THE ANNUAL REVIEW.....	10

LIST OF TABLES

Table 3.1 – Receivers Locations for Noise Assessment

Table 5.1 – Statement of Compliance/Non-Compliance \

Table 5.2 – Table of Non-Compliances under Project Approval 09_0080

Table 13.1 – Recommended Inclusions in the Annual Review

Annexure D – Table D1 - pH Surface Water Monitoring Results (MP1-MP6)

Table D2 - Conductivity Surface Water Monitoring Results (MP1-MP6)

Table D3 - Nitrate (NO₃) Surface Water Monitoring Results (MP1-MP6)

Table D4 - Aluminium (Al) Surface Water Monitoring Results (MP1-MP6)

Table D5 - Total Arsenic (As) Surface Water Monitoring Results (MP1-MP6)

Table D6 - Cadmium (Cd) Surface Water Monitoring Results (MP1-MP6)

Table D7 - Total Chromium (Cr) Surface Water Monitoring Results (MP1-MP6)

Table D8 - Copper (Cu) Surface Water Monitoring Results (MP1-MP6)

Table D9 - Mercury (Hg) Surface Water Monitoring Results (MP1-MP6)

Table D10 - Nickel (Ni) Surface Water Monitoring Results (MP1-MP6)

Table D11 - Total Suspended Solids Surface Water Monitoring Results (MP1-MP6)

Table D12 - Lead (Pb) Surface Water Monitoring Results (MP1-MP6)

Table D13 - Zinc (Zn) Surface Water Monitoring Results (MP1-MP6)

Annexure E – Table E1 - Water Re-Use Dam (MP7) pH Results - June 2014 to December 2016

Annexure G – Table G1 - pH Groundwater Monitoring Results (MP8-MP12)

Table G2 - Conductivity (dS/m) Groundwater Monitoring Results (MP8-MP12)

Table G3 - Nitrate (NO₃) Groundwater Monitoring Results (MP8-MP12)

Table G4 - Aluminium (Al) (mg/L) Groundwater Monitoring Results (MP8-MP12)

Table G5 - Arsenic (As) (mg/L) Groundwater Monitoring Results (MP8-MP12)

Table G6 - Cadmium (Cd) (mg/L) Groundwater Monitoring Results (MP8-MP12)

Table G7 - Total Chromium (Cr) (mg/L) Groundwater Monitoring Results (MP8-MP12)

Table G8 - Copper (Cu) (mg/L) Groundwater Monitoring Results (MP8-MP12)

Table G9 - Mercury (Hg) (mg/L) Groundwater Monitoring Results (MP8-MP12)

Table G10 - Nickel (Ni) (mg/L) Groundwater Monitoring Results (MP8-MP12)

Table G11 - Lead (Pb) (mg/L) Groundwater Monitoring Results (MP8-MP12)

Table G12 - Zinc (Zn) (mg/L) Groundwater Monitoring Results (MP8-MP12)

Table G13 - Recharge Rate (L/Hour) Groundwater Monitoring Results (MP8-MP12)

ANNEXURES

- Annexure A – Champions Quarry Monthly Production Data 2016
- Annexure B – Champions Quarry Extractive Material Transport 2016
- Annexure C – Champions Quarry Noise Monitoring Results
- Annexure D – Champions Quarry Surface Water Monitoring Results (MP 1-6)
- Annexure E – Champions Quarry Water Reuse Dam MP 7
- Annexure F – Champions Quarry Environmental Assessment Water Results
- Annexure G – Champions Quarry Groundwater Monitoring Results (MP 8-12)
- Annexure H – Champions Quarry Air Quality/Dust Monitoring Results
- Annexure I – Champions Quarry Complaints Register
- Annexure J – Champions Quarry Independent Environmental Audit
- Annexure K – DRE Quarry Production Data Form 2015/2016 Financial Year

GLOSSARY

ANZECC Guidelines	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) default trigger level for slightly disturbed ecosystem in in south eastern Australia for upland and lowland rivers
CCC	Community Consultative Committee
Department	Department of Planning and Environment
DoP	Department of Planning
DP & I	Department of Planning and Infrastructure previously known as DoP
DP & E	Department of Planning and Environment previously known as DoP and DP & I
DRE	Division of Resources and Energy within the NSW Department of Industry
EA	Champions Quarry Expansion, Environmental Assessment Report prepared by ERM Pty Limited and dated February 2010
EA (MOD 1)	Modification Application MP 09_0080 MOD 1 dated April 2013
EA (MOD 2)	Modification Application MP 09_0080 MOD 2 dated February 2016, the accompanying annexures A and B and the response to submissions dated April 2016
EA Documents	Incorporating the EA, RTS and PPR documents
EPA	NSW Environment Protection Authority
INP	NSW Department of Environment, Climate Change and Water's (DECCW) Industrial Noise Policy (INP), (EPA 2000)
LCC	Lismore City Council
NAL	Noise Assessment Location
NOW	NSW Office of Water, within the Department of Primary Industries
Notice of Modification	Any Notice of Modification issued pursuant to Section 75W of the EP & A Act
NHMRC Guidelines	National Health and Medical Research Council (2004) Australian Drinking Water Guidelines
OEH	Office of Environment and Heritage
PPR	Champions Quarry Expansion, Preferred Project Report prepared by ERM Pty Limited and dated December 2011

Project Approval	Project Approval/Conditions of Approval (incorporating the Statement of Commitments) issued by Planning and Assessment Commission of New South Wales dated 30 August 2012 as amended
Proponent	Champions Quarry 2 Pty Ltd and any other entity or person who seeks to carry out the development approved under the Project Approval
RMS	Roads and Maritime Services
Response to Submissions (RTS)	Champions Quarry Response to Submissions, prepared by ERM Pty Limited and dated September 2010 and containing the Proposed Quarry Management Plan
Secretary	Secretary of DP & E, or nominee
Statement of Commitment	Statement of Commitment (contained within Appendix 3 of the Project Approval)

1 BACKGROUND AND OVERVIEW

1.1 BACKGROUND

This report has been prepared in response to Schedule 5, Condition 4 of the Champions Quarry Part 3A Project Approval number 09_0080 (the 'Project Approval'). The report provides an overview of progress on compliance issues and elaborates on planned activities for the coming year.

Schedule 5, Condition 4 of the Project Approval states:

“By the end of March each year, the Proponent must submit a report to the Department reviewing the environmental performance of the project to the satisfaction of the Secretary. The review must:

- (a) describe the development (including 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 project over the previous calendar year, which includes a comparison of these results against:*
 - the relevant statutory requirements, limits or performance measures/criteria;*
 - the monitoring results of previous years; and*
 - the relevant predictions of the documents listed in condition 2(a) of Schedule 2 [of the Project Approval];*
- (c) identify any non-compliance over the last 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 project;*
- (e) identify any discrepancies between the predicted and actual impacts of the project 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 project.”*

1.2 HISTORY

Up until 4 July 2014 Champions Quarry was operating under the existing Lismore City Council Development Consent (DA 2005/999). At midnight on 4 July 2014 the Lismore City Council Development Consent was surrendered and Champions Quarry commenced quarrying operations under the Project Approval. Today Champions Quarry continue to operate under the Project Approval.

2 PREVIOUS AND FUTURE DEVELOPMENT

2.1 DEVELOPMENT CARRIED OUT DURING 2016

Development activities carried out in the 2016 calendar year:

- Schedule 2, Condition 8 – Extraction Levels - The Proponent is permitted to extract no more than 250,000 tonnes of extractive material from the site in any calendar year. In the 2016 calendar year the Proponent extracted 3,416.30 tonnes from the site. Annexure A breaks down the monthly extraction rates.
- Schedule 2, Condition 9 – Materials Transport – The Proponent must not transport more than 250,000 tonnes in any calendar year, dispatch more than 50 laden trucks from the site on any one day or dispatch more than 5 laden trucks from the site in any one hour. The Proponent has complied with these requirements in 2016 an overview is provided in Annexure B.
- Schedule 3, Condition 6 – Operating Hours – The Proponent is permitted to operate within the hours Monday-Friday 7am-6pm and Saturday 8am-1pm. These operating hours were complied with by the Proponent at all times except one instance in October 2016. The summary of truck movements confirms same, as set out in Annexure B.
- Schedule 3, Condition 18 and 19 – Planting Grasses/Shrubs/Trees: During 2015 the Proponent constructed Bunds A – D and the area to the north of the main access road and vegetated the areas with grasses, some native endemic shrubs and trees. During 2016 the areas were maintained on an ongoing basis including slashing around trees, maintenance of tree protection to reduce interferences by native animals, and progressive replacement of any unhealthy plants. The vegetation is now varying heights depending on the type of plant and otherwise progressing well.
- Bunds E and F have not been constructed nor are required to be constructed at this stage.
- Schedule 3, Condition 40 and 42 – Biodiversity Offset Strategy: The Proponent finalised the Biodiversity Offset Areas as part of a minor amendment to the Project Approval.
- Schedule 5, Condition 6 – Community Consultative Committee: The CCC held its 2016 meetings on 15 April 2016 and 14 December 2016. A copy of the draft/final meeting minutes are publicly available on Champions Quarry website.

2.2 PROPOSED DEVELOPMENT CARRIED OUT/TO BE CARRIED OUT DURING 2017

- Schedule 2, Condition 8 – Extraction Levels - The Proponent anticipates that there will be a significant jump in extraction during 2017 as a direct result of the Pacific Highway Upgrade, although extraction will still be within the 250,000 tonne per annum limit.
- Schedule 3, Condition 16 – Storage of Chemicals and Petroleum Products: Upon erection of a storage, maintenance and equipment shed onsite, an appropriately bunded area with impervious flooring and of sufficient capacity to contain 110% of the largest container stored within the bund and in accordance with Australian Standard AS1940-2004 will be installed.
- Schedule 3, Condition 19 – Planting Trees: The Proponent may during 2017 plant the following:
 - Bund E – To be constructed and planted with native endemic shrubs and trees; and
 - Bund F – To be constructed and planted with native endemic shrubs and trees; and

- Koala Habitat Area – The Koala habitat area will be planted with Koala habitat trees/shrubs and grass.
- Schedule 3, Condition 42 – Long Term Security of Offsets: The Proponent will make suitable arrangements to provide appropriate long term security for all of the offset areas in the Biodiversity Offset Strategy following the minor amendment to the Project Approval. The Proponent and the DP & E are discussing options with the view to finalise the form of security and contents.
- Schedule 3, Condition 46 – Conservation and Rehabilitation Bond: On or before 17 September 2017 the Proponent must lodge a conservation and rehabilitation bond with the Department. Within 3 months of the completion of each independent environmental audit, the proponent must review and revise the sum of the bond (Schedule 3, Condition 47).
- Schedule 5, Condition 6 – Community Consultative Committee: The CCC is due to hold two meetings in 2017.

Other Activities not specified in the Project Approval:

- Installation of a Sand Washing Plant – The Proponent proposes to make an application to the Department of Planning in 2017 seeking consent to install and operate a sand washing plant as contemplated by the EA.
- Maintenance Shed – The Proponent proposes to erect a storage, maintenance and equipment shed onsite being approximately 500m². Construction may commence in 2017. No construction commenced in 2016.
- Bunds – The Proponent proposes to construct bunds as and when required for noise and visual attenuation purposes within the “Operational Area” of the quarry as specified in the relevant management plans.

3 REVIEW OF MONITORING RESULTS

Noise, water and air quality testing was carried out by the Proponent in 2016 in accordance with the Project Approval and is discussed below.

3.1 NOISE MONITORING

Six noise assessment locations were identified in the EA Documents and Project Approval. These are detailed in Table 4.1 below.

Table 3.1 – Receivers Locations for Noise Assessment

Receiver Number	Description	AMG Coordinates	Approximate distance from Project area boundary (m)
NAL 1	Residence	531089, 6799150	810
NAL 2	Residence	531738, 6798473	330
NAL 2A	Residence	Adjacent to Receiver 2's location	380
NAL 3	Residence	532043, 6798156	510
NAL 4	Residence	530867, 6797990	220
NAL 5	Residence	Adjacent to Receiver 4's location	450
NAL 1 – 1566 Wyrallah Road, Tucki Tucki NAL 2 – 139 Hazlemount Lane, Tuckurimba NAL 2A – 115 Hazlemount Lane, Tuckurimba NAL 3 – 140 Hazlemount Lane, Tuckurimba			

NAL 4 – 1682 Wyrallah Road, Tuckurimba
NAL 5 – South Western Corner of Wyrallah Road and Tuckurimba Road, Tuckurimba
Receiver locations are shown in Appendix 1 of the Project Approval

Quarterly operator attended noise testing is required to be carried out by the Proponent for Receivers 2 and 3. Additional annual operator attended noise testing is to be carried out at Receivers 1, 4 and 5 and of machinery.

Six sets of operator attended noise testing were carried out during 2016. The Proponent notes that some of the testing timeframes were extended as required due to either a non-operational period or a period of weather preventing testing. Notwithstanding this, results were compliant with the relevant criteria. A copy of the noise monitoring results and relevant limits are attached as Annexure C.

3.2 SOIL AND WATER MONITORING

Surface and Groundwater Monitoring Points

Ten water monitoring points were identified in the EA Documents as relevant for water monitoring. These are set out below:

Surface Water Monitoring Points:

1. A point immediately upstream of Tucki Tucki Creek (with no impact from the Quarry);
2. A point immediately downstream of Tucki Tucki Creek (2.5 kilometres from the Quarry's Operational Area) where drainage water enters Tucki Creek;
3. A point on the onsite watercourse;
4. Downstream of the Operational Area (a continuation of the onsite watercourse referred to in Monitoring Point 3 above);
5. Discharge point of the Water Reuse Dam;
6. Stormwater overflow monitoring point for the Water Reuse Dam (only to be tested prior to discharge); and
7. Water Reuse Dam (pH levels only).

Ground Water Monitoring Points:

8. Borehole 3 (Groundwater Level and Quality Monitoring);
9. Borehole 5 (Groundwater Level and Quality Monitoring); and
10. Borehole 6 (Groundwater Level and Quality Monitoring).

Two additional groundwater monitoring points were added to the monitoring regime in late 2015 (by way of a revised Water Management Plan) as follows:

11. Onsite Windmill/Bore (Groundwater Level Monitoring only); and
12. Borehole 7 (Groundwater Level and Quality Monitoring).

Surface and Groundwater Criteria

Champions Quarry is currently collecting baseline data from all surface water monitoring locations (Monitoring Points 1–7) and groundwater monitoring locations (Monitoring Points 8–12, excluding Monitoring Point 11) to determine statistically derived site specific trigger

levels. In the interim, in accordance with the EA Documents, Champions Quarry have compared the monitoring results against the following:

- Surface water monitoring (Monitoring Points 1-7) are compared against ANZECC Guidelines; and
- Ground water monitoring results (Monitoring Points 8 – 12, excluding Monitoring Point 11) are compared against ANZECC Guidelines and NHMRC Guidelines.

Surface Water Testing – Monitoring Points 1-7

A copy of the surface water testing schedule and monitoring results for Monitoring Points 1-6 and the relevant limits are attached as Annexure D and depicted in Tables D1-D13 in Annexure D. A copy of the monitoring results for Monitoring Point 7 and the relevant limits are attached as Annexure E and depicted in Table E1 in Annexure E.

A copy of the water sample results contained in the Environmental Assessment is contained in Annexure F. These were undertaken as preliminary surface water sampling on behalf of the Proponents during 2008, with samples collected from Monitoring Point 1 (SW1), Monitoring Point 2 (SW2), Monitoring Point 3 (SW3) and Monitoring Point 4 (SW4).

Despite several attempts, successful samples were only collected from the following Monitoring Points due to insufficient water levels and/or the absence of discharge as follows:

- Monitoring point 1 – 3 attempts and 3 successful samples;
- Monitoring Point 2 – 3 attempts and 1 successful sample due to insufficient water;
- Monitoring Point 3 – 3 attempts and 1 successful sample due to insufficient water;
- Monitoring Point 4 – 3 attempts and 1 successful sample due to insufficient water;
- Monitoring Point 5 – 3 attempts and 3 successful samples;
- Monitoring Point 6 – 3 attempts and no successful samples due to insufficient water;
- Monitoring Point 7 – Weekly samples over 12 months (excluding four weeks when the tester was unavailable).

There have been some deviations between the baseline data collected at Monitoring Points 1, 2, 3, 4, 5 and 7 and the ANZECC Guidelines. These are identified in Annexure D and E as being highlighted in bold and further identified in Table D1-D13 and E1.

- Monitoring Point 1 experienced pH levels below the ANZECC Guidelines – This is consistent with the data collected in the previous year and is upstream of the Quarry. Refer to Table D1 in Annexure D.
- Monitoring Points 2, 3, 4 and 5 experienced pH levels below the ANZECC Guidelines – The EA Documents note that the pH of nearby soil and receiving waters are mildly acidic pH 4.5 – pH 5.3. This is consistent with the data collected in the previous year and Environmental Assessment predictions. The natural acidic soil conditions encountered at the Project Site and subsequent influence on runoff may require that maintenance of ambient condition is the preferred water quality goal. Hence, adjusting the pH to neutral conditions may result in unintended impacts on downstream aquatic ecosystems. This will be determined when site specific trigger levels are established. Refer to Table D1 in Annexure D.

- Monitoring Points 1, 2, 3, 4 and 5 experienced Aluminium levels that were above the ANZECC Guidelines – Champions Quarry has no control over the levels of Monitoring Point 1 as Monitoring Point 1 is in Tucki Tucki Creek and upstream of the Quarry. Monitoring Points 2, 3, 4 and 5 shows higher Aluminium levels. This is consistent with the data collected in the previous year and with the baseline data collected closer to the Quarry during 2008 and Environmental Assessment predictions. We note that no environmental assessment predictions were available for Monitoring Point 5 as the Water Reuse Dam was not in existence at the time of the Assessment. Refer to Table D4 in Annexure D.
- Monitoring Points 1 and 2 experienced Copper levels that were above the ANZECC Guidelines. Both Monitoring Points shows slightly higher Copper levels and this is in line with data from the previous year. We note, Monitoring Point 1 is upstream of the quarry. Notwithstanding this, Monitoring Point 3 located at the quarry has acceptable Copper levels. The Copper levels of Monitoring Point 2 being at least 1.5 kilometres from the Quarry may be attributable to other factors such as grazing activities or significant rain/runoff or agricultural interactions. Refer to Table D8 in Annexure D.
- Monitoring Point 5 experienced Total Suspended Solids levels that were above the ANZECC Guidelines. There were no discharges from Monitoring Point 5 (the Water Reuse Dam) but higher levels were following significant heavy rain. Future treatments of the Water Reuse Dam with Lime or similar will aim to control the levels of Total Suspended Solids. Refer to Table D11 in Annexure D.
- Monitoring Point 2 experienced zinc levels above the ANZECC Guidelines. Monitoring Point 2 is located 1.5 kilometres from the Quarry. However, Monitoring Point 3 located at the Quarry has acceptable Zinc levels. Hence the Zinc levels of Monitoring Point 2 being at least 1.5 kilometres from the Quarry may be attributable to other factors such as grazing activities or significant rain/runoff or agricultural interactions. Refer to Table D13 in Annexure D.
- Monitoring Point 7 was tested weekly for pH levels. These levels were consistently below the ANZECC Guidelines. This is consistent with the data collected in the previous year and with the baseline data collected closer to the Quarry during 2008. The EA Documents note that the pH of nearby soil and receiving waters are mildly acidic pH 4.5 – pH 5.3. The natural acidic soil conditions encountered at the Project Site and subsequent influence on runoff may require that maintenance of ambient condition is the preferred water quality goal. Hence, adjusting the pH to neutral conditions may result in unintended impacts on downstream aquatic ecosystems. Refer to Table E1 in Annexure E.

More generally, deviations were anticipated in the EA Documents and are expected given that the ANZECC Guidelines are interim guidelines until statically derived site specific trigger levels are determined.

Further explanations of anomalies are provided in Annexure D accompanying the individual Tables.

Ground Water Testing – Monitoring Points 8-12

A copy of the ground water monitoring results for Monitoring Points 8 -12 and the relevant limits are attached as Annexure G. Successful samples were collected as follows

- Monitoring point 8 – 3 successful samples;
- Monitoring Point 9 – 3 successful samples;
- Monitoring Point 10 – 3 successful samples;
- Monitoring Point 11 – 3 successful samples; and

- Monitoring Point 12 – 3 successful samples

Groundwater quality samples levels were consistently below the ANZECC Guidelines and NHMRC Guidelines trigger values with the exception of pH. This is consistent with the data collected in the previous year and with the baseline data collected closer to the Quarry during 2008. The EA Documents note that the pH of nearby soil and receiving waters are mildly acidic pH 4.5 – pH 5.3. The natural acidic soil conditions encountered at the Project Site and subsequent influence on runoff may require that maintenance of ambient condition is the preferred water quality goal. Hence, adjusting the pH to neutral conditions may result in unintended impacts on downstream aquatic ecosystems. Further explanations of anomalies are provided in Annexure G accompanying the individual Tables.

3.3 AIR QUALITY MONITORING

Monthly air quality testing is required to be carried out at Receiver 2 for a period of 12 months. We note that this 12 month period has expired, notwithstanding this we have continued to monitor air quality and intend to continue to do so until such time as the extraction rate increases.

A copy of the air quality monitoring results and relevant limits are attached as Annexure H and depicted in Table H1. All results were compliant and significantly below the criteria of $4\text{g}/\text{m}^2/\text{month}$ with the exception of the November 2016 period. It is believed that the exceedance was as a result of agricultural activities adjacent to the dust deposition gauge. Notwithstanding this, the annual average was significantly below the annual criteria average of $4\text{g}/\text{m}^2$.

4 REVIEW OF COMPLAINTS RECORDS

A copy of the complaints records since 2014 is attached as Annexure I. Records indicate that during 2016 there was one complaint, the complaint was a noise complaint at the Quarry from Receiver 2. Noise testing was carried out, as a result of the complaint, which proved to be compliant with the relevant criteria. The complainant was then notified of the outcome. 2014 had two complaints, both noise related and 2016 had one complaint, also noise related.

5 AREAS OF NON-COMPLIANCE

5.1 STATEMENT OF COMPLIANCE

Table 5.1 – Statement of Compliance/Non-Compliance

Were all conditions of the Project Approval complied with?	YES/NO
Project Approval 09_0080	No – refer to Table 5.2

Table 5.2 – Table of Non-Compliances under Project Approval 09_0080

Condition Number	Condition Description	Compliance Status	Risk Level	Comment	Where addressed in Annual Review
Schedule 3 Condition 6	Operating hours	Non-Compliant	Low	Truck loaded 7:55am	Section 5.2
Schedule 3 Condition 8(c1)	Carry out noise monitoring	Non-Compliant	Low	Insufficient noise monitoring carried out	Sections 3.1 and 5.3
Schedule 3 Condition 17(b)	Carry out surface water monitoring	Non-Compliant	Low	Insufficient surface water monitoring carried out and exceedances	Sections 3.2 and 5.4
Schedule 3 Condition 17(c)	Carry out ground water monitoring	Non-Compliant	Low	Insufficient ground water monitoring carried out and	Sections 3.2 and 5.4

				exceedances	
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5.2 OPERATING HOURS

The truck loading times have been reviewed to determine compliance with the operating hours. It is noted that one truck was loaded 5 minutes prior to the 8am Saturday opening hours on 2 April 2016. This shows a single non-compliance. As a result the offending employee has been counselled. In addition regular toolbox talks have been carried out advising staff of operating hours. Employees are also reminded when working Saturdays that the hours of operation are 8am to 1pm only.

5.3 NOISE MANAGEMENT

Quarterly operator attended noise testing is required to be carried out by the Proponent for Receivers 2 and 3. Additional annual operator attended noise testing is to be carried out at Receivers 1, 4 and 5 and of machinery.

Six sets of operator attended noise testing were carried out during 2016 that relate to Receivers 2 and 3. One additional quarterly operator attended noise test should have been carried out for Receivers 2 and 3. In addition an annual operator attended noise testing was required for Receivers 1, 4 and 5 and a machinery noise audit.

The non-compliance can be explained by inability to test due to long non-operational periods (as can be seen from production data) and/or non-compatible weather periods which did not allow testing. Some of the testing timeframes were also extended as required due to either a non-operational period or a period of weather preventing testing.

5.4 SOIL AND WATER MANAGEMENT

Surface and groundwater monitoring is required to be carried out quarterly. Data was only collected for 3 quarters in 2016. The non-compliance can be explained by the fact that the Proponent seeks to carry out surface water and ground water monitoring on the same day to establish any future interactions and surface water flows are frequently insufficient to carry out water testing.

There have also been some deviations between the baseline data collected at Monitoring Points 1, 2, 3, 4, 5, 7, 8, 9, 10 and 12 and the relevant guidelines (as discussed above).

These deviations in water quality from the relevant guidelines were predicted in the Environmental Assessment and it was for this reason that quarterly water monitoring (where water levels permit) be undertaken for a period of 3 years in order to collect baseline site specific water quality data and from there determine site specific trigger levels. After the initial monitoring period of 3 years, provided water quality meets the performance criteria, monitoring frequency will be reduced to half yearly.

The initial three year period will expire in June 2017. Notwithstanding this, there will still be insufficient data to derive site specific trigger levels (except in the case of Monitoring Point 7) as there will be an insufficient number of samples due to insufficient water levels. Accordingly, additional baseline site specific data will be collected until such time as there are sufficient samples. Ideally, 12 samples per Monitoring Point.

6 TRENDS IN MONITORING DATA OVER THE LIFE OF THE PROJECT

Given the relatively short testing program to date it is difficult to comment on the trends in monitoring data other than to say:

- All noise monitoring results have shown compliance with the relevant criteria.

- Water monitoring results in the form of baseline data are currently being collected in order to determine statistically derived site specific trigger levels. In the interim Champions Quarry have compared the monitoring results against the following:
 - Surface water monitoring results are compared against ANZECC Guidelines; and
 - Ground water monitoring results are compared against ANZECC Guidelines and NHMRC Guidelines.

There have been some deviations (discussed above) between the relevant guidelines and baseline data collected. However, this was anticipated in the EA Documents and is expected, given baseline data is being collected to determine statistically derived site specific trigger levels.

- All air quality monitoring results have shown compliance with the relevant criteria when averaged over a 12 month period.

7 DISCREPANCIES BETWEEN PREDICTED AND ACTUAL IMPACTS OF THE PROJECT

At this stage there are no discrepancies between the predicted and actual impacts of the Project, particularly given the relatively short period since the Proponent commenced quarrying operations under the Project Approval and the limited testing program to date.

8 INDEPENDENT ENVIRONMENTAL AUDIT 2015

An Independent Environmental Audit was carried out in 2015. The results are contained within the Champions Quarry Independent Environmental Audit Report November 2015, which is publicly available on Champions Quarry website. The Proponents response and corrective actions are contained in the Champions Quarry Response to Recommendations November 2015 which is attached as Annexure J.

9 MEASURES TO BE IMPLEMENTED TO IMPROVE ENVIRONMENTAL PERFORMANCE

Environmental performance will be continually monitored and assessed to develop strategies to improve performance.

10 PRODUCTION DATA

In accordance with Schedule 2, Condition 19 of the Project Approval, annual quarry production data is required to be submitted to DRE using the standard form and a copy of the data is to be included in the Annual Review.

There was 5,271 tonnes of crushed coarse sandstone materials sold during the 2015/2016 financial year including material from under 5mm to over 75 mm. A copy of the production data form is included in Annexure K.

11 MONITORING OF PRODUCT TRANSPORT

In accordance with Schedule 3, Condition 30A of the Project Approval, (included following the minor modification to the Project Approval in September 2016) records of time of dispatch, weight of load and vehicle identification for each laden truck dispatched from the Project must be retained and a summary included in the Annual Review. A summary is included as Annexure B. From this data it can be ascertained that the quarry did not exceed its allowable limit of 5 laden trucks from the site in any one hour or 50 laden trucks in any one day.

12 REVISIONS OF STRATEGIES PLANS AND PROGRAMS

In accordance with Schedule 5, Condition 5 all environmental reports were reviewed as follows:

1. The strategies, plans and programs were reviewed following the previous annual review. No revisions were required.
2. The strategies, plans and programs were also reviewed, amended, submitted to the Department and ultimately approved on 17 March 2017 following Modification 2 (2016) to the Project Approval. This included the revision of the following reports:
 - Landscape Management Plan (Version 3.1);
 - Environmental Management strategy (Version 3.1);
 - Soil and Water Management Plan (Version 2.1);
 - Waste Management Plan (Version 2.1);
 - Air Quality Management Plan (Version 2.1);
 - Transport Management Plan (Version 2.1);
 - Heritage Management Plan (Version 2.1); and
 - Noise Management Plan (Version 2.1).

No further revisions were required

13 RECOMMENDED INCLUSIONS IN THE ANNUAL REVIEW

Table 13.1 – Recommended Inclusions in the Annual Review

Inclusion	Where addressed in Annual Review
Monthly production figures	Section 2.1 and Annexure A
DRE standard quarry production data form	Section 10 and Annexure K
Hours of Operation	Section 2.1 and Annexure B
Reporting Period	Title Page
Comparison of Complaints over previous periods	Section 4
Response to Audit Recommendations	Section 8 and Annexure J
Status of Management Plans	Section 12
Exceedances of Guidelines	Section 3, Section 5.2 and 5.4
Extensions for monitoring	Not Applicable

ANNEXURE A - CHAMPIONS QUARRY MONTHLY PRODUCTION DATA 2016

CHAMPIONS QUARRY

Monthly Returns

1/1/16 - 31/12/16



Month	tonnes
January-16	664.75
February-16	751.20
March-16	128.55
April-16	501.88
May-16	109.55
June-16	71.16
July-16	215.72
August-16	529.70
September-16	217.39
October-16	13.00
November-16	174.80
December-16	38.60
Total	3,416.30

ANNEXURE B - CHAMPIONS QUARRY EXTRACTIVE MATERIAL TRANSPORT 2016

Champions Quarry 2 Pty Ltd
Truck Movements
 January 2016

<u>Date</u>	<u>Qty</u>	<u>Time</u>
11/01/2016	12.80	7.26
11/01/2016	12.60	8.14
11/01/2016	12.65	8.55
11/01/2016	12.80	9.35
11/01/2016	12.80	10.18
11/01/2016	12.80	10.58
12/01/2016	12.00	8.46
12/01/2016	12.05	9.36
15/01/2016	30.25	7.11
15/01/2016	32.60	7.19
15/01/2016	32.20	9.26
15/01/2016	32.65	11.15
19/01/2016	11.95	7.37
19/01/2016	12.20	8.32
19/01/2016	32.85	9.16
19/01/2016	32.60	9.27
19/01/2016	33.05	11.07
19/01/2016	11.85	11.15
19/01/2016	32.45	11.18
19/01/2016	11.90	11.55
19/01/2016	12.10	12.28
19/01/2016	11.95	13.08
19/01/2016	13.00	14.25
19/01/2016	12.15	14.28
20/01/2016	12.85	12.48
20/01/2016	12.85	12.56
20/01/2016	32.50	15.48
20/01/2016	32.20	15.55
28/01/2016	34.30	8.24
28/01/2016	11.45	14.31
29/01/2016	24.15	8.32
29/01/2016	24.00	9.51
29/01/2016	24.20	11.29

Champions Quarry 2 Pty Ltd Truck Movements February 2016

<u>Date</u>	<u>Qty</u>	<u>Time</u>
01/02/2016	11.15	13.13
01/02/2016	11.05	14.05
02/02/2016	32.15	10.47
03/02/2016	26.90	8.37
03/02/2016	12.50	9.47
04/02/2016	32.45	7.51
04/02/2016	32.15	8.01
04/02/2016	32.80	8.13
04/02/2016	33.20	8.21
04/02/2016	32.70	10.12
05/02/2016	33.05	7.10
05/02/2016	33.40	7.19
08/02/2016	33.20	7.44
22/02/2016	32.00	8.52
23/02/2016	32.05	14.27
23/02/2016	32.50	15.27
23/02/2016	4.55	11.50
26/02/2016	32.20	11.24
29/02/2016	33.20	8.47
29/02/2016	32.30	8.58
29/02/2016	32.40	9.37
29/02/2016	32.55	9.59
29/02/2016	32.45	10.51
29/02/2016	33.30	11.03
29/02/2016	32.55	11.19
29/02/2016	32.45	11.37

Champions Quarry 2 Champions Quarry 2 Pty Ltd
Truck Movements
March 2016

<u>Date</u>	<u>Qty</u>	<u>Time</u>
04/03/2016	31.85	8.56
04/03/2016	31.95	10.00
31/03/2016	32.25	11.14
31/03/2016	32.50	12.17

Champions Quarry 2 Pty Ltd

Truck Movements

April 2016

<u>Date</u>	<u>Qty</u>	<u>Time</u>
01/04/2016	32.20	15.51
02/04/2016	8.05	7.55
02/04/2016	9.60	8.17
02/04/2016	9.60	8.20
05/04/2016	12.89	15.25
05/04/2016	12.40	15.35
05/04/2016	12.89	16.09
07/04/2016	32.48	13.07
09/04/2016	32.38	9.37
09/04/2016	32.56	11.31
12/04/2016	12.33	10.19
12/04/2016	31.86	15.56
19/04/2016	12.79	8.25
20/04/2016	12.98	8.53
22/04/2016	32.60	8.49
22/04/2016	12.42	11.27
26/04/2016	31.85	12.39
26/04/2016	30.83	11.32
26/04/2016	30.49	14.00
26/04/2016	32.60	14.57
28/04/2016	32.57	14.25
28/04/2016	33.51	15.09

Champions Quarry 2 Pty Ltd
Truck Movements
May 2016

<u>Date</u>	<u>Qty</u>	<u>Time</u>	
19/05/2016	12.27	10.19	Martin Bros
25/05/2016	32.29	13.41	
27/05/2016	32.26	13.02	
27/05/2016	32.73	14.16	

Champions Quarry 2 Pty Ltd

Truck Movements

June 2016

<u>Date</u>	<u>Qty</u>	<u>Time</u>
10/06/2016	12.73	9.51
10/06/2016	13.49	10.58
16/06/2016	12.11	8.55
16/06/2016	12.71	15.52
16/06/2016	8.13	14.03
16/06/2016	11.99	11.18

Champions Quarry 2 Pty Ltd

Truck Movements

July 2016

<u>Date</u>	<u>Qty</u>	<u>Time</u>
01/07/2016	12.58	15.52
01/07/2016	12.75	10.48
01/07/2016	12.43	11.12
01/07/2016	12.51	11.33
01/07/2016	12.53	11.55
01/07/2016	12.56	12.15
01/07/2016	12.57	12.34
01/07/2016	12.52	12.51
01/07/2016	12.28	7.09
01/07/2016	12.44	8.17
05/07/2016	11.10	17.02
05/07/2016	11.28	12.30
05/07/2016	11.51	11.29
08/07/2016	12.50	14.32
08/07/2016	30.59	9.10
08/07/2016	12.57	15.25
21/07/2016	1.00	9.42

Champions Quarry 2 Pty Ltd
Truck Movements
August 2016

<u>Date</u>	<u>Qty</u>	<u>Time</u>
08/08/2016	32.07	13.34
09/08/2016	10.22	14.27
09/08/2016	10.51	15.27
09/08/2016	9.99	16.24
09/08/2016	1.00	11.14
10/08/2016	10.77	10.58
10/08/2016	10.34	12.05
10/08/2016	9.80	14.33
10/08/2016	10.28	15.20
10/08/2016	10.09	16.27
11/08/2016	10.00	14.09
11/08/2016	10.58	9.02
11/08/2016	11.48	12.56
11/08/2016	11.82	15.57
12/08/2016	11.25	10.27
17/08/2016	12.39	11.06
17/08/2016	12.92	11.38
17/08/2016	12.47	12.00
17/08/2016	12.58	12.20
17/08/2016	12.34	12.43
17/08/2016	12.85	13.01
17/08/2016	12.57	13.28
17/08/2016	12.33	14.45
17/08/2016	12.84	15.10
17/08/2016	12.88	15.37
19/08/2016	32.49	10.17
19/08/2016	13.09	14.36
19/08/2016	13.03	15.31
19/08/2016	12.98	15.35
19/08/2016	32.77	16.08
22/08/2016	13.04	14.16
23/08/2016	9.87	15.36
23/08/2016	10.04	16.42
26/08/2016	10.42	14.06
26/08/2016	10.23	14.59
26/08/2016	10.38	15.48
26/08/2016	10.31	16.33
29/08/2016	1.00	13.02
30/08/2016	10.68	16.25
31/08/2016	10.77	11.19
31/08/2016	9.90	12.24
31/08/2016	10.70	15.56

Champions Quarry 2 Pty Ltd

Truck Movements

August 2016

31/08/2016	10.63	16.43
31/08/2016	1.00	9.14

Champions Quarry 2 Pty Ltd

Truck Movements

September 2016

<u>Date</u>	<u>Qty</u>	<u>Time</u>
01/09/2016	10.75	12.14
02/09/2016	32.61	
02/09/2016	32.16	14.10
05/09/2016	6.00	9.08
05/09/2016	6.00	15.50
05/09/2016	10.34	16.09
06/09/2016	10.27	12.22
06/09/2016	10.32	16.18
06/09/2016	32.56	9.15
06/09/2016	32.66	12.17
07/09/2016	12.11	9.06
08/09/2016	10.86	16.39
09/09/2016	10.75	9.08
09/09/2016	10.80	12.12
22/09/2016	1.00	10.18
26/09/2016	12.33	11.04
26/09/2016	1.00	11.45
27/09/2016	12.20	14.32
27/09/2016	11.55	15.22
27/09/2016	12.70	16.00
27/09/2016	13.01	16.37
27/09/2016	32.94	16.42
27/09/2016	12.60	11.14
27/09/2016	6.00	12.51
13/09/2016	1.00	9.14
13/09/2016	1.00	10.28

Champions Quarry 2 Pty Ltd
Transaction Detail by Account

October 2016

Date	Qty	Time
26/10/2016	10.00	11.14
06/10/2016	1.00	13.14
12/10/2016	1.00	9.16
31/10/2016	1.00	12.01

Champions Quarry 2 Pty Ltd
Transaction Detail by Account
November 2016

Date	Qty	Time
29/11/2016	33.05	14.13
29/11/2016	32.05	14.16
29/11/2016	33.05	15.05
29/11/2016	33.95	15.10
30/11/2016	32.70	14.30
04/11/2016	1.00	11.06
08/11/2016	1.00	12.34
29/11/2016	4.00	9.42
30/11/2016	3.00	9.19
14/11/2016	1.00	12.14

Champions Quarry 2 Pty Ltd
Transaction Detail by Account
December 2016

Date	Qty	Time
09/12/2016	12.65	8.47
09/12/2016	12.65	11.13
09/12/2016	12.30	13.02
09/12/2016	1.00	12.50

ANNEXURE C - CHAMPIONS QUARRY NOISE MONITORING RESULTS

Date	Location	Type of Noise Monitoring	Relevant Criteria	Result	Compliance/ Non-Compliance	If Non-Compliance - Reasons/Notes	
5/08/2014	NAL 3	Additional Operational Testing	37	33.9	Compliance	N/A	
5/08/2014	NAL 3	Additional Operational Testing	37	32.7	Compliance	N/A	
26/09/2014	NAL 2	Receiver Complaint	37	34.9	Compliance	N/A	
4/11/2014	NAL 2	Routine - Quarterly	37	33.1	Compliance	N/A	
4/11/2014	NAL 3	Routine - Quarterly	37	34.7	Compliance	N/A	
11/03/2015	NAL 2	Routine - Quarterly	37	32.4	Compliance	N/A	
11/03/2015	NAL 3	Routine - Quarterly	37	36.5	Compliance	N/A	
18/08/2015	Onsite	Routine - Annually Plant and Equipment					
		Mobile Screening Plant - Striker	114	105.8	Compliance	N/A	
		Mobile Screening Plant - McCloskey	114	111.6	Compliance	N/A	
		Site Truck - Ford Louisville	91	90.3	Compliance	N/A	
		Dump Truck - Komatsu	119	106.2	Compliance	N/A	
		Water Truck - Isuzu	90	91.1	Compliance ³	N/A	
		Excavator - Komatsu PC300LC-8	106	106.2	Compliance ³	N/A	
		Excavator - Kobelco SK350LC-8	106	108.0	Compliance ³	N/A	
		Front End Loader - Hyundai HL-770	101	98.7	Compliance	N/A	
		Front End Loader - Komatsu WA500-3	101	101.4	Compliance ³	N/A	
10/09/2015	NAL 1	Routine - Annually	35	42.4	Noise Criteria Does Not Apply ¹	Operational Background	42.4 48.0
10/09/2015	NAL 4	Routine - Annually	38	44.4	Noise Criteria Does Not Apply ¹	Operational Background	44.4 47.5
10/09/2015	NAL 5	Routine - Annually	38	43.8	Noise Criteria Does Not Apply ¹	Operational Background	43.8 46.6

Date	Location	Type of Noise Monitoring	Relevant Criteria	Result	Compliance/ Non-Compliance	If Non-Compliance - Reasons/Notes	
15/09/2015	NAL 2	Routine - Annually	37	36.9	Compliance	N/A	
15/09/2015	NAL 3	Routine - Annually	37	37.0	Compliance	N/A	
26/11/2015	NAL 2	Routine - Quarterly	37	40.6	Compliance ²	Operational	40.6
						Background	41.7
9/12/2015	Onsite	Additional Plant and Equipment					
		Bulldozer - D9T CAT	109	109.2	Compliance ³	N/A	
9/12/2015	NAL 1	Routine Annually (Repeated Test)	35	42.8	Compliance ²	Operational	42.8
						Background	42.9
9/12/2015	NAL 4	Routine Annually (Repeated Test)	38	42.2	Compliance ²	Operational	42.2
						Background	42.9
9/12/2015	NAL 5	Routine Annually (Repeated Test)	38	44.0	Compliance ²	Operational	44.0
						Background	47.9
9/12/2015	NAL 3	Routine Quarterly	37	38.1	Compliance ³	N/A	
21/01/2016	NAL 2	Routine Quarterly	37	42.2	Compliance ²	Operational	42.2
						Background	44.4
21/01/2016	NAL 3	Routine Quarterly	37	57.0	Compliance ²	Operational	57.0
						Background	57.5
1/06/2016	NAL 2	Routine Quarterly	37	38.2	Compliance ³	N/A	
1/06/2016	NAL 3	Routine Quarterly	37	36.7	Compliance	N/A	
16/11/2016	NAL 2	Routine Quarterly	37	38.7	Compliance ³	N/A	
16/11/2016	NAL 3	Routine Quarterly	37	32.0	Compliance	N/A	

Notes:

- Noise Criteria Does Not Apply in accordance with the relevant EPA Licence as the mean wind speed at 10 metres is >3m/s.
- Background levels exceeded operational levels.
- Result within 2 dB(A) of relevant criteria, not discernible by human ear and therefore deemed compliance.

ANNEXURE D – CHAMPIONS QUARRY SURFACE WATER MONITORING RESULTS (MP1-MP6)

Monitoring Point+1:63t	Date	Sampling Conditions	pH	Conductivity	Nitrate (NO ₃)	Aluminium (Al)	Total Arsenic (As)	Cadmium (Cd)	Total Chromium (Cr)	Copper (Cu)	Mercury (Hg)	Nickel (Ni)	Oil & Grease	Total Suspended Solids	Lead (Pb)	Zinc (Zn)
ANZECC 2000 Trigger Values ¹			6.5-8.5 ²	0.350 (dS/m)	0.7 (mg/L)	0.055 (mg/L)	0.024 (mg/L)	0.0002 (mg/L)	n/s (mg/L)	0.0014 (mg/L)	0.0006 (mg/L)	0.011 (mg/L)	No visible sheen or detectable odour	50 (mg/L) ³	0.0034 (mg/L)	0.008 (mg/L)
MP1	17/06/2014	Flow	5.85	0.157	<0.005	0.808	<0.001	<0.001	0.001	0.001	<0.0005	0.001	None	4	<0.001	0.004
	23/10/2014	Flow	7.13	0.159	0.014	0.1	<0.001	<0.001	<0.001	0.001	<0.0005	0.001	None	9	<0.001	<0.001
	22/01/2015	Flow	6.98	0.196	<0.005	0.11	<0.001	<0.001	<0.001	0.001	<0.0005	0.001	None	10	<0.001	0.002
	6/03/2015	Flow - following heavy rain	6.87	0.134	0.019	0.09	<0.001	<0.0001	<0.001	0.002	<0.0005	0.001	None	11	<0.001	0.002
	7/04/2015	Flow - following heavy rain	6.7	0.123	0.166	1.994	0.001	<0.0001	0.002	0.002	<0.0005	0.002	None	25	<0.001	0.005
	13/08/2015	Flow	7.25	0.152	0.024	0.119	<0.001	<0.0001	<0.001	<0.001	<0.0005	0.001	None	11	<0.001	0.002
	18/12/2015	Flow	6.18	0.153	0.02	0.281	<0.001	<0.0001	0.001	0.001	<0.0005	0.001	None	20	<0.001	0.006
	26/05/2016	Flow	7.01	0.152	0.049	0.108	<0.001	<0.0001	<0.001	0.001	<0.0005	<0.001	None	13	<0.001	0.001
	10/06/2016	Flow - following heavy rain	6.43	0.123	0.296	0.177	<0.001	<0.001	<0.001	0.001	<0.0005	0.001	None	8	<0.001	0.002
MP2	16/11/2016	Flow	7.07	0.164	0.007	0.137	<0.001	<0.001	<0.001	0.001	<0.005	0.001	None	8	<0.001	0.004
	17/06/2014	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23/10/2014	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22/01/2015	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6/03/2015	Flow - following heavy rain	6.08	0.185	0.031	0.284	0.001	<0.0001	0.001	0.002	<0.0005	0.003	None	13	<0.001	0.006
	7/04/2015	Flow - following heavy rain	6.38	0.111	0.035	2.894	<0.001	0	0.002	0.004	<0.0005	0.004	None	6	<0.001	0.025
	13/08/2015	Minimal flow	6.37	0.244	<0.005	0.554	<0.001	<0.0001	0.001	0.002	<0.0005	0.002	None	33	<0.001	0.006
	18/12/2015	Minimal flow	5.78	0.151	0.003	0.18	0.001	<0.0001	<0.001	0.001	<0.0005	0.001	None	24	<0.001	0.032
	26/05/2016	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MP3	10/06/2016	Flow - following heavy rain	5.94	0.093	<0.005	0.992	<0.001	<0.001	0.001	0.002	<0.0005	0.001	None	17	<0.001	0.015
	16/11/2016	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17/06/2014	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23/10/2014	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22/01/2015	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6/03/2015	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7/04/2015	Flow - following heavy rain	5.88	0.098	0.015	1.475	<0.001	<0.0001	0.001	0.001	<0.0005	0.001	None	6	<0.001	0.006
	13/08/2015	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18/12/2015	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MP6	26/05/2016	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/06/2016	Flow - following heavy rain	5	0.106	<0.005	0.256	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	None	2	<0.001	0.007
	16/11/2016	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-

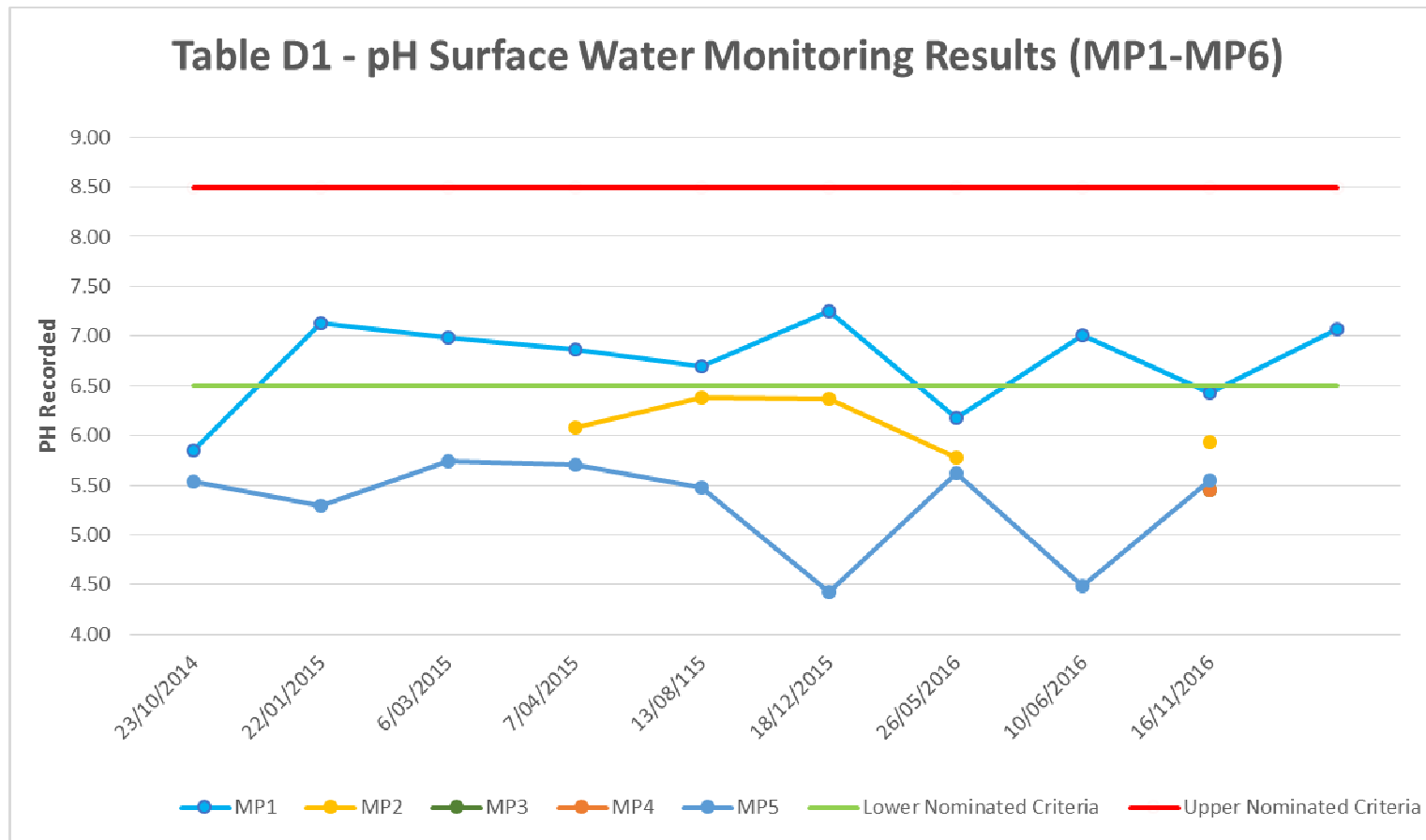
Monitoring Point+1:63t	Date	Sampling Conditions	pH	Conductivity	Nitrate (NO ₃)	Aluminium (Al)	Total Arsenic (As)	Cadmium (Cd)	Total Chromium (Cr)	Copper (Cu)	Mercury (Hg)	Nickel (Ni)	Oil & Grease	Total Suspended Solids	Lead (Pb)	Zinc (Zn)
ANZECC 2000 Trigger Values ¹			6.5-8.5 ²	0.350 (dS/m)	0.7 (mg/L)	0.055 (mg/L)	0.024 (mg/L)	0.0002 (mg/L)	n/s (mg/L)	0.0014 (mg/L)	0.0006 (mg/L)	0.011 (mg/L)	No visible sheen or detectable odour	50 (mg/L) ³	0.0034 (mg/L)	0.008 (mg/L)
MP4	17/06/2014	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23/10/2014	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22/01/2015	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6/03/2015	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7/04/2015	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13/08/2015	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18/12/2015	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26/05/2016	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/06/2016	Flow - following heavy rain	5.45	0.137	0.005	0.197	<0.001	<0.001	<0.001	0.001	<0.0005	0.001	None	4	<0.001	0.004
	16/11/2016	Insufficient Water Levels	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MP5	17/06/2014	No discharge from WRD	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23/10/2014	Yes	5.54	0.102	0.015	0.35	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	None	44	<0.001	0.001
	22/01/2015	Yes	5.29	0.123	<0.005	0.184	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	None	6	<0.001	0.002
	6/03/2015	Yes	5.74	0.076	0.005	0.445	<0.001	<0.0001	<0.001	<0.001	<0.0005	0.001	None	66	<0.001	0.002
	7/04/2015	Yes - following heavy rain	5.71	0.074	0.058	2.335	0.001	<0.0001	0.001	0.001	<0.0005	0.001	None	266	0.001	0.003
	13/08/115	Yes	5.47	0.059	0.119	1.552	<0.001	<0.0001	0.001	<0.001	<0.0005	<0.001	None	262	0.001	0.002
	18/12/2015	Yes	4.42	0.061	0.027	3.984	<0.001	<0.0001	0.003	<0.001	<0.0005	0.001	None	72	0.001	0.006
	26/05/2016	Yes	5.62	0.063	0.031	0.539	<0.001	<0.0001	<0.001	<0.001	<0.0005	<0.001	None	78	<0.001	0.001
	10/06/2016	Flow - following heavy rain	4.48	0.049	0.095	2.078	<0.001	<0.001	0.001	0.001	<0.0005	<0.001	None	478	0.002	0.003
	16/11/2016	Yes	5.55	0.066	0.041	0.419	<0.001	<0.001	<0.001	0.001	<0.005	<0.001	None	45	<0.001	0.004
MP6	17/06/2014	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23/10/2014	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22/01/2015	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6/03/2015	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7/04/2015	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	13/08/2015	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18/12/2015	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	26/05/2016	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/06/2016	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	16/11/2016	No Discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MP7 (pH Only)		SEE ALTERNATIVE TABLE														

1. Initially data will be compared against ANZECC Trigger Values with the aim to develop site specific trigger levels after 2 years of operations once a larger data set is available.

2. pH level required will be reviewed following collection of baseline monitoring data in accordance with the Project Approval. Specifically it is noted that the pH of nearby soil and receiving waters are mildly acidic pH4.5-pH5.3. The natural acidic soil conditions encountered at the Project Site and subsequent influence on runoff may require that maintenance of ambient condition is the preferred water quality goal.

3. Maximum level once the stormwater management system is constructed and operational. Exceedance permitted at overflow point for duration of overflow when wet weather overflow is occurring due to stormwater events $\geq 60.2\text{mm}$ in total falling over any consecutive 5 day period.

4. Data in **bold** indicates the data is outside the trigger levels.



Note: Monitoring Point 1 experienced pH levels below the ANZECC Guidelines – This is consistent with the data collected in the previous year and is upstream of the Quarry.

Monitoring Points 2, 3, 4 and 5 experienced pH levels below the ANZECC Guidelines – The EA Documents note that the pH of nearby soil and receiving waters are mildly acidic pH 4.5 – pH 5.3. This is consistent with the data collected in the previous year and Environmental Assessment predictions. The natural acidic soil conditions encountered at the Project Site and subsequent influence on runoff may require that maintenance of ambient condition is the preferred water quality goal. Hence, adjusting the pH to neutral conditions may result in unintended impacts on downstream aquatic ecosystems. This will be determined when site specific trigger levels are established.

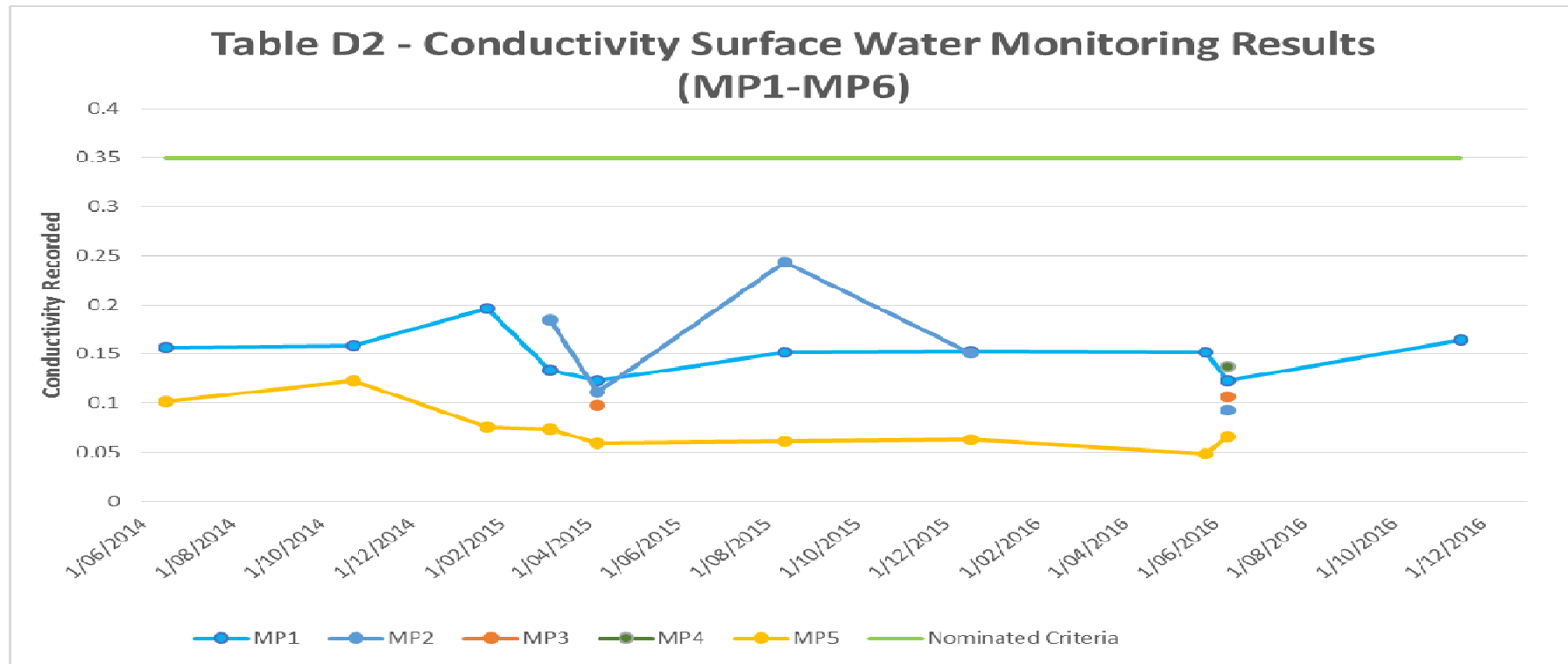
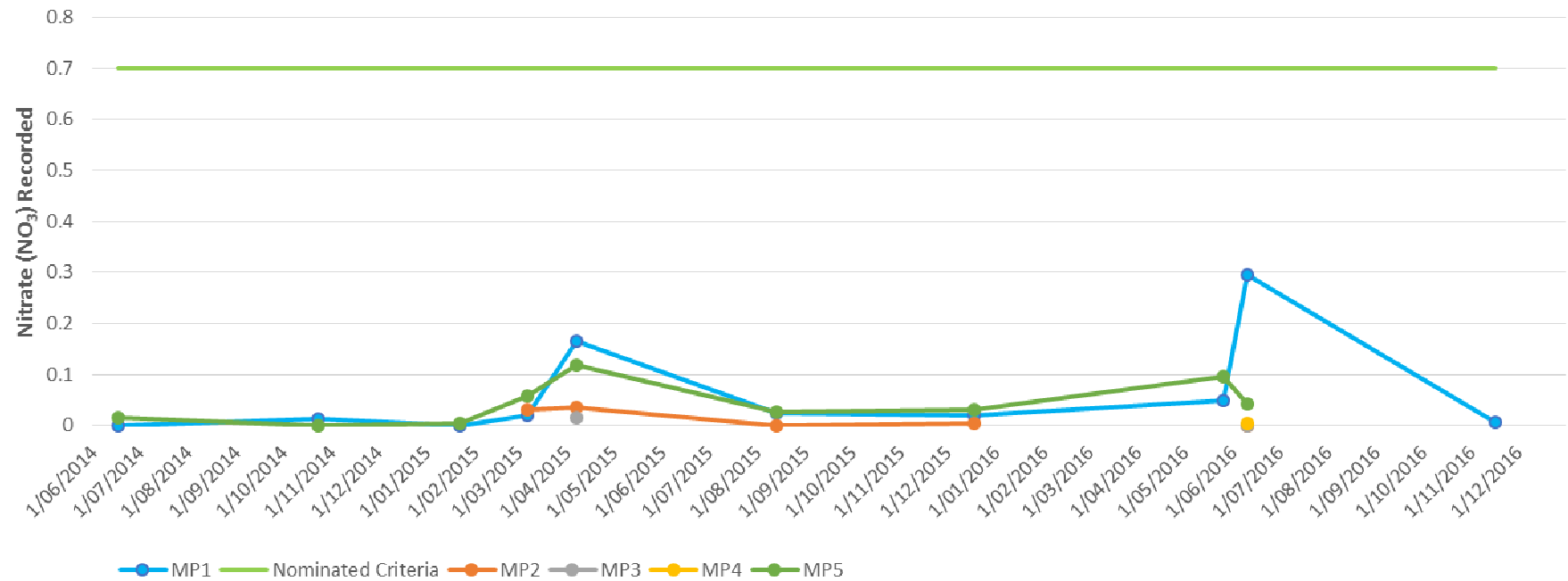
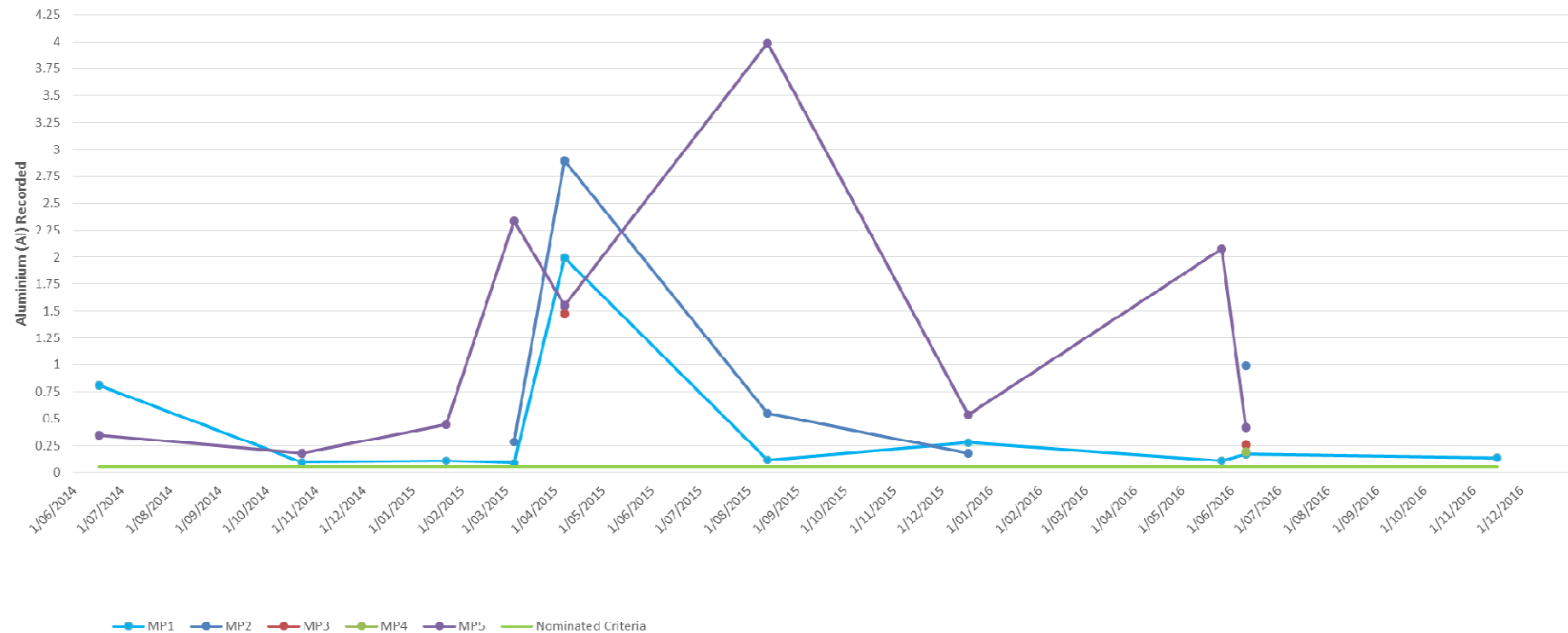


Table D3 - Nitrate (NO₃) Surface Water Monitoring Results (MP1-MP6)



Note: Results with a < value are shown at maximum possible value

Table D4 - Aluminium (Al) Surface Water Monitoring Results (MP1-MP6)

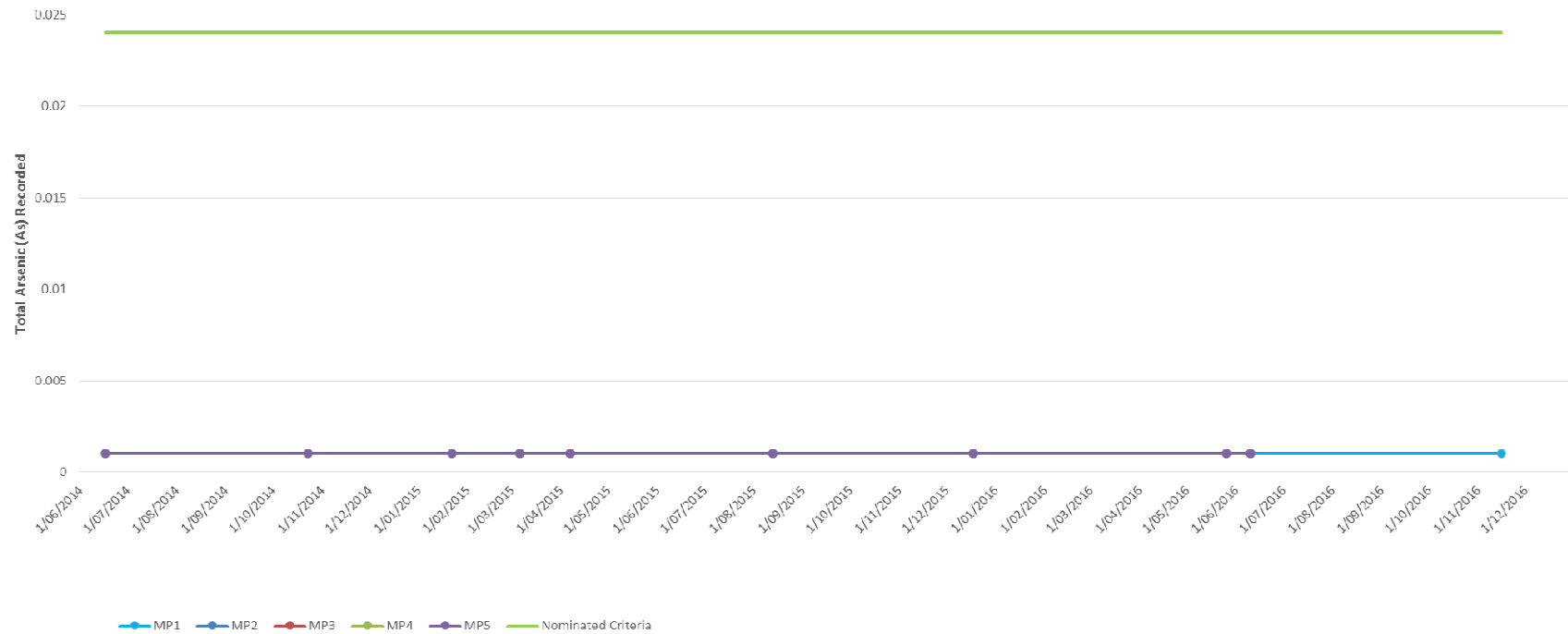


Note: Results with a < value are shown at maximum possible value

Monitoring Points 1, 2, 3, 4 and 5 experienced Aluminium levels that were above the ANZECC Guidelines – Champions Quarry has no control over the levels of Monitoring Point 1 as Monitoring Point 1 is in Tucki Tucki Creek and upstream of the Quarry.

Monitoring Points 2, 3, 4 and 5 shows higher Aluminium levels. This is consistent with the data collected in the previous year and with the baseline data collected closer to the Quarry during 2008 and Environmental Assessment predictions. We note that no environmental assessment predictions were available for Monitoring Point 5 as the Water Reuse Dam was not in existence at the time of the Assessment.

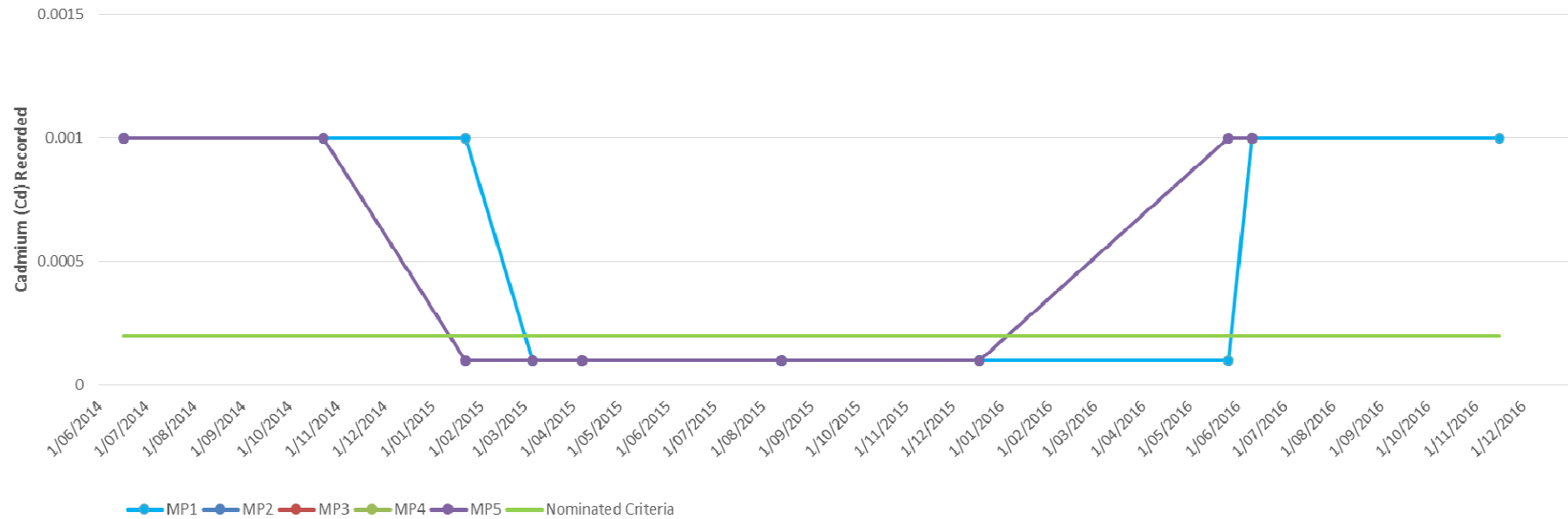
Table D5 - Total Arsenic (As) Surface Water Monitoring Results (MP1-MP6)



Results with a < value are shown at maximum possible value

Note:

Table D6 - Cadmium (Cd) Surface Water Monitoring Results (MP1-MP6)



Note: Results with a < value are shown at maximum possible values

Note: MP1, MP2, MP3, MP4 and MP5 all recorded a level of <0.001mg/L from June 2014 to January 2015 mg/L. This is artificially inflated as EAL were only testing to <0.001 rather than <0.0001 as EAL normally only test to 3 decimal places. EAL were then instructed to test to <0.0001mg/L which they did from March 2015 to May 2016, they then reverted to testing to <0.001mg/L.

Table D7 - Total Chromium (Cr) Surface Water Monitoring Results (MP1-MP6)

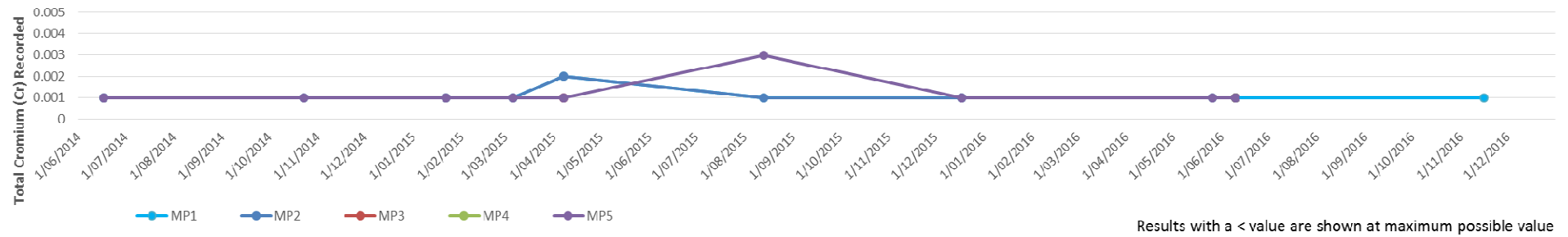
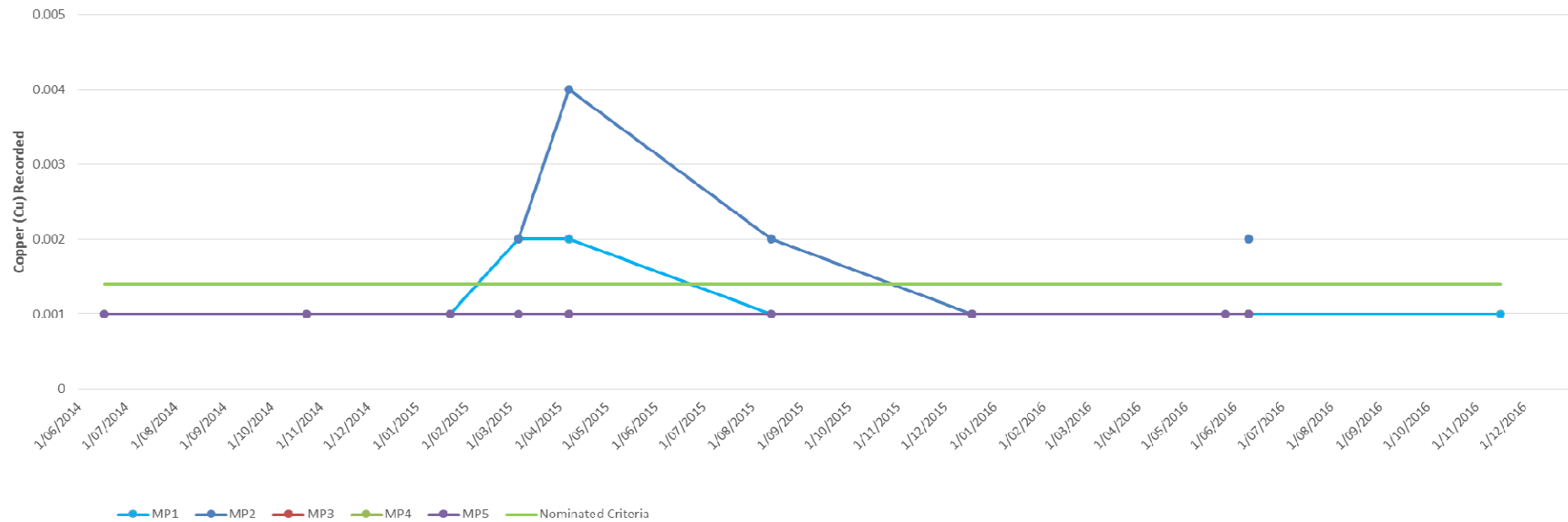


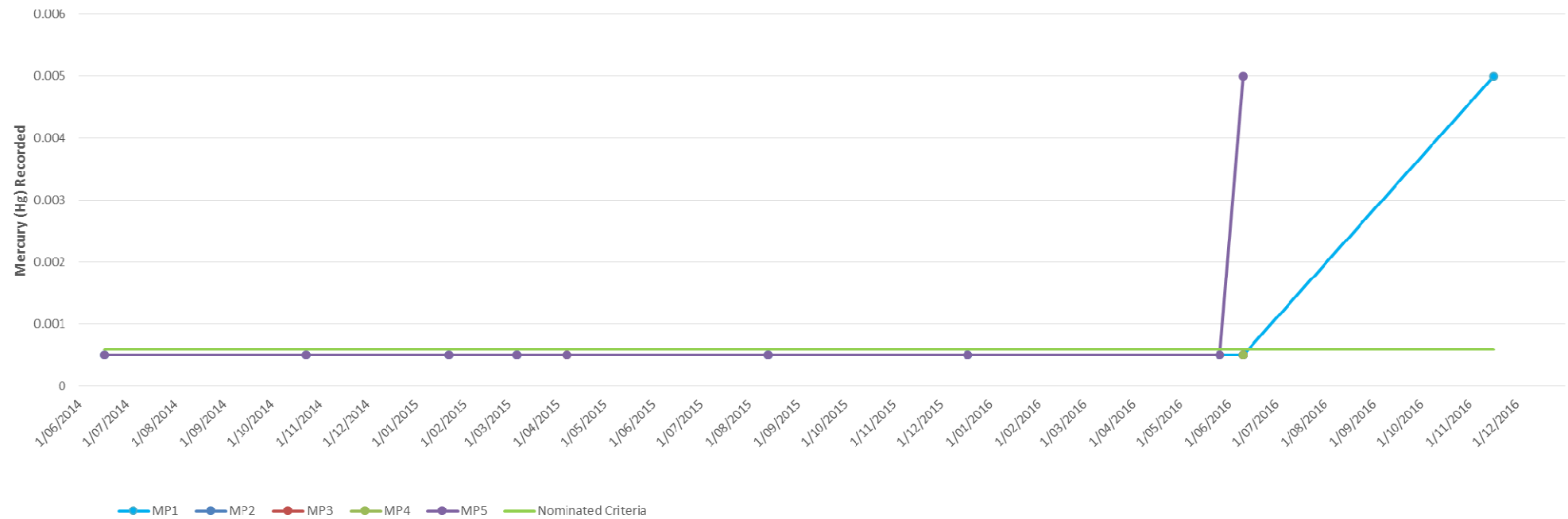
Table D8 - Copper (Cu) Surface Water Monitoring Results (MP1-MP6)



Note: Results with a < value are shown at maximum possible value

Monitoring Points 1 and 2 experienced Copper levels that were above the ANZECC Guidelines. Both Monitoring Points shows slightly higher Copper levels and this is in line with data from the previous year. We note, Monitoring Point 1 is upstream of the Quarry. Notwithstanding this, Monitoring Point 3 located at the Quarry has acceptable Copper levels. The Copper levels of Monitoring Point 2 being at least 1.5 kilometres from the Quarry may be attributable to other factors such as grazing activities or significant rain/runoff or agricultural interactions.

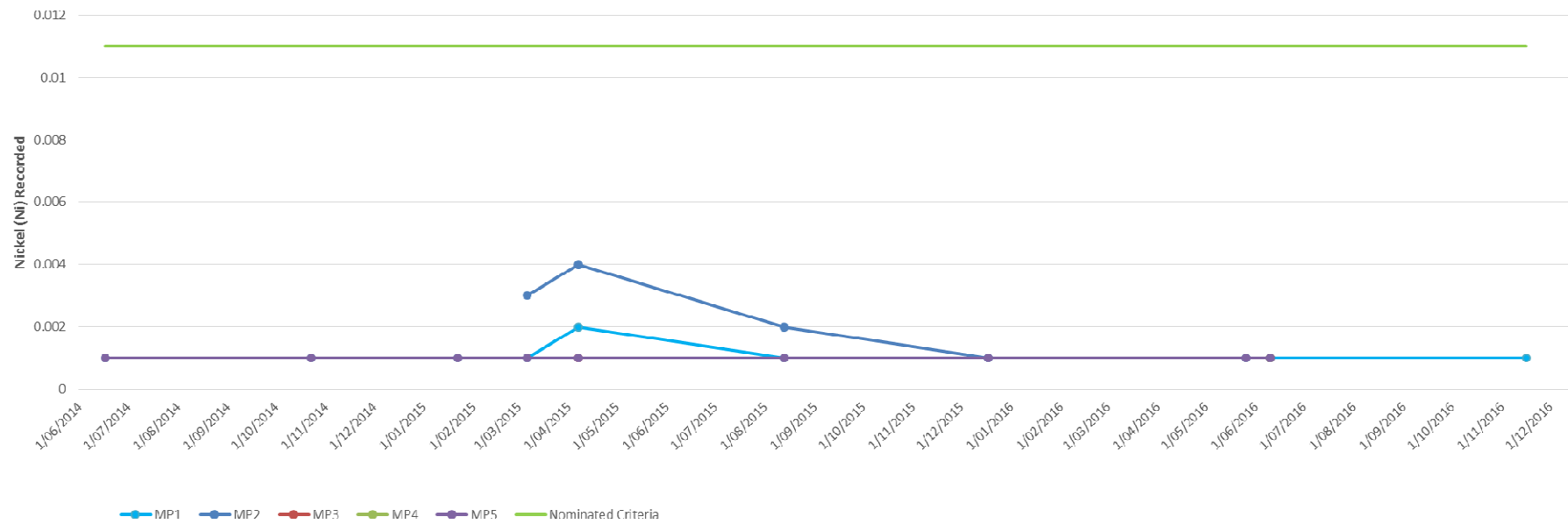
Table D9 - Mercury (Hg) Surface Water Monitoring Results (MP1-MP6)



Note: Results with a < value are shown at maximum possible value

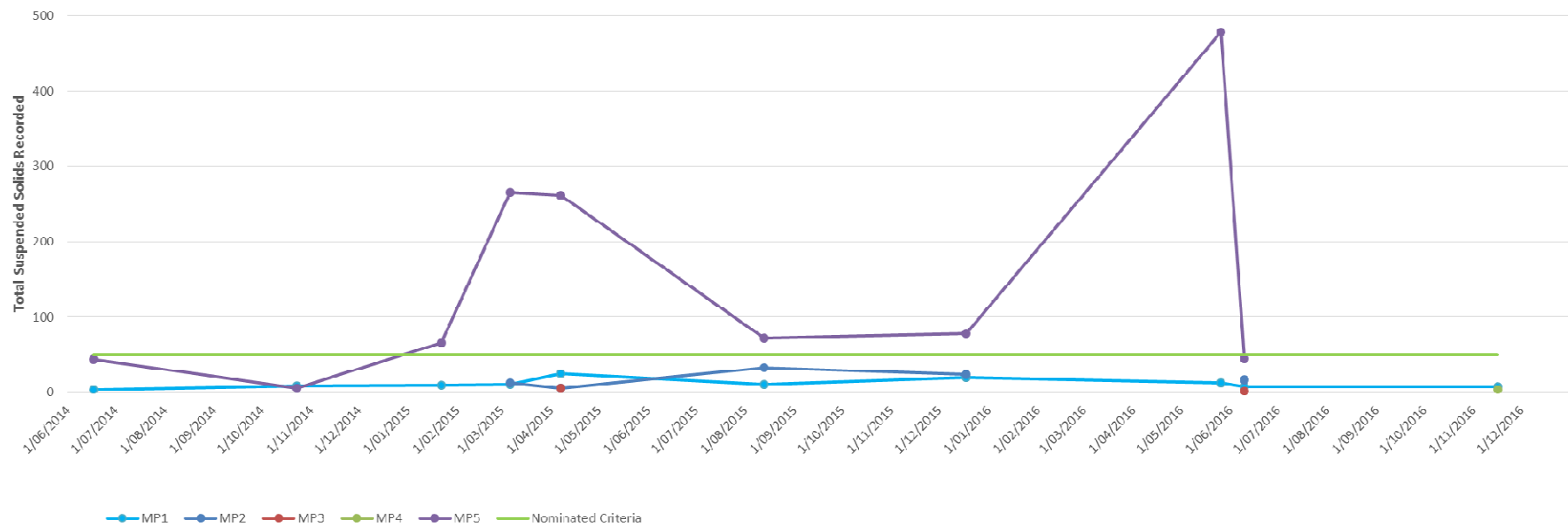
Note: MP2 and MP5 recorded a level of <0.0005mg/L up until 16 November 2016 at which time the EAL only tested to <0.005mg/L rather than <0.0005mg/L. Accordingly, the result is artificially inflated for these two sets of data.

Table D10 - Nickel (Ni) Surface Water Monitoring Results (MP1-MP6)



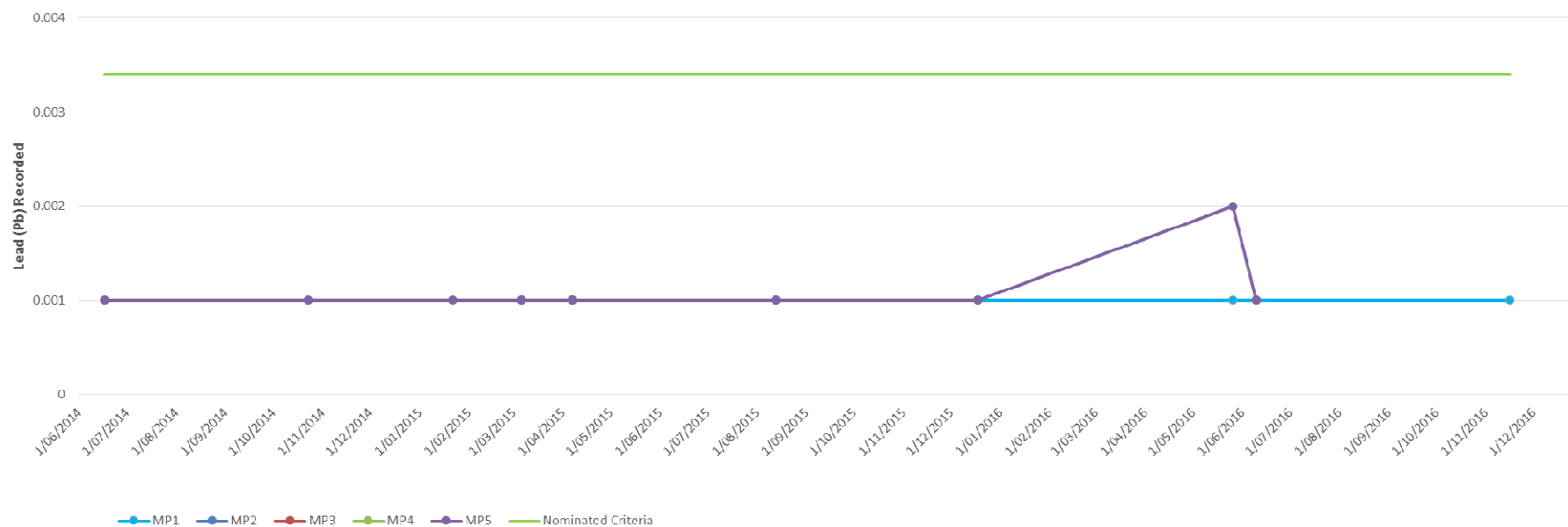
Note: Results with a < value are shown at maximum possible value

Table D11 - Total Suspended Solids Surface Water Monitoring Results (MP1-MP6)



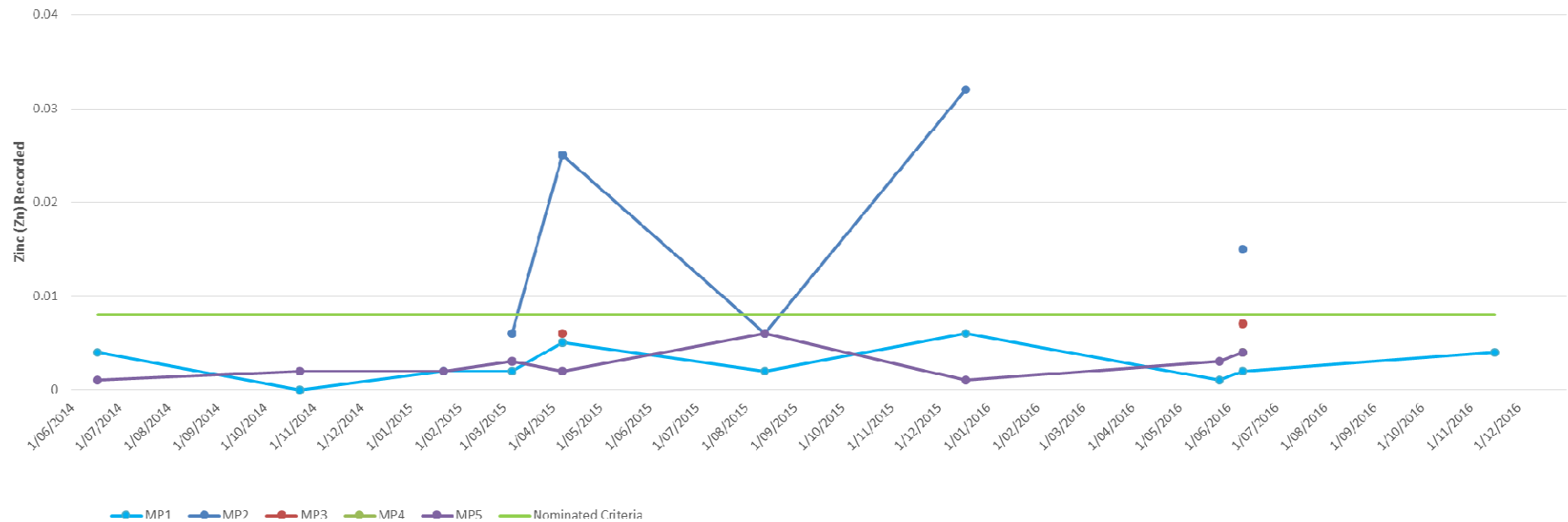
Monitoring Point 5 experienced Total Suspended Solids levels that were above the ANZECC Guidelines. There were no discharges from Monitoring Point 5 (the Water Reuse Dam) but higher levels were following significant heavy rain. Future treatments of the Water Reuse Dam with Lime or similar will aim to control the levels of Total Suspended Solids.

Table D12 - Lead (Pb) Surface Water Monitoring Results (MP1-MP6)



Note: Results with a < value are shown at maximum possible value

Table D13 - Zinc (Zn) Surface Water Monitoring Results (MP1-MP6)



Note: Results with a < value are shown at maximum possible value

Monitoring Point 2 experienced zinc levels above the ANZECC Guidelines. Monitoring Point 2 is located 1.5 kilometres from the Quarry. However, Monitoring Point 3 located at the quarry has acceptable Zinc levels. Hence the Zinc levels of Monitoring Point 2 being at least 1.5 kilometres from the Quarry may be attributable to other factors such as grazing activities or significant rain/runoff or agricultural interactions.

ANNEXURE E – CHAMPIONS QUARRY WATER REUSE DAM (MP7) – pH RESULTS

Monitoring Point	Date	pH
		6.5-8.5 ¹
MP7	17/06/2014	5.24
MP7	24/06/2014	5.32
MP7	7/07/2014	5.51
MP7	15/07/2014	5.72
MP7	22/07/2014	5.27
MP7	29/07/2014	5.49
MP7	5/08/2014	5.70
MP7	12/08/2014	5.27
MP7	18/08/2014	5.36
MP7	26/08/2014	5.41
MP7	3/09/2014	5.51
MP7	9/09/2014	5.85
MP7	18/09/2014	5.72
MP7	24/09/2014	5.63
MP7	2/10/2014	5.81
MP7	9/10/2014	5.70
MP7	15/10/2014	5.76
MP7	23/10/2014	5.54
MP7	28/10/2014	5.68
MP7	4/11/2014	5.71
MP7	TESTER UNAVAILABLE	-
MP7	19/11/2014	5.62
MP7	24/11/2014	5.65
MP7	2/12/2014	5.53
MP7	9/12/2014	5.61
MP7	17/12/2014	5.57
MP7	26/12/2014	5.81
MP7	2/01/2015	5.76
MP7	7/01/2015	5.71
MP7	13/01/2015	5.72
MP7	22/01/2015	5.29
MP7	28/01/2015	5.45
MP7	4/02/2015	5.49
MP7	11/02/2015	5.56
MP7	18/02/2015	5.61
MP7	25/02/2015	5.58
MP7	4/03/2015	5.72
MP7	6/03/2015	5.74
MP7	12/03/2015	5.79

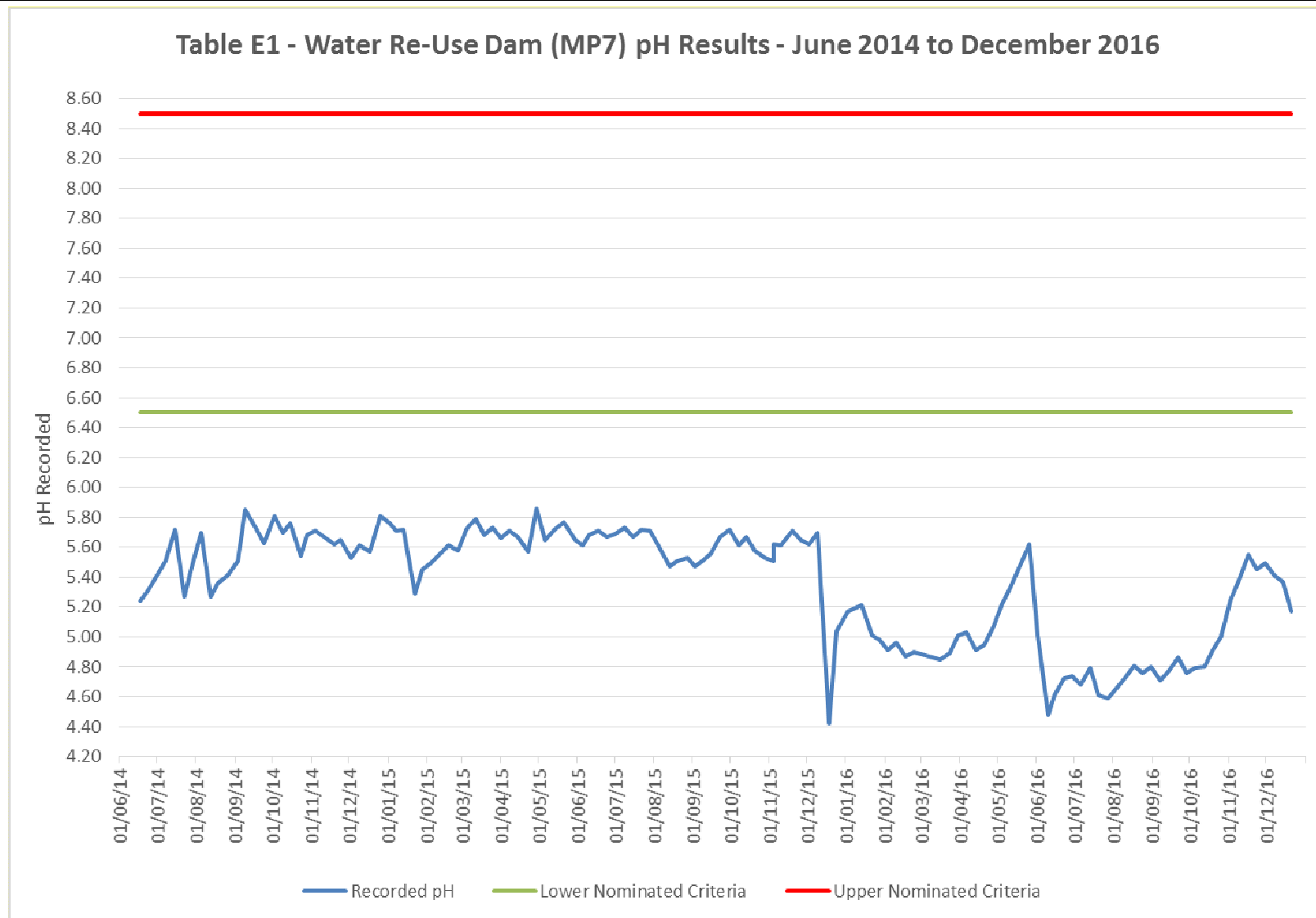
MP7	18/03/2015	5.68
MP7	25/03/2015	5.73
MP7	1/04/2015	5.66
MP7	7/04/2015	5.71
MP7	14/04/2015	5.67
MP7	22/04/2015	5.57
MP7	29/04/2015	5.86
MP7	6/05/2015	5.65
MP7	13/05/2015	5.72
MP7	21/05/2015	5.77
MP7	30/05/2015	5.65
MP7	5/06/2015	5.61
MP7	10/06/2015	5.68
MP7	17/06/2015	5.71
MP7	24/06/2015	5.67
MP7	1/07/2015	5.69
MP7	8/07/2015	5.73
MP7	15/07/2015	5.67
MP7	22/07/2015	5.72
MP7	28/07/2015	5.71
MP7	4/08/2015	5.61
MP7	13/08/2015	5.47
MP7	19/08/2015	5.51
MP7	27/08/2015	5.53
MP7	2/09/2015	5.47
MP7	8/09/2015	5.51
MP7	15/09/2015	5.56
MP7	22/09/2015	5.67
MP7	30/09/2015	5.72
MP7	7/10/2015	5.61
MP7	13/10/2015	5.67
MP7	20/10/2015	5.58
MP7	28/10/2015	5.53
MP7	4/11/2015	5.51
MP7	10/11/2015	5.61
MP7	19/11/2015	5.71
MP7	26/11/2015	5.65
MP7	4/11/2015	5.62
MP7	10/11/2015	5.61
MP7	19/11/2015	5.71
MP7	26/11/2015	5.65
MP7	2/12/2015	5.62
MP7	9/12/2015	5.7
MP7	18/12/2015	4.42
MP7	24/12/2015	5.04

MP7	2/01/2016	5.17
MP7	TESTER UNAVAILABLE	-
MP7	13/01/2016	5.21
MP7	21/01/2016	5.01
MP7	27/01/2016	4.98
MP7	3/02/2016	4.91
MP7	10/02/2016	4.96
MP7	17/02/2016	4.87
MP7	24/02/2016	4.9
MP7	4/03/2016	4.88
MP7	10/03/2016	4.86
MP7	16/03/2016	4.85
MP7	23/03/2016	4.89
MP7	30/03/2016	5.01
MP7	6/04/2016	5.03
MP7	13/04/2016	4.91
MP7	20/04/2016	4.95
MP7	27/04/2016	5.07
MP7	4/05/2016	5.22
MP7	11/05/2016	5.33
MP7	TESTER UNAVAILABLE	-
MP7	26/05/2016	5.62
MP7	1/06/2016	5.01
MP7	10/06/2016	4.48
MP7	15/06/2016	4.61
MP7	22/06/2016	4.72
MP7	29/06/2016	4.74
MP7	6/07/2016	4.68
MP7	13/07/2016	4.79
MP7	20/07/2016	4.61
MP7	27/07/2016	4.59
MP7	TESTER UNAVAILABLE	-
MP7	10/08/2016	4.72
MP7	17/08/2016	4.81
MP7	24/08/2016	4.76
MP7	31/08/2016	4.8
MP7	7/09/2016	4.71
MP7	14/09/2016	4.77
MP7	21/09/2016	4.86
MP7	28/09/2016	4.76
MP7	5/10/2016	4.79
MP7	12/10/2016	4.8

MP7	19/10/2016	4.91
MP7	26/10/2016	5
MP7	2/11/2016	5.25
MP7	9/11/2016	5.38
MP7	16/11/2016	5.55
MP7	23/11/2016	5.45
MP7	30/11/2016	5.49
MP7	7/12/2016	5.41
MP7	14/12/2016	5.37
MP7	21/12/2016	5.17
MP7	TESTER UNAVAILABLE	-

Notes

- Initially data will be compared against ANZECC pH Trigger Values with the aim to develop site specific trigger levels after 2 years of operations once a larger data set is available to evaluate the optimum outcome for the water quality of discharge waters. Specifically it is noted that the pH of nearby soil and receiving waters are mildly acidic pH4.5-pH5.3. The natural acidic soil conditions encountered at the Project Site and subsequent influence on runoff may require that maintenance of ambient condition is the preferred water quality goal.
- Data in **bold** indicates the data is outside the trigger levels.



Monitoring Point 7 was tested weekly for pH levels. These levels were consistently below the ANZECC Guidelines. This is consistent with the data collected in the previous year and with the baseline data collected closer to the Quarry during 2008. The EA

Documents note that the pH of nearby soil and receiving waters are mildly acidic pH 4.5 – pH 5.3. The natural acidic soil conditions encountered at the Project Site and subsequent influence on runoff may require that maintenance of ambient condition is the preferred water quality goal. Hence, adjusting the pH to neutral conditions may result in unintended impacts on downstream aquatic ecosystems.