



ENVIRONMENT PROTECTION LICENCE NO: 21029

October 2019 Monthly Report

FOR

**Princes Highway Upgrade
between Berry and Bomaderry**

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1 INTRODUCTION

The Downer Seymour Whyte Joint Venture (DSWJV) is contracted by Roads and Maritime Services (Roads and Maritime) to upgrade 10.3 kilometres of the Princes Highway between Mullers Lane (south of Berry) and Cambewarra Road, Bomaderry in New South Wales (NSW) (the Project). The project will provide a four-lane divided highway (two lanes in each direction) with median separation.

The project is one of a series of upgrades to sections of the Princes Highway which aims to provide a four-lane divided highway between Waterfall and Jervis Bay Road, Falls Creek. This would improve road safety and traffic efficiency, including for freight, on the NSW South Coast.

Figure 1 provides an overview of the project location.

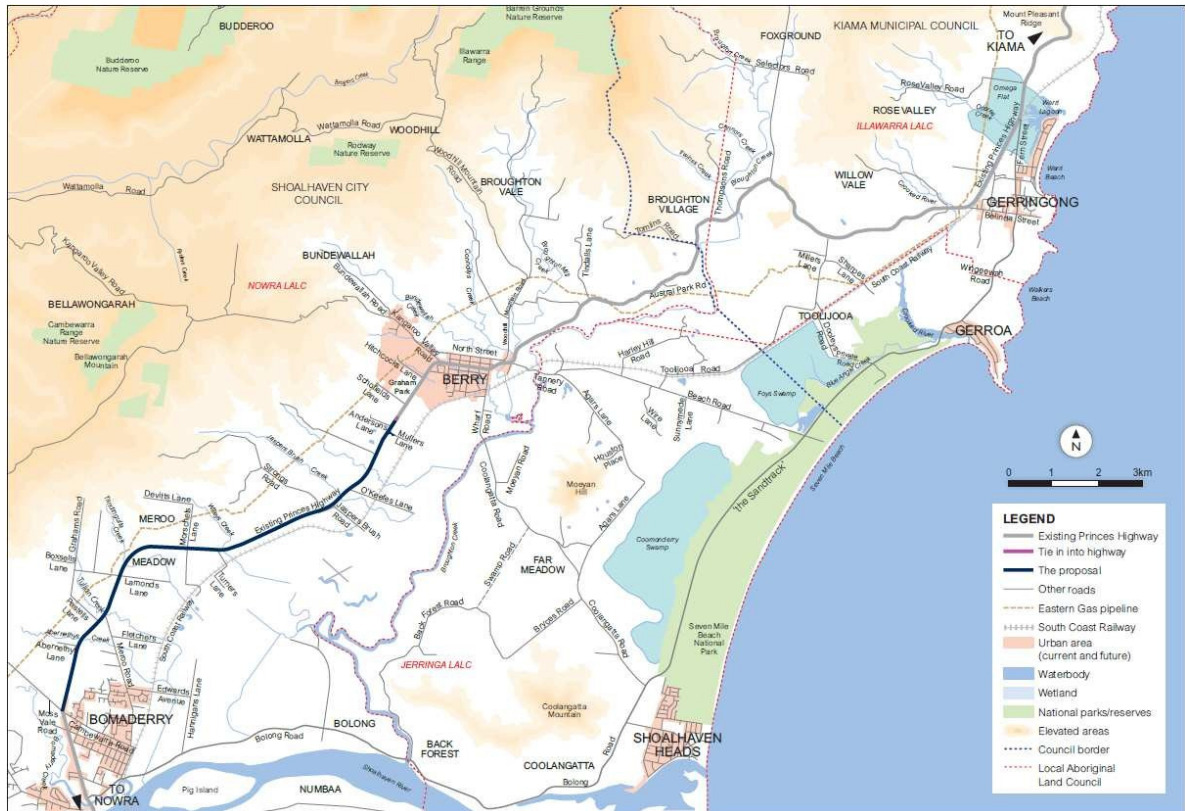


Figure 1-1 Project location

This report provides the results of monitoring undertaken during October 2019 as required by the project's Environment Protection Licence (EPL 21029) Condition R4.1.

2 NON-COMPLIANCES

Two non-compliances occurred during October:

1. Dust deposition data was not able to be obtained for gauge DDGI (19 Boxsells Lane, Meroo Meadow) as the dust gauge was missing at the time of collection.
2. Asphalt plant floated to site prior to 7am without prior approval at Lamonds Lane on 18/10/2019. No construction activities were undertaken, however the adjoining resident made a complaint to the project community complaints line.

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 October 2019 are provided in Table 3-1 and Figure 3-1 below.

Table 3-1 October 2019 Rainfall monitoring results

Location	Monthly rainfall recorded (mm)
Ison Lane, Jaspers Brush (RMS automatic weather station)	65.4

October was drier than average with 65.4 mm 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 108 mm for October as taken from the Nowra RAN Air Station Bureau of Meteorology Weather Station (Station Number 068076).

Most of the month's rain fell in the beginning of the month between 5-12 October (59.0) with 24.8mm falling on 9 October.

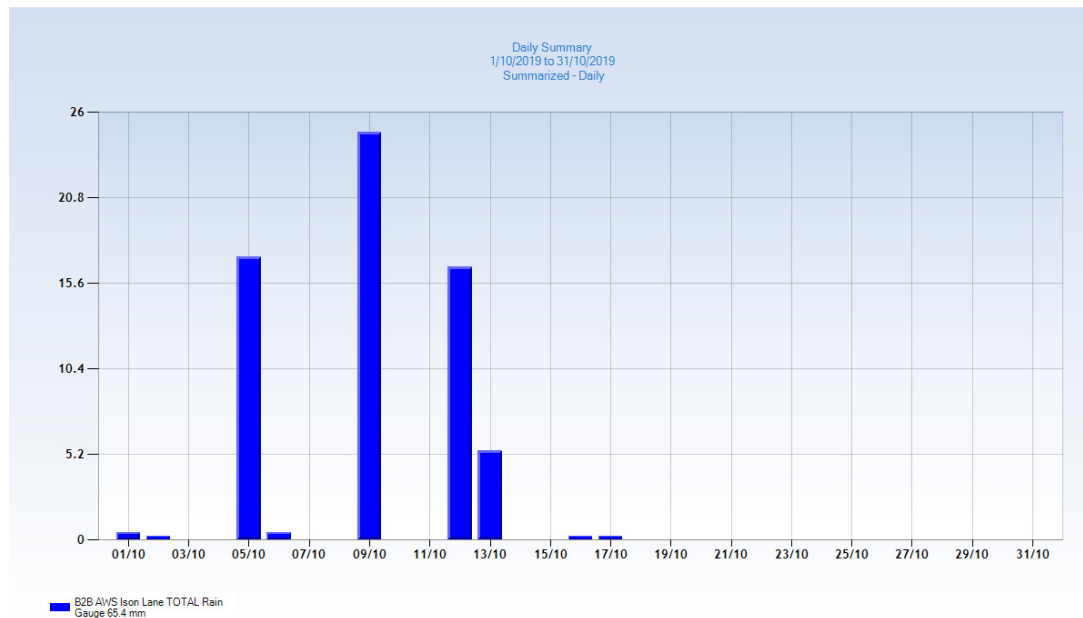


Figure 3-1 October Rainfall Results from Ison Compound Weather Station

Milder conditions prevailed during October with several days of moderate to high winds. The predominant wind direction for October was from the west-southwest. The highest wind gust recorded was 71.0 km/h and maximum wind speed was 45.7 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/or suspend work activities on days of high wind.

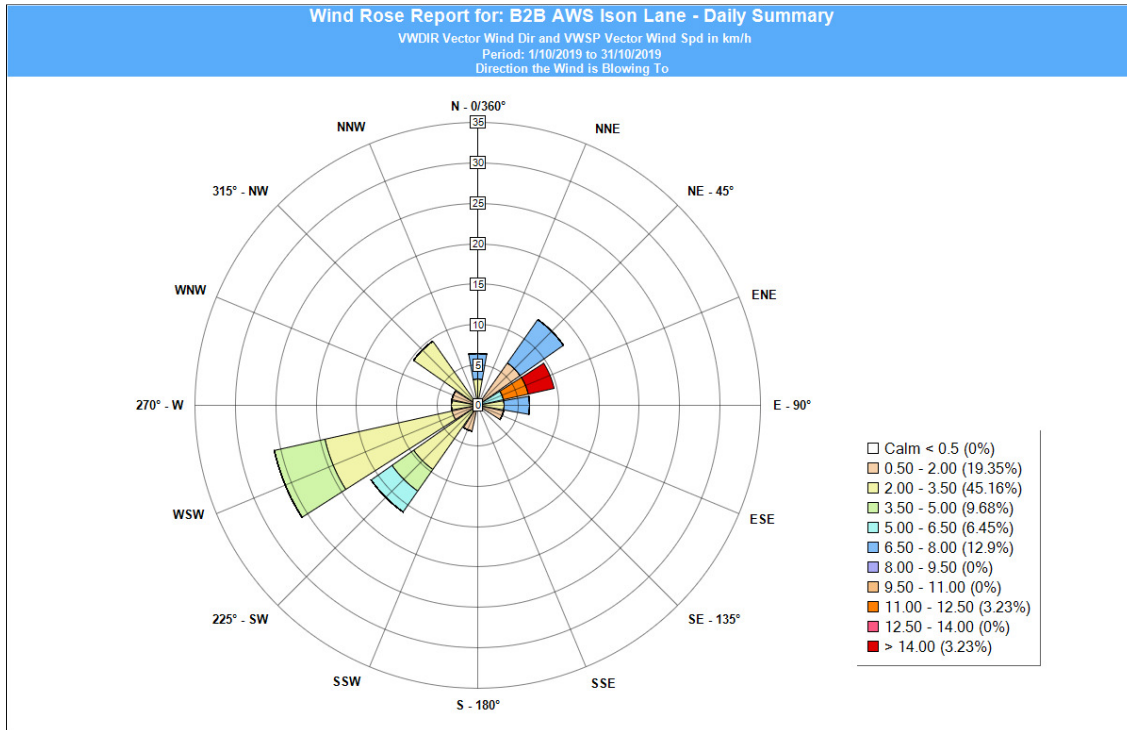


Figure 3-2 October 2019 Wind Rose Results from Isons Compound Weather Station. Average Wind direction and Average Wind Speed shown.

4 SEDIMENT BASIN DISCHARGE

Sixteen sediment basins were licensed under the EPL during October 2019. Notification for the decommissioning of Basins TB26.15 (located near Tandingulla Creek) and TB22.65S has been provided to the EPA. These basins will be decommissioned in the coming weeks once all stabilisation works are completed in each of these catchments.

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 October 2019 Sediment basin discharge(s)

EPA Identification No.	Location (adjacent address)	Discharge Date	pH (6.5-8.5)	Nephelometric Turbidity Units (<90NTU)	Oil and Grease (none visible)
PB19.82.S	Mullers Lane	10/10/19	7.5	30	None visible
		15/10/19	7.5	15	None visible
PB24.45.N	B660 Princes Highway	16/10/19	7	35	None visible
		17/10/19	7	30	None visible
		18/10/19	7	35	None visible
TB21.15.N	Opposite O'Keefes Lane	14/10/19	7	30	None visible
TB21.50.N	Opposite Jaspers Brush Road	10/10/19	7	50	None visible
		15/10/19	7	40	None visible
		21/10/19	7	40	None visible
TB21.70.S	Intersection at Jaspers Brush Road	08/10/19	6.5	9.8	None visible
		11/10/19	7	20	None visible
TB21.90.S	Jaspers Brush Ancillary Site	11/10/19	7	20	None visible
		18/10/19	7	60	None visible
TB22.10.N	Strongs Road	10/10/19	7	70	None visible
		15/10/19	7	30	None visible
TB22.25S	Opposite Strongs Road	18/10/19	7.5	30	None visible
TB22.30.N	South of Strongs Road	15/10/19	7	30	None visible
TB22.65.S	South of Wileys Creek	14/10/19	7	40	None visible
		23/10/19	7.5	40	None visible
TB22.80.N	Ison Compound	10/10/19	7.5	50	None visible
TB25.10.N	Devitts Lane	No discharges in October 2019			
TB25.70N	South of Devitts Lane	17/10/19	7.5	45	None visible
TB25.75.N	South of Devitts Lane	No discharges in October 2019			
TB26.15S	North of Tandingulla Creek	11/10/19	7	50	None visible
TB28.90.N	Abernethy's Lane	16/10/19	7	25	None visible

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

5 AIR MONITORING RESULTS

Dust deposition gauges for the project were installed on 26 of September 2019 and changed on 24 October 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 from the nearest OEH ambient air quality monitoring stations to the project (Wollongong, Kembla Grange and Albion Park, approximately 25 km north of the project area). Very poor to hazardous regional air quality was experienced during the end of October, likely due to smoke haze resulting from numerous bushfires in NSW.

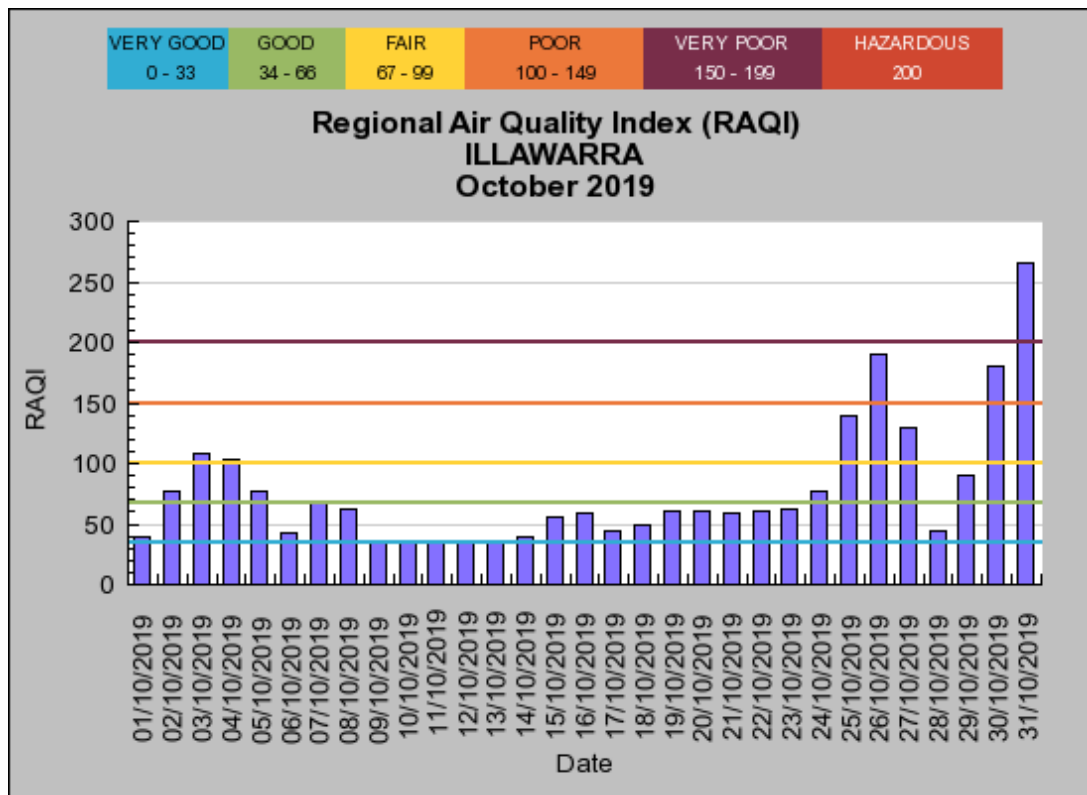


Figure 5-1: Regional Air Quality Index for October from the nearest OEH air quality monitoring stations – Illawarra (NSW OEH).

All results for total insoluble matter were within the relevant criteria of 4g/m²/month for October and all were below a rolling 12-month average of 4g/m²/month.

Refer to Table 5.1 below for detailed results.

As discussed in Section 2, dust gauge DDG-I at Boxsells Lane was missing at the time of collection. A replacement gauge will be installed at this location.

Table 5-1 October 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	0.8	1.7	2.5	3.0
2-DDG B	10A Jaspers Brush Road, Jaspers Brush	0.7	0.3	1.0	2.4
3-DDG C	20C Strongs Road, Jaspers Brush	1.0	0.3	1.3	2.1
4-DDG D	10C Jaspers Brush Road, Jaspers Brush	0.5	0.4	0.9	2.5
5-DDG E	30 Ison Lane, Jaspers Brush	0.5	0.3	0.8	1.1
6-DDG F	Lot 209 DP 1210788	0.6	0.4	1.0	2.5
7-DDG H	10 Lamonds Lane, Meroo Meadow	1.5	0.5	2.0	3.9
8-DDG I	19 Boxsells Lane, Meroo Meadow	No data obtained			
9-DDG J/K	265 Princes Highway, Meroo Meadow	0.7	1.2	1.9	3.5
10-DDG L	1028 Meroo Meadow, Meroo Meadow	0.5	0.3	0.8	2.6
11-DDG M	32 Elvin Drive, Bomaderry	0.7	0.4	1.1	2.3
12-DDG N	9 Devitt's Lane, Meroo Meadow	0.5	0.4	0.9	1.8
13-DDG P	24 Abernethys Lane, Meroo Meadow	0.8	0.5	1.3	2.2

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 October 2019. No exceedances above predicted levels for the relevant activity were recorded.

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

Table 6-1 October 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	31/10/2019	9:15	61.6	<ul style="list-style-type: none"> Excavator and grader operating to form roadway. Constant traffic from Princes Highway.
16	L2 - 20C Strongs Road, Jaspers Brush	Rock Hammering, Earthworks	31/10/2019	10:04	61.8	<ul style="list-style-type: none"> Rock hammering, bulldozer moving material, drilling soil nails, heavy vehicles on haul road. Constant traffic from Princes Highway.

EPA ID No.	Location description	Construction activity	Date	Time	L(A)eq 15min	Comments
17	L3 - 30 Ison Lane, Jaspers Brush	Compound Operation	31/10/2019	8:47	45.7	<ul style="list-style-type: none"> Constant traffic from Princes Highway main noise source. One occurrence of reversing beeper.
18	L5 - 15 Turner Lane, Jaspers Brush	Earthworks, Piling	31/10/2019	9:18	54.7	<ul style="list-style-type: none"> Constant traffic from Princes Highway main noise source. Revving machinery operating in the distance (unknown plant as they were not visible through trees). Cars on Turners Lane.
19	L6 - B710 Princes Highway, Jaspers Brush	Earthworks	31/10/2019	8:45	61.1	<ul style="list-style-type: none"> Excavator operating and spreading material, water cart driving on haul road. Constant traffic from Princes Highway.
20	L7 - 310C Princes Highway, Jaspers Brush	Construction works not audible	31/10/2019	9:45	57.0	<ul style="list-style-type: none"> Constant traffic from Princes Highway.
21	BG08 - 19 Boxsells Lane, Meroo Meadow	Earthworks	31/10/2019	8:18	56.2	<ul style="list-style-type: none"> Reversing beepers in the distance (no L.O.S to construction area). Cars on Boxsells Lane, birds chirping.
22	BG09 - 1028 Meroo Road, Meroo Meadow	Minimal construction works	31/10/2019		63.5	<ul style="list-style-type: none"> Cars driving on Meroo Road, worker using plate compactor.
23	L8 - 24 Abernethys Lane, Meroo Meadow	Earthworks	31/10/2019	7:50	60.1	<ul style="list-style-type: none"> Heavy vehicles driving past on haul road, trucks entering adjacent work area. Constant traffic from Princes Highway.
24	BG10 - 35 Gardenia Crescent, Bomaderry	Construction works not audible	31/10/2019	7:38	49.9	<ul style="list-style-type: none"> Construction works not audible
25	BG11 - 38 Elvin Drive, Bomaderry	Earthworks	31/10/2019	8:10	59.3	<ul style="list-style-type: none"> Grader trimming material, roller compacting material, heavy vehicles operating on haul road. Constant traffic from Princes Highway.

7 ENVIRONMENTAL COMPLAINTS

There were six environmental complaints received in October 2019, all of which were closed out in the required timeframe. Five of these complaints related to out of hours works and noise impacts. Two of the complaints related to dust impacts. Refer to Table 7-1 for details.

Table 7-1 Summary of environmental complaints received for October 2019

Complaint Details	Required timeframe for response (G36)	Date / time complaint received	Actions & due date	Status / timing
10 Lamonds Lane Complaint about dust impacts to property	24 hours – response (SMS) 5 days resolution	25/10/19 – 6.30pm	CM reiterated offer to clean boat and exterior of house.	Closed – within 5 days
10 Lamonds Lane Water cart on site early for night work	2 hours – response (SMS)	27/10/19 – 5.30pm	Toolboxed personnel not to be working on site in the vicinity of Lamonds Lane due to sensitive receivers	Closed – within 24 hours
10 Lamonds Lane Complaint about noise from night work. Resident also reiterated complaint about dust from ongoing construction work and its impacts on home. *Complaint was also sent to EPA by resident	2 hours – response (phone call)	27/10/19 – 9.10pm	CM reiterated offer of relocation – declined. CM also reminded that we had offered to clean exterior house / boat but that too was declined. CM rang site personnel to ask that they stop using horn on paver.	Closed – within 24 hours.
20 Lamonds Lane Complaint about night work as son doing HSC.	2 hours – response 24 hours - resolution	27/10/19 – 9.30pm	CM offered relocation (which he declined). Resident said he did not want night work to occur at all. CM tried to explain the reasoning for it, but he said it was not fair that motorists were given more consideration than residents. CM gave resident set of noise cancelling headphones and a restaurant voucher.	Closed – within 24 hours
10 Lamonds Lane Complaint about paver still using horn during OOHW	2 hours – response (SMS / phone call)	28/10/19 – 9.00pm	CM rang site personnel to ask that they stop using horn on paver and not use it ever again. This was followed up by written warning to contractor the next day. CM also visited complaints with gifts of	Closed – within 24 hours.

			noise cancelling head phones and restaurant vouchers. Resident finally accepted offer of house clean and car clean.	
10 Boxsells Complaint about night work	24 hours – response (email)	29/10/19 – 10pm	Complaint about noise from and duration of night work. CM apologised, reiterated offer of alt accommodation and gave restaurant vouchers.	Closed within 24 hours.