



Warrell Creek to Nambucca Heads – Pacific Highway Upgrade Project

ENVIRONMENT PROTECTION AUTHORITY MONTHLY REPORT

■ October 2016

Pacifico Project Number: WC2NH



A team consisting of RMS and Pacifico (ACCIONA Ferrovial 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
- d) 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 October 2016 were limited to the following:

- Paving Works
- Clearing and Grubbing (North Facing Ramps)
- Topsoil stripping and clearing (North Facing Ramps)
- Earthworks including crushing
- Continuing bridge works including piling, headstock construction, pile caps, girder placement, deck unit installation and temporary work platforms
- Continuing culvert works
- Scour rock installation
- Continuing utility works
- Topsoil amelioration and blending
- Batter stabilisation using hydromulch (permanent design seed mix)
- Soft landscaping preparation works
- Longitudinal drainage installation
- Basin maintenance including dewatering and desilting
- Basin Decommissioning
- Installation and maintenance of Erosion and Sediment Controls

Works scheduled for next month include

- Paving works
- Earthworks including crushing
- Topsoil Strip (North Facing Ramps)
- Installation of second concrete batch plant in the southern portion of the Project
- Preparation works for installation of Asphalt Plant
- Continuing bridge works including piling, headstock construction, pile caps, girder placement, deck unit installation and temporary work platforms
- Landscaping works including early works planting
- Continuing culvert works

- Scour rock installation
- Continuing utility works
- Batter stabilisation using hydromulch (permanent design seed mix)
- Topsoil Amelioration and blending
- Longitudinal drainage installation
- Basin decommissioning
- Basin Maintenance including dewatering and desilting
- Installation and maintenance of Erosion and Sediment Controls

1.1 Consultation Activities

The project's consultation activities during October 2016 included the following:

Groups	Date	Key Topics
Environmental Review Group	18/10/2016	Construction Progress, Design Update, Upcoming works, Environmental Update, Monitoring update, Out of Hours Works, Incidents and Community Complaints
Drop-In Sessions	12/10/16 and 13/10/16	Proposed temporary Asphalt Batching Plant – as part of the community consultation process
Toolboxes	Wednesdays each week	Key Safety, Environment, Traffic and Community messages for the entire workforce. Also, advising workforce of visitors to site.
North Facing Ramps group	10am every second Monday: 10/10/16 and 24/10/16	Two week look-ahead for construction activities, responses to other project related queries.

Other Consultation Activities:

- Issue notification/invitation to 440 database stakeholders and letterbox drop 64 neighbouring stakeholders to attend two drop-in sessions for the proposed temporary asphalt plant
- Notification of temporary bus service for school children near Bald Hill Road
- Notification of, and sought feedback about, second concrete batch plant opposite Scotts Head Road, South Macksville.

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:

- Finalise engagement with local community regarding construction of asphalt plant
- Conduct tour of alignment for 43 St Patricks Primary School (Macksville) 11-yr-old students on the 10 November
- Seek further agreement for OOHW for concreting and earthworks at Bald Hill Road
- Notify various traffic changes for Bald Hill Road
- Notify traffic staging for southern Old Coast Rd
- Notify permanent closure of Albert Drive north and new bridge opening
- Notify 90-day look-ahead for North Facing Ramps
- Notify Bridge openings for Mattick Road
- Seek agreement from one property owner for OOHW at Lower Warrell Creek
- Notify for girder lift over highway for quarry entrance
- Notify for Scotts Head Road girder lifts for Lower Warrell creek bridge
- School visits including construction personnel and RMS representatives likely first quarter 2017

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 - Precipitation

Month	Total monthly rainfall	Location
01/10/16 – 31/10/16	48	Northern Compound
01/10/16 – 31/10/16	38.2	Albert Drive Compound

The site experienced a total of 9 rain days throughout the month of October 2016.

During October, rainfall received on site was lower than the October monthly average of 92.6mm. 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 October 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

Date	Time	TOTAL Rain Gauge (mm)
1/10/2016	9:00:00	0
2/10/2016	9:00:00	0
3/10/2016	9:00:00	0
4/10/2016	9:00:00	0
5/10/2016	9:00:00	0
6/10/2016	9:00:00	0
7/10/2016	9:00:00	0
8/10/2016	9:00:00	0
9/10/2016	9:00:00	0
10/10/2016	9:00:00	0
11/10/2016	9:00:00	4.4
12/10/2016	9:00:00	0
13/10/2016	9:00:00	0
14/10/2016	9:00:00	8.8
15/10/2016	9:00:00	0.4
16/10/2016	9:00:00	0
17/10/2016	9:00:00	0
18/10/2016	9:00:00	3.8
19/10/2016	9:00:00	0
20/10/2016	9:00:00	0
21/10/2016	9:00:00	5.2
22/10/2016	9:00:00	1.8
23/10/2016	9:00:00	3.8
24/10/2016	9:00:00	0
25/10/2016	9:00:00	0
26/10/2016	9:00:00	0
27/10/2016	9:00:00	0
28/10/2016	9:00:00	0
29/10/2016	9:00:00	9.6
30/10/2016	9:00:00	0
31/10/2016	9:00:00	0.4

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

Date	Time	TOTAL Rain Gauge (mm)
1/10/2016	9:00:00	0
2/10/2016	9:00:00	0
3/10/2016	9:00:00	0
4/10/2016	9:00:00	0
5/10/2016	9:00:00	0
6/10/2016	9:00:00	0
7/10/2016	9:00:00	0
8/10/2016	9:00:00	0
9/10/2016	9:00:00	0
10/10/2016	9:00:00	0
11/10/2016	9:00:00	2
12/10/2016	9:00:00	0
13/10/2016	9:00:00	0
14/10/2016	9:00:00	5.6
15/10/2016	9:00:00	0.2
16/10/2016	9:00:00	0
17/10/2016	9:00:00	0
18/10/2016	9:00:00	5
19/10/2016	9:00:00	0
20/10/2016	9:00:00	0
21/10/2016	9:00:00	1.8
22/10/2016	9:00:00	2.6
23/10/2016	9:00:00	6.4
24/10/2016	9:00:00	0
25/10/2016	9:00:00	0
26/10/2016	9:00:00	0
27/10/2016	9:00:00	0
28/10/2016	9:00:00	0
29/10/2016	9:00:00	23.4
30/10/2016	9:00:00	0
31/10/2016	9:00:00	1

Table 2.3: Weather conditions recorded in October 2016 at Smoky Cape by the Bureau of Meteorology.

October 2016			
Date	Minimum temperature (°C)	Maximum temperature (°C)	Rainfall (mm)
1/10/2016		23.9	0
2/10/2016	14.6	25.5	0
3/10/2016	18.1	23.5	0
4/10/2016	14.5	24.6	0
5/10/2016	14.8	25.1	0
6/10/2016	16.8	26.5	0
7/10/2016	16	26	0
8/10/2016	19	28.8	0
9/10/2016	14.5	24.4	3.2
10/10/2016	16.1	24.2	0.4
11/10/2016	14.2	23.1	4.2
12/10/2016	12.9	24.3	0.4
13/10/2016	12.2	19.5	2.4
14/10/2016	11	21.8	28
15/10/2016	13	22.9	0.4
16/10/2016	15.6	22.9	0
17/10/2016	17.8	21.8	0
18/10/2016	14	24.1	5.2
19/10/2016	15	27	0
20/10/2016	16	21	3.4
21/10/2016	16	23.4	12.2
22/10/2016	17.2		1.4
23/10/2016		21.5	
24/10/2016	10.5	22.5	10.4
25/10/2016	12.5	25.1	0
26/10/2016	15.5	27	0
27/10/2016	18	27	0
28/10/2016	17.1	27.2	0
29/10/2016	15.5	26.4	9.2
30/10/2016	19	23.8	0
31/10/2016	18.6		3

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 17th October 2016, field testing was undertaken. Results are attached in Appendix A.

pH levels noted to be outside of trigger levels at:

Nambucca river recorded elevated levels upstream (7.46) and downstream (7.64). All controls were in place, with no works being undertaken within the waterway. The elevated levels are thus unlikely to be attributable to construction activities. It is noted that these results are within ANZECC criteria (6.5-8.0) and that the trigger levels for Nambucca River are pH 7, with anything outside of this result being outside of trigger levels.

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

Lower Warrell Creek upstream (4.84) and downstream (4.43mg/L). All controls were verified to be in place for the site, with no construction activities undertaken within the waterway. The reduced levels are attributed to decaying vegetative matter within the waterway.

Nambucca River upstream (5.6mg/L) and downstream (5.29mg/L). All controls were verified to be in place for the site, with no activities being undertaken in the waterway. It is noted that these levels are above ANZECC criteria (5mg/L).

4. Sediment Basin Water Monitoring

Water was released from commissioned sediment basins after rainfall events on the 23rd and 29th October 2016. A release was also undertaken on the 18th October to allow for desilting of the basin. 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) ($R^2 = 0.6095$, $p < 0.00001$, $n=90$). 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

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
18/10/2016	B59.00	N	7.26	11.3		200	Release for decommissioning
24/10/2016	B49.67	N	7.82	14.5		50	
24/10/2016	B54.24	N	7.14	61.7		5	
25/10/2016	B45.00	N	7.42	31.2		100	
25/10/2016	B43.37	N	7.57	52.5		50	
28/10/2016	B49.67	N	7.91	58.9		50	
31/10/2016	B53.03	N	7.77	5.6		50	

5. Noise Monitoring

Monthly routine construction noise monitoring was undertaken on the 5th and the 6th of October 2016 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 audible from the nearest residence.

6. Vibration Monitoring

No vibration monitoring was undertaken during October 2016. Planned blast works have been completed as of August 2016.

7. Dust Monitoring

Dust deposition gauges (DDG) were placed at nearby sensitive receivers from 31st August to 29th September 2016. 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, except for DDG 6, which recorded 11.7g/m²/month TIM and 9.7g/m²/month AC.

It is noted that the monitoring period for this gauge commenced before several additional mitigation measures were put into place for the site. The results for the month are reduced greatly from the previous month. Several additional measures have been implemented to further mitigate any potential dust generation in the area. The watercart stand pipe has been relocated closer to the

area to shorten the distance for watercarts to travel. This also allows watercart operators to visually confirm that the area is sufficiently wet down while filling their tanks from this location. This new location for the standpipe removes the need for watercarts to cross the compound entry road, allowing for easier access. Additionally, field staff and onsite management from Pacifico and subcontractors have been tool boxed regarding the requirements for dust mitigation, with emphasis on prevention of dust generation and that works are to cease if mitigation measures are not effective for the area. The area superintendent has also organised for future rock deliveries from site stockpiles or Valla Quarry to be wet down before arrival to the area to further prevent emissions. Regular inspections are also being undertaken by environmental staff to ensure that dust mitigation measures for the area are effective.

Existing mitigation measures for the area include stabilisation of the nearby batters with hydromulch and polyacrylamide soil binders as well as using surfactant additives in water carts to assist with dust mitigation. It is noted that the material present in the funnel for this gauge appeared to be "clumpy", with relatively large particle size for the material to have been deposited by wind alone. Additionally, the colour of the material within the gauge appeared to be darker than the current subsoils being placed or excavated within the area, possibly suggesting a different source for the dust than from construction activities. An additional gauge has been setup in this dust catchment area to assist in interpreting results for the area.

DDG7 also recorded an increase in TIM of 2.5g/m²/month compared to previous months (total TIM <4g/m²/month). The superintendent for the area is focusing dust suppression efforts on this area to mitigate dust emissions in the area to prevent further increases.

Water cart usage outside of standard construction hours has been utilised to assist with reducing dust emissions from the project, during public holidays on Sundays throughout the Project. Pacifico is progressively stabilising cuts and fills that have reached their final profile. Pacifico is monitoring this area closely for dust, with residents located very close to the earthworks currently being undertaken in this area.

No complaints were received in this monitoring period regarding air quality.

8. Groundwater Monitoring

ACCIONA (Pacifico) have undertaken groundwater monitoring, field testing and lab sampling was undertaken on the 29th and 30th of October 2016. Lab results are yet to be received, field 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 (7.35). It is noted that these levels are within ANZECC criteria (6.5-8.5).

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 October 2016. A summary of these approvals is below in Table 4.

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

OOH Request Title	>5dB(A) above background	Approval Date
Washing tipper bins	N	4/10/2016
Refuelling	N	7/10/2016

Field verification monitoring was undertaken for works at the rail pergola near Cockburn Lane (field sheet attached in Appendix A). The monitoring was undertaken in between the works and the closest receiver. Traffic was the dominant noise source during monitoring (reflected in the LAeq recorded on the field sheet), with the activity not being audible from the receiver's property boundary.

Field verification monitoring was also undertaken for saw cutting at Bald Hill Road. Results were >5dB(A) above background levels and within modelled levels of 69.3dB(A), with the receivers having written agreements and notified before the activity was undertaken. Acoustic screening was also trialled at the location to test the screen's efficacy at reducing noise levels. Results show that use of the screening resulted in an approximately 5dB(A) reduction in noise levels at the monitoring location.

Other works outside of standard construction hours already approved under section L4.2 (d) of the EPL that took place during October 2016 were:

- Pump diversion at Williamsons + Rosewood Creek
- Watercart operations
- Steel fixing precast yard
- Dewatering Lower Warrell Creek
- Wet curing bridge decks
- Northern earthworks, drainage in sparsely populated area
- Girder deliveries
- Subsoil installation (south)
- Paver set out and maintenance
- Paver washout
- Rail pergola drainage works
- Nambucca Bridge works

- Bridgeworks Lower Warrell Creek

10. Complaints

10.1 Summary of Complaints for the month

No complaints against ACCIONA in October 2016.

11. Non-Compliance

11.1 Summary of Non-compliances

No Non-Compliances against the ACCIONA Environmental Protection Licence (EPL) 20533 occurred in October 2016.

Appendix A – Monitoring Results

Table 1a - Surface Water Sampling Results October 2016 –Dry Event

Location	Units	Levels of Concern	Upper Warrell Creek			Upper Warrell Creek			Stony Creek			Stony Creek			Low er Warrell Creek			Low er Warrell Creek			Unnamed Creek Gumma West			Unnamed Creek Gumma East			Unnamed Creek Gumma North			Nambucca River South			Nambucca River South			
			Upstream	Downstream	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	
Freshwater / Estuarine		ANZECC 2000 95% species protected	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater	Freshwater		
Date of Sampling			17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16	17-Oct-16		
Time of Sampling		Freshwater Marine	10:55 AM	10:45 AM	9:45 AM	8:45 AM	12:55 PM	1:10 PM	12:10 PM	11:40 AM	12:05 AM	1:23 PM	1:35 PM																							
Comments																																				
Type																																				
Field Physical data																																				
Temperature	C	-	24.86	14.99	18.35	25.1	16.3	19.02	24.4	16	17.93	26.46	15.94	17.84	27.9	18.4	21.65	27.9	18.4	21.64	26.5	16.3	19.36	26.5	16.3	17.51	26.5	16.3	20.14	27.9	18.1	21.43	27.9	18.1	21.49	
pH	pH	-	7.25	6.48	6.43	7.3	6.4	6.41	7.5	6.6	6.54	7.33	6.26	6.52	7.02	6.57	6.58	7.02	6.57	6.71	7	6.1	6.43	7	6.1	5.96	7	6.1	6.42	7	7	7.46	7	7	7.64	
Conductivity	mS/cm	0.125-2.2	0.316	0.232	0.275	0.348	0.227	0.277	0.348	0.227	0.246	0.3338	0.2168	0.241	20.946	0.679	5.29	20.946	0.679	5.18	0.808	0.4234	0.56	0.808	0.4234	0.364	0.808	0.4234	0.858	47.32	29.44	44.6	47.32	29.44	44	
Turbidity	NTU	50	10	10.96	4	4.7	9.9	3.5	9.1	9.9	3.5	5.7	5.97	3.74	0.3	6.82	1.83	4.4	6.82	1.83	3.2	52.78	11.3	10.1	52.78	11.3	42.8	52.78	11.3	4.1	19.3	6.7	1.4	19.3	6.7	2.5
Dissolved Oxygen	mg/L	5	4.98	1.91	4.52	4.8	2.6	4.22	4.8	2.6	5.9	6.34	3.52	7.22	7.98	5.07	4.84	7.98	5.07	4.43	6.4	1.75	2.23	6.4	1.75	0.4	6.4	1.75	4.71	9.1	7.4	5.6	9.1	7.4	5.29	
Dissolved Oxygen	%	-	-	-	-	-	-	46.8	-	-	64.2	-	-	78.4	-	-	57.3	-	-	52.4	-	-	24.9	-	-	4.3	-	-	53.5	-	-	76.9	-	-	72.5	
TDS	g/L	-	-	-	0.179	-	-	0.18	-	-	0.16	-	-	0.157	-	-	3.330	-	-	3.26	-	-	0.359	-	-	0.237	-	-	0.549	-	-	27.2	-	-	26.9	
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 October 2016

Date	Time	Location	Rec ID	NCA	NML	Activity	Predicted levels for activity	Laeq	LAFMAX	LAFMIN	LAF10	LAF50	LAF90	Principal sources/ operations	Measurements exceeding criteria, plant/ operations causing	Corrective actions	Notes
6/10/2016	1:55 PM	Cockburns Lane	16	1	50	Cut	65	45.1	63.5	39.4	47.1	44.5	42.1	Excavators	NA	NA	Construction not audible
6/10/2016	12:21 PM	Bald Hill Rd	197	3	50	Cut	72	61.7	77.6	41.8	52.6	47.9	44.9	Hand tools, grader, roller, water cart	NA	NA	Within predicted levels
5/10/2016	4:53 PM	Letitia Rd	406	4	59	Cut	74	59.5	73.5	44	63.5	55.7	47.9	Grader, water cart, scrapers, dozer	NA	NA	Within predicted levels
5/10/2016	4:27 PM	Mattick Rd	442	6	44	Cut	62	48.6	68.8	41.7	50.6	46.9	44.5	FEL loading SMZ, excavator	NA	NA	Within predicted levels
6/10/2016	11:12 AM	Nursery Rd	415	4	59	Cut	53	52.5	74.1	39.9	53.6	47.7	43.4	Dozer	NA	NA	Construction not dominant source. Within predicted levels - other noise sources highway, local traffic, birds
6/10/2016	2:17 PM	Wallace St	148	3	50	Cut	47	56	67.1	49.4	58.4	54.3	51.9	Excavators, moxy	NA	NA	Construction not audible
6/10/2016	11:50 AM	Gumma Rd	383	3	50	Bridgeworks	67	50.6	66.4	40.9	52.9	49	45.4	Crane, hand tools	NA	NA	Within predicted levels


Table 3 - Dust Monitoring Results September 2016

Analyte	Time Period	Unit	DDG ID		DDG1	DDG2	DDG3	DDG4	DDG5	DDG5E	DDG5W	DDG6	DDG7	DDG8	DDG9NE	DDG9E	DDG A1	DDG A2	
			Start date of sampling	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016	31/08/2016
			Finish date of sampling	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016	29/09/2016
			Levels of Concern	LOR															
Ash Content	Current Month	g/m ² .month	4	0.1	0.3	0.5	1.2	0.8	0.5	0.8	0.4	9.7	1.8	0.7	0.3	2.9	----	----	
		mg	N/A	1	5	9	21	14	8	14	6	166	31	12	5	50	----	----	
	Previous Month	g/m ² .month			0.2	0.7	0.9	1.1	0.5	0.3	1.1	29	0.3	0.5	1.8	2.2	----	----	
	Change	g/m ² .month	Increase of 2		0.1	-0.2	0.3	-0.3	0	0.5	-0.7	-19.3	1.5	0.2	-1.5	0.7	----	----	
Combustible Matter	Current Month	g/m ² .month	N/A	0.1	0.9	0.6	0.7	0.4	<0.1	0.4	0.2	1.9	1.2	0.4	0.2	0.9	----	----	
		mg	N/A	1	16	10	11	7	<1	6	4	33	21	6	4	15	----	----	
Total Insoluble Matter (TIM)	Current Month	g/m ² .month	4	0.1	1.2	1.1	1.9	1.2	0.5	1.2	0.6	11.6	3	1.1	0.5	3.8	----	----	
		mg	N/A	1	21	19	32	21	8	20	10	199	52	18	9	65	----	----	
	Previous Month	g/m ² .month		0.1	0.4	1.2	1.6	1.4	0.9	0.7	1.5	37.2	0.5	0.8	2.4	4.1	----	----	
	Change	g/m ² .month	Increase of 2	0.1	0.8	-0.1	0.3	-0.2	-0.4	0.5	-0.9	-25.6	2.5	0.3	-1.9	-0.3	----	----	
Arsenic	Current Month	mg/L		0.001	----	----	----	----	----	----	----	----	----	----	----	----	----	<0.001	
Comments											Grass in gauge	Grass in gauge		Insects in gauge	Gauge broken				

Table 4 – Groundwater Monitoring Results October 2016

Location	Units	Groundwater Investigation Levels (GILs)	4BH007		4BH008		4BH010		4BH011		4BH021		4BH022c		4BH025		4BH026		4BH037a		4BH038		1BH49		4BH058c		4BH061		4BH062							
			Cut 4	Cut 4	Cut 6	Cut 6	Cut 11	Cut 11	Cut 11	Cut 11	Cut 12	Cut 12	Fill 15	Fill 15	Cut 17	Cut 17	Cut 17	Cut 17	Cut 23	Cut 23																
Date of Sampling			25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016	25/10/2016							
			Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results	Trigger levels 80 / 20%ile	Results								
Comments				DRY		DRY			Unable to sample						Unable to sample			DRY			Unable to sample			Unable to sample				DRY		DRY						
Laboratory data - awaiting results																																				
Field Physical data																																				
Depth to standing water level from TOC	m	-	-	-	-	-	16.802	16.53	-	-	8.7420	7.56	16.0140	2.87	8.4500	-	14.4820	-	1.2000	0.72	1.3520	-	17.4120	-	13.8440	15.38	-	-	-							
pH	pH	-	-	-	-	6.264	4.736	7.35	-	-	6.7800	5.8100	6.61	7.0900	6.43	6.7780	6.2080	-	7.34	6.2600	-	6.5080	5.9220	6.38	7.3040	6.7680	-	6.9800	5.2400	-	6.3960	5.5620	8.01	-	-	-
Conductivity	mS/cm	-	-	-	-	3630.000	-	-	-	-	111.300	-	231.000	-	0.342	-	322.000	-	5.550	-	8366.000	-	121.100	-	132.660	0.115	-	-	-	-	-					
Temperature	C	-	-	-	-	22.4420	-	25.34	-	-	22.3600	-	23.50	21.1500	22.99	22.6040	-	21.3000	-	25.9820	24.90	22.5600	-	22.8200	-	23.1940	25.69	-	-	-	-					
Exceedance of trigger level																																				

Figure 1: Noise Monitoring Field Sheet: Out of Hours – Rail Pergola Works



Noise Monitoring Field Record Sheet

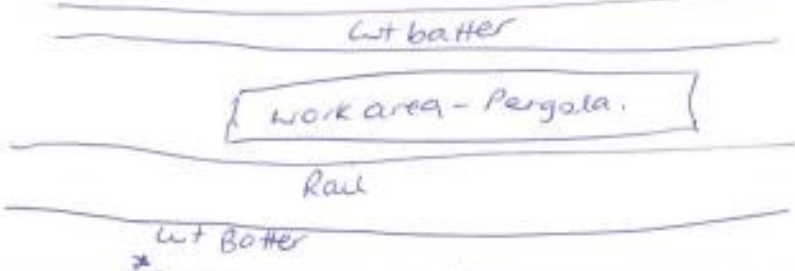

Monitoring Location <i>Cockburns Lane - Townend.</i>	Recvr ID: <i>19</i>		
Description of Location <i>Adjacent to Pergola</i>	Recording # <i>325</i>		
Date of Monitoring <i>2/18/16</i>	NCA: <i>1</i>		
Weather + Wind speed/ direction <i>Med-high. NW.</i>			
Measurement Start Time (hh:mm) <i>5:15pm</i>	Measurement Length (min.): <i>15min</i>		
Noise Meter Model + ID			
Measurement Results (dB(A))	Laeq <i>55.2</i>	Lceq	LAF50 <i>53.8</i>
	LAFmax <i>73.2</i>	LAF05 <i>57.1</i>	LAF90 <i>51.2</i>
	LAFmin <i>47.7</i>	LAF10 <i>57.6</i>	
Major Construction Noise(s) During Monitoring	<i>NIL.</i>		
Other Noise Source(s) During Monitoring	<i>Traffic</i>		
Remarks	<i>Steel fixing + formwork - no lights or machines - inaudible.</i>		
Site Diagram (monitoring location, buildings, construction activity or other noise sources, distances, north:			
			
Noises with peaks	<i>Peaks = traffic + wind.</i>		
Dominant noises + tally of dominant noises/ 15 secs			
<i>wind + traffic 53 - Dominant.</i>			
<i>Construction work barely audible, only occasional sound of timber falling/banging.</i>			
<i>Inaudible for the most part of 15min.</i>			

Figure 2 : Noise Monitoring Field Sheet: Out of Hours – Sawcutting without acoustic screen



Noise Monitoring Field Record Sheet



Monitoring Location	BHE	Recvr ID:	MT
Description of Location	Roadside	Recording #	320
Date of Monitoring	17/10/2016	NCA:	5
Weather + Wind speed/ direction	still		
Measurement Start Time (hh:mm)	9:15pm	Measurement Length (min.):	
Noise Meter Model + ID	NL-02		
Measurement Results (dB(A))	Laeq	Lceq	LAF50
	LAFmax	LAF05	LAF90
	LAFmin	LAF10	
	57.6	64.2	56.2
	69.1	62.1	51.7
	42.3	60.5	
Major Construction Noise(s) During Monitoring	Saw-cutting		
Other Noise Source(s) During Monitoring	Traffic		
Remarks			
Site Diagram (monitoring location, buildings, construction activity or other noise sources, distances, north):			
<p>big saw * without screen</p> 			
Noises with peaks			
Pac Hwy traffic each 2 mins.			
Pac Hwy traffic walking			
Dominant noises + tally of dominant noises/ 15 secs			
saw cutting 62.1, 66 w traffic → 53 to 54 +++ 3.5 mins			
with screen 5 61 53 to 58			

Figure 3 – Noise Monitoring Field Sheet – Out of Hours – Sawcutting with acoustic screen



Noise Monitoring Field Record Sheet

Monitoring Location	BHA		Recvr ID:	197		
Description of Location	Roadside		Recording #	321		
Date of Monitoring	17/10/2016		NCA:	3		
Weather + Wind speed/ direction	54.1					
Measurement Start Time (hh:mm)	4:24		Measurement Length (min.):			
Noise Meter Model + ID	NL-06					
Measurement Results (dB(A))	Laeq	52.5	Lceq	64.4	LAF50	51.9
	LAFmax	61.6	LAF05	55.6	LAF90	48.7
	LAFmin	45.3	LAF10	55.1		
	Saw-cutting w/screen					
Major Construction Noise(s) During Monitoring	Traffic, bird					
Other Noise Source(s) During Monitoring						
Remarks	Site Diagram (monitoring location, buildings, construction activity or other noise sources, distances, north: 321 - with screen. big saw - longji with screen					
Noises with peaks	+ traffic 55.3, 56.1 compressor 11 continual lapwing - 54dB - 1 saw cutting 53 - 54.7 51.2, 50.3, 48.4. 1.16					
Dominant noises + tally of dominant noises/ 15 secs						

Noise Impact Assessment Report

Report Details

Report Date: 6/10/2016 Report Reference: Refuelling
Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 08/10/16 - Ongoing Time of Proposed Works: 5:30-7am Work Duration:
Description of Works: Refuelling

Noise Prediction Details

Expected Meteorological Conditions

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

Proposed Equipment

Location: Location 10 Number of Plant: 1 Equipment: Truck and Dog - Moving Usage Factor: 1 Total Sound Power: 108

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
204-46 WALL STREET, MACKSVILLE NSW 2447	39.0	2.5	No / Type 1	
233-95 EAST STREET, MACKSVILLE NSW 2447	39.0	2.9	No / Type 1	
246-57 EAST STREET, MACKSVILLE NSW 2447	39.0	3.5	No / Type 1	
--73 EAST STREET, MACKSVILLE NSW 2447	39.0	3.5	No / Type 1	
394-60 GUMMA ROAD, GUMMA NSW 2447	39.0	17.9	No / Type 1	
386-32 GUMMA ROAD, MACKSVILLE NSW 2447	39.0	25.5	No / Type 1	
383-75 RIVER STREET, MACKSVILLE NSW 2447	39.0	25.7	No / Type 1	
366-65 RIVER STREET, MACKSVILLE NSW 2447	39.0	13.1	No / Type 1	
339-55 RIVER STREET, MACKSVILLE NSW 2447	39.0	7.2	No / Type 1	
355-15 BELLEVUE DRIVE, NORTH MACKSVILLE NSW	46.0	5.2	No / Type 1	
384-DP205344 BELLEVUE DRIVE, NORTH MACKSVI	46.0	13.4	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	22.2	No / Type 1	
388-DP654625 NURSERY ROAD, NORTH MACKSVII	46.0	19.9	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE N:	46.0	4.9	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:

Noise Impact Assessment Report

Report Details

Report Date: 4/10/2016 Report Reference: Refuelling
 Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 29/09/16 - Ongoing Time of Proposed Works: 5:30-7am Work Duration:
 Description of Works: Refuelling - CH53300

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Strong (16 - 21) Wind Direction: West
 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 6	1	Fuel Cart	1	107

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
398-2 MATTICK ROAD, NORTH MACKSVILLE NSW ;	38.0	11.0	No / Type 1	
402-83 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	32.9	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW ;	38.0	24.5	No / Type 1	
409-122 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	31.7	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	27.3	No / Type 1	
429-124 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	30.8	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	28.5	No / Type 1	
499-73 CHAMPIONS LANE, NORTH MACKSVILLE N	38.0	26.2	No / Type 1	
384-DP205344 BELLEVUE DRIVE, NORTH MACKSVI	46.0	20.1	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	22.8	No / Type 1	
388-DP654625 NURSERY ROAD, NORTH MACKSVII	46.0	25.9	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE N!	46.0	16.2	No / Type 1	
397-36 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	40.6	No / Type 1	
400-51 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	39.8	No / Type 1	
412-24 LETITIA CLOSE, NORTH MACKSVILLE NSW ;	46.0	26.9	No / Type 1	
406-20 LETITIA CLOSE, NORTH MACKSVILLE NSW ;	46.0	42.9	No / Type 1	
410-19 LETITIA CLOSE, NSW	46.0	45.2	No / Type 1	
486-41 LETITIA CLOSE, NORTH MACKSVILLE NSW ;	46.0	34.4	No / Type 1	
415-143 NURSERY ROAD, NORTH MACKSVILLE NS!	46.0	17.1	No / Type 1	
482-169 NURSERY ROAD, NORTH MACKSVILLE NS!	46.0	27.9	No / Type 1	
31153-LOT 1 PACIFIC HWY, NORTH MACKSVILLE	46.0	34.7	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:

Noise Impact Assessment Report

Report Details

Report Date: 4/10/2016 Report Reference: Refuelling
 Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 29/09/16 - Ongoing Time of Proposed Works: 5:30-7am Work Duration:
 Description of Works: Refuelling

Noise Prediction Details

Expected Meteorological Conditions

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

Proposed Equipment

Location: Location 9 Number of Plant: 1 Equipment: Fuel Cart Usage Factor: 1 Total Sound Power: 107

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
398-2 MATTICK ROAD, NORTH MACKSVILLE NSW ;	38.0	15.3	No / Type 1	
402-83 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	39.8	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW ;	38.0	24.6	No / Type 1	
409-122 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	32.8	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	23.9	No / Type 1	
429-124 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	27.4	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	19.9	No / Type 1	
499-73 CHAMPIONS LANE, NORTH MACKSVILLE N	38.0	17.6	No / Type 1	
384-DP205344 BELLEVUE DRIVE, NORTH MACKSVI	46.0	7.4	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	8.2	No / Type 1	
388-DP654625 NURSERY ROAD, NORTH MACKSVII	46.0	11.4	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE N!	46.0	2.4	No / Type 1	
397-36 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	13.5	No / Type 1	
400-51 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	30.6	No / Type 1	
412-24 LETITIA CLOSE, NORTH MACKSVILLE NSW ;	46.0	31.9	No / Type 1	
406-20 LETITIA CLOSE, NORTH MACKSVILLE NSW ;	46.0	32.6	No / Type 1	
410-19 LETITIA CLOSE, NSW	46.0	31.3	No / Type 1	
486-41 LETITIA CLOSE, NORTH MACKSVILLE NSW ;	46.0	24.1	No / Type 1	
415-143 NURSERY ROAD, NORTH MACKSVILLE NS!	46.0	19.6	No / Type 1	
482-169 NURSERY ROAD, NORTH MACKSVILLE NS!	46.0	18.8	No / Type 1	
31153-LOT 1 PACIFIC HWY, NORTH MACKSVILLE	46.0	18.9	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:

Noise Impact Assessment Report

Report Details

Report Date: 6/10/2016 Report Reference: Refuelling
Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 08/10/16-Ongoing Time of Proposed Works: 5:30-7am Work Duration:
Description of Works Refuelling

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed Strong (16 - 21) Wind Direction West
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 9 1 Truck and Dog - Moving 1 108

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
426-537 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	3.1	No / Type 1	
490-459 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	6.7	No / Type 1	
492-469 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	7.0	No / Type 1	
493-37 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	3.3	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW	38.0	19.2	No / Type 1	
496-539 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	7.4	No / Type 1	
497-72 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	4.3	No / Type 1	
501-525 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	14.4	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	13.9	No / Type 1	
505-1 SIDING ROAD, NORTH MACKSVILLE NSW 24	38.0	9.8	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	15.0	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 2	38.0	15.5	No / Type 1	
518-18 SIDING ROAD, NORTH MACKSVILLE NSW 2	38.0	10.5	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	14.9	No / Type 1	
532-23 CHARLES PLACE, NAMBUCCA HEADS NSW	38.0	19.6	No / Type 1	
543-33 CHARLES PLACE, NAMBUCCA HEADS NSW	38.0	18.2	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:

Noise Impact Assessment Report

Report Details

Report Date: 7/10/2016 Report Reference: Refuelling - Crushing PI
 Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 10/10/16 - Ongoing Time of Proposed Works: 5:30-7am, 6-7pm, M-F, 6:30-8am D Work Duration:
 Description of Works: Refuelling Crusher in Cut 10 and 9

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Strong (16 - 21) Wind Direction: West
 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 1	1	Truck and Dog - Moving	1	108

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
112-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	13.1	No / Type 1	
117-15 REID STREET, MACKSVILLE NSW 2447	39.0	1.6	No / Type 1	
131-DP826440, HARRIMANS LANE, MACKSVILLE N	39.0	1.7	No / Type 1	
148-1 REID STREET, MACKSVILLE NSW 2447	39.0	1.4	No / Type 1	
151-72 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	15.4	No / Type 1	
155-26 HARRIMANS LANE, MACKSVILLE NSW 2447	39.0	3.1	No / Type 1	
163-4 SCOTTS HEAD ROAD, WAY WAY NSW 2447	40.0	34.3	No / Type 1	
175-34 HARRIMANS LANE, NSW	39.0	3.6	No / Type 1	
180-58 HARRIMANS LANE, MACKSVILLE NSW 2447	39.0	10.3	No / Type 1	
186-41 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	6.4	No / Type 1	
192-38 KERR DRIVE, MACKSVILLE NSW 2447	39.0	7.5	No / Type 1	
193-KERR DRIVE, MACKSVILLE NSW 2447	39.0	14.6	No / Type 1	
194-DP1014123, KERR DRIVE, MACKSVILLE NSW 2	39.0	25.2	No / Type 1	
197-54 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	14.6	No / Type 1	
261-13 CONNORS CRESCENT, MACKSVILLE NSW 2	39.0	20.5	No / Type 1	
266-2 AINSWORTH CLOSE, MACKSVILLE NSW 2447	39.0	19.0	No / Type 1	
302-98 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	18.0	No / Type 1	
342-228 SCOTTS HEAD ROAD, WAY WAY NSW 244	36.0	19.5	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:

Name: _____

Date: _____

Signature: _____

Position: _____

Required Mitigation Measures:

Noise Impact Assessment Report

Report Details

Report Date: 4/10/2016 Report Reference: Tipper Washout
 Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 06/10/16 - ongoing Time of Proposed Works: 6-7am Mon-Fri 7am-8am Sat Work Duration:
 Description of Works: Washout of tipper and wetting down tipper bins

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Strong (16 - 21) Wind Direction: West
 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 9	1	Diesel pump - 6"	1	93
Location 9	2	Tipper	0.75	99

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
398-2 MATTICK ROAD, NORTH MACKSVILLE NSW ;	38.0	10.6	No / Type 1	
402-83 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	34.8	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW ;	38.0	19.7	No / Type 1	
409-122 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	28.0	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	19.2	No / Type 1	
429-124 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	22.6	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	15.2	No / Type 1	
499-73 CHAMPIONS LANE, NORTH MACKSVILLE N	38.0	13.0	No / Type 1	
384-DP205344 BELLEVUE DRIVE, NORTH MACKSVI	46.0	4.2	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	4.7	No / Type 1	
388-DP654625 NURSERY ROAD, NORTH MACKSVII	46.0	7.2	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE N:	46.0	1.5	No / Type 1	
397-36 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	9.0	No / Type 1	
400-51 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	25.5	No / Type 1	
412-24 LETITIA CLOSE, NORTH MACKSVILLE NSW ;	46.0	27.2	No / Type 1	
406-20 LETITIA CLOSE, NORTH MACKSVILLE NSW ;	46.0	27.7	No / Type 1	
410-19 LETITIA CLOSE, NSW	46.0	26.5	No / Type 1	
486-41 LETITIA CLOSE, NORTH MACKSVILLE NSW ;	46.0	19.4	No / Type 1	
415-143 NURSERY ROAD, NORTH MACKSVILLE NSI	46.0	15.0	No / Type 1	
482-169 NURSERY ROAD, NORTH MACKSVILLE NSI	46.0	14.2	No / Type 1	
31153-LOT 1 PACIFIC HWY, NORTH MACKSVILLE	46.0	14.0	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:

Noise Impact Assessment Report

Report Details

Report Date: 6/10/2016 Report Reference: Refuelling
Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 08/10/16 - Ongoing Time of Proposed Works: 5:30-7am Work Duration:
Description of Works: Refuelling

Noise Prediction Details

Expected Meteorological Conditions

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

Proposed Equipment

Location: Location 5 Number of Plant: 1 Equipment: Truck and Dog - Moving Usage Factor: 1 Total Sound Power: 108

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
1-760 UPPER WARRELL CREEK ROAD, CONGARINN	40.0	1.2	No / Type 1	
3-800 UPPER WARRELL CREEK ROAD, CONGARINN	40.0	1.2	No / Type 1	
4-4201 PACIFIC HIGHWAY, EUNGAI CREEK NSW 24	40.0	2.8	No / Type 1	
5-464 BROWNS CROSSING ROAD, WARRELL CREEK	40.0	4.3	No / Type 1	
6-4227 PACIFIC HIGHWAY, CONGARINNI NSW 244	40.0	3.2	No / Type 1	
10-4317 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	2.5	No / Type 1	
11-4263 PACIFIC HIGHWAY, CONGARINNI NSW 24	40.0	7.1	No / Type 1	
12-4371 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	1.8	No / Type 1	
16-DP755562, COCKBURNS LANE, WARRELL CREEK	40.0	15.1	No / Type 1	
19-73 COCKBURNS LANE, WARRELL CREEK NSW 24	40.0	15.5	No / Type 1	
22-4411 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	2.1	No / Type 1	
39-4476 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	2.2	No / Type 1	
45-4390 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	4.3	No / Type 1	
51-196 ALBERT DRIVE, WARRELL CREEK NSW 2447	40.0	1.6	No / Type 1	
55-4478 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	2.3	No / Type 1	
59-46 ROSEWOOD ROAD, WARRELL CREEK NSW 2	40.0	1.9	No / Type 1	
60-180 ROSEWOOD ROAD, WARRELL CREEK NSW	36.0	9.8	No / Type 1	
64-69 ROSEWOOD ROAD, WARRELL CREEK NSW 2	36.0	1.4	No / Type 1	
66-174 ROSEWOOD ROAD, WARRELL CREEK NSW	36.0	4.4	No / Type 1	
68-91 ROSEWOOD ROAD, WARRELL CREEK NSW 2	36.0	13.3	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:

Noise Impact Assessment Report

Report Details

Report Date: 6/10/2016 Report Reference: Refuelling
Company: Pacific Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 08/10/16 - Ongoing Time of Proposed Works: 5:30-7am Work Duration:
Description of Works Refuelling

Noise Prediction Details

Expected Meteorological Conditions

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

Proposed Equipment

Location: Location 9 Number of Plant: 1 Equipment: Truck and Dog - Moving Usage Factor: 1 Total Sound Power: 108

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
1-760 UPPER WARRELL CREEK ROAD, CONGARINN	40.0	4.6	No / Type 1	
3-800 UPPER WARRELL CREEK ROAD, CONGARINN	40.0	4.5	No / Type 1	
4-4201 PACIFIC HIGHWAY, EUNGAI CREEK NSW 24	40.0	4.9	No / Type 1	
5-464 BROWNS CROSSING ROAD, WARRELL CREEK	40.0	4.6	No / Type 1	
6-4227 PACIFIC HIGHWAY, CONGARINNI NSW 244	40.0	5.7	No / Type 1	
10-4317 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	7.7	No / Type 1	
11-4263 PACIFIC HIGHWAY, CONGARINNI NSW 24	40.0	7.1	No / Type 1	
12-4371 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	7.4	No / Type 1	
16-DP755562, COCKBURNS LANE, WARRELL CREEK	40.0	9.8	No / Type 1	
19-73 COCKBURNS LANE, WARRELL CREEK NSW 24	40.0	7.1	No / Type 1	
22-4411 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	9.7	No / Type 1	
39-4476 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	11.7	No / Type 1	
45-4390 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	31.1	No / Type 1	
51-196 ALBERT DRIVE, WARRELL CREEK NSW 2447	40.0	13.1	No / Type 1	
55-4478 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	19.1	No / Type 1	
59-46 ROSEWOOD ROAD, WARRELL CREEK NSW 2	40.0	22.9	No / Type 1	
60-180 ROSEWOOD ROAD, WARRELL CREEK NSW	36.0	17.8	No / Type 1	
64-69 ROSEWOOD ROAD, WARRELL CREEK NSW 2	36.0	18.7	No / Type 1	
66-174 ROSEWOOD ROAD, WARRELL CREEK NSW	36.0	11.7	No / Type 1	
68-91 ROSEWOOD ROAD, WARRELL CREEK NSW 2	36.0	14.5	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:

Name:

Date:

Signature:

Position:

Required Mitigation Measures:

Noise Impact Assessment Report

Report Details

Report Date: 6/10/2016 Report Reference: Refuelling
Company: Pacific Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 08/10/16 - Ongoing Time of Proposed Works: 5:30-7am Work Duration:
Description of Works: Refuelling - 44600

Noise Prediction Details

Expected Meteorological Conditions

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

Proposed Equipment

Location: Location 11 Number of Plant: 1 Equipment: Truck and Dog - Moving Usage Factor: 1 Total Sound Power: 108

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
1-760 UPPER WARRELL CREEK ROAD, CONGARINN	40.0	4.1	No / Type 1	
3-800 UPPER WARRELL CREEK ROAD, CONGARINN	40.0	4.0	No / Type 1	
4-4201 PACIFIC HIGHWAY, EUNGAI CREEK NSW 24	40.0	4.2	No / Type 1	
5-464 BROWNS CROSSING ROAD, WARRELL CREEK	40.0	4.1	No / Type 1	
6-4227 PACIFIC HIGHWAY, CONGARINNI NSW 244	40.0	4.5	No / Type 1	
10-4317 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	5.7	No / Type 1	
11-4263 PACIFIC HIGHWAY, CONGARINNI NSW 24	40.0	4.9	No / Type 1	
12-4371 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	5.1	No / Type 1	
16-DP755562, COCKBURNS LANE, WARRELL CREEK	40.0	5.8	No / Type 1	
19-73 COCKBURNS LANE, WARRELL CREEK NSW 24	40.0	4.9	No / Type 1	
22-4411 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	6.7	No / Type 1	
39-4476 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	10.3	No / Type 1	
45-4390 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	19.3	No / Type 1	
51-196 ALBERT DRIVE, WARRELL CREEK NSW 2447	40.0	11.7	No / Type 1	
55-4478 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	18.7	No / Type 1	
59-46 ROSEWOOD ROAD, WARRELL CREEK NSW 2	40.0	29.6	No / Type 1	
60-180 ROSEWOOD ROAD, WARRELL CREEK NSW	36.0	34.3	No / Type 1	
64-69 ROSEWOOD ROAD, WARRELL CREEK NSW 2	36.0	27.8	No / Type 1	
66-174 ROSEWOOD ROAD, WARRELL CREEK NSW	36.0	28.2	No / Type 1	
68-91 ROSEWOOD ROAD, WARRELL CREEK NSW 2	36.0	34.0	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:

Noise Impact Assessment Report

Report Details

Report Date: 6/10/2016 Report Reference: Refuelling
 Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 08/10/16 - Ongoing Time of Proposed Works: 5:30-7am Work Duration:
 Description of Works: Refuelling - North Bald Hill Road

Noise Prediction Details

Expected Meteorological Conditions

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

Proposed Equipment

Location: Location 1 Number of Plant: 1 Equipment: Truck and Dog - Moving Usage Factor: 1 Total Sound Power: 108

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
117-15 REID STREET, MACKSVILLE NSW 2447	39.0	3.3	No / Type 1	
118-241 WALLACE STREET, MACKSVILLE NSW 244	39.0	2.1	No / Type 1	
148-1 REID STREET, MACKSVILLE NSW 2447	39.0	3.6	No / Type 1	
155-26 HARRIMANS LANE, MACKSVILLE NSW 2447	39.0	2.0	No / Type 1	
156-220 WALLACE STREET, MACKSVILLE NSW 244	39.0	2.9	No / Type 1	
175-34 HARRIMANS LANE, NSW	39.0	11.1	No / Type 1	
180-58 HARRIMANS LANE, MACKSVILLE NSW 2447	39.0	14.4	No / Type 1	
184-21 WEDGEWOOD DRIVE, MACKSVILLE NSW 2	39.0	8.3	No / Type 1	
186-41 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	32.4	No / Type 1	
192-38 KERR DRIVE, MACKSVILLE NSW 2447	39.0	17.7	No / Type 1	
195-WEDGEWOOD DRIVE, MACKSVILLE NSW 2447	39.0	19.6	No / Type 1	
197-54 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	30.5	No / Type 1	
204-46 WALL STREET, MACKSVILLE NSW 2447	39.0	7.6	No / Type 1	
261-13 CONNORS CRESCENT, MACKSVILLE NSW 2	39.0	10.9	No / Type 1	
266-2 AINSWORTH CLOSE, MACKSVILLE NSW 2447	39.0	20.5	No / Type 1	
294-105 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	16.3	No / Type 1	
302-98 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	8.4	No / Type 1	
342-228 SCOTTS HEAD ROAD, WAY WAY NSW 244	36.0	8.6	No / Type 1	
353-117 BALD HILL ROAD, MACKSVILLE NSW 2447	36.0	9.9	No / Type 1	
356-122 BALD HILL ROAD, MACKSVILLE NSW 2447	36.0	10.0	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:

Noise Impact Assessment Report

Report Details

Report Date: 6/10/2016 Report Reference: Refuelling
 Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 08/10/16 - Ongoing Time of Proposed Works: 5:30-7am Work Duration:
 Description of Works: Refuelling - North Bald Hill Road

Noise Prediction Details

Expected Meteorological Conditions

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

Proposed Equipment

Location: Location 2 Number of Plant: 1 Equipment: Truck and Dog - Moving Usage Factor: 1 Total Sound Power: 108

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
117-15 REID STREET, MACKSVILLE NSW 2447	39.0	2.6	No / Type 1	
118-241 WALLACE STREET, MACKSVILLE NSW 244	39.0	1.2	No / Type 1	
148-1 REID STREET, MACKSVILLE NSW 2447	39.0	2.9	No / Type 1	
155-26 HARRIMANS LANE, MACKSVILLE NSW 244:	39.0	1.7	No / Type 1	
156-220 WALLACE STREET, MACKSVILLE NSW 244	39.0	2.3	No / Type 1	
175-34 HARRIMANS LANE, NSW	39.0	8.8	No / Type 1	
180-58 HARRIMANS LANE, MACKSVILLE NSW 244:	39.0	22.6	No / Type 1	
184-21 WEDGEWOOD DRIVE, MACKSVILLE NSW 2	39.0	6.8	No / Type 1	
186-41 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	37.9	No / Type 1	
192-38 KERR DRIVE, MACKSVILLE NSW 2447	39.0	4.7	No / Type 1	
195-WEDGEWOOD DRIVE, MACKSVILLE NSW 244:	39.0	15.9	No / Type 1	
197-54 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	24.4	No / Type 1	
204-46 WALL STREET, MACKSVILLE NSW 2447	39.0	3.0	No / Type 1	
261-13 CONNORS CRESCENT, MACKSVILLE NSW 2:	39.0	9.5	No / Type 1	
266-2 AINSWORTH CLOSE, MACKSVILLE NSW 244:	39.0	13.2	No / Type 1	
294-105 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	17.7	No / Type 1	
302-98 BALD HILL ROAD, MACKSVILLE NSW 2447	39.0	8.6	No / Type 1	
342-228 SCOTTS HEAD ROAD, WAY WAY NSW 244	36.0	7.9	No / Type 1	
353-117 BALD HILL ROAD, MACKSVILLE NSW 2447	36.0	11.3	No / Type 1	
356-122 BALD HILL ROAD, MACKSVILLE NSW 2447	36.0	10.2	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: