



Warrell Creek to Nambucca Heads – Pacific Highway Upgrade Project

ENVIRONMENT PROTECTION AUTHORITY MONTHLY REPORT

■ April 2017

Pacifico Project Number: WC2NH



A team consisting of RMS and Pacifico (ACCIONA Ferrovia JV) to upgrade the Pacific Highway at Warrell Creek to Nambucca Heads

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1. Introduction

Environmental Protection Licence (EPL) 20533 was issued to ACCIONA Infrastructure for the Warrell Creek to Nambucca Heads Pacific Highway Upgrade project on the 16th December 2014. Condition R1.8 of the EPL requires the licensee to provide the EPA with a monthly report containing the following information:

- a) details of all non-compliances with the conditions of this licence and measures taken, or proposed, to prevent a recurrence of such a non-compliance; and
- b) details of all discharges from the sediment basins where the water quality results exceed the limits prescribed by Condition L2.4 including the results of rainfall measurements to demonstrate compliance with Condition L2.5; and
- c) details of results of any acoustic investigation made in relation to Condition L4.2d); and

The report referred to in this condition must be received by the EPA within 10 working days of the end of each month.

This document has been prepared to fulfil the requirements of Condition R1.8.

1.1 Description of Works

The project's construction activities during April 2017 included the following:

- Bitumen sealing work
- Earthworks
- Continuing bridge works including girder placement, deck unit installation and deck concrete pours
- Continuing works in the Pergola area near Upper Warrell Creek
- Continuing drainage works
- Scour rock installation
- Batter stabilisation using hydromulch (permanent design seed mix)
- Topsoil Amelioration and Blending
- Concrete Lined Drains
- Basin Decommissioning
- Basin Maintenance including dewatering
- Installation of Erosion and Sediment Controls
- Pavement (Asphalt and Concrete)
- Line marking
- Operation of concrete and asphalt batch plants
- Removal of rock platforms underneath Nambucca Bridge

Works scheduled for next month include

- Earthworks including crushing
- Continuing bridge works including girder placement, deck unit installation and deck concrete pours
- Landscape Planting
- Continuing drainage works
- Scour rock installation

- Batter stabilisation using hydromulch (permanent design seed mix)
- Topsoil Amelioration and Blending
- Concrete Lined Drains
- Basin Decommissioning
- Basin Maintenance including dewatering and desilting
- Installation of Erosion and Sediment Controls
- Paving operations including Asphaltting and concreting
- Line marking Pavement (Asphalt and Concrete)
- Verge / Median Placement
- Continue removing rock platforms at Lower Warrell Creek and Nambucca River

1.2 Consultation Activities

The project’s consultation activities during April 2017 included the following:

Table 1 – Consultation Activities

Groups	Date	Key Topics
Environmental Review Group	April 7 th	Construction Progress, Design Update, Upcoming Works, Environmental Update, Monitoring Update, Out of Hours Works, Incidents and Community Complaints
Toolboxes	Wednesday each week	Workforce behavioural issues examined and impact management tips provided, as appropriate. eg. how to avoid complaints, turning off flashing beacons, housekeeping pre-Easter, mitigating potential community vehicle impacts.
Macksville Show	April 28 th and 29 th	Project display staffed by RMS and Pacifico personnel. Questions included project completion date, potential use of pre-cast facility location, potential flooding, etc.
North Facing Ramps group	Two meetings: 10 th and 24 th April	Three week look-ahead for construction activities and general project discussion.

Other Consultation Activities:

- Project presentations were delivered to U3A and the Lions Club of Nambucca Heads
- Rescheduled opening dates and details of two new sidetracks near Old Coast Road emailed to local residents and emergency and essential services

- Letterbox dropped southern rock crushing notification to 9 properties, as well as a modified version of the notification letterbox dropped to 36 further properties
- Quarry access bridge notification emailed to database including emergency and essential services, and letterbox dropped to two closest properties

At House Noise Treatments

The at house noise treatment program is currently being managed by RMS and is not part of the ACCIONA (Pacifico) Scope of Works and Technical Criteria.

Upcoming Community and stakeholder activities:

- Conduct next Nambucca Shire Council liaison meeting 30 May 2017;
- Conduct next North Facing Ramps tri-weekly roadside community meeting scheduled for Monday 15 May;
- Provide June to August construction activity update for RMS website;
- Provide June to August construction activity details for quarterly Project Update;
- Distribute Browns Crossing Road flood notification and report to 20 properties;
- Distribute further three-monthly North Facing Ramps look-ahead;
- Distribute notification for final night-time girder deliveries through Warrell Creek;
- Obtain 8 agreements for Out of Hours paving and sawcutting activities at Letitia Close;
- Obtain 9 agreements for Out of Hours paving and sawcutting activities at Bald Hill Road;
- Obtain 7 agreements for Out of Hours on railway corridor and Upper Warrell Creek;
- Continue to consult stakeholders impacted by visual mounds along the entire alignment;
- Co-deliver content of RMS signposting Communications Strategy including conducting Community Information Sessions June 21 and 22.

2. Weather

2.1 Discussion

The automatic recording weather stations at the main site compounds (north and south) records rainfall totals daily at 9AM. The total rainfall received for the month is as follows: -

Table 2 – Rainfall recorded at the two weather stations operated by Pacifico

Month	Total monthly rainfall	Location
1/04/2017 – 30/04/2017	106.8mm	Northern Compound
1/04/2017 – 30/04/2017	67.4mm	Albert Drive Compound

The site experienced a total of 17 rain days throughout the month of April 2017.

During April, rainfall received on site was lower than the April monthly average of 171.5mm. A summary of weather conditions recorded over the month for Smoky Cape by the Bureau of Meteorology is detailed below in Table 2.3.

The daily summaries for rainfall received in April at the Albert Drive Compound and Northern Compound are shown below in Table 2.1 and 2.2.

Table 2.1 – Rainfall recorded at Albert Drive Southern Compound Automated Weather Station

April 2017		
Date	Time	TOTAL Rain Gauge (mm)
1/04/2017	9:00:00	0.4
2/04/2017	9:00:00	0
3/04/2017	9:00:00	5.4
4/04/2017	9:00:00	11
5/04/2017	9:00:00	4.8
6/04/2017	9:00:00	3
7/04/2017	9:00:00	25.2
8/04/2017	9:00:00	4.6
9/04/2017	9:00:00	0.2
10/04/2017	9:00:00	0
11/04/2017	9:00:00	0
12/04/2017	9:00:00	0
13/04/2017	9:00:00	0
14/04/2017	9:00:00	0.2
15/04/2017	9:00:00	0
16/04/2017	9:00:00	0
17/04/2017	9:00:00	0.2
18/04/2017	9:00:00	0
19/04/2017	9:00:00	0.8
20/04/2017	9:00:00	0.8
21/04/2017	9:00:00	1.6
22/04/2017	9:00:00	0.6
23/04/2017	9:00:00	0
24/04/2017	9:00:00	0.2
25/04/2017	9:00:00	0
26/04/2017	9:00:00	1
27/04/2017	9:00:00	7.4
28/04/2017	9:00:00	0
29/04/2017	9:00:00	0
30/04/2017	9:00:00	0

Table 2.2 – Rainfall recorded at the Northern Compound Automated Weather Station

April 2017

Date	Time	TOTAL Rain Gauge (mm)
1/04/2017	9:00:00	0.2
2/04/2017	9:00:00	0.2
3/04/2017	9:00:00	7.6
4/04/2017	9:00:00	9
5/04/2017	9:00:00	12.4
6/04/2017	9:00:00	0.6
7/04/2017	9:00:00	53.8
8/04/2017	9:00:00	4
9/04/2017	9:00:00	0
10/04/2017	9:00:00	0
11/04/2017	9:00:00	0
12/04/2017	9:00:00	0
13/04/2017	9:00:00	0.6
14/04/2017	9:00:00	0
15/04/2017	9:00:00	0
16/04/2017	9:00:00	0
17/04/2017	9:00:00	0
18/04/2017	9:00:00	0
19/04/2017	9:00:00	5.2
20/04/2017	9:00:00	0.6
21/04/2017	9:00:00	1
22/04/2017	9:00:00	1
23/04/2017	9:00:00	0
24/04/2017	9:00:00	0
25/04/2017	9:00:00	0.2
26/04/2017	9:00:00	1.6
27/04/2017	9:00:00	8.8
28/04/2017	9:00:00	0
29/04/2017	9:00:00	0
30/04/2017	9:00:00	0

Table 2.3: Weather conditions recorded in April 2017 at Smoky Cape by the Bureau of Meteorology.

April 2017

Date	Minimum temperature (°C)	Maximum temperature (°C)	Rainfall (mm)
1/04/2017	16.5	24.2	0.6
2/04/2017	16.2	23	1.8
3/04/2017	15	23.2	10
4/04/2017	14.8	23.1	27.8
5/04/2017	14.5	24.9	18.2

Date	Minimum temperature (°C)	Maximum temperature (°C)	Rainfall (mm)
6/04/2017	14.2	21.9	4.4
7/04/2017	14.6	24.3	36.2
8/04/2017	15.3	24.9	3.4
9/04/2017	16.8	23.9	0
10/04/2017	16.3	24.7	0
11/04/2017	16.2	26.3	0
12/04/2017	16.7	26	0.6
13/04/2017	16.7	24.9	0
14/04/2017	16.8	25.8	0
15/04/2017	17.4	26.9	0
16/04/2017	17.7	26.7	0
17/04/2017	15.7		0
18/04/2017		26.6	
19/04/2017	15.3	25.7	6.2
20/04/2017	15.8	25	8.8
21/04/2017	16.2	25.9	0
22/04/2017	16.9	25.5	6.2
23/04/2017	17.6	26	0
24/04/2017	17.2	26	0
25/04/2017	17.3	24.8	0
26/04/2017	19.5	21.1	1
27/04/2017	12.5	21.4	6.6
28/04/2017	13.6	19.2	0
29/04/2017	14.5	24.7	0
30/04/2017	15.3	25	0

3. Surface Water Monitoring

Pacifico have been provided trigger levels for baseline monitoring from RMS, these will be compared against monthly data as well as between upstream and downstream sites to determine works impact.

Monthly sampling was undertaken by ACCIONA (Pacifico):

Dry Sampling Event

A "dry" sampling event was undertaken on the 5th April 2017, field testing was undertaken. Results are attached in Appendix A.

pH levels noted to be outside of trigger levels at:

Lower Warrell Creek recorded low pH levels upstream (6.41) and downstream (6.35). All controls were in place for the site. These levels were also consistent with the upstream site and unlikely to be attributable to construction impacts.

Nambucca River recorded elevated pH levels upstream (7.21) and downstream (7.29). It is noted that the trigger levels for Nambucca River are pH 7, with anything outside of this result being outside of trigger levels.

Conductivity was noted to be outside trigger levels at:

Nambucca River recorded low conductivity levels upstream (9.9mS/cm) and downstream (9.45mS/cm). Levels were consistent from upstream to downstream sites and are unlikely to be attributable to construction impacts.

Unnamed Creek Gumma East recorded slightly elevated levels upstream (0.87mS/cm). All controls were in place for the site. As the result is upstream of the construction site it is unlikely to be attributable to construction impacts.

Dissolved Oxygen (DO) noted to be below trigger levels at:

Upper Warrell Creek downstream (2.45mg/L). All controls were verified to be in place for the site. These levels were only slightly below trigger levels (2.6mg/L trigger level).

Lower Warrell Creek upstream (1.76mg/L) and downstream (1.42mg/L). All controls were verified to be in place for the site.

Nambucca River upstream (2.99mg/L) and downstream (2.68mg/L). All controls were verified to be in place for the site, with no additional construction activities undertaken within the waterway.

4. Sediment Basin Water Monitoring

Water was released from commissioned sediment basins after rainfall events on the 3rd-8th, 18th-22nd and the 24th to the 27th April 2017. A statistical correlation has been developed which identified the relationship between Turbidity (NTU) and Total Suspended Solids (TSS) for water quality in the WC2NH Project sediment basins in order to determine the NTU equivalent of 50mg/L TSS. This statistical correlation has been developed to meet EPL Licence No 20533 Condition L2.7 to determine compliance with the Water and/or Land Concentration Limits Condition L2.4. A positive correlation has been calculated between Total Suspended Solids (TSS) and Turbidity (NTU) ($R^2 = 0.5953$, $p < 0.00001$, $n=184$). The regression equation for the analytical results calculates a turbidity (NTU) value of 124.776 for a TSS value of 50mg/L. A safety factor of 30% has been applied to the NTU result of the correlation, providing a turbidity (NTU) value of 87.3432, rounded to an NTU value of 85. To measure NTU in the field a Horiba U-52G multi-parameter water quality meter has been utilised, which is maintained and calibrated in accordance with manufacturer's specifications. TSS sampling is being undertaken to ensure compliance with 1 in 10 sampling to validate the correlation.

Table 3 below has the water quality results recorded for the water release events:

Table 3 – Water Release Register April 2017

Date	Basin ID	Oil and Grease (visible) (Limit = No visible)	pH (6.5-8.5)	Turbidity (NTU) (Limit <90 NTU)	TSS (mg/L) (Limit <50mg/L)	Approx Volume Discharged (kL)	Comments
1/04/2017	B45.64	N	7.55	58.2		800	
1/04/2017	B48.30	N	6.6	20.2		500	
1/04/2017	B49.20	N	6.54	18.8		600	
1/04/2017	B60.58	N	8.42	70.4		200	
1/04/2017	B60.5	N	8.3	70.2		400	
3/04/2017	B53.9	N	8.3	66.4		2500	
3/04/2017	B53.00	N	7.92	43.7		1000	
3/04/2017	B58.45	N	8.38	57		900	
3/04/2017	B55.5	N	7.73	70.1		450	
3/04/2017	B58.10	N	7.8	61.9		900	
4/04/2017	B57.7	N	7.2	49.9		700	
4/04/2017	B53.9	N	8.02	69.8		1000	
5/04/2017	B53.9	N	7.88	66		1000	
5/04/2017	B58.45	N	7.92	54.3		900	
5/04/2017	B58.6	N	8.42	73.4		650	
5/04/2017	B45.00	N	7.21	19.2		250	
6/04/2017	B45.64	N	8.15	39.7		350	
6/04/2017	B55.17B	N	7.96	54.3		300	
7/04/2017	B53.8	N	8.26	74.1		1500	
7/04/2017	B49.20	N	6.55	47.7		600	
7/04/2017	B48.46	N	6.61	34.2		600	
7/04/2017	B48.30	N	6.86	68.9		500	
7/04/2017	B42.80	N	6.83	45.9		600	
7/04/2017	B49.67	N	7.23	25.2		800	
7/04/2017	B47.96	N	6.82	11.9		600	
8/04/2017	B53.00	N	8.3	84.3		2000	
8/04/2017	B53.03	N	8.12	73.2		200	
8/04/2017	B60.5	N	7.1	8.3		400	
8/04/2017	B60.85	N	6.7	7.25		400	
8/04/2017	B60.87	N	7.2	75.4		300	
8/04/2017	B48.46	N	6.59	15.2		200	
8/04/2017	B48.30	N	6.63	20.3		50	
8/04/2017	B49.45	N	6.67	72.1		700	
8/04/2017	B49.20	N	6.75	25.1		100	
8/04/2017	B47.96	N	6.6	18.2		100	
9/04/2017	B58.10	N	8.1	83.6		900	
9/04/2017	B55.5	N	7.6	81.26		400	
9/04/2017	B59.78	N	8.1	77.4		800	
9/04/2017	B59.85	N	8.4	83.4		900	
9/04/2017	B60.3	N	7.6	71.4		300	
10/04/2017	B53.5	N	8.16	74.9		1500	

Date	Basin ID	Oil and Grease (visible) (Limit = No visible)	pH (6.5-8.5)	Turbidity (NTU) (Limit <90 NTU)	TSS (mg/L) (Limit <50mg/L)	Approx Volume Discharged (kL)	Comments
10/04/2017	B55.17B	N	7.41	56.3		300	
10/04/2017	B45.50	N	6.95	69.2		400	
10/04/2017	B42.30	N	7.12	47.6		700	
10/04/2017	B44.44	N	7.59	75.9		490	
10/04/2017	B47.14	N	6.59	39.7		450	
10/04/2017	B48.46	N	6.71	46.6		600	
10/04/2017	B45.64	N	7	37.9		200	
10/04/2017	B43.75	N	7.29	65.9		350	
11/04/2017	B57.7	N	8.16	31		700	
11/04/2017	B58.45	N	8.11	70.4	14	900	
11/04/2017	B58.6	N	7.82	54.1		600	
11/04/2017	B53.9	N	7.94	81.6		2000	
11/04/2017	B45.64	N	8.23	22		50	
11/04/2017	B42.30	N	7.13	32.9		450	
12/04/2017	B53.9	N	7.19	67.9		1500	
12/04/2017	B45.64	N	7.99	43.1		50	
12/04/2017	B43.37	N	7.66	49.7		650	
14/04/2017	B55.8	N	8.01	73.7		1000	Basin Decommissioned
18/04/2017	B53.00	N	7.76	39		1000	Extra water released below SSZ
21/04/2017	B53.5	N	7.88	31.2		20	Water released for desilting
24/04/2017	B48.30	N	8.06	35.8		20	Water pumped to basin for treatment (not rainfall run-off)
24/04/2017	B42.80	N	7.87	9.9		150	Water released for desilting
26/04/2017	B42.80	N	6.97	22.1		300	Water released for capacity of pipejacking operation
26/04/2017	B47.96	N	7.21	33.3		450	Water released below SSZ
27/04/2017	B47.96	N	7.26	28.1		500	
27/04/2017	B42.80	N	7.1	36.7		200	
27/04/2017	B43.10	N	7.16	55.8		100	

5. Noise Monitoring

Monthly routine construction noise monitoring was undertaken on the 11th of April 2017 at eight locations near to construction works. Monitoring results are available in Appendix A, Table 2.

All sites were within predicted levels for the activity being undertaken or were not the dominant noise source at the nearest residence.

6. Vibration Monitoring

No vibration monitoring was undertaken during the month of April 2017.

7. Dust Monitoring

Dust deposition gauges (DDG) were placed at nearby sensitive receivers from 6th March to 3rd and 4th April 2017. DDG results are available in Appendix A.

All dust deposition gauges were below the level of concern for Total Insoluble Matter (TIM) and Ash Content (AC) (4g/m².month or increase of 2g/m²/month) during the monitoring period, with the exception of DDG6N (located at Letitia Close). This gauge recorded a level of 7.7g/m².month for Total Insoluble Matter (TIM) and 6.4g/m².month for Ash Content (AC). It is noted that this gauge is within the project boundary, with works at a nearby mulch stockpile a potential source for the exceedance. Gauge DDG6, also within the same dust catchment but installed on a sensitive receiver's property, recorded much lower levels (1.5g/m²/month TIM, 1.1g/m²/month AC). DDG7 (located at Mattick Road) also recorded an increase in TIM of 3g/m²/month, although the TIM level was within allowable levels (3.7g/m²/month). Water carts will continue to be utilised in this area to mitigate dust.

Surfactant additives have been, and will continue to be utilised on site in water carts to assist with dust mitigation. Dust mitigation measures including water carts and wetting of quarry material before arrival to site will continue.

8. Groundwater Monitoring

ACCIONA (Pacifico) have undertaken groundwater monitoring on 20th of April 2017. Field testing and lab sampling was undertaken. The results from the groundwater monitoring is available in Table 4 of Appendix A.

pH levels noted to be outside of trigger levels at:

4BH010 – Cut 6 recorded elevated pH of 7.39 (trigger level 4.74 - 6.26). It is noted that these levels are within ANZECC criteria (6.5-8.0).

4BH021 – Cut 11 recorded low pH of 2.31 (trigger level 5.81-6.78). It is noted that there is no unusual construction activities taking place in the area and there is no sign of groundwater ingress onto the Cut face. Follow up monitoring was conducted on the 8th May which confirmed that the pH level was 6.21. It is therefore probable there was a problem with the measuring equipment which will be sent away for servicing.

4BH022c – Cut 11 recorded low pH of 4.23 (trigger level 7.09-5.93). It is noted that there is no unusual construction activities taking place in the area and there is no sign of groundwater ingress onto the Cut face. Follow up monitoring was

conducted on the 8th May which confirmed that the pH level was 5.61. It is therefore probable there was a problem with the measuring equipment which will be sent away for servicing.

4BH037a – Fill 15 recorded elevated pH of 7.07 (trigger value 5.92-6.5). It is noted that this bore has been relocated from its original location due to it being within the construction footprint, with trigger levels not necessarily corresponding with the new bore location.

4BH038 – Fill 15 recorded elevated pH of 7.64 (trigger value 6.77-7.3). It is noted that this was only a minor exceedance of trigger levels (7.30).

4BH058c – Cut 17 recorded low pH of 4.93 (trigger value 5.56-6.4). It is noted that this bore has been relocated from its original location due to it being within the construction footprint

Conductivity noted to be outside of trigger levels at:

4BH037a – Fill 15 of 9.85mS/cm (trigger value 5.55mS/cm). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint, with trigger levels not necessarily corresponding with the new bore location.

Water depth noted to be outside of trigger levels at:

4BH058c – Cut 17 of 14.76m (trigger value of 13.8m). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

Metals noted to be above trigger levels at:

4BH010 – Cut 6 recorded elevated levels of iron (10.5mg/L, trigger value 6.58mg/L). It is noted that construction works within this cut have completed with no intersection of the groundwater table or seepages on the cut faces noted.

4BH021 – Cut 11 recorded elevated levels of copper (0.014mg/L, trigger value 0.0108mg/L) and zinc (0.021mg/L, trigger value 0.0176mg/L).

4BH022c – Cut 11 recorded elevated levels of aluminium (0.440mg/L, trigger value 0.0122mg/L), cadmium (0.0139mg/L, trigger value 0.001mg/L), copper (0.010mg/L, trigger value 0.003mg/L), manganese (3.01mg/L, trigger value 0.486mg/L), nickel (0.197mg/L, trigger value 0.0036mg/L) and zinc (0.616mg/L, trigger value 0.0085mg/L). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

4BH038 – Fill 15 recorded elevated levels of manganese (1.7mg/L, trigger value 1.5mg/L), nickel (0.022mg/L, trigger value 0.006mg/L) and zinc (0.107mg/L, trigger value 0.0132mg/L).

Nutrients noted to be above trigger levels at:

4BH010 – Cut 6 recorded elevated levels of phosphorus (0.08mg/L, trigger value 0.03mg/L), nitrogen (1.0mg/L, trigger value 0.58mg/L) and nitrate (0.03mg/L, trigger value 0.025mg/L).

4BH021 – Cut 11 recorded elevated levels of phosphorus (0.16mg/L, trigger value 0.057mg/L), nitrogen (2.4mg/L, trigger value 0.38mg/L) and ammonia (0.16mg/L, trigger value 0.064mg/L).

4BH022c – Cut 11 recorded elevated levels of phosphate (0.02mg/L, trigger value 0.0126mg/L), nitrogen (4.2mg/L, trigger value 0.58mg/L), nitrate (3.79mg/L, trigger value 0.4mg/L) and nitrite (0.02mg/L, trigger value 0.005mg/L). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

4BH037a – Fill 15 recorded elevated levels of phosphate (0.30mg/L, trigger value 0.016mg/L), nitrogen (2.6mg/L, trigger value 2.16mg/L), nitrite (0.81mg/L, trigger value 0.013mg/L) and ammonia (2.4mg/L, trigger value 0.79mg/L). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

Major anions and cations noted to be above trigger levels at:

4BH010 – Cut 6 recorded elevated levels of calcium (10mg/L, trigger value 5.99mg/L).

4BH021 – Cut 11 recorded elevated levels of chloride (16mg/L, trigger value 15.2mg/L), calcium (4mg/L, trigger value 1.48mg/L) and magnesium (3mg/L, trigger value 2mg/L).

4BH022c – Cut 11 recorded elevated levels of chloride (410mg/L, trigger value 78.8mg/L), sulfate (834mg/L, trigger value 61.8mg/L), sodium (261mg/L, trigger value 72mg/L), calcium (92mg/L, trigger value 50.4mg/L) and magnesium (109mg/L, trigger value 11.8mg/L). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

4BH037a – Fill 15 recorded elevated levels of chloride (1890mg/L, trigger value 948.8mg/L), sulfate (4430mg/L, trigger value 2056mg/L), bicarbonate (468mg/L, trigger value 61.2mg/L), sodium (1350mg/L, trigger value 720mg/L), potassium (68mg/L, trigger value 720mg/L), calcium (364mg/L, trigger level 189.6mg/L) and magnesium (570mg/L, trigger value 306.2mg/L). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

4BH038 – Fill 15 recorded elevated levels of chloride (2370mg/L, trigger value 2340.37mg/L) and sulfate (2940mg/L, trigger value 2752mg/L).

Total Dissolved Solids (TDS) noted to be above trigger levels at:

4BH021 recorded elevated levels (361mg/L, trigger value 94.68mg/L).

4BH022c recorded elevated levels (1520mg/L, trigger value 130.62mg/L). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

4BH037a recorded elevated levels (6200mg/L, trigger level 132.6mg/L). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint.

9. Acoustic Investigations

Acoustic Investigations (modelling) have been conducted and approved for several Out of Hours Works proposed to model impact on residents during the month of April 2017. A summary of these approvals is below in Table 4.

Table 4 – April Out of Hours Works approved under L4.2 (d) Acoustic Investigation (Modelled)

Out of Hours Activity	>5dB(A) above background	Approval Date	Complete? Y/N
Drainage Installation at Upper Warrell Creek	N	6/04/2017	Y
Washout Concrete Paver Chainage 45500	N	10/04/2017	Y
Paver Washout in Cut 21 and 17	N	13/04/2017	Y
SMZ and batter trimming Lower Warrell Creek to Bald Hill Road	N	20/04/2017	Ongoing
SMZ and Batter Trimming Williamsons Creek to Lower Warrell Creek	N	20/04/2017	Ongoing
Kerb Paver Washdown	N	20/04/2017	Y
Removal of Material from Service Road A	N	20/04/2017	Now covered by Written Agreements

Other works outside of standard construction hours already approved under section L4.2 (d) of the EPL that took place during April 2017 were:

- Water cart usage over the weekend;
- Running of various pumps and generators;
- Northern Earthworks extended hours in sparsely populated area in the northern zone;
- Nambucca River structures concreting works north of Pier 7 approved in previous months;
- SMZ conditioning through the northern portion of the Project;
- Concreting at Cut 2;
- Wet curing in the pergola at cut 2;
- Washout concrete paver CC05;
- Cut 21 long drainage, subsoil installation, SMZ trimming;
- Old Coast Road North Bridge concreting, formworks, steel fixing;
- Backfilling of Railway Pergola;
- Refuelling in designated zones; and

Acoustic Investigations (field monitoring) have been conducted for Out of Hours Works during the month of April 2017, results are included in Appendix A.

10. Complaints

9.1 Summary of Complaints for the month of April 2017

No Complaints for the month of April 2017

11. Non-Compliance

11.1 Summary of Non-compliances

No non-compliances against the ACCIONA Environmental Protection License occurred during April 2017.

Appendix A – Monitoring Results

Table 1 – Surface Water Results April 2017 – Dry Event

Location	Units	Levels of Concern	Upper Warrell Creek			Upper Warrell Creek			Stony Creek			Stony Creek			Lower Warrell Creek			Lower Warrell Creek			Unnamed Creek Gumma West			Unnamed Creek Gumma East			Unnamed Creek Gumma North			Nambucca River South			Nambucca River South					
			Upstream	Upstream	Downstream	Upstream	Upstream	Downstream	Upstream	Upstream	Downstream	Upstream	Upstream	Downstream	Upstream	Upstream	Downstream	Upstream	Upstream	Downstream	Upstream	Upstream	Downstream	Upstream	Upstream	Downstream	Upstream	Upstream	Downstream	Upstream	Upstream	Downstream						
Freshwater / Estuarine		ANZECC 2000 95% species protected	Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Estuarine			Estuarine								
Date of Sampling			5-Apr-17			5-Apr-17			5-Apr-17			5-Apr-17			5-Apr-17			5-Apr-17			5-Apr-17			5-Apr-17			5-Apr-17			5-Apr-17								
Time of Sampling			3:00 PM			2:51 PM			2:29 PM			2:14 PM			3:25 PM			3:17 PM			4:15 PM			4:30 PM			4:10 PM			3:52 PM			4:00 PM					
Comments															Flooded									Water level too low to sample			Wind chop stirring sediment			Wind chop stirring sediment								
Type			80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result	80th %ile	20th %ile	Result
Field Physical data																																						
Temperature	C	-	24.86	14.99	19.27	25.1	16.3	19.91	24.4	16	19.66	26.46	15.94	21.31	27.9	18.4	21.53	27.9	18.4	22	26.5	16.3	21.99	26.5	16.3	20.48	26.5	16.3	-	27.9	18.1	23.71	27.9	18.1	22.98			
pH	pH	6.5-8	7.25	6.48	6.66	7.3	6.4	6.72	7.5	6.6	6.99	7.33	6.26	7.26	7.02	6.57	6.41	7.02	6.57	6.35	7	6.1	6.58	7	6.1	6.27	7	6.1	-	7	7	7.21	7	7	7.29			
Conductivity	mS/cm	0.125-2.2	0.316	0.232	0.167	0.348	0.227	0.171	0.348	0.227	0.194	0.3338	0.2168	0.204	20.946	0.679	0.483	20.946	0.679	0.514	0.808	0.4234	0.87	0.808	0.4234	0.381	0.808	0.4234	-	47.32	29.44	9.9	47.32	29.44	9.45			
Turbidity	NTU	50	10.96	4	1.8	9.9	3.5	1.8	9.9	3.5	1	5.97	3.74	1	6.82	1.83	2.5	6.82	1.83	2.8	52.78	11.3	6.6	52.78	11.3	5.3	52.78	11.3	-	19.3	6.7	12.2	19.3	6.7	12.6			
Dissolved Oxygen	mg/L	5	4.98	1.91	3.24	4.8	2.6	2.45	4.8	2.6	4.75	6.34	3.52	5.5	7.98	5.07	1.76	7.98	5.07	1.42	6.4	1.75	2.44	6.4	1.75	1.96	6.4	1.75	-	9.1	7.4	2.99	9.1	7.4	2.68			
Dissolved Oxygen	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
TDS	g/L	-	-	-	0.109	-	-	0.111	-	-	0.126	-	-	0.132	-	-	0.314	-	-	0.329	-	-	0.517	-	-	0.248	-	-	-	-	-	-	-	-	-	5.96		

Taken from ANZECC guidelines 95% protected species levels where no 80/20 trigger values provided
 Taken from alternative trigger levels provided in ANZECC Water Guidelines Volume 1 and Volume 2 where insufficient data was available for 95%
 Exceedances of trigger values

Table 2 - Noise Monitoring Results April 2017

Date	Time	Location	Rec ID	NCA	NML	Activity	Predicted levels for activity	Laeq	LAFMAX	LAFMIN	LAF10	LAF50	LAF90	Principal sources/operations	Construction noise dominant?	Corrective actions	Notes	
11/04/2017	10:00 AM	Albert Drive	74	1	50	Cut		62	52.6	75.2	43.6	49.9	47.6	46.2	Asphalt plant	N	NA	Dominant noise sources: highway, local traffic, birds
11/04/2017	9:26 AM	Cockburns Lane	16	1	50	Cut		65	47.1	60.8	41.4	48.8	46.2	44		N	NA	Construction not audible. Dominant noise sources: highway, birds
11/04/2017	12:07 PM	Bald Hill Rd	197	3	50	Cut		72	55	70.8	46.9	55.7	51.8	49.4	Trucks, excavator, LVs	N	NA	Dominant noise sources: local traffic, highway traffic
11/04/2017	2:50 PM	Letitia Rd	406	4	59	Cut		74	57.6	66.3	47.4	61	56.3	51.5	NFR earthworks	Y	NA	Within predicted levels
11/04/2017	3:15 PM	Mattick Rd	442	6	44	Cut		62	50.9	72.9	45.4	51	49	47.4	Truck, excavator, roller	Y	NA	Within predicted levels
11/04/2017	2:20 PM	Nursery Rd	415	4	59	Cut		53	55.3	79.9	40.4	51.2	46.6	43.3	Excavators removing rock	N	NA	Dominant noise sources: highway, birds
11/04/2017	12:32 PM	Wallace St	148	3	50	Cut		47	61.4	86.4	44.9	62.9	53.7	49.2	Excavators loading trucks	N	NA	Construction not audible. Dominant noise sources: local traffic
11/04/2017	11:20 AM	Gumma Rd	383	3	50	Hauling material		60	61.8	79.9	38.2	62.8	44.3	40.4	Truck	N	NA	Dominant noise sources: local traffic

Table 3 - Dust Monitoring Results March 2017 – April 2017

Analyte	Time Period	Unit	Levels of Concern		DDG ID	DDG1	DDG2	DDG3	DDG4	DDG5	DDG6	DDG6N	DDG7	DDG8	DDG9NE	DDG9E	DDG A1	DDG A2
			Start date of sampling	Finish date of sampling	LOR	6/03/2017	6/03/2017	6/03/2017	6/03/2017	6/03/2017	6/03/2017	6/03/2017	6/03/2017	6/03/2017	6/03/2017	6/03/2017	6/03/2017	6/03/2017
Ash Content	Current Month	g/m ² .month	4	0.1	0.1	0.3	0.7	0.4	0.3	1.1	6.4	2.9	0.2	0.2	0.3	----	----	
	Previous Month	mg	N/A	1	2	5	12	7	5	19	110	49	4	3	5	----	----	
	Change	g/m ² .month	Increase of 2		-0.1	-0.5	-0.1	-0.1	-22.4	-0.6	4.7	2.4	-0.8	0	0	----	----	
Combustible Matter	Current Month	g/m ² .month	N/A	0.1	0.7	0.2	0.4	0.3	0.3	0.4	1.3	0.8	0.2	<0.1	0.1	----	----	
	Change	mg	N/A	1	11	4	6	4	5	7	21	15	3	1	2	----	----	
Total Insoluble Matter (TIM)	Current Month	g/m ² .month	4	0.1	0.8	0.5	1.1	0.7	0.6	1.5	7.7	3.7	0.4	0.2	0.4	----	----	
	Previous Month	mg	N/A	1	13	9	18	11	10	26	131	64	7	4	7	----	----	
	Change	g/m ² .month	Increase of 2	0.1	0.6	1.3	1.9	0.9	25.1	2.3	2.1	0.7	1.6	0.4	0.5	----	----	
Arsenic	Current Month	mg/L	0.001	----	----	----	----	----	----	----	----	----	----	----	----	<0.001	<0.001	

Table 5 – Field Monitoring for Out of Hours Works April 2017

Description of Works	Date	Time	Location	NCA	NML (dBA)	Calculated Laeq (dBA)	Distance to receiver (m)	Compliant	Notes
Service Road A works - Drainage	6/4/2017	10:44am	Property Boundary	1	45dB	43.1dB	175m	Y	

Figure 1 – Acoustic Investigation (Modelling) Results April 2017

SoundAdvice

Noise Prediction and Management Tool

Noise Impact Assessment Report

Report Details

Report Date:	21/09/2016	Report Reference:	
Company:		Prepared by:	

Proposed Works

Date of Proposed Works:	Time of Proposed Works:	Work Duration:
Description of Works:		

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed	Strong (16 - 21)	Wind Direction	North East
Cloud Cover	Clear	Temperature (Degrees C)	10 - 20 ° C
Relative Humidity (%)	< 55%	Time of Day	Night (7pm-6am M-F, 4

Proposed Equipment

Location	Number of Plant	Equipment	Usage Factor	Total Sound Power
Location B	1	Concrete paver washout	0.5	101
Location B	2	Lite	<25%	75

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
403-247 OLD COAST ROAD, NSW	38.0	32.5	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW 2	38.0	6.6	No / Type 1	
411-309 OLD COAST ROAD, NORTH MACKSVILLE N:	38.0	38.3	No / Type 2	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	1.6	No / Type 1	
444-198 OLD COAST ROAD, NORTH MACKSVILLE N:	38.0	7.2	No / Type 1	
488-DP809906 MATTICK ROAD, NORTH MACKSVILLI	38.0	3.7	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	2.7	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW 2	38.0	8.1	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	4.0	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	2.4	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 24	38.0	1.1	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	1.7	No / Type 1	

Risk:
 Type 1 - Complies with assessment criteria
 Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
 Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
 Type 4 - High Risk - More than 5dB(A) above assessment criteria

Notes:

Name:	
Date:	
Signature:	
Position:	
Required Mitigation Measures:	

SoundAdvice

Noise Prediction and Management Tool

Pacific Highway Upgrade
Warrell Creek to Nambucca Heads
Chainage 56,400 - 58,400

Noise Impact Assessment Report

Report Details

Report Date: 21/09/2016
Company: AFIV
Report Reference: paver washout 56900
Prepared by: JH

Proposed Works

Date of Proposed Works: 17/10
Description of Works: Paver washout
Time of Proposed Works: 6-7pm
Work Duration: M-F

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Strong (16 - 21)
Wind Direction: North East
Cloud Cover: Clear
Temperature (Degrees C): 10 - 20 ° C
Relative Humidity (%): <55%
Time of Day: Extended Hours

Proposed Equipment

Location	Number of Plant	Equipment	Usage Factor	Total Sound Power
Location 6	1	Paver washout	0.5	101
Location 6	1	Ute	<25%	75

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
426-537 OLD COAST ROAD, NORTH MACKSVILLE N	37.0	4.6	No / Type 1	
490-459 OLD COAST ROAD, NORTH MACKSVILLE N	37.0	14.0	No / Type 1	
492-469 OLD COAST ROAD, NORTH MACKSVILLE N	37.0	9.6	No / Type 1	
493-37 SIDING ROAD, NEWEE CREEK NSW 2447	37.0	3.5	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW	37.0	22.4	No / Type 1	
496-539 OLD COAST ROAD, NORTH MACKSVILLE N	37.0	6.2	No / Type 1	
497-72 SIDING ROAD, NEWEE CREEK NSW 2447	37.0	2.8	No / Type 1	
501-525 OLD COAST ROAD, NORTH MACKSVILLE N	37.0	8.0	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA	37.0	6.1	No / Type 1	
505-1 SIDING ROAD, NORTH MACKSVILLE NSW 24-	37.0	4.5	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA	37.0	10.3	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 2-	37.0	3.9	No / Type 1	
518-18 SIDING ROAD, NORTH MACKSVILLE NSW 2-	37.0	3.1	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA	37.0	7.5	No / Type 1	
532-23 CHARLES PLACE, NAMBUCCA HEADS NSW	37.0	8.6	No / Type 1	
543-33 CHARLES PLACE, NAMBUCCA HEADS NSW	37.0	6.5	No / Type 1	

Risk:

- Type 1 - Complies with assessment criteria
- Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
- Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
- Type 4 - High Risk - More than 5dB(A) above assessment criteria

Notes:

Weather from AQMP

Name: _____
Date: _____
Signature: _____
Position: _____
Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

Pacific
Warre
Chain

Noise Impact Assessment Report

Report Details

Report Date: 20/04/2017 Report Reference: CH49000 SMZ and batt
Company: Pacific Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 22 April - 6 June Time of Proposed Works: 1pm-6pm Saturdays Work Duration:
Description of Works

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Strong (16 - 21) Wind Direction: South
Cloud Cover: Mostly Clear Temperature (Degrees C): 20 - 30 °C
Relative Humidity (%): 65 - 75% Time of Day: Extended Hours

Proposed Equipment

Location	Number of Plant	Equipment	Usage Factor	Total Sound Power
Location 9	1	Excavator 20T - 50T - loading	0.75	108
Location 9	1	Grader 16G-CAT 16G-Moving with alarm	0.75	115
Location 9	8	Truck and Dog - Moving	0.5	105
Location 9	2	16 foot roller Vibratory 10T - 25T - Moving with a/lar	0.75	110
Location 9	1	Trencher	0.75	101

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
112-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	7.5	No / Type 1	
117-15 REID STREET, MACKSVILLE NSW 2447	41.0	14.2	No / Type 1	
131-DP826440, HARRIMANS LANE, MACKSVILLE NSW	41.0	15.4	No / Type 1	
148-1 REID STREET, MACKSVILLE NSW 2447	41.0	14.8	No / Type 1	
151-72 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	12.6	No / Type 1	
155-26 HARRIMANS LANE, MACKSVILLE NSW 2447	41.0	18.8	No / Type 1	
163-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	9.9	No / Type 1	
175-34 HARRIMANS LANE, NSW	41.0	23.3	No / Type 1	
180-58 HARRIMANS LANE, MACKSVILLE NSW 2447	41.0	40.8	No / Type 1	
186-41 BALD HILL ROAD, MACKSVILLE NSW 2447	41.0	29.0	No / Type 1	
192-38 KERR DRIVE, MACKSVILLE NSW 2447	41.0	41.3	No / Type 2	
193-KERR DRIVE, MACKSVILLE NSW 2447	41.0	36.9	No / Type 1	
194-DP1014123, KERR DRIVE, MACKSVILLE NSW 24	41.0	30.2	No / Type 1	
197-54 BALD HILL ROAD, MACKSVILLE NSW 2447	41.0	30.8	No / Type 1	
261-13 CORNHORS CRESCENT, MACKSVILLE NSW 24	41.0	23.4	No / Type 1	
266-2 AINSWORTH CLOSE, MACKSVILLE NSW 2447	41.0	20.8	No / Type 1	
302-98 BALD HILL ROAD, MACKSVILLE NSW 2447	41.0	15.3	No / Type 1	
342-228 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	12.6	No / Type 1	

Risk:

- Type 1 - Complies with assessment criteria
- Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
- Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
- Type 4 - High Risk - More than 5dB(A) above assessment criteria

Notes:

Name: _____

Date: _____

Signature: _____

Position: _____

Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

Pacific
Warre
Chain:

Noise Impact Assessment Report

Report Details

Report Date: 20/04/2017 Report Reference: CH450000 SMZ and bat
Company: Pacifica Prepared by: H.Rutherford

Proposed Works

Date of Proposed Works: 22 April - 6 June Time of Proposed Works: 1pm-6pm Saturdays Work Duration:
Description of Works:

Noise Prediction Details

Expected Meteorological Conditions
Wind Speed: Strong (16 - 21) Wind Direction: South
Cloud Cover: Mostly Clear Temperature (Degrees C): 20 - 30 ° C
Relative Humidity (%): 65 - 75% Time of Day: Extended Hours

Proposed Equipment

Location	Number of Plant	Equipment	Usage Factor	Total Sound Power
Location 10	1	ad foot roller Vibratory 10T - 25T -Moving with alar	0.75	110
Location 10	4	Truck and Dog - Moving	0.5	105
Location 10	1	Excavator 20T - 50T - loading	0.5	106
Location 10	1	Grader 16G-CAT 16G-Moving with alarm	0.25	111

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
112-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	7.2	No / Type 1	
117-15 REID STREET, MACKSVILLE NSW 2447	41.0	13.2	No / Type 1	
131-DPB25440, HARRIMANS LANE, MACKSVILLE NSW	41.0	14.5	No / Type 1	
148-1 REID STREET, MACKSVILLE NSW 2447	41.0	13.4	No / Type 1	
151-72 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	12.1	No / Type 1	
155-26 HARRIMANS LANE, MACKSVILLE NSW 2447	41.0	18.2	No / Type 1	
163-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	10.9	No / Type 1	
175-34 HARRIMANS LANE, NSW	41.0	23.4	No / Type 1	
180-58 HARRIMANS LANE, MACKSVILLE NSW 2447	41.0	42.2	Yes / Type 2	1.2
186-41 BALD HILL ROAD, MACKSVILLE NSW 2447	41.0	32.7	No / Type 1	
192-38 KERR DRIVE, MACKSVILLE NSW 2447	41.0	22.0	No / Type 1	
193-KERR DRIVE, MACKSVILLE NSW 2447	41.0	35.5	No / Type 1	
194-DP1014123, KERR DRIVE, MACKSVILLE NSW 24	41.0	21.8	No / Type 1	
197-54 BALD HILL ROAD, MACKSVILLE NSW 2447	41.0	33.2	No / Type 1	
261-13 CONNORS CRESCENT, MACKSVILLE NSW 24	41.0	19.4	No / Type 1	
266-2 AINSWORTH CLOSE, MACKSVILLE NSW 2447	41.0	20.3	No / Type 1	
302-98 BALD HILL ROAD, MACKSVILLE NSW 2447	41.0	19.0	No / Type 1	
342-228 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	9.2	No / Type 1	

Risk:
Type 1 - Complies with assessment criteria
Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
Type 4 - High Risk - More than 5dB(A) above assessment criteria
Notes:

Name: _____
Date: _____
Signature: _____
Position: _____
Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

P:
W:
C:

Noise Impact Assessment Report

Report Details

Report Date: 19/04/2017
 Company: Pacifico
 Report Reference: SMZ trimming and batt
 Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 22 April - 6th June
 Description of Works:
 Time of Proposed Works: Saturdays
 Work Duration:

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Medium (10 - 16)
 Wind Direction: South West
 Cloud Cover: Mostly Clear
 Temperature (Degrees C): 10 - 20 °C
 Relative Humidity (%): 75 - 85%
 Time of Day: Extended Hours

Proposed Equipment

Location	Number of Plant	Equipment	Usage Factor	Total Sound Power
Location 12	1	Excavator 20T - 50T - loading	0.75	108
Location 12	1	Grader 16G-CAT 16G-Moving with alarm	0.75	115
Location 12	10	Truck and Dog - Moving	0.75	107
Location 12	2	ad foot roller Vibratory 10T - 25T -Moving with alar	0.75	110
Location 12	1	Subsoil trencher	0.75	101

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
-273 UPPER WARRELL CREEK ROAD, CONGARINNI	45.0	21.1	No / Type 1	
74-79 ALBERT DRIVE, WARRELL CREEK NSW 2447	45.0	28.8	No / Type 1	
81-40 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	32.1	No / Type 1	
89-33 O'DELLS ROAD, DONNELLYVILLE NSW 2447	45.0	11.6	No / Type 1	
93-8 MAIN STREET, DONNELLYVILLE NSW 2447	45.0	17.4	No / Type 1	
97-4723 PACIFIC HIGHWAY, DONNELLYVILLE NSW ;	45.0	35.6	No / Type 1	
100-17 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	20.4	No / Type 1	
101-DP1072289, HENRYS LANE, WARRELL CREEK NSW	40.0	8.3	No / Type 1	
109-11 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	23.1	No / Type 1	
163-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	36.6	No / Type 1	
115-35 MAIN STREET, DONNELLYVILLE NSW 2447	45.0	21.1	No / Type 1	
151-72 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	35.6	No / Type 1	
112-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	40.7	No / Type 1	

Risk:

- Type 1 - Complies with assessment criteria
- Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
- Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
- Type 4 - High Risk - More than 5dB(A) above assessment criteria

Notes:

Name:

Date:

Signature:

Position:

Required Mitigation Measures:

SoundAdvice

Noise Prediction and Management Tool

P:
W:
C:

Noise Impact Assessment Report

Report Details

Report Date: 20/04/2017
 Company: Pacifico
 Report Reference: Kerb paver pack down
 Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 21/04/17
 Description of Works: Time of Proposed Works: 1-6pm
 Work Duration:

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Strong (16 - 21)
 Cloud Cover: Mostly Clear
 Relative Humidity (%): 65 - 75%
 Wind Direction: South
 Temperature (Degrees C): 20 - 30 °C
 Time of Day: Extended Hours

Proposed Equipment

Location	Number of Plant	Equipment	Usage Factor	Total Sound Power
Location 2	3	LV's	<25%	75
Location 2	1	Water Cart	0.75	106
Location 2	1	Concrete Agitator	0.75	95
Location 2	1	Concrete Vibrator	0.5	97

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
--273 UPPER WARRELL CREEK ROAD, CONGARINNI	45.0	15.0	No / Type 1	
74-73 ALBERT DRIVE, WARRELL CREEK NSW 2447	45.0	15.9	No / Type 1	
81-40 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	30.0	No / Type 1	
89-33 O'DELLS ROAD, DONNELLYVILLE NSW 2447	45.0	7.3	No / Type 1	
93-8 MAIN STREET, DONNELLYVILLE NSW 2447	45.0	17.9	No / Type 1	
97-4723 PACIFIC HIGHWAY, DONNELLYVILLE NSW :	45.0	23.3	No / Type 1	
100-17 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	15.1	No / Type 1	
101-OP1072289, HENRYS LANE, WARRELL CREEK N:	40.0	5.1	No / Type 1	
103-11 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	11.5	No / Type 1	
163-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	13.1	No / Type 1	
115-35 MAIN STREET, DONNELLYVILLE NSW 2447	45.0	7.0	No / Type 1	
151-72 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	9.6	No / Type 1	
112-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	45.0	11.7	No / Type 1	

Risk:

- Type 1 - Complies with assessment criteria
 - Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria
 - Type 3 - Moderate Risk - 2dB(A) to 5dB(A) above assessment criteria
 - Type 4 - High Risk - More than 5dB(A) above assessment criteria
- Notes:

Name: _____
 Date: _____
 Signature: _____
 Position: _____

Required Mitigation Measures: