



ENVIRONMENT PROTECTION LICENCE NO: 21029

August 2019 Monthly Report

FOR

**Princes Highway Upgrade
between Berry and Bomaderry**

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2 NON-COMPLIANCES

Two non-compliances occurred during August:

1. A discharge of dirty water (high turbidity levels) occurred downstream of a work site in Tullian Creek during August. The discharge occurred as a result of sediments being mobilised from the bed of a newly constructed creek diversion. The non-compliance was identified immediately, and creek flows were blocked to prevent any further discharge. The diversion was rectified and water quality in the creek was quickly returned to normal.
2. After completion of works at 1pm Saturday afternoon, a Grader operator proceeded to wash down the vehicle outside but adjacent to the project area on a local road. The activity continued until approximately 3pm, breaching the approved working hours. After contact from a nearby resident, the operator was contacted and instructed to cease the activity.

3 RAINFALL AND WEATHER

The RMS automatic weather station is situated at Ison Lane, Jaspers Brush, located adjacent to the project's main ancillary compound (Ison Lane Compound) for the project. The results of rainfall monitoring for August 2019 are provided in Table 3-1 and Figure 3-1 below.

Table 3-1 August 2019 Rainfall monitoring results

Location	Monthly rainfall recorded (mm)
Ison Lane, Jaspers Brush (RMS automatic weather station)	34.6

August was drier than average with only 34.6mm of rainfall recorded at the project specific weather station at Ison Lane, Jaspers Brush (RMS automatic weather station). The long term average expected rainfall is around 59.7mm for August as taken from the Nowra Boat Shed Bureau of Meteorology Weather Station.

There was only one rain event in late August totalling 31.4mm with the largest daily total falling on the 27th with 9.8mm being recorded.

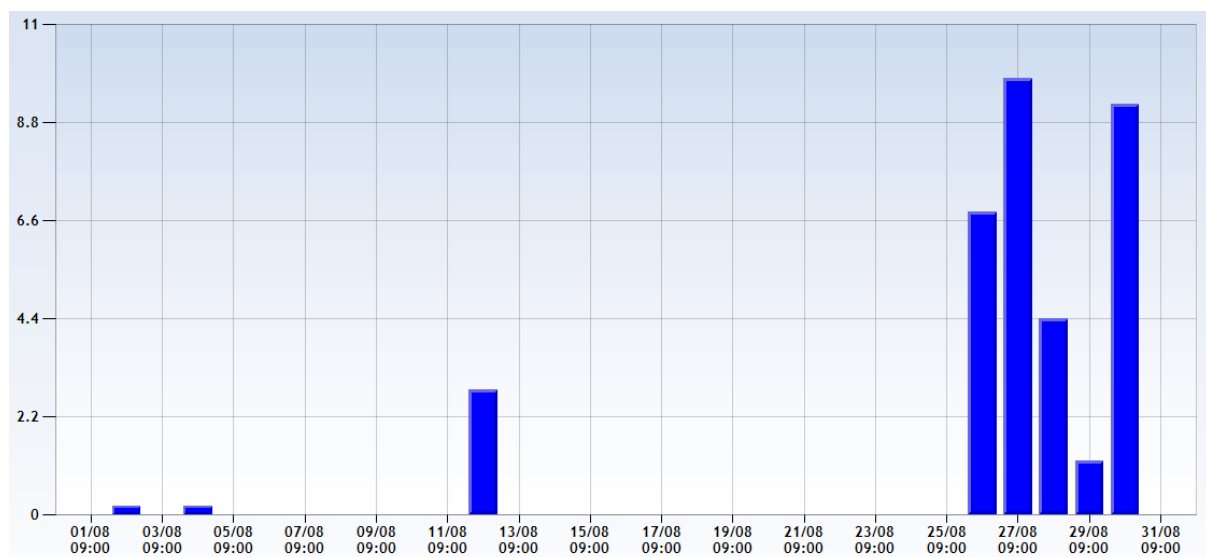


Figure 3-1 August Rainfall Results from Ison Compound Weather Station

August was characteristically windy. The predominant wind for July was from the west-southwest. The highest wind gust recorded was 93 km/h and maximum wind speed was 59.1 km/h (refer Figure 3-2). DSWJV continue to monitor site activities, implement dust suppressant across site, utilise a fleet of water carts during working hours and limit dust generating activities and even suspend work activities on days of high wind.

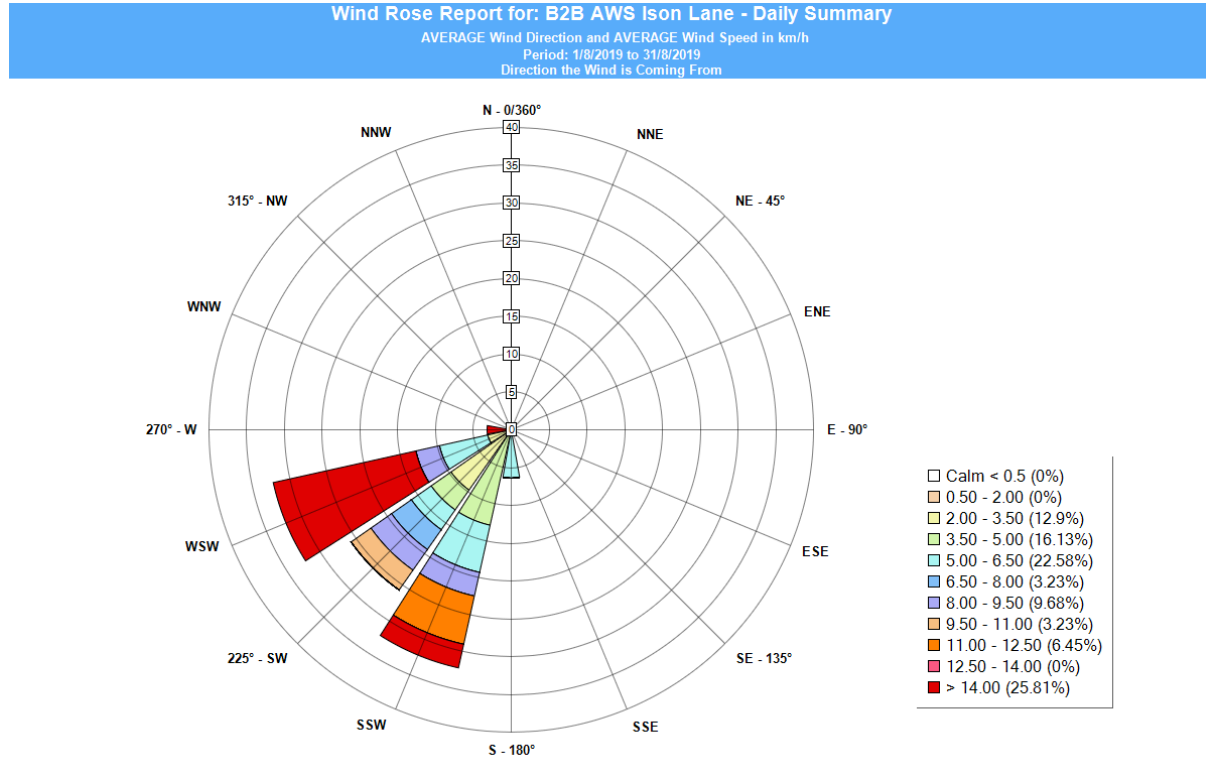


Figure 3-2 August 2019 Wind Rose Results from Ison's Compound Weather Station. Average Wind direction and Average Wind Speed shown.

4 SEDIMENT BASIN DISCHARGE

Fifteen sediment basins were licensed under the EPL during August 2019. Decommissioning of basins TB23.40S, TB23.45S and 23.80S was completed in late August. Notification for the decommissioning of Basin TB26.15 (located near Tandingulla Creek) given to EPA on the 23rd of August. Decommissioning of this basin is planned to be completed in September 2019.

On the 20th of June in accordance with licence condition L2.6, DSWJV began to use a statistical correlation for the calculation of TSS (mg/L) from Turbidity (NTU). The correlation uses the formula of $TSS (mg/L) = 0.43 * (NTU) + 1.00$. Given that the threshold value for TSS is 50mg/l, samples if less than 114 NTU would be deemed suitable for discharge. For a factor of safety, the acceptable discharge limit was reduced to 90 NTU.

See Table 4.1 below for details on sediment basin discharges.

Table 4-1 July 2019 Sediment basin discharge(s)

EPA Identification No.	Location (adjacent address)	Discharge Date	pH (6.5-8.5)	Nephelometric Turbidity Units (<100NTU)	Oil and Grease (none visible)
PB19.82.S	Mullers Lane	None for August			
PB24.45.N	B660 Princes Highway	None for August			
TB21.15.N	Opposite O'Keefes Lane	01/08/2019	8.08	6.4	None visible
		19/08/2019	6.6	34	None visible
TB21.50.N	Opposite Jaspers Brush Road	14/08/19	7.26	11	None visible
TB21.70.S	Intersection at Jaspers Brush Road	None for August			
TB21.90.S	Jaspers Brush Ancillary Site	None for August			
TB22.10.N	Strongs Road	None for August			
TB22.30.N	South of Strongs Road	None for August			
TB22.65.S	B455 Princes Highway	None for August			
TB22.80.N	Ison Compound	None for August			
TB23.45.S*	Jaspers Brush North of Wileys Creek	01/08/2019	7.8	35	None visible
TB25.10.N	Devitts Lane	None for August			
TB25.70N	Northern Twin Basin	None for August			
TB25.75.N	Southern Twin Basin	None for August			
TB28.90.N	Abernethy's Lane	None for August			

TSS (mg/L) modelled from Turbidity (NTU) based on approved correlation formula of $TSS = 0.43(NTU) + 1.00$*

***Basin discharged to remove remaining water in bottom of basin for decommissioning. Basin no longer on Licence.**

5 AIR MONITORING RESULTS

Dust deposition gauges for the project were installed on 26th of July 2019 and changed on 27th August 2019 within the NATA accredited window (30 days +/- 2 days). Air quality has been assessed according to the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (EPA, 2016). Results are summarised in Table 5-1 below.

Figure 5-1 provides air quality data at the nearest OEH ambient air quality monitoring station to the project (Albion Park, approximately 25 km north of the project area).

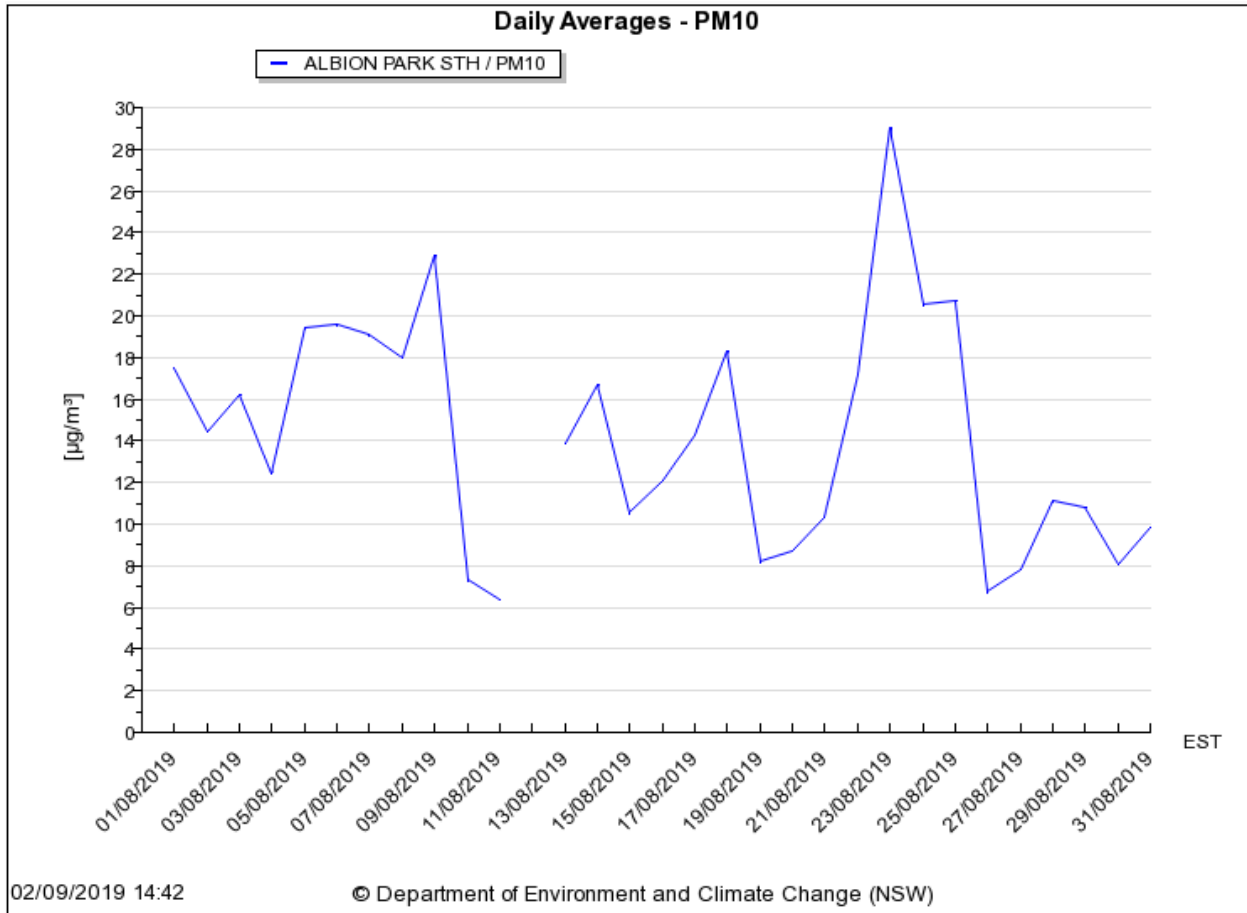


Figure 5-1: Ambient Air Quality data for August from the nearest OEH air quality monitoring station (Albion Park).

Two dust gauges recorded insoluble matter in exceedance of the allowable 4g/m²/month. DDG L recorded 4.5g/m² and DDG M recorded 7.5g/m² in the month of August. See Table 5.1 below for detailed results.

DDG L is located directly adjacent to a work area that is in preparation for final layers of general fill before layers of SMZ material (less likely to create dust) are placed. Therefore dust risk is likely to reduce in this area in the near future. Temporary stockpiles in this area have also been stabilised with hydromulch. Increased use of water suppression will be ongoing until the area is stabilised.

DDG M is located in the southern part of the project area. Foundation treatments occurred in this area during August, which was a source of dust. SMZ material was subsequently placed over the more dust prone subsoils, which will reduce risk of dust generation moving forward. Placement of mulch on a newly constructed visual topsoil mound also occurred

during the month which was also a potential source of dust. Given these activities are now complete, it is expected that risk of dust generation will decrease in the coming months.

The 12-month rolling average for DDG JK had increased to more than the target level of 4.0g/m²/month during July because of an exceedance in that month, as noted previously non-project factors may have contributed to this increase. The levels in this area returned to a lower level during August however the rolling annual average remains above the threshold level.

Table 5-1 August 2019 Air quality monitoring results

EPA Identification No.	Location (adjacent address)	Ash Content g/m ² ,month	Combustible Matter g/m ² ,month	Total Insoluble Matter g/m ² ,month	Rolling Average (Total Insoluble Matter) g/m ² ,month
1-DDG A	10 Croziers Lane, Jaspers Brush	1.4	0.9	2.3	2.6
2-DDG B	10A Jaspers Brush Road, Jaspers Brush	1.8	0.4	2.2	2.4
3-DDG C	20C Strongs Road, Jaspers Brush	1.4	0.3	1.7	2.5
4-DDG D	10C Jaspers Brush Road, Jaspers Brush	0.9	0.2	1.1	2.5
5-DDG E	30 Ison Lane, Jaspers Brush	0.3	<0.1	0.3	1.1
6-DDG F	Lot 209 DP 1210788	1.5	1.6	3.1	2.8
7-DDG H	10 Lamonds Lane, Meroo Meadow	2.8	0.3	3.1	4.1
8-DDG I	19 Boxsells Lane, Meroo Meadow	0.8	0.2	1.0	1.4
9-DDG J/K	265 Princes Highway, Meroo Meadow	1.0	0.8	1.8	4.6
10-DDG L	1028 Meroo Meadow, Meroo Meadow	3.3	1.2	4.5	3.0
11-DDG M	32 Elvin Drive, Bomaderry	6.3	1.2	7.5	2.4
12-DDG N	9 Devitt's Lane, Meroo Meadow	0.6	0.1	0.7	1.8
13-DDG P	24 Abernethys Lane, Meroo Meadow	1.2	0.2	1.4	2.7

Note: bold type indicates a result above the relevant criteria

6 NOISE MONITORING RESULTS

Noise monitoring was undertaken in accordance with the Construction Noise and Vibration Management Plan (CNVMP) for the project in August 2019. No exceedances above predicted levels for the relevant activity were recorded.

Table 6-1 below summarises the attended noise monitoring undertaken in August 2019.

Table 6-1 August 2019 Noise Monitoring Results

EPA ID No.	Location description	Construction activity	Date	Time	L(A) _{eq} 15min	Comments
15	L1 - B210 Princes Highway, Jaspers	Earthworks	28/08/19	1540 1555	61.3	<ul style="list-style-type: none"> Roller operating on opposite side of the highway (constant), several occurrences of trucks entering and exiting work area Constant traffic from Princes Highway with light and heavy vehicles dominating
16	L2 - 20C Strongs Road, Jaspers Brush	Earthworks	28/08/19	1515 1530	62.2	<ul style="list-style-type: none"> Workers at retaining wall using hand tools and power tools (hammers, saws) Constant traffic from Princes Highway with light and heavy vehicles dominating
17	L3 - 30 Ison Lane, Jaspers Brush	Compound Operation	28/08/19	1630 1645	47.7	<ul style="list-style-type: none"> Constant traffic from Princes Highway with light and heavy vehicles dominating Vehicles moving entering and exiting compound area (4 occurrences).
18	L5 - 15 Turner Lane, Jaspers Brush	Construction works not audible	28/08/19	1655 1712	54.7	<ul style="list-style-type: none"> Construction work not audible Constant traffic from Princes Highway with light and heavy vehicles dominating
19	L6 - B710 Princes Highway, Jaspers Brush	Bridgeworks	28/08/19	1437 1452	60.5	<ul style="list-style-type: none"> Several workers on bridge visible but not audible Constant traffic from Princes Highway with light and heavy vehicles dominating
20	L7 - 310C Princes Highway, Jaspers Brush	Construction works not audible	28/08/19	834 849	62.3	<ul style="list-style-type: none"> Princes Highway Traffic Traffic in paddock
21	BG08 - 19 Boxsells Lane, Merroo Meadow	Construction works not audible	28/08/19	1410 1425	43.7	<ul style="list-style-type: none"> Construction works not audible Birds chirping, trees rustling. car nearby (2 occurrences)

EPA ID No.	Location description	Construction activity	Date	Time	L(A)eq 15min	Comments
22	BG09 - 1028 Meroo Road, Meroo Meadow	Earthworks	29/08/19	857 912	59	<ul style="list-style-type: none"> • 5 tonne digger • Grader • Survey Crew • Light vehicle • Traffic on Meroo Road dominant noise source • Cars x 29 Trucks x 5
23	L8 - 24 Abernethys Lane, Meroo Meadow	No construction activities in vicinity	29/08/19	811 826	55.9	<ul style="list-style-type: none"> • No construction work within 500m. • Princes Highway dominant noise source • Traffic on Abernethys Lane x 2
24	BG10 - 35 Gardenia Crescent, Bomaderry	Construction works not audible	29/08/19	922 937	53.3	<ul style="list-style-type: none"> • No construction noise audible • No construction work within 500m • Traffic on Gardenia Crescent
25	BG11 - 38 Elvin Drive, Bomaderry	No construction activities in vicinity	29/08/19	7:44 7:59	62.8	<ul style="list-style-type: none"> • No construction works within 500m • Princes Highway Traffic 50m away. Dominant continuous noise source • Birds tweeting • Dog Barking

7 ENVIRONMENTAL COMPLAINTS

There were four environmental complaints received in August which were closed out within the required timeframes. Three complaints were in relation to dust. One complaint came from night works. See Table 7-1 below for details.

Table 7. 1 - Summary of environmental complaints received for August 2019.

Complaint Details	Required timeframe for response (G36)	Date/ time complaint received	Actions & due date	Status / timing
Dust at Jaspers Brush Road	24 hours – response (SMS) 5 days response	21/8/19 – 11.15 am	CM spoke with Enviro team and work ceased.	Closed – within 24 hours.
Dust from stockpiles near property	24 hours – response (SMS) 5 days response	19/8/19 – 4.00pm	Enviro team arranged for stockpiles to be hydro-mulched that week once wind abated	Closed – within 24 hours.
Noise from night work	24 hours – response (SMS) 5 days response	15/8/19 – 4.30am	Complaint resulted from traffic set-up in front of his property. CM spoke with resident and asked if he would like alternative accommodation. Resident declined.	Closed – within 12 hours
Dust at Jaspers Brush Road	24 hours – response (SMS) 5 days response	7/8/19 – 11.15am	CM provided planned mitigation as well as data required under POEO Act as requested.	Closed – within 12 hours