



AUGUST 2024

Annual Environmental Report

Prepared By:
Mid West Ports



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Attachment 1 2024 Sediment Monitoring Report (O2 Marine, 2024)

Attachment 2 Annual Audit Compliance Report (AACR)

1 Introduction

1.1 PURPOSE

The Geraldton Port (the Port) is situated in the Mid West region of Western Australia, approximately 430km north of Perth. Geraldton is the major hub for the region and services the mining, agricultural and fishing industries. The Port consists of a Commercial Harbour comprised of seven bulk loading berths, as well as a Fishing Boat Harbour (FBH). Figure 1 shows the location and layout of the Port.

The Port operates under Environmental Licence L4275/1982/15 (the Licence) which is administered by the Department of Water and Environmental Regulation (DWER). This Annual Environmental Report meets the reporting requirements of the Licence and provides a summary of environmental monitoring results as they relate to operational activities during the period 1 July 2023 to 30 June 2024 inclusive.

Table 1 lists the annual reporting requirements under the Licence and the associated section within this report which addresses each requirement.



Figure 1 – Location and Layout of Geraldton Port

Table 1 – Annual Reporting Requirements

Condition or Table	Requirement	Relevant Section(s) of this Report
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	Summary of Environmental Incidents Section 7
10	Representative DEM level for each distinct manganese product handled in the Annual Period.	No manganese ore was loaded during this reporting period. High Volume Sampling - Manganese as PM10 Section 2.3.2.6
12	Moisture Content averaged over each shipment of manganese ore	
13	Particle size distribution of each distinct manganese ore product (lump and fines)	
Table 3	Ambient air quality monitoring and a comparison against specified targets.	Air Quality Monitoring 2023/2024 Section 2.3
Table 4	Ambient sediment monitoring	Sediment Quality Section 3
Table 5	Stormwater monitoring	Fertiliser Discharge Monitoring Section 4
Table 6	Ambient marine quality monitoring	Iron Concentrate Loading Monitoring Section 5
32	Investigation report provided for any sediment monitoring exceedances of limits stipulated in Table 4.	Section 3, Attachment 1
35	Complaints Summary	Summary of Complaints Section 6
36	Compliance	Annual Audit Compliance Report (AACR)

1.2 GERALDTON PORT OPERATIONS 2023/2024

During the 2023/2024 reporting period, MWPA operated seven (7) commercial berths and associated marine assets as outlined below:

- MWPA operates and maintains Berth 1/2, which was primarily used for fuel bunkering.
- Berth 3 shiploading infrastructure is owned and operated by Co-operative Bulk Handling (CBH) and was used to export grain.
- MWPA owns and operates Berth 4 bulk handling facility (BHF) and shiploader which was used to export mineral sands, talc, and metal concentrates.
- MWPA owns and operates Berth 5 bulk handling facility (BHF) and shiploader which was used to export iron-ore.
- Berth 6 was utilised for import of fertiliser, fuel, heavy mineral concentrate (HMC), and export of metal concentrates, and iron concentrate by rotainer operations. Break bulk cargo was also imported via Berth 6.

- Berth 7 shiploading infrastructure is owned and operated by Karara Mining and was used to export iron-ore.

A total of 17,286,326 tonnes of product was shipped through the Port during the reporting period of which 14,431,616 tonnes was regulated product under environmental licence L4275/1982/15. Iron-ore exports made up approximately 86% of regulated throughput, which totalled 12,365,919 tonnes during the period from Berth 5 and Berth 7. In addition to regulated products, CBH exported a total of 2,485,393 tonnes of grain via Berth 3.

Figure 2 provides a summary of annual throughput by Category 58 licenced commodity.

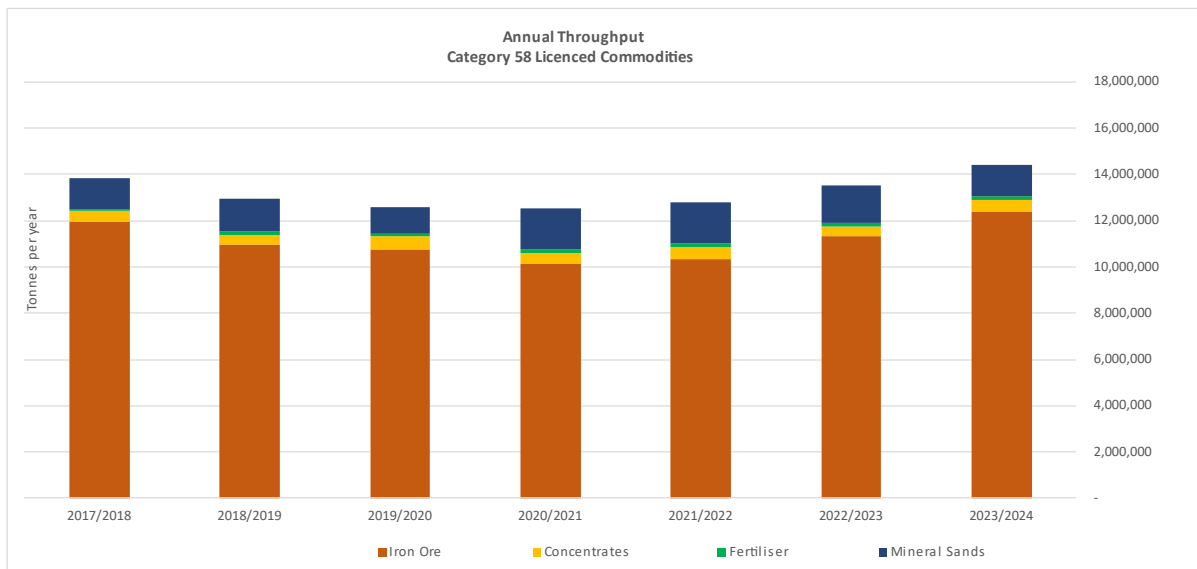


Figure 2 – Geraldton Port Annual Throughput by Commodity

1.3 AMENDMENTS TO THE ENVIRONMENTAL LICENCE

On 23 January 2024, licence L4275/1982/15 was amended to allow for authorised handling and export of lithium direct shipping ore (DSO) and spodumene concentrate via Berth 4. Operational requirements for loading lithium DSO and spodumene concentrate were specified in Table 1, condition 8 including:

- Product transported in tarped haulage trucks to premises.
- Product loaded from Berth 4.
- Product loaded via the Berth 4 loading system. Handling via fully enclosed shed storage with internal hopper to conveyor, or truck unloader to conveyor.
- Containing a product moisture content at or above DEM, as averaged over each shipment, with each shipment details recorded and maintained.
- Loading with ship loader chute lowered and far as possible into the ships hold to minimise vertical drop height.

- Maintain and operate dust extraction systems during operations.
- Maintain and operate road sweeper to remove any product spillage.
- Maintain and operate Humeceptors on Berth 4 to recover spilt product and to prevent discharge to the marine environment.

The licence amendment issued 23 January 2024 also resulted in changes to ambient air quality monitoring requirements in Table 3, condition 30. This Annual Environmental Report includes an assessment of monitoring results against relevant licence conditions that were in place at the time throughout the reporting period. A summary of monitoring targets in place during the reporting period, both before and after the licence amendment are summarised in Table 2.

Table 2 – Ambient Air Quality Targets

Parameter	Licence Requirement 01 July 2023 to 31 January 2024		Licence Requirement 1 February 2024 to 30 June 2024	
	Value	Averaging Period	Value	Averaging Period
Particulates	90.0 µg/m ³ TSP	24 Hours	-	-
	50 ug/m ³ PM10	24 Hours	50 ug/m ³ PM10	24 Hours
Nickel	0.14 µg/m ³ TSP	24 Hours	0.02 µg/m ³ PM10	Annual Rolling Average
Manganese	0.15 µg/m ³ PM10	Annual Rolling Average	0.15 µg/m ³ PM10	24 Hours
Lead	0.5 µg/m ³ TSP	3 month rolling average	-	-
	0.5 ug/m ³ PM10 (B1, LR, PW)	24 Hours	0.5 ug/m ³ PM10 (B1, LR, PW)	24 Hours
	2.0 ug/m ³ PM10 (CR)	24 Hours	2.0 ug/m ³ PM10 (CR)	24 Hours
Lithium	-	-	PM10 (no target applied)	24 Hours

2 Ambient Air Quality

MWPA conducts ambient air quality monitoring using a network of Tapered Element Oscillating Microbalance (TEOM) real time dust monitors that measure particulate matter finer than 10 microns in diameter (PM₁₀) at 10-minute intervals. MWPA also conducts metals speciation monitoring using High Volume Air Samplers (HiVol) that measure metal concentrations as PM₁₀. The program was implemented in 2009 and includes four air quality monitoring stations to represent the north, east, south and west boundaries of the prescribed premises. Figure 3 shows the location of each air quality monitoring station. Abbreviations for air quality monitoring stations used throughout this report are:

- Berth 1 – B1
- Connell Road – CR
- Lemmon Road – LR
- Port Way – PW

The Tower 501 anemometer measures wind speed and wind direction. This wind sensor is used for operational and reporting purposes as it provides the best representation of wind parameters experienced within the commercial harbour.

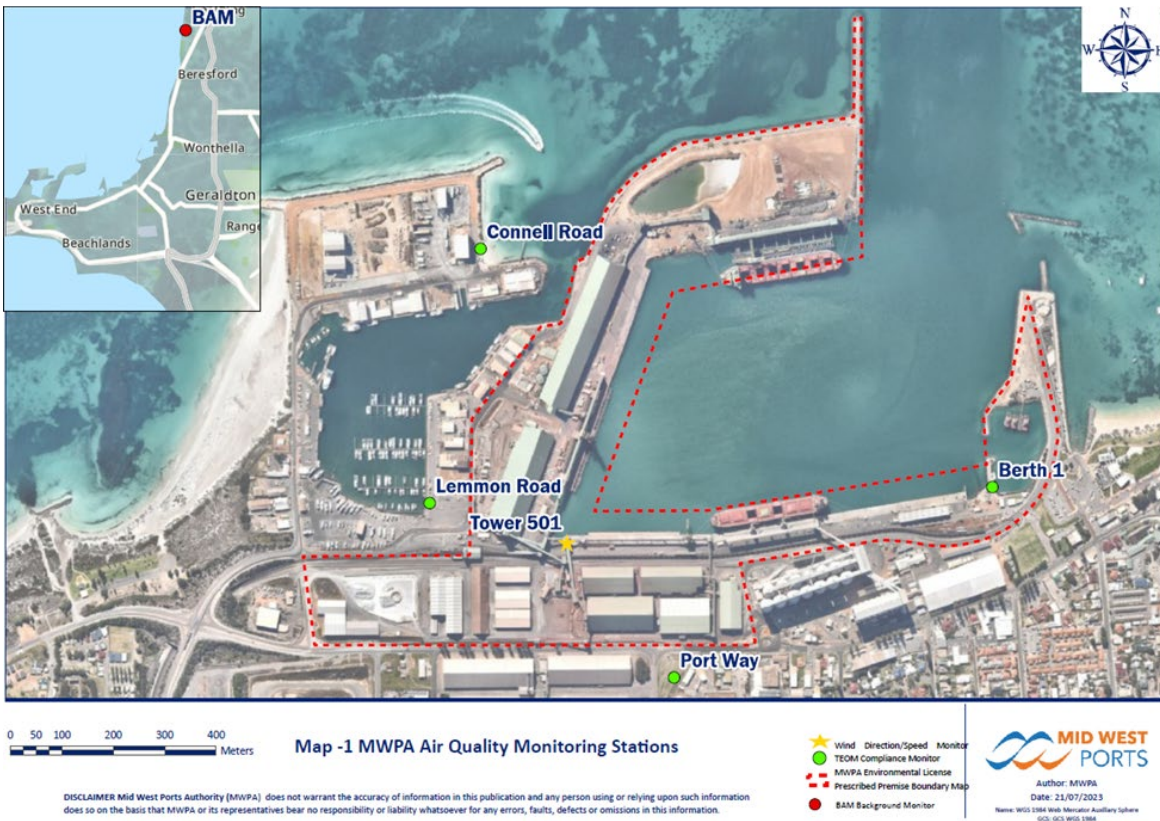


Figure 3 - MWPA Air Quality and Wind Monitoring Network

2.1 FACTORS AFFECTING AIR QUALITY 2023/2024

Ambient dust concentrations on any given day will depend on a range of activities, meteorological factors and potential dust sources (both Port related and non-Port related). Dust from these sources can impact upon air quality measured at the Port monitoring stations and include:

- Elevated ambient background dust levels (regional and local scale).
- Offsite dust sources, such as suspended aerosol components of sea spray and windblown dust.
- Transport of bulk products via trains and trucks and unloading via train and truck unloaders.
- Localised construction, excavation and heavy vehicle movement activities.
- Loading of bulk products via conveyors and shiploaders including grain over Berth 3; mineral sands, talc and metal concentrates over Berth 4; and iron-ore over Berth 5 and 7.
- Loading of metal concentrates and mineral sands concentrate via rotainer box at Berth 6.
- Unloading of fertiliser and mineral sands at Berth 6 via mobile hopper and grab operation or self-discharging vessel.
- Sand bypassing activities occurring at Pages Beach and Connell Road “Lives Beach”.
- Dust from unsealed surfaces and disturbed ground.

2.1.1 Geraldton Climate

Geraldton has a Mediterranean type climate with hot, dry summers and mild, wet winters. The summer months (December to February) experience strong coastal sea breezes with offshore winds dominating in the mornings and sea breezes in the afternoons. The combination of hot dry weather and strong winds during the summer months can result in naturally high dust levels. This can occur both as regional scale dust storms, due to strong winds blowing over the surrounding agricultural, or localised dust levels in areas of low vegetation cover and sandy soils such as the coastal strip which surrounds the Port.

In the coastal environments of Geraldton hot dry summers result in lower levels of ground cover as winter grasses die back and the soil dries out. As a result, the typical southerly winds are often associated with localised dust generation. Additionally, it is recognised that using the Australian Standard air quality monitoring methodologies, that the aerosol component of salt in the air also increases measured dust levels.

Rainfall, wind speed, wind direction, temperature and humidity are all factors that can impact dust levels measured in the region and within the Port. Table 3 provides an overview of weather conditions including rainfall and maximum wind gusts experienced.

Table 3 - Geraldton Port Monthly Weather Observations

Rainfall (mm)											
Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
36.8	31.2	13.4	1.2	6.4	0.4	0.0	17.4	2.2	0.6	8.4	148.2
Max wind gust (knots)											
WNW	NW	W	S	NE	S	S	NNE	E	ENE	SW	W
33	37	47	35	39	38	37	41	39	35	38	34

2.1.2 Background Dust Levels

To better understand typical background dust levels commensurate with the Port’s location, MWPA installed a real time PM₁₀ Beta Attenuation Monitor (BAM1020) in late 2013. The BAM is located approximately 4km north of the Port in the suburb of Bluff Point (Figure 4). This location was selected as the weather, vegetation and soil characteristics are proportionate with those experienced at the Port. It is positioned at a similar distance to the ocean, which may influence PM₁₀ concentrations through sea spray and salt. This site is referred to as Background BAM (BB) for the remainder of this report.



Figure 4 - MWPA Background Air Quality Monitoring Location

2.1.3 Sand By-passing Activity

During September 2023 and March 2024, annual sand bypassing activities were undertaken by MWPA in collaboration with the City of Greater Geraldton. This program is undertaken in accordance with Ministerial Statement 600 commitment 8-2 and the associated *Geraldton Northern Beaches Stabilisation Program 2006*. This year (2023/2024) bypassing activities included the removal of sand accreting against the groyne rock walls east of the Connell Road monitoring station, and removal of sand from the Northern end of Pages Beach. The program involves pushing up fine beach sand into stockpiles above the high-water line. Trucks are then filled via a front-end loader prior to being transported to beaches north of the port precinct. Options to minimise windblown dust from the stockpile handling and truck loading operations are limited. The dust impact is very localised and directly impacts the Connell Road monitoring station as it is situated within 50 to 100m of the sand stockpiling operations.

2.2 DUST MANAGEMENT INITIATIVES 2023/2024

The 2022 Dust Action Plan identified several key initiatives aimed at enhancing air quality within the Port precinct. For the 2023/24 financial year (FY), Mid West Ports spent just over \$700,000 on key initiatives and have completed the following improvements:

- **Cascade chute:** Implemented on Berth 4 Shiploader for dry products.
- **Dry fog dust suppression system:** Installed on Berth 5 Shiploader for iron ore. Commissioned in March 2024, this system creates ultrafine water droplets (<10µm) that agglomerate with dust particles, causing the dust to settle back into the product. Fog sprays were installed along the shiploader conveyor and at the loading chute.
- **Partial enclosure and dust extraction upgrades:** Completed for the Mid West Ports truck unloader.

Additional Dust Mitigation Works (2023/24 FY):

- **Port wide dust collector servicing and balancing:** Servicing and balancing of nine Mid West Ports dust collectors and additional customer collectors on sheds, conveyors, and unloaders to ensure effective dust collection.
- **Enclosure of Berth 4 Shiploader boom conveyor CV06:** Enclosures and shroud covers were extended at dust release points, and wind flow was reduced with curtains at the head end where the product enters the chute.
- **Improved spray bars and extended enclosure:** Implemented on the Iron Ore Loadout Circuit at Tower TT500.
- **Hydroscan system installation:** Installed for product moisture monitoring on the Iron Ore Loadout Circuit.
- **Modified dust hoods:** Adjusted in the Mid West Ports truck unloader to accommodate more types of trailer combinations, including both belly dump and end-tipping trailers.

Several improvements were still in progress at the end of the 2023/24 FY:

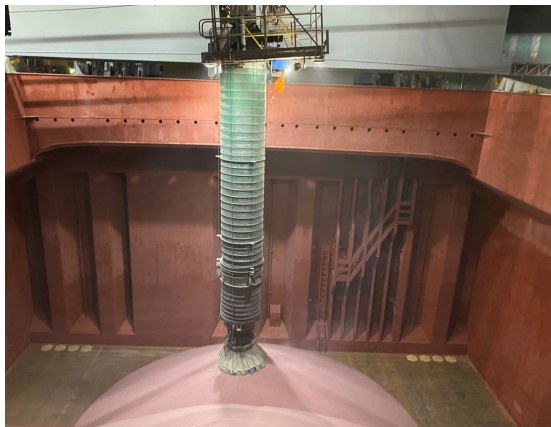
- **Modification of Berth 4 Shiploader cascade chute:** Adjustments to suit larger vessels, allowing chute changes in the washdown bay with longer vessels alongside.
- **Installation of Dry Fog Systems:** Implementation in the remaining transfer towers of the Iron Ore Loadout Circuit.



Berth 5 Shiploader Dry Fog System



DustTamer Fence



Berth 4 Shiploader Cascade Chute



Berth 6 Vessel Hold Dry Fog System

Figure 5 - Dust Improvements Implemented

A DustTamer fence was constructed on Marine Terrace in April 2023, significantly improving air quality downwind of the fence in the Fishing Boat Harbour, as shown in Figure 6. Data from e-samplers upwind and downwind of the fence demonstrates that peak PM10 concentrations have largely been eliminated and the concentrations have reduced by 50% overall under southerly wind conditions.

These comprehensive dust management efforts demonstrate MWPA's commitment to maintaining air quality and ensuring environmentally responsible operations.

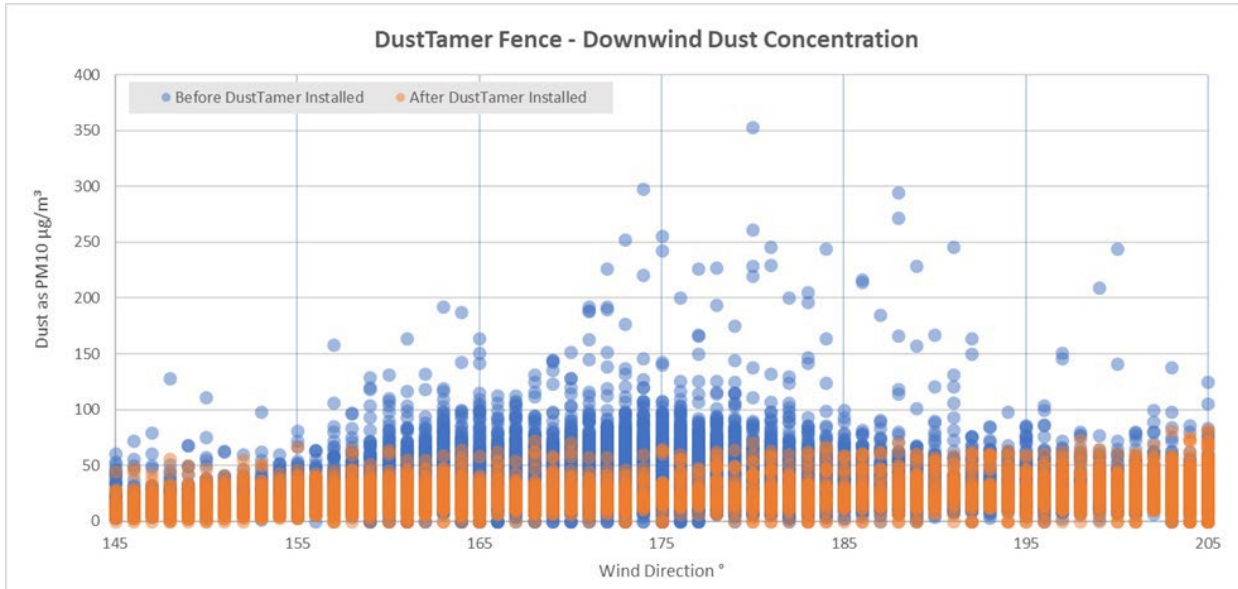


Figure 6 – DustTamer Fence – Downwind Dust Concentrations

2.3 AIR QUALITY MONITORING 2023/2024

2.3.1 Real-Time Particulates as PM₁₀

MWPA’s compliance air quality monitoring stations (TEOMs) and background BAM monitoring station continuously monitored particulates as PM₁₀ during the reporting period. Table 4 presents summarised data from 2023/2024 in comparison with historical monitoring periods.

Compliance monitoring stations recorded dust levels above the target level of 50 µg/m³ on 110 days, which is a reduction of 3 days from the previous reporting period. It is important to note that the dust monitors record dust during all wind conditions (as opposed to only winds blowing from the Port area). As discussed in Section 2.1, dust levels measured at MWPA boundary air quality monitoring stations are not necessarily related to Port activities.

An investigation of exceedance days identified 31 days in which port operations caused or significantly contributed to the target exceedance. This equates to approximately 28% of the total recorded exceedances for the reporting year, down from 47% in the 2022/2023 year.

When compared with historical monitoring periods, the following can be noted:

- Three out of five locations observed a decrease in the number of days where results exceeded the 50 µg/m³ as PM₁₀ daily target.
- The Background BAM (BB) recorded a substantial increase in the number of days above 50 µg/m³ with 52 days recorded, increasing from 26 days the previous year. Background average dust levels were also slightly higher than previous years.

- Berth 1 (B1) situated within the commercial harbour observed the lowest number of days above $50 \mu\text{g}/\text{m}^3$ (13 days) the lowest average dust level and the lowest maximum dust level.
- Port Way (PW) observed a reduced number of days above $50 \mu\text{g}/\text{m}^3$, a reduction in average dust levels and a decrease in maximum dust levels was recorded.
- Connell Road (CR) observed a significant increase in the number of days above $50 \mu\text{g}/\text{m}^3$, an increase in average dust levels and a higher maximum dust level. Located within 5 meters of a breakwater and adjacent to a beach, it receives more background particulates from sea spray aerosols and wind-blown beach sand compared to other monitoring sites.
- Lemmon Road (LR) observed a slight decrease in the number of days above $50 \mu\text{g}/\text{m}^3$, a reduction in average dust levels and a decrease in maximum dust levels recorded.
- All compliance monitors had 4 days without data in 2023/24. The Port Way monitor had 2 extra days, and Berth 1 had 3 extra days.

Figures 7 through 11 present Port influenced, and total days per month above the licence target ($50\mu\text{g}/\text{m}^3$).

Table 4 – Real-Time Dust as PM10 Air Quality Monitoring Summary

	Port Way					Connell Road					Lemmon Road					Berth 1					Background BAM				
	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
Days > 50 $\mu\text{g}/\text{m}^3$	27	46	49	69	62	40	48	100	39	71	27	42	40	30	28	15	9	17	21	13	15	15	24	26	52
Port Influenced days > 50 $\mu\text{g}/\text{m}^3$	5	15	26	28	19	22	18	48	17	15	11	21	19	13	6	7	6	5	18	6	0	0	0	0	0
Average ($\mu\text{g}/\text{m}^3$)	30.4	31.8	34.9	38.3	36.3	33.6	34.7	41.7	33.6	38.1	30.0	30.1	33.1	31.5	30.6	22.7	22.5	23.5	23.8	24.3	28.2	23.7	25.5	27.4	32.9
Maximum ($\mu\text{g}/\text{m}^3$)	157.7	99.7	125.6	264.8	194.9	105.0	99.4	114.3	80.6	155.0	157.2	86.8	122.2	78.2	100.4	62.4	80.1	74.2	172.6	83.4	107.3	136.4	94.7	216.4	360.0
Minimum ($\mu\text{g}/\text{m}^3$)	3.0	6.4	3.6	6.4	6.0	8.3	6.3	11.7	3.6	8.0	8.4	3.3	5.1	6.2	5.9	2.3	4.8	4.0	4.5	5.4	5.5	3.3	5	5.5	0.7
No Data	3	5	5	2	6	0	4	0	2	4	1	6	0	3	4	1	4	0	2	7	30	28	7	129	68

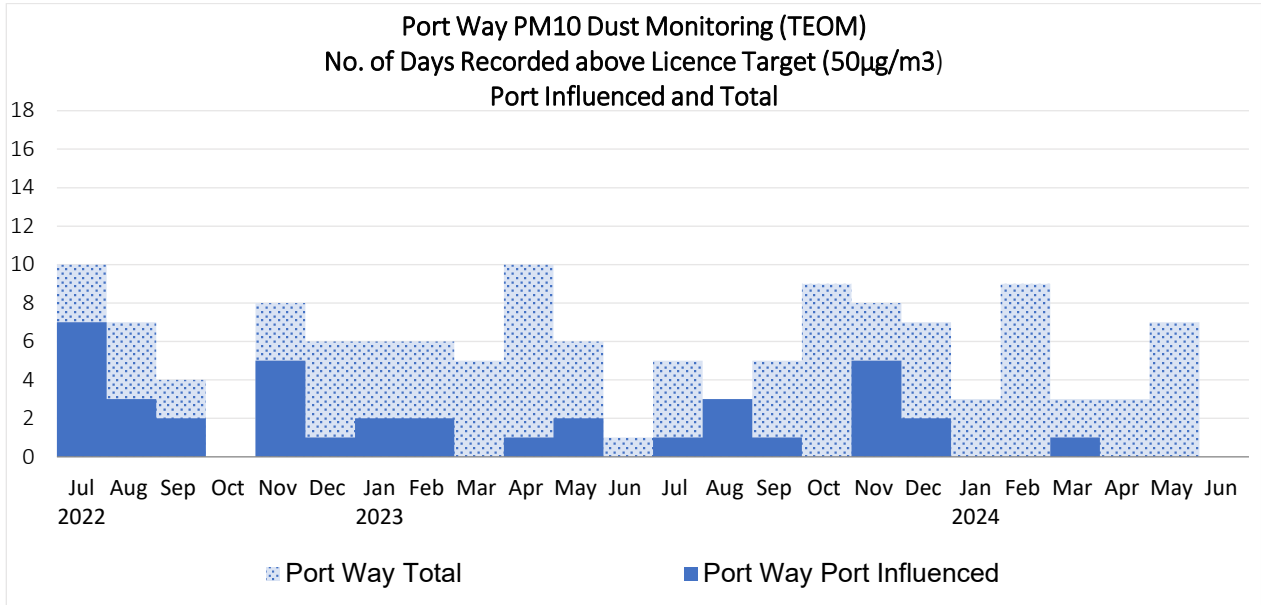


Figure 7 - Port Way – Number of days per month above 50µg/m³ – Port Influenced and Total

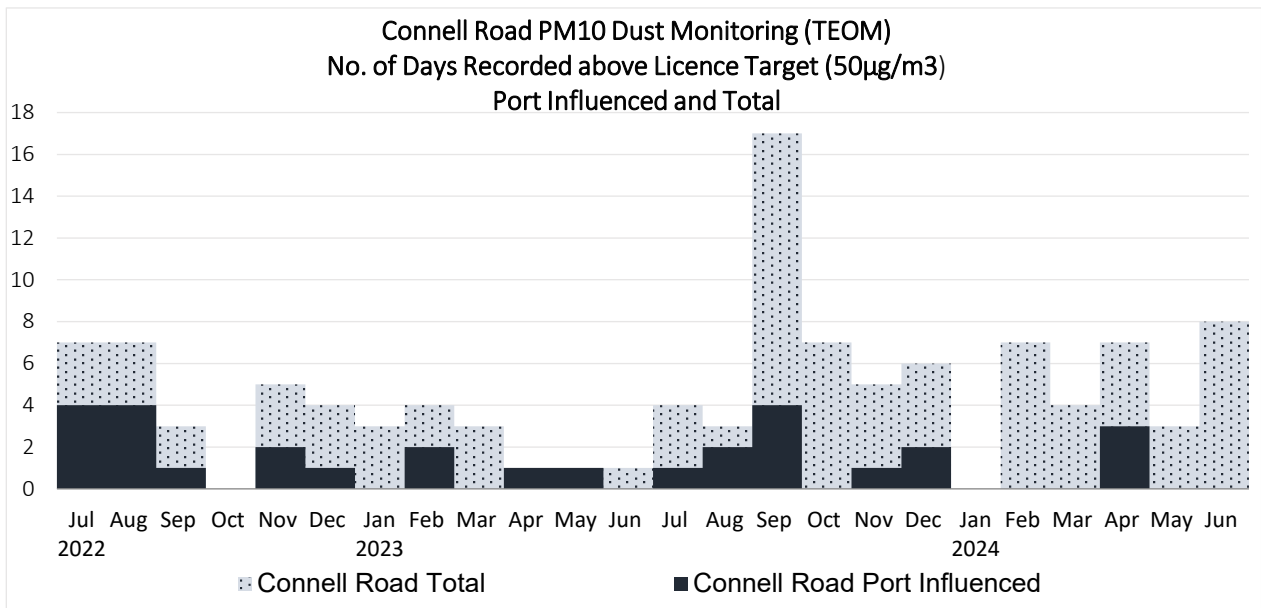


Figure 8 - Connell Road – Number of days per month above 50µg/m³ – Port Influenced and Total

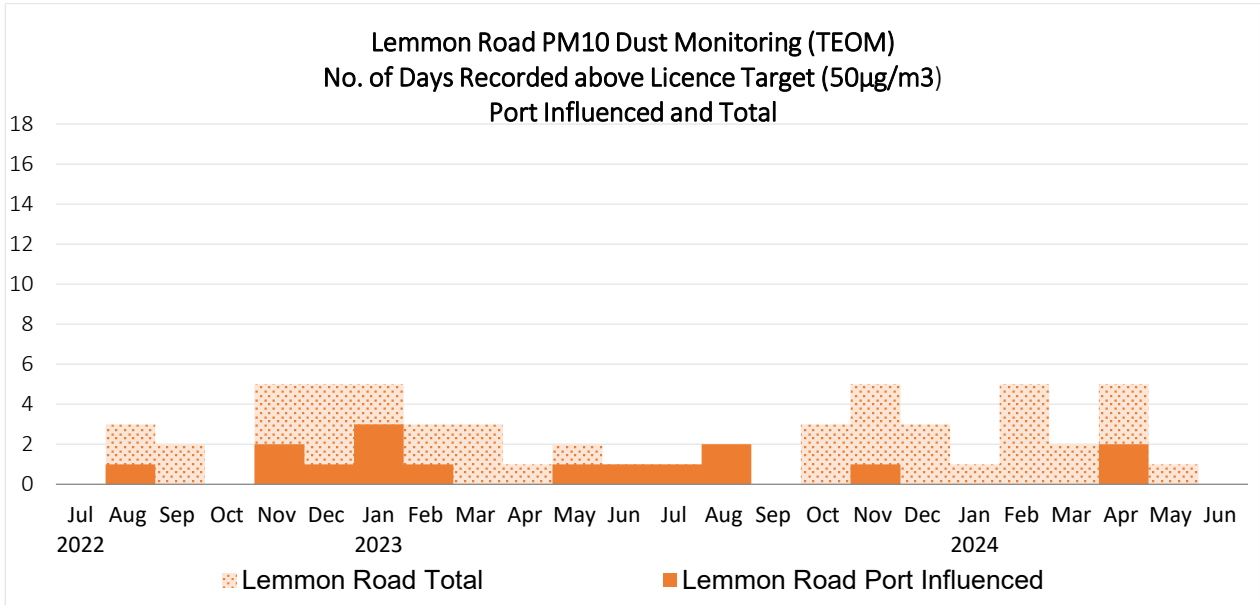


Figure 9 - Lemmon Road – Number of days per month above 50µg/m³ – Port Influenced and Total

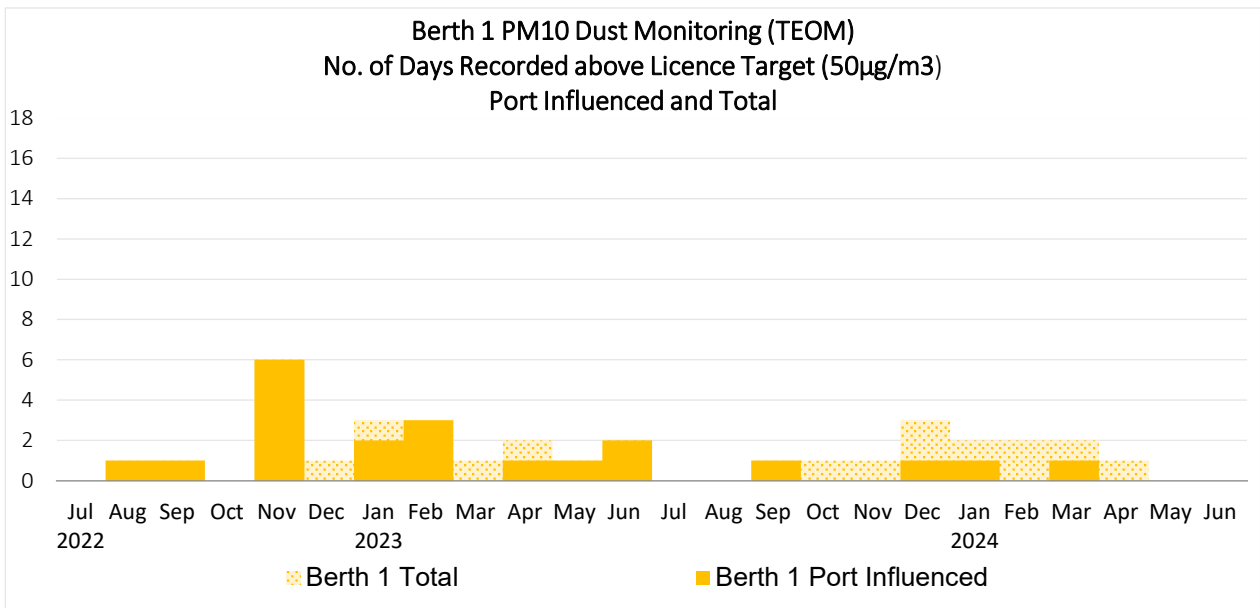


Figure 10 - Berth 1 – Number of days per month above 50µg/m³ – Port Influenced and Total

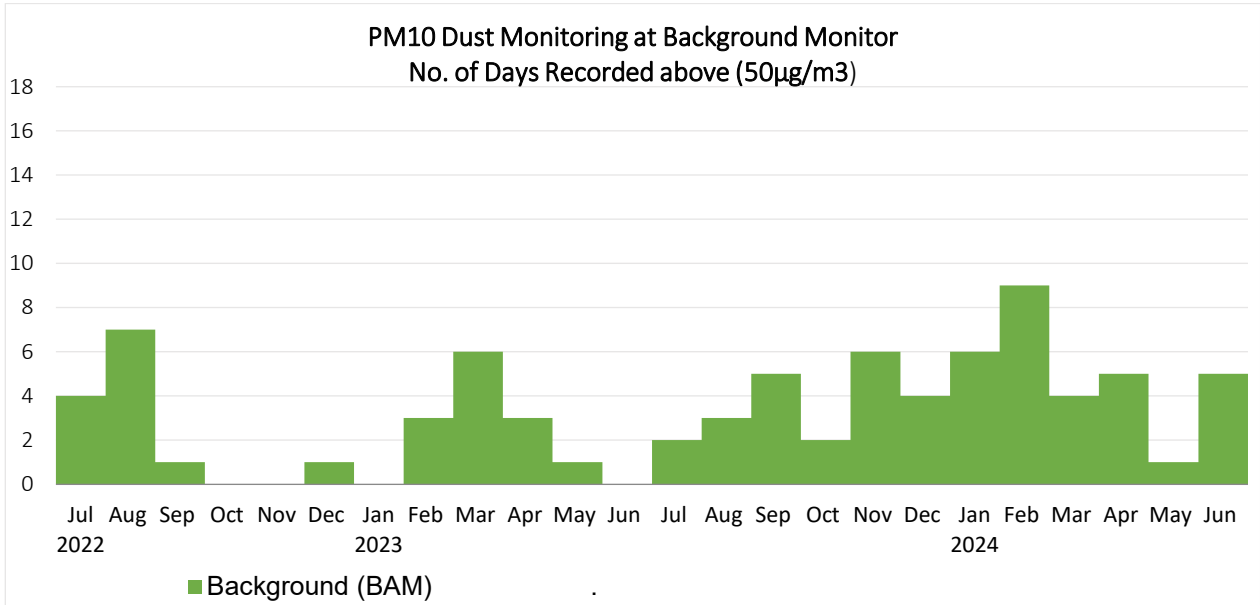


Figure 11- Background Monitor – Number of days per month above 50µg/m³

2.3.2 Monitoring of Metal Concentrate Shiploading (High Volume Air Sampling)

Each air quality monitoring station has two High Volume Air Samplers (HiVol), one fitted with a PM₁₀ inlet and the other with a TSP inlet. Samples are collected over a 24-hour sample period commencing at 12:00 noon. The sample date listed in all reports and tables is that of the day on which sampling commenced.

HiVol sampling is conducted in accordance with the requirements of MWPA’s Air Quality Monitoring Sampling and Analysis Plan (the SAP). Two types of sampling are conducted:

- Concentrate sampling; and
- Background sampling.

Concentrate samples are any samples in which metal concentrates were loaded within the sample period or occurred in the 24 hours preceding the sample being taken. Concentrate sampling is a mandatory requirement for loading of metal concentrates at the Port.

Background samples are any sample in which no metal concentrates were loaded during the sample period or during the 24 hours preceding the sample being taken. The requirement to collect background samples was removed in the licence in January 2024, however MWPA has continued to collect background HiVol PM₁₀ samples twice per month.

To meet the requirements of the SAP over the 2023/2024 reporting period a total 165 HiVol sampling days were required to be analysed. This is four less than the 2022/2023 monitoring period where 169 sampling days were required. The actual number of samples analysed from each HiVol is listed in Table 5.

Table 5 - Number of HiVol Samples Analysed

Monitoring Station	Samples Analysed			
	Count PM ₁₀ 2022/2023	Count PM ₁₀ 2023/2024	Count TSP 2022/2023	Count TSP 2023/2024
Port Way	118	130	174	93
Connell Road	118	131	174	94
Lemmon Road	118	131	174	94
Berth 1	118	131	175	94

2.3.2.1 High Volume Sampling - Particulates as PM₁₀

MWPA collects HiVol samples of particulates as PM₁₀ during periods of metal concentrate shiploading and for background sampling. The MWPA TEOM monitoring stations provide continuous monitoring of particulates as PM₁₀, offering a more complete data source for analysis. PM₁₀ HiVol levels are therefore not presented in this report (results can be made available on request).

2.3.2.2 High Volume Sampling - Particulates as TSP

The requirement to collect TSP HiVol samples was removed from the Licence in January 2024. Table 6 presents a summary of monitoring results for the 2022/2023 financial year and 2023/2024 financial year from July 2023 to January 2024.

Monitors recorded particulates as TSP above 90µg/m³ a total of 108 days during the reporting period.

Table 6 - HiVol Particulates as TSP Monitoring Summary

Monitoring Station	Particulates as TSP					
	Target = 90 µg/m ³					
	Average 2022/2023 (µg/m ³)	Average 2023/2024 (µg/m ³)	Maximum 2022/2023 (µg/m ³)	Maximum 2023/2024 (µg/m ³)	Count >90 2022/2023 (#, %)	Count >90 2023/2024 (#, %)
Port Way	77	84	420	370	39, 22%	28, 30%
Connell Road	92	121	240	780	77, 44%	50, 53%
Lemmon Road	83	70	210	140	66, 38%	20, 21%
Berth 1	54	65	460	310	10, 6%	10, 11%

2.3.2.3 High Volume Sampling - Copper as PM₁₀

During this monitoring period, a total of 13 vessels were loaded with copper concentrates either over Berth 4 or via containers at Berth 6. A total of 126,316MT of copper concentrate was loaded during 2023/2024.

No exceedances of the licence target level for copper ($1.0 \mu\text{g}/\text{m}^3$) occurred during the reporting period.

There was a reduction of the average levels of copper in 2023/2024 measured across all monitoring locations compared to 2022/2023. The reduction in measured copper levels aligns with the migration of copper loading from Berth 4 to Berth 6. The last ship loaded with copper over Berth 4 was completed 16/12/2023. Figure 12 displays the annual average concentration of copper in HiVol samples for each monitoring location. Figure 13 displays each individual result for copper as PM_{10} in 2022/2023 and 2023/2024.

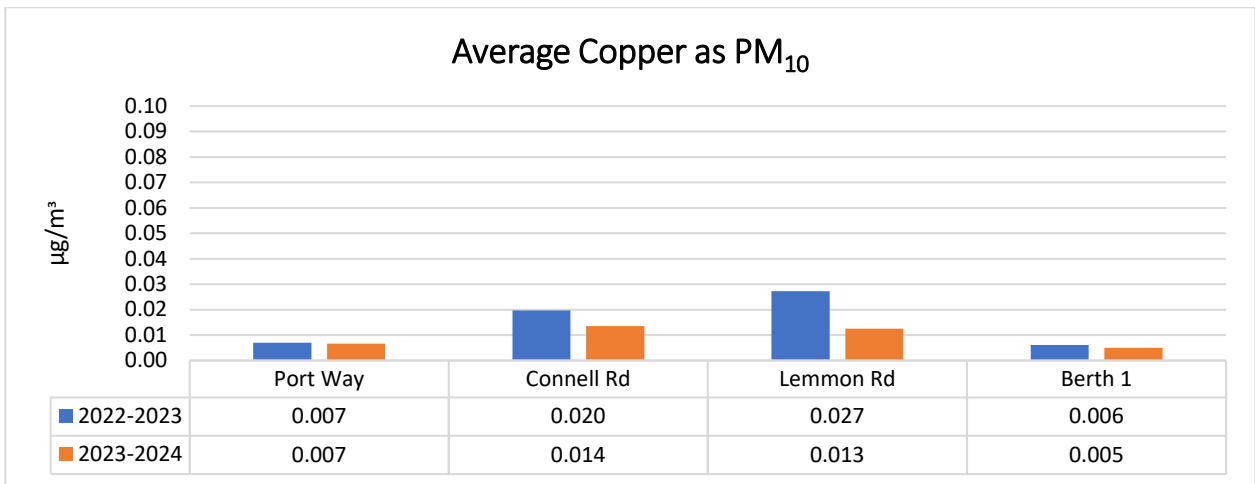


Figure 12 - HiVol Copper as PM_{10} - Monitoring Summary

Copper as PM₁₀
Environmental Licence Target = 1.0 µg/m³

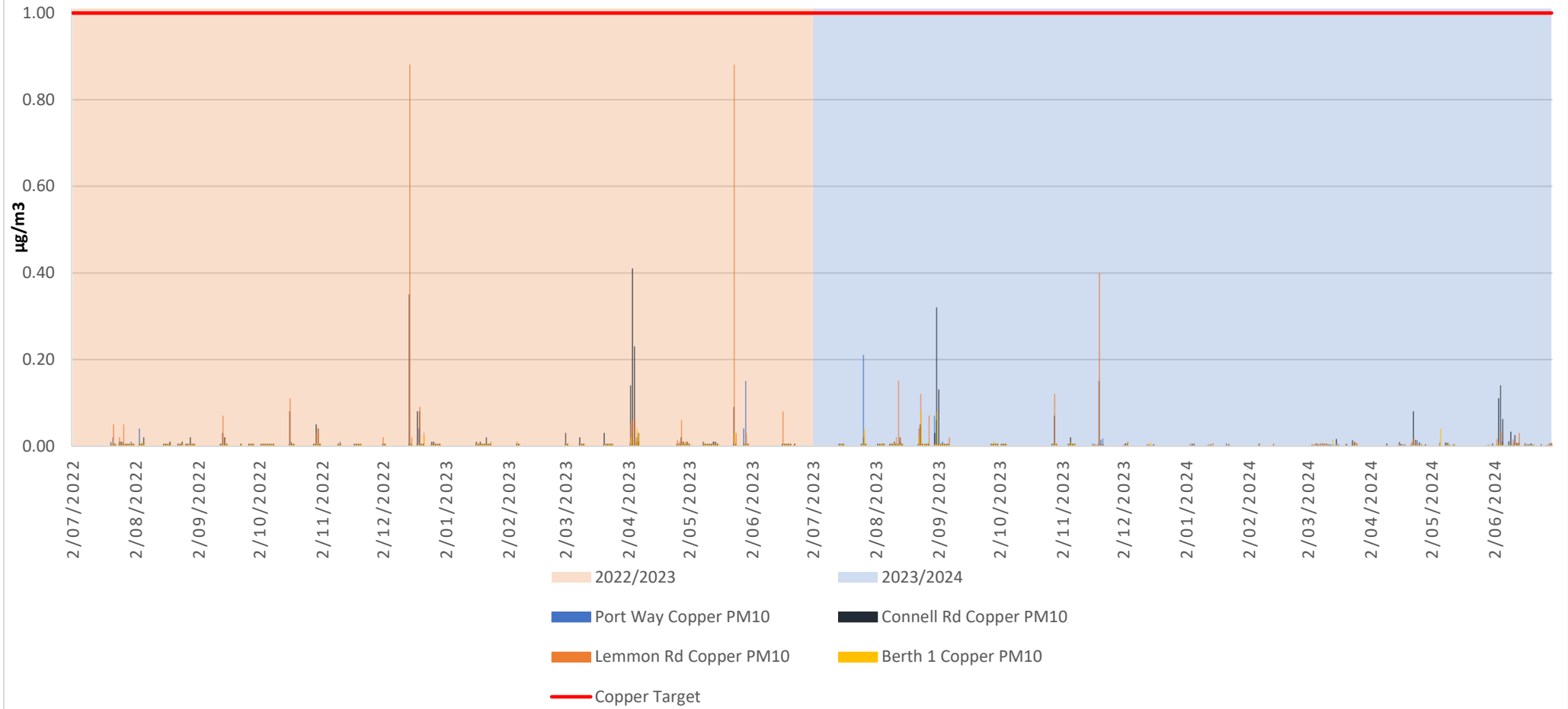


Figure 13 - 2022/2023 and 2023/2024 Copper Levels in Dust as PM₁₀

2.3.2.4 High Volume Sampling - Nickel as TSP

During this monitoring period a total of 5 vessels were loaded with nickel concentrates via containers at Berth 6. A total of 69,576MT of nickel concentrate was loaded during 2023/2024.

The nickel target of $0.14 \mu\text{g}/\text{m}^3$ as TSP (24hr average) was amended in January 2024 to $0.02 \mu\text{g}/\text{m}^3$ as PM_{10} (annual rolling average). This section presents the results for nickel during the period when monitoring was required for TSP from July 2023 to January 2024.

One exceedance of the licence target level for nickel ($0.14 \mu\text{g}/\text{m}^3$) occurred during the reporting period.

1. The BBC Danube loaded 12,051MT of Nickel Concentrate from 25 – 28 August 2023. On 25 August 2023, the Connell Road HiVol recorded a concentration of $0.16 \mu\text{g}/\text{m}^3$ of Nickel as TSP. MWPA reported the exceedance to DWER as required under the Licence, via the Pollution Watch Service (ICMS71451).

An investigation of the exceedance was completed, and corrective actions implemented. The outcomes of the investigation were reported by MWPA to DWER on 13 October 2023. No exceedances in nickel have since occurred during any loading events on Berth 6.

Figure 17 displays each individual result for nickel as TSP in 2022/2023 and 2023/2024 through to February.

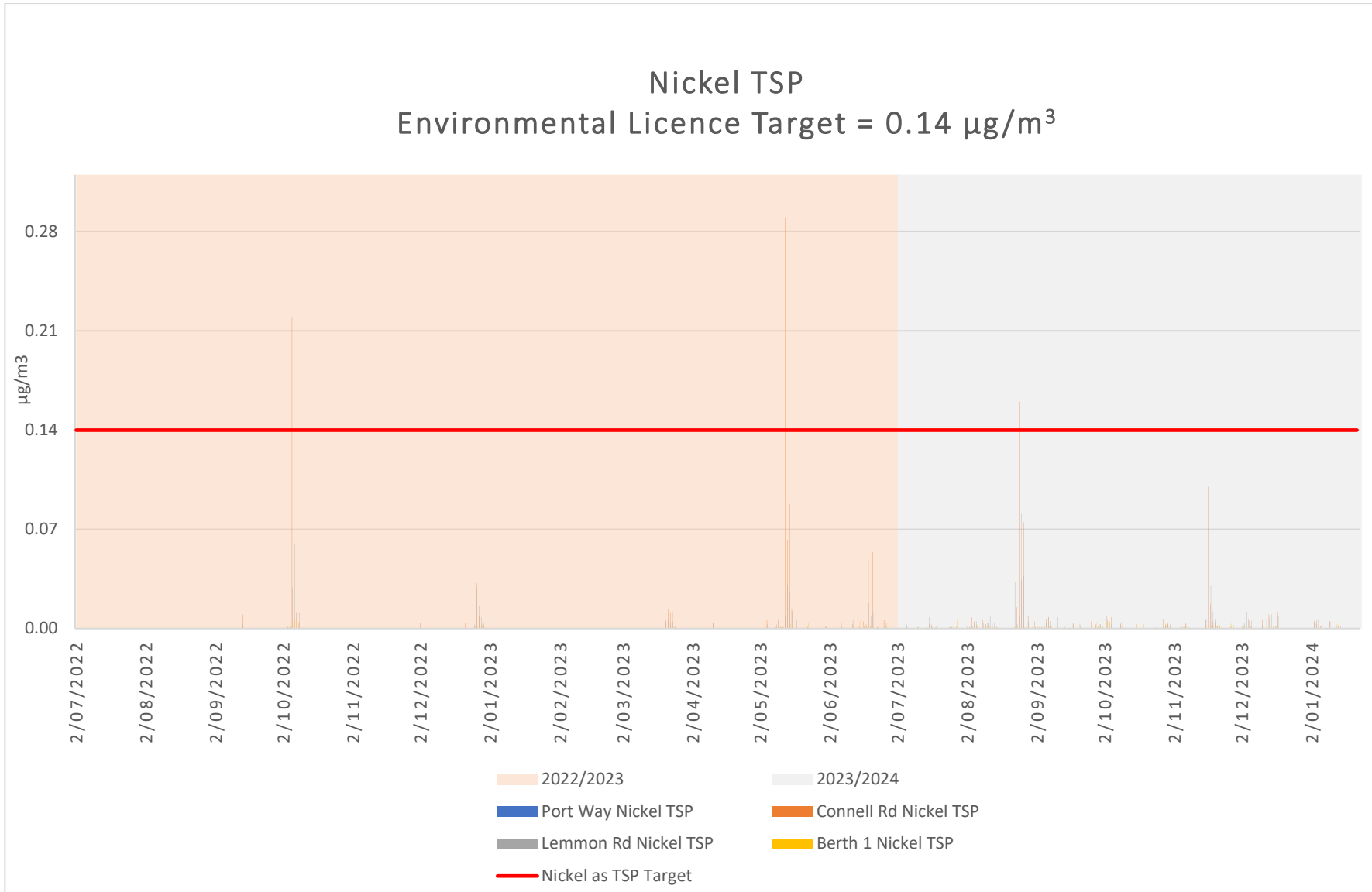


Figure 14 - 2022/2023 and 2023/2024 through to February Nickel Levels in Dust as TSP

2.3.2.5 High Volume Sampling - Nickel as PM₁₀

This section presents the sampling of nickel as PM₁₀ for the period from January 2024 to June 2024.

The 3-month rolling average for nickel as PM₁₀ remained well below the licence limit of 0.02 µg/m³ as shown on Figure 13. The target for nickel as PM₁₀ came into effect in January 2024.

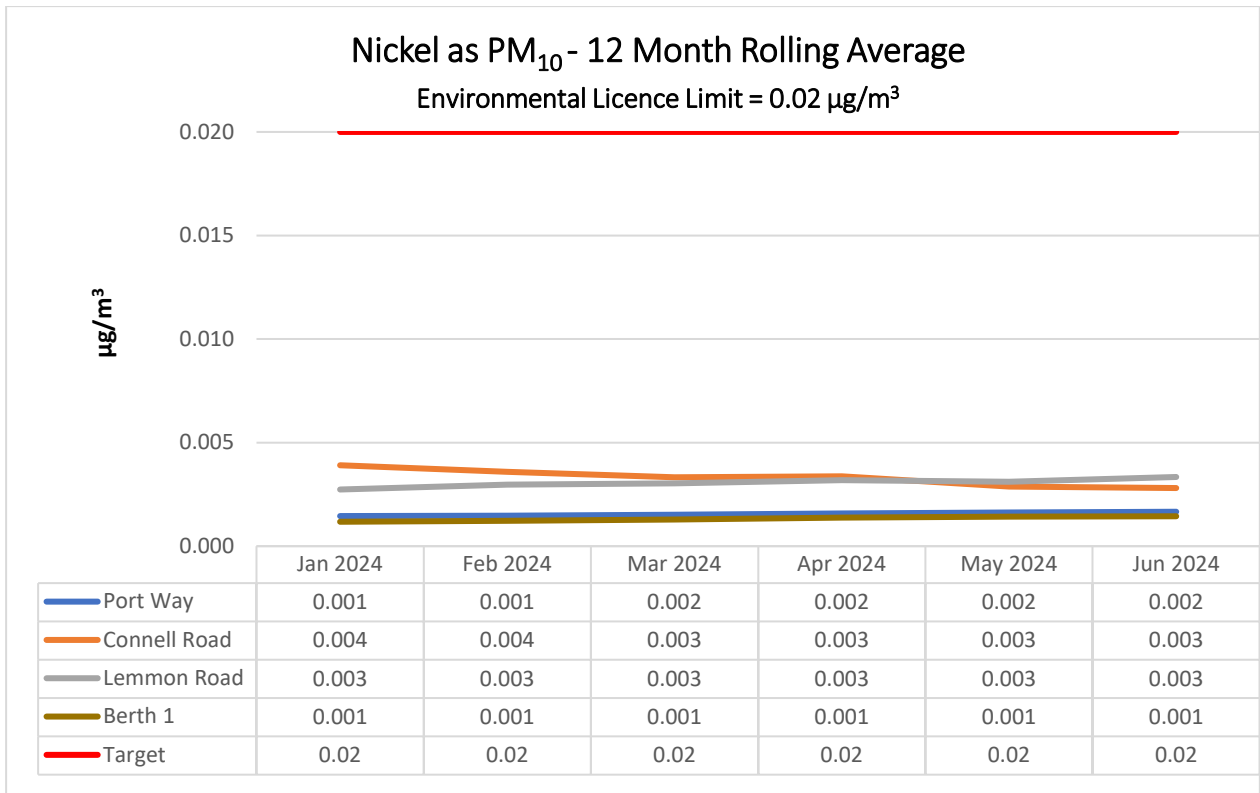


Figure 15 - Nickel as PM₁₀ 12 month rolling average

Average nickel as PM₁₀ levels remained very low across all monitoring sites, with slightly higher concentrations recorded at Connell Road and Lemmon Road compared to other monitors. Figure 16 displays the annual average concentration of nickel in HiVol samples for each monitoring location. Figure 17 displays each individual result for nickel as PM₁₀ in 2022/2023 and 2023/2024.

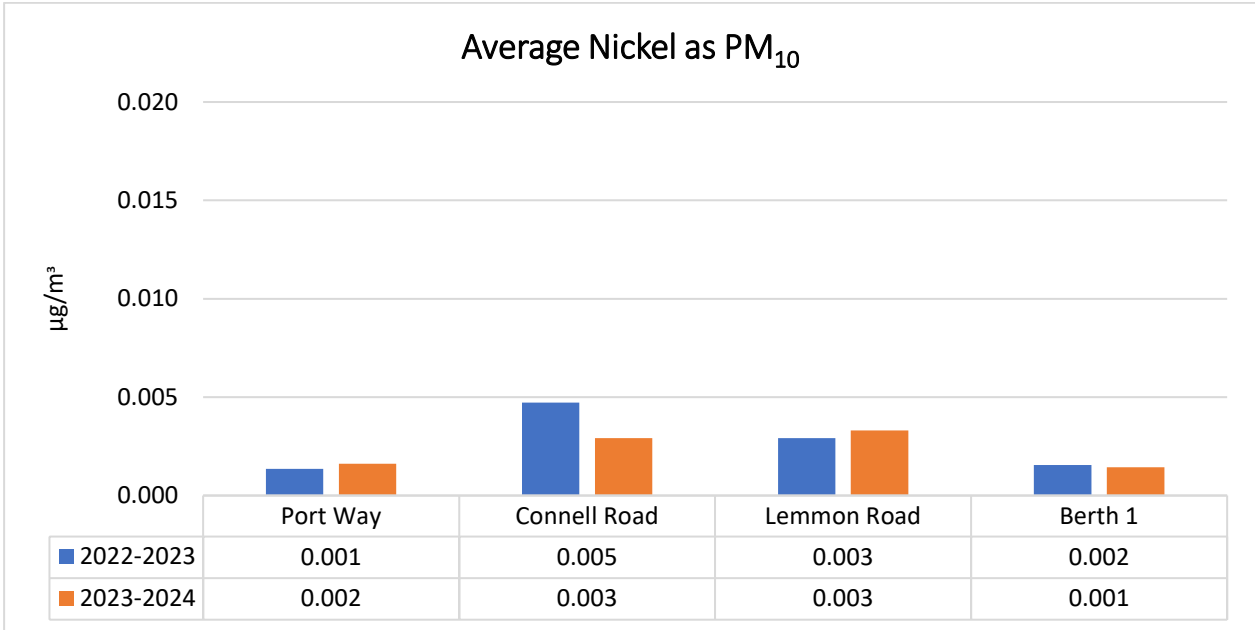


Figure 16 - HiVol Nickel – Annual PM₁₀ Average - Monitoring Summary

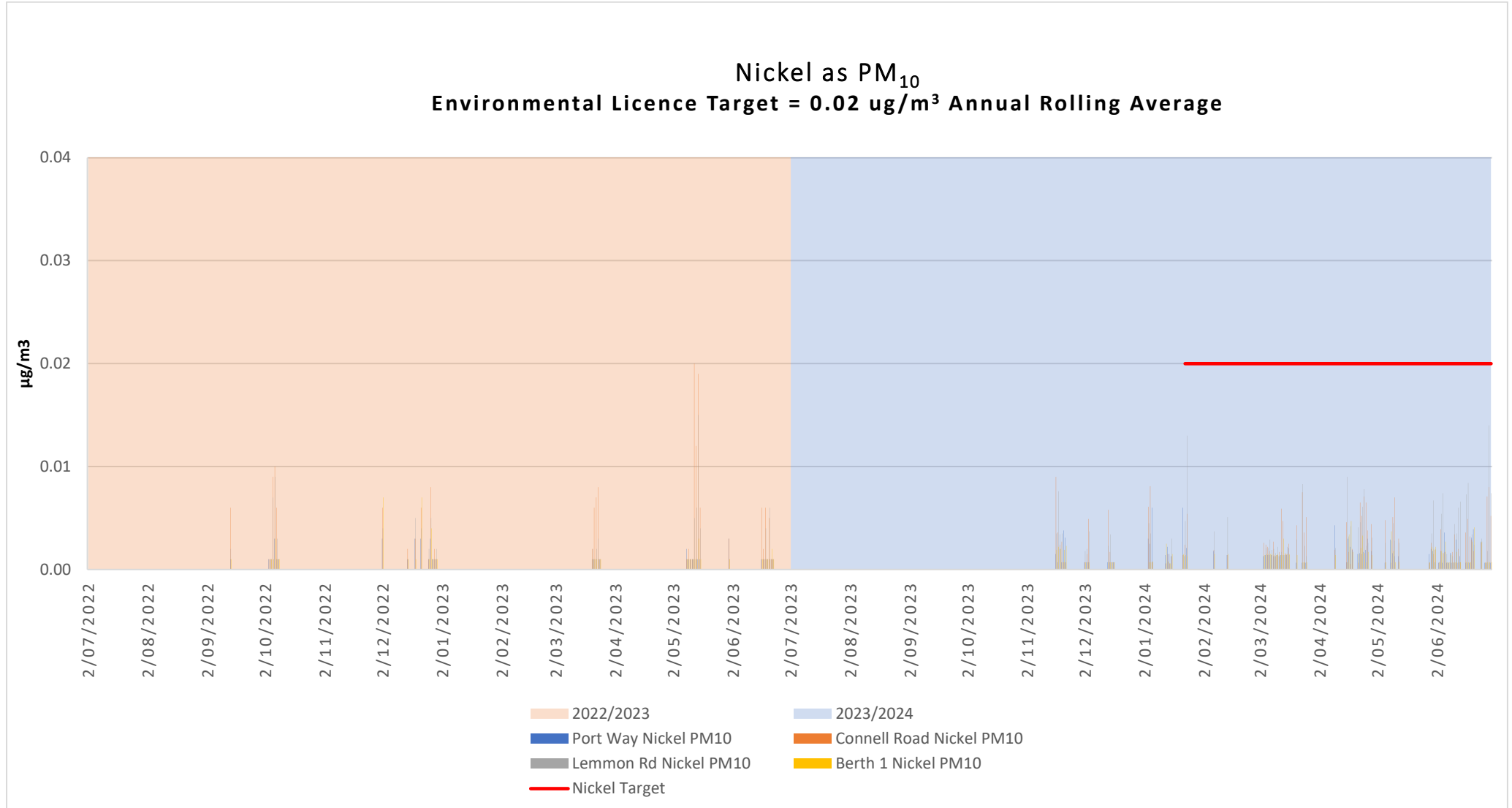


Figure 17 - 2022/2023 and 2023/2024 Nickel Levels in Dust as PM₁₀

2.3.2.6 High Volume Sampling - Manganese as PM₁₀

No vessels were loaded with manganese ore during the 2023/2024 reporting period. MWPA has completed monitoring for manganese as PM₁₀ continuously during shiploading events since November 2017, despite no shipments of manganese ore being undertaken.

In January 2024, the licence target for manganese changed from 0.15 µg/m³ as an annual rolling average to 0.15 µg/m³ as a 24-hour average. Figure 18 displays the annual rolling average for manganese as PM₁₀. All recorded levels are below the licence target level at the time of 0.15 µg/m³.

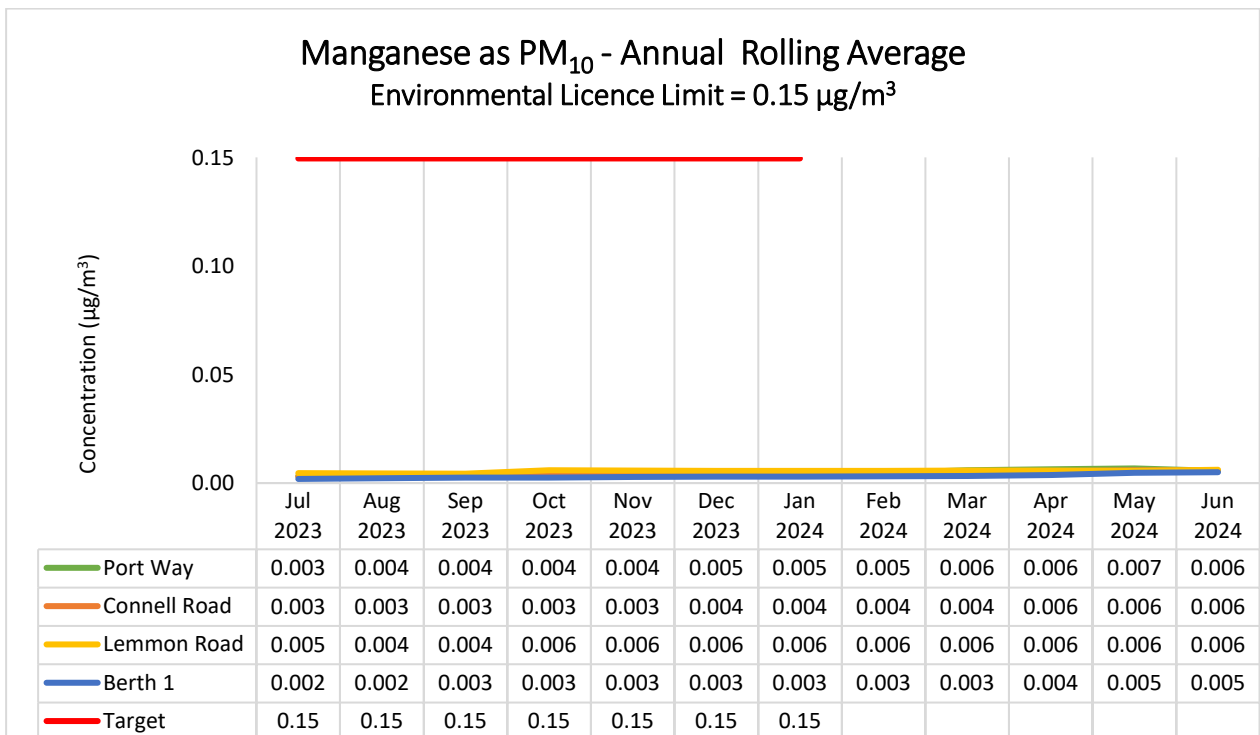


Figure 18 - Annual Rolling Average Manganese as PM₁₀

From January 2024 to July 2024, there were no exceedances of the new licence target level for manganese (0.14 µg/m³) 24 hour average. Figure 19 displays manganese concentrations recorded as PM₁₀.

MWPA currently has no customer agreements in place to export manganese.

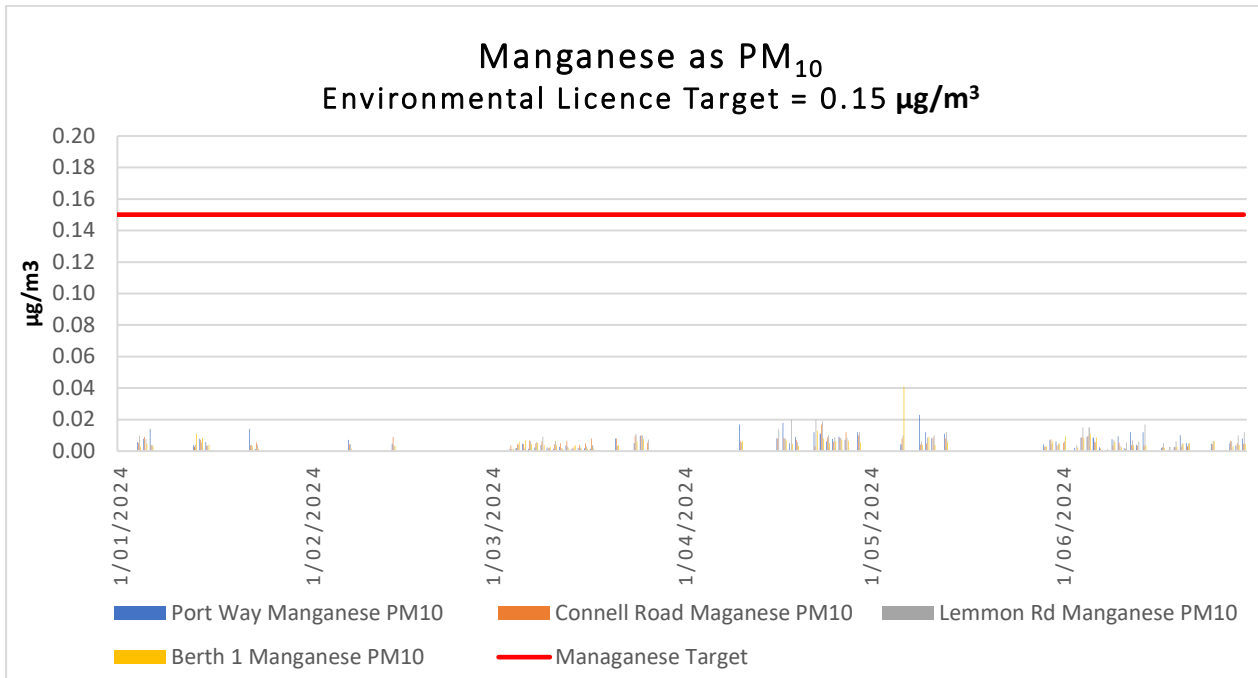


Figure 19 - 2024 Manganese Levels in Dust as PM₁₀

2.3.2.7 High Volume Sampling - Lead as PM₁₀

During this monitoring period a total of nine vessels were loaded with lead concentrate via rotainers at Berth 6. A total of 75,772MT of lead concentrate was loaded during 2023/2024. No lead concentrate loading occurred over Berth 4 during the reporting period. All loading of lead concentrate is anticipated to occur over Berth 6 in future.

During the reporting period, there were no exceedances of the licence target level for lead recorded (0.5 µg/m³). Figure 20 displays the annual average concentration of lead in HiVol samples for each monitoring location. Figure 21 displays each individual result for lead as PM₁₀ in 2022/2023 and 2023/2024.

Transitioning lead concentrate loading from conveyor and shiploader at Berth 4 to rotainer loading at Berth 6 is expected to have contributed to the reduction in average lead levels recorded at all monitors.

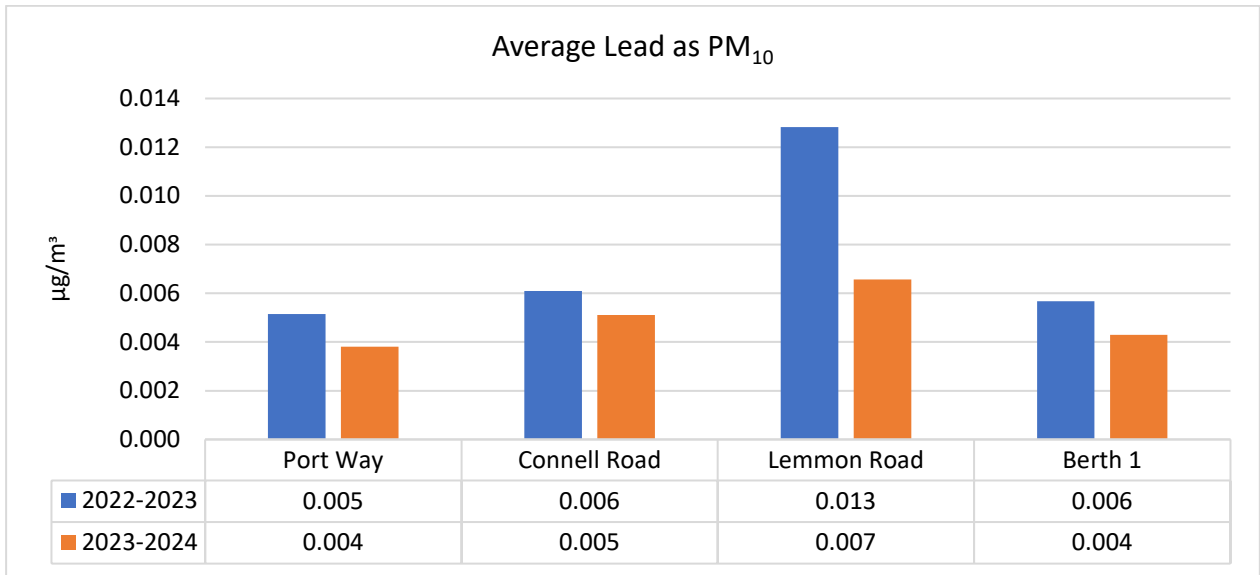


Figure 20 – Annual Average HiVol Lead as PM₁₀

Lead as PM₁₀
Environmental Licence Target = 0.5 µg/m³

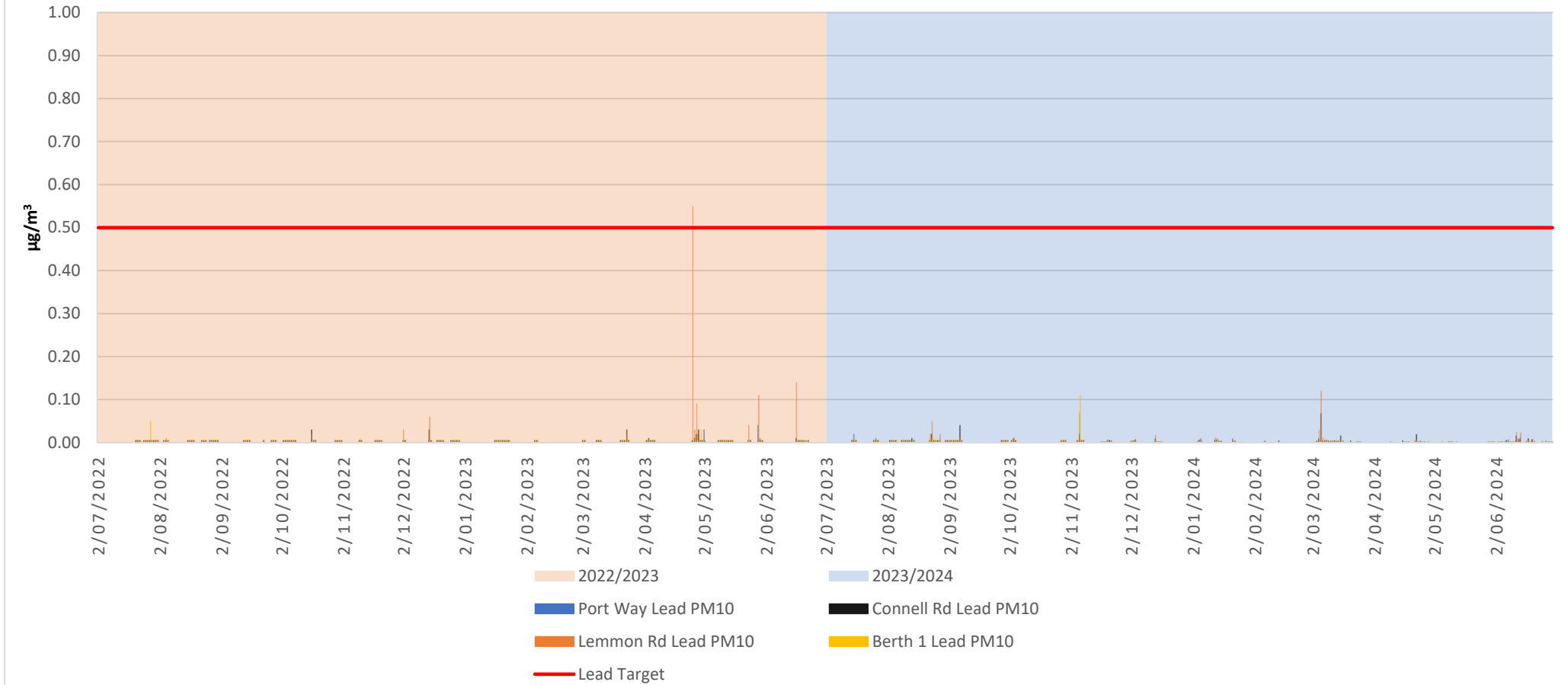


Figure 21 - 2022/2023 and 2023/2024 Lead Levels in Ambient Air as PM₁₀

2.3.2.8 High Volume Sampling - Lead as TSP

The 3-month rolling average for lead as TSP stayed well below the licence limit of 0.5 µg/m³ as shown on Figure 22. The requirement to sample lead as TSP was removed from the licence in January 2024.

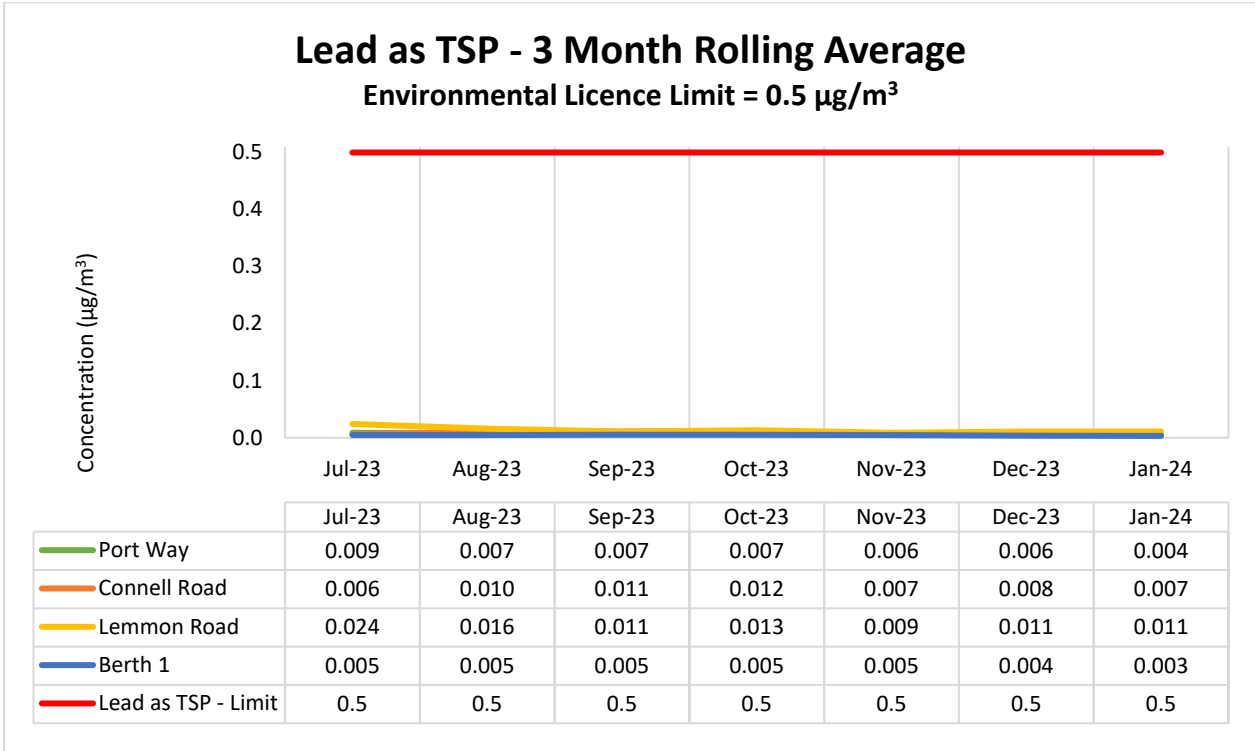


Figure 22 - Lead as TSP 3 month rolling average

2.3.2.9 High Volume Sampling - Lithium as PM₁₀

In January 2024, the Port received approval to export lithium direct shipping ore (DSO) and spodumene concentrate. The amendment included a requirement to monitor lithium as PM₁₀ (no target stipulated). There were no shipments of spodumene or lithium DSO in the 2023/2024 financial year, with loading expected to begin in 2024/2025. Figure 23 displays each individual result for lithium as PM₁₀ in 2024.

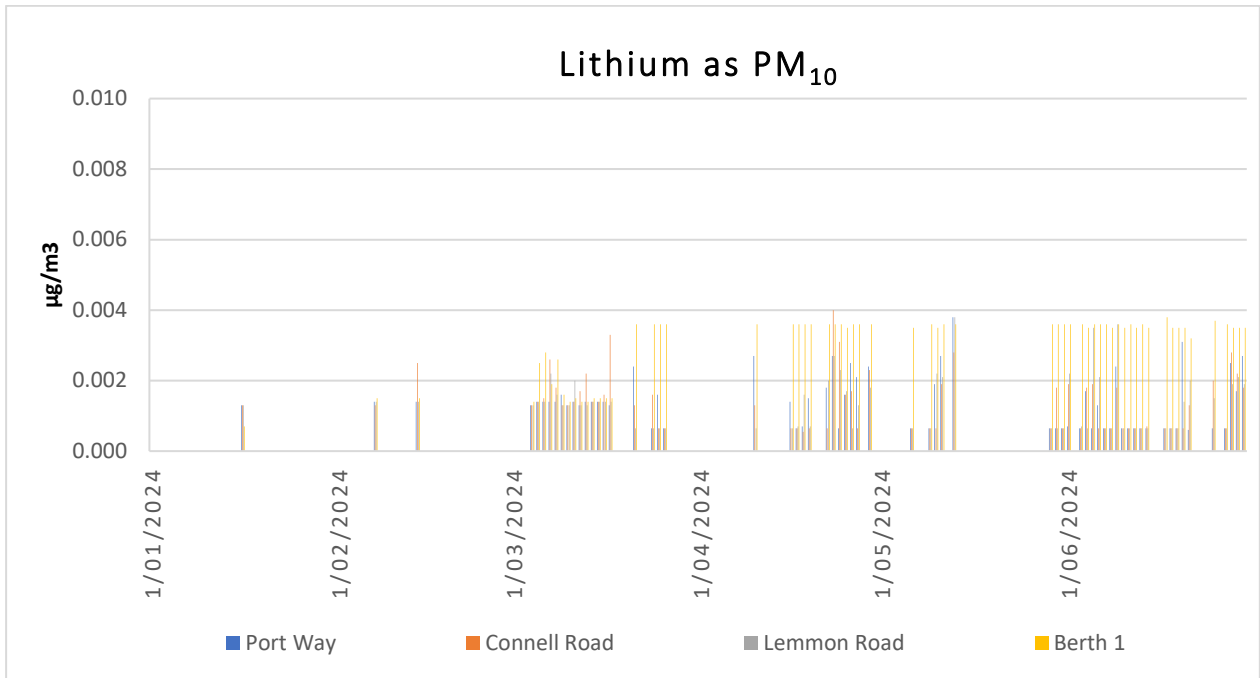


Figure 23 - Lithium Levels in Ambient Air as PM10

2.4 AIR QUALITY MONITORING EQUIPMENT – RELIABILITY, MAINTENANCE & CALIBRATION

MWPA maintain and calibrate all air quality monitoring equipment according to AS/NZ Standards and manufacturers’ specifications, as summarized in Table 7. High volume air samplers are serviced and calibrated every two months, and TEOM and BAM samplers every three months by a qualified external specialist. Calibration certificates are recorded in MWPA’s document management system and are available upon request.

TEOM dust monitors operated continuously with minimal downtime during the reporting period, apart from 4 instances of widespread power or data outages causing invalid sampling days at all monitoring locations. Additionally:

- Lemmon Road had 3 invalid sampling days due to power and equipment failure.
- Port Way had 2 invalid days due to a localized power outage.
- The Background BAM monitor had 68 invalid days due to a major fault requiring offsite repair and tape breakage issues. This unit is not a compliance monitoring station, and data loss is not considered a licence non-compliance.

All invalid sampling days were reported for compliance monitors in the MWPA incident management system (CAMMS) and detailed in the 2023/2024 Annual Audit Compliance Report (AACR).

There was one incident of non-compliance related to continuous PM₁₀ monitoring during shiploading of metal concentrate events due to a power outage. This incident is detailed in the AACR.

Table 7 - Air Quality Monitoring Equipment Calibration Standards

Air Quality Monitoring Equipment		Australian Standard
High Volume Air Samplers	PM10	AS/NZS 3580.9.6:2015
	TSP	AS/NZS 3580.9.3:2015
TEOM		AS/NZS 3580.9.8:2008(R2018)
BAM		AS/NZS 3580.9.11:2016

3 Sediment Quality

3.1 OVERVIEW

MWPA's sediment monitoring program is conducted in accordance with the MWPA Sediment Sampling and Analysis Plan. The objectives of the Geraldton Port 2024 sediment sampling program are to:

- Inform the status of contaminants in the sediment and their associated ecological risk.
- Comply with Licence conditions 31 and 32; and
- Provide a temporal and spatial comparison against historically surveyed sediment results.

The results of the annual sediment sampling program are used by MWPA to assess the performance of controls designed to mitigate impacts to the marine environment from bulk materials handling, infrastructure maintenance and stormwater management.

MWPA commissioned O2 Marine to undertake the 2024 Sediment Monitoring Program, with samples collected between 16 April -18 April 2024.

Under licence condition 32, MWPA is required to provide an investigation report to DWER within six weeks of becoming aware of an exceedance of the lowest stipulated guideline values for the parameters specified. Interim results from the 2024 sediment monitoring program were provided to MWPA on 24th July 2024, with the final report provided as Attachment 1 (O2 Marine, 2024).

3.2 SEDIMENT MONITORING RESULTS – 2024

3.2.1 Metals

An overview of the 2024 exceedances recorded above default guideline values (DGV) and the upper guideline values (GV-High) for metals where ANZG 2018 guideline values exist, is presented spatially in Figure 24.

The general trend across the commercial harbour is of stable/slightly decreasing concentrations of the main contaminants of concern. However, some contaminants still occur at concentrations which exceed DGVs at most berth pocket monitoring locations, with zinc and copper exceeding the GV-high at several sites. Within the FBH and tug pen, copper and zinc exhibit increasing trends in concentrations over time with several sources external of MWPA's operations identified as having contributed to contaminant levels.

Key findings of the 2024 sediment monitoring program included:

- Consistent with sampling in previous years, the concentrations of metals are higher in the CH and FBH than those areas outside the harbours and at control sites.

- Metal concentrate trends are generally slightly declining within the CH indicating limited impact from current operations. However, several contaminants still occur at concentrations which exceed DGVs at most berth pocket monitoring locations.
- While trends within the FBH are increasing over time, during the 2024 monitoring, average concentrations of these metals generally decreased relative to results from previous years. It is likely there is an ongoing source from the non-MWPA operated activities of the FBH.
- Soluble metals have generally not been detected at levels that would be considered harmful to marine ecosystems, suggesting most of the contaminants exist in a particulate form held within fine silts and clay sediments.
- Several detections for copper and zinc may be bioavailable at a small proportion of sites with several values exceeding SPLs and DGVs within the FBH and CH.
- The QA/QC assessment identifies that laboratory reported results have resulted in a low confidence of the results, thus any interpretation of results should be undertaken with caution.

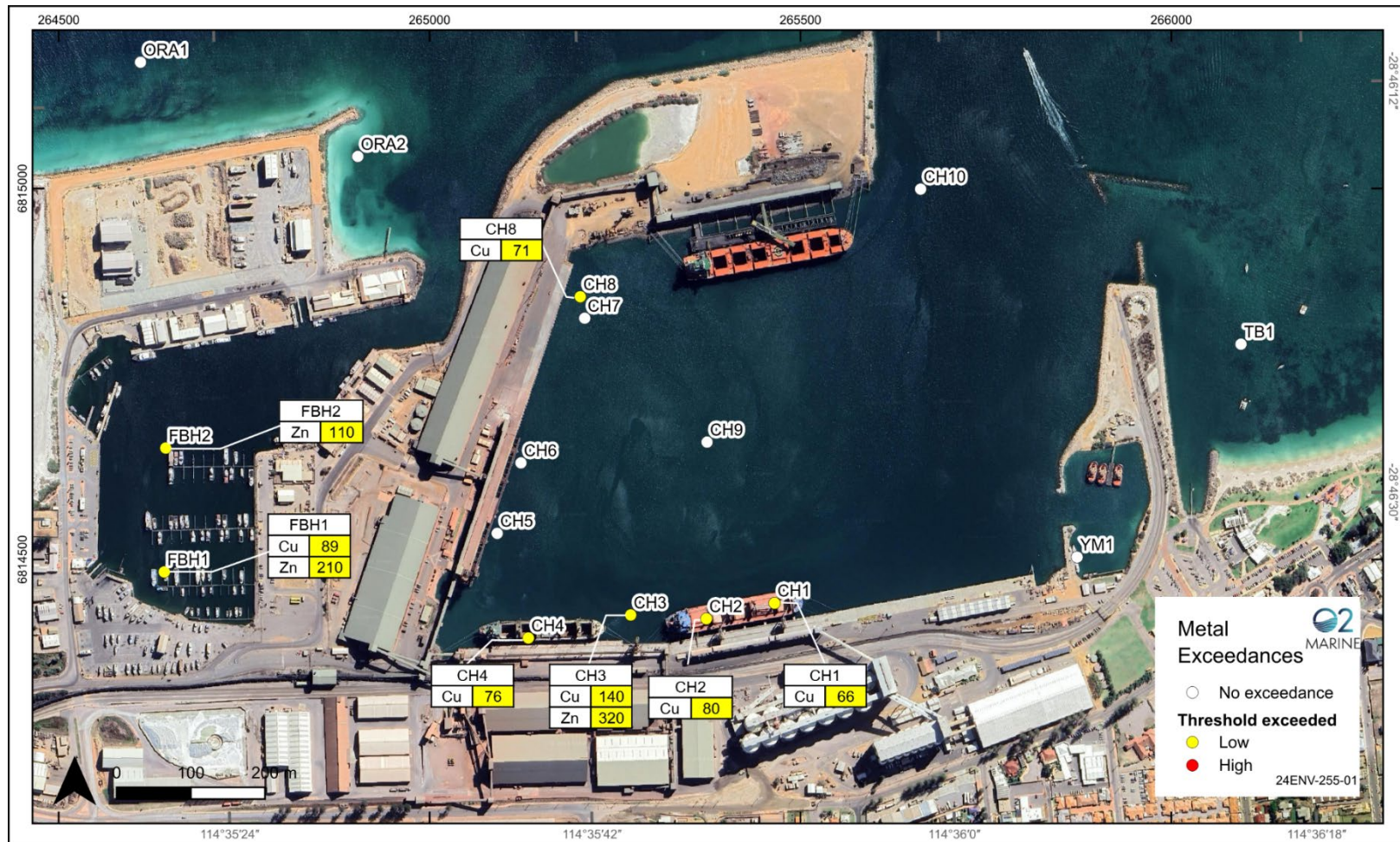


Figure 24 - Geraldton Port 2024 Sediment Sampling Locations and Metal Concentration Exceedances

Figure 24 shows metal concentrations (mg/kg) and exceedances of ANZG (2018) guideline values. Guideline values exist for arsenic, cadmium, copper, lead, mercury and nickel. No ANZG guideline values exist for iron, aluminium or vanadium.

3.3 INVESTIGATION OF EXCEEDANCES

License condition 32 requires investigation of exceedances and reporting of findings. The following exceedances were recorded during 2024:

- Copper exceeded the DGV at 7 sites.
- Zinc exceeded the DGV at 2 sites.
- Copper was bioavailable at concentrations exceeding the DGV at site FBH2.
- Zinc was bioavailable at concentrations exceeding the DGV at site FBH1.
- Zinc concentrations in elutriate samples exceeded the SPLs at sites FBH1 and CH3.

As of February 2024, all metal concentrate loading operations previously conducted over Berth 4 have ceased, where metal concentrate loading operations have been moved to Berth 6 with loading conducted via rotainer boxes. Iron concentrate represents a new addition to the list of metal concentrates loaded at the port with loading operations having commenced in November 2023.

As the reported concentrations of metals in the CH are generally lower than the 2023 results, it is considered that the CH's elevated metals in sediment concentrations are primarily due to historical port activities.

Nickel product handling in 2024 is not considered to have affected nickel in sediment concentrations as reported levels remain comparable to recent historical levels (with no exceedance of the DGV at any location).

The FBH and tug pen exhibit long-term increasing trends in concentrations of copper and zinc, where concentrations have declined over the past 3 monitoring events. It is suggested that several sources external to MWPA's controlled operations may also contribute to contaminant levels, being linked to the stormwater infrastructure from non-port-controlled land.

MWPA has reviewed the following considering the 2024 sediment exceedances:

- Risk to the marine environment presented by the elevated metal concentrations; and
- Control measures and plan for remedial actions.

3.4 RISK TO ENVIRONMENT

To date, further investigations commissioned or implemented by MWPA to assess the risk to the environment include:

- Aluminium normalisation – conducted annually in recent years to establish levels of enrichment within the harbours compared to reference and control sites. This process enables more accurate comparison of reported concentrations at impacted sites to control sites.

- Bioavailability assessment via dilute acid extraction (DAE) - conducted in 2014, 2019, and 2024 (this year). This test is used as an indicator of bioavailability of contaminants. MWPA is committed to conducting DAE on a five-yearly basis as a minimum.
- Bioavailability assessments via elutriate assessment – conducted in 2014, 2019, 2020, and 2024 (this year). These tests are designed to measure and predict the release of contaminants to the water column where they may be bioavailable. MWPA is committed to conducting elutriate testing on a five-yearly basis as a minimum.
- Passive water quality monitoring results within the CH – presently conducted monthly to monitor soluble metal concentrations.
- Development and implementation of a Marine Environmental Monitoring and Management Plan (MEMMP) developed in accordance with EPA (2016) to monitor and track trends in water quality within the CH and FBH.

Aluminium normalisation indicated levels of enrichment for metals copper and zinc which exceeded the DGVs were reported as ‘severe’ to ‘very severe’ for the CH, and ‘severe’ to ‘extremely severe’ for the FBH.

Elutriate results indicate that zinc has potential to impact water quality within the CH and FBH if marine sediments are disturbed. This is consistent with results reported in previous investigations conducted by RPS (2014) and O2Marine (2020b), however water quality monitoring programs conducted during the 2012 and 2021 dredge programs did not identify any water quality issues for zinc related to tailwater discharge from the dredge reclaim area (GPA 2013; O2 Marine 2021b).

DAE results indicate that zinc and copper may potentially be available for uptake by marine organisms within the FBH, however offer no risk within the CH. No previous data exists for FBH sediment however previous bioavailability assessments from the CH identified all total metals as having very low bioavailability, with contaminants bound to sediment particles. Furthermore, based on the field and laboratory QA/QC assessment, the data reported for this assessment should be interpreted with a level of caution as there is likely to be a level of error in the reported results.

Based on these findings and the QA/QC assessment, it is difficult to draw conclusions with regards to the level of risk posed to water quality and ecosystem health, however based on the general decline in metals concentrations and levels of enrichment the key contaminants reported in 2024 pose a similar level of risk as with previous years, with most contaminants present within the CH being attributed to historical sources, and copper and zinc within the FBH likely a result of antifoulant paints and vessel anodes, common to marinas across Western Australia.

3.5 CONTROL MEASURES AND REMEDIAL ACTIONS

3.5.1 Control actions

To prevent bulk material handling operations contributing to or further enriching concentrations of metals within the CH, MWPA continues to review existing controls for metal concentrate handling at the port. As of February 2024, MWPA has transitioned all metal concentrate handling to Berth 6 via Rotainer

operations. This is expected to significantly reduce any handling, loading facility washdown or fugitive emissions.

A marine environmental monitoring and management plan (MEMMP) was implemented in June 2024, which will also aid in determining risk to the marine environment and ensuring that the defined environmental values are not placed at risk from Port operations.

The 2024 monitoring results demonstrate metal concentrate trends either remaining stable or are slightly declining within the CH and FBH indicating limited impacts from current operations. Annual review of trends of contaminant concentrations reported within the compliance sediment program, alongside the newly developed MEMMP will continue to allow MWPA to facilitate an ongoing assessment of the effectiveness of control measures and establish how concentrations and enrichment levels are changing over time.

3.5.2 Remedial actions

MWPA's primary remedial action for elevated contaminants in the shipping harbour is dredging and in-situ management. While most contaminants show stable or slightly decreasing levels, the 2012 and 2021 dredging campaigns did not immediately reduce metal concentrations. Instead, 2022 saw an increase due to fine particles from hopper overflow. By 2023 and 2024, levels returned to historical norms.

MWPA has reviewed its dredging methods, noting that fine particles, which bind metals, are hard to recover. MWPA is committed to reviewing methodology of future maintenance dredging campaigns to maximise the capture and retention of fine clay and silt-sized particles (and in turn metal contaminants) to assist in reducing sediment contaminant concentrations.

4 Fertiliser Discharge Monitoring

Fertilisers are imported at the Port via mobile hoppers and grabs at Berth 6. Nutrients from fertilisers can result in adverse impacts on the water quality and marine ecology. MWPA monitor contaminated surface water run-off from Berth 6 through the stormwater system before it discharges into the marine environment. Sampling is completed at the humeceptor on Berth 6 (SW14) in accordance with Condition 33, Table 5. MWPA conducts this monitoring according to the Fertiliser Discharge Monitoring SAP, each day of fertiliser handling and on the fourth day after handling is completed.

Procedures are in place for fertiliser import to ensure spillage is prevented from entering the harbour, and product spilt to the berth is regularly swept up and removed. Water accumulated in the humeceptor is removed via vacuum truck on a regular basis to reduce the discharge of pollutants into the marine environment and maintain operational capacity.

During this monitoring period a total of 19 vessels unloaded 161,007MT of fertiliser at Berth 6.

Table 8 - Ammonia and Nitrogen (mg/L) in SW14 Humeceptor During Fertiliser Unloading 2023/2024.

Fertiliser Vessel Name	Fertiliser Product	Start Loading	Stop Loading	Ammonia-N (mg/L)		NOx-N (mg/L)		Total Nitrogen (mg/L)	
				Average during Loading	4 days post loading	Average during Loading	4 days post loading	Average during Loading	4 days post loading
Elsa Oldendorff	MAPSCZ	22/11/2023	23/11/2023	SW14 was empty – there was no water to sample					
Edgar Oldendorff	MAP/DAP	11/12/2023	13/12/2023	SW14 was empty – there was no water to sample					
IVS Magpie	SSP/NPS	20/12/2023	21/12/2023	SW14 was empty – there was no water to sample					
TAC Daytona	SSP/DPZ	27/12/2023	27/12/2023	SW14 was empty – there was no water to sample					
Bunun Orchid	MAP	09/01/2024	11/01/2024	SW14 was empty – there was no water to sample					
Indonesian Bulker	MOP	11/01/2024	12/01/2024	SW14 was empty – there was no water to sample					
Melody Selmer	MAP/DAP	20/01/2024	21/01/2024	SW14 was empty – there was no water to sample					
African Oriole	MAP/SOA	05/02/2024	06/02/2024	SW14 was empty – there was no water to sample					
Bamboo Star	MOP	08/02/2024	08/02/2024	SW14 was empty – there was no water to sample					
Cetus Tiger	MAP	10/03/2024	10/03/2024	SW14 was empty – there was no water to sample					
Woodgate	Urea	04/03/2024	05/03/2024	SW14 was empty – there was no water to sample					
Earth Harmony	Urea	26/03/2024	29/03/2024	SW14 was empty – there was no water to sample					

Fertiliser Vessel Name	Fertiliser Product	Start Loading	Stop Loading	Ammonia-N (mg/L)		NOx-N (mg/L)		Total Nitrogen (mg/L)	
				Average during Loading	4 days post loading	Average during Loading	4 days post loading	Average during Loading	4 days post loading
				CH Doris	Urea	02/04/2024	14/04/2024	SW14 was empty – there was no water to sample	
Berge Hakodate	DAP/MOP	12/04/2024	13/04/2024	SW14 was empty – there was no water to sample					
Emma Oldendorff	Urea	14/04/2024	16/04/2024	SW14 was empty – there was no water to sample					
Pan Nova	MAP	21/04/2024	22/04/2024	SW14 was empty – there was no water to sample					
Quest	Urea	17/05/2024	21/05/2024	SW14 was empty – there was no water to sample					
African Rook	Urea	21/05/2024	22/05/2024	SW14 was empty – there was no water to sample					
Hu Po Hai	Urea	14/06/2024	18/06/2024	SW14 was empty – there was no water to sample					

5 Iron Concentrate Loading Monitoring

Iron concentrate was exported during the reporting period via rotainers over Berth 6. Licence condition 34, Table 6 requires MWPA to monitor marine water at Berth 6 for total iron before commencement and each day of iron concentrate loading. Iron concentrations were below detection during all water monitoring completed during the period (Table 9).

During this monitoring period a total of 4 vessels equating to 147,472MT of iron concentrate was loaded at Berth 6. All vessels were loaded during the period November 2023 and April 2024 in accordance with the licence.

Table 9 - Total Iron (mg/L) in Marine Water During Iron Concentrate Loading – Berth 6, 2023/2024.

Fertiliser Vessel Name	Product	Start Loading	Stop Loading	Total Iron (unfiltered) (mg/L)	
				Pre Shipment Concentration	Average during Loading
Zhong Chang 258	Iron Concentrate	26/11/2023	06/12/2023	<0.5	<0.5
Yue Dian 58	Iron Concentrate	16/02/2024	23/02/2024	<0.5	<0.5
Zhong Chang 258	Iron Concentrate	17/03/2024	02/04/2024	<0.5	<0.5
Yue Dian 58	Iron Concentrate	19/04/2024	30/04/2024	<0.5	<0.5

6 Summary of Complaints

Licence condition 35 requires MWPA to maintain a complaints management system that records the number and details of complaints about alleged emissions from the premises. Complaints and community feedback and recorded in MWPA’s incident management system (CAMMS).

During the reporting period, 17 complaints were received as summarised in Table 10. Eleven of these complaints were attributed to port operations. Most complaints were associated with dust emissions impacting leaseholders in the Fishing Boat Harbour (FBH). Two community enquiries were also received regarding noise, one regard marine water quality, and one regarding coastal erosion.

Table 10 - Complaints Received 2023/2024

No.	Incident Date	CAMMS Number	Incident Title	Brief Summary
1	29/06/2023	HA-22422	Community Concern – Noise Complaint *Not Port Influenced	One noise complaint received relating to truck braking at John Wilcock Link (not port influenced).
2	16/08/2023	IN-27212	Community Concern – Dust Complaint	Dust complaint received from charter boat operator in south pens who developed respiratory infection after overnighting on his vessel 09/08/23. Also concerned with dust deposition on vessel 16/08/23.
3	18/09/2023	IN-27236	Community Concern – Dust Complaint	Dust complaint received from charter boat operator in south pens regarding talc dust from front end loader operating.
4	19/09/2023	IN-27239	Community Concern – Coastal Erosion *Not Port Influenced	Complaint referred from CGG relating to coastal erosion at Point Moore (not Port Influenced).
5	13/11/2024	IN-27299	Community Concern – Dust Complaint	One complaint received in relation to talc dust deposition on vessel in south pens, during loading of MV African Crate 1-2nd November.
6	8/12/2023	IN-27339	Community Concern – Dust Complaint	Complaint from FBH leaseholder regarding talc dust and build up on vessels. Leaseholder contacted to cease road sweeping in southerly winds.

No.	Incident Date	CAMMS Number	Incident Title	Brief Summary
7	12/12/2023	IN-27349	Community Concern – Dust Complaint *Not Port Influenced	Noise complaint from West End resident regarding trucks on John Wilcock link (not port influenced)
8	27/12/2023	IN-27380	Community Concern – Dust Complaint	Dust complaint from FBH pen holder regarding increased iron-ore dust (red/black) build up on vessel, particularly during easterly winds.
9	24/01/2024	IN-27419	Community Concern – Dust Complaint	Grain dust complaint from resident on Augustus St. Reported to CBH and attributed to grain dust transfer from Annex to silo.
10	19/02/2024	IN-27465	Community Concern – Water Quality Concern *Not Port Influenced	Concern raised from visitor to Geraldton regarding water quality at town beach and perceived nickel contamination (not port influenced)
11	26/02/2024	IN-27495	Community Concern – Dust Complaint	Email communications from FBH leaseholders received with ongoing concerns around talc and iron-ore dust.
12	19/03/2024	IN-27522	Community Concern - Dust Complaint	Concern raised by FBH pen holder around iron-ore dust deposition on his vessel and car parked in the SE corner of the FBH. Complainant raised concern around red dust staining boat surfaces, window seals and air conditioning drain water (red colour).
13	25/03/2024	IN-27523	Community Concern - Dust Complaint	Complaint via DWER Pollution Watch regarding dust impact to cray boat moored on north side of the FBH. Complainant raised concerns around black dust corroding vessel. DWER reference number ICMS 76764.
14	27/03/2024	IN-27526	Community Concern – Noise Complaint *Not Port Influenced	Complaint from Belair Caravan Park regarding noise from truck brakes. Concern raised with increased use of air brakes in recent months for truck passing through John Wilcock link particularly at night.
15	24/04/2024	IN-27553	Community Concern – Dust Complaint	Concern raised relating to dust generated from earthworks on FBH northern reclaim, impacting boat building works on neighboring lease. Project Manager notified and work ceased until water cart could be deployed and easterly winds eased. Works area to be capped with gravel to prevent dust generation long-term.

No.	Incident Date	CAMMS Number	Incident Title	Brief Summary
16	04/06/2024	IN-27613	Community Concern – Dust Complaint	A port user lodged a complaint regarding iron ore dust coating their facility within the Mineral Storage Area. Concern raised on accelerated corrosion of infrastructure and potential for product contamination.

7 Summary of Environmental Incidents

As required by Condition 39 of the licence, MWPA must summarize any failures or malfunctions of pollution control equipment and any environmental incidents during the reporting period, including actions taken.

Five reportable environmental incidents with potential pollution risks occurred during the reporting period and were reported to DWER via a Section 72 Waste Discharge Notification. These incidents were:

- During a 16mm rainfall event on Saturday, 24th February, stormwater contaminated with iron ore was discharged into the commercial harbour. A turbid plume was observed in the southwest corner of the harbour due to discharge from licensed stormwater outfalls SW7, SW9, SW11, SD12, and SW13. The plume, which caused elevated turbidity and discolouration in marine waters, remained in the southwest corner of the harbour from approximately 16:30 to midnight. It dissipated naturally within 8 hours. No impact was observed at the harbour entrance, indicating no effect on adjacent Champion Bay. The impact was contained within the commercial harbour and dispersed naturally (CAMMS incident IN-26749, ICMS 75160).
- On 19th May 2024, fertiliser spilled into the harbour during the discharge of a vessel. The grab's closing mechanism failed, spilling material onto the ship's deck and then fully releasing over the edge onto the spill plates on the wharf. The load's weight (~7t) caused the spill plate to collapse, wedging it between the vessel and the wharf. An unknown amount of urea was released into the ocean. Based on the volume recovered, the stevedore company estimated that 5 to 10% of the grab's content, about 500kg, was lost. They reported the incident immediately and suspended operations. The MWPA Wharf supervisor responded within 20 minutes, but due to the soluble nature of the urea, there was little evidence of the spill in the water. Initial investigations indicated that a solenoid failure caused the bucket to leak and then suddenly fail. Most of the spilt material was recovered using the grab, shovels, and sweepers (CAMMS incident IN-27001, ICMS 79090).
- On Sunday, 2nd June 2024, stormwater contaminated with iron ore was discharged into the commercial harbour during a 27mm rainfall event. A turbid plume was observed on the west side of the commercial harbour, adjacent to Berth 6, due to a stormwater spoon drain overtopping. The impact was contained within the commercial harbour and dispersed naturally (CAMMS incident IN-26749, ICMS 79642).

- On Wednesday, 12th June 2024, stormwater contaminated with iron ore was discharged into the commercial harbour during a 3.6mm rainfall event. A turbid plume was observed on the south side of the commercial harbour, adjacent to Berth 3 and 4, due to flooding on Gillam Road from heavy rain in a short time. The impact was contained within the commercial harbour and dispersed naturally (CAMMS incident IN-26749, ICMS 80002).
- One exceedance of air quality target for Nickel as TSP (Section 2.3.2.4).
- Six incidents occurred where environmental monitoring equipment malfunctioned, or samples were not taken in accordance with the licence. These events were reported to DWER via quarterly Air Quality Monitoring reports.

Incidents considered to be a non-compliance with licence conditions or that had the potential to cause pollution are reported in the attached Annual Audit Compliance Report (AACR) (Attachment 2).

MWPA promotes a culture of immediate and transparent reporting of all environmental incidents, regardless of severity. Several minor environmental incidents were reported during the period, as outlined in Table 11. All incidents were recorded in the MWPA incident management system (CAMMS).

Table 11 - Minor Environmental Incidents 2022/2023

Incident Date	CAMMS Number	Incident Description
22/08/2023	IN-27194	Approx. 2L of oil observed leaking from waste bin in the FBH south pens. Leaking oil cans removed from the bin and oil spillage cleaned up.
30/08/2023	IN-27204	Uncontained abrasive blasting works on Berth 4 resulting in surface plume of sand blasting material debris in the harbour alongside Berth 4 and Berth 5. Work method reviewed with shadecloth and floating boom containment put in place for works to continue.
5/09/2023	IN-27210	Small hydraulic oil leak from excavator during rock wall repairs. Spill estimated less than 5L. Spill contained to landside work area with no impact to marine environment. Hydraulic oil contained and recovered with absorbent pads and kitty litter. All contaminated material removed for off-site disposal.
5/09/2023	IN-27209	Small oil spill on Berth 3 below ship loader. Spill contained on hard stand area and was clean-up. No impact to marine environment.
2/10/2023	IN-27251	Sandblasting material escaped containment from works under Berth 4 during extremely low tide conditions. Sandblasting halted until containment could be reinstated.
3/11/2023	IN-27281	Small oil spill on roadway at Gate 2 from elevated work platform. Spill contained to hard stand area and cleaned up.
5/11/2023	IN-27284	Protective covering wrapping jetty components at eastern breakwater disintegrating and at risk of blowing into harbour. Project Manager notified and clean-up completed by contractor in charge of the works.
7/11/2023	IN-27294	Black substance observed in water around stern and seaward side of Ultra Margay on Berth 3. Substance identified as soot from the emissions gas cleaning (scrubber) system. MWPA Harbour Master discussed discharge with Vessel Master and advised discharge within harbour was not acceptable. Vessel put on watch list for future visits.

Incident Date	CAMMS Number	Incident Description
11/11/2023	IN-27294	Approximately 200L of hydraulic oil spilt from burst hydraulic hose from Qube truck on Berth 6. Oil spill contained on berth hardstand and recovered with kitty litter, with material disposed off-site.
15/11/2023	IN-27303	Hydraulic oil spill to ground on Berth 7 resulted from hydraulic hose failure from loader operations doing rock wall repairs. Machine work ceased to stop leak, spill pads applied and contaminated soil removed for off-site disposal.
27/11/2023	IN-27314	Small diesel spill (less than 2L) from Qube truck on Berth 6, from secondary tank back flowing to first tank. Spill contained to hard stand on the berth and cleaned up with kitty litter.
8/12/2023	IN-27368	Sheen observed in the water at anchorage adjacent to MV Leon Oetkar. Ship's captain contacted marine team who collected water sample, which upon inspection showed no hydrocarbons present. Sheen attributed to coral spawning.
17/12/2023	IN-27362	Generator on Berth 6 blew a fuel hose and leaked approximately 5L of diesel onto the hardstand. Generator turned off and spill absorbent used to clean up the spill. Generator replaced with a back-up and frequency of equipment checks increased.
18/12/2023	IN-27365	Hydraulic oil spill (<1L) from Vacwest truck on corner of Berth 3 and 4. Work ceased, kitty litter applied to absorb the spill. Truck hydraulics to be checked and rectified.
19/12/2023	IN-27370	Hydraulic oil spill at Berth 4, near tower 102 from Vacwest truck. Spill cleaned up with kitty litter and absorbent pads. Vacwest advised to review hydraulic issue and rectify.
21/12/2023	IN-27375	Elevated copper result recorded in marine water sampling adjacent to Berth 4. Concentration of 12ug/L recorded above the 80% species protection level guideline of 8ug/L. No elevated readings recorded at any other monitoring site indicating impact was localised and did not impact further into the harbour. Operations during the month reviewed with operations, particularly the loading of Copper Concentrate 21 st November. A potential issue with labelling of the humeceptor isolation valve was identified and rectified.
27/12/2023	IN-27382	Dust extraction not operating on Shed 4 while trucking. Reported to Fenix. Refurbishment work being carried out on dust extractors.
1/02/2024	IN-27438	Biosecurity concern reported by contractor working on Lease 10 who sighted a potential red fire ant. Sample of ant collected and provided to DAFF (via Environmental Advisor) who confirmed ant was a local species and not of concern. Leaseholder advised to conduct pest control to remove ants from the lease as precautionary measure.
5/02/2024	IN-27449	Excessive dust generated from earthmoving works on Berth 7 under strong SW wind conditions. MWPA project manager contacted to coordinate water cart ASAP to suppress dust.
6/02/2024	IN-27452	Excessive dust observed from Karara tower on Berth 7. Wharf Supervisor contacted Karara who ceased the maintenance work found to be the cause of the dust. Method of cleaning tower by air for maintenance changed to manual sweeping/vacuuming to reduce dust emissions.
15/02/2024	IN-27458	Residual 29M metals concentrate sludge mixed with strandline product in Sump 6, resulting in a mixed waste product potentially high in lead, copper and zinc. Sludge transferred to Berth 7 bunker for drying and testing to determine disposal options.

Incident Date	CAMMS Number	Incident Description
1/03/2024	IN-27482	Passive water sample adjacent to Berth 7 discharge pipes recorded elevated lead concentration at 14.6ug/L above the 80% species protection level of 12ug/L during January. No other elevated concentrations were recorded at any other sampling location, or for any other analytes. Lead levels returned to normal range during February and March sampling.
7/03/2024	IN-27492	Unknown volume of diesel discovered during night shift in the FBH. Spill suspected to be old diesel fuel discharged via bilge water from a vessel in the FBH. Absorbent boom deployed by MWPA to contain the spill. Absorbent pads were used to recover spilt diesel before using small craft to dissipate remaining sheen within the boom area via propeller action (suitable method advised by MEER). Environmental monitoring completed at a number of locations inside and outside the boom area. Spill recovery monitoring report in development for submission to DOT.
14/03/2024	IN-27499	Hydraulic oil leak from Vacwest wet sweeper on Berth 6. Spill contained and recovered using kitty litter. Spill contained to berth hardstand and no impact to marine environment.
18/03/2024	IN-27505	Depositional dust gauge funnel damaged at Bluff Point background location (repeat incident)
13/04/2024	IN-27541	Minor fertiliser spill noted at Gate 2 entrance and Gate 3 exit. Wharf Supervisor contacted Qube to arrange spillage to be swept up.
20/04/2024	IN-27548	Diesel spill on Berth 6 from Qube haul truck, due to overflow while transferring fuel between tanks. Spill response materials were used to contain the spill, including a small volume which split over the berth deck to the harbour. All diesel was recovered and spill response material disposed off site. A transfer tank lock out system has been introduced to ensure no fuel transfer can occur while Qube trucks are inside the port.
19/05/2024	IN-27588	Hydraulic oil spill to hard stand from Qube truck at Berth 4 truck unloader. Absorbent material deployed to contain and recover the spill.
25/05/2024	IN-27601	Hydraulic hose ruptured on road train while end tipping iron-ore in L88 truck unloader. Absorbent material deployed to contain and recover the spill.
29/05/2024	IN-27604	Excavator contacted CV03 structure causing hydraulic oil fitting to be damaged and spill oil into bunded area. Absorbent material deployed to contain and recover the spill.
2/06/2024	IN-27622	Hydraulic leak from truck at lease 88 truck unloader. Spill contained on hard stand and recovered.
8/06/2024	IN-27618	Hydraulic leak from truck at lease 88 truck unloader. Spill contained on hard stand and recovered.
11/06/2024	IN-27624	Hydraulic leak from truck at lease 88 truck unloader. Spill contained on hard stand and recovered.
17/06/2024	IN-27632	Hydraulic leak from truck at lease 88 truck unloader. Spill contained on hard stand and recovered.
21/06/2024	IN-27644	Hydraulic leak from truck at lease 88 truck unloader. Spill contained on hard stand and recovered.
25/06/2024	IN-27648	Hydraulic leak from truck at lease 88 truck unloader. Spill contained on hard stand and recovered.
29/06/2024	IN-27654	Hydraulic hose blew on rotabox on Berth 6 causing minor oil spill. Spill contained to hard stand on berth and recovered.

8 References

ANZG (2018). Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia. Available at www.waterquality.gov.au/anz-guidelines.

O2 Marine (2023). Geraldton Port Annual Sediment Compliance Survey – 2023. Attachment 1.