Nickel West Leinster Operations

(Leinster Township)

Potable Water Quality Report

April to June 2025

Contents

1. Water Provider Information

Water provider's contact details	
Name of Company	BHP Nickel West Pty Ltd
Company Address	Level 43 125 St Georges Terrace, Perth WA 6000
DoH Liaison Officer	Giovanna De Sousa
DoH Liaison Officer Email	Giovanna.desousa@bhp.com
DoH Liaison Contact #	0466 847 141

1.1 System Information

BHP Nickel West Leinster Nickel Operations is located 370 km north of Kalgoorlie. The Leinster Nickel Operations cover large mineral tenement landholdings incorporating several Nickel deposits and facilities including Leinster township (residential area, commercial facilities and SPQ accommodation village). Previously the average population on any given day at this location was 1000 people but since moving into a temporary suspension the Leinster town population has reduced to a maximum of 350.

1.2 Drinking Water Supply System

Drinking water for the township of Leinster is sourced from the 11 mile bore field that sits 6 km equidistant from both locations. The raw water from this bore field has historically raised levels of salinity and nitrates.

Water is stored at the 11-mile water transfer station (390 kilolitres) and is gas chlorinated prior to being pumped to storage facilities located at town and the mine site.

The town reticulation network includes a 3 million litre buffer tank which provides holding capacity and distribution head pressure. There are two reverse osmosis (RO) units located at the dry mess facility and the town medical centre to deliver higher quality water.

Drinking water supplied by BHP complies with the health-related criteria, as outlined in version 3.7 of the Australian Drinking Water Guidelines (ADWG).

1.3 Number of Drinking Water Sampling Points

Table 1 below provides the number of drinking water sample points maintained. Source water sample points are included in the monitoring program to provide data relating to changes in chemistry and microbiology of pre-treatment water. As these points are not indicative of the quality of drinking water provided for consumption, only consumer or distribution sample point information is collated in this quarterly report.

Table 1: Drinking Water Sampling Points		
Region	**Consumer / Distribution Points**	**Source Water Points (11 mile)**
Leinster Township	7	1

2. Performance Summary

Table 2 below provides the number of microbiological water samples completed throughout quarter one. The required number assessed, number within compliance and any variance within the sampling quota.

Table 2: Drinking Water Sampling Performance Summary			
Microbiological Quality[1]	**No. assessed**	**No. compliant**	**Variance**
Thermotolerant coliforms / E. coli	17	17	0
Amoeba (Thermophilic Naegleria)	17	17	0
Chemical Quality	**No. assessed**	**No. compliant**	**Variance**
Chemical - Health	230	218	**12**
Chemical - Aesthetic	71	63	**8**
Radiological	2	2	0

[1]*Microbiological results from location SP2 11 Mil transfer station were not included in the total tally as this is considered a source supply point.*

3. Microbial Performance

Microbiological verification sampling is completed routinely at identified drinking water sample points which are chosen to be representative of distributed water. The aim of verification sampling is to confirm the water quality supplied to Leinster Town is safe and aesthetically acceptable. To ensure confidence in the reported results, all microbiological analyses are undertaken by a NATA accredited laboratory.

Microbiological results are reported by exception, and the Department of Health Western Australia (DoH) is notified of the exception as required by the specific alert level notification requirements listed in the DoH Binding Protocol.

Table 3 below provides a summary of microbiological compliance, including samples that require DoH notification and remedial actions.

Table 3: **Microbiological - Compliance**						
Region/ Scheme/Zone	**Date**	**Microbiological Characteristic**	**Alert Level**	**Remedial Actions**	**Date DOH notified**	**Close out date**
There were no microbiological exceptions in Q2 2025.						

4. Chemical - Health Related Performance

Water chemistry samples are completed routinely at locations and frequencies specified in the Site Water Quality Verification Monitoring Program developed using a risk-based approach following completion of the site-specific drinking water quality risk assessment. The aim of verification sampling is to ensure that the water quality delivered to Leinster Town is of acceptable quality. Verification samples are analysed by a NATA accredited laboratory with the exception of free chlorine readings which are undertaken by technicians on-site using handheld instruments.

Chemistry results that have the potential to affect human health and have health related guidelines in Table 10.6 of the Australian Drinking Water Guidelines (ADWG) 2011(v3.8) are reported by exception to the West Australian Department of Health (DoH).

Table 4 depicts health related chemical performance for April to June 2025.

Table 4: Leinster Township Distribution Water Chemical Health Performance						
Health Characteristic	**Units**	**ADWG Guideline**	**Maximum Recorded Value**	**No of Analyses**	**No of Analyses Complying**	**Variance**
1.1-Dichloroethene	mg/L	0.03	<0.001	1	1	0
1.2-Dichlorobenzene	mg/L	1.5	<0.001	1	1	0
1.2-Dichloroethane	mg/L	0.003	<0.001	1	1	0
1.2-Dichloroethene	mg/L	0.06	<0.001	1	1	0
1.4-Dichlorobenzene	mg/L	0.04	<0.001	1	1	0
2,4,6-Trichlorophenol	mg/L	0.02	<0.0002	2	2	0
2,4-Dichlorophenol	mg/L	0.2	<0.0002	2	2	0
2-chlorophenol	mg/L	0.3	<0.0001	2	2	0
Acephate	mg/L	0.008	<0.0005	1	1	0
Acrylamide	mg/L	0.0002	<0.0002	1	1	0
Aldicarb	mg/L	0.004	<0.00005	1	1	0
Ametryn	mg/L	0.07	<0.00001	1	1	0
Amitraz	mg/L	0.009	<0.1[2]	1	1	0
Amitrole	mg/L	0.0009	<0.0001	1	1	0
Antimony	mg/L	0.003	<0.001	1	1	0
Arsenic	mg/L	0.01	<0.001	1	1	0
Asulam	mg/L	0.07	<0.002	1	1	0
Atrazine	mg/L	0.02	<0.00001	1	1	0
Barium	mg/L	2	0.03	1	1	0
Benomyl	mg/L	0.09	<0.00001	1	1	0
Benzene	mg/L	0.001	<0.001	2	2	0
Benzo(a)pyrene TEQ	mg/L	0.00001	<0.000005	1	1	0
Beryllium	mg/L	0.06	<0.001	1	1	0
Bioresmethrin	mg/L	0.1	<0.0005	1	1	0
Boron	mg/L	4	0.63	1	1	0
Bromacil	mg/L	0.4	<0.00002	1	1	0
Bromate	mg/L	0.02	<0.005	1	1	0
Bromodichloromethane	mg/L	0.25	<0.001	1	1	0
Bromoform	mg/L	0.25	0.004	1	1	0
Bromophos-ethyl	mg/L	0.01	<0.0001	1	1	0
Bromoxynil	mg/L	0.01	<0.00005	1	1	0
Cadmium	mg/L	0.002		1	1	0
Carbaryl	mg/L	0.03	<0.00001	1	1	0
Carbendazim (Thiophanate methyl)	mg/L	0.09	<0.0001	1	1	0
Carbofuran	mg/L	0.01	<0.00001	1	1	0
Carbon Tetrachloride	mg/L	0.003	<0.001	1	1	0
Carboxin	mg/L	0.3	<0.0001	1	1	0
Carfentrazone-ethyl	mg/L	0.1	<0.0001	1	1	0
Chlorantraniliprole	mg/L	6	<0.0001	1	1	0
Chlorfenvinphos	mg/L	0.002	<0.00002	1	1	0
Chloroacetic Acid	mg/L	0.15	<0.001	2	2	0
Chlorobenzene	mg/L	0.3	<0.001	1	1	0
Chloroxuron	mg/L	0.01	<0.0001	1	1	0
Chlorpyrifos	mg/L	0.01	<0.00002	1	1	0
Chlorsulfuron	mg/L	0.2	<0.0002	1	1	0

Chromium	mg/L	0.05	0.003	1	1	0
Clopyralid	mg/L	2	<0.01	1	1	0
Copper	mg/L	2	0.004	1	1	0
Cyanide	mg/L	0.08	<0.004	1	1	0
Cyfluthrin	mg/L	0.05	<0.0005	1	1	0
Cypermethrin	mg/L	0.2	<0.0005	1	1	0
Cyprodinil	mg/L	0.09	<0.00001	1	1	0
Deltamethrin & Tralomethrin	mg/L	0.04	<0.0005	1	1	0
Diazinon	mg/L	0.004	<0.00001	1	1	0
Dibromochloromethane	mg/L	0.25	<0.001	1	1	0
Dicamba	mg/L	0.1	<0.01	1	1	0
Dichlobenil	mg/L	0.01	<0.0001	1	1	0
Dichloroacetic Acid	mg/L	0.1	<0.001	2	2	0
Dichloromethane (methylene chloride)	mg/L	0.004	<0.004	1	1	0
Dichlorprop-P	mg/L	0.01	<0.0001	1	1	0
Dichlorvos	mg/L	0.005	<0.0002	1	1	0
Diclofop-methyl	mg/L	0.005	<0.00005	1	1	0
Dicofol	mg/L	0.004	<0.0001	1	1	0
Diflubenzuron	mg/L	0.07	<0.0001	1	1	0
Dimethoate	mg/L	0.007	<0.00002	1	1	0
Diphenamid	mg/L	0.3	<0.0001	1	1	0
Diquat	mg/L	0.007	<0.00005	1	1	0
Disulfoton	mg/L	0.004	<0.00005	1	1	0
Diuron	mg/L	0.02	<0.00002	1	1	0
Endothal	mg/L	0.1	<0.001	1	1	0
EPTC	mg/L	0.3	<0.0001	1	1	0
Ethion	mg/L	0.004	<0.00002	1	1	0
Ethoprophos	mg/L	0.001	<0.00001	1	1	0
Ethylbenzene	mg/L	0.3	<0.001	2	2	0
Etridiazole	mg/L	0.1	<0.0005	1	1	0
Fenamiphos	mg/L	0.0005	<0.00001	1	1	0
Fenarimol	mg/L	0.04	<0.00002	1	1	0
Fenitrothion	mg/L	0.007	<0.002	1	1	0
Fensulfothion	mg/L	0.01	<0.00001	1	1	0
Fenthion	mg/L	0.007	<0.00005	1	1	0
Fenvalerate & Esfenvalerate	mg/L	0.03	<0.0005	1	1	0
Fipronil	mg/L	0.0007	<0.00001	1	1	0
Flamprop methyl	mg/L	0.004	<0.0001	1	1	0
Fluometuron	mg/L	0.07	<0.00001	1	1	0
Fluoride	mg/L	1.5	0.4	1	1	0
Flupropanate	mg/L	0.009	<0.0001	1	1	0
Formothion	mg/L	0.05	<0.02	1	1	0
Free Chlorine	mg/L	5[1]	2.5	23	23	0
Glyphosate	mg/L	1	<0.01	1	1	0
Haloxyfop	mg/L	0.001	<0.0001	1	1	0
Hexachlorobutadiene	mg/L	0.0007	<0.001[2]	1	1	0
Hexaflurate	mg/L	0.03	<0.0001	1	1	0

Hexazinone	mg/L	0.4	<0.00002	1	1	0
Imazapyr	mg/L	9	<0.01	1	1	0
Imidacloprid	mg/L	0.05	<0.00001	1	1	0
Iodide	mg/L	0.5	<0.050	1	1	0
Iprodione	mg/L	0.1	<0.00005	1	1	0
Lead	mg/L	0.01	<0.001	1	1	0
Malathion	mg/L	0.07	<0.00002	1	1	0
Manganese	mg/L	0.5	<0.001	1	1	0
MCPA	mg/L	0.04	<0.01	1	1	0
Mercury	mg/L	0.001	<0.0001	1	1	0
Metaldehyde	mg/L	0.02	<0.01	1	1	0
Methidathion	mg/L	0.006	<0.0001	1	1	0
Methiocarb	mg/L	0.007	<0.00001	1	1	0
Methomyl	mg/L	0.02	<0.00001	1	1	0
Metolachlor	mg/L	0.3	<0.00001	1	1	0
Metribuzin	mg/L	0.07	<0.00002	1	1	0
Metsulfuron methyl	mg/L	0.04	<0.005	1	1	0
Mevinphos	mg/L	0.005	<0.00002	1	1	0
Molinate	mg/L	0.004	<0.0001	1	1	0
Molybdenum	mg/L	0.05	0.013	1	1	0
Monocrotophos	mg/L	0.002	<0.00002	1	1	0
Napropamide	mg/L	0.4	<0.0001	1	1	0
Nicarbazin	mg/L	1	<0.0001	1	1	0
Nickel	mg/L	0.02	<0.001	1	1	0
Nitralin	mg/L	0.5	<0.0001	1	1	0
Nitrate as NO3	mg/L	50	88.6	27	15	12
Norflurazon	mg/L	0.05	<0.0001	1	1	0
Omethoate	mg/L	0.001	<0.00001	1	1	0
Oryzalin	mg/L	0.4	<0.00005	1	1	0
Oxamyl	mg/L	0.007	<0.00001	1	1	0
Parathion	mg/L	0.02	<0.0002	1	1	0
Parathion-methyl	mg/L	0.0007	<0.002[2]	1	1	0
Pebulate	mg/L	0.03	<0.0001	1	1	0
Pendimethalin	mg/L	0.4	<0.00005	1	1	0
Perfluorobutane sulfonic acid	mg/L	0.001	<0.0000005	1	1	0
Perfluorohexane sulfonic acid (PFHxS)	mg/L	0.00003	<0.0000005	1	1	0
Perfluorooctane sulfonic acid (PFOS)	mg/L	0.000008	<0.0000002	1	1	0
Perfluorooctanoic acid (PFOA)	mg/L	0.56	<0.0000005	1	1	0
Permethrin	mg/L	0.2	<0.0005	1	1	0
Piperonyl butoxide	mg/L	0.6	<0.0005	1	1	0
Pirimicarb	mg/L	0.007	<0.0001	1	1	0
Polycyclic aromatic hydrocarbons (PAHs) Benzo-(a)-pyrene	mg/L	0.00001	<0.000005	1	1	0
Profenofos	mg/L	0.0003	<0.00001	1	1	0
Propachlor	mg/L	0.07	<0.0001	1	1	0

Propanil	mg/L	0.7	<0.0001	1	1	0
Propargite	mg/L	0.007	<0.0001	1	1	0
Propazine	mg/L	0.05	<0.00001	1	1	0
Propiconazole	mg/L	0.1	<0.00005	1	1	0
Propyzamide	mg/L	0.07	<0.0001	1	1	0
Pyrazophos	mg/L	0.02	<0.0001	1	1	0
Pyroxsulam	mg/L	4	<0.0001	1	1	0
Selenium	mg/L	0.01	<0.01	1	1	0
Silver	mg/L	0.1	<0.001	1	1	0
Simazine	mg/L	0.02	<0.00002	1	1	0
Spirotetramat	mg/L	0.2	<0.0001	1	1	0
Styrene	mg/L	0.03	<0.001	1	1	0
Sulprofos	mg/L	0.01	<0.00005	1	1	0
Temephos	mg/L	0.4	<0.00002	1	1	0
Terbacil	mg/L	0.2	<0.0001	1	1	0
Terbufos	mg/L	0.0009	<0.00001	1	1	0
Terbuthylazine	mg/L	0.01	<0.00001	1	1	0
Terbutryn	mg/L	0.4	<0.00001	1	1	0
Tetrachloroethene	mg/L	0.05	<0.001	1	1	0
Tetrachlorvinphos	mg/L	0.1	<0.00001	1	1	0
Thiobencarb	mg/L	0.04	<0.00001	1	1	0
Thiometon	mg/L	0.004	<0.0005	1	1	0
Toltrazuril	mg/L	0.004	<0.0001	1	1	0
Toluene	mg/L	0.8	<0.001	2	2	0
Total Trihalomethanes	mg/L	0.25	0.004	1	1	0
Xylene	mg/L	0.6	<0.002	1	1	0
trans-1.2-Dichloroethene	mg/L	0.06	<0.001	1	1	0
Triadimefon	mg/L	0.09	<0.0001	1	1	0
Trichlorfon	mg/L	0.007	<0.00002	1	1	0
Trichloroacetaldehyde (chloral hydrate)	mg/L	0.1	<0.001	2	2	0
Trichloroacetic Acid	mg/L	0.1	<0.001	2	2	0
Triclopyr	mg/L	0.02	<0.01	1	1	0
Trifluralin	mg/L	0.09	<0.01	1	1	0
Uranium	mg/L	0.02	0.003	1	1	0
Vernolate	mg/L	0.04	<0.0001	1	1	0
Vinyl chloride	mg/L	0.0003	<0.01[2]	1	1	0

[1] As total chlorine is not tested, the free chlorine result is measured against the ADWG health-related guideline value for total chlorine within Table 4.

[2]The Laboratory LOR was above the ADWG health limit. These were requested to be run with the lower limits, and the laboratory has been notified for next sampling run.

4.1 Chemical - Health Related - Exception Notification

5. Table 5 below provides a summary of chemical health compliance, including samples that require DoH notification and remedial actions. Due to the ongoing detections of Nitrate above the ADWG Health guidelines for the Leinster Mine Water Distribution System, an exemption from the Department of Health was granted commencing in July 2025. Results between 50mg/L and 100mg/L are no longer reportable, however where concentrations above this level are detected, they still must be reported to DWAlert@health.wa.gov.au.

Table 5: Leinster Township Distribution Water Chemical Health Compliance

Region/ Scheme/Zone	Date	Chemical Characteristic	Result (mg/L)	Alert Level	Remedial Actions	Date DOH notified	Close out date
Barcode: SP 4 Town Potable Tank	03/04/25	Nitrate (as NO3)	83	50 mg/L	A community communication plan is in place for new residence, additional to provision of RO treated water available for the public, which can be sourced at the township medical centre.	23/04/25	Ongoing
	08/04/25		89				
	10/04/25		82				
	01/05/25		79			29/05/25	
	15/05/25		76				
	20/05/25		84				
	03/06/25		73.5			19/06/25	
	05/06/25		82				
	19/06/25		81				
Barcode: SP 2 11 Mile Transfer	08/04/25	Nitrate (as NO3)	79			23/04/25	
	20/05/2025		80			29/05/25	
	03/06/2025		75.3			19/06/25	

Additional sampling is conducted on a monthly frequency for Nitrate at the Leinster Medical Centre due to the ongoing detections of Nitrate above the ADWG Health guidelines for the Leinster Township Water Distribution System, which is detailed in Table 6.

Table 6: Leinster Medical Centre RO Monthly Nitrate Analysis

Sample Date	Nitrate Value (mg/L)
19/06/2025	15
5/06/2025	9.2
15/05/2025	7.2
1/05/2025	6
10/04/2025	5.1
3/04/2025	4.7
30/01/2025	4.8
5/12/2024	3.2
21/11/2024	2.9
10/10/2024	3.1
19/09/2024	6.8
22/08/2024	23
16/07/2024	21
20/06/2024	16
16/05/2024	16
21/04/2024	16
27/03/2024	17

29/02/2024	19
1/02/2024	11
28/12/2023	10
28/11/2023	9.7
17/11/2023	10

6. Chemical - Aesthetic Performance

This section includes water chemistry results that do not have health guideline values but do have aesthetic guideline values in the ADWG (2011). Exceeding an aesthetic guideline value does not pose a health risk (provided no health guideline is exceeded at the same time) but can affect the palatability and how pleasing the water appears. Individual exceedances are generally not reportable to the DoH, with exception of turbidity.

Table 7 depicts aesthetic related chemical performance for April to June 2025. Next round of sampling is to be completed in July 2025.

Table 7: Leinster Township Distribution Water Chemical Aesthetic Performance

Aesthetic Characteristic	Units	ADWG Guideline	Maximum Recorded Value	No of Analyses	No of Analyses Complying	Variance
1.3-Dichlorobenzene	mg/L	0.02	<0.001	1	1	0
Acid Soluble Alumium	mg/L	0.2	<0.010	1	1	0
Ammonia as N	mg/L	0.4112	<0.01	1	1	0
Chloride	mg/L	250	242	1	1	0
Hydrogen Sulphide	mg/L	0.05	<0.01	1	1	0
Iron	mg/L	0.3	<0.05	1	1	0
pH	pH units	6.5 - 8.5	6.57 8.6	20	20	0
Reactive Silica	mg/L	80	74.4	1	1	0
Sodium	mg/L	180	854	1	1	0
Total Dissolved Solids	mg/L	600	1.35	20	12	8
Turbidity	NTU	5	<0.05	22	22	0
Zinc	mg/L	3	0.005	1	1	0

6.1 Chemical - Aesthetic Related – Incident Specific Information

Australian Drinking Water Guidelines state based on taste total dissolved solids should ideally be less than 600 mg/L to be regarded good quality for drinking. The Australian Drinking Water Guideline also state between 600 – 900mg/L is regarded as fair quality drinking water and acceptable. Highest record value for TDS in this quarter was recorded at 854 mg/L, within “fair quality water” as defined in ADWG.

7. Radiological Performance

Radiological parameters include gross alpha and gross beta levels which measure the overall radioactivity of the water. Verification samples are analysed by a NATA accredited laboratory to ensure accuracy of results.

Radiological results that are above the ADWG (2011) recommended screening levels (0.5 Bq/L for either gross alpha or gross beta) are investigated to determine the nature of the radioactivity. If further radiological analysis reveals a radiation dose exceedance, this is reported to the West Australian Department of Health (DoH). The department is notified of the exception within the required timeframe and using the communication mode specified in the DoH Binding Protocol.

Table 8 depicts the radiological performance for April to June 2025. Next radiological sampling is to be completed in June 2026.

Table 8: Leinster Township Radiological Performance

Parameter	Units	ADWG Guideline	Maximum Recorded Value	No of Analyses	No of Analyses Complying	Variance
Gross Alpha	Bq/L	0.5	0.12[1]	1	1	0
Gross Beta – 40K	Bq/L	0.5	0.1[1]	1	1	0

[1]Radiological sampling for Q2 was taken from SP 2 Transfer Station and whilst this is a source water location it is considered representative of radiological water quality within the town with the exception of the locations where an additional filtration barrier capable of removal is present.

8. Planned Sample Summary

Planned drinking water quality monitoring completeness during April to June 2025 is summarised in Table 9 below.

Table 9: Leinster Township Distribution Water Planned Sample Summary

Parameter	Planned Analyses	Taken	% Compliance to Plan
Microbial	34	34	100%
Chemical	281	281	100%
Radiological[1]	2	2	100%

[1] Radiological sampling is undertaken on a biannual basis with the next sampling to be conducted in June 2026

9. Planned Sample Exceptions

There were no planned sample exceptions in Q2 2025.

10. General Notes/Other News

A Water Services Licence was granted by the Economic Regulation Authority (ERA) for the town of Leinster in September 2020 (commenced 16/9/2020 and expires 15/9/2045).

The verification monitoring program for Leinster Town is planned for revision and update in 2025.