



ENVIRONMENT PROTECTION LICENCE NO: 21029

July 2019 Monthly Report

FOR

**Princes Highway Upgrade
between Berry and Bomaderry**

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Contents

| | | |
|----------|--|-----------|
| 1 | INTRODUCTION | 4 |
| 2 | NON-COMPLIANCES | 4 |
| 3 | RAINFALL AND WEATHER | 5 |
| 4 | SEDIMENT BASIN DISCHARGE | 6 |
| 5 | AIR MONITORING RESULTS | 8 |
| 6 | NOISE MONITORING RESULTS | 9 |
| 7 | ENVIRONMENTAL COMPLAINTS | 12 |
| | Table 3-1 July 2019 Rainfall monitoring results | 5 |
| | Table 4-1 July 2019 Sediment basin discharge(s) | 7 |
| | Table 5-1 July 2019 Air quality monitoring results | 9 |
| | Table 6-1 July 2019 Noise Monitoring Results..... | 10 |

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 July 2019 as required by the project’s Environment Protection Licence (EPL 21029) Condition R4.1.

2 NON-COMPLIANCES

No non-compliances with EPL conditions occurred for the reporting period of July 2019.

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

Table 3-1 July 2019 Rainfall monitoring results

| Location | Monthly rainfall recorded (mm) |
|--|--------------------------------|
| Ison Lane, Jaspers Brush (RMS automatic weather station) | 31.4 |

July was drier than average with only 31.4mm 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 48.5mm for July as taken from the Nowra Boat Shed Bureau of Meteorology Weather Station. There was only one rain event in early July, totalling 28.6mm with the largest daily total falling on the 5th with 13.2mm being recorded.

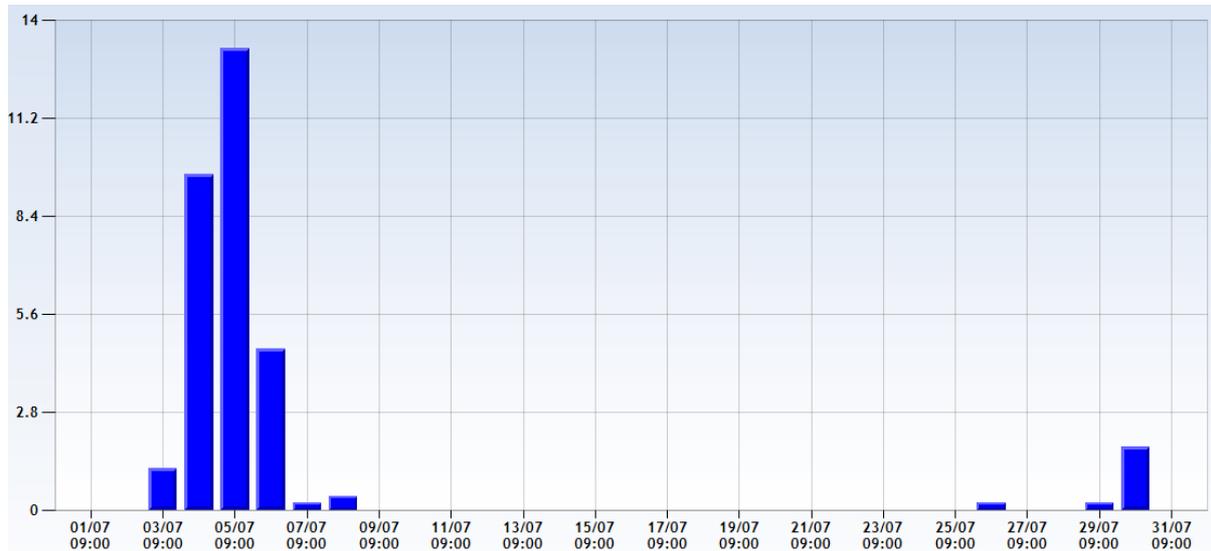


Figure 3-1 July Rainfall Results from Ison Compound Weather Station

July was characteristically windy. The predominant wind for July was from the west-southwest. The highest wind gust recorded was 102.9 km/h and maximum wind speed was 56.7 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 even suspend work activities on days of high wind.

AVERAGE Wind Direction and AVERAGE Wind Speed in km/h
 Period: 1/7/2019 to 31/7/2019
 Direction the Wind is Blowing To

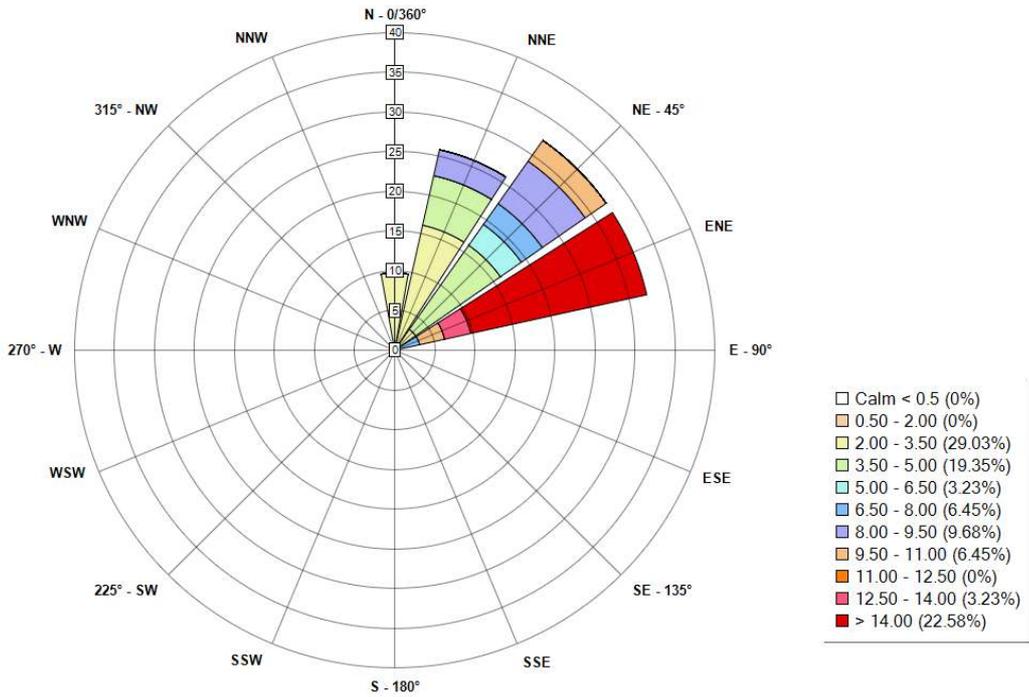


Figure 3-2 July 2019 Wind Rose Results from Isons Compound Weather Station. Average Wind direction and Average Wind Speed shown. N.B. Wind Rose shows direction wind is blowing to.

4 SEDIMENT BASIN DISCHARGE

Eighteen sediment basins were licensed under the EPL during June 2019. No sediment basins were commissioned during the month.

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 | 8/07//19 | 7.95 | 42.2 | None visible |
| PB24.45.N | B660 Princes Highway | 1/7/19 | 6.67 | 9 | None visible |
| | | 10/7/19 | 7.5 | 16.5 | None visible |
| TB21.15.N | Opposite O'Keefes Lane | 4/7/19 | 7.2 | 92* | None visible |
| | | 8/7/19 | 6.65 | 88.1 | None visible |
| TB21.50.N | Opposite Jaspers Brush Road | 4/7/19 | 7.04 | 24.7 | None visible |
| | | 11/7/19 | 6.8 | 30 | None visible |
| | | 24/7/19 | 6.98 | 28.6 | None visible |
| TB21.70.S | Intersection at Jaspers Brush Road | 8/7/19 | 7.74 | 33.4 | None visible |
| | | 10/7/19 | 7.74 | 33.4 | None visible |
| TB22.10.N | Strongs Road | 08/7/19 | 8.28 | 16.9 | None visible |
| TB22.65.S | B455 Princes Highway | 8/7/19 | 7.99 | 20.3 | None visible |
| TB22.80.N | Ison Compound | 08/7/19 | 8.45 | 47.6 | None visible |
| | | 09/07/19 | 7.22 | 42 | None visible |
| TB23.40.S | Jaspers Brush North of Wileys Creek | 08/7/19 | 7.63 | 12.6 | None visible |
| TB23.45.S | Jaspers Brush North of Wileys Creek | 09/07/19 | 7.4 | 22 | None visible |
| TB23.80.S | Wileys side track compound | 08/7/19 | 7.31 | 14.7 | None visible |
| TB25.10.N | Devitts Lane | 04/07/19 | 6.99 | 31 | None visible |
| | | 10/07/19 | 6.8 | 69 | None visible |
| | | 19/07/19 | 7.88 | 53 | None visible |
| TB25.75.N | South of Devitts Lane | 8/07/19 | 7.69 | 26.5 | None visible |
| TB28.90.N | Abernethy's Lane | 9/07/19 | 6.95 | 18 | None visible |
| | | 24/7/19 | 6.61 | 5.5 | None visible |

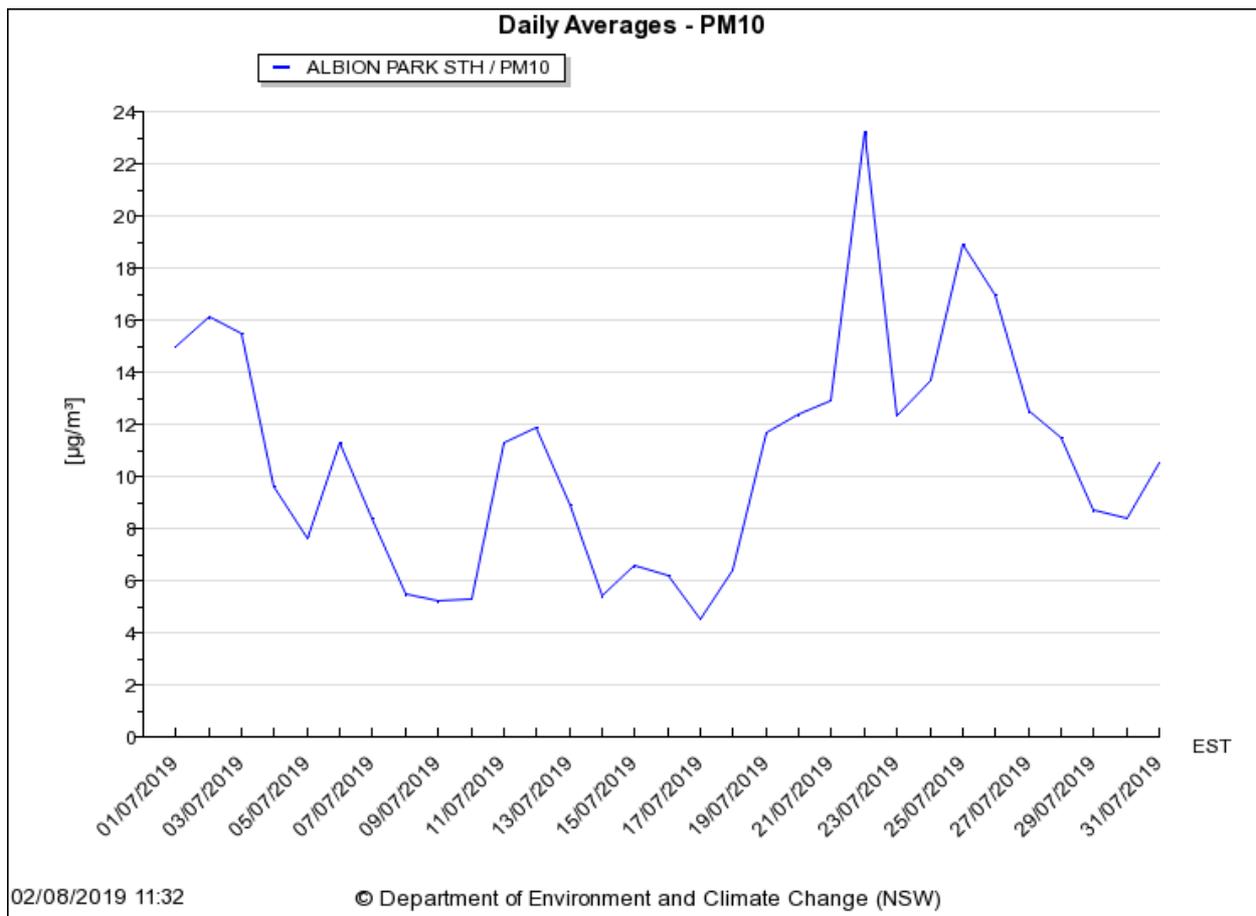
TSS (mg/L) modelled from Turbidity (NTU) based on approved correlation formula of $TSS = 0.43*(NTU) + 1.00$

***Lab sample also taken and determined to be 41mg/L TSS (ie <50mg/L)**

5 AIR MONITORING RESULTS

Dust deposition gauges for the project were installed on 26th of June 2019 and changed on 26th July 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.

Error! Reference source not found. 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).



Two dust gauges recorded insoluble matter in exceedance of the allowable 4g/m²/month. DDG H recorded 4.3g/m² and DDG JK recorded 12.1g/m² in the month of July. See Table 5.1 below for detailed results.

DDG H is positioned close to the haul road at this location and levels are likely attributed to heavy vehicle movements through the area. Watercarts were used extensively during dry and windy conditions to manage dust at this location.

DDG JK had a high level of combustible matter in the sample. This dust gauge is located midway down the slope of an overgrown, grassy paddock to the northwest of Tullian Creek and therefore is likely that windblown grass seed/material has contributed to the high combustible material levels recorded.

The 12 month rolling average for DDG JK has increased to more than the target level of

4.0g/m²/month during July at 4.4g/m²/month. Dust mitigation efforts will be focused in this area in the coming months to minimise project-based dust levels at this location. Non-project factors as noted above may continue to result in high dust levels at this location however.

Table 5-1 July 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 | 0.2 | 0.3 | 0.5 | 2.5 |
| 2-DDG B | 10A Jaspers Brush Road, Jaspers Brush | 1 | 0.2 | 1.2 | 2.2 |
| 3-DDG C | 20C Strongs Road, Jaspers Brush | 1.4 | 0.3 | 1.7 | 2.7 |
| 4-DDG D | 10C Jaspers Brush Road, Jaspers Brush | 0.4 | 0.2 | 0.6 | 2.5 |
| 5-DDG E | 30 Ison Lane, Jaspers Brush | 0.2 | 0.2 | 0.4 | 1.1 |
| 6-DDG F | Lot 209 DP 1210788 | 0.7 | 0.2 | 0.9 | 2.7 |
| 7-DDG H | 10 Lamonds Lane, Meroo Meadow | 3.9 | 0.4 | 4.3 | 3.9 |
| 8-DDG I | 19 Boxsells Lane, Meroo Meadow | 0.4 | 0.1 | 0.5 | 1.4 |
| 9-DDG J/K | 265 Princes Highway, Meroo Meadow | 2.6 | 9.5 | 12.1 | 4.4 |
| 10-DDG L | 1028 Meroo Meadow, Meroo Meadow | 1.5 | 0.7 | 2.2 | 2.9 |
| 11-DDG M | 32 Elvin Drive, Bomaderry | 0.7 | 0.1 | 0.8 | 1.9 |
| 12-DDG N | 9 Devitt's Lane, Meroo Meadow | 0.5 | 0.1 | 0.6 | 1.7 |
| 13-DDG P | 24 Abernethys Lane, Meroo Meadow | 0.4 | 0.1 | 0.5 | 2.8 |

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

Table 6.1 below summarises the attended noise monitoring undertaken in July 2019.

Table 6-1 July 2019 Noise Monitoring Results

| EPA ID No. | Location description | Construction activity | Date | Time | L(A)eq 15min | Comments |
|------------|--|--------------------------------|----------|----------------|--------------|--|
| 15 | L1 - B210 Princes Highway, Jaspers | Construction works not audible | 25/07/19 | 8:46 9:01 | 67.6 | <ul style="list-style-type: none"> No construction noise audible – Princes Highway dominant noise source |
| 16 | L2 - 20C Strongs Road, Jaspers Brush | Earthworks Bridgeworks | 25/07/19 | 8:11 8:26 | 62 | <ul style="list-style-type: none"> Some intermittent noise from reversing squawkers on excavators working on batter below. Traffic from Princes Highway dominating with light heavy vehicle. |
| 17 | L3 - 30 Ison Lane, Jaspers Brush | Construction works not audible | 25/07/19 | 9:08 :923 | 55.9 | <ul style="list-style-type: none"> No construction noise audible LV's entering and exiting Ison's compound Constant traffic on the Princes highway |
| 18 | L5 - 15 Turner Lane, Jaspers Brush | Earthworks | 25/07/19 | 9:23 9:38 | 58 | <ul style="list-style-type: none"> Traffic from Princes Highway with light vehicles dominating |
| 19 | L6 - B710 Princes Highway, Jaspers Brush | Bridgeworks Earthworks | 25/07/19 | 7:10 7:25 | 63.4 | <ul style="list-style-type: none"> Crane Workers with hand tools Constant traffic on the Princes Highway |
| 20 | L7 - 310C Princes Highway, Jaspers Brush | Construction works not audible | 25/07/19 | 12:47 13:02 | 63 | <ul style="list-style-type: none"> Grader working 15-150m away Truck and dogs entering site x 4 Workers talking on radio Reversing squawker on grader Princes Highway Traffic |
| 21 | BG08 - 19 Boxsells Lane, Meroo Meadow | Construction works not audible | 25/07/19 | 8:41 8:56 | 47.08 | <ul style="list-style-type: none"> No construction noise audible |
| 22 | BG09 - 1028 Meroo Road, Meroo Meadow | Earthworks | 25/07/19 | 9:31 9:46 | 54.6 | <ul style="list-style-type: none"> Excavator and grader working 100m away Princes Highway Traffic Meroo Road Traffic x 25 Kids talking and playing in 1028 Meroo Road Birds calling |

| EPA ID No. | Location description | Construction activity | Date | Time | L(A)eq 15min | Comments |
|------------|--|--------------------------------|----------|----------------|--------------|--|
| 23 | L8 - 24 Abernethys Lane, Meroo Meadow | Earthworks Drainage | 25/07/19 | 8:17 8:32 | 56 | <ul style="list-style-type: none"> • Delivery of GF to Abernethy's x 6 • Truck and Dogs idling, exhaust brakes, squeaking, tailgates slamming, reverse squawkers • Workers talking, workers radios • Traffic on Abernethy's Lane x 2 • Princes Highway Traffic • Helicopter flying overhead • Worker using toilet |
| 24 | BG10 - 35 Gardenia Crescent, Bomaderry | Construction works not audible | 25/07/19 | 13:15 13:30 | 48.7 | <ul style="list-style-type: none"> • No construction noise audible |
| 25 | BG11 - 38 Elvin Drive, Bomaderry | Earthworks | 25/07/19 | 7:44 7:55 | 67.7 | <ul style="list-style-type: none"> • Excavator idling 40m away • Workers talking/arguing • Excavator squeaking as it tracks along fill • Excavator tracking within 2m of logger • Excavator beginning work 20m away from logger |

7 ENVIRONMENTAL COMPLAINTS

There were two environmental complaints received in July which were closed out within the required timeframes. Both complaints were in relation to the same issue – dust at Lamonds Lane. See Table 7.1 below for details.

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

| Complaint Details | Required timeframe for response (G36) | Date/ time complaint received | Actions & due date | Status / timing |
|---|--|-------------------------------|--|----------------------------|
| Dust – Same resident as previous complaint. | 24 hours – response (SMS) 5 days response | 17/7/19 – 2.00pm | Resident complained water carts had attended but had not sprayed water. Escalated to EPA. CM / EM asked for work to stop for remainder of day. Resolution was discussed with resident. | Closed – within two hours. |
| Dust | 24 hours – response (SMS) 5 days response | 17/7/19 – 1.30 pm | Resident complained that dust from Lamonds turning bay was excessive. CM arranged water carts to attend immediately and stay in the area. | Closed – within two hours. |