

RICHMOND QUARRY

**Annual Review 2021
Calendar Year**

IMS-COMP-G-0875-RQ



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DEFINITIONS

ANZECC	Australian and New Zealand Environment and Conservation Council
CCC	Community Consultative Committee
CEA	Central Extraction Area
DPI&E	NSW Department of Planning, Industry and Environment.
DPI Water	Division of Water within the NSW Department of Planning, Industry and Environment.
DRE	Division of Resources & Energy within the NSW Planning, Industry and Environment
EAL	Environmental Analysis Laboratory
EPA	Environment Protection Authority
EPL	Environment Protection Licence
Extraction Area	The Central and Southern Extraction Areas, shown on Figure 9 in Appendix 6 of the Project Approval
EA	Richmond 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 (MOD 3)	Modification Application MP 09_0080 MOD 3 dated February 2017, titled Annexure A – Application pursuant to Section 75W of the Environmental Planning and Assessment Act 1979, and the response to submissions dated July 2017
DECC	Department of Environment & Climate Change
DRG	Department of Resources & Geoscience
IEA	Independent Environmental Audit
LCC	Lismore City Council
LMP	Landscape Management Plan
MP	Monitoring Point
Project Approval	Project Approval issued by Planning and Assessment Commission of New South Wales containing the CoA dated 30 August 2012 as amended from time to time
NAL	Noise Assessment Location
NATA	National Association of Testing Authorities
NHMRC	National Health and Medical Research Council
OEH	Office of Environmental Heritage
SEA	Southern Extraction Area
Reporting period	The 2021 calendar year

1.0 TITLE BLOCK

Name of operation	Richmond Quarry
Name of operator	GSQ Holdings Pty Ltd
Development consent / project approval #	Part 3A Project Approval 09_0080
Name of holder of development consent / project approval	Richmond Quarry
Mining lease #	NA
Name of holder of mining lease	NA
Water licence #	NA
Name of holder of water licence	NA
MOP/RMP start date	NA
MOP/RMP end date	NA
Annual Review start date	1 January 2021
Annual Review end date	31 December 2021
<p>I, Michael Barnes, certify that this audit report is a true and an accurate record of the compliance status of Richmond Quarry for the period 1 January to 31 December 2021 and that I am authorised to make this statement on behalf of Richmond Quarry.</p> <p>Note.</p> <p>a) The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.</p> <p>b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).</p>	
Name of authorised reporting officer	Michael Barnes
Title of authorised reporting officer	Commercial Manager
Signature of authorised reporting officer	
Date	31/03/2022

2.0 INTRODUCTION

2.1 SCOPE

This Annual Review has been prepared in accordance with Condition 4, Schedule 5 (Condition 4(5)) of Project Approval (MP 09_000) for Richmond Quarry. This review covers the calendar year reporting period from 1 January 2021 to 31 December 2021.

Condition 4(5) and all other relevant conditions required as part of the Annual Review are outlined in Table 1 with reference to the section of this report where each has been addressed.

Table 1: Relevant Conditions of Approval

Condition of Approval	Condition Requirements	Section Addressed in Report
Condition 4(5)	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. This 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;	3.1, 3.2, 3.3, 5.0, 6.0
	(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: <ul style="list-style-type: none"> • the relevant statutory requirements, limits or performance measures/criteria; • the monitoring results of previous years; and • the relevant predictions in the documents listed in condition 2(a) of Schedule 2; 	5.1, 5.2, 5.3, 5.4, 8.2, Appendix F
	(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;	11.0
	(d) identify any trends in the monitoring data over the life of the project;	5.1, 5.2, 5.3 and 5.4
	(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and	5.1, 5.2, 5.3 and 5.4
	(f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the project.	3.0, 5.0, 6.0
Condition 19(2)	The Proponent must: (a) provide annual quarry production data to DRG using the standard form for that purpose; and (b) include a copy of this data in the Annual Review (see condition 4 of schedule 5).	3.1, Appendix B
Condition 30A(2)	The Proponent must make, and retain for at least 3 years, records of the time of dispatch, weight of load and vehicle identification for each laden truck dispatched from the project. These records must be made available to the Department on request and a summary included in the Annual Review.	11.1, 11.2 and 11.3

2.2 BACKGROUND

Richmond Quarry is a sandstone quarry located at 1668 Wyrallah Road, Tuckurimba NSW 2480 with the site's regional context shown in Figure 1 in Appendix A. The quarry has been in small scale operation on the site since 1959, and then commencing to operate under Lismore City Council's Development Consent (DA 2005/999).

In 2011, following geological testing the Quarry was recognised as State Significant resource. In 2012 a Part 3A expansion to 250,000 tonnes per annum extraction was approved by the NSW State government. In 2014 this approval was implemented after environmental controls were put in place.

Richmond Quarry is predominantly surrounded by agricultural grazing land.

On Wednesday the 22nd of May 2019 Richmond Quarry suspended quarrying activities onsite. During the 2021 reporting year, Richmond Quarry has continued to be suspended with only environmental monitoring and sediment and erosion maintenance activities being conducted onsite.

Company management are in the process of determining the future plans for the quarry in the longer term.

2.3 APPROVALS

A summary of all the approvals relevant to the Richmond Quarry site is provided in Table 2. Modification 3 of Project Approval 09_0080 was approved in August 2017 for the operation of a sand washing plant on-site.

No water extraction licence is required for operations.

Table 2: Summary of Approvals

Approval Type	Approval Number	Date Granted	Changes made to approval
Project Approval	09_0080	30 August 2012	Modification 3 granted on 9 August 2017.
Environmental Protection Licence	20562	10 April 2015	Minor licence variations made by EPA to reflect changes made to Schedule 1 of the Protection of the Environment Operations Act 1997. Variations dated 10 September 2020.

2.4 OPERATION MAPS

2.4.1 REGIONAL CONTEXT MAP

The regional location of the Richmond Quarry is detailed in Figure 1 of Appendix A.

2.4.2 PROJECT LAYOUT AND BIODIVERSITY OFFSET MAP

The project layout, showing the following is provided as Figure 2 of Appendix A. The project layout includes:

- Approved operational boundary.
- Approved extraction extent.
- Biodiversity Offset Areas.
- Protected Revegetation Area.

2.4.3 OPERATIONAL DISTURBANCE FOOTPRINT MAP

The current Quarry disturbance footprint is identified in Figure 3 of Appendix A.

2.4.4 ENVIRONMENTAL MONITORING LOCATIONS MAP

The environmental monitoring program for the site includes surface water, groundwater and dust monitoring as detailed in Figure 4 of Appendix A.

The noise monitoring locations at sensitive receivers is provided in the Noise Management Plan (v2.1) and Figure 3 of Project Approval 09_0080.

2.4.5 SITE PHOTOS

Site photographs of bunds and screening are detailed in Appendix E. All photographs were taken in March 2021.

2.5 KEY ENVIRONMENTAL PERSONNEL CONTACT DETAILS

The contact details of key employees at Richmond Quarry are provided in Table 3 below.

Table 3: Environmental Personnel

Name	Position	Phone
Matt Duff	Quarry Manager	02 6622 0886
Steve Scifleet	QSE Manager	02 6674 7656
Conor Ryan-McGinn	QSE Coordinator	02 6674 7656

3.0 OPERATIONS SUMMARY

3.1 PRODUCTION SUMMARY

Table 4 and 5 describe the tonnes of product sold onsite during the calendar year.

Table 4: Production Summary

Material	Approved limit (specify source)	Previous reporting period (2017 actual)	Previous reporting period (2018 actual)	Previous reporting Period (2019 actual)	Current Reporting Period (2020 actual)	Current Reporting Period (2021 actual)
Saleable Product	250,000 † (MP 09_0080)	42,285.84 †	29,823.73 †	53,515.50 †	0t Currently suspended	0t Currently suspended

Table 5: Tonnes Sold Monthly

Month	Tonnes Sold
January 2021	0
February 2021	0
March 2021	0
April 2021	0
May 2021	0
June 2021	0
July 2021	0
August 2021	0
September 2021	0
October 2021	0
November 2021	0
December 2021	0
Annual Total	0

Annual production data for each financial year is reported to the Department of Planning, Industry and Environment's (DPI&E) Division of Resources and Geosciences (DRE). A copy of the form submitted to the DRE for the 2020/2021 financial year is provided in Appendix B. It should be noted that all other data reported within this Annual Review is presented on a calendar year basis in accordance with the requirements of the Project Approval 09_0080.

3.2 OPERATIONS CARRIED OUT DURING 2021

3.2.1 OPERATIONAL EXTENT

On Wednesday the 22nd of May 2019 Richmond Quarry suspended quarrying activities onsite. No processing of quarried materials was conducted post the suspension of the quarry. Company management are in the process of determining the future plans for the quarry in the longer term.

3.2.2 OPERATIONS COMPLETED

A storage, maintenance and equipment shed was constructed on-site for the storage of banded chemicals in accordance with AS1940-2004 in 2018. A self banded fuel tank was installed on-site for refuelling onsite. The self banded fuel tank has since been removed following the suspension of site activities.

3.2.3 SAND WASHING PLANT

Until the suspension, the Sand Washing Plant continued to operate in the northern quadrant of the southern extraction area following Modification 3 in August 2017.

3.2.4 HOURS OF OPERATION

In accordance with Condition 6(3) of Project Approval 09_0080, quarry operating hours are detailed in Table 6. The quarry does not operate on Sundays or public holidays.

Table 6: Operational Hours

Day	Quarry Operations including Construction Activities	Rock Hammer Operations
Monday to Friday	7 am to 6 pm	9 am to 12 pm and 2pm to 4pm
Saturday	8 am to 1 pm	None

Should operations restart following the suspension, Richmond Quarry will continue to operate within Progression 1 of the Southern Extraction Area, progressively moving into the Western Quadrant.

3.2.5 TRUCK MOVEMENTS

A register of truck movements is maintained on-site. A total of 0 truck dispatches from the site were recorded during the reporting period. Further discussion on truck movements is detailed within Section 11.0.

3.3 OPERATIONS TO BE CARRIED OUT DURING 2021

Richmond Quarry is currently not operating following the suspension of operations in May 2019. Should the site reopen the Quarry will continue to operate within Progression 1 of the Southern Extraction Area, progressively moving into the Western Quadrant.

Bund F shown in Figure 4 of Project Approval (MP 09_0080) is planned to be constructed, vegetated and planted with native endemic shrubs and trees in accordance with the Landscape Management Plan should operations recommence.

4.0 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

Table 7: Annual Review Actions

Action required from previous Annual Review	Requested by	Where discussed in Annual Review
None	NA	NA

5.0 ENVIRONMENTAL PERFORMANCE

5.1 NOISE

During 2021, Richmond Quarry operated in accordance with the Site's Noise Management Plan V2.1. Under normal operating conditions noise monitoring is performed on a quarterly basis to ensure the below approved criteria from the Project Approval 09_0080 and EPL 20562 are met. Noise monitoring was completed for Quarter 1 in 2019. Due to the suspension of Quarrying operations on the 22nd of May 2019 Richmond Quarry applied to the DPI&E with a revised Noise Management Plan that suspended quarterly onsite Noise Monitoring until the reinstatement of quarrying operations. The DPI&E agreed to these changes in a letter dated 22 July 2019.

Table 8: Noise Criteria for Richmond Quarry

Receiver	LA eq (15 min) dB(A)	Relevant Conditions
NAL 4 and NAL 5	38	Condition 5, Schedule 3 of PA 09_0080. Condition L4.1 of EPL 20562.
NAL2, NAL2A, NAL 3 and privately owned land along the southern end of Hazlemount Lane	37	
NAL 1 and other receivers	35	

Noise results for 2019 are provided in Table 9 and available on the Richmond Quarry website.

All noise monitoring is performed by a suitably qualified consultant to ensure operational noise is correctly recorded. In the event of any noise exceedance, follow up noise monitoring will be conducted when required and affected landowners will be notified. Exceedances in the noise criteria will be appropriately addressed by quarry management through the implementation of mitigation measures including changes to quarry operations or the implementation of noise reducing equipment.

Project Approval 09_0080 requires annual sound power testing of site equipment. This was performed once in 2019. Due to the suspension of the quarrying activities onsite, no sound power testing was completed after quarter 1 2019 as there was no operating quarrying occurring onsite after this date.

The sand washing plant was commissioned in 2018, no noise complaints have been received in relation to the operation of the sand washing plant.



Table 9: Noise Monitoring Results for Richmond Quarry

Date	Location	Type of Noise Monitoring	Relevant Criteria	Result	Compliant/ Non-Compliant	Noise Monitoring Conducted By
20/03/2019		NAL 2A (3)	Routine Quarterly	36.1	<37 Compliant	Consultant
20/03/2019		NAL 3	Routine Quarterly	32	<37 Compliant	Consultant
20/03/2019	Sound Power Level (SPL) On-site Plant and Equipment	Metso LT106 Jaw Crusher	SPL	102.7	SPL	Consultant
		Dozer D10 - Single Tyne Ripper Sandstone	SPL	108.8	SPL	Consultant
		Dozer D10 - Pushing Up Material	SPL	105.3	SPL	Consultant
		Maxtrax Cone Crusher - 10/30 Rear	SPL	104.4	SPL	Consultant
		Maxtrax Cone Crusher - 14/45 Front	SPL	103.7	SPL	Consultant
		Maxtrax Cone Crusher - 14/70 Front	SPL	102.4	SPL	Consultant
		Maxtrax Cone Crusher - 11 Opposite	SPL	101.8	SPL	Consultant

5.2 AIR QUALITY

Site dust monitoring is performed on a monthly basis at the north east corner of the site that is nearest residential receiver (Receiver 2) the location of the dust monitoring location is shown in Figure 4 of Appendix A. The location of the dust bottle was moved in 2018 due to the previous location being not on quarry land.

On one occasion in July nominated trigger values were exceeded. The exceedance was not with in historical records and inconsistent with the care and maintenance status of the site. After this occasion levels returned to below the nominated trigger value and have continued to do so in line with historical records, see table 10 and Appendix F. As a result the exceedance was attributed to either a testing anomaly or potentially a result of property maintenance at one of the residential receivers such as slashing. Air quality will continue to be monitored and in the event of further exceedances control measures will be put in place if required.

Table 10 provides the dust monitoring results from 2021. On two occasions dust sampling was completed at intervals longer then required under the project approval being 30 days +/- 2 days. The non compliance in April was due to the sampler not being available which did not occur again in the reporting period. The non compliance in Oct/Nov was due to a temporary change in proponent in which time the dust sampling was missed during handover. The new proponent is no longer engaged. Sampling has returned to compliant intervals since. A non-compliance has been raised and is noted in table 25 below.

Table 10: Monthly Dust Monitoring Results for Richmond Quarry 2021

Month	Sampling Days (30 days +/- 2)	Sample Comments	Sample Volume (L)	Deposit Rate of Insoluble Solids Total Suspended Solids		Deposit Rate of Ash (g/m ² /mth)	Deposit Rate of Combustible Matter (g/m ² /mth)
				(g/m ² / mth)	(mg/m ² /day)		
Trigger Values				>4	-	2	-
Jan 21	29	-	1.58L	0.7	25	0.6	0.1
Feb 21	32	-	5.0L	0.5	18	0.2	0.4
Mar 21	30	-	5.19L	0.4	13	0.2	1.3
Apr 21	33	Organic matter	2.0L	0.3	10	0.2	0.1
May 21	28	Ants	0.43L	0.1	4	0.1	0
Jun 21	29	-	1.25L	1.4	46	0.7	0.7
Jul 21	31	Fine organic matter, brown	0.44L	5.8	193	2.8	3
Aug 21	31	Large organic matter, brown	0.43L	1.6	55	0.7	1
Sept 21	29	Insects, fine organic matter	0.48L	1	35	0.7	0.4
Oct/Nov 21	50	-	4.250L	0.3	9	0.3	0
Dec 20	29	-	5.150L	0.1	4	0.3	0.1

5.3 HERITAGE (ABORIGINAL AND NON-ABORIGINAL)

Heritage management conditions are covered under Conditions 34, 35 and 36 of Project Approval 09_0080. Site activities are operated within the operational footprint shown in Figure 2 in Appendix A. No Aboriginal or non-aboriginal heritage items were detected onsite in 2021. Previous cultural heritage investigations on-site have not detected any Aboriginal or non-aboriginals heritage items in the area. Table 11 below provides a summary of the heritage conditions and their implementation to date.

Table 11: Summary of Heritage Conditions

Project Approval Condition #	Details	Implementation
Condition 34, Schedule 3	This approval does not allow the Proponent to disturb any human remains found on site.	No human remains found on-site. This requirement is covered off with all employees during the site induction.
Condition 35, Schedule 3	Prior to causing any surface disturbance of the land in the sites for the: (a) Water Supply Dam; (b) Water Reuse Dam; and (c) Southern Extraction Area the Proponent must undertake targeted sub-surface archaeological investigations, in consultation with OEH and Aboriginal stakeholders, to the satisfaction of the Secretary.	Sub-surface investigations carried out on 29 November 2013.
Condition 36, Schedule 3	The Proponent must prepare a Heritage Management Plan for the project to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with OEH and Aboriginal stakeholders; (b) be submitted to the Secretary for approval prior to carrying out any development on site (other than the construction of bunds and vegetative screening) under this approval; (c) include a detailed program for proposed targeted sub-surface archaeological investigations, including a strategic sampling methodology; and (d) describe the measures that would be implemented for: <ul style="list-style-type: none"> • monitoring all new surface disturbance on site for unidentified Aboriginal objects; • managing the discovery of any human remains or previously unidentified Aboriginal objects on site; and • ensuring ongoing consultation with Aboriginal stakeholders in the conservation and management of any Aboriginal cultural heritage values on site. The Proponent must implement the approved management plan as approved from time to time by the Secretary.	During 2021, the site operated under the Heritage Management Plan (Versions 2.0 and 2.1).

5.4 WATER MANAGEMENT

5.4.1 WATER LICENCES

Richmond Quarry does not hold a water licence for site operations. The water reuse dam on-site is used for operational water requirements.

5.4.2 WATER DISCHARGES

A controlled discharge (by pump at the release point) occurred at MP6 during March and April 2021. The water quality was tested during the releases. Each release was conducted in accordance with the sites Environmental Protection Licence EPL20562 and Site Water Management Plan. The details of the discharge monitoring results are detailed in Table 12 below.

Table 12: MP6 Water Discharge Records 2021

Date	Prefest or Release	PH >6.5 or <8.5	Suspended Solids	Oil & Grease	Comments
30/03/2021	Release	5.28	9	<2	Release due to significant rainfall in preceding week.
31/03/2021	Release	5.22	13	3	Release due to significant rainfall in preceding week.
08/04/2021	Release	4.88	11	3	Release due to significant rainfall in preceding week.

5.4.3 SITE WATER BALANCE

During 2019, operational water was used on-site for dust suppression and truck washing. Operational water is sourced from the site's Water Reuse Dam that has a 40 ML capacity which is significantly greater than the sites current water requirements. No specific records were kept in relation to the use of water onsite, demand is managed on a weekly basis to ensure the water level in the water reuse dam does not exceed freeboard. No operational water was used in 2021 due to the suspension of operations.

Employees use potable water delivered to a tank located beside the lunch room building. Employees utilise a portable toilet that is serviced regularly by a licenced operator.

The sand washing plant was commissioned during 2018 and continued to be used until 22 May 2019. The processing of sand utilises water from the water reuse pond. All process water is returned to the water reuse pond following the reduction of the sediment load in the 1ml processing ponds.

In addition, the operation of the sand washing plant and ancillary activities has increased the surface disturbance area of the site by approximately one hectare (Figure 3 of Appendix A). As stated in the Water Management Plan, the existing Water Reuse Dam has the capacity to adequately accommodate this increase in the site's disturbance footprint.

5.4.4 WATER MANAGEMENT

The sites water management practises are described in the approved Water Management Plan (v2.1). This plan details how the site approaches the management of surface and groundwater onsite.

The site is currently collecting baseline data for all surface water and groundwater monitoring points to establish statistically derived site specific trigger levels. In the interim, monitoring results are compared against the following guidelines:

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) (ANZECC Guidelines) – criteria for surface water and groundwater monitoring.
- National Health and Medical Research Council (2004) Australian Drinking Water Guidelines (NHMRC Guidelines) – criteria for groundwater monitoring.

5.4.5 SURFACE WATER MONITORING

The Water Management Plan for the site describes the surface water management measures that are to be implemented by site operations. To measure the effectiveness of these measures the Water Management Plan prescribes a surface water monitoring program. A description of this program is provided in Table 13 below, with the monitoring point locations identified on Figure 4 of Appendix A. A summary of the results from the surface water monitoring conducted in 2021 is detailed in Table 15 and the detailed results are located in Appendix D Table 1 and 2. Graphs of the monitoring results are shown in Appendix F.

There was one instance on January 1 2021 where the weekly monitoring of the Water Reuse Dam (MP7) was not completed due to the monitoring person being unavailable on this day. As a result it was communicated with the Quarry Manager that a second person is to be available to undertake the monitoring in the event that the existing monitoring person is not able to undertake the monitoring. Sampling was completed compliantly for the remainder of the reporting period as per appendix D table 2.

An extension for quarterly water monitoring was requested by Richmond Quarry in quarter three of the reporting period due to COVID 19 lockdowns in the Tweed and Lismore Shires restricting movement of staff. Richmond Quarry was granted an extension on the quarterly water monitoring until November 2021 by the Department. Monitoring was completed in October 2021. A non-compliance has been raised for this and is captured in table 21 below.

5.4.6 CHANGES TO SURFACE WATER MONITORING LOCATIONS

Unfortunately Richmond Quarry no longer has access to Monitoring Points MP3 and MP4 as detailed in Table 14 below. The landowner where MP3 and MP4 are located has denied access to these points in writing. Richmond Quarry has made changes to the existing environmental monitoring program to ensure that any impacts from quarry operations to the environment on-site and the surrounding areas is still captured on an ongoing basis within areas that can be accessed. The changes are detailed below in Table 14 and can be viewed on Figure 4 of Appendix A.

Table 13: Overview of Surface Water Monitoring Locations and Frequency

Monitoring Point	Type of Monitoring Point	Monitoring Frequency
MP1	Surface water monitoring – upstream on Tucki Tucki Creek – 1.5 km from site.	Quarterly
MP2	Surface water monitoring – downstream – 1.5 km from site.	Quarterly
MP3	Surface water monitoring – on-site watercourse. Removed.	Quarterly (when water levels permit)
MP4	Surface water monitoring – downstream of operational quarry.	Quarterly (when water levels permit)
MP5	Water Reuse Dam – near discharge point on the north-western corner.	Quarterly
MP6	Discharge Quality of stormwater overflow on the Water Reuse Dam - near discharge point on the north-western corner.	Prior to being discharged to receiving watercourses and daily while discharging
MP7	Water Reuse Dam (pH only) - near discharge point on the north-western corner.	Weekly

Table 14: Changes to Surface Water Monitoring Locations

Monitoring Point	Description	Action	Reasoning
MP3	Tucki Tucki swamp downstream of MP4 and quarry operations	Remove monitoring point	MP3 is located downstream of MP4. Any surface water contamination issues arising from quarry operations will be picked up upstream at MP4. The removal of MP3 as a downstream monitoring point should not detract from the overall surface water monitoring program of the site. In case of a significant contamination event, MP2 is used to monitor further downstream of MP3. It is also noted that MP3 is regularly dry, with only 2 samples of monitoring data able to be obtained since monitoring began in 2014.
MP4	Adjacent to quarry land within Lot 2 DP1191905	Adjacent to previous monitoring point – moved to within Lot 5 DP1191905	MP4 has been relocated a short distance upstream of the current monitoring point onto Lot 5 DP1191905. The change of location should result in negligible change to the monitoring data obtained by the existing monitoring point. The upstream change should assist in reducing contamination from cow manure in the stream at the existing downstream location.

Table 15: Surface Water Quality Parameters and Assessment Criteria

Parameters Analysed	Unit	ANZECC 2000 Trigger Values for Freshwater	Monitoring Points not meeting standards	Reasoning / Actions Taken
MONITORING POINTS 1-5 NOTE:				
pH (units)	-	6.5-8.5	MP1, MP4 and MP5	<p>Historical pH levels at MP5 have been measured within the range of 5 to 6 pH as was the case in the reporting period apart from one occasion in quarter four where pH fell just below 5. To address drops in pH Agricultural Lime is added to the pond to increase the ponds pH to above 6.5 to meet the sites trigger value. The establishment of site specific trigger levels will assist in defining pH levels more reflective of the local conditions. MP5 is the same location as MP7 within the site's Water Reuse Dam. The dam pH is routinely monitored on a weekly basis as MP7, with a discussion on the results provided further below.</p> <p>MP1 and MP2 are several kilometers from site in Tucki Tucki creek and subject to influences from active agricultural grazing lands. MP1 is an upstream monitoring point with no influences from the quarry. MP1 bordered the lower nominated criteria but stayed within range. MP2 is down stream of the quarry and also bordered the lower nominated criteria however fell below the lower nominated criteria in the last two quarters of the reporting period. MP2 has historically had pH levels recorded that border above or below the lower nominated pH criteria of 6.5. MP4 only had sufficient flows to sample once in the reporting period and bordered below the lower nominated criteria. The pH levels will continue to be monitored and further investigations will be initiated in the event that the pH levels fall significantly below previous observed levels.</p>
Conductivity	(dS/m)	0.350	Meets standards	All surface water monitoring points were below the criteria for conductivity.
Nitrate (NO ₃)	(mg/L)	0.7	Meets standards	All surface water monitoring points were below the criteria for nitrate.

Parameters Analysed	Unit	ANZECC 2000 Trigger Values for Freshwater	Monitoring Points not meeting standards	Reasoning / Actions Taken
Aluminium (Al)	(mg/L)	0.055	MP1, MP2, MP4 and MP5	MP1 and MP2 measured above the lower limit of 0.055mg/L. MP1 is an upstream monitoring point, with no impact from quarry operations. The levels in MP2 are consistent with the data collected in the previous years. Quarter two of the reporting period did show uncharacteristically high results for both MP1 and MP2, both returned to their normal range in the following quarters. MP4 only had sufficient flows to sample once in the reporting period and was over the nominated criteria, insufficient flows meant no further sampling could take place to identify trends. Historical observations of Aluminium in MP5 have shown levels that are above the ANZECC Guidelines. MP5 was below the threshold for two of the four quarters in the reporting period. In 2021 Aluminium levels have continued to remain below 2019 levels since the suspension of site activities in May 2019. The Aluminium levels will continue to be monitored and further investigations will be initiated in the event that the aluminium levels rise significantly above previous observed levels.
Total Arsenic (As)	(mg/L)	0.024	Meets standards	All surface water monitoring points were below the criteria for Arsenic.
Cadmium (Cd)	(mg/L)	0.0002	Meets standards	2021 Cadmium levels have continued to remain below 2019 levels since the suspension of site activities in May 2019.
Total Chromium (Cr)	(mg/L)	Not Specified ¹	MP1 and MP2	2021 Chromium levels have remained below 2019 levels since the suspension of site activities in May 2019 apart from one occasion in Quarter two however levels returned to normal in the following quarters. The Chromium levels will continue to be monitored and further investigations will be initiated in the event that the Chromium levels rise significantly above previous observed levels
Copper (Cu)	(mg/L)	0.0014	MP2 and MP5	Copper levels remained below the nominated criteria for three of the four quarters in the reporting period. In quarter three copper levels exceeded the nominated criteria at MP2 and MP5 but remained similar to historical results. Copper levels fell below the nominated criteria in the following quarter. Copper levels will continue to be monitored and further investigations will be initiated in the event that the Copper levels rise significantly above previous observed levels

Parameters Analysed	Unit	ANZECC 2000 Trigger Values for Freshwater	Monitoring Points not meeting standards	Reasoning / Actions Taken
Mercury (Hg)	(mg/L)	0.0006	Meets standards	All surface water monitoring points were below the nominated criteria for mercury.
Nickel (Ni)	(mg/L)	0.011	Meets standards	All surface water monitoring points were below the criteria for nickel.
Lead (Pb)	(mg/L)	0.0034	Meets standards	All surface water monitoring points were below the criteria for lead.
Zinc (Zn)	(mg/L)	0.008	MP5 and MP2.	During quarter one and two zinc levels fell below the nominated criteria. During quarter three MP2 and MP5 breached the nominated criteria. In quarter four MP2 dropped back below the nominated criteria and MP5 also showed a reduction however it was still over the nominated criteria. Levels that were above the nominated criteria were similar to or below historical records. Zinc levels will continue to be monitored and further investigations will be initiated in the event that the levels rise above previous observed levels.
MONITORING POINT 7				
pH (units)	-	6.5-8.5 (EPL 20562 and Water Management Plan)	MP7	MP7 is tested weekly for pH with results ranging from 4.41-6.84 during 2021. Historical pH levels have consistently been recorded below the lower pH criteria of 6.5 within MP7. In 2019 the washing of sand onsite may have influenced the pH levels in the Reuse Pond. To address the lowering pH in 2019, Agricultural Lime was added to the pond to increase the ponds pH to above 6.5 to meet the sites trigger value. Addressing the pH in the pond may also assist in reducing the levels of dissolved metals within the pond water. Following the suspension of quarrying activities in May 2019 the pH levels in the dam have been measured both above and below the lower nominated criteria pH of 6.5.

ANZECC Guidelines do not specify a trigger value for total chromium (Cr) due to insufficient data. This will be established as part of the baseline criteria.

5.4.7 GROUNDWATER MONITORING

The Water Management Plan details a groundwater management plan for the site. The groundwater management plan describes the groundwater monitoring program for the site, with a summary provided below in Table 16 and the groundwater bore locations provided in Figure 4 of Appendix A.

Table 16: Overview of Groundwater Monitoring Locations and Frequency

Monitoring Point	Type of Monitoring Point	Monitoring Frequency
8	Groundwater level and quality monitoring – previously BH3	Quarterly
9	Groundwater level and quality monitoring – previously BH5	Quarterly
10	Groundwater level and quality monitoring – previously BH6	Quarterly
11	Groundwater level only – windmill/bore	Quarterly
12	Groundwater level and quality monitoring – previously BH7	Quarterly

Available Groundwater bores were sampled on a quarterly basis during 2021. MP8 and MP11 were not able to be sampled due to no access to the area.

A summary of the results from the groundwater monitoring conducted in 2021 is detailed in Table 18 and the detailed results are located in Appendix D Table 3. Graphs of the monitoring results are shown in Appendix F.

Until site specific trigger values have been established for the groundwater monitoring bores, Richmond Quarry uses the ANZECC trigger values for freshwater and the NHMRC Drinking Water Guidelines as a baseline for monitoring data.

During 2021, groundwater monitoring data (excluding pH) met the criteria for the NHMRC Drinking Water Guidelines and only minor exceedances were recorded against the ANZECC trigger values. The pH for the surrounding areas surface and groundwater is well established to be slightly acidic. Groundwater monitoring data for pH was lower than the criteria set by both of the guidelines.

An extension for quarterly water monitoring was requested by Richmond Quarry in quarter three of the reporting period due to COVID 19 lockdowns in the Tweed and Lismore Shires restricting movement of staff. Richmond Quarry was granted an extension on the quarterly water monitoring until November 2021 by the Department. Monitoring was completed in October 2021. A non-compliance has been raised for this and is captured in table 21 below.

5.4.8 CHANGES TO GROUND WATER MONITORING LOCATIONS

Unfortunately Richmond Quarry no longer has access to Monitoring Points MP11 and MP8. The landowner where MP11 and MP8 are located has denied access to these points in writing. Richmond Quarry has made changes to the existing environmental monitoring program to ensure that any impacts from quarry operations to the environment on-site and the surrounding areas is still captured on an ongoing basis within areas that can be accessed. The

changes are detailed below in Table 17 – Changes to Ground Water Monitoring Locations and Figure 4 of Appendix A.

Table 17: Changes to Ground Water Monitoring Locations

Monitoring Point	Description	Action	Reasoning
MP11	Windmill within Lot 2 DP1191905	Remove monitoring point	MP11 is used to measure the groundwater height only and due to contamination issues is unsuitable to be used for groundwater quality monitoring. MP11 is now outside of the quarry land and is not permitted to be accessed by the land owner. In 2015 MP12 was added to the site's monitoring program to monitor the height and quality of downstream groundwater in lieu of – MP11. The addition of MP12 to the site's groundwater monitoring program removed the requirement for the height levels to be monitored at MP11.
MP8	East of quarry operations	Remove monitoring point	Access is no longer permitted on the surrounding quarry land, including Lots 2 and 3 of DP 1191905. As a result, Richmond Quarry staff no longer have access to MP8 for groundwater monitoring. MP10 is located south of MP8 and will continue to be monitored to assess the areas groundwater quality and level.



Table 18: Groundwater Quality Parameters and Assessment Criteria

Parameters Analysed	Unit	ANZECC 2000 Trigger Values for Freshwater	NHMRC Drinking Water Guidelines	Monitoring Points not meeting standards	Reasoning / Actions Taken
pH (units)	-	6.5-8.5	6.5-8.5	MP9, MP10, MP12	<p>The pH at all groundwater bores has been consistently below the ANZECC Guidelines. The range in pH for each of the groundwater bores during 2021 has not changed significantly from previous years with result ranges provided below:</p> <ul style="list-style-type: none"> • MP9: pH 5.17 – 5.38 • MP10: pH 4.46 – 4.62 • MP12: pH 4.72 – 5.34 <p>The Environmental Assessment noted 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 Site and subsequent influence on groundwater may require that maintenance of ambient condition is the preferred water quality goal rather than the neutral conditions set out in the ANZECC Guidelines. The establishment of site specific trigger levels will assist in defining pH levels more reflective of the local conditions.</p>
Conductivity	(dS/m)	0.350	n/s	MP12	<p>The conductivity values for MP12 have mostly remained over the ANZECC Guidelines for freshwater since sampling commenced. MP9 and MP10 has consistently remained below the nominated criteria. These values will be continued to be monitored and further investigations will be initiated in the event that the conductivity levels continue to rise above previous observed levels.</p>
Nitrate (NO ₃)	(mg/L)	0.7	50	Meets standards	<p>All groundwater monitoring bores were below the criteria for Nitrate in 2021. Levels dropped in 2021 compared to the 2020 reporting period.</p>
Aluminium (Al)	(mg/L)	0.055	0.2	MP10 and MP9	<p>During 2021, the Aluminium levels in MP12 consistently were within the ANZECC Guidelines. MP10 did not meet the ANZECC Guidelines in all Quarters and MP9 did not meet the Guideline in Quarter one and four. The Aluminium levels recorded at the groundwater bores during 2021 were</p>



Parameters Analysed	Unit	ANZECC 2000 Trigger Values for Freshwater	NHMRC Drinking Water Guidelines	Monitoring Points not meeting standards	Reasoning / Actions Taken
					consistent with previous historical monitoring data. These values will be continued to be monitored and further investigations will be initiated in the event that the conductivity levels continue to rise above previous observed levels.
Total Arsenic (As)	(mg/L)	0.024	0.01	Meets standards	All groundwater monitoring bores were below the criteria for Arsenic.
Cadmium (Cd)	(mg/L)	0.0002	0.002	Meets standards	All groundwater monitoring bores were below the criteria for Cadmium.
Total Chromium (Cr)	(mg/L)	Not Specified ¹	0.054	Meets standards	All groundwater monitoring bores were below the criteria for Chromium.
Copper (Cu)	(mg/L)	0.0014	2	MP9, MP10, MP12	During 2021, the Copper levels for MP9, MP10 and MP12 exceeded the ANZECC trigger value in all four quarters. Copper levels at MP9, MP10 and MP12 were trending down in the reporting period compared to 2020 levels. Copper levels will be continued to be monitored and further investigations will be initiated in the event that the levels rise above previous observed levels.
Mercury (Hg)	(mg/L)	0.0006	0.001	Meets standards	All groundwater monitoring bores were below the criteria for Mercury.
Nickel (Ni)	(mg/L)	0.011	0.02	Meets standards	All groundwater monitoring bores were below the criteria for Nickel.
Lead (Pb)	(mg/L)	0.0034	0.01	Meets standards	All groundwater monitoring bores were below the criteria for Lead.
Zinc (Zn)	(mg/L)	0.008	3	MP9, MP10, MP12	During 2021, the Zinc levels for MP9, MP10 and MP12 exceeded the ANZECC trigger values in all four quarters. The levels were within the range of previous historical monitoring data in quarter one and two. Quarter three and four saw a rise in zinc particularly at MP12. Zinc results at MP12 are inconsistent with historical records. Zinc levels at MP12 are also not consistent with trends of other metals in quarter three and four. Zinc levels will continue to be monitored,



Parameters Analysed	Unit	ANZECC 2000 Trigger Values for Freshwater	NHMRC Drinking Water Guidelines	Monitoring Points not meeting standards	Reasoning / Actions Taken
					further investigations will be initiated in the event future monitoring results show a definite trend consistent with quarter three and four increases.

ANZECC Guidelines do not specify a trigger value for total chromium (Cr) due to insufficient data. This will be established as part of the baseline criteria.

6.0 REHABILITATION PERFORMANCE

The quarries Landscape Management Plan (v3.1) that details the approach for the management of site rehabilitation and biodiversity offsets throughout the sites life. The sites rehabilitation objectives are detailed in Table 19 below.

The ongoing rehabilitation strategy for the quarry is a progressive approach. Rehabilitation activities will commence in areas no longer required by the quarry, such as where excavation activities are complete and the area is not required for processing purposes. This approach will allow rehabilitation to occur alongside excavation activities, resulting in vegetation being established in different areas (cells) of the site as areas become available following completion of excavation. It is anticipated that at any one time up to 2 x 3 hectare extraction cells will be operational plus the Central Extraction Area processing area. The overall objective of the rehabilitation plan is to develop a relatively weed free, functional ecosystem that provides ecological services to maintain and enhance fauna populations.

Table 19: Rehabilitation Objectives

Feature	Objective
Site (as a whole)	Safe, stable and non-polluting
Surface Infrastructure	To be decommissioned and removed, unless the Secretary agrees otherwise
Benched Quarry Walls	Landscaped with native endemic flora species
Quarry Pit Floors	Suitable for grazing
Other land affected by the Project	Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: <ul style="list-style-type: none"> • native endemic species; and • a landform consistent with the surrounding environment

7.0 BIODIVERSITY

The Biodiversity Offsets requirements are detailed in the Landscape Management Plan, with the location of the offset areas provided in Figure 2 in Appendix A.

In accordance with Condition 46(3), Richmond Quarry submitted a revised calculation and documentation for the Conservation and Rehabilitation Bond to the DPI&E for approval on the 31st of August 2018. The Department of Planning and Environment reviewed the submission and was satisfied with submission approving the Conservation and Rehabilitation Bond. Final lodgement of the bond was made on the 16th of October 2018.

8.0 COMMUNITY

8.1 COMMUNITY CONSULTATIVE COMMITTEE

In accordance with Condition 6(5), Richmond Quarry has a Community Consultative Committee (CCC) to provide a mechanism for open and effective communication with local community members. The CCC held a meeting on 24 September 2018 to discuss site operations, complaints and the transition from Champions Quarry to Richmond Quarry. A copy of the CCC 2018 meeting minutes is publicly available on the Richmond Quarry website.

Due to the suspension of quarrying operations on 22 May 2019 the Richmond Quarry did not hold a committee meeting during 2021. Richmond Quarry distributed a community letter to all residents within a 2km radius of the quarry updating the residents on the quarry suspension and the associated ongoing movement of materials from existing stockpiles in 2019. A copy of community letter is shown in Appendix G.

No community contributions were made during 2021.

8.2 COMPLAINTS REGISTER

Richmond Quarry maintains a complaints register that is publicly available on the Richmond Quarry website. During 2021, there were no complaints made to the quarry.

9.0 INDEPENDENT ENVIRONMENTAL AUDIT

As per Project Approval 09_0080 an IEA was due to be conducted in 2021 as this marks 3 years since the previous IEA. Richmond Quarry was granted an extension on the IEA to September 2022 by the Department. Richmond Quarry has communicated the extended due date of submission and subsequent change of audit commission date to the endorsed external auditor. The endorsed external auditor has confirmed its availability to conduct the 2022 IEA in the agreed time frame. A non-compliance has been raised for this and is captured in table 21 below.

In 2018 an Independent Environmental Audit was conducted by GHD. As per the Project Approval 09_0080, an Independent Environmental Audit (IEA) is required to be completed every three years.

The *Independent Environmental Audit Report, December 2018* and *Response to Recommendations* are available on the Richmond Quarry website. Appendix C addresses progress of the Response to Audit Recommendations from the 2018 Audit. Several findings from the 2018 IEA are on hold due to the site still being in care and maintenance as it has been since May 2019. Company management are in the process of determining the future plans for the quarry in the longer term. The outstanding 2018 IEA findings will be evaluated and actioned as part of this investigation as well as during the 2022 IEA.

10.0 STATEMENT OF COMPLIANCE

Table 20: Statement of Compliance

Were all conditions of the relevant approval complied with?	
Part 3A Project Approval 09_0080	No

11.0 NON COMPLIANCE

There was four minor non compliances in the reporting period. These non compliances are summarised in table 21 below and addressed under the corresponding sections of this Annual Review.



Table 21: Non Compliance Summary

Relevant Approval	Condition #	Condition Description (summary)	Compliance status	Comment	Where addressed in Annual Review
MP 09_0080	Schedule 3, Condition 12.	Air quality management plan requires sampling every 30 days +/- 2 days.	Non-compliant	2 Instances where the dust monitoring bottle was not changed over in 30 days +/- 2 days.	Section 5.2 and table 10.
	Schedule 3, Condition 17.	Quarterly surface and groundwater monitoring as per water management plan.	Non-compliant	Quarterly surface water and ground water monitoring could not be performed due to COVID 19 lockdowns on one occasion.	Section 5.4.5 and 5.4.7
	Schedule 3, Condition 17.	Monitoring of MP7 required to be monitored on a weekly basis.	Non-compliant	One instance on January 1 2021 monitoring did not occur as the sampler was unavailable.	Section 5.4.5
	Schedule 5, Condition 9.	Independent Environmental Audit was required in the reporting period.	Non-compliant	IEA was not completed in 2021. An extension was provided for the IEA by the Department.	Section 9.0



Compliance status key for above table

Risk Level	Colour Code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> • potential for serious environmental consequences, but is unlikely to occur; or • potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	Non-compliance with: <ul style="list-style-type: none"> • potential for moderate environmental consequences, but is unlikely to occur; or • potential for low environmental consequences, but is likely to occur.
Administrative non-compliance	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

11.1 TRUCK MOVEMENTS

Condition 9, Schedule 2 restricts the number of daily truck movements to 50 and only permits 5 truck movements to occur in any one hour.

Hourly Truck Movements

During 2021 there were zero instances where there were more than 5 truck movements within 1 hour during the reporting period.

Daily Truck Movements

During 2021 there were zero instances when more than 50 trucks were dispatched in a day.

11.2 OPERATING HOURS

During the reporting period, there was zero non-compliances in the permitted operating hours of the site.

11.3 TRANSPORT MONITORING

Condition 30A, Schedule 3 requires records to be maintained for the time of dispatch, weight of load and vehicle identification of each laden truck dispatched from the Quarry. Overall; there were zero truck dispatches from the site during the reporting period. There was zero non-compliance in regard to Condition 30A, Schedule 3 in 2021.

APPENDIX A – MAPPING

Figure 1: Richmond Quarry – Regional Location

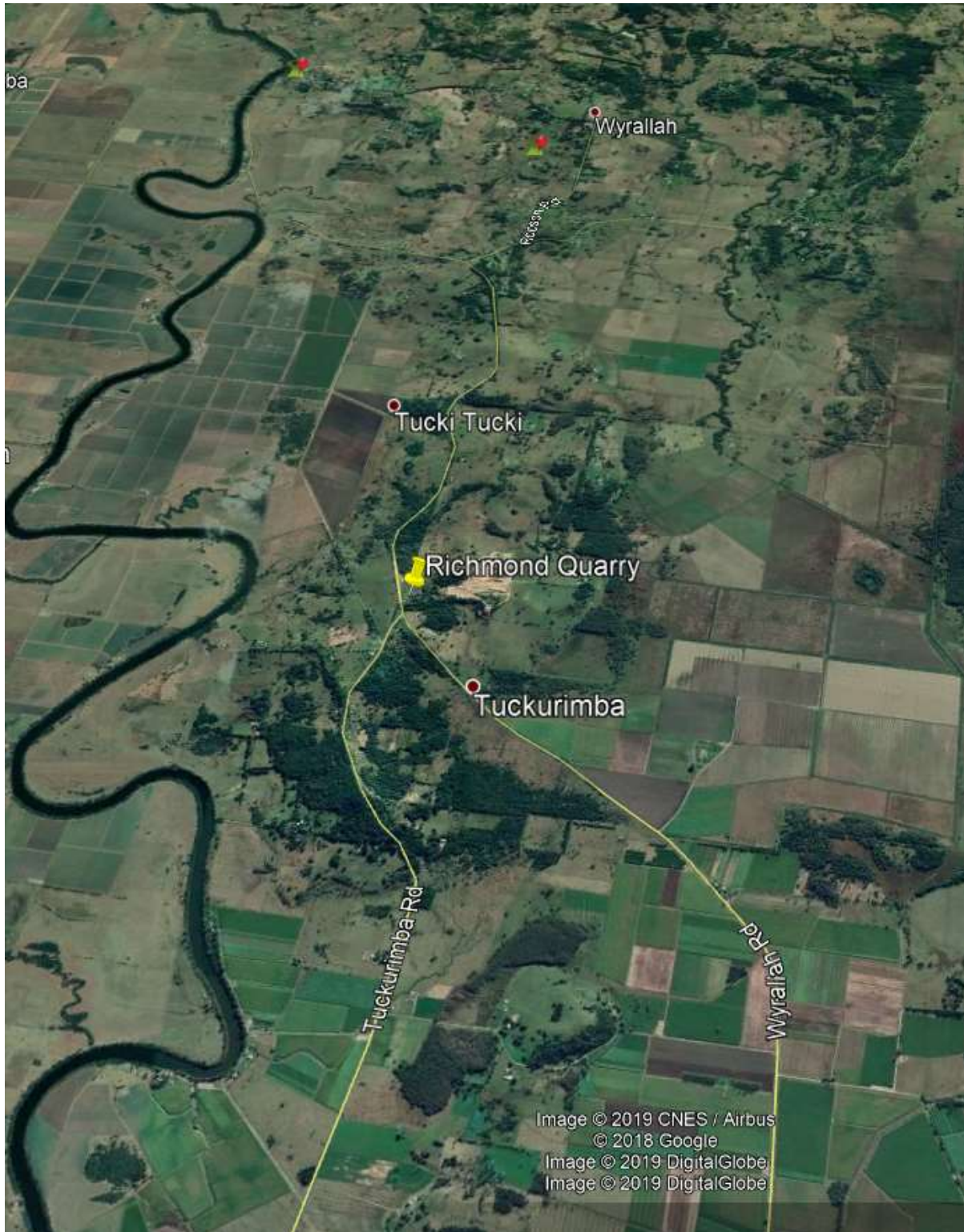


Figure 2: Project Layout (extract from Appendix 6 of Project Approval 09_0080)



Figure 3: Disturbance Footprint 2019



Figure 4: Environmental Monitoring Locations



APPENDIX B – SITE PRODUCTION DATA

Production Data for the 2020/2021 Financial Year

<p>Extractive Materials Return 2020-2021 Form S1 – Period Ending 30 June 2021</p>		<p>Regional NSW</p>
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fQuote RIMS ID in all correspondence

Quarry Id: Rims ID: 400494 Operators Name: GSQ HOLDINGS PTY LTD Address: PO BOX 642 LISMORE NSW 2480 Email: compliance@solo.com.au Quarry Name: RICHMOND QUARRY Quarry Address: 1586 WYRALLAH RD, TUCKURIMBA NSW 2480	Inquiries please telephone: (02) 4063 6713 Completed or Nil Returns Email – mineral.royalty@planning.nsw.gov.au Postal Address (see below)
<p><i>Please amend name, postal address and location of mine or quarry if incorrect or incomplete.</i></p>	

The return should be completed and forwarded to **Senior Advisory Officer, RESOURCE ECONOMICS, STRATEGY, PERFORMANCE & INDUSTRY DEVELOPMENT, DEPARTMENT OF REGIONAL NSW, PO BOX 344 HUNTER REGION MAIL CENTRE NSW 2310** on or before **31 October 2021**. If completion of the return is unavoidably delayed, an application for extension of time should be requested **before** the due date. If no work was done during the year, a **NIL** return must be forwarded.

The return should relate to the **above quarrying establishment** and should cover the operations of quarrying and treatment (such as crushing, screening, washing etc.) carried out at or near the quarry. A return is required even if the operations are solely of a developmental nature and whether the area being worked is held under a mining title or otherwise.

Director, Resources Policy

Please complete all the following information to assist in identifying the location of the Quarry

Typical Geology: Sandstone

Nearest Town to Quarry: Lismore

Local Council Name: Lismore City Council

Deposited Plan and Lot Number/s of Quarry: Lot 5 DP 1191905

Email Address of Operator: compliance@solo.com.au; info@richmondquarry.com.au

Name of Owner or Licensee: GSQ HOLDINGS PTY LTD

Postal Address of Licensee: PO Box 642, Lismore NSW 2480

Licence/Lease Number/s (if any)
 From Mining, Exploration & Geoscience (NSW Mineral Resources): NA
 From Crown Lands or other NSW Department: NA

If any output was obtained from land NOT held under licence from the above Departments, state the Name/s and Address/es of the Owners of the land _____

To the best of my knowledge, information entered in this return is correct and no blank spaces left where figures should have been inserted.

• SIGNATURE of PROPRIETOR or MANAGER DATE 26/09/21

Extractive Materials Return 2020-2021



Regional
NSW

Form S1 – Period Ending 30 June 2021

- CONTACT PERSON for this return MR MICHAEL BARNES
NAME MR MICHAEL BARNES Telephone (02) 6621 7431

Extractive Materials Return 2020-2021



Regional
NSW

Form S1 – Period Ending 30 June 2021

Sales During 2020-2021

Production information may be published in aggregated form for statistical reporting. However, production data for individual operations is kept strictly confidential.

Product	Description	Quantity Tonnes
Virgin Materials		
Crushed Coarse Aggregates		
Over 75mm		
Over 30mm to 75mm		
5mm to 30mm		
Under 5mm		
Natural Sand		
Manufactured Sand		
Prepared Road Base & Sub Base		
Other Unprocessed Materials		
Recycled Materials		
Crushed Coarse Aggregates		
Over 75mm		
Over 30mm to 75mm		
5mm to 30mm		
Under 5mm		
Natural Sand		
Manufactured Sand		
Prepared Road Base & Sub Base		
Other Unprocessed Materials		
River Gravel		
Over 30mm		
5mm to 30mm		
Under 5mm		
Construction Sand	Excluding Industrial	
Industrial Sand		
Foundry, Moulding		
Glass		
Other (Specify)		
Dimension Stone	Building, Ornamental, Monumental	
Quarried in Blocks		
Quarried in Slabs		
Decorative Aggregate	Including Terrazzo	
Loam	Soil for Topdressing, Garden soil, Horticultural purposes)	
TOTAL SITE PRODUCTION		Nil
Gross Value (\$) of all Sales		Nil
Type of Material		
Number of Full-Time Equivalent (FTE) Employees	Employees - Nil	Contractors - Nil

Please Note: A return for clay-based products can be obtained by contacting the inquiry number.



APPENDIX C – INDEPENDENT ENVIRONMENTAL AUDIT

Response to 2018 Independent Environmental Audit Recommendations

Table A: Corrective Actions

#	Condition	Corrective Action	Response	Timeframe	Progress	Completion
CAR 1	Project Approval, Condition 14, Schedule 2	Confirm the demountable building and shed have been constructed in accordance with the BCA and obtain construction and occupation certificates	Richmond Quarry has engaged a building certifier to obtain the necessary approvals to comply with the Building Code of Australia.	Initial: 31 March 2019 Revised: On hold due to suspension of quarry activities.	Building certifier engaged to manage building approvals. Initial inspection of buildings complete.	
CAR 2	Project Approval, Condition 2, Schedule 3	Install boundary pegs that are clear and permanent, so limits of extraction areas are easy to identify	Surveyor to checked and replace any missing pegs in the Southern and Central Extraction Areas onsite. Site to install coloured PVC Pipes to enable easy identification and protect the locations of survey pegs onsite.	Completed	Surveyor has checked and replaced missing pegs in Southern and Central Extraction Areas onsite. Coloured PVC pipes in have been installed.	Completed
CAR 3	Project Approval, Condition 6, Schedule 3	Reinforce operating hours to employees	Toolbox Meeting to be held to reinforce operating hours to site employees.	Completed	Completed.	Completed
CAR 4	Project Approval, Condition 16, Schedule 3	Store chemicals in accordance with Condition 16, Schedule 3	<ul style="list-style-type: none"> Chemicals and Petroleum to be stored in accordance with Australian Standard AS1940-2004, The Storage and Handling of Flammable and Combustible Liquids. Additional bunds to be obtained to ensure all liquids are banded and to prevent crowding. Obtain a large bund adequate to store the waste oil IBC. Ensure Chemicals and Petroleum storage has the required signage / placarding in place. Obtain a designated spill kit for the chemical storage area. 	Completed	Matt Duff has implemented changes to bunding and storage onsite. Correct segregation and signage / placarding completed.	Completed
CAR 5	Project Approval, Condition 19, Schedule 3	Obtain confirmation from the Secretary that they are satisfied with the works required by Condition 19, Schedule 3	<ul style="list-style-type: none"> Current Quarry works completed by Richmond Quarry are currently restricted to the Progression 1 Area as defined in the Project Approval. Obtain confirmation from the Secretary that DPI&E are satisfied with the construction of Bunds A – D. 	Initial: 30 June 2019 Revised: On hold due to suspension of quarry activities.	<ul style="list-style-type: none"> Russell Currie to obtain a plan of bunds in approval versus constructed onsite. Matt Duff to address the requirement that the bunds are established and vegetated (with 	



#	Condition	Corrective Action	Response	Timeframe	Progress	Completion
					grasses, native endemic shrubs and trees) and provide evidence. <ul style="list-style-type: none"> • Matt Duff to address the establishment of vegetated screening of planted trees to the north of the access road and provide evidence. • Russell Currie to write to DPI&E following collation of above evidence from Matt Duff. 	
CAR 6	Project Approval, Condition 1, Schedule 4	Notify the affected landowners when exceedances of monitoring criteria occur	No Noise / Dust Exceedances have occurred since the change of ownership from Champions Quarry to Richmond Quarry. Per the Noise and Air Quality Management Plans any exceedances will be notified to the affected landholders in writing.	Completed	Completed	Completed
CAR 7	Project Approval, Condition 1A, Schedule 5	Where required by the conditions, provide evidence of consultation with public authorities, any comments and how the comments have been addressed, as per Condition 1A, Schedule 5	Provide evidence to the DPI&E showing consultation with public authorities, specifically where required by site consent / licence requirements.	Completed	Russell Currie wrote to DPI&E and provided evidence of consultation with public authorities.	Completed
CAR 8	Project Approval, Condition 2, Schedule 5	Notify the Secretary when exceedances of monitoring criteria occur	No Noise / Dust Exceedances have occurred since the change of ownership from Champions Quarry to Richmond Quarry. Per the Noise and Air Quality Management Plans any exceedances will be reported to the secretary.	Completed	Completed	Completed
CAR 9	Project Approval, Condition 4, Schedule 5	Submit the Annual Review by the end of March each year and include all of the requirements of Condition 4, Schedule 5.	2018 Annual Review will be submitted by 31 March 2019 for the 2018 year. Annual review will be in accordance with Condition 4, Schedule 5 of the Project Approval.	Completed	Annual Review report submitted to DPI&E by 31 March 2019	Completed.
CAR 10	Project Approval, Condition 5, Schedule 5	Review management plans as required by Condition 5, Schedule 5 and submit to the Secretary within the specified timeframes	No Management Plan reviews have been required prior to the audit since the change of ownership from Champions Quarry to Richmond Quarry. Management plan reviews will be undertaken in accordance with Condition 5 of Schedule 5 of the Project Approval. Any Management Plan reviews that cannot be achieved within the 3 month period will	Completed	Completed	Completed



#	Condition	Corrective Action	Response	Timeframe	Progress	Completion
			require a request for extension to be submitted to the Secretary for approval.			
CAR 11	Project Approval, Condition 7, Schedule 5	Report incidents to the Secretary and other relevant agencies within seven days of the incident	No Noise / Dust Exceedances have occurred since the change of ownership from Champions Quarry to Richmond Quarry. Per the Noise and Air Quality Management Plans any exceedances will be reported to the secretary.	Completed	Completed	Completed

Table B: Recommended Actions

#	Condition	Recommendation	Response	Timeframe	Progress	Completion
REC 1	Air Quality Management Plan	Revise the Air Quality Management Plan to include the new dust monitoring location. It is also recommended to include a figure showing the monitoring location.	The Air Quality Management Plan is to be reviewed and updated to include the revised dust monitoring location. A figure showing the new location to be provided in the plan.	Completed	Air Quality Management Plan revised to include the new dust monitoring location and a figure showing the monitoring location.	Completed
REC 2	Landscape Management Plan	Update the Landscape Management Plan to clarify what is required in regards to rehabilitation	Review and update the Landscape Management Plan to define the rehabilitation to be undertaken in relation to the updated site progression plans.	Initial: 30 September 2019 Revised: On hold due to suspension of quarry activities.		
REC 3	Landscape Management Plan	Undertake the monitoring and reporting outlined in the Landscape Management Plan to monitor the success of the rehabilitation and identify where remedial action is necessary	Review and update the Landscape Management Plan to accurately define the rehabilitation reporting and monitoring requirements for the site. Develop and implement monitoring and reporting forms.	Initial: 30 September 2019 Revised: On hold due to suspension of quarry activities.		
REC 4	Landscape Management Plan	Engage a surveyor to re-establish/re-mark the pegs delineating the rehabilitation areas	Surveyor to check and replace any missing pegs in the Biodiversity Offset Areas and the Protected Revegetation Area onsite. Site to install coloured PVC Pipes to enable easy identification and protect the locations of survey pegs onsite.	Completed	Surveyor has re-established /re-marked the pegs delineating the rehabilitation areas onsite. Placement of PVC	Completed



#	Condition	Recommendation	Response	Timeframe	Progress	Completion
REC 5	Noise Management Plan	Revise the Noise Management Plan to include the new noise monitoring location. It is also recommended to include a figure showing the monitoring location	Review and update the Noise Management Plan to include any updated noise management locations. Figure showing the monitoring locations to be included in the plan.	Initial: 30 September 2019 Revised: On hold due to suspension of quarry activities.	pipes completed.	
REC 6	Transport Management Plan	Consult with RMS during the review of the Transport Management Plan	RMS to be consulted during the review / update of the transport management plan.	Initial: 30 September 2019 Revised: On hold due to suspension of quarry activities.		
REC 7	Transport Management Plan	Maintain the new truck monitoring system to ensure it captures all the information required and prevents further incidents in regards to truck movements	Transport Management Plan to be updated to include the revised truck monitoring system.	Initial: 30 September 2019 Revised: On hold due to suspension of quarry activities.		
REC 8	Waste Management Plan	Introduce a system to encourage recycling of waste products	A domestic recycling service is to be implemented to the site starting the 17th of December. Used oil filters will also be collected and recycled.	Completed	Domestic recycling service introduced onsite.	Completed
REC 9	Water Management Plan	Review the Water Management Plan sediment basin calculations to ensure they are in accordance with Managing Urban Stormwater Soils and Construction – Volume 2e Mines and quarries (DECC, 2008) and EPL. It is also recommended the calculations be done for individual stages	Review the Water Management Plan sediment basin calculations to ensure are designed, installed and maintained in accordance with Managing Urban Stormwater Soils and Construction – Volume 2e Mines and quarries (DECC, 2008) and EPL. Calculations to take into account progression plans for the site.	Initial: 31 October 2019 Revised: On hold due to suspension of quarry activities.		
REC 10	Water Management Plan	Develop and implement a procedure to record that sediment basins are monitored and maintained appropriately	Weekly Surface Water Field Sheet IMS-ENVM-F-3746-RQ updated to monitor the condition of the surface water ponds onsite.	Completed	Weekly Surface Water Field Sheet IMS-ENVM-F-3746-RQ updated.	Completed
REC 11	Water Management Plan	Review erosion and sediment controls across the site to ensure that they provide adequate protection and are installed and maintained in accordance with DECC	Review the Water Management Plan sediment and erosion controls, ensure are installed and maintained in accordance with Managing Urban Stormwater Soils and Construction –	Completed	Site Erosion and Sediment Controls reviewed and improvement	Completed



#	Condition	Recommendation	Response	Timeframe	Progress	Completion
		2008	Volume 2e Mines and quarries (DECC, 2008) and EPL.		works completed onsite.	
REC 12	Project Approval, Condition 7, Schedule 2	Survey and peg the boundary of all approved Extraction Areas and the quarry floor on a periodic basis to demonstrate compliance with Condition 7, Schedule 2	Surveyor to checked and replace any missing pegs on the boundary of the approved extraction areas. Pegs to be placed near operational areas to mark the maximum extraction depth in the extraction areas.	Initial: 31 January 2019 Revised: On hold due to suspension of quarry activities.	Surveyors engaged to mark the extraction design and maximum extraction depth.	
REC 13	Project Approval, Condition 13, Schedule 3	Revise the Water Management Plan to update the water budget with consideration that the proposed Water Supply Dam is no longer an option.	Water Management Plan to be reviewed / updated to consider the onsite water balance.	Initial: 31 October 2019 Revised: On hold due to suspension of quarry activities.		
REC 14	Project Approval Condition 38, Schedule 3	Implement and record the routine inspections of Tuckean Swamp and Tucki Tucki Creek	Add inspection / observation of Tuckean Swamp and Tucki Tucki Creek onto Quarterly Surface Monitoring Checklist and undertake observation at planned February monitoring.	Completed	Inspection of Tuckean Swamp and Tucki Tucki Creek incorporated into Quarterly Monitoring Checklist.	Completed
REC 15	Project Approval Condition 42, Schedule 3	Obtain from DPE confirmation the Offset Strategy and Conservation and Rehabilitation Bond is the long term security required by Condition 42, Schedule 3	Request sent to DPI&E confirming if the Offset Strategy and Conservation and Rehabilitation Bond is the long term security required by Condition 42, Schedule 3	Completed	Letter received from DPI&E on 10 April 2019 confirming long term security of offsets.	Completed



APPENDIX D – WATER MONITORING TABLES

Table 1: Surface Water Monitoring Results 2021

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)
Monitoring Point	Date	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)
MP1	30/03/2021	7	0.122	0.28	0.134	<0.001	<0.0001	<0.001	<0.001	<0.0005	<0.001	None	4	<0.001	0.002
	8/06/2021	6.88	0.141	0.065	0.628	<0.001	<0.0001	0.001	0.001	<0.0005	0.001	None	8	<0.001	0.004
	29/10/2021	6.85	0.168	<0.005	0.095	<0.001	<0.0001	<0.001	0.001	<0.0005	0.001	None	5	<0.001	0.007
	16/12/2021	6.91	0.16	0.01	0.252	<0.001	<0.0001	<0.001	0.001	<0.0005	0.001	None	11	<0.001	0.002
MP2	30/03/2021	6.96	0.122	0.275	0.097	<0.001	<0.0001	<0.001	<0.001	<0.0005	<0.001	None	6	<0.001	0.002
	8/06/2021	6.68	0.122	0.075	0.653	<0.001	<0.0001	0.001	0.001	<0.0005	0.001	None	7	<0.001	0.004
	29/10/2021	6.29	0.222	<0.005	0.27	<0.001	<0.0001	<0.001	0.002	<0.0005	0.002	None	32	<0.001	0.01
	16/12/2021	6	0.148	<0.005	0.252	<0.001	<0.0001	<0.001	0.001	<0.0005	0.001	None	8	<0.001	0.002
MP3	30/03/2021	No Access													
	8/06/2021	No Access													
	29/10/2021	No Access													
	16/12/2021	No Access													
MP4	30/03/2021	6.13	0.1	<0.005	0.229	<0.001	<0.0001	<0.001	<0.001	<0.0005	<0.001	None	40	<0.001	0.004
	8/06/2021	Insufficient Water Levels													
	29/10/2021	Insufficient Water Levels													
	16/12/2021	Insufficient Water Levels													
MP5	30/03/2021	5.17	0.067	<0.005	0.174	<0.001	<0.0001	<0.001	0.001	<0.0005	0.002	None	7	<0.001	0.007
	8/06/2021	5.03	0.072	<0.005	0.24	<0.001	<0.0001	<0.001	0.001	<0.0005	0.002	None	3	<0.001	0.007
	29/10/2021	4.99	0.082	<0.005	0.159	<0.001	<0.0001	<0.001	0.002	<0.0005	0.003	None	5	<0.001	0.02
	16/12/2021	4.85	0.079	<0.005	0.252	<0.001	<0.0001	<0.001	0.001	<0.0005	0.002	None	5	<0.001	0.011

- 1 Initially data will be compared against ANZECC Trigger Values with the aim to develop site specific trigger levels once a large enough baseline data set is available.
- 2 It is noted that the pH of nearby soil and receiving waters are mildly acidic pH4.5-pH5.3. Site specific pH trigger levels to be established once a large enough baseline data set is available.
- 3 ANZECC Guidelines do not specify a trigger value for total chromium (Cr) due to insufficient data. This will be established as part of the baseline criteria for the site.
- 4 EPL 20562 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 ≥ 60.2mm in total falling over any consecutive 5 day period.
- 5 Data in bold indicates the data is outside the trigger levels.

Table 2: Water Reuse Dam (MP7) – pH Results 2021

Date	pH	Comments
1/01/2021		Sampler not available
8/01/2021	6.84	
15/01/2021	5.64	
22/01/2021	5.51	
29/01/2021	5.43	
5/02/2021	5.38	
12/02/2021	5.36	
19/02/2021	5.38	
26/02/2021	5.38	
5/03/2021	5.45	
12/03/2021	5.43	
19/03/2021	5.41	
26/03/2021	5.47	
2/04/2021	5.43	
9/04/2021	5.32	
16/04/2021	5.25	
23/04/2021	5.17	
30/04/2021	5.02	
7/05/2021	4.76	
14/05/2021	4.5	
21/05/2021	4.82	
28/05/2021	4.95	
4/06/2021	5.03	
11/06/2021	5.21	
18/06/2021	5.32	
25/06/2021	5.15	
2/07/2021	5.26	
9/07/2021	5.03	
16/07/2021	5.14	
23/07/2021	5.09	
30/07/2021	5.09	
6/08/2021	5.05	
13/08/2021	5.03	
20/08/2021	4.96	
27/08/2021	4.95	
3/09/2021	4.91	
10/09/2021	4.85	
17/09/2021	4.86	
24/09/2021	4.78	
1/10/2021	4.75	
8/10/2021	4.81	
15/10/2021	4.69	
22/10/2021	4.71	
29/10/2021	4.65	
5/11/2021	4.54	
12/11/2021	4.62	



Date	pH	Comments
19/11/2021	4.41	
26/11/2021	4.55	
3/12/2021	4.69	
10/12/2021	4.72	
17/12/2021	4.68	
24/12/2021	4.68	
31/12/2021	4.57	



Table 3: Groundwater Monitoring Results 2021

ANZECC 2000 Trigger Values ¹		6.5 - 8.5 3	0.35	0.7	0.055	0.024	0.0002	n/s	0.0014	0.0006	0.011	0.0034	0.008
NHMRC Drinking Water Guidelines ²		6.5 - 8.5 3	n/s	50	0.2	0.01	0.002	0.05	2	0.001	0.02	0.01	3
Monitoring Point	Date	pH	Conductivity (dS/m)	Nitrate (NO3) (mg/L)	Aluminium (Al) (mg/L)	Total Arsenic (As) (mg/L)	Cadmium (Cd) (mg/L)	Total Chromium (Cr) (mg/L)	Copper (Cu) (mg/L)	Mercury (Hg) (mg/L)	Nickel (Ni) (mg/L)	Lead (Pb) (mg/L)	Zinc (Zn) (mg/L)
MP8	31/03/2021	No Access											
	9/06/2021	No Access											
	29/10/2021	No Access											
	16/12/2021	No Access											
MP9	31/03/2021	5.38	0.141	0.108	0.081	<0.001	<0.0001	<0.001	0.014	<0.0005	0.001	<0.001	0.018
	9/06/2021	5.17	0.209	0.055	0.034	<0.001	<0.0001	<0.001	0.006	<0.0005	0.001	0.001	0.01
	29/10/2021	5.19	0.238	<0.005	0.03	<0.001	<0.0001	<0.001	0.003	<0.0005	0.001	0.001	0.05
	16/12/2021	5.28	0.216	<0.005	0.084	<0.001	<0.0001	<0.001	0.005	<0.0005	0.001	<0.001	0.044
MP10	31/03/2021	4.62	0.076	0.07	0.243	<0.001	<0.0001	0.001	0.021	<0.0005	0.002	0.001	0.021
	9/06/2021	4.58	0.078	0.169	0.142	<0.001	<0.0001	0.001	0.01	<0.0005	0.001	<0.001	0.012
	29/10/2021	4.46	0.109	0.038	0.133	<0.001	<0.0001	0.001	0.017	<0.0005	0.003	0.002	0.039
	16/12/2021	4.53	0.082	0.071	0.208	<0.001	<0.0001	0.001	0.017	<0.0005	0.002	0.002	0.024
MP12	31/03/2021	5.34	0.371	0.003	0.027	<0.001	<0.0001	<0.001	0.02	<0.0005	0.001	<0.001	0.013
	9/06/2021	4.72	0.405	<0.005	0.04	<0.001	<0.0001	<0.001	0.016	<0.0005	0.002	<0.001	0.012
	29/10/2021	4.74	0.402	<0.005	0.045	<0.001	<0.0001	<0.001	0.016	<0.0005	0.002	0.002	0.116
	16/12/2021	4.83	0.435	<0.005	0.013	<0.001	<0.0001	<0.001	0.005	<0.0005	0.002	0.001	0.141

- 1 Initially data will be compared against ANZECC Trigger Values with the aim to develop site specific trigger levels once a large enough baseline data set is available.
- 2 Initially data will be compared against NHMRC Drinking Water Guidelines with the aim to develop site specific trigger levels once a large enough baseline data set is available.
- 3 It is noted that the pH of nearby soil and receiving waters are mildly acidic pH4.5-pH5.3. Site specific pH trigger levels to be established once a large enough baseline data set is available.
- 4 ANZECC Guidelines do not specify a trigger value for total chromium (Cr) due to insufficient data. This will be established as part of the baseline criteria for the site.
- 5 Data in **bold** indicates the data is outside the trigger levels.

APPENDIX E – SITE PHOTOGRAPHS OF BUNDS AND SCREENING AREAS

BUND A

View of Bund A from the eastern end, trees planted to the north of the Bund and a single row of non-koala habitat trees on the south-western side of the Bund. Photo March 2021.



BUND B

Bund B – Low earth mound 10 metres wide. Established and grassed and planted with 2 rows of non-koala habitat trees/shrubs. Photo March 2021.



BUND C

Earth bund surrounding the Sand Washing Plant approx. 15 metres wide. Photo March 2020.



BUND D

10 metre wide bund. Established and grassed. Photo March 2021.



BUND E

Low sacrificial bund 10 metres wide. Established and grassed. Photo March 2021.



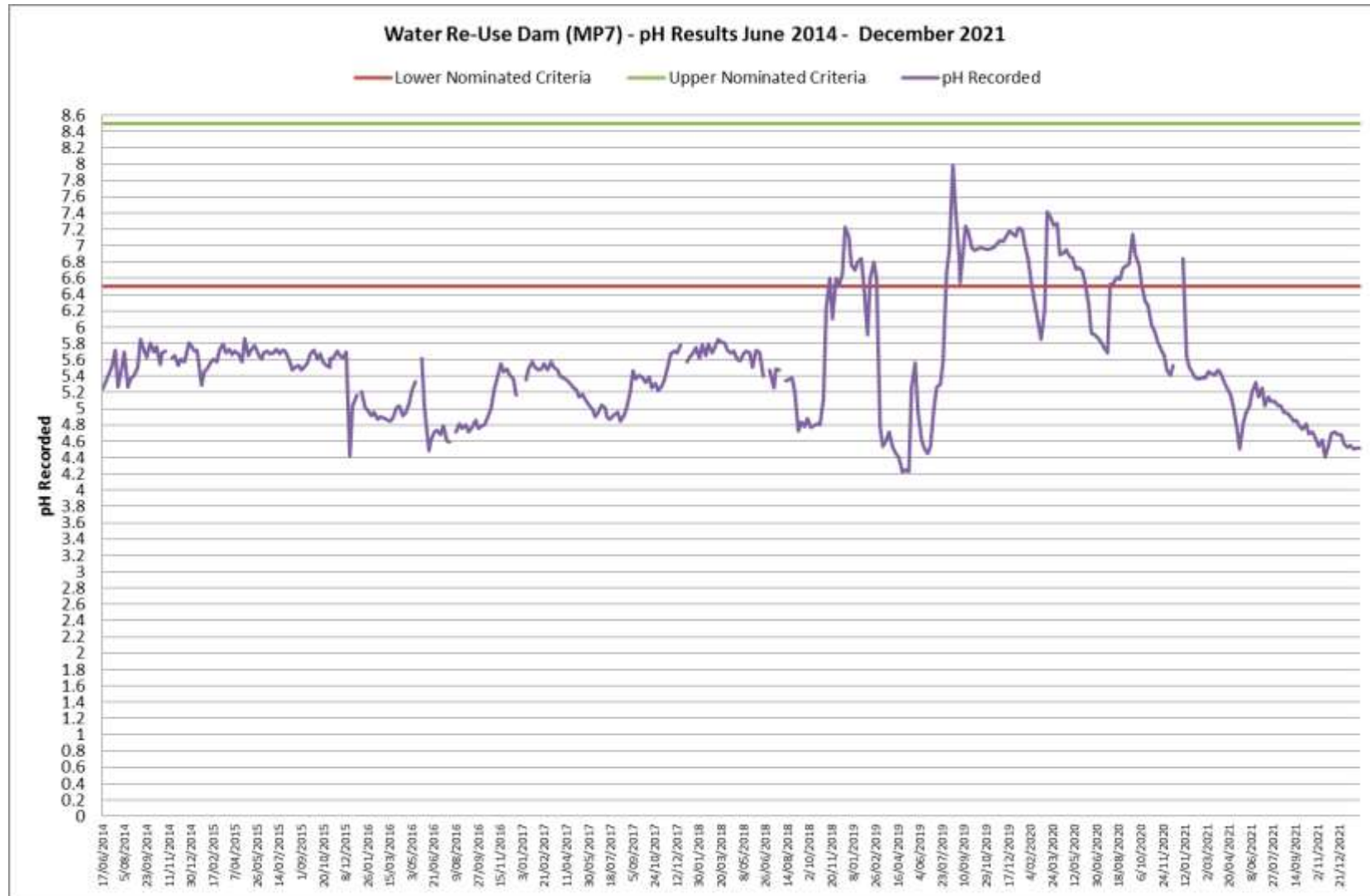
AREA TO THE NORTH OF THE MAIN ACCESS ROAD

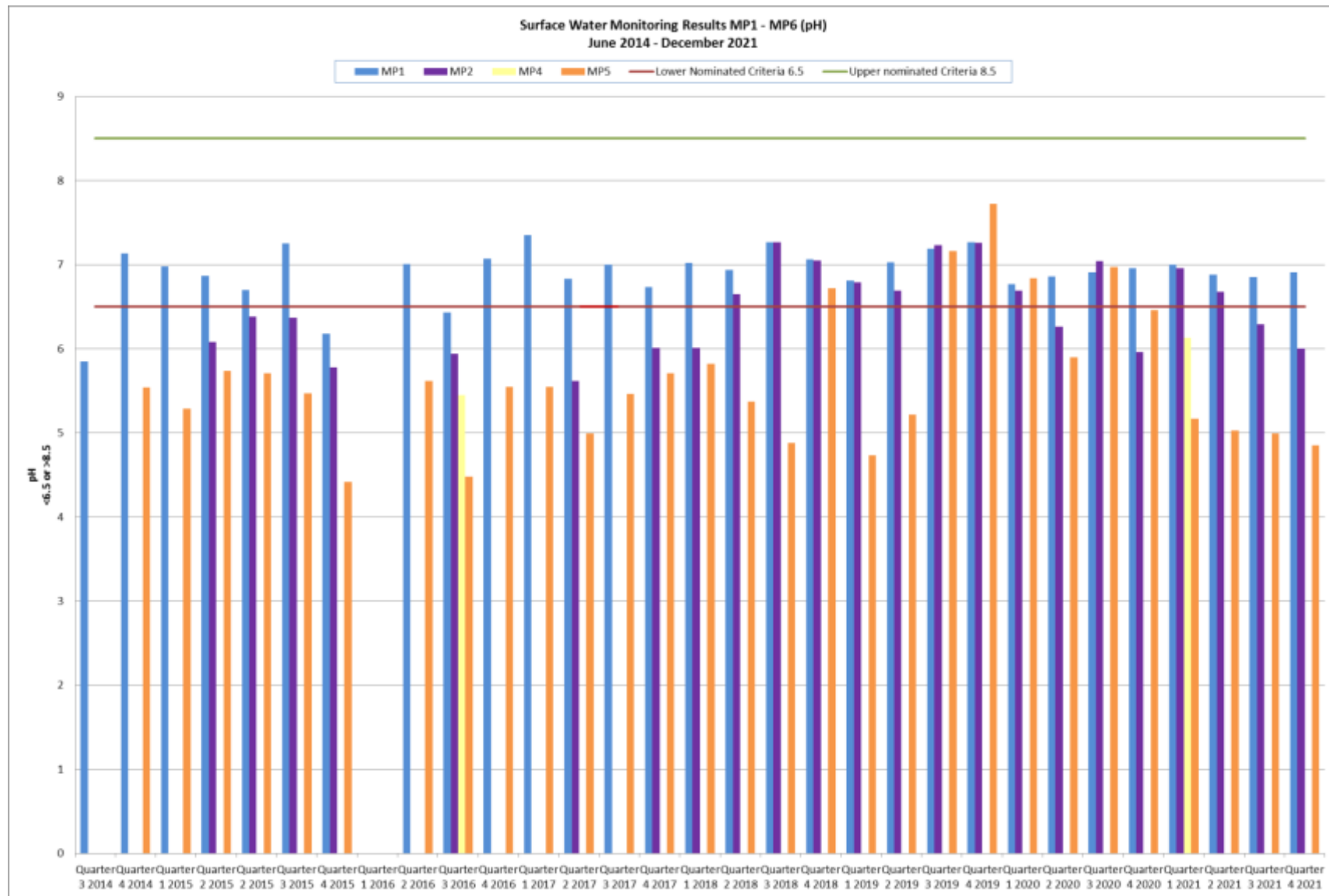
Established, grassed and planted with 2 rows of non-koala habitat trees/shrubs. Photo March 2021.

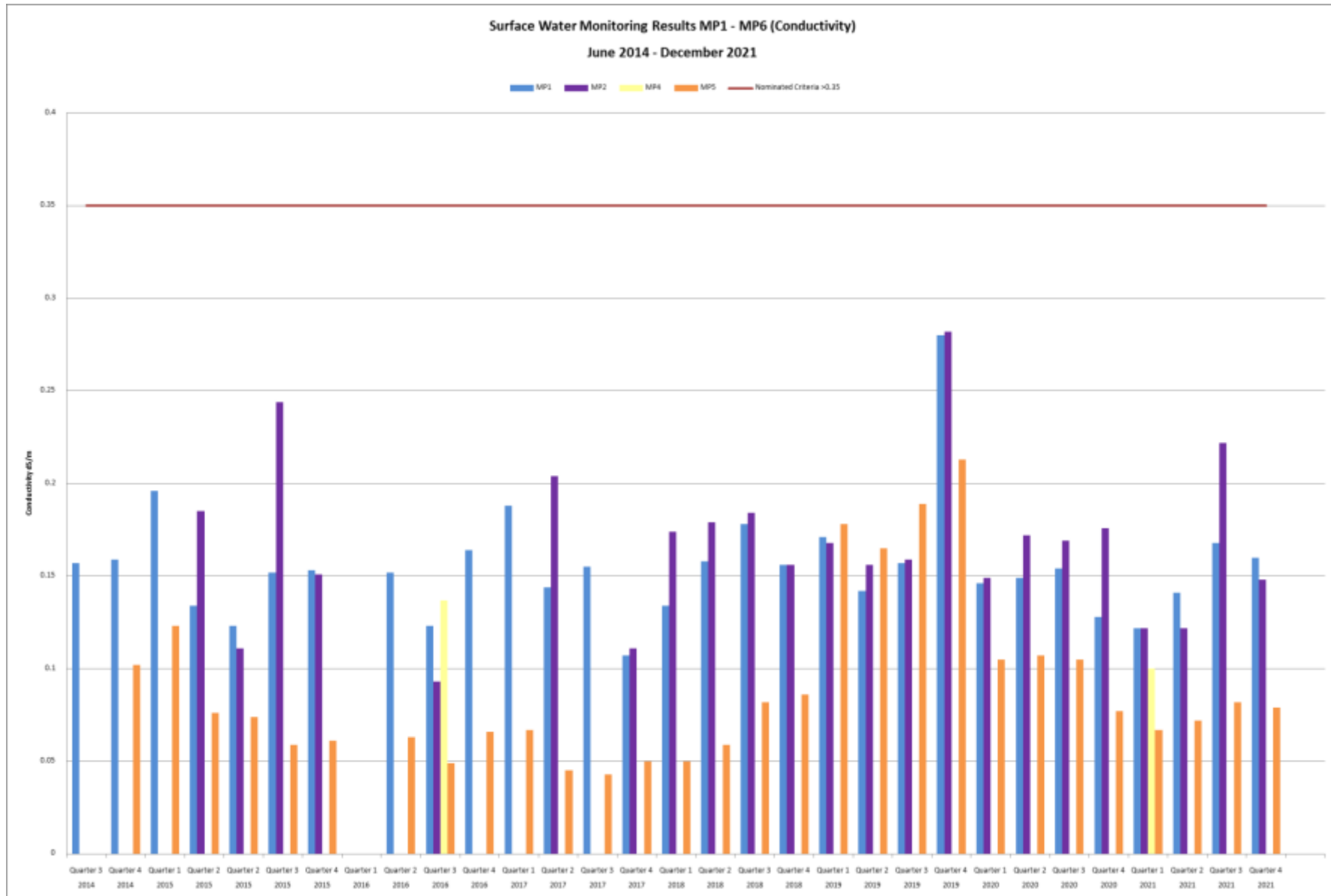


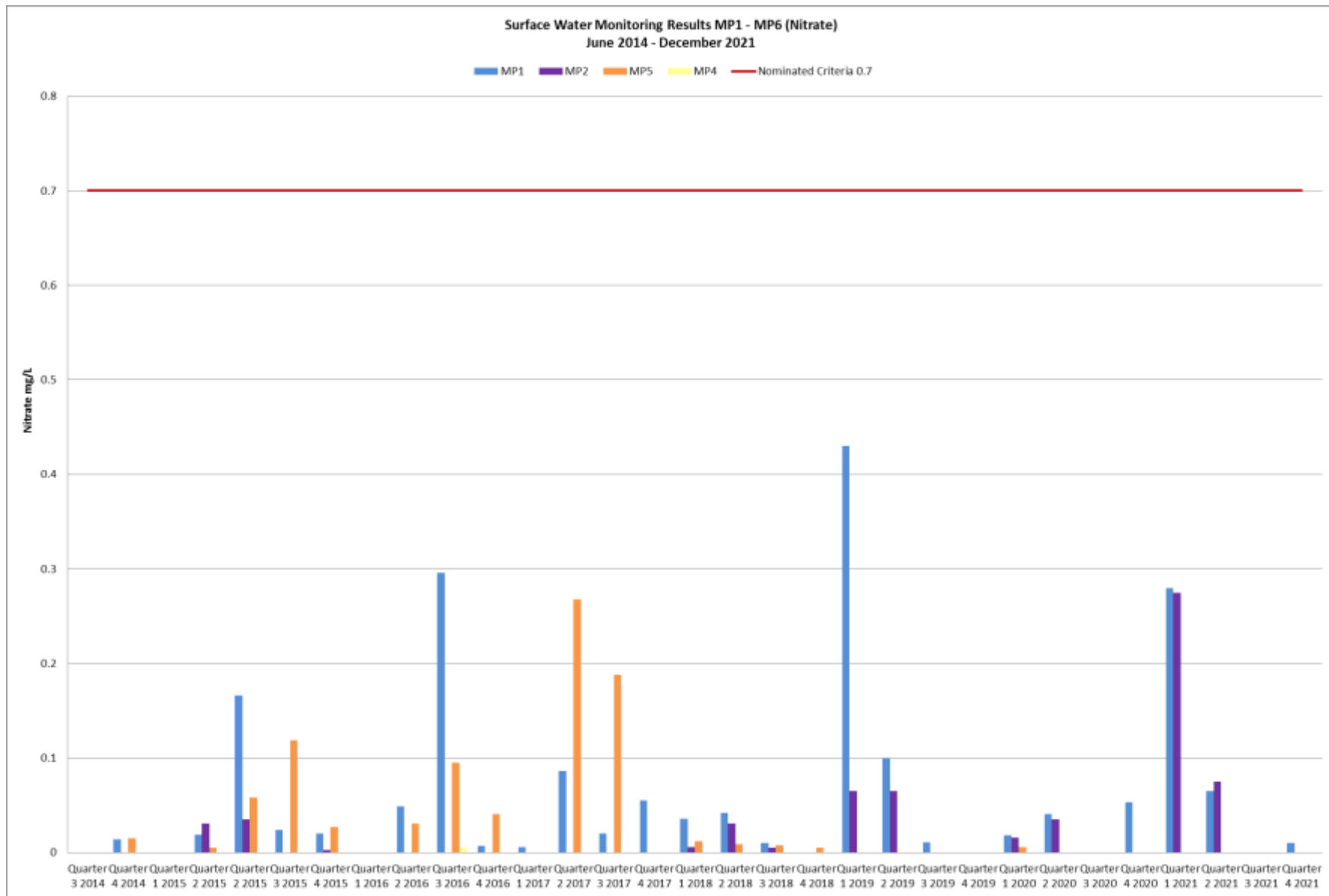


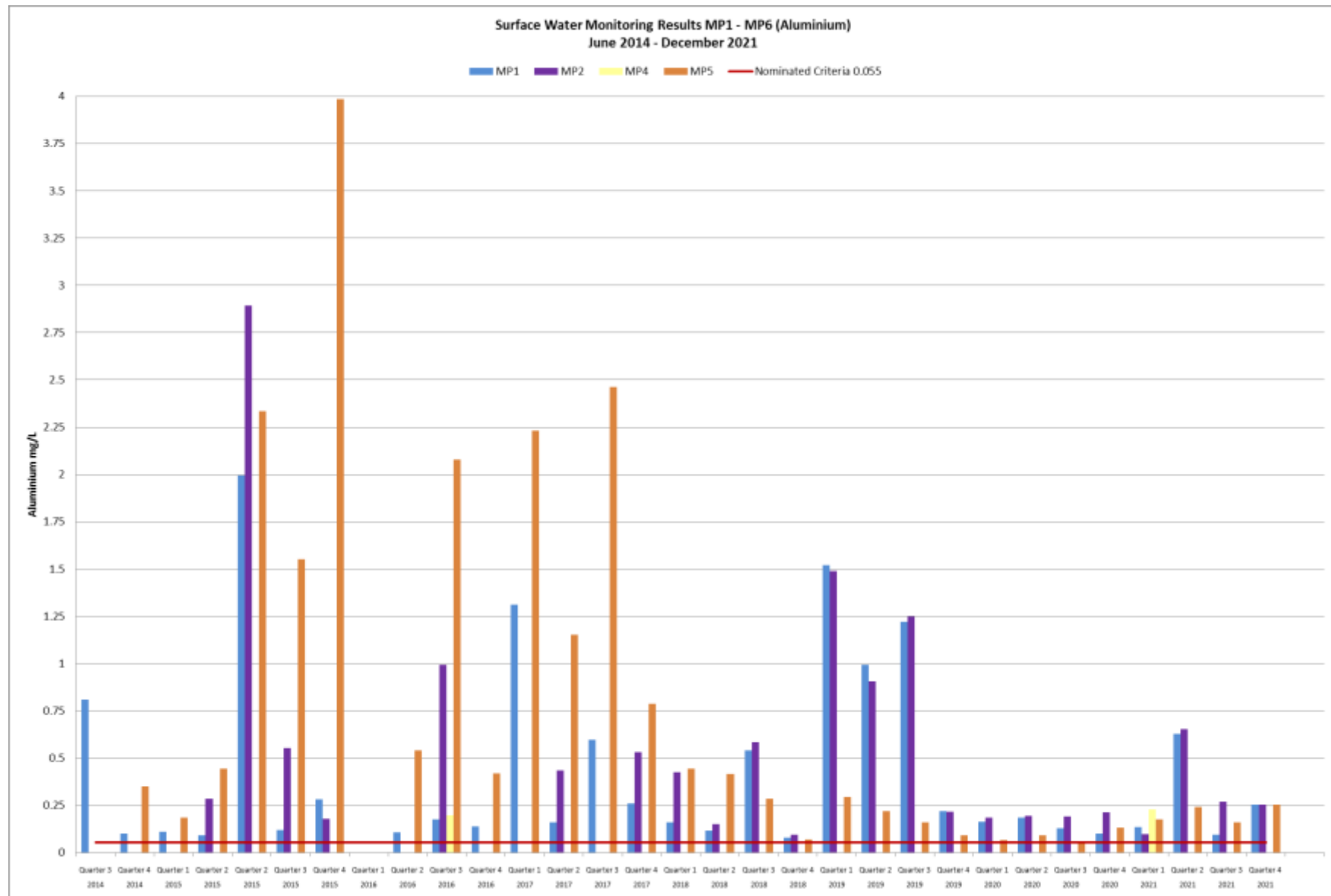
APPENDIX F – ENVIRONMENTAL MONITORING GRAPHS

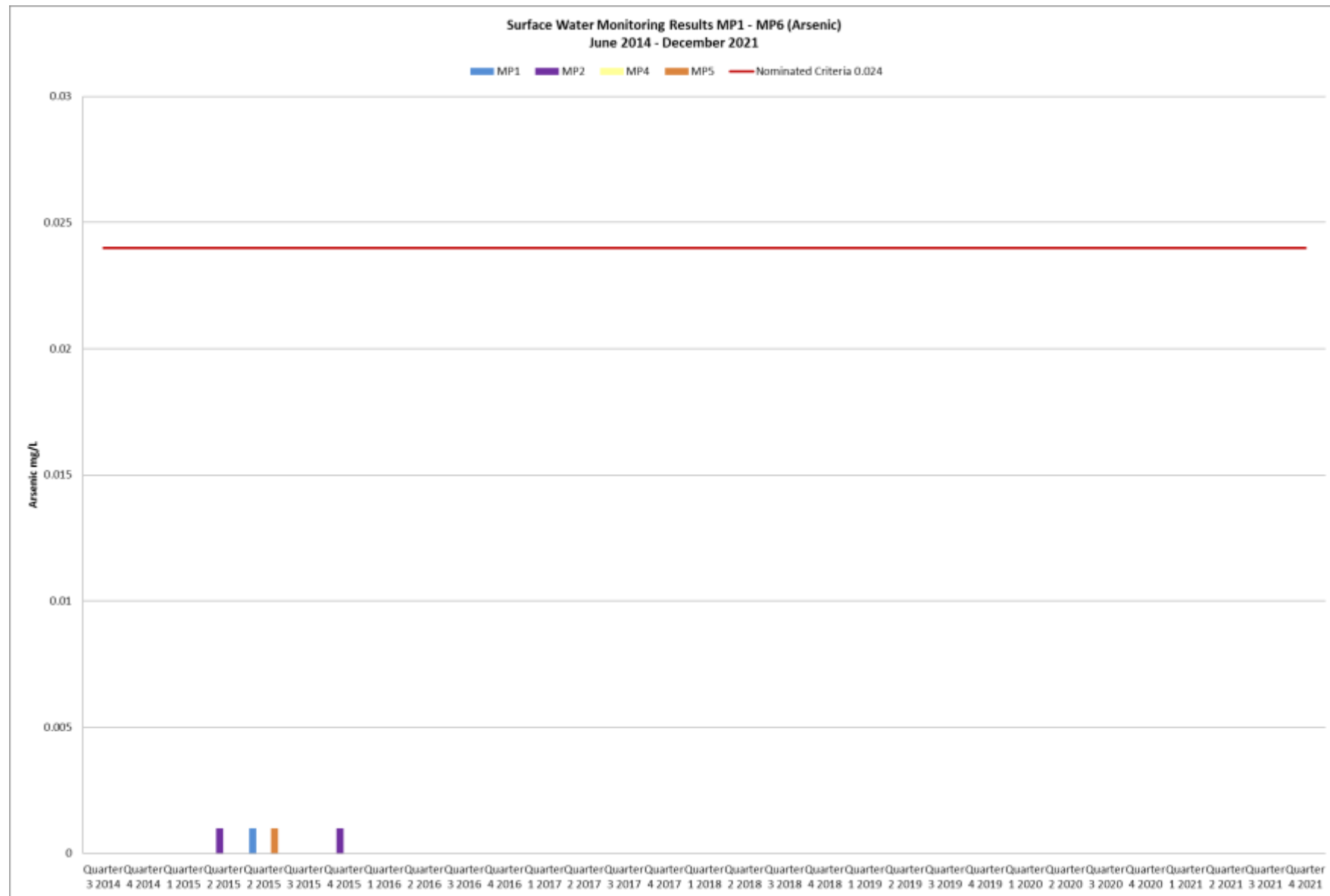


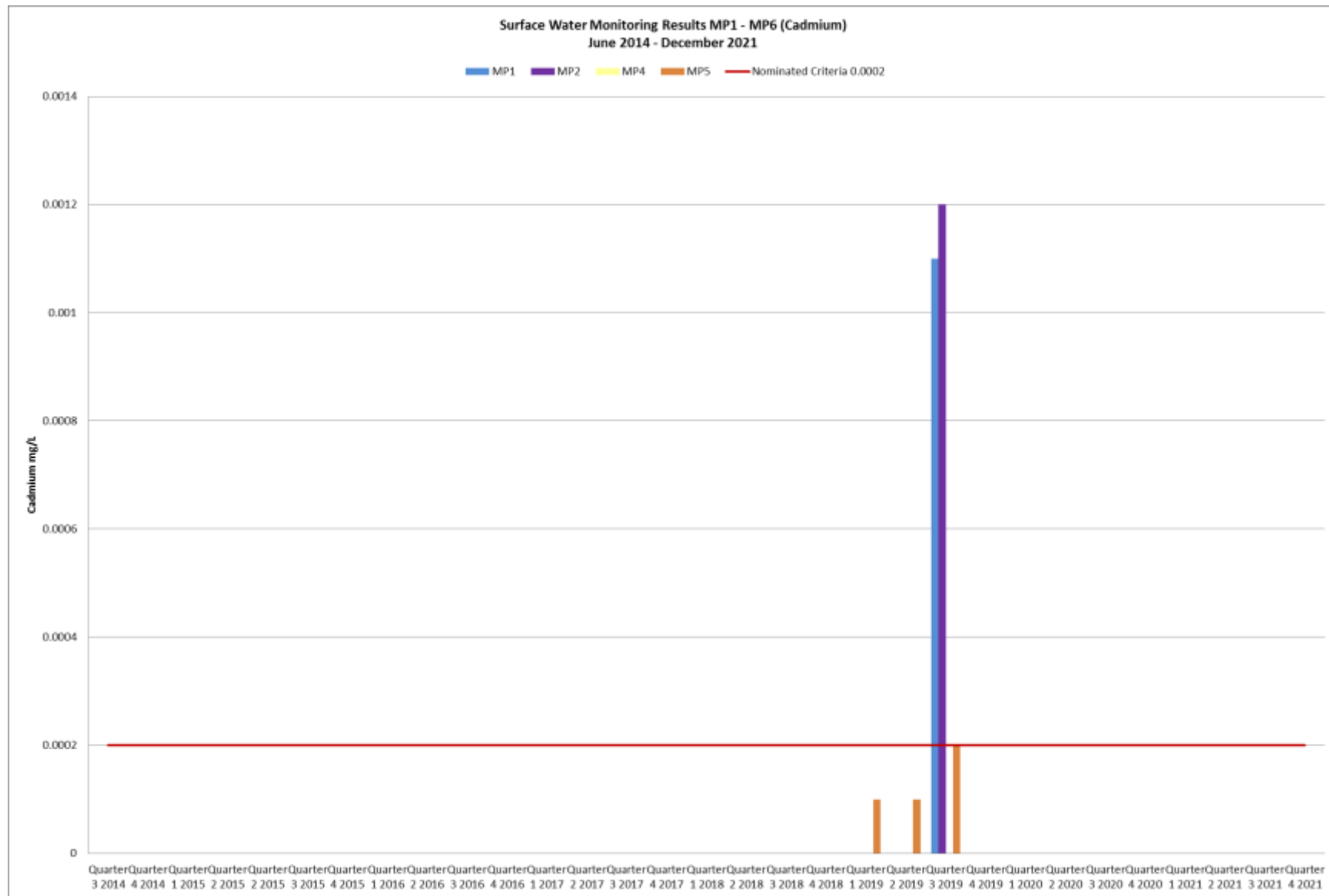


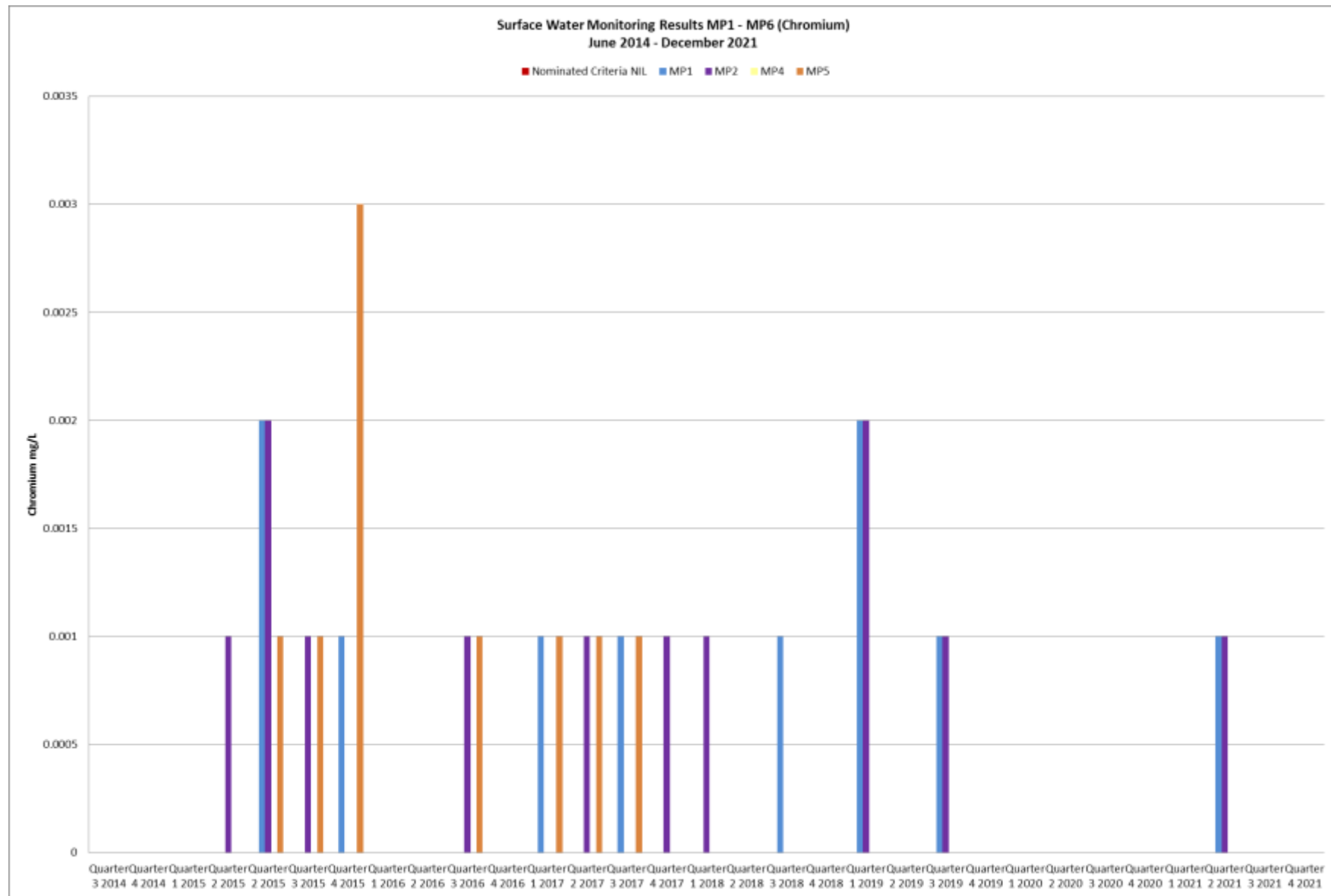


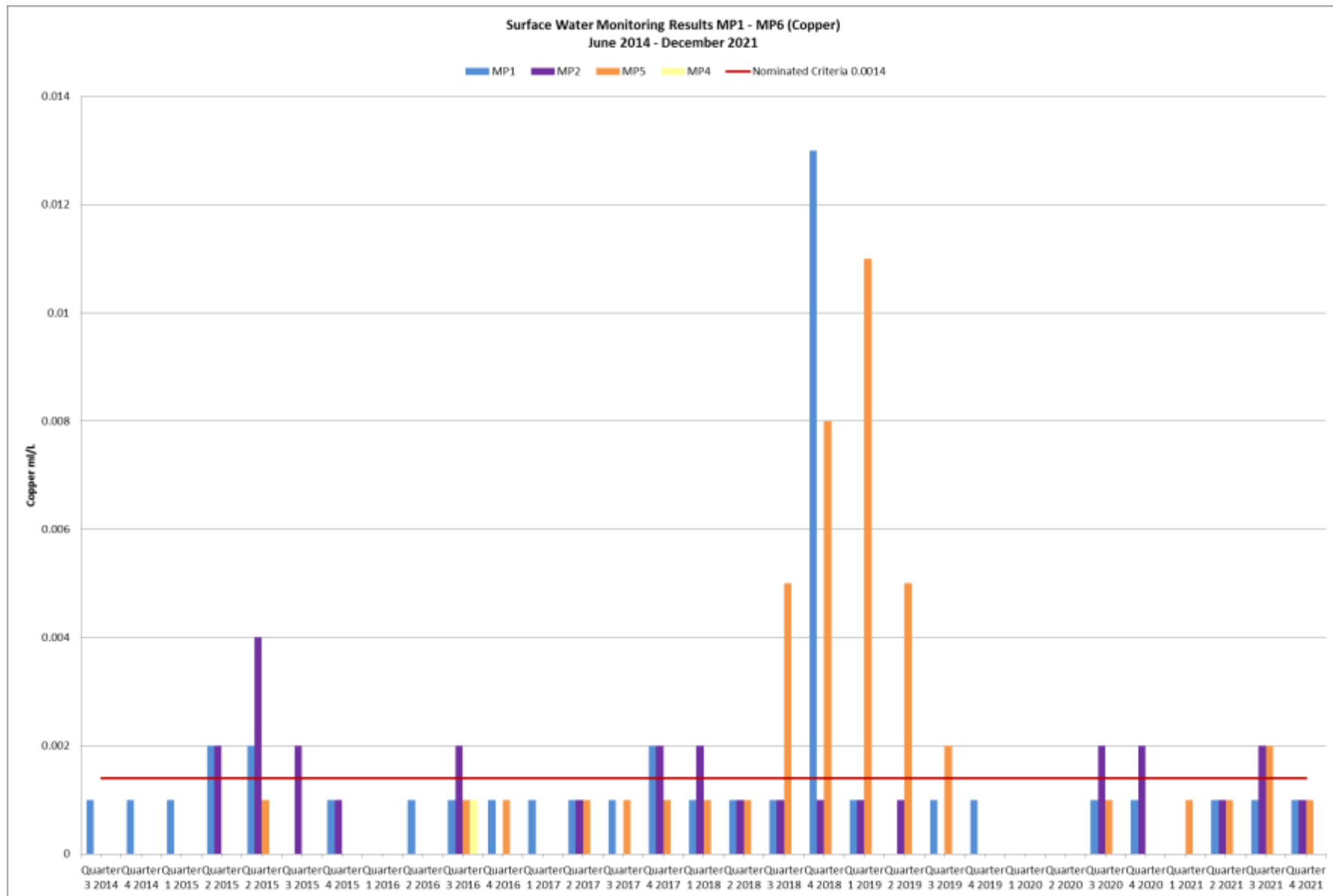


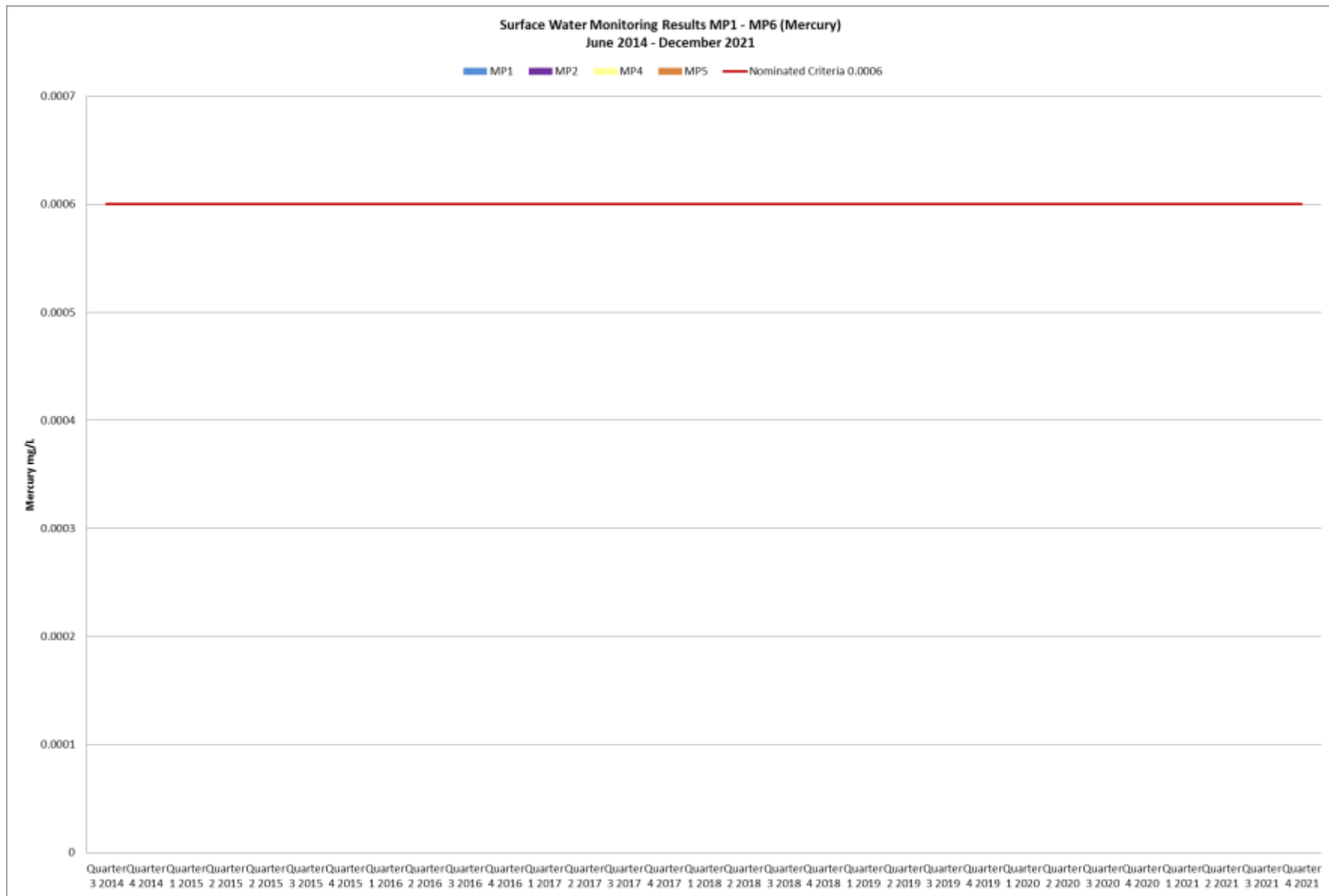


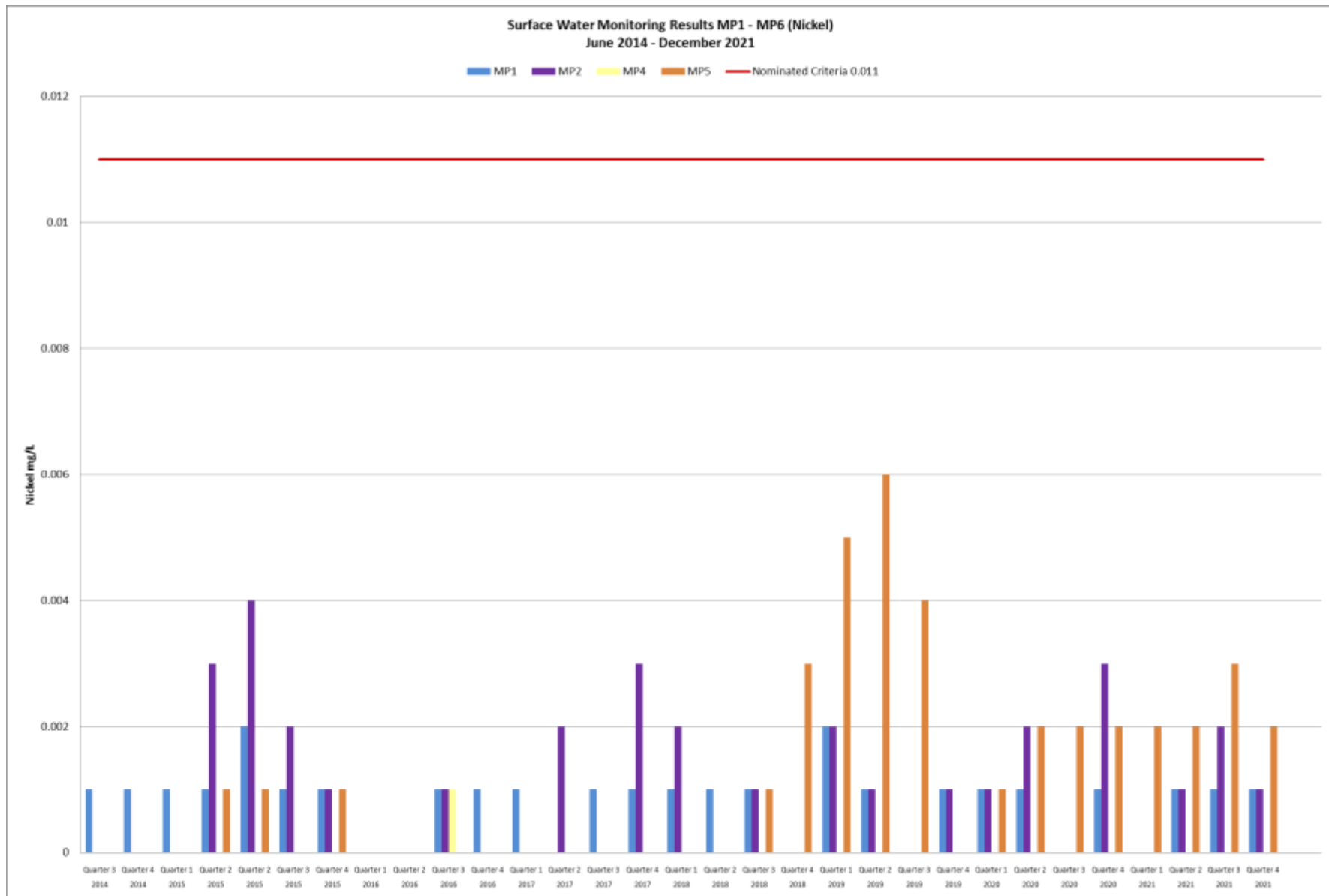


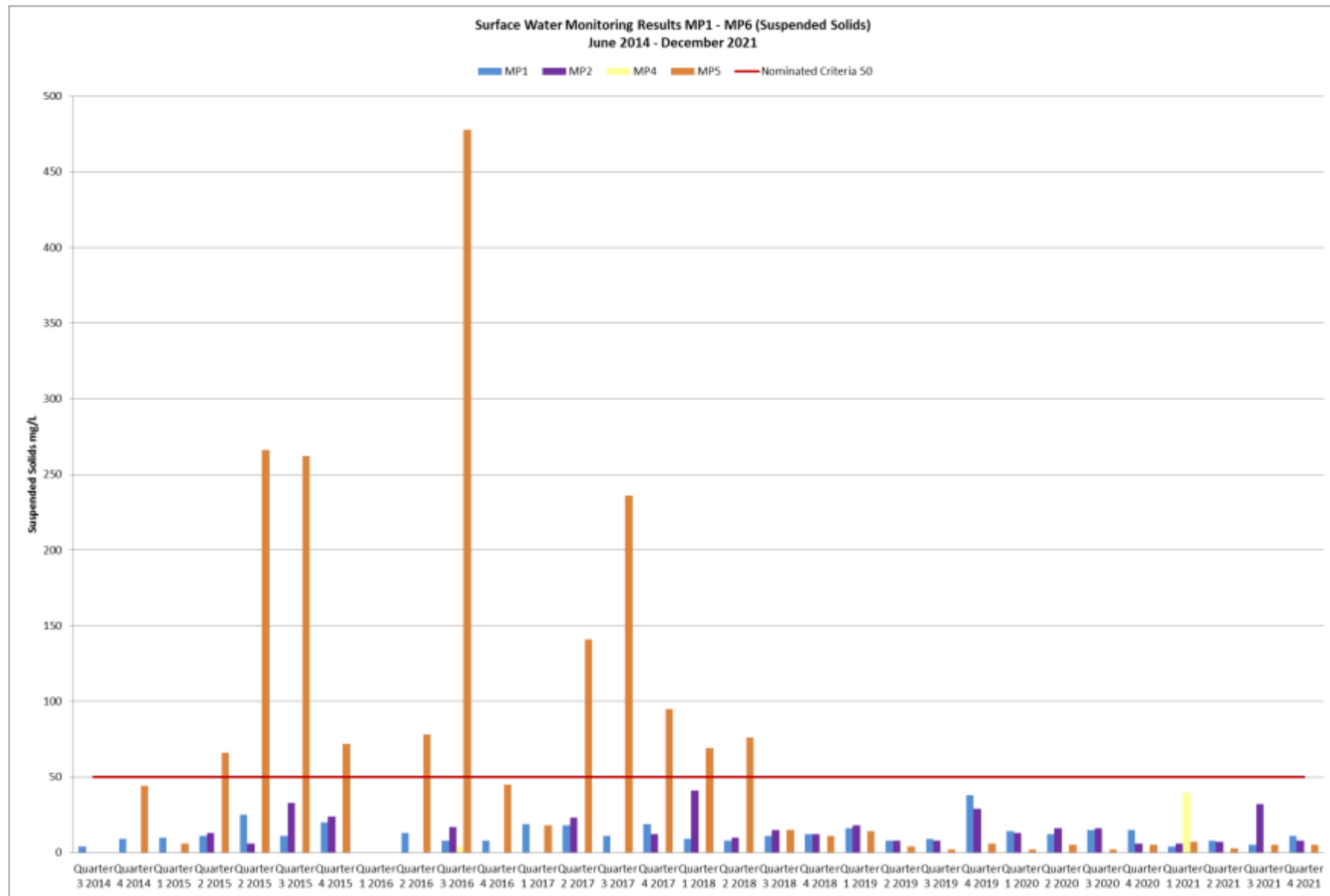


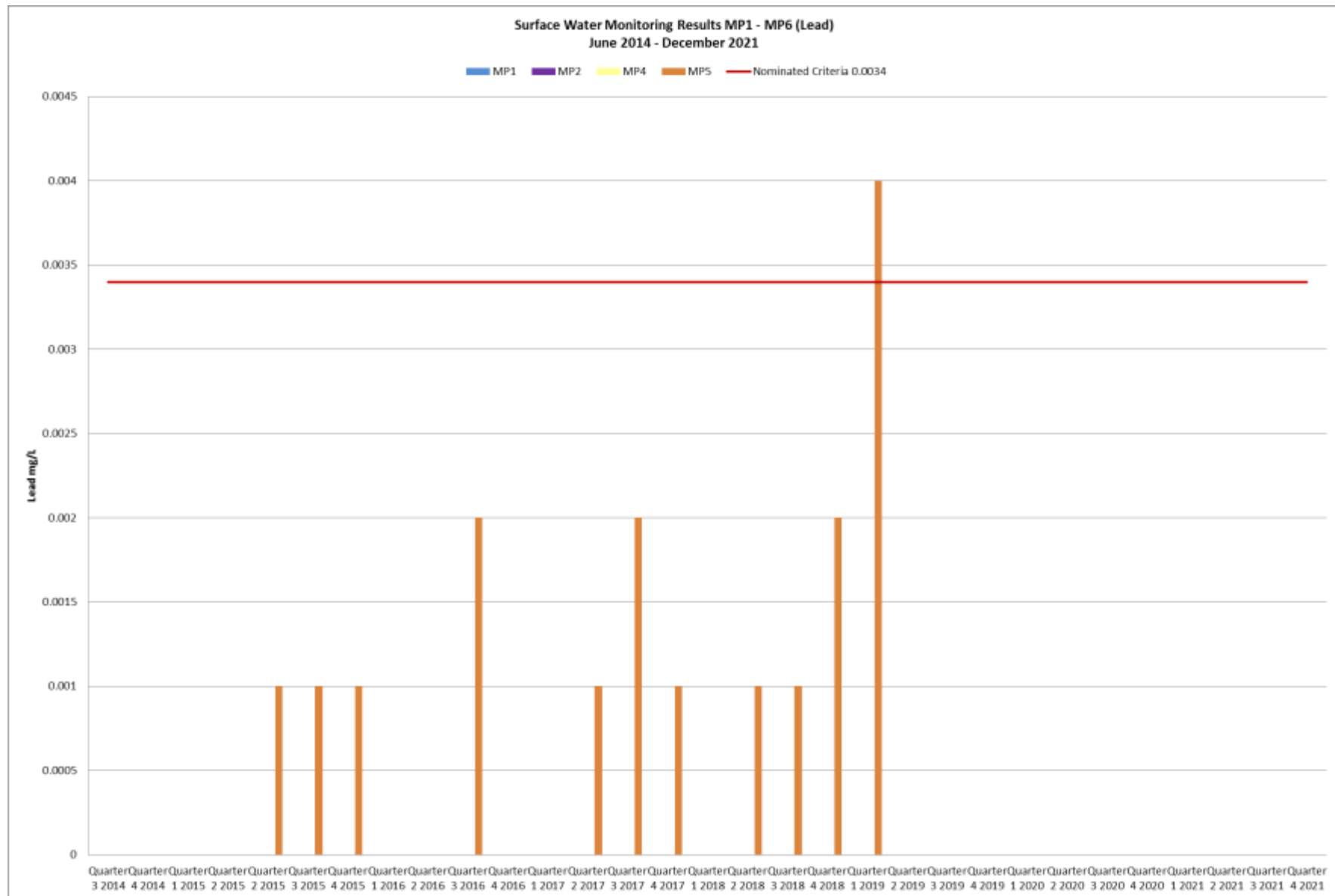


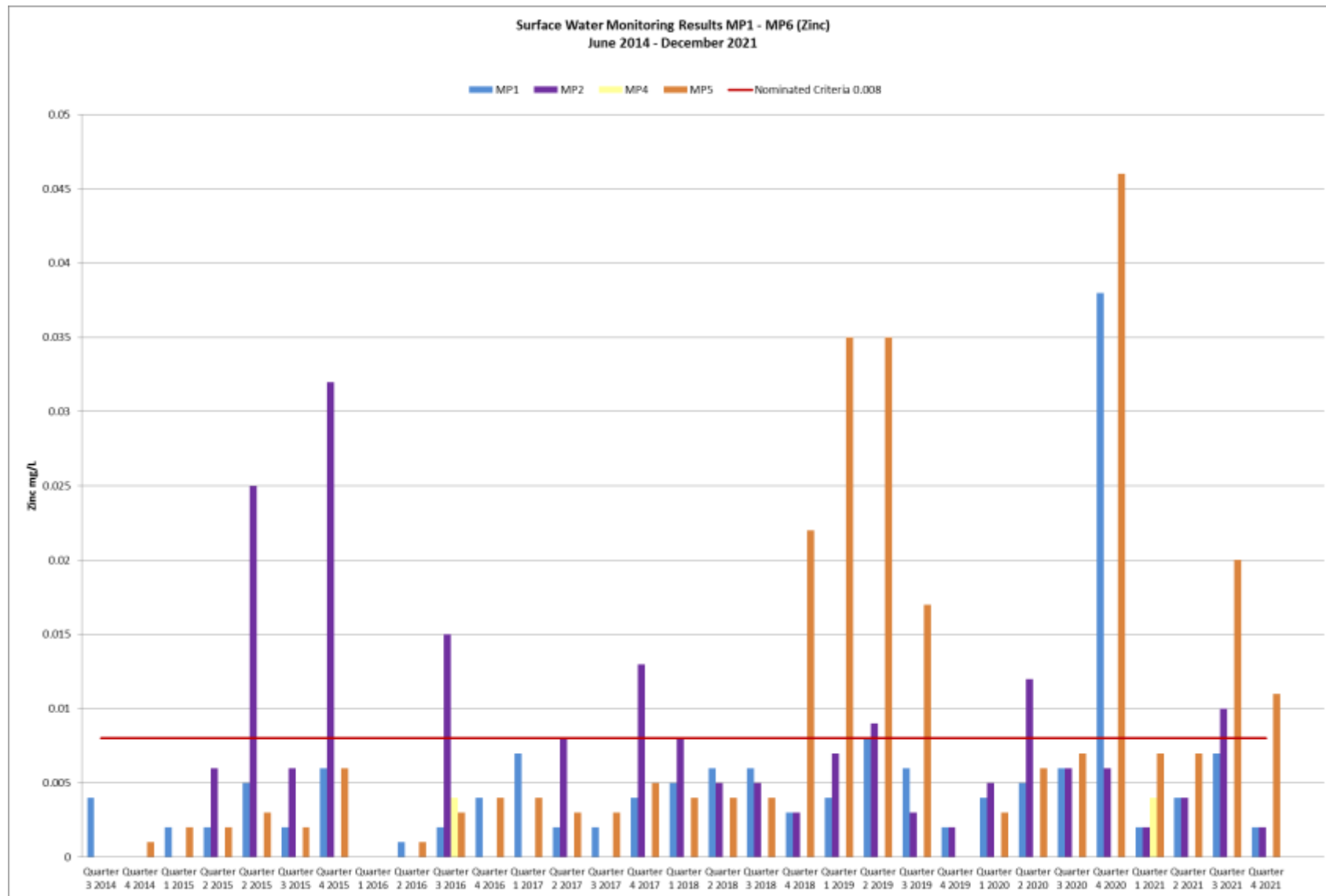


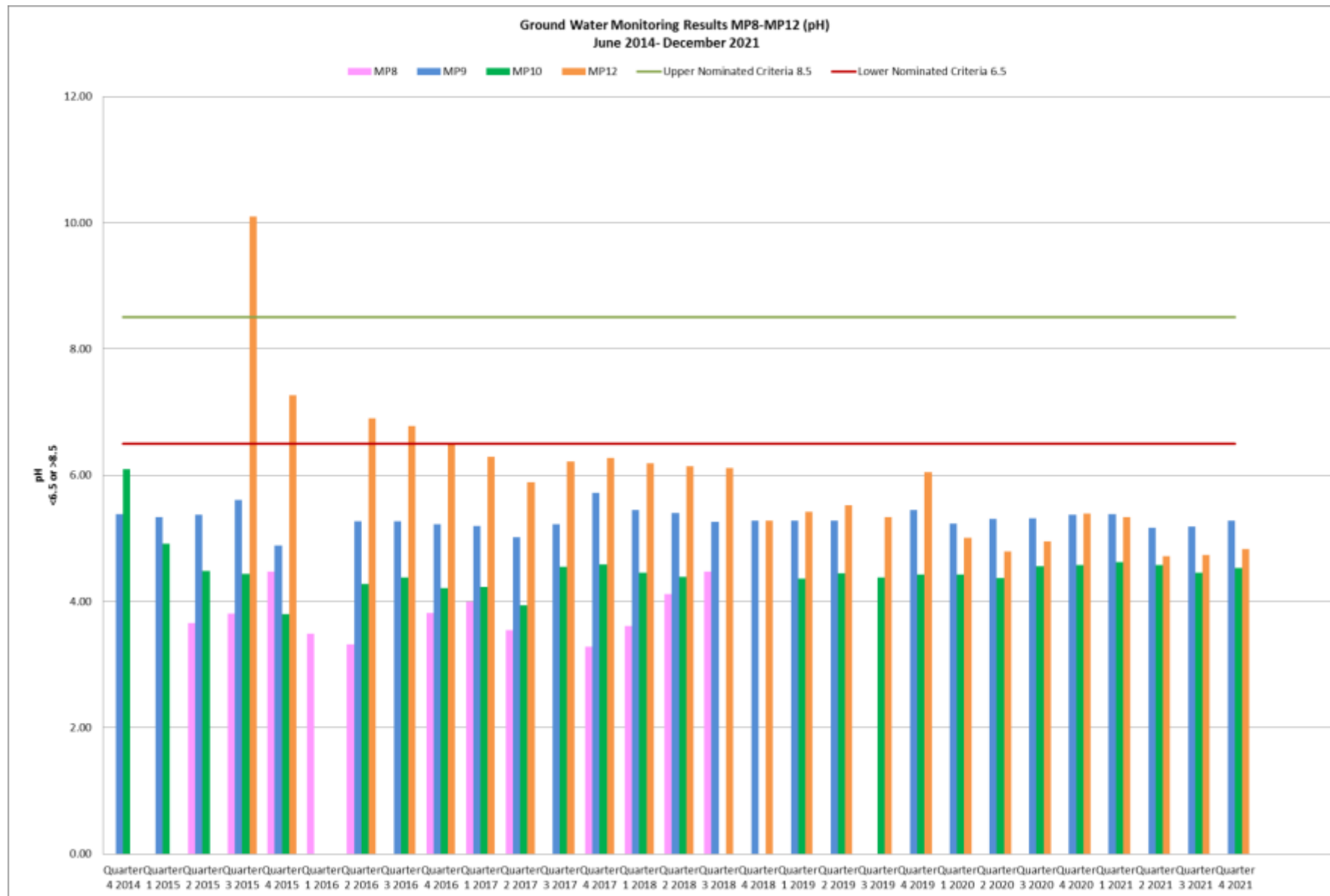


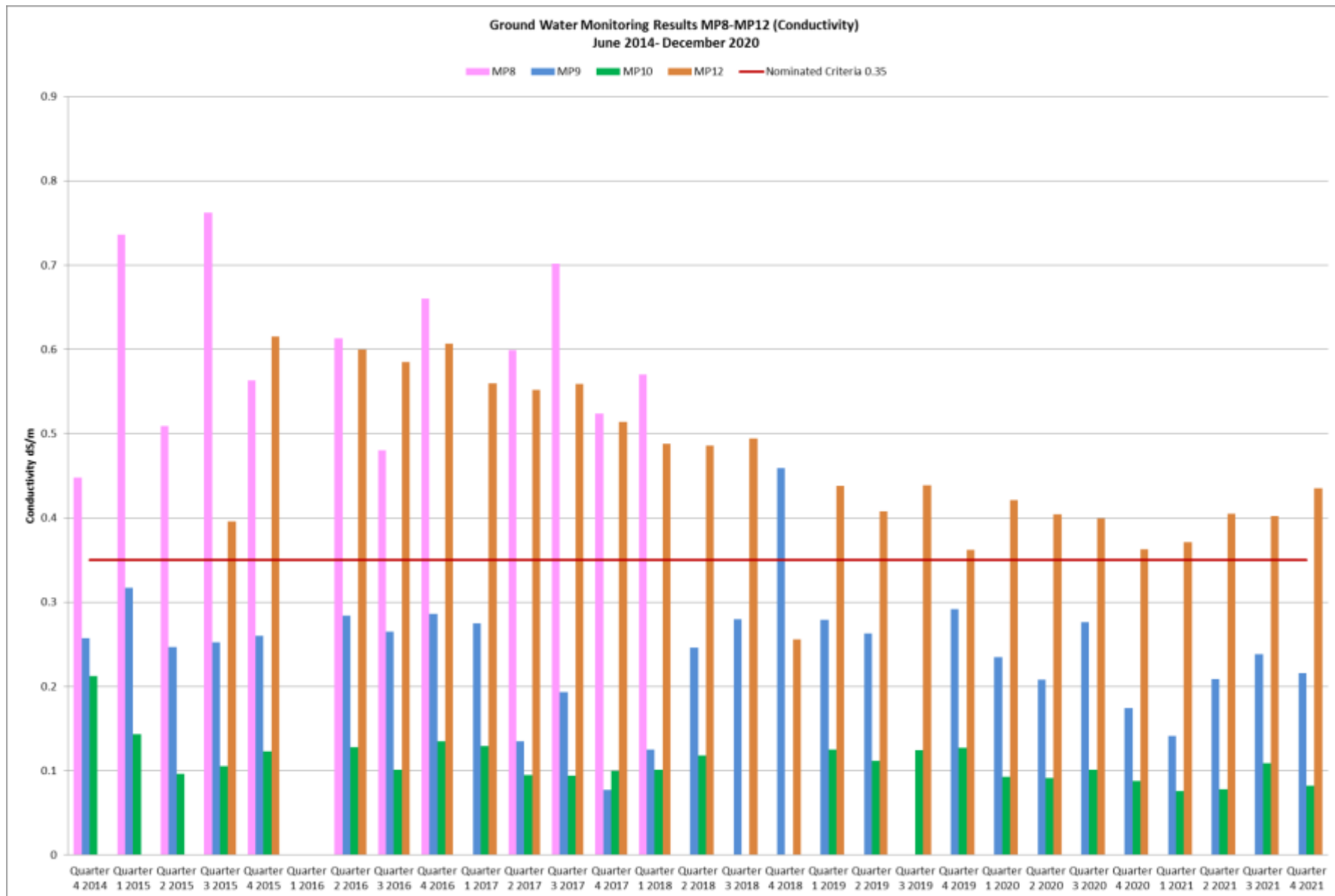


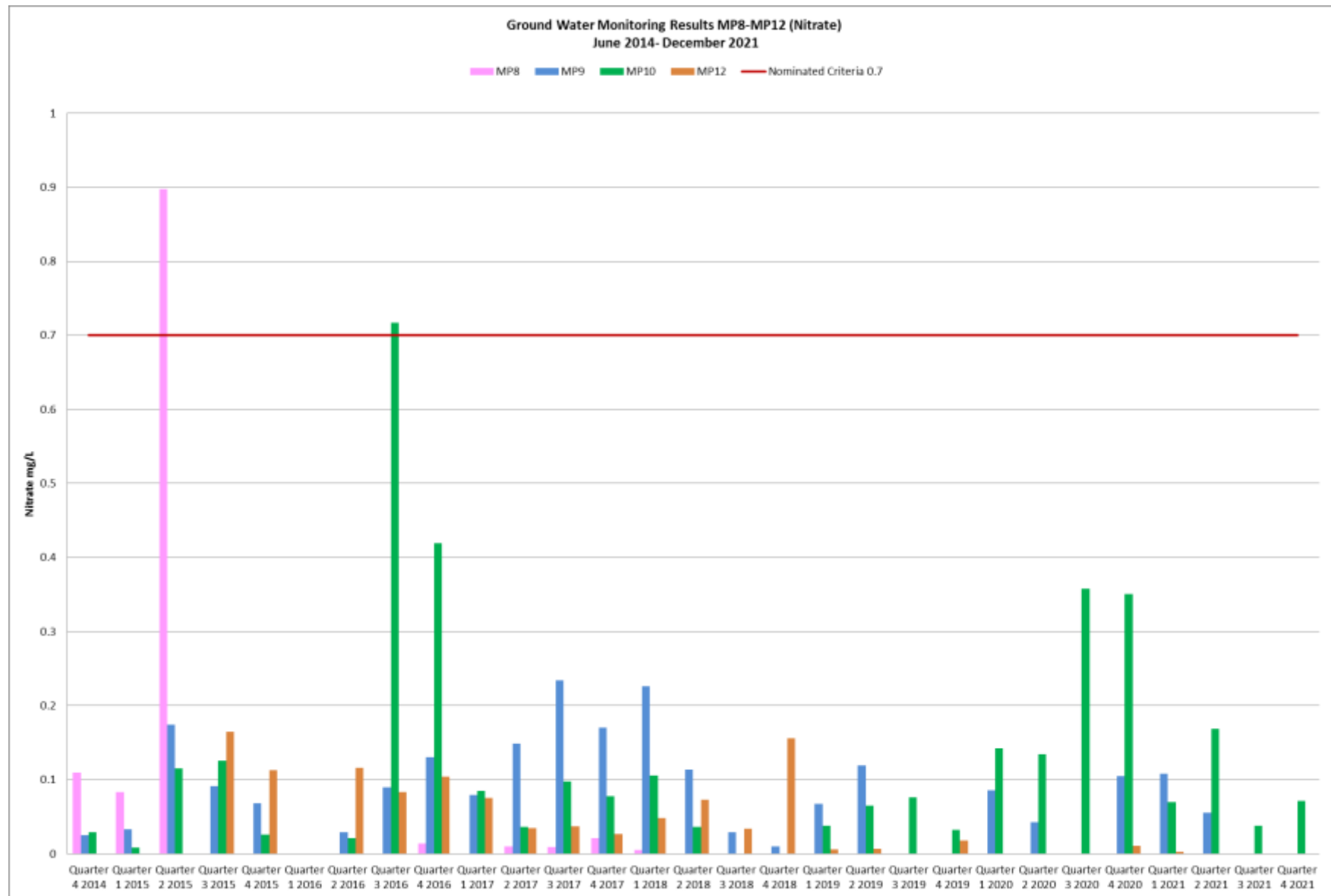


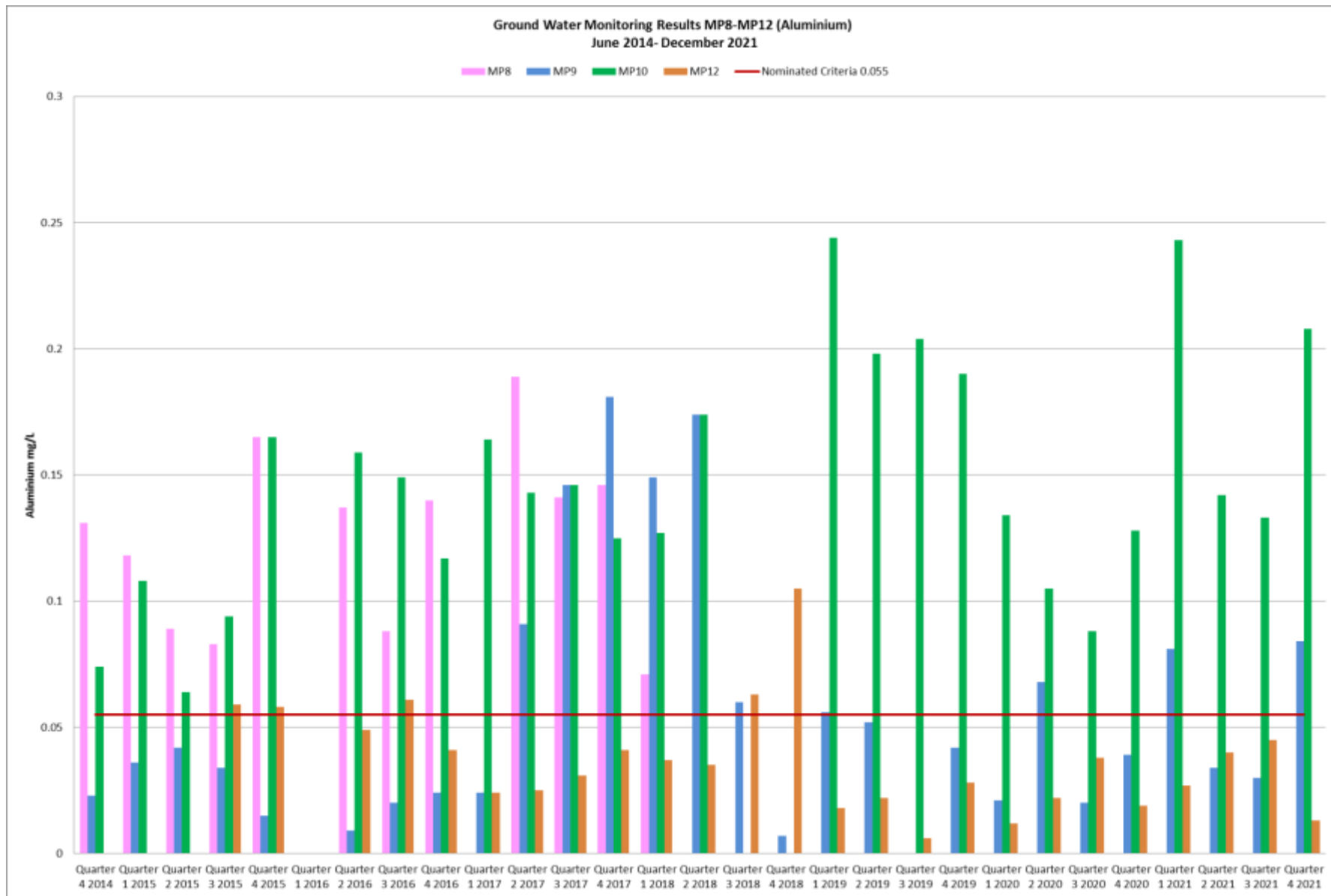


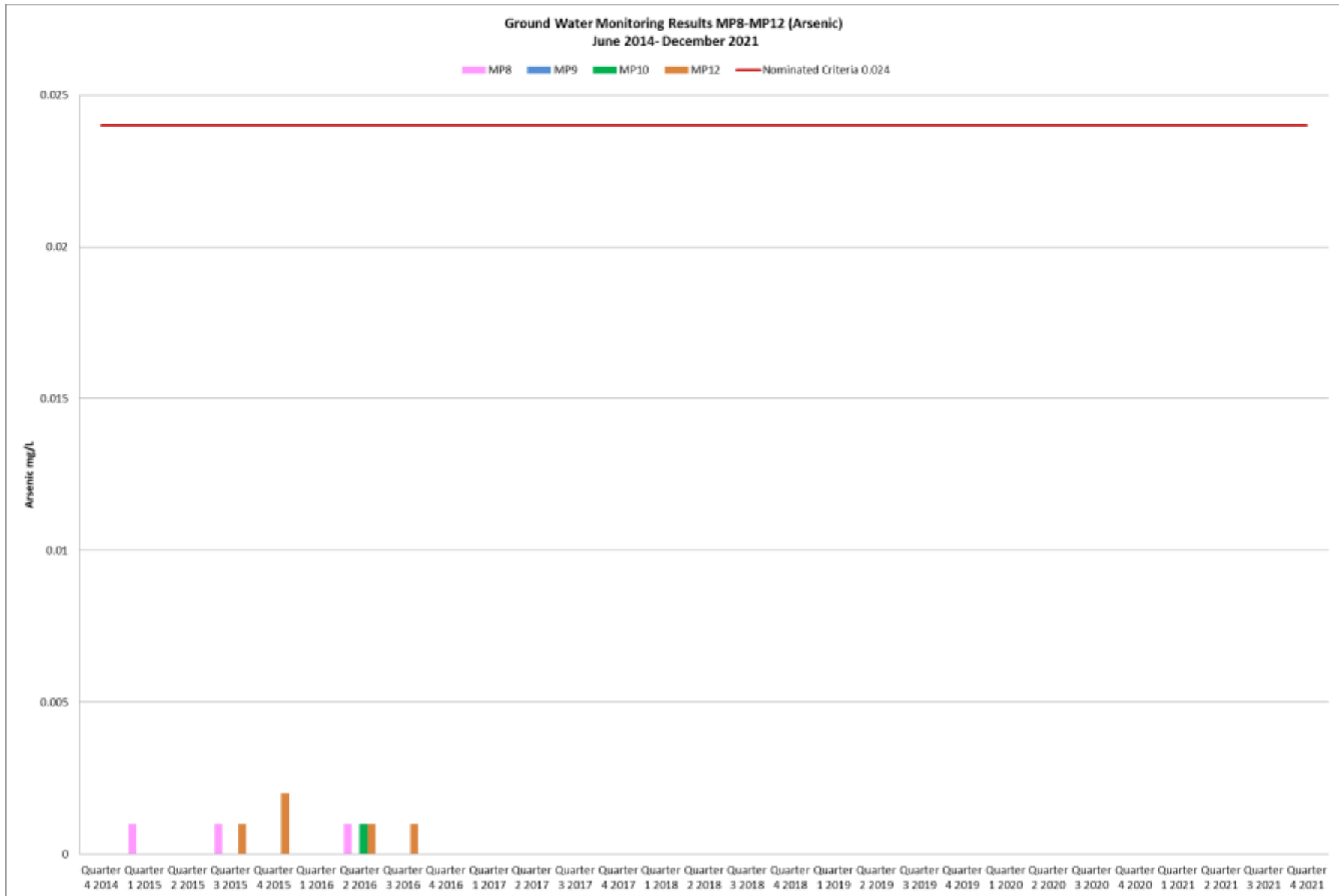


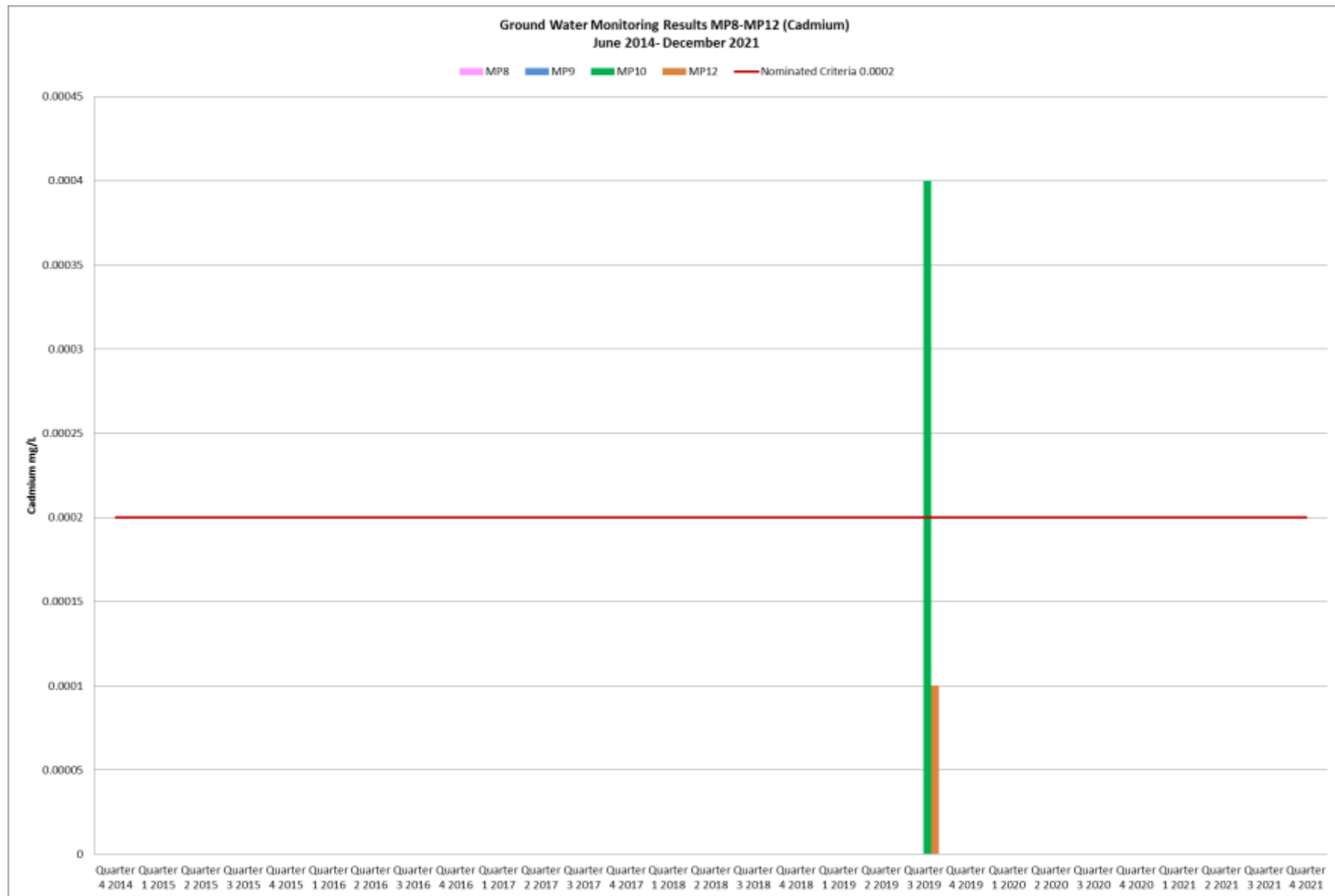


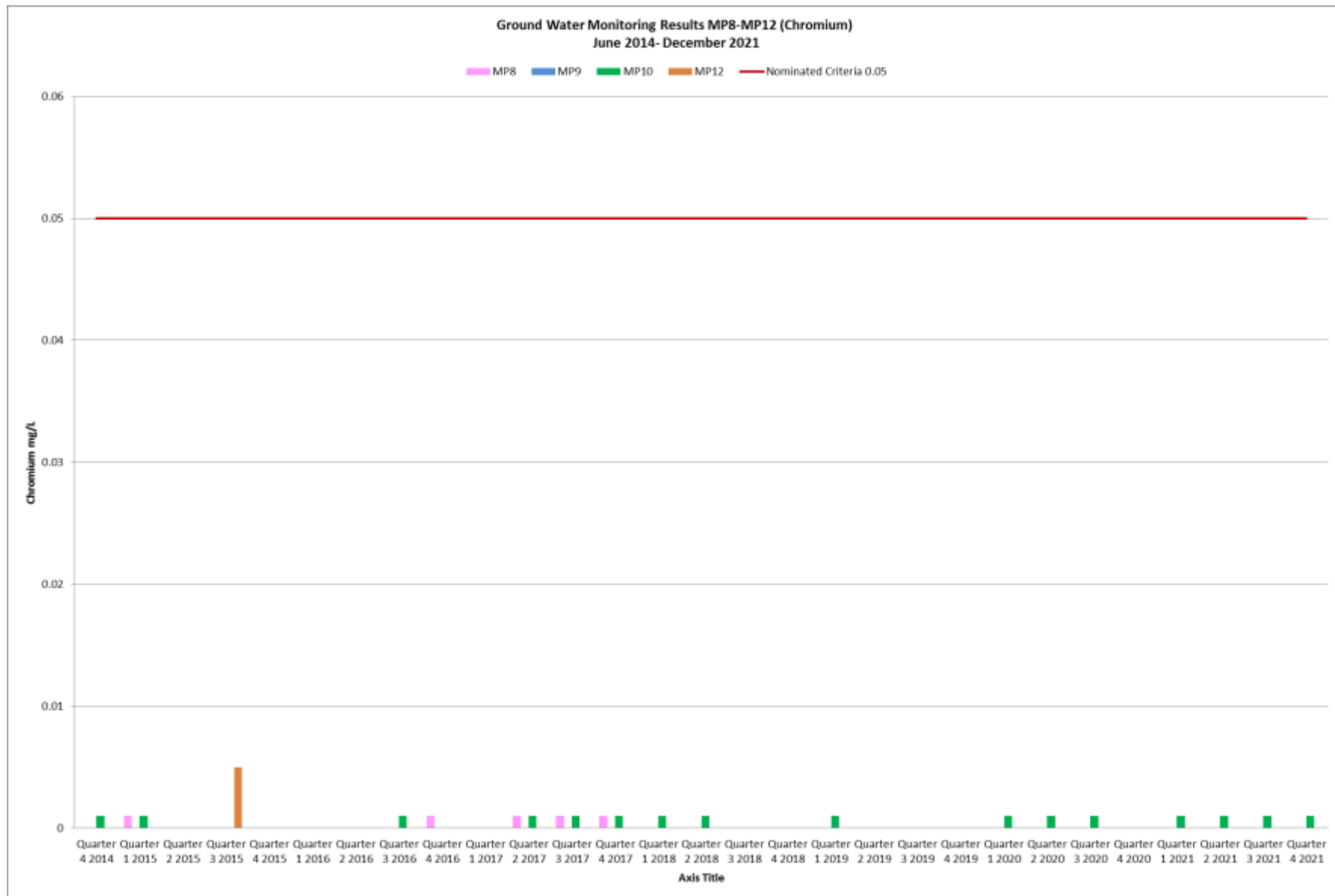


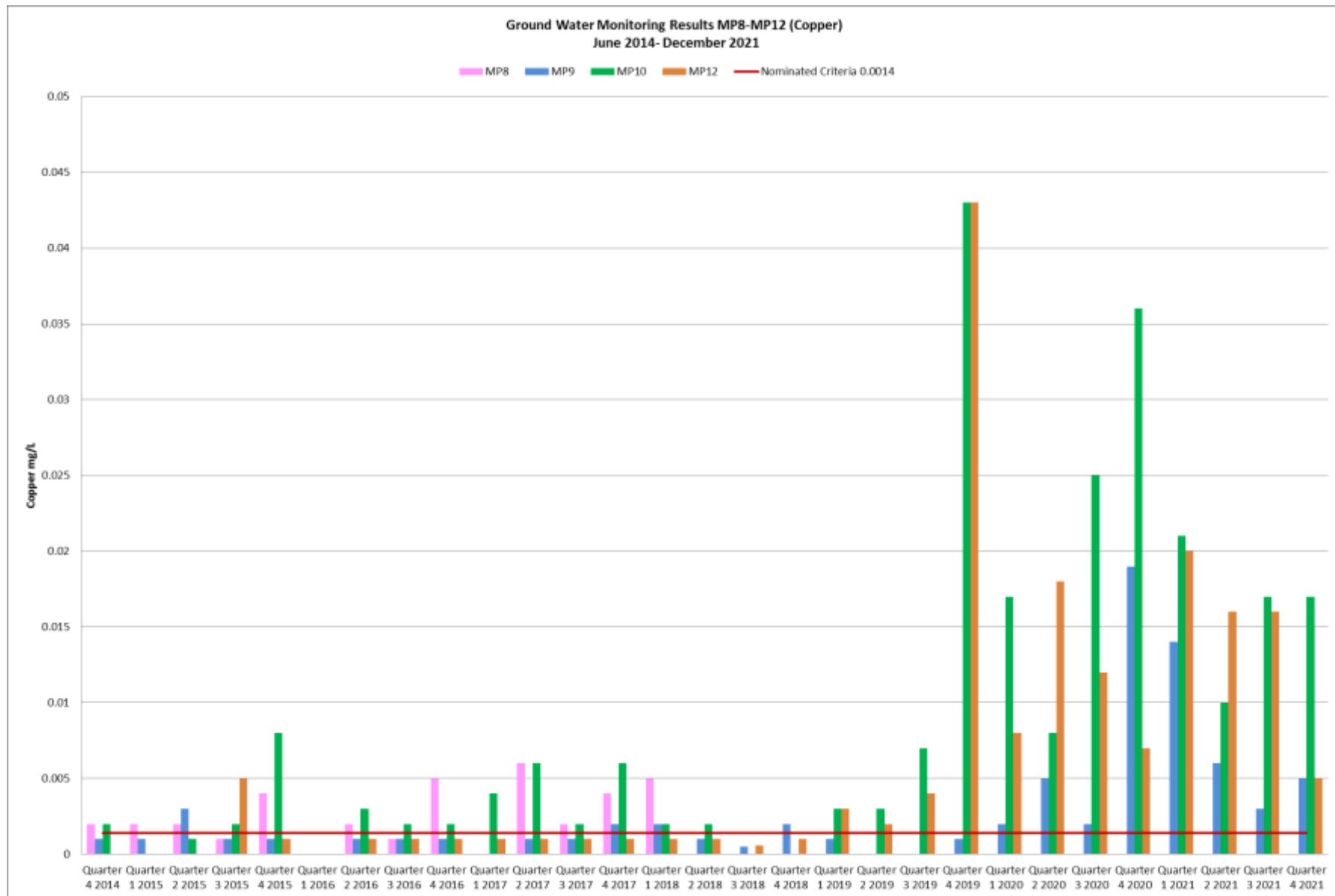


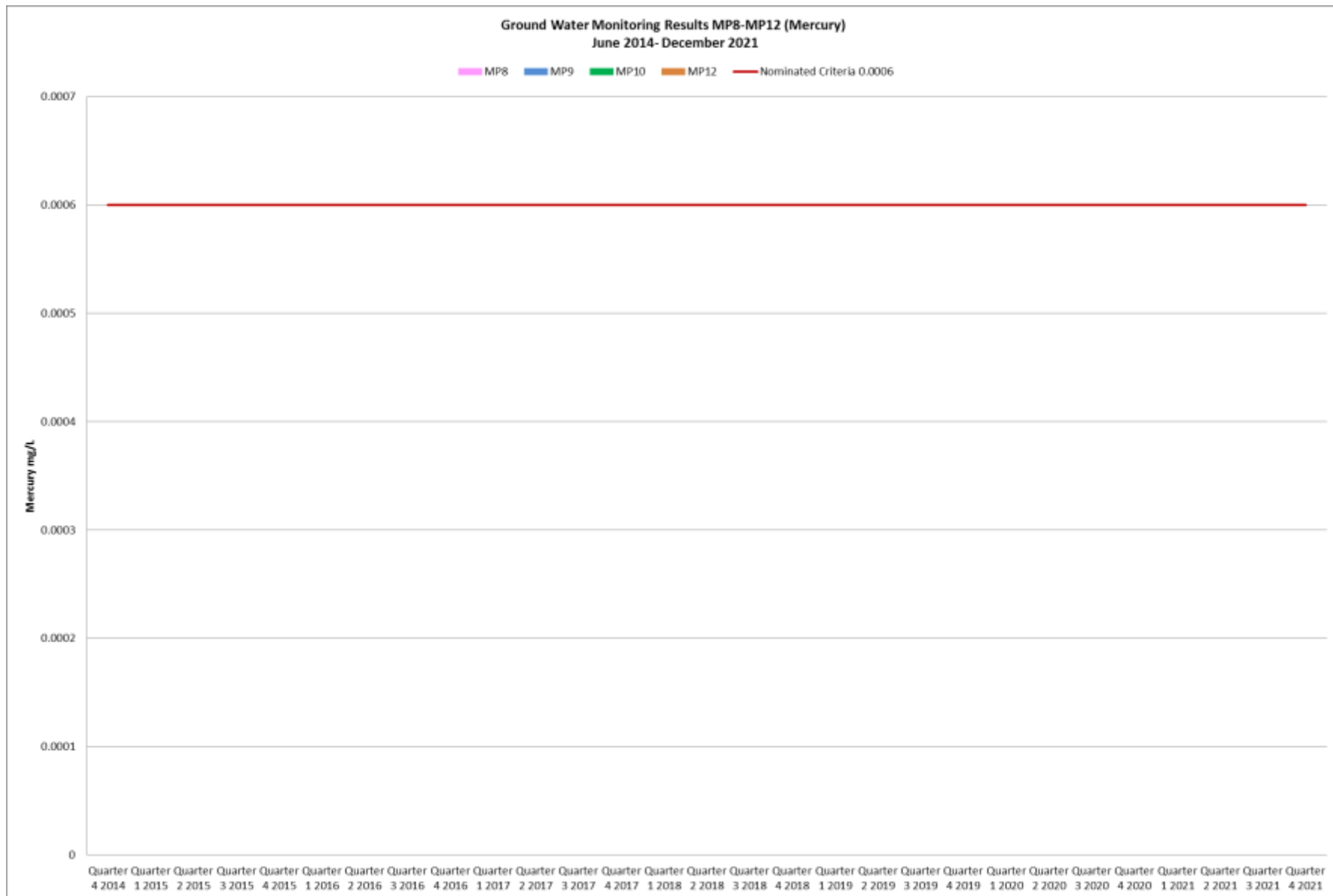


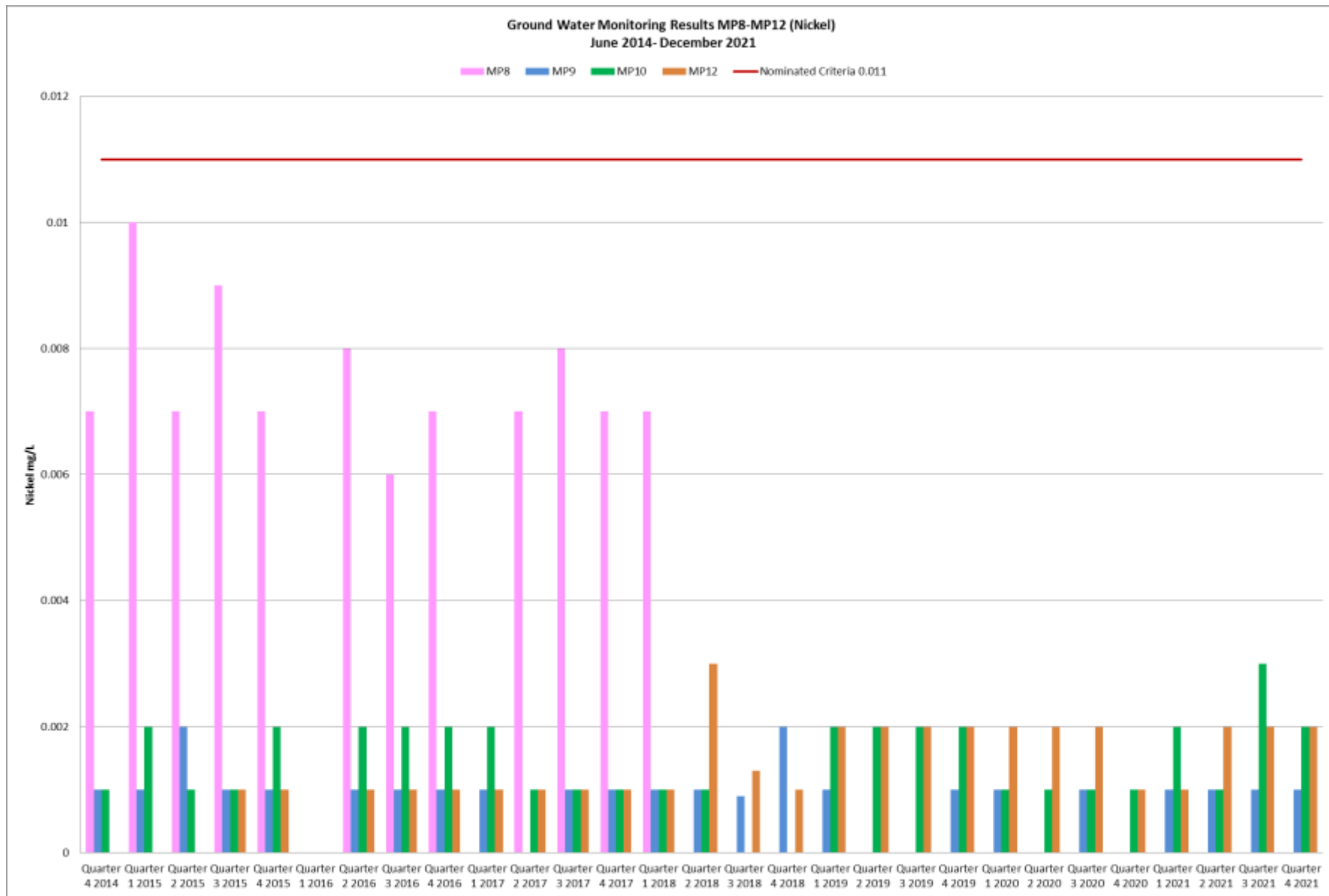


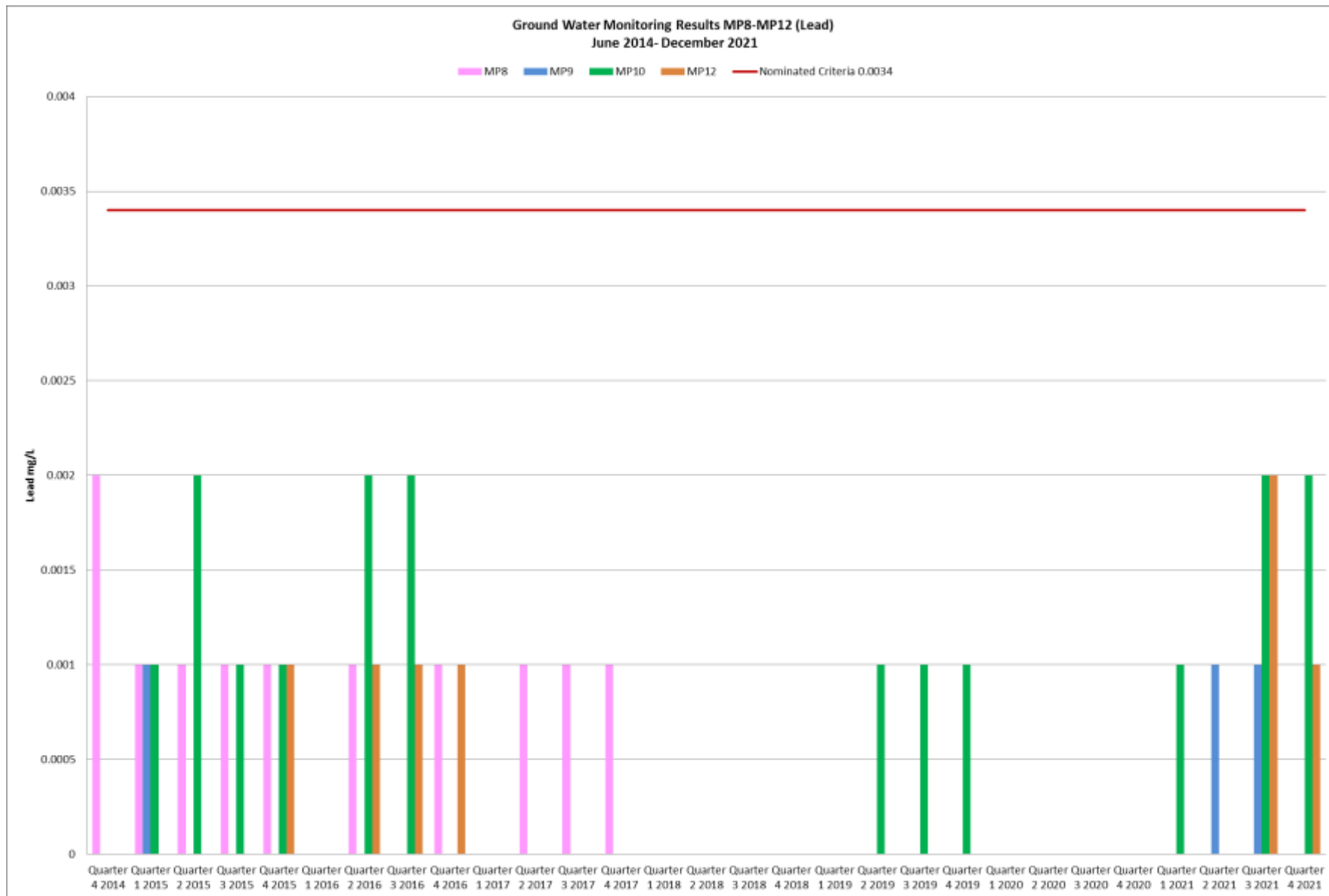


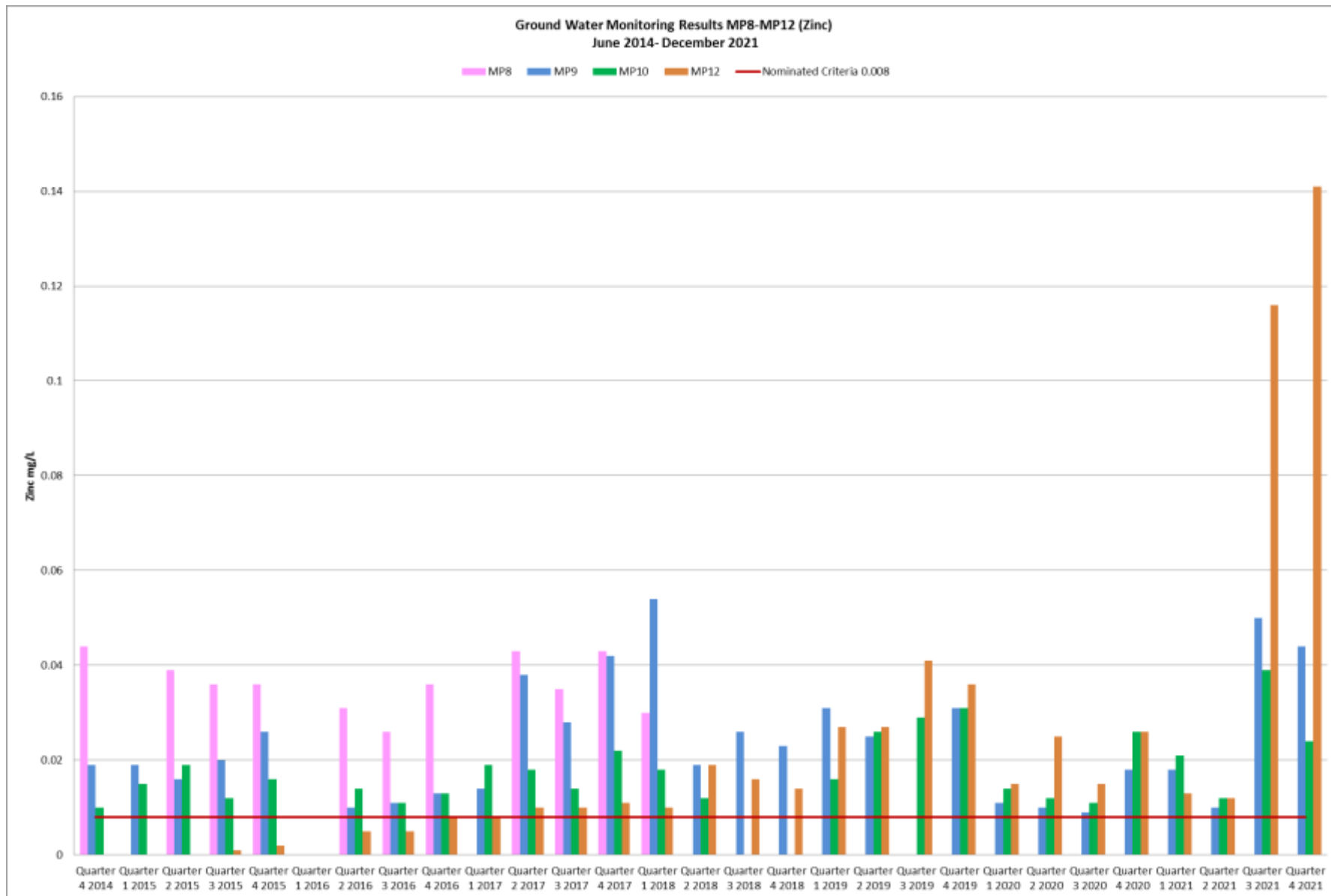


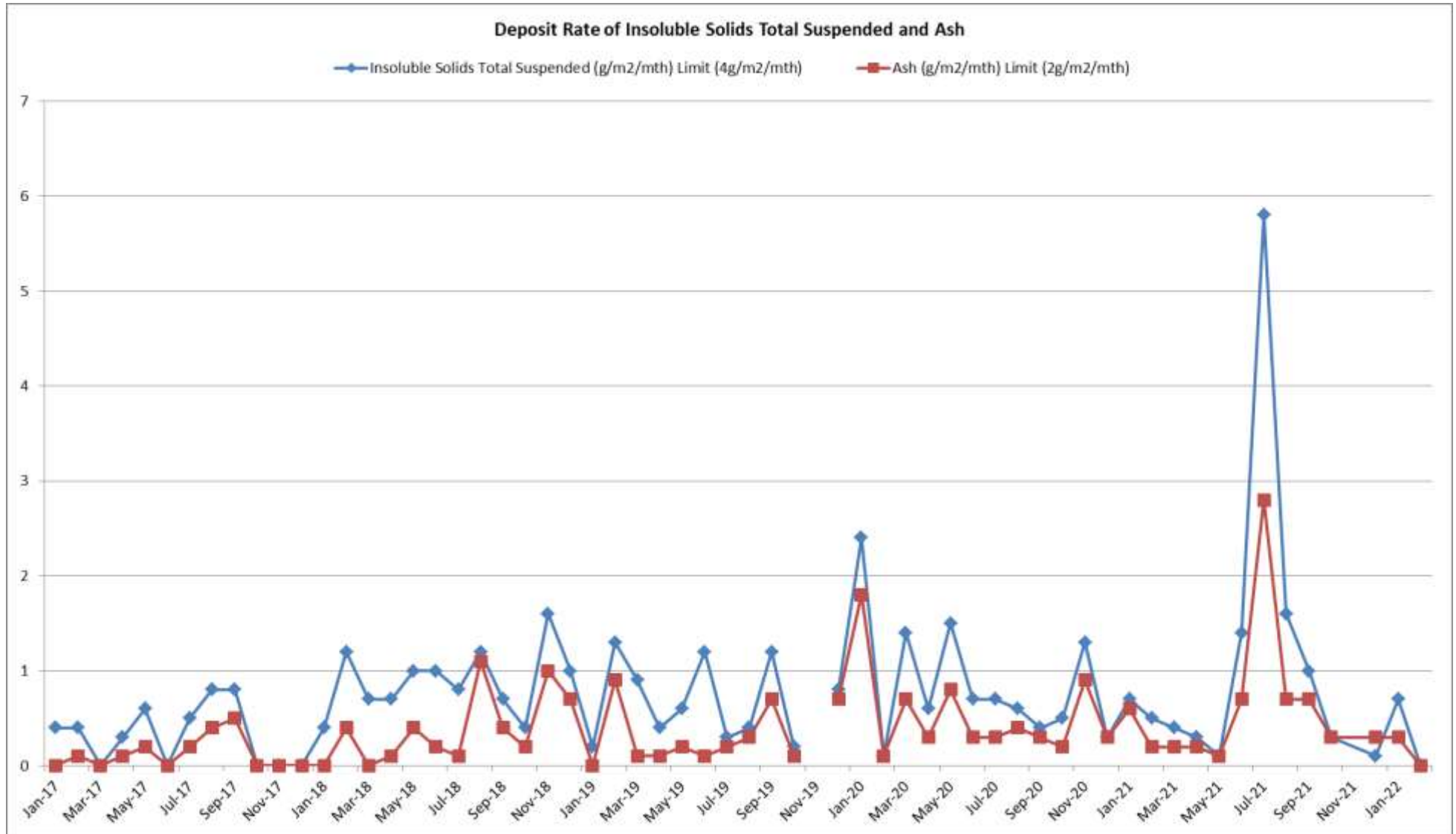












APPENDIX G – UPDATE LETTER TO RESIDENTS

1668 Wyrallah Road, Tuckurimba NSW 2480
Phone: 02 6622 0886
www.richmondquarry.com.au



25 November 2019

Dear Resident/s,

RE: RICHMOND QUARRY UPDATE

Richmond Quarry wishes to advise that the Quarry has currently suspended Quarrying operations onsite. Operations were suspended at 5pm on Wednesday the 22nd of May 2019.

Whilst no quarrying of rock is currently occurring onsite, there are very limited stockpiles of previously quarried rock available for sale onsite. This stockpiled rock is loaded onto customer transport via a single onsite loader when required.

The quarry is committed to meeting the onsite environmental requirements as required in the Site Project Approval 09_0080 and Environmental Protection Licence 20562. The site continues to regularly upload environmental monitoring results onto the Richmond Quarry Website www.richmondquarry.com.au to communicate the results to the community.

Should you have any queries or require any further information relating to the Quarry, please do not hesitate to contact Matt Duff (Quarry Manager) on 02 6622 0886 or by email on info@richmondquarry.com.au.

Yours faithfully



Michael Barnes
Commercial Manager
Richmond Quarry