



Warrell Creek to Nambucca Heads – Pacific Highway Upgrade Project

ENVIRONMENT PROTECTION AUTHORITY MONTHLY REPORT

■ November 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
- 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 November 2016 were limited to the following:

- Bitumen sealing work
- Clearing and Grubbing
- Topsoil stripping
- Earthworks including crushing
- Continuing bridge works including piling, headstock construction, pile caps, girder placement, deck unit installation and temporary work platforms
- Installation of monitoring instruments – settlement plates
- Continuing culvert works
- Batter stabilisation using hydromulch (permanent design seed mix)
- Topsoil Amelioration and Blending
- Concrete Lined Drains
- Basin Decommissioning (north)
- Basin Maintenance including dewatering
- Installation of Erosion and Sediment Controls
- Concrete pavement installation including sawcutting
- Concrete pavement drain installation
- Pavement Drainage installation
- Sub-soil drain installation
- Permanent landscape planting

Works scheduled for next month include

- Earthworks including crushing
- Clearing and grubbing (North Facing Ramps)
- Topsoil Strip (North Facing Ramps)

- Installation of second concrete batch plant in the southern portion of the Project
- Continuing bridge works including piling, headstock construction, pile caps, girder placement, deck unit installation and temporary work platforms
- Continuing culvert works
- Batter stabilisation using hydromulch (permanent design seed mix)
- Topsoil Amelioration and Blending
- Concrete Lined Drains
- Basin Decommissioning (north)
- Basin Maintenance including dewatering and desilting
- Installation of Erosion and Sediment Controls
- Removal of temporary bridge (LWC)
- Concrete pavement installation including sawcutting
- Concrete pavement drain installation
- Pavement Drainage installation
- Sub-soil drain installation
- Asphalt pavement trial and installation of asphalt pavement
- Commencement of asphalt batch plant installation
- Installation of concrete batch plant at Cut 10
- Permanent landscape planting

1.2 Consultation Activities

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

Table 1 – Consultation Activities

Groups	Date	Key Topics
Environmental Review Group	18/10/16	Construction Progress, Design Update, Upcoming works, Environmental Update, Monitoring update, Out of Hours Works, Incidents and Community Complaints
School group tour	10/11/16	St Patrick's Primary School Macksville – 43 11yr-olds half-day tour of alignment
Community group presentation	17/11/16	Macksville Probus Club – 25 members – presentation from Pacifico Construction Manager and RMS Project Director
Toolboxes	Wednesdays each week	Key Safety, Environment, Traffic and Community messages for the entire workforce. Also, advising workforce of visitors to site.

Other Consultation Activities:

- Obtained agreement for out of hours work for Lower Warrell Creek girder deliveries
- Ongoing night time delivery of girder notifications: traffic alert information, emails and text messages to distribution list

- Obtained agreements for Out of hours work for Bald Hill Road concreting, including broader notification
- Invitation to entire email distribution list for final quarterly Community Information Sessions next month

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.

All enquiries received are emailed to GHD representative and appropriate RMS personnel.

Upcoming Community and stakeholder activities:

- Announce RMS approval to community for construction of asphalt plant
- Notify Christmas shutdown arrangements
- Notify various traffic changes for Bald Hill Road
- Notify permanent closure of Albert Drive north and new bridge opening
- Notify 90-day look-ahead for North Facing Ramps and traffic staging for southern Old Coast Rd
- Notify Bridge openings for Mattick Road
- Notify for Scotts Head Road girder lifts for Upper Warrell creek bridge
- Further school visits and tours 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
01/11/16 – 30/11/16	20.2mm	Northern Compound
01/11/16 – 30/11/16	35.8mm	Albert Drive Compound

The site experienced a total of 14 rain days throughout the month of November 2016.

During November, rainfall received on site was lower than the November monthly average of 117.1mm. 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 November 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

November 2016		
Date	Time	TOTAL Rain Gauge (mm)
1/11/2016	9:00:00	0.6
2/11/2016	9:00:00	2.4
3/11/2016	9:00:00	0
4/11/2016	9:00:00	0
5/11/2016	9:00:00	0
6/11/2016	9:00:00	0
7/11/2016	9:00:00	0
8/11/2016	9:00:00	0
9/11/2016	9:00:00	4.4
10/11/2016	9:00:00	9.8
11/11/2016	9:00:00	0
12/11/2016	9:00:00	1
13/11/2016	9:00:00	0.6
14/11/2016	9:00:00	0
15/11/2016	9:00:00	0
16/11/2016	9:00:00	0
17/11/2016	9:00:00	0
18/11/2016	9:00:00	0
19/11/2016	9:00:00	0
20/11/2016	9:00:00	0
21/11/2016	9:00:00	0
22/11/2016	9:00:00	0
23/11/2016	9:00:00	0
24/11/2016	9:00:00	0
25/11/2016	9:00:00	0
26/11/2016	9:00:00	0
27/11/2016	9:00:00	0
28/11/2016	9:00:00	0
29/11/2016	9:00:00	1.2
30/11/2016	9:00:00	0.2

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

November 2016		
Date	Time	TOTAL Rain Gauge (mm)
1/11/2016	9:00:00	0.2
2/11/2016	9:00:00	9
3/11/2016	9:00:00	0

Date	Time	TOTAL Rain Gauge (mm)
4/11/2016	9:00:00	0
5/11/2016	9:00:00	0
6/11/2016	9:00:00	0
7/11/2016	9:00:00	0
8/11/2016	9:00:00	0
9/11/2016	9:00:00	12.8
10/11/2016	9:00:00	10
11/11/2016	9:00:00	0
12/11/2016	9:00:00	1.2
13/11/2016	9:00:00	0.6
14/11/2016	9:00:00	0
15/11/2016	9:00:00	0
16/11/2016	9:00:00	0
17/11/2016	9:00:00	0
18/11/2016	9:00:00	0
19/11/2016	9:00:00	0
20/11/2016	9:00:00	0
21/11/2016	9:00:00	0
22/11/2016	9:00:00	0
23/11/2016	9:00:00	0
24/11/2016	9:00:00	0
25/11/2016	9:00:00	0
26/11/2016	9:00:00	0
27/11/2016	9:00:00	0
28/11/2016	9:00:00	0
29/11/2016	9:00:00	0
30/11/2016	9:00:00	2

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

November 2016			
Date	Minimum temperature (°C)	Maximum temperature (°C)	Rainfall (mm)
1/11/2016		27	
2/11/2016	15.1	25.5	29.2
3/11/2016	17	25.9	0
4/11/2016	18	27.2	0
5/11/2016	19	33.2	0
6/11/2016	16	27	0
7/11/2016	17.5	25	0
8/11/2016	19.4	27.1	0
9/11/2016	19	27.5	3

Date	Minimum temperature (°C)	Maximum temperature (°C)	Rainfall (mm)
10/11/2016	16.9	27	14
11/11/2016	17.8	28.1	0
12/11/2016	21	30	1.2
13/11/2016	21	33.5	4.2
14/11/2016	18.5	26.7	0
15/11/2016	15	25	0
16/11/2016	15	27.6	0
17/11/2016	16	27.5	0
18/11/2016	19	25.8	0
19/11/2016	18.9	26.2	0
20/11/2016	19	28.8	0
21/11/2016	19.1	27.1	0
22/11/2016	19.6	26	0
23/11/2016	18.5	26	0
24/11/2016	19	25.6	0
25/11/2016	16.6	25.3	0
26/11/2016	16	27.1	0
27/11/2016	18.7	28.3	0
28/11/2016	20	26	0
29/11/2016	18.3	26.3	0
30/11/2016	17	29	1.4

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):

Wet Sampling Event

A "wet" sampling event (>10mm in 24 hours) was undertaken on the 10th of November 2016, lab sampling and field testing was undertaken. Results are available in Appendix A.

pH levels noted to be outside trigger levels at:

Nambucca River downstream (7.64). It is noted that this is only marginally above trigger levels (7.56). All controls were in place for the site with no works being undertaken within the waterway.

Conductivity levels noted to be above trigger levels at:

Gumma Wetlands downstream (1.16mS/cm). It is noted that this was a minor exceedance of trigger levels (0.842mS/cm). All controls were in place for the site

with no works being undertaken within the waterway. It is noted that only one set of trigger values has been provided for both upstream and downstream sites, which does not allow for any background variability between upstream and downstream sites.

Turbidity levels noted to be above trigger levels at:

Nambucca River upstream (92 NTU) and downstream (20.1 NTU). It is noted that levels decreased from upstream to downstream sites, and are therefore unlikely to be attributable to construction activities. It was also noted in the field that wind chop was stirring sediment up near the banks, which contributed to the higher turbidity readings for the site.

Dissolved oxygen levels noted to be below trigger levels at:

Upper Warrell Creek upstream (1.49mg/L) and downstream (1.07mg/L). All controls were in place for the site, with no works being undertaken within the waterway. Low DO levels are potentially as a result of decaying vegetative matter within the waterway.

Lower Warrell Creek upstream (1.74mg/L) and downstream (1.67mg/L). It is noted that levels only decreased marginally from upstream to downstream sites and are therefore unlikely to be attributable to construction activity. All controls were in place for the site.

Nambucca River upstream (2.59mg/L) and downstream (2.68mg/L). It is noted that levels increased from upstream to downstream sites and are therefore unlikely to be attributable to construction activities.

Metals noted to be outside of trigger levels at:

Upper Warrell Creek recorded elevated levels of manganese downstream (0.328mg/L). It is noted that these levels are well within ANZECC criteria (1.9mg/L). Levels of zinc were also elevated upstream (0.064mg/L) and downstream (0.045mg/L). It is noted that levels decreased from upstream to downstream sites and are therefore unlikely to be attributable to construction impacts. Controls were in place for the site with no activities being undertaken within the waterway.

Stony Creek recorded elevated levels of manganese upstream (0.085mg/L) and downstream (0.086mg/L), zinc upstream (0.211mg/L) and downstream (0.036mg/L). Manganese levels were well within ANZECC criteria (1.9mg/L). Zinc and manganese levels remained consistent or decreased from upstream to downstream sites and are therefore unlikely to be elevated due to construction impacts. Controls were in place at the site with no activities being undertaken within the waterway.

Lower Warrell Creek recorded elevated levels of cadmium (0.0014mg/L), manganese (1.29mg/L), nickel (0.029mg/L), zinc (0.145mg/L) and iron (2.35mg/L) downstream. It is noted that all controls were in place for the site.

Nutrients noted to be outside trigger levels at:

Stony Creek recorded elevated levels of nitrite downstream (0.03mg/L). It is noted that nitrite levels decreased from upstream (0.07mg/L), but that no trigger levels for nitrite upstream have been provided. The elevated levels are therefore unlikely to be attributable to construction impacts. All controls were in place for the site, with no construction activities being undertaken within the waterway.

Lower Warrell Creek recorded elevated levels of total nitrogen downstream (1.2mg/L), nitrite upstream (0.04mg/L) and downstream (0.55mg/L), ammonia downstream (0.19mg/L). All controls were in place for the site, with no activities being undertaken within the waterway. These results are therefore not likely to be attributed to construction impacts. Decaying vegetation within the waterway potentially contributed to the exceedance of trigger levels.

Nambucca River recorded elevated levels of nitrogen upstream (0.9mg/L) and downstream (1.1mg/L). Levels only slightly changed from upstream to downstream sites and the elevated levels are therefore unlikely to be as a result of construction impacts. All controls were in place for the site..

TSS levels noted to be above trigger levels at:

Stony Creek downstream (12mg/L) recorded elevated levels. It is noted that there was only slight increase from upstream (8mg/L) to downstream sites, therefore these elevated levels are unlikely to be as a result of construction impacts. All controls for the site were in place, with no construction activity being undertaken within the waterway.

Dry Sampling Event

A "dry" sampling event was undertaken on the 23rd November 2016, lab sampling and field testing was undertaken. Results are attached in Appendix A.

pH levels noted to be outside of trigger levels at:

Lower Warrell Creek recorded elevated pH levels upstream (7.28). It is noted that this was only a minor exceedance of trigger levels (7.02) and that these levels are within ANZECC criteria (6.5-8.0). All controls were in place for the site.

Nambucca River recorded elevated pH levels upstream (7.76) and downstream (7.85). It is noted that the 20th and 80th percentile trigger levels for Nambucca River are both pH 7, with any results apart from pH7 being outside of trigger levels. It is noted that these levels are within ANZECC criteria (6.5-8.0). All controls were in place for the site, with no activities being undertaken within the waterway.

Turbidity (NTU) noted to be above trigger levels at:

Stony Creek downstream (10.2 NTU). All controls were in place for the site, with no activities undertaken within the waterway. It is noted that levels only increased slightly from upstream (9.1 NTU) and are thus unlikely to be attributed to construction activities.

Lower Warrell Creek upstream (39.2 NTU) and downstream (19.4 NTU). It is noted that levels decreased from upstream to downstream sites and are unlikely to be as a result of construction activities. All controls were in place for the site..

Nambucca river recorded elevated levels upstream (65.2 NTU) and downstream (74.6 NTU). All controls were verified to be in place for the site, with no activities being undertaken within the waterway. It was noted that wind chop was causing disturbance of sediment from the river bank, which may have contributed to the elevated levels at the site.

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

Stony Creek downstream (3.03mg/L). It is noted that levels only decreased slightly from upstream (3.09mg/L) and is unlikely to be due to construction activities. All controls were in place for the site with no activities being undertaken within the waterway.

Lower Warrell Creek upstream (4.20mg/L) and downstream (3.84mg/L). All controls were verified to be in place for the site. Decaying vegetation within the waterway may have contributed to the low DO levels.

Nambucca River upstream (4.49mg/L) and downstream (4.8mg/L). It is noted that levels increased from upstream to downstream sites and are thus unlikely to be due to construction activities. All controls were in place for the site, with no construction activities being undertaken within the waterway.

Metals were noted to be above trigger levels at:

Stony Creek recorded elevated levels of magnesium upstream (0.132 mg/L) and downstream (0.169 mg/L). It is noted that these levels are well within ANZECC criteria (1.9mg/L). All controls were in place for the site, with no construction activities being undertaken within the waterway.

Lower Warrell Creek recorded elevated levels of arsenic upstream (0.002mg/L) and downstream (0.002 mg/L), nickel upstream (0.002 mg/L) and downstream (0.002mg/L), zinc downstream (0.007mg/L). All values were within ANZECC criteria. All controls were in place for the site, the elevated levels are therefore unlikely to be as a result of construction impacts.

Nutrients noted to be outside of trigger levels at:

Stony Creek recorded elevated levels of phosphorus (0.05mg/L). This was compliant with ANZECC criteria (0.05mg/L). All controls were verified to be in place for the site, with no activities being undertaken within the waterway.

Nambucca River recorded elevated levels of phosphorus upstream (0.09mg/L) and downstream (0.06mg/L), nitrogen upstream (0.7mg/L) and downstream (0.6mg/L) and nitrate upstream (0.04mg/L) and downstream (0.04mg/L). It is noted that all values were either consistent or decreased from upstream to downstream sites and were thus not likely to be construction activity related. All controls were in place for the site, with no activities being undertaken within the waterway. The agricultural land further upstream is a potential source for these levels of nutrients.

TSS noted to be outside of trigger levels at:

Stony Creek downstream (13mg/L). All controls were verified to be in place for the site, with no construction activity occurring in the waterway.

Nambucca river downstream (96mg/L). It was noted during sampling that wind chop along the bank was causing disturbance of sediment, potentially resulting in the higher levels of TSS. All controls were verified to be in place for the site, with no construction activities occurring within the waterway.

4. Sediment Basin Water Monitoring

Water was released from commissioned sediment basins after rainfall events on the 2nd and 9th of November 2016. 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

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
2/11/2016	B58.45	N	7.56	18.8	6	100	
2/11/2016	B49.67	N	7.05	4		50	
3/11/2016	B60.87	N	6.84	53.2		20	
3/11/2016	B60.5	N	7.63	26.3		25	
4/11/2016	B59.6	N	7.87	15.1	9	90	
4/11/2016	B59.85	N	7.52	26.3		50	
4/11/2016	B45.00	N	7.15	77.3		200	
5/11/2016	B53.8	N	8.15	39.4	7	200	

11/11/2016	B53.8	N	8.31	16.2		200	
11/11/2016	B53.5	N	7.26	24.6		300	
11/11/2016	B55.17B	N	7.69	31.3		70	
11/11/2016	B45.50	N	6.58	7.2		200	
11/11/2016	B45.64	N	7.93	38.5		300	

5. Noise Monitoring

Monthly routine construction noise monitoring was undertaken on the 7th and 15th of November 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.

Additional noise monitoring was undertaken on 21st November 2016 as a result of concerns raised by a community member, results were compliant with the predicted levels for the activity.

6. Vibration Monitoring

Vibration monitoring was undertaken on the 21st of November 2016 in response to concerns raised by residents regarding nearby vibratory rolling at Albert Drive, results are available in Appendix A. Levels recorded were well below levels for building damage (5mm/s).

7. Dust Monitoring

Dust deposition gauges (DDG) were placed at nearby sensitive receivers from 29th September 2016 to 31st October 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, with the exception of DDG 3, which recorded 5.6g/m²/month TIM and 4.4g/m²/month AC. It was noted during dust gauge collection that the grass around the gauge had been mowed, with grass in the gauge itself. This was a likely contributor to the exceedance for this gauge. Additionally the gauge is located nearby to the Boral Quarry, which also contributes to the dust level readings at the gauge.

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.

8. Groundwater Monitoring

ACCIONA (Pacifico) have undertaken groundwater monitoring on the 29th of November 2016. 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 (6.48). It is noted that this was only slightly above trigger levels (6.264).

4BH021 – Cut 11 (6.79). It is noted that this was only slightly above trigger levels (6.79)

4BH037 – Fill 15 (7.17). It is noted that this bore was relocated from its original location due to it being within the construction footprint. Trigger levels are from the original location and therefore may not correspond with the new location due to differences in groundwater quality.

Conductivity noted to be outside of trigger levels at:

4BH037 – Fill 15 (8.65mS/cm). It is noted that this bore had to be relocated from its original location due to it being within the construction footprint. Trigger levels from the original location therefore may not correspond with the new location entirely due to differences in groundwater quality.

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

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

OOH Request Title	>5dB(A) above background	Approval Date
Installation of Subsoil Drainage between CH53620-55240	N	2/11/2016
Girder Lift - North Nambucca River	N	4/11/2016
Rosewood Road Bridge Concreting Preparation	N	7/11/2016
Generator for bore pump at CH56600	N	17/11/2016

Concrete finishing and wet curing at Upper Warrell Creek	N	17/11/2016
Concrete finishing works at Mattick Road	N	18/11/2016
Clean out of McGuinness Dam on a Saturday and Sunday	N	23/11/2016
Concreting Works at Floodplain Bridge 2	N	24/11/2016
SMZ Conditioning and dust suppression at CH57550-61300	N	30/11/2016
CCTV of pavement drainage lines between CH46050-46850	N	30/11/2016
Linemarking at the corner of Old Coast Road and the Pacific Highway	N	30/11/2016

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

- Out of hours basin treatment

Field monitoring has been undertaken for several activities throughout November 2016. Results for this are summarised in Appendix A.

10. Complaints

10.1 Summary of Complaints for the month

7/11/2016 – Resident contacted Pacifico regarding concerns about high wind generating dust. Area superintendent was contacted and water carts were focused to this area to minimise dust generation. No further complaints regarding dust were received from the resident for the rest of the month.

9/11/2016 – Manager of local waste management facility contacted Pacifico regarding concerns about segregation of waste before it was brought to the facility. Superintendents were contacted regarding the concern which was included in the weekly global toolbox about the requirements to separate waste as much as possible before disposal.

9/11/2016 – Resident contacted Pacifico regarding water draining onto their property. Pacifico and RMS both inspected the property the following day and noted that all environmental controls were in place for the area and had worked effectively for the previous rainfall event.

18/11/2016 – Resident contacted Pacifico regarding concerns around vibration and noise from rollers working near Albert Drive. It was ascertained that vibration was the main concern regarding building damage, with monitoring undertaken 21/11 while the roller was active. Results were compliant with building damage guidelines which was explained to the resident (See Table 5 below).

18/11/2016 – Resident contacted Pacifico regarding concerns around noise from construction for the North Facing Ramps at 5pm. Monitoring was undertaken 20/11 with similar equipment operating and results are available below (see table 7).

28/11/2016 – Resident contacted Pacifico regarding concerns around dust generation from site during very windy conditions. Area Superintendent reduced activities within the area to minimise dust generation. Water carts were being used in the area at the time.

11. Non-Compliance

11.1 Summary of Non-compliances

No non-compliances against the ACCIONA Environmental Protection Licence (EPL) 20533 occurred in November 2016.

Appendix A – Monitoring Results

Table 1a - Surface Water Sampling Results November 2016 – Wet 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			Downstream			Upstream			Downstream			Upstream			Downstream			Upstream			Downstream			Upstream			Downstream							
Freshwater / Estuarine		ANZECC 2000 95% species protected		Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Estuarine			Estuarine				
Date of Sampling				10-Nov-16			10-Nov-16			10-Nov-16			10-Nov-16			10-Nov-16			10-Nov-16			10-Nov-16			10-Nov-16			10-Nov-16			10-Nov-16			10-Nov-16				
Time of Sampling				10:40 AM			11:00 AM			10:00 AM			9:30 AM			11:30 AM			11:35 AM			12:50 PM			1:30 PM			1:15 PM			12:04 PM			12:20 PM				
Comments																																						
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		
Laboratory data																																						
Metals																																						
Aluminium	mg/L	0.055	-	0.244	0.0162	0.01	0.194	0.016	0.02	0.098	0.02	0.01	0.114	0.01	<0.01	0.28	0.01	<0.01	0.28	0.01	0.11	0.25	0.02	<0.01	0.25	0.02	0.02	0.25	0.02	<0.01	0.11	0.01	<0.10	0.11	0.01	<0.10		
Arsenic	mg/L	0.024	0.0023	0.001	0.001	<0.001	0.001	<0.001	0.002	0.001	<0.001	0.002	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	0.002	0.001	0.002	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001	<0.010	0.002	0.001	<0.010
Cadmium	mg/L	0.0002	0.0055	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	0.0002	0.0001	0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0010	-	-	<0.0010		
Chromium	mg/L	0.001	0.0044	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.010	-	-	<0.010		
Copper	mg/L	0.0014	0.0013	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	0.001	0.001	<0.001	0.001	0.001	<0.001	0.001	0.001	<0.001	0.001	0.001	<0.010	0.001	0.001	<0.010		
Lead	mg/L	0.0034	0.0044	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.010	-	-	<0.010		
Manganese	mg/L	1.9	0.08	0.3	0.01	0.175	0.158	0.0178	0.328	0.0726	0.0218	0.085	0.083	0.0164	0.086	0.35	0.087	0.241	0.35	0.087	1.29	0.49	0.011	0.107	0.49	0.011	0.088	0.49	0.011	0.319	0.076	0.006	0.062	0.076	0.006	0.041		
Nickel	mg/L	0.011	0.07	-	-	<0.001	-	-	0.002	-	-	0.001	-	-	<0.001	0.0034	0.001	0.002	0.0034	0.001	0.029	0.002	0.001	<0.001	0.002	0.001	0.002	0.002	0.001	0.002	0.001	0.002	-	-	<0.010	-	<0.010	
Selenium	mg/L	11	-	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.10	-	-	<0.10		
Silver	mg/L	0.00005	0.0014	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.010	-	-	<0.010		
Zinc	mg/L	0.008	0.015	0.007	0.005	0.064	0.0062	0.0042	0.045	0.0064	0.005	0.211	0.006	0.005	0.036	0.018	0.005	0.011	0.018	0.005	0.145	0.011	0.005	0.015	0.011	0.005	0.066	0.011	0.005	<0.005	0.005	0.005	<0.050	0.005	0.005	<0.050		
Iron	mg/L	0.011	-	1.38	0.48	0.31	0.99	0.366	0.16	1.4	0.41	0.16	1.48	0.35	<0.05	0.52	0.05	0.06	0.52	0.05	2.35	1.65	0.37	0.05	1.65	0.37	0.26	1.65	0.37	0.14	0.26	0.05	<0.50	0.26	0.05	<0.10		
Mercury	mg/L	0.0006	0.0004	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001		
Total Recoverable Hydrocarbons																																						
Naphthalene	µg/L	16	50	16	NA	16	NA	16	NA	16	NA	16	NA	16	NA	16	NA	16	NA	16	NA	16	NA	16	NA	16	NA	16	NA	16	NA	50	NA	50	NA			
06 - C10 Fraction	µg/L	-	-	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA			
06 - C10 Fraction minus BTEX (F1)	µg/L	-	-	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA			
>C10 - C16 Fraction	µg/L	-	-	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA			
>C16 - C34 Fraction	µg/L	-	-	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA			
>C34 - C40 Fraction	µg/L	-	-	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA			
>C10 - C40 Fraction (sum)	µg/L	-	-	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA			
>C10 - C16 Fraction minus Naphthalene (F2)	µg/L	-	-	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA			
BTEX																																						
Benzene	µg/L	950	700	950	NA	950	NA	950	NA	950	NA	950	NA	950	NA	950	NA	950	NA	950	NA	950	NA	950	NA	950	NA	950	NA	700	NA	700	NA	NA				
Toluene	µg/L	180	180	180	NA	180	NA	180	NA	180	NA	180	NA	180	NA	180	NA	180	NA	180	NA	180	NA	180	NA	180	NA	180	NA	180	NA	180	NA	180	NA			
Ethylbenzene	µg/L	80	80	80	NA	80	NA	80	NA	80	NA	80	NA	80	NA	80	NA	80	NA	80	NA	80	NA	80	NA	80	NA	80	NA	80	NA	80	NA	80	NA			
m&p-Xylenes	µg/L	-	-	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA			
o-Xylene	µg/L	350	350	350	NA	350	NA	350	NA	350	NA	350	NA	350	NA	350	NA	350	NA	350	NA	350	NA	350	NA	350	NA	350	NA	350	NA	350	NA	350	NA			
Xylenes - Total	µg/L	-	-	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA			
Sum of BTEX	µg/L	-	-	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA			
Nutrients																																						
Total Phosphorus	mg/L	0.03	0.03	0.05	0.02	0.04	0.044	0.016	0.02	0.03	0.016	0.02	0.034	0.01	0.02	0.04	0.01	<0.01	0.04	0.01	0.02	0.11	0.03	0.02	0.11	0.03	0.04	0.11	0.03	0.02	0.07	0.02	0.14	0.07	0.02	0.07		
Phosphate (reactive phosphorus)	mg/L	-	-	0.01	0.0034	<0.01	0.01	0.004	<0.01	0.018	0.0022	<0.01	0.018	0.003	<0.01	0.011	0.006	<0.01	0.011	0.006	<0.01	0.013	0.005	<0.01	0.013	0.005	<0.01	0.013	0.005	<0.01	0.029	0.01	<0.01	0.029	0.01	0.01		
Total Nitrogen	mg/L	0.5	0.3	0.56	0.3	0.4	0.52	0.2	0.3	0.48	0.2	0.6	0.63	0.2	0.3	0.54	0.31	0.4	0.54	0.31	1.2	3.1	0.9	0.7	3.1	0.9	1.1	3.1	0.9	0.8	0.46	0.2	0.9	0.46	0.2	1.1		
Total Kjeldahl Nitrogen	mg/L	-	-	0.5	0.3	0.4	0.5	0.2	0.3	0.34	0.2	0.5	0.6	0.2	0.3	0.5	0.2	0.4	0.5	0.2	0.6	2.8	0.8	0.7	2.8	0.8	1.1	2.8	0.8	0.8	0.3	0.2	0.9	0.3	0.2	1.1		
Nitrate	mg/L	0.7	-	0.102	0.01	<0.01	0.054	0.01	<0.01	0.208	0.01	<0.01	0.2	0.01	<0.01	0.05	0.01	<0.01	0.05	0.01	<0.01	0.03	0.01	<0.01	0.03	0.01	<0.01	0.03	0.01	<0.01	0.04	0.01	<0.01	0.04	0.01	<0.01		
Nitrite	mg/L	-	-	-	-	<0.01	-	-	0.02	-	-	0.07	0.02	0.01	0.03	0.02	0.01	0.04	0.02	0.01	0.55	0.02	0.01															

Table 1b – Surface Water Monitoring Results November 2016 –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			
		Freshwater	Marine	Upstream	Downstream	Result	Upstream	Downstream	Result	Upstream	Downstream	Result	Upstream	Downstream	Result	Upstream	Downstream	Result	Upstream	Downstream	Result	Upstream	Downstream	Result	Upstream	Downstream	Result	Upstream	Downstream	Result	Upstream	Downstream	Result				
Freshwater / Estuarine		ANZECC 2000 95% species protected		Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Freshwater			Estuarine			Estuarine			
Date of Sampling				23-Nov-16			23-Nov-16			23-Nov-16			23-Nov-16			23-Nov-16			23-Nov-16			23-Nov-16			23-Nov-16			23-Nov-16			23-Nov-16			23-Nov-16			
Time of Sampling				12:20 PM			12:40 PM			12:05 PM			11:35 AM			2:50 PM			3:10 PM			1:25 PM			1:50 PM			1:35 PM			3:30 PM			3:40 PM			
Comments																																					
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				
Laboratory data																																					
Metals																																					
Aluminium	mg/L	0.055	-	0.06	0.01	0.01	0.05	0.01	<0.01	0.05	0.01	<0.01	0.04	0.01	<0.01	0.06	0.01	<0.01	0.06	0.01	<0.01	0.1	0.01	0.01	0.1	0.01	0.01	0.02	0.1	0.01	-	0.02	0.01	<0.10	0.02	0.01	<0.10
Arsenic	mg/L	0.024	0.0023	-	-	<0.001	-	-	<0.001	-	-	<0.001	0.001	0.001	<0.001	0.001	0.001	<0.001	0.001	0.001	<0.001	0.002	0.001	0.002	0.002	0.001	0.001	0.002	0.001	-	0.002	0.001	<0.010	0.002	0.001	<0.010	
Cadmium	mg/L	0.0002	0.0055	-	-	0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	0.0001	0.0001	<0.0001	0.0001	0.0001	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	-	-	-	<0.0010	-	-	<0.0010	
Chromium	mg/L	0.001	0.0044	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	-	-	-	<0.010	-	-	<0.010	
Copper	mg/L	0.0014	0.0013	-	-	<0.001	-	-	0.004	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	-	-	0.001	0.001	<0.010	0.001	0.001	<0.010
Lead	mg/L	0.0034	0.0044	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	-	-	-	<0.010	-	-	<0.010	
Manganese	mg/L	1.9	0.35	0.21	0.02	0.22	0.2	0.03	0.082	0.06	0.02	0.132	0.052	0.013	0.169	0.26	0.08	0.175	0.26	0.08	0.165	0.23	0.019	0.098	0.23	0.019	0.114	0.23	0.019	-	0.03	0.002	0.019	0.03	0.002	0.015	
Nickel	mg/L	0.011	0.07	-	-	0.001	-	-	0.002	-	-	<0.001	-	-	<0.001	0.001	0.001	0.002	0.001	0.001	0.002	0.001	0.001	<0.001	0.001	0.001	0.002	0.001	0.001	-	-	-	<0.010	-	-	<0.010	
Selenium	mg/L	11	-	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	-	-	<0.10	-	-	<0.10		
Silver	mg/L	0.00005	0.0014	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	<0.001	-	-	-	-	<0.010	-	-	<0.010		
Zinc	mg/L	0.008	0.015	-	-	0.026	-	-	0.019	0.005	0.005	0.005	0.005	0.005	<0.005	0.006	0.005	<0.005	0.006	0.005	0.007	0.005	0.005	0.007	0.005	0.005	0.009	0.005	0.005	-	0.005	0.005	<0.050	0.005	0.005	<0.050	
Iron	mg/L	-	-	0.99	0.46	0.14	0.93	0.31	0.14	0.82	0.42	0.05	0.78	0.37	<0.05	0.83	0.05	<0.05	0.83	0.05	<0.05	2.01	0.25	0.88	2.01	0.25	0.18	2.01	0.25	-	-	<0.50	-	-	<0.50		
Mercury	mg/L	0.0006	0.0004	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	<0.0001	-	-	-	-	<0.0001	-	-	<0.0001		
Total Recoverable Hydrocarbons																																					
Naphthalene	µg/L	16	50	16	NA	16	NA	NA	16	NA	NA	16	NA	NA	16	NA	NA	16	NA	NA	16	NA	NA	16	NA	NA	16	NA	NA	16	NA	NA	50	NA	50	NA	
C6 - C10 Fraction	µg/L	-	-	-	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	-	NA	-	-	NA		
C6 - C10 Fraction minus BTEX (F1)	µg/L	-	-	-	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	-	NA	-	-	NA		
>C10 - C16 Fraction	µg/L	-	-	-	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	-	NA	-	-	NA		
>C16 - C34 Fraction	µg/L	-	-	-	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	-	NA	-	-	NA		
>C34 - C40 Fraction	µg/L	-	-	-	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	-	NA	-	-	NA		
>C10 - C40 Fraction (sum)	µg/L	-	-	-	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	-	NA	-	-	NA		
>C10 - C16 Fraction minus Naphthalene (F2)	µg/L	-	-	-	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	-	NA	-	-	NA		
BTEX																																					
Benzene	µg/L	950	700	950	NA	950	NA	NA	950	NA	NA	950	NA	NA	950	NA	NA	950	NA	NA	950	NA	NA	950	NA	NA	950	NA	NA	950	NA	700	NA	700	NA		
Toluene	µg/L	180	180	180	NA	180	NA	NA	180	NA	NA	180	NA	NA	180	NA	NA	180	NA	NA	180	NA	NA	180	NA	NA	180	NA	NA	180	NA	180	NA	180	NA		
Ethylbenzene	µg/L	80	5	80	NA	80	NA	NA	80	NA	NA	80	NA	NA	80	NA	NA	80	NA	NA	80	NA	NA	80	NA	NA	80	NA	NA	80	NA	5	NA	5	NA		
m&p-Xylenes	µg/L	-	-	-	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	-	NA	-	-	NA		
o-Xylene	µg/L	350	350	350	NA	350	NA	NA	350	NA	NA	350	NA	NA	350	NA	NA	350	NA	NA	350	NA	NA	350	NA	NA	350	NA	NA	350	NA	350	NA	350	NA		
Xylenes - Total	µg/L	-	-	-	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	-	NA	-	-	NA		
Sum of BTEX	µg/L	-	-	-	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	NA	NA	-	-	NA	-	-	NA		
Nutrients																																					
Total Phosphorus	mg/L	0.05	0.03	0.04	0.01	0.04	0.03	0.01	0.01	0.04	0.01	0.03	0.02	0.01	0.05	0.04	0.01	0.02	0.04	0.01	0.02	0.12	0.03	0.05	0.12	0.03	0.35	0.12	0.03	-	0.04	0.02	0.09	0.04	0.02	0.06	
Phosphate (reactive phosphorus)	mg/L	-	-	-	-	<0.01	-	-	<0.01	-	-	<0.01	-	-	<0.01	0.01	0.0044	<0.01	0.01	0.0044	<0.01	0.01	0.0005	<0.01	0.01	0.0005	<0.01	0.01	0.0005	-	0.01	0.008	<0.01	0.01	0.008	<0.01	
Total Nitrogen	mg/L	0.5	0.3	0.62	0.2	0.7	0.6	0.2	0.4	0.3	0.1	0.6	0.41	0.1	0.3	0.5	0.2	0.4	0.5	0.2	0.4	2.8	1.1	1.1	2.8	1.1	3.6	2.8	1.1	-	0.5	0.2	0.7	0.5	0.2	0.6	
Total Kjeldahl Nitrogen	mg/L	-	-	0.6	0.2	0.7	0.6	0.2	0.4	0.3	0.1	0.5	0.4	0.1	0.3	0.5	0.2	0.4	0.5	0.2	0.4	2.4	1	1.1	2.4	1	3.6	2.4	1	-	0.5	0.2	0.7	0.5	0.2	0.6	
Nitrate	mg/L	0.7	-	0.04	0.01	0.02	0.03	0.01	0.03	0.03	0.01	0.07	0.03	0.01	<0.01	0.04	0.01	0.02	0.04	0.01	0.03	0.04	0.01	0.04	0.04	0.01	0.03	0.04	0.01	-	0.02	0.01	0.04	0.02	0.01	0.04	
Nitrite	mg/L	-	-	-	-	<0.01	0.01	0.01	<0.01	0.01	0.01	<0.01	0.01	0.01	<0.01	0.01	0.01	<0.01	0.01	0.01	<0.01	0.05	0.01	<0.01	0.05	0.01	<0.01	0.05	0.01	-	0.02	0.01	<0.01	0.02	0.01	<0.01	
Ammonia	mg/L	0.9	-	-	-	<0.01	-	-	<0.01	-	-	<0.01	-																								

Table 3 - Dust Monitoring Results July/August 2016

		DDG ID	DDG1	DDG2	DDG3	DDG4	DDG5	DDG5E	DDG5W	DDG6	DDG6N	DDG7	DDG8	DDG9NE	DDG9E	DDG A1	DDG A2		
		Start 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		
		Finish date of sampling	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016	31/10/2016		
Analyte	Time Period	Unit	Levels of Concern	LOR															
Ash Content	Current Month	g/m ² .month	4	0.1	0.4	0.7	4.4	1.5	1	0.7	0.3	1.4	0.3	0.8	1.4	0.4	1.9	----	----
		mg	N/A	1	7	13	83	29	19	14	6	27	6	15	27	8	36	----	----
	Change	g/m ² .month	Increase of 2		0.3	0.5	1.2	0.8	0.5	0.8	0.4	9.7		1.8	0.7	0.3	2.9	----	----
Combustible Matter	Current Month	g/m ² .month	N/A	0.1	0.5	0.5	1.2	0.5	0.4	0.4	0.2	0.5	0.1	0.5	0.5	0.3	0.6	----	----
		mg	N/A	1	10	9	22	8	8	7	3	8	2	9	8	6	11	----	----
Total Insoluble Matter (TIM)	Current Month	g/m ² .month	4	0.1	0.9	1.2	5.6	2	1.4	1.1	0.5	1.9	0.4	1.3	1.9	0.7	2.5	----	----
		mg	N/A	1	17	22	105	37	27	21	9	35	8	24	35	14	47	----	----
	Change	g/m ² .month	Increase of 2	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	----	----
Arsenic	Current Month	mg/L		0.001	----	----	----	----	----	----	----	----	----	----	----	----	0.001	0.001	
Comments				Small amount of grass in gauge		Lawn mowed around gauge - grass in gauge				Removed	Removed	Grass in gauge	Funnel missing	Insects in gauge (ants)			Insects and grass in gauge		

Table 4 – Groundwater Monitoring Results November 2016

Location	Units	Groundwater Investigation Levels (GILs)	4BH007	4BH008	4BH010	4BH011	4BH021	4BH022c	4BH025	4BH026	4BH037a	4BH038	1BH49	4BH058c	4BH061	4BH062																			
Cut/Fill			Cut 4	Cut 4	Cut 6	Cut 6	Cut 11	Cut 11	Cut 12	Cut 12	Fill 15	Fill 15	Cut 17	Cut 17	Cut 23	Cut 23																			
Date of Sampling			29/11/2016	29/11/2016	29/11/2016	29/11/2016	29/11/2016	29/11/2016	29/11/2016	29/11/2016	29/11/2016	29/11/2016	29/11/2016	29/11/2016	29/11/2016	29/11/2016																			
			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																			
Comments				DRY		DRY		Unable to sample		Unable to sample		DRY		Unable to sample		DRY	DRY																		
Field Physical data																																			
Depth to standing water level from TOC	m	-	-	-	16.802	16.64	-	-	8.7420	7.90	16.0140	2.32	8.4500	-	14.4820	1.2000	0.93	1.3520	-	17.4120	-	13.8440	15.80	-	-	-	-								
pH	pH	-	-	-	6.264	4.736	6.48	-	-	6.7800	5.8100	6.79	7.0900	6.24	6.7780	6.2080	-	7.34	6.2600	-	6.5080	5.9220	7.17	7.3040	6.7680	-	6.9800	5.2400	-	6.3960	5.5620	7.10	-	-	-
Conductivity	mS/cm	-	-	-	3630.000	4.48	-	-	111.300	0.178	231.000	0.820	0.342	-	322.000	5.550	0.820	8.65	8366.000	-	121.100	5.550	-	132.660	0.272	-	-	-	-	-	-	-			
Temperature	C	-	-	-	22.4420	21.28	-	-	22.3600	23.72	21.1500	23.26	22.6040	-	21.3000	25.9820	25.24	22.5600	-	22.8200	-	23.1940	27.13	-	-	-	-	-	-	-	-				

Table 5 – Vibration Monitoring Results November 2016

DATE	TIME	Location	Vector Sum	Comment
[Date]	[Time]		[mm/s]	
21/11/2016	10:35:00	Main St, Donnellyville	0.38	Background (no roller)
21/11/2016	11:20:00	Main St, Donnellyville	0.39	During rolling (light vibe)
21/11/2016	11:45:00	Albert Drive, Donnellyville	0.73	Peak from roller stopping + reversing (light vibe)
21/11/2016	12:00:00	Albert Drive, Donnellyville	0.86	Peak from roller stopping + reversing (heavy vibe)

Table 6 – Field Monitoring for Out of Hours Works November 2016

Description of Works	Date	Time	Location	NCA	NML	Laeq	Distance to receiver (m)	Compliant	Principal sources/ operations	Notes
Concrete Pavement Sawcutting	2/11/2016	11:05 PM	Old Coast Rd	6	38	55.7	120	Y	Saw cutting	Type 4 Activity approved (justifiable work activity approved by the EPA in accordance with L4.5)

Table 7 – Additional Noise Monitoring Results November 2016

Description of Works	Date	Time	Location	NCA	NML	Predicted levels for activity	Laeq	Principal sources/ operations	Notes
Earthworks*	20/11/2016	4:08 PM	Letitia Cl	6	59	60	55.7	Scrapers, compactor, water cart	Within Noise Management Levels

*Daytime activity measured in response to Community complaint received by Pacifico.



Noise Impact Assessment Report

Report Details

Report Date: 23/11/2016 Report Reference: Clean out McGuinness
Company: Pacific Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: Starting 26/11 Time of Proposed Works: Sat and Sun Work Duration:
Description of Works

Noise Prediction Details

Expected Meteorological Conditions
Wind Speed: Medium (10 - 16) Wind Direction: South West
Cloud Cover: Clear Temperature (Degrees C): 10 - 20 ° C
Relative Humidity (%): < 55% Time of Day: Standard Hours (7am-6

Proposed Equipment

Location	Number of Plant	Equipment	Usage Factor	Total Sound Power
Location 8	1	Excavator 20T - 50T - loading	1	109
Location 8	1	Tipper	0.5	95

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
1-760 UPPER WARRELL CREEK ROAD, CONGARINN	50.0	5.7	No / Type 1	
3-800 UPPER WARRELL CREEK ROAD, CONGARINN	50.0	5.5	No / Type 1	
4-4201 PACIFIC HIGHWAY, EUNGAI CREEK NSW 24	50.0	6.6	No / Type 1	
5-464 BROWNS CROSSING ROAD, WARRELL CREEK	50.0	5.7	No / Type 1	
6-4227 PACIFIC HIGHWAY, CONGARINNI NSW 244	50.0	8.4	No / Type 1	
10-4317 PACIFIC HIGHWAY, WARRELL CREEK NSW	50.0	11.0	No / Type 1	
11-4263 PACIFIC HIGHWAY, CONGARINNI NSW 24	50.0	11.0	No / Type 1	
12-4371 PACIFIC HIGHWAY, WARRELL CREEK NSW	50.0	14.1	No / Type 1	
16-DP755562, COCKBURNS LANE, WARRELL CREEK	50.0	15.5	No / Type 1	
19-73 COCKBURNS LANE, WARRELL CREEK NSW 24	50.0	11.0	No / Type 1	
22-4411 PACIFIC HIGHWAY, WARRELL CREEK NSW	50.0	17.9	No / Type 1	
39-4476 PACIFIC HIGHWAY, WARRELL CREEK NSW	50.0	20.5	No / Type 1	
45-4390 PACIFIC HIGHWAY, WARRELL CREEK NSW	50.0	36.0	No / Type 1	
51-196 ALBERT DRIVE, WARRELL CREEK NSW 2447	50.0	20.0	No / Type 1	
55-4478 PACIFIC HIGHWAY, WARRELL CREEK NSW	50.0	25.1	No / Type 1	
59-46 ROSEWOOD ROAD, WARRELL CREEK NSW 2	50.0	20.5	No / Type 1	
60-180 ROSEWOOD ROAD, WARRELL CREEK NSW	46.0	13.0	No / Type 1	
64-69 ROSEWOOD ROAD, WARRELL CREEK NSW 2	46.0	16.0	No / Type 1	
66-174 ROSEWOOD ROAD, WARRELL CREEK NSW	46.0	9.1	No / Type 1	
68-91 ROSEWOOD ROAD, WARRELL CREEK NSW 2	46.0	9.9	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: 24/11/2016 Report Reference: Extended Hours - Floc
 Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 25/11/16 - February 2 Time of Proposed Works: 6-9pm M-F, 7-5 Sat Work Duration:
 Description of Works

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Strong (16 - 21) Wind Direction: South 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 2	1	Concrete Pump + Cement Mixer Truck 8 t / 350 bar	0.75	94
Location 2	1	Piling - Hydraulic hammer - 28T	0.5	117
Location 2	1	Concrete Agitator	1	96
Location 2	1	Excavator 20T - 50T - loading	0.25	103
Location 2	1	Vibrating Hammer	0.5	94
Location 2	1	Geniw EWP	0.25	96
Location 2	1	Compressor	0.5	90
Location 2	2	Crane - 50 -100T (160kW)	0.25	98

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
204-46 WALL STREET, MACKSVILLE NSW 2447	39.0	31.6	No / Type 1	
233-95 EAST STREET, MACKSVILLE NSW 2447	39.0	21.8	No / Type 1	
246-57 EAST STREET, MACKSVILLE NSW 2447	39.0	22.4	No / Type 1	
--73 EAST STREET, MACKSVILLE NSW 2447	39.0	24.1	No / Type 1	
394-60 GUMMA ROAD, GUMMA NSW 2447	39.0	20.8	No / Type 1	
386-32 GUMMA ROAD, MACKSVILLE NSW 2447	39.0	23.2	No / Type 1	
383-75 RIVER STREET, MACKSVILLE NSW 2447	39.0	24.2	No / Type 1	
366-65 RIVER STREET, MACKSVILLE NSW 2447	39.0	21.9	No / Type 1	
339-55 RIVER STREET, MACKSVILLE NSW 2447	39.0	21.6	No / Type 1	
355-15 BELLEVUE DRIVE, NORTH MACKSVILLE NSW	46.0	20.0	No / Type 1	
384-DP205344 BELLEVUE DRIVE, NORTH MACKSVI	46.0	20.6	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	25.9	No / Type 1	
388-DP654625 NURSERY ROAD, NORTH MACKSVII	46.0	23.1	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE N:	46.0	18.7	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: 30/11/2016 Report Reference: Linemarking - CNR Pac
 Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 5-16/12 (only 1 night) Time of Proposed Works: 7pm-5am Work Duration:
 Description of Works

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Strong (16 - 21) Wind Direction: South 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 2	2	Daymakers (Tower lights)	1	93
Location 2	1	Light Truck	0.25	92
Location 2	1	Line Marking Truck	1	93

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
398-2 MATTICK ROAD, NORTH MACKSVILLE NSW :	38.0	6.8	No / Type 1	
402-83 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	21.4	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW :	38.0	15.1	No / Type 1	
409-122 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	17.7	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	14.8	No / Type 1	
429-124 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	17.0	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	15.0	No / Type 1	
499-73 CHAMPIONS LANE, NORTH MACKSVILLE N	38.0	15.7	No / Type 1	
384-DP205344 BELLEVUE DRIVE, NORTH MACKSVI	46.0	18.0	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	20.6	No / Type 1	
388-DP654625 NURSERY ROAD, NORTH MACKSVII	46.0	24.3	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE N:	46.0	12.0	No / Type 1	
397-36 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	27.1	No / Type 1	
400-51 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	24.1	No / Type 1	
412-24 LETITIA CLOSE, NORTH MACKSVILLE NSW :	46.0	27.8	No / Type 1	
406-20 LETITIA CLOSE, NORTH MACKSVILLE NSW :	46.0	29.6	No / Type 1	
410-19 LETITIA CLOSE, NSW	46.0	26.2	No / Type 1	
486-41 LETITIA CLOSE, NORTH MACKSVILLE NSW :	46.0	21.3	No / Type 1	
415-143 NURSERY ROAD, NORTH MACKSVILLE NS!	46.0	20.7	No / Type 1	
482-169 NURSERY ROAD, NORTH MACKSVILLE NS!	46.0	21.6	No / Type 1	
31153-LOT 1 PACIFIC HWY, NORTH MACKSVILLE	46.0	41.8	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: 18/11/2016 Report Reference: Mattick Rd-Concrete Fi
Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 19/11/16 Time of Proposed Works: 1-3pm Work Duration:
Description of Works

Noise Prediction Details

Expected Meteorological Conditions

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

Proposed Equipment

Location: Location 2 Number of Plant: 3 Equipment: Handtools Usage Factor: 0.75 Total Sound Power: 93

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
403-247 OLD COAST ROAD, NSW	37.0	16.2	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW :	37.0	26.3	No / Type 1	
411-309 OLD COAST ROAD, NORTH MACKSVILLE N	37.0	12.1	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	37.0	24.4	No / Type 1	
444-198 OLD COAST ROAD, NORTH MACKSVILLE N	37.0	25.0	No / Type 1	
488-DP809906 MATTICK ROAD, NORTH MACKSVIL	37.0	10.5	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	37.0	6.3	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW	37.0	5.0	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA	37.0	4.9	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA	37.0	4.4	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 2	37.0	1.3	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA	37.0	4.0	No / Type 1	
M8a-349 OLD COAST ROAD, NORTH MACKSVILLE	37.0	7.4	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: 11/11/2016
Company: AFJV
Report Reference: Generator Bore Pump 56800
Prepared by: JH

Proposed Works

Date of Proposed Works: 12/11/2016-end of pr Time of Proposed Works: 24 hours
Description of Works: Generator required for bore pump
Work Duration: 7 days

Noise Prediction Details

Expected Meteorological Conditions

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

Proposed Equipment

Location	Number of Plant	Equipment	Usage Factor	Total Sound Power
Location 5	1	Generator - 300kva	1	103

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
426-537 OLD COAST ROAD, NORTH MACKSVILLE NS	38.0	6.5	No / Type 1	
490-459 OLD COAST ROAD, NORTH MACKSVILLE NS	38.0	17.6	No / Type 1	
492-469 OLD COAST ROAD, NORTH MACKSVILLE NS	38.0	10.9	No / Type 1	
493-37 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	5.3	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW 2	38.0	27.4	No / Type 1	
496-539 OLD COAST ROAD, NORTH MACKSVILLE NS	38.0	5.4	No / Type 1	
497-72 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	2.7	No / Type 1	
501-525 OLD COAST ROAD, NORTH MACKSVILLE NS	38.0	1.7	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA I	38.0	7.8	No / Type 1	
505-1 SIDING ROAD, NORTH MACKSVILLE NSW 244	38.0	3.2	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA I	38.0	1.6	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 24	38.0	1.5	No / Type 1	
518-18 SIDING ROAD, NORTH MACKSVILLE NSW 24	38.0	3.0	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA I	38.0	1.2	No / Type 1	
532-23 CHARLES PLACE, NAMBUCCA HEADS NSW 2	38.0	1.3	No / Type 1	
543-33 CHARLES PLACE, NAMBUCCA HEADS NSW 2	38.0	2.2	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:

Worst case wind direction

Name: _____

Date: _____

Signature: _____

Position: _____

Required Mitigation Measures:

Noise Impact Assessment Report

Report Details

Report Date: 4/11/2016 Report Reference: Nambucca River - Girders
 Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 05/11/16 - 31/12/16 Time of Proposed Works: 6am-8am Saturday Work Duration:
 Description of Works: Lifting Girders from Barge on Nambucca River

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Low (6 - 10) Wind Direction: South 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 13	1	EWP	0.5	99
Location 13	1	Compressor	0.5	90
Location 13	3	Small Work Boat	<25%	87
Location 13	1	Crane - Crawler - > 400T	<25%	96
Location 13	1	Tug boat	<25%	110

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
204-46 WALL STREET, MACKSVILLE NSW 2447	39.0	24.0	No / Type 1	
233-95 EAST STREET, MACKSVILLE NSW 2447	39.0	25.5	No / Type 1	
246-57 EAST STREET, MACKSVILLE NSW 2447	39.0	27.0	No / Type 1	
--73 EAST STREET, MACKSVILLE NSW 2447	39.0	26.7	No / Type 1	
394-60 GUMMA ROAD, GUMMA NSW 2447	39.0	35.7	No / Type 1	
386-32 GUMMA ROAD, MACKSVILLE NSW 2447	39.0	37.7	No / Type 1	
383-75 RIVER STREET, MACKSVILLE NSW 2447	39.0	39.3	No / Type 2	
366-65 RIVER STREET, MACKSVILLE NSW 2447	39.0	34.7	No / Type 1	
339-55 RIVER STREET, MACKSVILLE NSW 2447	39.0	31.6	No / Type 1	
355-15 BELLEVUE DRIVE, NORTH MACKSVILLE NSW	46.0	32.4	No / Type 1	
384-DP205344 BELLEVUE DRIVE, NORTH MACKSVI	46.0	39.0	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	46.3	No / Type 2	
388-DP654625 NURSERY ROAD, NORTH MACKSVII	46.0	43.9	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE N:	46.0	32.7	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: 30/11/2016 Report Reference: SMZ Placement and Co
 Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 05/12/16 - April 2017 Time of Proposed Works: 6pm-6am (Nightshift) Work Duration:
 Description of Works

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Low (6 - 10) Wind Direction: South 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	30T articulated dump truck-CAT730-Moving for	0.75	111
Location 9	1	foot roller Vibratory 10T - 25T -Moving with alar	0.5	108
Location 9	1	both barrel roller 7T-Dynapac CA15-Moving with al	0.5	111
Location 9	1	Grader 140H-CAT 140H-Moving with alarm	0.75	117
Location 9	4	Daymakers (Tower lights)	1	93

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
426-537 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	17.3	No / Type 1	
490-459 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	24.0	No / Type 1	
492-469 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	24.4	No / Type 1	
493-37 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	20.3	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW	38.0	34.0	No / Type 1	
496-539 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	26.6	No / Type 1	
497-72 SIDING ROAD, NEWEE CREEK NSW 2447	38.0	21.9	No / Type 1	
501-525 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	31.9	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	28.4	No / Type 1	
505-1 SIDING ROAD, NORTH MACKSVILLE NSW 24	38.0	28.6	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	25.1	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 2	38.0	25.6	No / Type 1	
518-18 SIDING ROAD, NORTH MACKSVILLE NSW 2	38.0	25.4	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	19.7	No / Type 1	
532-23 CHARLES PLACE, NAMBUCCA HEADS NSW	38.0	24.8	No / Type 1	
543-33 CHARLES PLACE, NAMBUCCA HEADS NSW	38.0	23.3	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: 1/11/2016 Report Reference: Subsoil 53600
 Company: AFJV Prepared by: JH

Proposed Works

Date of Proposed Works: 5/11-26/11/16 Time of Proposed Works: 1-5pm Work Duration:
 Description of Works Subsoil installatoin

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 8	1	Backhoe-Case 580 Super LE-Moving with alarm	0.25	100
Location 8	1	Excavator <10T - loading	0.25	93
Location 8	1	Water Cart	0.25	101
Location 8	1	Hand tools	0.75	93
Location 8	4	Ute	<25%	75
Location 8	1	Tipper truck	0.25	92
Location 8	1	Trencher	0.25	98
Location 8	1	Vibe plate	0.25	94

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
398-2 MATTICK ROAD, NORTH MACKSVILLE NSW :	38.0	10.3	No / Type 1	
402-83 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	27.3	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW :	38.0	16.5	No / Type 1	
409-122 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	28.5	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	16.9	No / Type 1	
429-124 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	18.2	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	10.8	No / Type 1	
499-73 CHAMPIONS LANE, NORTH MACKSVILLE N	38.0	9.0	No / Type 1	
384-DP205344 BELLEVUE DRIVE, NORTH MACKSVI	46.0	14.9	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	16.1	No / Type 1	
388-DP654625 NURSERY ROAD, NORTH MACKSVII	46.0	18.3	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE N:	46.0	12.1	No / Type 1	
397-36 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	21.0	No / Type 1	
400-51 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	39.3	No / Type 1	
412-24 LETITIA CLOSE, NORTH MACKSVILLE NSW :	46.0	27.9	No / Type 1	
406-20 LETITIA CLOSE, NORTH MACKSVILLE NSW :	46.0	36.7	No / Type 1	
410-19 LETITIA CLOSE, NSW	46.0	29.1	No / Type 1	
486-41 LETITIA CLOSE, NORTH MACKSVILLE NSW :	46.0	18.3	No / Type 1	
415-143 NURSERY ROAD, NORTH MACKSVILLE NSI	46.0	17.8	No / Type 1	
482-169 NURSERY ROAD, NORTH MACKSVILLE NSI	46.0	17.4	No / Type 1	
31153-LOT 1 PACIFIC HWY, NORTH MACKSVILLE	46.0	28.2	No / Type 1	

Risk:

Type 1 - Complies with assessment criteria

Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria

Name: _____

Date: _____

Signature: _____

Position: _____

Required Mitigation Measures:

Noise Impact Assessment Report

Report Details

Report Date: 1/11/2016 Report Reference: Subsoil 53800
 Company: AFJV Prepared by: JH

Proposed Works

Date of Proposed Works: 5/11-26/11/16 Time of Proposed Works: 1-5pm Work Duration:
 Description of Works Subsoil installation

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 10	1	Backhoe-Case 580 Super LE-Moving with alarm	0.25	100
Location 10	1	Excavator <10T - loading	0.25	93
Location 10	1	Water Cart	0.25	101
Location 10	4	Ute	<25%	75
Location 10	1	Tipper truck	0.25	92
Location 10	1	Trencher	0.25	98
Location 10	1	Hand tools	0.75	93
Location 10	1	Vibe plate	0.25	94

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
398-2 MATTICK ROAD, NORTH MACKSVILLE NSW :	38.0	5.9	No / Type 1	
402-83 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	37.5	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW :	38.0	20.9	No / Type 1	
409-122 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	28.4	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	16.8	No / Type 1	
429-124 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	20.2	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	11.0	No / Type 1	
499-73 CHAMPIONS LANE, NORTH MACKSVILLE N	38.0	8.1	No / Type 1	
384-DP205344 BELLEVUE DRIVE, NORTH MACKSVI	46.0	11.7	No / Type 1	
385-47 NURSERY ROAD, NORTH MACKSVILLE NSW	46.0	12.6	No / Type 1	
388-DP654625 NURSERY ROAD, NORTH MACKSVII	46.0	14.5	No / Type 1	
325-1 GRANDVIEW DRIVE, NORTH MACKSVILLE N:	46.0	3.7	No / Type 1	
397-36 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	14.2	No / Type 1	
400-51 OLD COAST ROAD, NORTH MACKSVILLE NS	46.0	30.5	No / Type 1	
412-24 LETITIA CLOSE, NORTH MACKSVILLE NSW :	46.0	29.5	No / Type 1	
406-20 LETITIA CLOSE, NORTH MACKSVILLE NSW :	46.0	32.2	No / Type 1	
410-19 LETITIA CLOSE, NSW	46.0	27.7	No / Type 1	
486-41 LETITIA CLOSE, NORTH MACKSVILLE NSW :	46.0	17.0	No / Type 1	
415-143 NURSERY ROAD, NORTH MACKSVILLE NSI	46.0	21.4	No / Type 1	
482-169 NURSERY ROAD, NORTH MACKSVILLE NSI	46.0	15.0	No / Type 1	
31153-LOT 1 PACIFIC HWY, NORTH MACKSVILLE	46.0	22.7	No / Type 1	

Risk:

Type 1 - Complies with assessment criteria

Type 2 - Low Risk - 0 to 2 dB(A) above assessment criteria

Name: _____

Date: _____

Signature: _____

Position: _____

Required Mitigation Measures:

Noise Impact Assessment Report

Report Details

Report Date: 1/11/2016 Report Reference: Subsoil install 54500
 Company: AFJV Prepared by: JH

Proposed Works

Date of Proposed Works: 5/11-26/11 Time of Proposed Works: 1-5pm Work Duration:
 Description of Works: Subsoil installation 54500

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 1	1	Tipper truck	0.25	92
Location 1	1	Excavator <10T - loading	0.25	93
Location 1	1	Trencher	0.25	98
Location 1	1	Backhoe-Case 580 Super LE-Moving with alarm	0.25	100
Location 1	1	Water Cart	0.25	101
Location 1	4	Ute	<25%	75
Location 1	1	Hand tools	0.75	93
Location 1	1	Vibe plate	0.25	94

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
403-247 OLD COAST ROAD, NSW	38.0	4.7	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW :	38.0	36.5	No / Type 1	
411-309 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	13.5	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	27.0	No / Type 1	
444-198 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	12.3	No / Type 1	
488-DP809906 MATTICK ROAD, NORTH MACKSVIL	38.0	10.1	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	6.6	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW	38.0	1.2	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	1.2	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	1.2	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 2	38.0	1.0	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	1.2	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:

Weather from AQMP

Name: _____

Date: _____

Signature: _____

Position: _____

Required Mitigation Measures:

Noise Impact Assessment Report

Report Details

Report Date: 1/11/2016 Report Reference: Subsoil install 55200
 Company: AFJV Prepared by: JH

Proposed Works

Date of Proposed Works: 5/11-26/11 Time of Proposed Works: 1-5pm Work Duration:
 Description of Works: Subsoil installation 55200

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 5	1	Backhoe-Case 580 Super LE-Moving with alarm	0.25	100
Location 5	1	Excavator <10T - loading	0.25	93
Location 5	1	Tipper truck	0.25	92
Location 5	1	Trencher	0.25	98
Location 5	1	Water Cart	0.25	101
Location 5	1	Ute	0.25	79
Location 5	1	Hand tools	0.75	93
Location 5	1	Vibe plate	0.25	94

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
403-247 OLD COAST ROAD, NSW	38.0	31.7	No / Type 1	
405-4 MATTICK ROAD, NORTH MACKSVILLE NSW :	38.0	16.8	No / Type 1	
411-309 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	26.9	No / Type 1	
414-18 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	14.0	No / Type 1	
444-198 OLD COAST ROAD, NORTH MACKSVILLE N	38.0	31.8	No / Type 1	
488-DP809906 MATTICK ROAD, NORTH MACKSVIL	38.0	25.2	No / Type 1	
491-64 MATTICK ROAD, NORTH MACKSVILLE NSW	38.0	21.2	No / Type 1	
495-OLD COAST ROAD, NORTH MACKSVILLE NSW	38.0	12.1	No / Type 1	
503-219 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	12.8	No / Type 1	
514-197 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	11.7	No / Type 1	
515-3 CHARLES PLACE, NAMBUCCA HEADS NSW 2	38.0	2.2	No / Type 1	
529-169 FLORENCE WILMONT DRIVE, NAMBUCCA	38.0	10.6	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:

Weather from AQMP

Name: _____

Date: _____

Signature: _____

Position: _____

Required Mitigation Measures:

Noise Impact Assessment Report

Report Details

Report Date: 17/11/2016
Company: Pacifico
Report Reference: Concrete finishing and wet curing - Upp Warrell Creek
Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 17/11/16 - 20/01/17
Description of Works: Time of Proposed Works: 6-8pm M-F, 1-4pm Sat, Sun (wet cu Work Duration: 3 months

Noise Prediction Details

Expected Meteorological Conditions

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

Proposed Equipment

Location: Location 4
Number of Plant: 3
Equipment: Handtools
Usage Factor: 0.75
Total Sound Power: 93

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
1-760 UPPER WARRELL CREEK ROAD, CONGARINN	40.0	8.7	No / Type 1	
3-800 UPPER WARRELL CREEK ROAD, CONGARINN	40.0	8.3	No / Type 1	
4-4201 PACIFIC HIGHWAY, EUNGAI CREEK NSW 24	40.0	15.2	No / Type 1	
5-464 BROWNS CROSSING ROAD, WARRELL CREEK	40.0	11.5	No / Type 1	
6-4227 PACIFIC HIGHWAY, CONGARINNI NSW 244	40.0	25.6	No / Type 1	
10-4317 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	19.0	No / Type 1	
11-4263 PACIFIC HIGHWAY, CONGARINNI NSW 24	40.0	34.5	No / Type 1	
12-4371 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	12.8	No / Type 1	
16-DP755562, COCKBURNS LANE, WARRELL CREEK	40.0	28.8	No / Type 1	
19-73 COCKBURNS LANE, WARRELL CREEK NSW 2	40.0	40.2	No / Type 2	
22-4411 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	10.5	No / Type 1	
39-4476 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	6.8	No / Type 1	
45-4390 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	9.9	No / Type 1	
51-196 ALBERT DRIVE, WARRELL CREEK NSW 2447	40.0	5.1	No / Type 1	
55-4478 PACIFIC HIGHWAY, WARRELL CREEK NSW	40.0	6.6	No / Type 1	
59-46 ROSEWOOD ROAD, WARRELL CREEK NSW 2	40.0	5.1	No / Type 1	
60-180 ROSEWOOD ROAD, WARRELL CREEK NSW	36.0	8.0	No / Type 1	
64-69 ROSEWOOD ROAD, WARRELL CREEK NSW 2	36.0	3.0	No / Type 1	
66-174 ROSEWOOD ROAD, WARRELL CREEK NSW	36.0	7.1	No / Type 1	
68-91 ROSEWOOD ROAD, WARRELL CREEK NSW 2	36.0	5.1	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: 30/11/2016 Report Reference: CCTV Pipes
Company: Pacifico Prepared by: N.Rutherford

Proposed Works

Date of Proposed Works: 12/03/2016 Time of Proposed Works: 1pm-6pm Work Duration:
Description of Works

Noise Prediction Details

Expected Meteorological Conditions

Wind Speed: Strong (16 - 21) Wind Direction: South West
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 8	1	CCTV Truck (Bogie)	0.75	99

Noise Predictions

Receiver ID	Criteria	Predicted LAeq	Exceedance / Risk	Magnitude - dB(A)
28-425 UPPER WARRELL CREEK ROAD, CONGARIN	45.0	11.9	No / Type 1	
42-395 UPPER WARRELL CREEK ROAD, CONGARIN	45.0	14.7	No / Type 1	
48-13A SONNYS LANE, WARRELL CREEK NSW 2447	45.0	11.9	No / Type 1	
51-196 ALBERT DRIVE, WARRELL CREEK NSW 2447	45.0	14.6	No / Type 1	
55-4478 PACIFIC HIGHWAY, WARRELL CREEK NSW	45.0	10.2	No / Type 1	
57-153 ALBERT DRIVE, WARRELL CREEK NSW 2447	45.0	21.4	No / Type 1	
58-19 ROSEWOOD ROAD, WARRELL CREEK NSW 2	45.0	19.9	No / Type 1	
59-46 ROSEWOOD ROAD, WARRELL CREEK NSW 2	45.0	15.4	No / Type 1	
61-124 ALBERT DRIVE, WARRELL CREEK NSW 2447	45.0	24.7	No / Type 1	
63-115 ALBERT DRIVE, WARRELL CREEK NSW 2447	45.0	46.4	Yes / Type 2	1.4
64-69 ROSEWOOD ROAD, WARRELL CREEK NSW 2	40.0	16.0	No / Type 1	
68-91 ROSEWOOD ROAD, WARRELL CREEK NSW 2	40.0	12.0	No / Type 1	
71-DP1150527, ROSEWOOD ROAD, WARRELL CRE	40.0	8.7	No / Type 1	
74-73 ALBERT DRIVE, WARRELL CREEK NSW 2447	45.0	34.1	No / Type 1	
77-62 O'DELLS ROAD, WARRELL CREEK NSW 2447	40.0	24.6	No / Type 1	
81-40 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	23.8	No / Type 1	
89-33 O'DELLS ROAD, DONNELLYVILLE NSW 2447	45.0	14.2	No / Type 1	
93-8 MAIN STREET, DONNELLYVILLE NSW 2447	45.0	18.5	No / Type 1	
100-17 ALBERT DRIVE, DONNELLYVILLE NSW 2447	45.0	12.1	No / Type 1	
111-12 PARKINS CLOSE, WARRELL CREEK NSW 244	40.0	14.2	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: