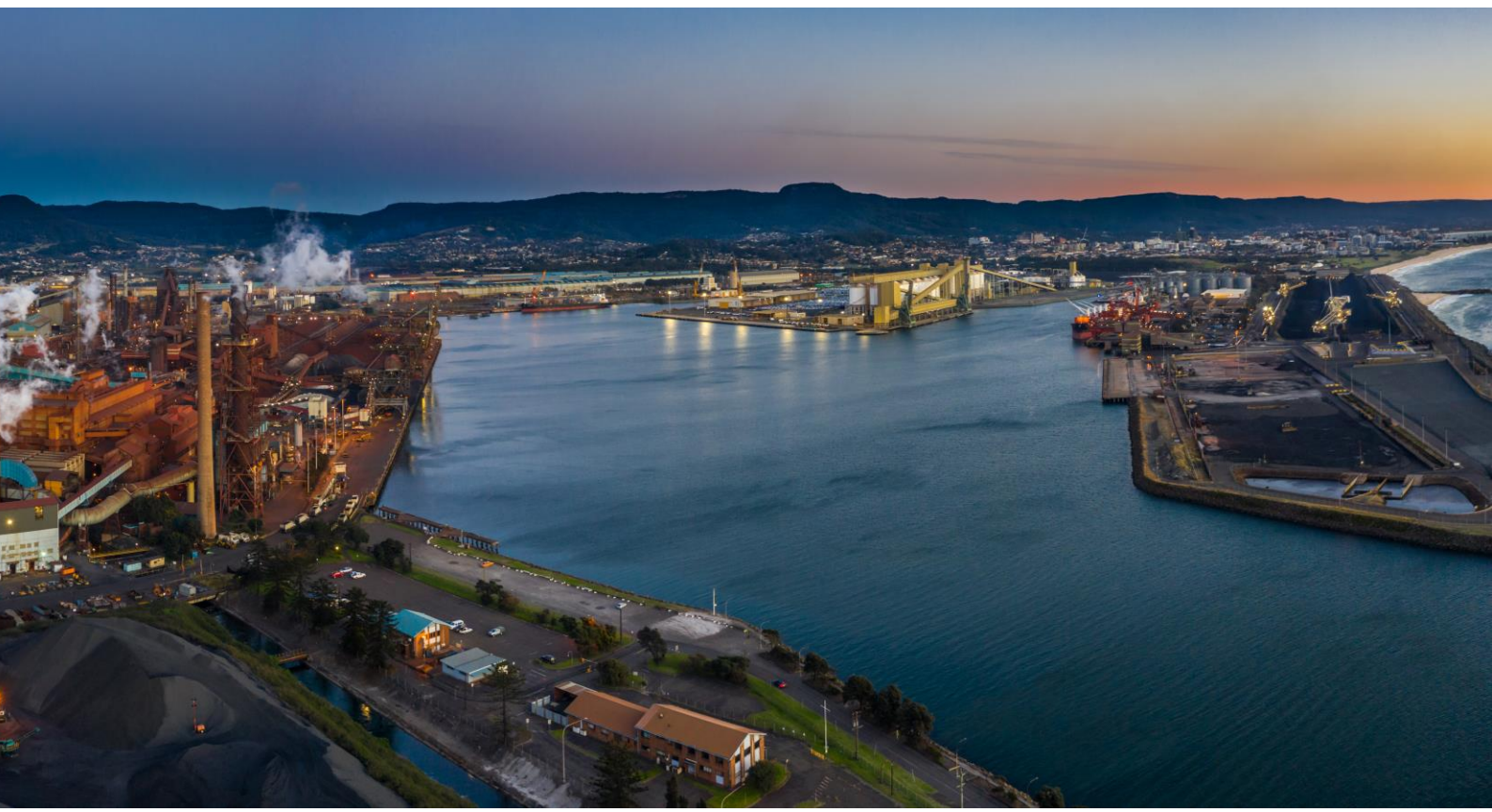


Nacap  
Port Kembla Pipeline Project

Construction noise and vibration impact assessment  
June 2023

Doc no. 20040-NV-RP-1-4





## CNVIS

Client	Nacap
Project	Port Kembla Pipeline Project
Document no.	20040-NV-RP-1-4
Revision	Rev 4
Date	5 June 2023
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### Revision history

0	20 January 2023	Draft report to client
1	30 January 2023	Updated contour map
2	13 February 2023	Added trenching works to assessed program
3	3 March 2023	Updated with comments after client review
4	26 May 2023	Updated to accommodate pipe welding and string pull back



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Appendix A. Predicted noise contours

Appendix B. Detailed noise predictions

Definition of terms

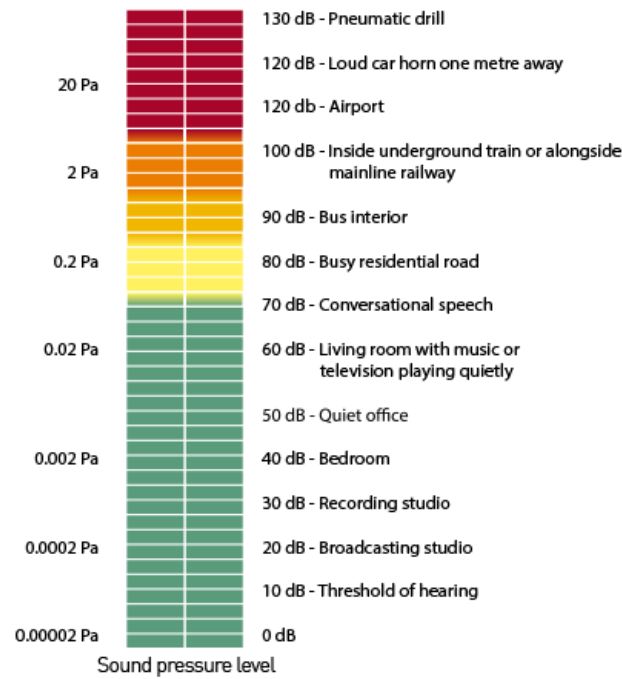
<b>Assessment period</b>	The period in a day over which assessments are made.
<b>Background noise</b>	The underlying level of noise present in the ambient noise, excluding the noise source under investigation.
<b>Decibel (dB)</b>	A measure of sound equivalent to 20 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure, and 10 times the logarithm (to base 10) of the ratio of a given sound power to a reference power.
<b>dB(A)</b>	Unit used to measure 'A-weighted' sound pressure levels. A-weighting is an adjustment made to sound-level measurement to approximate the response of the human ear.
<b>dB(C)</b>	Unit used to measure 'C-weighted' sound pressure levels, an adjustment made to sound level to approximate low frequency noise between 10 Hz and 200 Hz.
<b>Extraneous noise</b>	Noise resulting from activities that are not typical of the area such as construction, and traffic generated by holiday periods or special events such as concerts or sporting events. Normal daily traffic is not considered to be extraneous.
<b>Noise assessment criteria</b>	A standard rule or test by which the acceptability of the nature and characteristics of noise may be judged or evaluated. Criteria are generally based on guidelines or standards developed by Government agencies (eg EPA) to protect the majority of people for the majority of the time from adverse impacts.
<b>Noise level statistics</b>	<p><math>L_{A90}</math> - The A-weighted sound pressure level exceeded 90% of the monitoring period. This is considered to represent the background noise.</p> <p><math>L_{Aeq}</math> - The equivalent continuous A-weighted noise level—the level of noise equivalent to the energy average of noise levels occurring over a measurement period.</p> <p><math>L_{A1}</math> - The A-weighted sound pressure level exceeded 1% of the monitoring period.</p> <p><math>L_{Amax}</math> - The maximum A-weighted noise level associated with the measurement period.</p>
<b>Sound Power Level (SWL)</b>	The A-weighted sound power level is a logarithmic ratio of the acoustic power output of a source relative to $10^{-12}$ watts and expressed in decibels. Sound power level is calculated from measured sound pressure levels and represents the level of total sound power radiated by a sound source.

**Sound Pressure Level (SPL)**

This is the level of noise, usually expressed in dB(A), as measured by a standard sound level meter with a pressure microphone. The sound pressure level in dB(A) gives a close indication of the subjective loudness of noise.

A technical definition for the sound pressure level, in decibels, is 20 times the logarithm (base 10) of the ratio of any two quantities related to a given sound pressure to a reference pressure (typically 20  $\mu$ Pa equivalent to 0 dB). Examples of typical sound pressure levels are shown below.

**Threshold of pain**



Source: [https://www.osha.gov/dts/osta/otm/noise/health\\_effects/soundpropagation.html](https://www.osha.gov/dts/osta/otm/noise/health_effects/soundpropagation.html)

**Tonal noise**

Noise with perceptible and definite pitch or tone

# 1. Introduction

## 1.1 Overview

Australian Industrial Energy (AIE) is developing the Port Kembla Gas Terminal (the project) in Port Kembla, south of Wollongong, New South Wales (NSW). The project involves construction of a liquified natural gas (LNG) import terminal consisting of a Floating Storage and Regasification Unit (FSRU) in the Inner Harbour, wharf offloading facilities and installation of a new pipeline that will connect the AIE Port Kembla Gas Terminal (PKGT) with the Jemena owned gas transmission network via the Eastern Gas Pipeline (EGP).

The proposed pipeline is approximately 12.1 kilometres long, DN450 buried steel gas transmission pipeline between the PKGT and a new End of Line (EOL) facility in the vicinity of the Jemena's existing Kembla Grange facility. This Port Kembla Pipeline Project (PKPP) is comprised of three sections as illustrated in Figure 1:

- Section 1.1 – around 4.3 kilometer pipeline from kilometre point (KP) 0 at PKGT to KP 4.1 at Springhill Road to be built by Jemena; owned by AIE with some services provided in operation by Jemena
- Segment 1.2 – 2.2 km pipeline from Spring Hill Road (KP 4.1) to proposed AIE-owned Lateral from Cringila Lateral tie-in (KP 6.5) (previously identified as Cringila Facility) to be built, owned, and operated by Jemena. This Segment also includes the Cringila Lateral pipeline from BOC.
- Segment 2 – 5.6 km pipeline from proposed Lateral from Cringila Lateral tie-in (KP 6.5 – not within scope) to Kembla Grange Metering Station (KGMS) which includes the Kembla Grange Tie-in Facility (KP 11.9) to be built, owned and operated by Jemena.

Section 1.1 of the project was declared Critical State Significant Infrastructure (SSI 9471) and approved by the NSW Department of Planning, Industry and Environment in April 2020, following completion of an Environmental Impact Statement.

Sections 1.2 and 2 of the project were approved under SSI 9973 for Modification 2 – Port Kembla Lateral Looping Pipeline (October 2020).

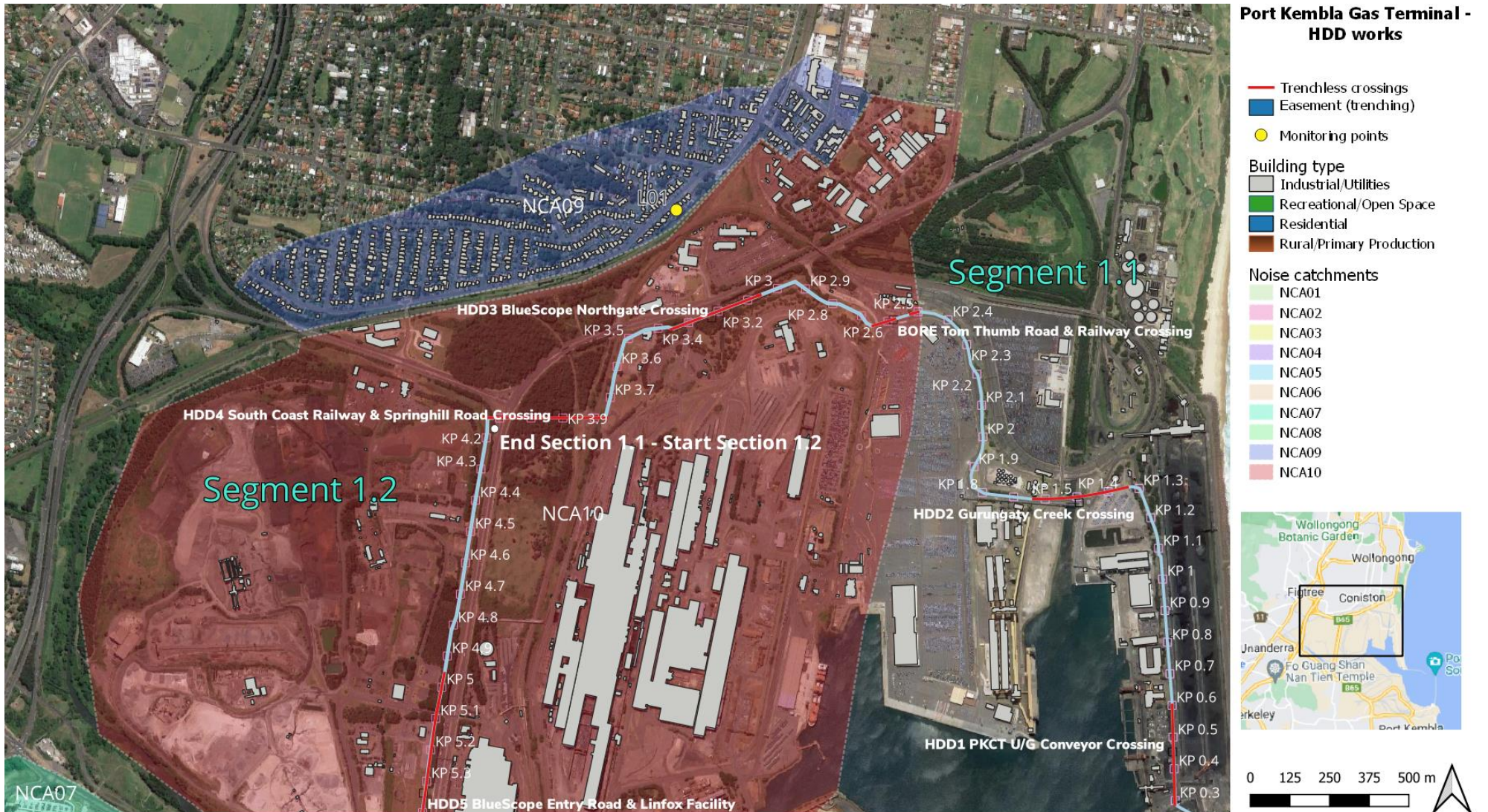
Nacap has been awarded the pipeline construction contract for the project, which will involve a blend of trenching and horizontal directional drilling (HDD).

The project may result in construction noise and vibration impacts on the surrounding community and Nacap will proactively and appropriately address these impacts, in line with relevant guidelines and project approvals.

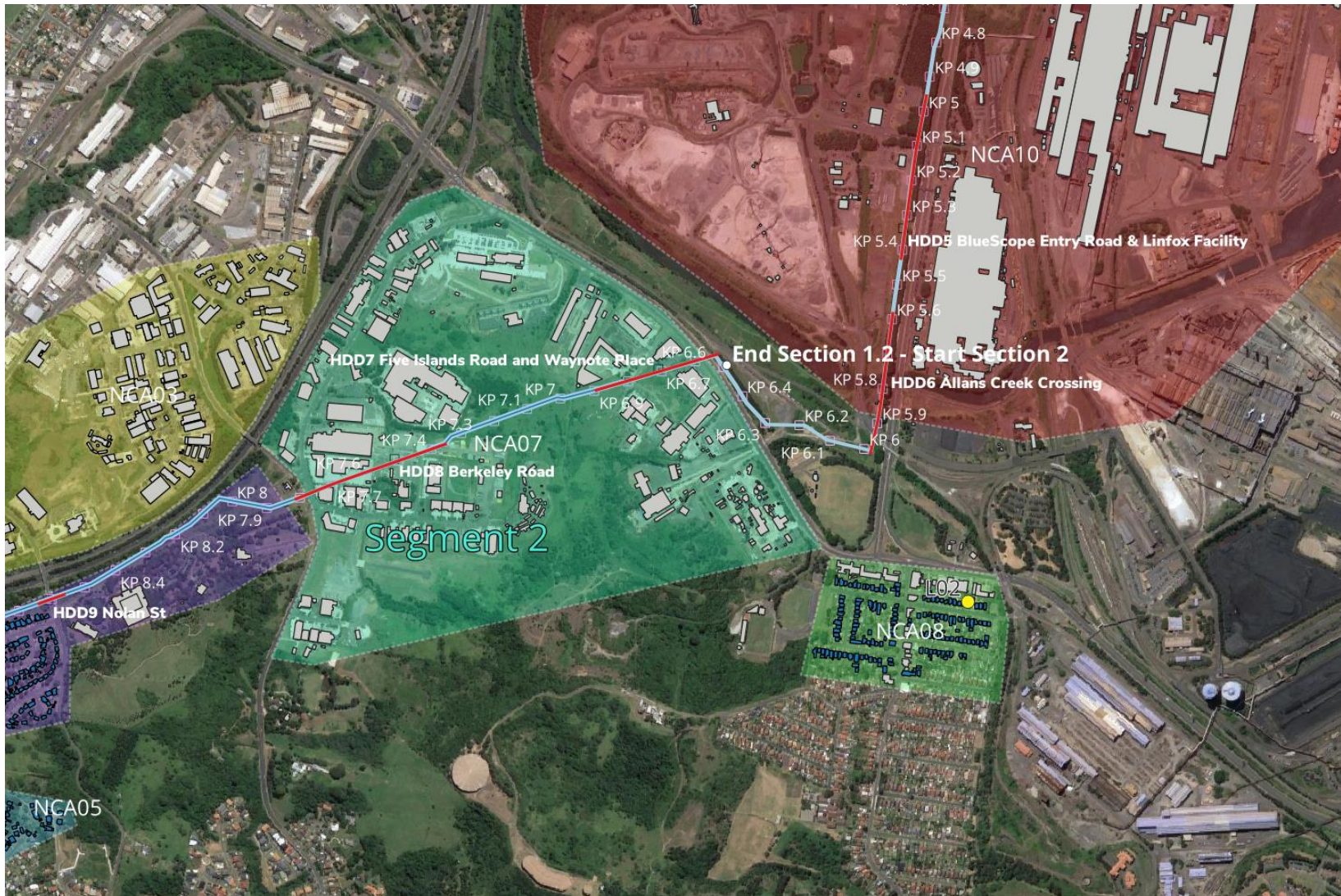
Hutchison Weller was engaged to assess the level of impact of noise and vibration on sensitive receivers from trenching and underboring operations within Sections 1.2 and 2 of the Project. Works under Section 1.1 have previously been assessed in line with SSI 9471.

This construction noise and vibration impact statement (CNVIS) describes the works planned in Section 1.2 and 2, their nature, timing and duration, applicable assessment criteria, existing noise environment, modelling methodology and findings as well as recommendations for noise management and verification of the noise levels.









**Port Kembla Gas Terminal - HDD works**

- Trendless crossings
- Easement (trenching)
- Monitoring points

- Building type**
- Industrial/Utilities
  - Recreational/Open Space
  - Residential
  - Rural/Primary Production

- Noise catchments**
- NCA01
  - NCA02
  - NCA03
  - NCA04
  - NCA05
  - NCA06
  - NCA07
  - NCA08
  - NCA09
  - NCA10

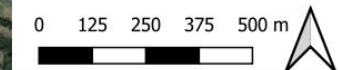






Figure 1 Project location and surrounds



## 1.2 Planned activities

Figure 1 illustrates the project corridor and illustrates the locations which will be trenched (blue easement) and which HDD will be used (red sections).

The nature of construction associated with this project requires most activities to be undertaken during standard hours; however some activities will continue uninterrupted during and outside standard construction hours, with justification for proposed extended hours based on quality, safety and technical matters.

Table 1 summarises the construction activities assessed in this document including an indication of whether they are proposed during and/or outside standard construction hours. Planned hours of each activity and justification for the extended hours are also given. In summary, horizontal directional drilling (HDD) requires uninterrupted operation for quality and safety reasons. HDD would only be required on short-term campaigns for selected sections of the new pipeline.

**Table 1 Proposed activities and timing**

Activity	Construction hours	Justification for extended hours	Equipment usage
Trenching using small excavators along new pipeline route	7am to 6pm Monday to Friday 8am to 1pm Saturday	N/A	Excavator Rammer compactor Double Drum trench roller
Underboring using horizontal directional drilling along new pipeline route	7am to 6pm, 7 days when HDD operating	Horizontal directional drilling requires continuous operation to prevent collapse of the tunnel in softer ground. Secondly, the drilling fluid used during drilling remains active for twelve hours so would be wasted for shorter drilling periods.	Power pack / generator Slurry mixer Water plant Horizontal direction drill Excavator Vacuum truck Traffic control vehicles
Pipe welding	7am to 6pm, 7 days	Completed during weekends to ensure the pipe string is ready for pull back	LV mounted welding machine
Pull back of pipe string through bore	7am to 6pm single day with provision for extension into the evening (6pm to 10pm)	Pull-back of the pipe string must be completed in one continuous shift to prevent damage to the pipe. The pipe string is 1200 metres long and may require an extension to standard hours.	As per underboring but exit pit equipment is replaced with 5 excavators working in unison over the length of the pipe string.

Trenching will progress at around 40 – 60 metres each day depending on weather and utilities constraints and are proposed for standard hours only.

Works outside standard hours are planned for the following HDD sites, which are assessed in this document and their locations illustrated in Figure 1.

- HDD 04 South coast Railway to Springhill Road – Length approx. 388.15
- HDD 05 BlueScope to Linfox – approx. 470m
- HDD 06 Allans Creek Crossing – approx. 425m
- HDD 07 Five islands and Waynote – approx. 360m
- HDD 08 Berkley Road – approx. 450m
- HDD 10 Princes Hwy and South Coast Railway – approx. 950m 24h
- Pipe string area at HDD 10



Considering the approved standard hours described in Section 2.1, proposed works outside standard hours would include 1 pm to 6 pm Saturday and 7am to 6 pm Sunday.

Traffic management would also commence prior to the HDD works, with a 6 am start. Once the work is complete, a hydrotest would be completed, requiring a 24 hour operational day.



## 2. Assessment framework

### 2.1 Conditions of Approval

The project is being delivered under two separate approvals - SSI 9471 for Section 1.1 and SSI 9973 for Section 1.2 and 2. Conditions of Approval (CoA) for the management of construction noise and vibration impacts are detailed in Table 2 for SSI 9471 and Table 3 for SSI 9973. These requirements are followed throughout the assessment process.

**Table 2 Project Conditions of Approval for Section 1.1 – SSI 9471**

Condition	Description
<b>Construction hours</b>	
27	<p>Unless the Secretary agrees otherwise, the Proponent may only undertake construction activities on site between:</p> <ol style="list-style-type: none"> <li>7 am to 6 pm Monday to Friday;</li> <li>8 am to 1 pm Saturdays; and</li> <li>at no time on Sundays and NSW public holidays.</li> </ol> <p>The following construction activities may be undertaken outside these hours without the approval of the Secretary:</p> <ol style="list-style-type: none"> <li>the delivery of materials as requested by the NSW Police Force or other authorities for safety reasons;</li> <li>emergency work to avoid the loss of life, property and/or material harm to the environment;</li> <li>construction works that cause LAeq (15 mins) noise levels that are: <ul style="list-style-type: none"> <li>no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009); and</li> <li>no more than the noise management levels specified in Table 3 of the Interim Construction noise Guideline (DECC, 2009) at other sensitive land uses; and</li> <li>continuous or impulsive vibration values, measured at the most affected residence, are no more than those for human exposure to vibration, specified in Table 2.2 of Assessing vibration: a technical guideline (DEC, 2006); and</li> <li>intermittent vibration values measured at the most affected residence are no more than those for human exposure to vibration, specified in Table 2.4 of Assessing vibration: a technical guideline (DEC, 2006); or</li> </ul> </li> <li>where a negotiated agreement has been reached with affected receivers;</li> </ol>
<b>Noise and vibration</b>	
28	<p>The Proponent must:</p> <ol style="list-style-type: none"> <li>minimise the noise of the development, including any associated traffic noise;</li> <li>ensure that the construction noise generated by the development is managed in accordance with the best practice requirements outlined in the Interim Construction Noise Guideline (DECC, 2009), or its latest version; and</li> <li>implement all reasonable feasible mitigation measures to achieve the following construction vibration goals: <ul style="list-style-type: none"> <li>For structural damage vibration, the vibration limits set out in the German Standard DIN 4150 Part 3 – 1999 Structural Vibration in Buildings – Effects on Structures; or</li> <li>For human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: A Technical Guidelines (DEC 2006).</li> </ul> </li> </ol>



**Table 3 Project Conditions of Approval for Sections 1.2 and 2 – SSI 9973**

Condition	Description
Construction hours	
B6	<p>Unless otherwise agreed by the Secretary, the Proponent may only undertake construction activities between:</p> <ul style="list-style-type: none"><li>(a) 7 am to 6 pm Monday to Friday;</li><li>(b) 8 am to 1 pm Saturdays; and</li><li>(c) at no time on Sundays and NSW public holidays</li></ul> <p>The following activities may be undertaken outside these hours without the approval of the Secretary:</p> <ul style="list-style-type: none"><li>(a) the delivery of materials as requested by the NSW Police Force or other authorities for safety reasons;</li><li>(b) emergency work to avoid the loss of life, property and/or material harm to the environment;</li><li>(c) where a negotiated agreement has been reached with affected receivers; or</li><li>(d) works as approved through the out-of-hours work protocol outlined in the CEMP required by condition C1.</li></ul>
Noise	
B7	<p>The Proponent must minimise the noise generated by any construction, upgrading or decommissioning activities in accordance with the best practice requirements outlined in the Interim Construction Noise Guideline (DECC, 2009), or its latest version.</p>

### 3. Existing environment and assessment criteria

#### 3.1 Existing environment

Port Kembla is an industrial area south of Wollongong, NSW. The project would be constructed between the Port to the east and Kembla Grange in the west.

The pipeline will trace a route north of the port around the periphery of the industrial area before turning south to the existing gas network in Cringilla. From there, the pipeline would head west through industrial lands and adjacent to some sections of residential land use.

The existing environment is influenced by industrial land uses in the area such as steel works and grain terminals. Heavily trafficked transport corridors also influence the existing noise level such as Five Islands Road, Princes Motorway and Princes Highway.

Residential and non-residential sensitive receivers are located to the northwest of the project in Mount St Thomas and Coniston, southeast and south in the suburbs of Cringilla and Kembla and northwest in Unanderra and Farmborough Heights.

For efficiency in assigning noise management levels to identified sensitive receivers, they have been divided into representative Noise Catchment Areas (NCA), within which existing levels of noise are likely to be similar and impacts from the project of a similar magnitude. A summary of nearby receivers and NCAs is presented in Table 4 (and illustrated in Figure 1).

**Table 4 Sensitive receivers and NCAs**

NCA	Description	Orientation from and distance to nearest project site
NCA1	Farmborough Heights residential area located at least 300 metres from traffic noise sources of the Princes Highway	Around 300 metres northwest of the exit pit of HDD 10
NCA2	Residential suburb of Unaderra located adjacent to the Princes Highway	Around 50 metres northwest of the exit pit of HDD 10
NCA3	Industrial precinct of Unanderra between the Princes Highway and Princes Motorway	Between 100 metres east of the exit pit of HDD 10 and 200 metres west of the HDD 10 entry pit
NCA4	Residential suburb of Berkeley adjacent to the Princes Motorway.	Around 30 metres south of the HDD10 entry pit
NCA5	Residential area of Berkely further south of the works and more distant from the Princes Motorway	Around 500 metres from the entry pit of HDD10
NCA6	Residential land uses of Kembla Grange sitting between the Princes Highway and Princes Motorway	Around 800 metres southwest of the HDD10 exit pit and 1.5 kilometres south west of the Entry pit.
NCA7	Industrial area of Unanderra between the Princes Motorway and Five Islands Road	Entry and exit pits of HDD 7 and HHD 8 are within this catchment, with closest receiver between 30 and 60 metres of entry pits.
NCA8	Residential area of Cringilla adjacent to Five Islands Road and Lake Avenue	Up to 700 metres southeast of HDD7 and 350 metres south of HDD6.
NCA9	Residential area of Mt St Thomas near Masters Road and Springhill Road	400 – 500 metres north of HDD4
NCA10	Industrial area of Port Kembla and Spring Hill	Less than 100 metres east of HDD5



### 3.2 Background noise monitoring

To characterise the existing ambient noise environment around the project site and establish project Noise Management Levels (NMLs), a baseline noise survey was undertaken in support of the project’s Environmental Impact Statement (GHD 2018), which provided representative data for Sections 1.1 and 1.2 of the PKPP. Supplementary monitoring was completed by Hutchison Weller in December 2022 to accommodate Section 2 of the project between Cringilla and Kembla Grange. Monitoring locations and measured noise levels for each NCA are described in Table 5. Locations are illustrated in Figure 1.

Rating Background Levels (RBL) represent the average minimum background sound level and are the 10th percentile LA90 noise level for each measurement period, averaged over the measurement days. Background noise monitoring found the evening RBL to exceed the day RBL at M1. At night the RBL was greater than during the evening at M2.

The ambient noise level, which is the overall noise level encompassing a variety of noise sources, remained elevated into the evening and night. This is likely due to existing industrial and traffic noise in the area.

**Table 5 Background noise levels**

Monitoring Location		Rating background level (RBL) <sup>2</sup>		
		Day <sup>1</sup>	Evening <sup>1</sup>	Night <sup>1</sup>
2018	L01. 117 Gladstone Avenue, Coniston	39	40	39
	L02. 16 Merrett Avenue, Cringilla	43	42	45
2022	M01 135 Farmborough Road, Farmborough Heights	47	44	37
	M02 1 Orana Parade, Unanderra	49	44	36
	M03 24 Warwick Street Berkeley	50	48	37

Note 1: The Noise Policy for Industry (EPA, 2017) defines day, evening and night time periods as:

- Day: the period from 7 am to 6 pm Monday to Saturday or 8 am to 6 pm on Sundays and public holidays.
- Evening: the period from 6 pm to 10 pm.
- Night: the remaining periods.

Note 2: Where the evening RBL exceeds the day RBL, the day RBL shall be adopted. Similarly, where the night RBL exceeds the evening RBL, the evening RBL shall be adopted in line with the EPA (2017) *Noise Policy for Industry*

### 3.3 Interim Construction Noise Guideline

CoA 28 of SSI 9471 and CoA B7 of SSI 9973 require implementation of best practice noise mitigation measures detailed in the *Interim Construction Noise Guideline* (ICNG) (DECC 2009) during construction activities.

The ICNG notes noise that exceeds background noise levels may result in adverse impacts and an increased likelihood of complaints.

During standard hours, where construction noise is within 10 dB(A) of the RBL, the impacts are considered acceptable. Where construction noise is more than 10 dB(A) above the RBL, a residential receiver is taken to be noise affected and the proponent should undertake all reasonable and feasible steps to manage the impact and consult with the affected community. Above a LAeq, 15 minute noise level of 75 dB(A), a receiver is considered to be highly noise affected, requiring respite to be given in consultation with the regulatory authority and the community.

At night, or outside approved construction hours, construction noise at a residential receiver more than 5 dB(A) above the RBL is taken to be noise affected.

In addition, irritating noise such as rock hammers, impact piling, or other impulsive noise sources usually result in greater annoyance than continuous construction noise. A 5 dB(A) penalty is applicable to such activities prior to comparison with the NMLs. The NMLs in Table 7 are based on the RBLs described in Section 3.2.

A noise level above  $L_{Aeq, 15min}$  70 dB(A) at a commercial property is considered to warrant noise mitigation. Similarly, an industrial facility would warrant noise mitigation at  $L_{Aeq, 15 minute}$  noise levels above 75 dB(A).

Table 6 presents management levels for noise at other relevant sensitive land uses based on the principle that the characteristic activities for each of these land uses should not be unduly disturbed.

Internal noise levels are assessed at the centre of the occupied room. Where internal noise levels cannot be measured, external noise levels may be used. A conservative estimate of the difference between internal and external noise levels is 10 dB for buildings other than residences.

**Table 6 NMLs for non-residential sensitive receivers**

Sensitive receiver type	NML applicable when in use, $L_{Aeq, 15 min}$
Classrooms at schools and other educational institutions	Internal noise level 45 dB(A)
Hospital wards and operating theatres	Internal noise level 45 dB(A)
Places of worship	Internal noise level 45 dB(A)
Active recreation areas (characterised by sporting activities and activities which generate their own noise or focus for participants, making them less sensitive to external noise intrusion)	External noise level 65 dB(A)
Passive recreation areas (characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example, reading, meditation)	External noise level 60 dB(A)
Community centres	Refer to the recommended 'maximum' internal levels in AS2107 for specific uses.

### 3.4 Sleep disturbance

The ICNG recommends where works are likely to occur over more than two consecutive nights, maximum noise levels should be analysed in terms of the extent and number of times the maximum noise exceeds the RBL. Additionally, the DECCW (2011) Road Noise Policy discusses a guideline aimed at limiting the level of sleep disturbance due to environmental noise: a  $L_{A1, 1 minute}$  or  $L_{Amax}$  level of any noise should not exceed the ambient  $LA_{90}$  noise level by more than 15 dB(A).

The Road Noise Policy also suggests maximum internal noise levels below 50-55 dB(A) are unlikely to awaken people from sleep and one or two noise events per night, with maximum internal noise levels of 65-70 dB(A) are not likely to affect health and wellbeing significantly.

Based on this guidance, a sleep awakening criterion of 55 dB(A) (internal) has been adopted for the works. Given that noise attenuation of 10 dB(A) is typically provided by an open window, a sleep awakening criterion of 65 dB(A) (external) has been applied to residential bedroom façades.

Hence, a screening criterion for sleep disturbance of RBL + 15 dB(A) and an awakening criterion of 65 dB(A), measured as  $L_{A1, 1 minute}$  or  $L_{Amax}$ , will be applied in this assessment. While not mandatory, the screening criterion should trigger additional consideration of the nature and frequency of disturbances whilst the awakening criterion should act as a maximum noise goal not to be exceeded on more than a couple of occasions.

### 3.5 Project-specific construction noise management levels

Based on the measured RBLs and requirements of the ICNG, project-specific noise management levels (NMLs) are summarised in Table 7. NMLs for non-residential receivers are described in Table 6.

**Table 7 Noise management levels**

NCA	Representative monitoring location	Noise Management Level, LAeq, 15 minute					
		Standard hours		Outside standard hours			
		Noise affected	Highly noise affected	Day	Evening	Night	Sleep disturbance screening (LAMax)
NCA01	M01	57	75	52	49	42	42
NCA02	M02	59	75	54	49	41	41
NCA03	M02	59	75	54	49	41	41
NCA04	M03	60	75	55	53	42	42
NCA05	M03	60	75	55	53	42	42
NCA06	M02	59	75	54	49	41	41
NCA07	M03	60	75	55	53	42	42
NCA08	L02	53	75	48	47	47	47
NCA09	L01	49	75	44	44	44	44
NCA10	L01	49	75	44	44	44	44

### 3.6 Vibration management levels

When assessing human exposure to construction-related vibration, CoA 28 of SSI 9471 requires vibration goals to be established using *Environmental Noise Management Assessing Vibration: A Technical Guideline* (DECC 2006), which provides criteria for the assessment of vibration impacts on humans. Without specific reference in SSI 9973 to vibration guidelines, a similar approach to SSI 9471 has been adopted.

Construction activities typically generate intermittent vibration, which is assessed using a Vibration Dose Value (VDV). Acceptable values of vibration doses are presented in Table 8 for sensitive receivers.

**Table 8 VDV Vibration criteria**

Receiver type	Time period	Intermittent Vibration Dose Value (VDV ms <sup>-1.75</sup> )	
		Preferred	Maximum
Critical areas	When in Use	0.1	0.2
Residential	Day (7am to 10pm)	0.2	0.4
	Night (10pm to 7am)	0.13	0.26
Office, schools, educational institutions and places of worship	When in use	0.4	0.8



Potential building damage from construction vibration is provided requires the application of values set out in the *German Standard DIN 4150-3: Structural Vibration - effects of vibration on structures*. These values are presented in Table 9.

**Table 9 Guideline values for vibration velocity to be used when evaluating the effects of short-term vibration on structures (DIN 4150-3).**

Line	Type of building	Guideline values for vibration (PPV mm/s)			
		1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz	Vibration at horizontal plane of highest floor at all frequencies
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15
3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (e.g. listed buildings under preservation order)	3	3 to 8	8 to 10	8

Indicative minimum safe working distances from sensitive receivers for typical vibration intensive plant are presented in Table 10. The minimum distances are for both structural damage and human comfort.

Safe working distances are indicative and will vary depending on the item of plant and local geotechnical conditions. The cosmetic damage thresholds apply to typical buildings under typical geotechnical conditions and vibration monitoring is recommended at specific sites. Where structures are more sensitive, such as heritage items, more stringent conditions are applicable and should be considered individually.

In relation to human response, the safe working distances relate to continuous vibration. For most construction activities, vibration emissions are intermittent and higher vibration levels over shorter periods are acceptable. Additional assessment should be undertaken where the human response criteria are exceeded.

**Table 10 Safe working distances for vibration intensive plant**

Plant item	Rating/description	Safe working distance	
		Cosmetic damage (DIN 4150)	Human response (DECCW)
Vibratory roller	<50 kN (typically 1-2 t)	10 m	15 m to 20 m
	<100 kN (typically 2-4 t)	12 m	20 m
	<200 kN (typically 4-6 t)	25 m	40 m
	<300 kN (typically 7-13 t)	30 m	100 m
	>300 kN (typically 13-18 t)	40 m	100 m
	>300 kN (> 18 t)	50 m	100 m
Small hydraulic hammer	300 kg – 5 to 12 t excavator	4 m	7 m
Medium hydraulic hammer	900 kg – 12 to 18t excavator	14 m	23 m
Large hydraulic hammer	1600 kg – 18 to 34 t excavator	45 m	73 m
Vibratory pile driver	Sheet piles	4 m to 40 m	20 m
Pile boring	≤800 mm	4 m	n/a
Jackhammer	Hand held	4 m	Avoid contact with structure

### 3.7 Construction traffic noise

While operating within the construction site, construction vehicles are assessed as part of the construction activity of which they are a part. However, once these vehicles leave the construction site and enter public roads, they are assessed as road traffic.

The NSW Road Noise Policy is generally adopted to assess the impact of construction traffic on public roads. A screening test is first applied to establish whether noise levels will increase by more than 2 dB due to construction traffic. Where any noise increase is less than 2 dB, the objectives of the Road Noise Policy have been met.

Where this is not the case, further assessment is undertaken in line with the Noise Criteria Guideline, which Transport for NSW uses to implement the Road Noise Policy. Applicable noise criteria from the Noise Criteria Guideline are summarised in Table 11.

**Table 11 Road traffic noise criteria**

Development type	Day 7am to 10pm	Night 10pm to 7am
Existing residence affected by additional traffic on arterial roads generated by land use developments	60 LAeq (15 hour)	55 LAeq (9 hour)
Existing residence affected by additional traffic on local roads generated by land use developments	55 LAeq (1 hour)	50 LAeq (1 hour)

## 4. Impact assessment

### 4.1 Plant and equipment

Planned activities and their timeframes are summarised in Section 1.2. The plant and equipment proposed to complete each activity are outlined in Table 12 including the expected equipment in use and associated overall unmitigated  $L_{Aeq, 15 \text{ minute}}$  and  $L_{Amax}$  sound power levels.

Sound power levels and predicted noise levels depend on the number of plant items operating at any one time and their precise location relative to a sensitive receiver. Equipment was assumed to be working at representative locations within each work area. Where plant and equipment are positioned differently, predicted levels will change slightly.

Each trenching and HDD site would be operated individually, with no cumulative impacts expected.

### 4.2 Modelling

SoundPlan noise modelling software was used to calculate noise impacts in accordance with the ISO9613 prediction method at all identified noise-sensitive receivers. The model included:

- Topography – 1 metre DEM based on LPI Lidar data captured in 2013. 4-metre-tall stockpiles included along southwestern perimeter of the disposal area.
- Individual buildings have been included to account for shielding and reflections.
- Individual sensitive receivers – One receiver location representing each residential dwelling and located at 1.5 metres height up to 600 metres from the works. Around 1900 receivers have been included in this assessment.
- Construction noise sources – Activities and equipment provided by Nacap were included in the noise model as point sources within each HDD site and area sources for each trenching site. Sound power levels as per Table 12.
- Meteorology – worst-case conditions (gentle breeze from source to receiver and stable conditions).
- Noise barriers – a 2 metre noise barrier was assumed around the west and south boundaries of the HDD 10 work site. The configuration of this hoarding should be confirmed prior to commencement at this site.

**Table 12 Plant and equipment included in the noise model**

Location	Work site	Equipment/plant	No.	UF %	Adj SWL	L <sub>Amax</sub>
Trenches	General	Excavator	1	40	99	109
		Rammer compactor	1	30	102	108
		Trench roller	1	30	102	105
HDD 04, 05, 06, 07, 08	Entry pit	Excavator 12t	1	40	99	109
		HDD rig (Vermeer 330)	1	100	94	99
		Mud pump	1	100	106	108
		Recycle plant	1	100	100	102
		Excavator 5t	1	30	90	99
		Power pack	1	100	95	95
	Exit pit	Vacuum truck	1	30	104	112
		Excavator 5t	1	30	90	99
HDD10	Entry pit	Excavator 12t	1	40	99	109
		HDD rig (Gallagher HDD660)	1	100	103	108
		Mud pump	1	100	106	108
		Recycle plant	1	100	100	102

Location	Work site	Equipment/plant	No.	UF %	Adj SWL	LAmaz
		Excavator 5t	1	30	90	99
		Power pack	1	100	95	95
	Exit Pit	Vacuum truck	1	30	104	112
		Excavator 5t	1	30	90	99
Pipe welding	Pipe string area	Engine-driven welder	3	100	96	100
Pipe string pull back	Pipe string area	Excavator 13 tonne	5	30	99	104

### 4.3 Predicted noise levels

#### 4.3.1 Trenching

A summary of predicted noise levels for trenching is provided in Table 13 and detailed results for all sensitive receivers are provided in Appendix B.

Trenching activities are not likely to result in significant impacts due to the relatively low noise intensity and typically large distances from source to receivers. No residential receivers were identified as potentially exceeding the 75 dBA threshold considered highly noise affected. However, one residence in Warwick Street may come close.

Trenching in the eastern portions of Section 2 at Warwick Street are likely to result in the greatest level of impact with 15 residences predicted to be between 1 and 10 dB above the NML for standard hours and 11 between 10 and 20 dB. With progress of trenching between 40 and 60 metres each day, maximum predicted levels would be applicable for 1 to 2 shifts only.

#### 4.3.2 HDD

A summary of predicted noise levels for HDD is provided in Table 14. For work at most HDD sites, exceedances of the NML are not expected at residential receivers during any period.

However, at HDD 10, minor exceedances of the NML are expected during standard hours (up to 7 residents in Orana Place) and out of works periods on Saturday and Sunday. Up to 18 minor exceedances are predicted with levels 1 – 10 dB above the weekend day NML and up to 2 receivers with predicted noise between 10 and 20 dB above the NML.

At HDD 04, some minor exceedances are predicted during weekend day work with 18 residents predicted to exceed the NML by up to 2 dB in these periods.

Predicted noise levels demonstrate no sensitive receiver would be highly noise affected (greater than 75 dBA), with the maximum predicted noise level of 67 dBA at residential premises near HDD 10.

No evening (between 6pm and 10 pm) works are planned. Works commencing before 8am on Saturday and Sunday are considered the night period and a larger number of receivers would experience noise impacts in these times. Up to 165 minor, 30 moderate and 4 high level exceedances are expected where full operations are underway in the early morning and this period should be avoided at HDD 10.

HDD 04 works are also likely to exceed night NML at up to 18 receivers in the early morning.

These predicted levels are for largely unmitigated noise emissions from the HDD, generator, water and slurry treatment and excavator operation. With relatively simple noise mitigation in the form of noise blankets reducing noise levels by around 5 dB, the number of receivers predicted to exceed the NMLs would decrease.



Contours of predicted levels for each HDD site are presented in Appendix A. Contours indicate the extent of noise impacts within the adjacent community.

#### 4.3.3 Pipe welding

Up to three welding rigs would operate during standard hours and on weekends outside standard hours. No exceedances of the applicable NMLs are expected from this activity considering the low noise emissions from the proposed equipment.

#### 4.3.4 Pipe string pull back

Five excavators would work concurrently along the pipe string to drag it from west to east at the exit pit. The excavators would be between 250 metres and 100 metres of residents in Farmborough Heights (NCA 1) and Unanderra (NCA 2).

A summary of results is in Table 15. In general this activity will be relatively quiet along the pipe string area with maximum noise levels experienced in Unanderra (NCA 2) likely around 51 dBA. The HDD rig would still be employed to pull the string back near NCA 4 and this would result in noisy activity at NCA 4.

During standard hours, the NML should not be exceeded in NCAs 1 and 2. If the works continue into the evening, minor exceedances are likely of around 2 dB. This level of exceedance is likely to be barely perceptible to residents and would be of short duration.

Works are not proposed to continue into the night period.

**Table 13 Predicted noise levels –trenching sites**

Construction location	Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)
Maximum predicted LAeq, 15 minute noise level at <b>residence</b>	47	43	75	65
Maximum predicted LAeq, 15 minute noise level at <b>non-residence</b>	60	67	71	58
Number of highly noise affected (>75 dB)	0	0	0	0
<b>Number of exceedances of standard hours NML</b>				
0 – 10 dB above NML	1	0	15	3
10 – 20 dB above NML	0	0	11	0
20 – 30 dB above NML	0	0	0	0

**Table 14 Predicted noise levels –HDD sites**

Construction location	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10
Maximum predicted LAeq, 15 minute noise level at <b>residence</b>	44	35	43	39	34	67
Maximum predicted LAeq, 15 minute noise level at <b>non-residence</b>	57	58	62	67	62	58
Number of highly noise affected (>75 dB)	0	0	0	0	0	0
<b>Number of exceedances of standard hours NML</b>						
0 – 10 dB above NML	0	0	0	0	0	8
10 – 20 dB above NML	0	0	0	0	0	0
20 – 30 dB above NML	0	0	0	0	0	0
<b>Number of exceedances of outside standard hours daytime NML</b>						
0 – 10 dB above NML	18	0	0	0	0	18
10 – 20 dB above NML	0	0	0	0	0	2
20+ dB above NML	0	0	0	0	0	0



Construction location	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10
<b>Number of exceedances of night NML</b>						
0 – 10 dB above NML	18	0	0	0	0	165
10 – 20 dB above NML	0	0	0	0	0	30
20+ dB above NML	0	0	0	0	0	4
30+ dB above NML	0	0	0	0	0	0

**Table 15 Predicted noise levels –pipe string welding and pull back**

Construction location	Pipe string welding	Pipe string pull back
Maximum predicted LAeq, 15 minute noise level at <b>residence</b>	51	63
Maximum predicted LAeq, 15 minute noise level at <b>non-residence</b>	45	46
Number of highly noise affected (>75 dB)	0	0
<b>Number of exceedances of standard hours NML</b>		
0 – 10 dB above NML	0	3
10 – 20 dB above NML	0	0
20 – 30 dB above NML	0	0
<b>Number of exceedances of outside standard hours daytime NML</b>		
0 – 10 dB above NML	0	18
10 – 20 dB above NML	0	0
20+ dB above NML	0	0

#### 4.4 Vibration impact assessment

HDD is not an inherently vibration-intensive activity and vibration emissions are not expected to result in human comfort cosmetic damage issues at the distances the nearest receivers are from each site.

Trenching will involve a trench roller and rammer compactor, which produce vibration. The *Construction Noise and Vibration Guideline* (RMS 2016) describes minimum working distances from sensitive receivers for typical items of vibration intensive plant. These distances are quoted in Table 16 for cosmetic damage (as per BS 7385) and human comfort (from *Assessing Vibration: a technical guideline*) and apply to damage of typical buildings under typical geotechnical conditions. The human comfort guide is applicable to continuous vibration so where vibration is intermittent, higher vibration levels over shorter periods are permissible.

Considering a trench roller and rammer compactor are smaller than the small vibratory roller quoted in Table 16, this minimum working distance is conservative.

**Table 16 Minimum working distances (RMS 2016)**

Equipment	Rating/description	Minimum working distance	
		Cosmetic damage	Human Response
Vibratory roller	Small (1 – 2 tonnes)	5 m	15 – 20 m

Figure 2 illustrates the minimum distance for a small roller at trenching sites (blue lines) nearest to sensitive residential receivers. No residential premises are within the minimum working distance of 5 metres or the human comfort distance of 15 metres. Therefore the risk of vibration impacts on nearby receivers is low.



**Figure 2 Minimum working distances to satisfy cosmetic damage and human comfort criteria for small roller.**





#### 4.5 Construction-related traffic

Construction-related traffic would be limited to delivery of plant and equipment during site establishment and then light vehicles for personnel arriving and departing from site each shift. Vehicle numbers are very low, with up to 3 deliveries of heavy plant during site establishment and demobilisation, up to 3 deliveries of materials and equipment during drilling and up to 6 light vehicle movements at the start and end of each shift.

For a perceptible increase in traffic noise, around 2 dB, a 60% increase in traffic volume over existing levels is necessary.

Based on the low numbers of traffic movements generated by these works, the risk of impacts on the community's amenity from construction-related traffic noise is not likely to be low.

## 5. Summary and recommendations

Proposed works represent a low risk of adverse impacts on sensitive receivers for trenching and HDD locations. Exceedances would largely be minor and appropriate mitigation measures should reduce the numbers of affected receivers.

Approval pathways for activities outside standard hours are provided in the conditions of approval. Work in Sections 1.2 and 2 may be approved through the OOHW Protocol prepared as part of the Noise and Vibration Management Plan or with a negotiated agreement with the affected community. Work in Section 1.1 would require a negotiated agreement if not compliant with the NMLs.

Standard mitigation measures for these works are listed in Table 17. In addition to these measures, the following specific measures are recommended to reduce predicted noise levels for underboring from HDD10 and HDD04 (for OOHW)

- Install noise barriers between stationary plant such as generators, water treatment, mud pump and HDD and noise sensitive receivers. Barriers may be plywood hoarding (minimum 17 mm) or construction blanket installed on temporary fencing/scaffolding. Barriers should be at least 2 metres tall and block line of sight between source and receiver. This measure is applicable to underboring at sites closest to sensitive receivers, i.e. HDD10 and HDD04 if commencing prior to 8am on Saturday or Sunday.

**Table 17 Standard mitigation measures**

Administrative	
Community consultation	<ul style="list-style-type: none"> <li>• Receivers predicted to exceed the NMLs, i.e. noise affected, should be consulted and an agreement reached with the substantial majority for works to be undertaken outside standard hours.</li> </ul>
Complaint management	<ul style="list-style-type: none"> <li>• Any complaints will be managed promptly in line with the NVMP and associated procedures.</li> </ul>
Site induction	<ul style="list-style-type: none"> <li>• Site Environmental Induction should be delivered to the team and should include consideration and awareness of noise impacts.</li> </ul>
Noise control	
Equipment selection	<ul style="list-style-type: none"> <li>• Priority will be given to the use of quieter construction methods and plant alternatives where feasible and reasonable.</li> <li>• All equipment shall be well maintained, including mufflers and any noise suppression</li> </ul>
Use and siting of plant	<ul style="list-style-type: none"> <li>• Plant used intermittently to be throttled down or shut down.</li> <li>• Noise-emitting plant to be directed away from sensitive receivers where possible.</li> <li>• Stationary plant should be located behind a structure or enclosed if practicable.</li> <li>• Avoid compression breaking on approach to the site.</li> </ul>
Non-tonal reversing alarms.	<ul style="list-style-type: none"> <li>• Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.</li> </ul>
Monitoring	
Noise monitoring	<ul style="list-style-type: none"> <li>• Monitoring should be completed to verify the assumptions of this CNVIS regarding estimated equipment noise emissions and to ensure compliance with the NMLs.</li> </ul>



## Appendix A. Predicted noise contours

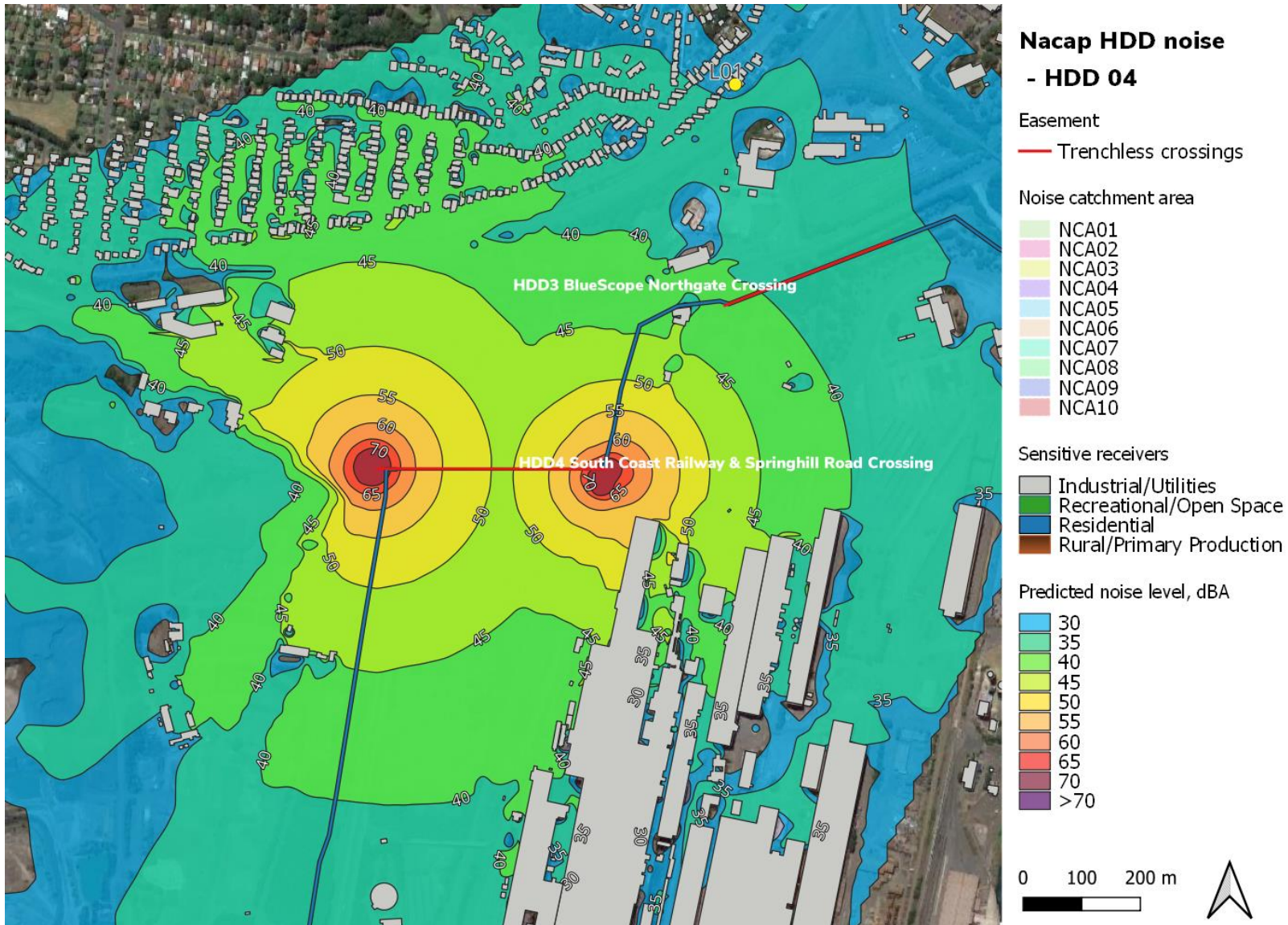


Figure 3 Noise contours – HDD04



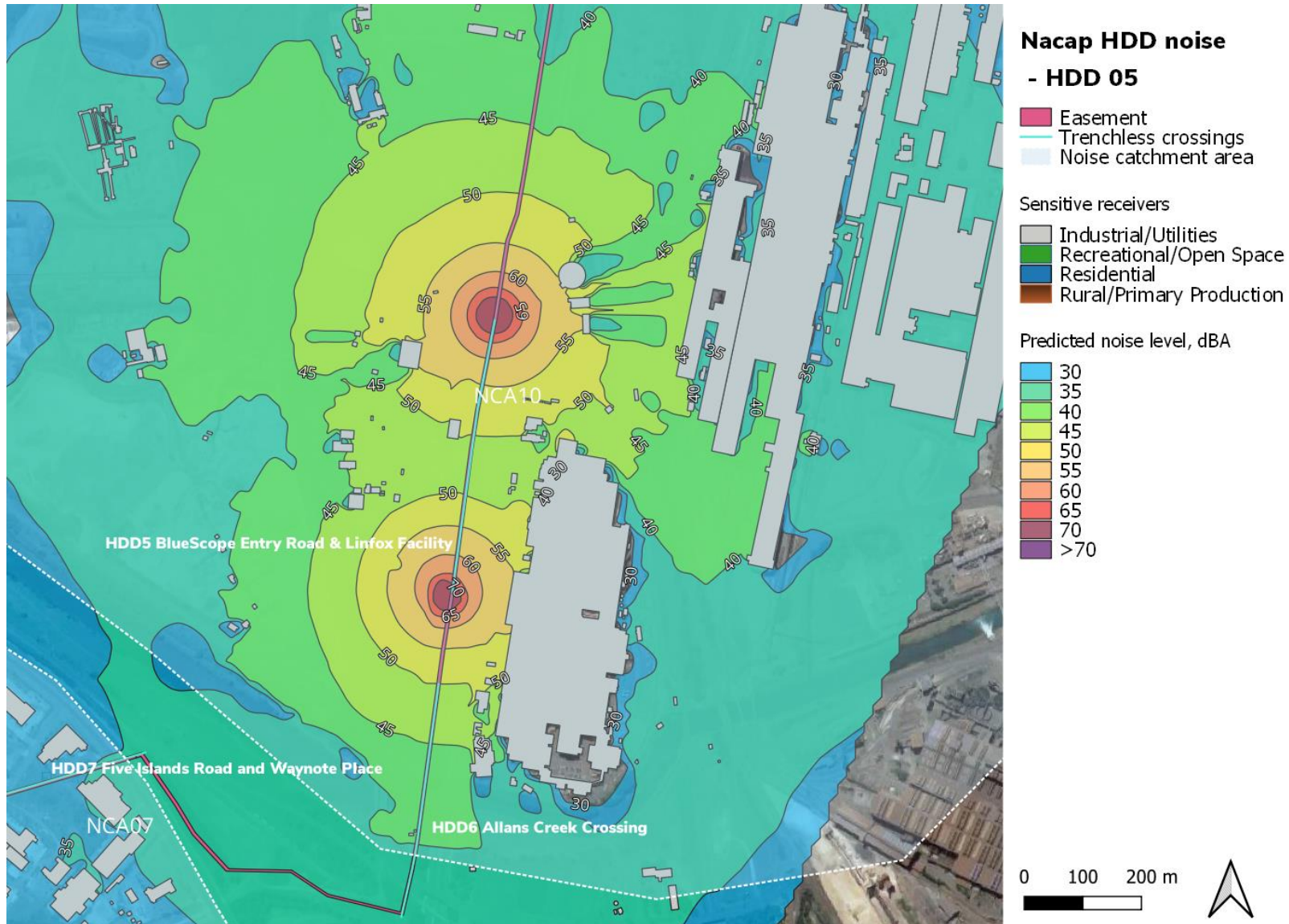


Figure 4 Noise contours – HDD05

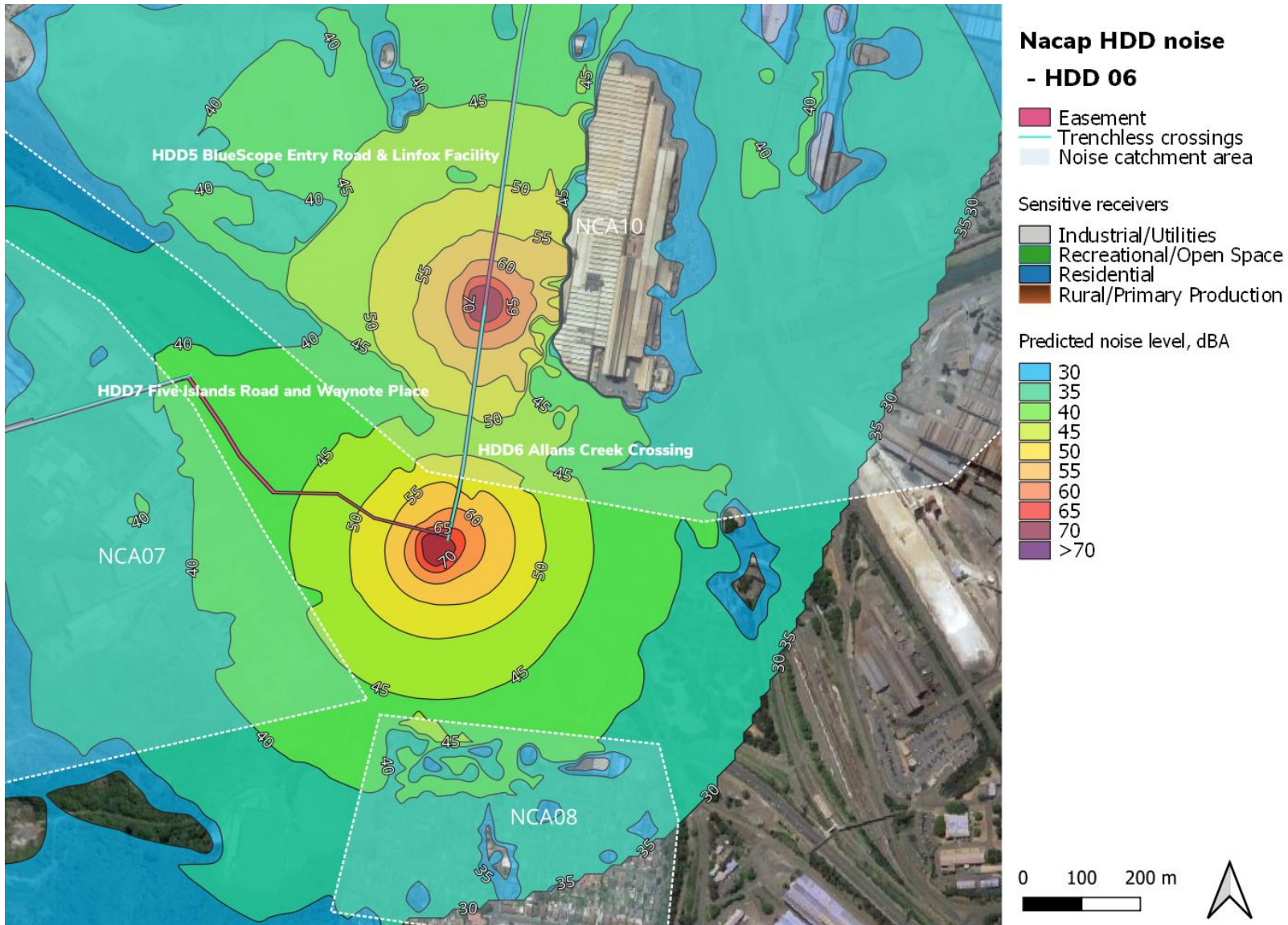


Figure 5 Noise contours – HDD06



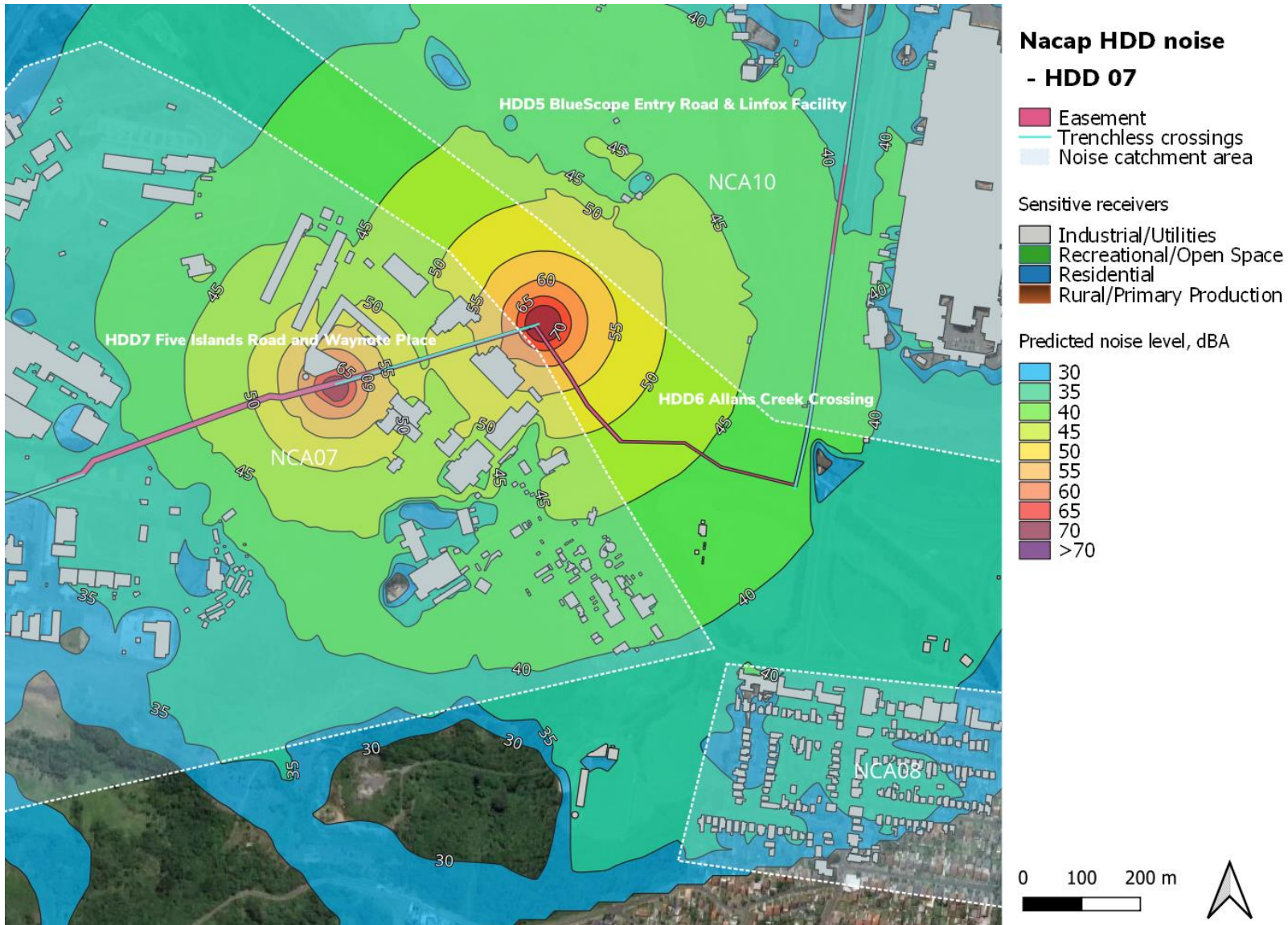


Figure 6 Noise contours – HDD07

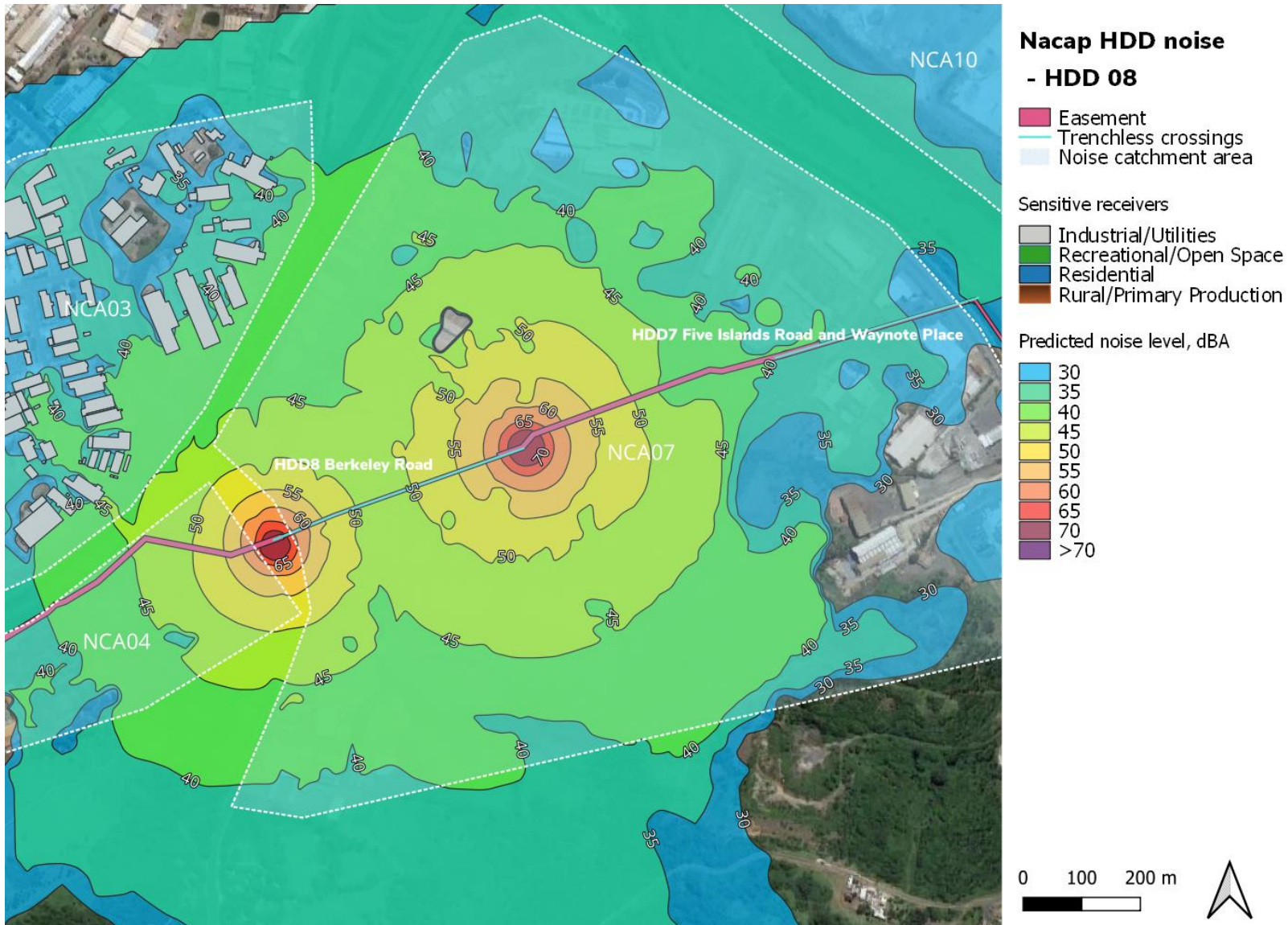


Figure 7 Noise contours – HDD08



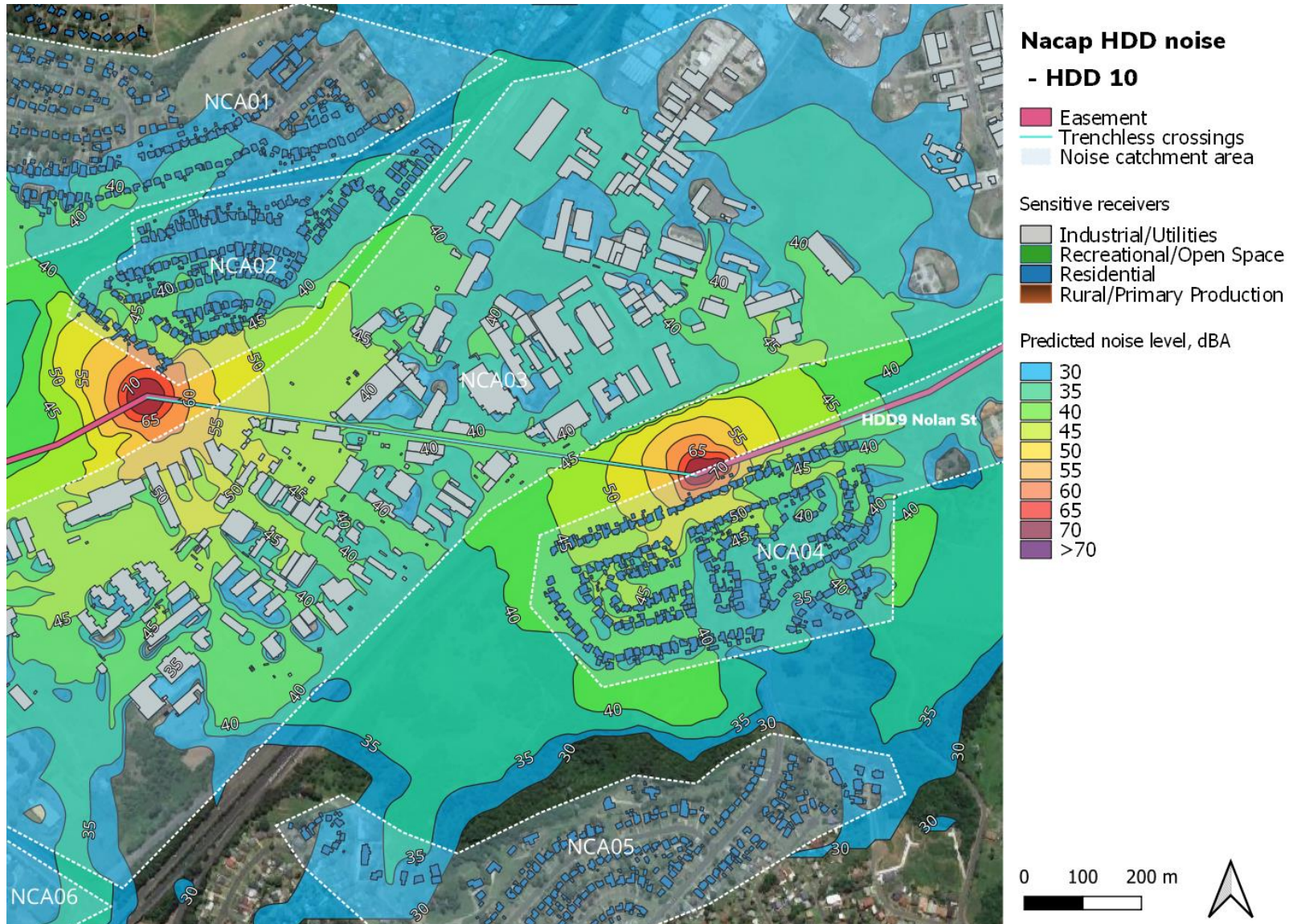


Figure 8 Noise contours – HDD10



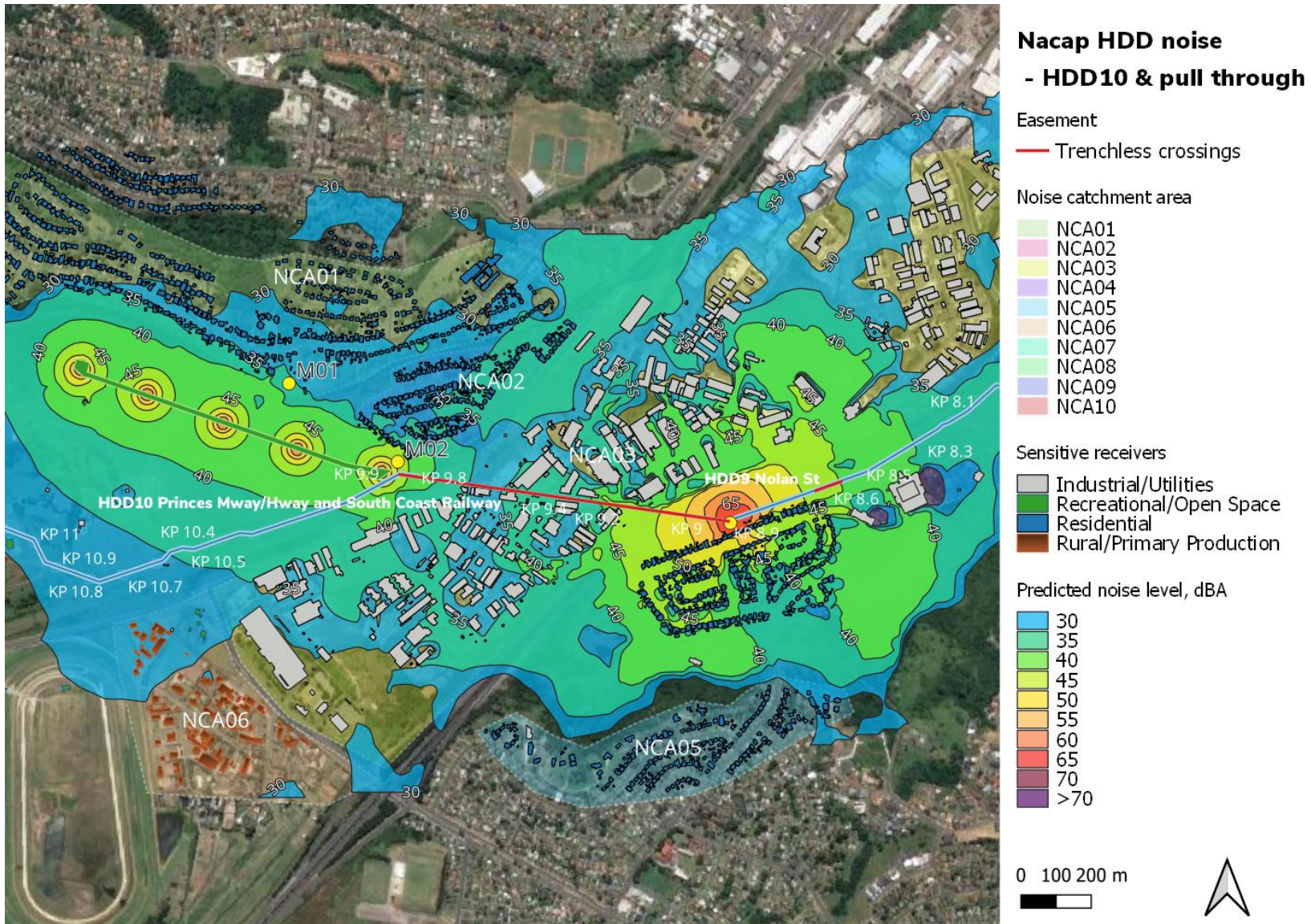


Figure 9 Noise contours – HDD10



## Appendix B. Detailed noise predictions



Receivers			Land use	Trenching						HDD						Pull through	Welding					
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10	
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	LAeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator				Pulling conduit through bore	Pipe welding
Exceedance legend				>75dBA (highly affected)		1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML						
1994601	NCA01	1 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	19	0	0	0	0	17	13	13	
1994223	NCA01	1 BARDESS CR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	32	32	31	
1993609	NCA01	1 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	35	40	39	
1994007	NCA01	1 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	27	23	23	
1995522	NCA01	1 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	33	0	0	0	0	24	32	27	
1993217	NCA01	1 WARRAH PL, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	24	26	20	20	
1995160	NCA01	10 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	15	0	0	0	0	12	11	10	
1995538	NCA01	10 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	27	29	28	
1995309	NCA01	10 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	30	25	25	
1994811	NCA01	10 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	23	0	0	0	0	24	25	15	
1994357	NCA01	100 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	23	20	21	
1994470	NCA01	101 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	41	0	0	0	23	40	32	33	
1993331	NCA01	101 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	21	17	18	
1993960	NCA01	101 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	31	26	24	
1995392	NCA01	102 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	37	29	32	
1994966	NCA01	102 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	16	17	17	
1993978	NCA01	103 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	41	0	0	0	22	43	35	34	
1993375	NCA01	103 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	24	19	21	
1994674	NCA01	104 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	36	29	33	
1994874	NCA01	104 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	15	15	16	
1993417	NCA01	105 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	41	0	0	0	0	43	34	33	
1995227	NCA01	105 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	23	18	22	
1995138	NCA01	106 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	39	31	34	
1995159	NCA01	106 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	13	13	13	
1993991	NCA01	107 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	43	0	0	0	0	45	35	35	
1995520	NCA01	107 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	42	0	0	0	0	45	35	34	
1995042	NCA01	107 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	17	14	15	
1994804	NCA01	108 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	36	29	34	
1994115	NCA01	108 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	21	0	0	0	0	16	12	11	
1995437	NCA01	109 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	44	0	0	0	0	47	37	37	
1994680	NCA01	109 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	33	0	0	0	0	25	20	22	
1994796	NCA01	11 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	19	15	14	
1993353	NCA01	11 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	32	36	35	
1993856	NCA01	11 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	33	28	27	
1993660	NCA01	11 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	26	26	15	
1995498	NCA01	11 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	24	27	18	
1994240	NCA01	110 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	33	29	34	
1995297	NCA01	110 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	20	18	19	
1995126	NCA01	111 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	41	0	0	0	0	42	34	35	
1995262	NCA01	111 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	20	18	17	
1995055	NCA01	112 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	35	31	34	
1994723	NCA01	112 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	25	21	21	
1994617	NCA01	113 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	42	0	0	0	0	43	36	36	
1994870	NCA01	113 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	42	0	0	0	0	43	34	35	
1994244	NCA01	113 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	21	17	18	
1994086	NCA01	114 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	42	32	34	
1994187	NCA01	114 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	22	19	19	
1995323	NCA01	115 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	42	0	0	0	0	43	35	36	
1994482	NCA01	115 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	20	16	17	
1995095	NCA01	116 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	42	33	34	
1995382	NCA01	116 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	24	20	20	
1995248	NCA01	117 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	42	0	0	0	0	44	35	35	
1995380	NCA01	117 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	23	20	21	
1993646	NCA01	117 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	20	15	20	
1995529	NCA01	118 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	42	32	34	
1994230	NCA01	118 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	23	0	0	0	0	19	12	14	
1995230	NCA01	118A FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	33	0	0	0	0	34	28	33	
1993274	NCA01	119 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	42	0	0	0	0	42	35	36	
1993597	NCA01	119 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	40	0	0	0	0	43	33	36	
1993616	NCA01	119 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	22	20	20	
1994397	NCA01	12 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	20	15	14	
1995402	NCA01	12 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	25	22	24	
1995096	NCA01	12 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	30	26	26	
1993863	NCA01	12 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	17	27	18	
1993796	NCA01	120 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	20	20	23	
1994572	NCA01	121 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	25	16	21	
1993461	NCA01	122 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	41	32	33	
1994405	NCA01	122 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	23	20	20	
1993418	NCA01	122 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	20	18	21	







Receivers			Land use	Trenching						HDD						Pull through	Welding							
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10			
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	LAeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend				>75dBA (highly affected)		1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML								
1994451	NCA01	182 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	30	27	29		
1993155	NCA01	183 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	35	41	40		
1995345	NCA01	184 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	34	0	0	0	0	0	30	28	28		
1993769	NCA01	185 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	34	39	38		
1993513	NCA01	186 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	0	25	25	19		
1994971	NCA01	186 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	33	32	34		
1993980	NCA01	187 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	35	39	38		
1993311	NCA01	188 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	30	32	32		
1994079	NCA01	189 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	35	39	38		
1993747	NCA01	19 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	0	18	12	12		
1993158	NCA01	19 BEN NEVIS RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	0	30	27	27		
1994988	NCA01	19 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	25	16	20		
1994342	NCA01	19 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	30	26	27		
1994025	NCA01	19 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	20	0	0	0	0	0	25	25	14		
1993235	NCA01	19 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	21	27	25	17		
1993435	NCA01	190 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	28	27	30		
1994582	NCA01	191 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	35	41	40		
1995501	NCA01	192 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	0	29	32	33		
1993514	NCA01	193 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	37	39	40		
1994706	NCA01	194 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	0	27	24	27		
1994158	NCA01	195 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	34	41	40		
1993915	NCA01	196 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	0	29	28	32		
1994138	NCA01	197 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	37	38	39		
1994814	NCA01	197A FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	37	43	41		
1994664	NCA01	198 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	32	32	34		
1994860	NCA01	199 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	31	40	38		
1993643	NCA01	199 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	35	41	40		
1994576	NCA01	2 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	18	0	0	0	0	0	18	12	11		
1995329	NCA01	2 BARDESS CR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	28	28	28		
1995287	NCA01	2 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	31	35	35		
1994378	NCA01	2 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Commercial/Bus	70	70	70	70	70	70	70	0	0	0	35	0	0	0	0	0	28	25	24		
1994341	NCA01	2 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	24	29	29	27	23		
1994784	NCA01	2 ROBERT ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	29	33	33	26		
1995374	NCA01	2 WARRAH PL, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	26	26	26	18	26		
1994287	NCA01	2/209 FARMBOROUGH RD, FARMBOROUGH HEIGHT	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	33	38	37		
1994173	NCA01	20 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	0	19	14	13		
1994255	NCA01	20 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	23	26	25		
1995432	NCA01	20 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	31	27	27		
1994586	NCA01	20 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	34	39	0	0	0	26	33	33	31	31		
1994448	NCA01	20 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	0	25	25	14		
1993562	NCA01	200 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	34	0	0	0	0	0	27	26	27		
1993316	NCA01	200 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	34	0	0	0	0	0	28	27	27		
1993257	NCA01	201 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	34	38	37		
1993936	NCA01	201A FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	34	40	39		
1995429	NCA01	202 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	0	30	29	28		
1994622	NCA01	203 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	22	39	38		
1993537	NCA01	203 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	34	37	36		
1993751	NCA01	204 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	34	0	0	0	0	0	31	29	29		
1993906	NCA01	205 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	34	38	37		
1993577	NCA01	206 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	32	30	30		
1995197	NCA01	207 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	31	39	38		
1994504	NCA01	21 BEN NEVIS RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	0	29	25	25		
1993637	NCA01	21 BEN NEVIS RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	31	29	28		
1995259	NCA01	21 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	31	28	29		
1993861	NCA01	21 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	0	30	28	27		
1993648	NCA01	21 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	19	0	0	0	0	0	26	26	13		
1993945	NCA01	21 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	0	26	26	17		
1994175	NCA01	210 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	34	0	0	0	0	0	28	22	24		
1994687	NCA01	211 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	32	38	37		
1994344	NCA01	212 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	0	20	18	18		
1993188	NCA01	212 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	0	28	24	24		
1993319	NCA01	213 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	33	37	37		
1994385	NCA01	214 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	33	31	30		
1995479	NCA01	215 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	34	37	36		
1993683	NCA01	216 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	28	28	28		
1995070	NCA01	218 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	34	0	0	0	0	0	29	27	27		
1994850	NCA01	218 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49																	



Receivers			Land use	NML						Trenching				HDD						Pull through	Welding
				Standard hours		Highly noise affected		Sleep disturbance		Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10
Ref	NCA	Address		hours	Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)				Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend				>75dBA (highly affected)			1 - 10dB > night NML			10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML			10-20 dB > day NML					
1995047	NCA01	23 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	22	22	13
1994452	NCA01	23 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	29	29	18
1995012	NCA01	230-232 FARMBOROUGH RD, FARMBOROUGH HEIG	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	29	30	30
1995445	NCA01	231 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	30	29	28
1993709	NCA01	233 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	29	24	24
1993817	NCA01	234 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	23	22	27
1994759	NCA01	235 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	29	24	24
1995503	NCA01	236 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	19	19	22
1994275	NCA01	237 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	30	25	26
1994380	NCA01	238 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	28	20	26
1993753	NCA01	23A BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	26	21	21
1993857	NCA01	23A BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	31	34	33
1993468	NCA01	24 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	20	15	15
1994245	NCA01	24 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	30	27	26
1995200	NCA01	24 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	26	33	33	29
1993569	NCA01	24 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	27	27	14
1994833	NCA01	240 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	24	25	26
1993214	NCA01	241 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	22	24	23
1995211	NCA01	242 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	22	23	23
1995170	NCA01	243 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	28	23	23
1994041	NCA01	245 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	28	23	25
1995508	NCA01	245 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	22	23	24
1993969	NCA01	247 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	30	26	27
1995208	NCA01	248 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	31	26	26
1994190	NCA01	249 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	26	23	22
1994372	NCA01	25 BEN NEVIS RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	30	28	28
1995272	NCA01	25 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	28	24	24
1994332	NCA01	25 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	31	28	28
1993363	NCA01	25 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	23	23	12
1994965	NCA01	25 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	28	28	18
1995378	NCA01	25 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	22	18	17
1994144	NCA01	250 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	25	25	24
1995521	NCA01	251 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	29	24	25
1993387	NCA01	252 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	19	15	23
1993846	NCA01	253 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	26	24	24
1993237	NCA01	254 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	21	25	24
1994210	NCA01	255-259 FARMBOROUGH RD, FARMBOROUGH HEIG	Commercial/Bus	70	70	70	70	70	70	70	0	0	0	0	0	0	0	0	28	24	24
1995268	NCA01	256 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	19	24	24
1993495	NCA01	258 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	29	25	24
1993294	NCA01	25A BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	28	26	25
1993463	NCA01	25A BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	26	21	22
1994793	NCA01	26 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	16	16	16
1993802	NCA01	26 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	30	26	26
1995173	NCA01	26 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	26	36	33	30
1994912	NCA01	26 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	25	25	15
1995485	NCA01	260 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	29	24	24
1994119	NCA01	262 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	28	20	21
1994213	NCA01	262 FARMBOROUGH RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	23	24	24
1994097	NCA01	27 BEN NEVIS RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	30	29	29
1995239	NCA01	27 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	29	25	24
1993200	NCA01	27 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	31	29	28
1993886	NCA01	27 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	26	25	25
1995202	NCA01	27 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	26	26	12
1993241	NCA01	27 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	28	28	16
1994792	NCA01	27 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	21	17	17
1995174	NCA01	28 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	30	28	28
1995187	NCA01	28 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	26	26	14
1993426	NCA01	29 BEN NEVIS RD, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	32	31	30
1994073	NCA01	29 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	18	14	18
1995456	NCA01	29 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	29	26	25
1994146	NCA01	29 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	31	29	31
1993885	NCA01	29 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	28	28	16
1993496	NCA01	29 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	28	28	18
1993758	NCA01	29 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	24	19	19
1994299	NCA01	3 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	18	15	15
1994679	NCA01	3 BARDESS CR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	30	30	29
1995233	NCA01	3 BINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	30	27	22
1995344	NCA01	3 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	32	37	36
1995444	NCA01	3 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	0	0	0	0	0	27	25	24
1994162	NCA0																				



Receivers			Land use	Trenching						HDD						Pull through		Welding						
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10			
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend				>75dBA (highly affected)		1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML								
1994221	NCA01	33 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	0	31	29	29		
1993864	NCA01	33 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	35	36	0	0	0	27	34	34	28	28		
1994094	NCA01	33 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	27	27	18	18		
1995035	NCA01	33 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	28	28	18	18		
1994034	NCA01	34 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	30	29	29	29		
1994643	NCA01	34 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	27	27	14	14		
1993355	NCA01	34 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	14	12	15	15		
1995214	NCA01	35 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	30	25	25	25		
1994923	NCA01	35 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	35	39	0	0	27	36	34	30	30	30		
1994490	NCA01	35 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	28	28	17	17		
1994942	NCA01	35 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	31	31	17	17		
1995455	NCA01	35 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	22	16	16	16		
1995417	NCA01	36 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	32	31	31	31		
1994106	NCA01	36 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	28	14	20	20		
1993376	NCA01	37 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	25	25	24	24		
1994785	NCA01	37 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	25	25	24	24		
1993931	NCA01	37 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	30	29	30	30		
1993182	NCA01	37 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	35	38	0	0	0	27	34	34	30	30		
1994081	NCA01	37 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	23	0	0	0	0	30	30	17	17		
1994040	NCA01	37 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	31	31	20	20		
1993754	NCA01	37 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	23	17	17	17		
1994590	NCA01	38 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	31	30	30	30		
1994004	NCA01	38 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	20	0	0	0	0	27	27	11	11		
1994318	NCA01	38 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	28	16	20	20		
1994471	NCA01	39 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	33	33	32	32		
1995158	NCA01	39 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	35	37	0	0	0	27	34	34	28	28		
1993273	NCA01	39 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	28	16	28	16		
1994876	NCA01	39 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	31	28	18	18		
1993890	NCA01	39 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	23	11	16	16		
1994678	NCA01	4 BARDESS CR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	29	29	28	28		
1995356	NCA01	4 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	25	31	32	32		
1993207	NCA01	4 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	30	26	25	25		
1994460	NCA01	4 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	22	27	23	18	18		
1994412	NCA01	4 ROBERT ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	26	33	33	25	25		
1994495	NCA01	40 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	29	26	26	26		
1993938	NCA01	40 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	21	0	0	0	0	27	27	16	16		
1994805	NCA01	40 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	31	16	22	22		
1993972	NCA01	41 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	31	31	30	30		
1994294	NCA01	41 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	35	37	0	0	0	27	34	34	29	29		
1995067	NCA01	41 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	31	31	16	16		
1994141	NCA01	41 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	28	28	18	18		
1995389	NCA01	41 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	33	25	24	24		
1993779	NCA01	41 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	24	12	19	19		
1994559	NCA01	42 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	19	0	0	0	0	26	26	17	17		
1993474	NCA01	42 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	0	31	18	22	22		
1994393	NCA01	43 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	30	31	30	30		
1993810	NCA01	43 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	35	38	0	0	0	27	34	34	29	29		
1993873	NCA01	43 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	28	28	18	18		
1994683	NCA01	43 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	28	28	17	17		
1993517	NCA01	43 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	25	25	15	15		
1994724	NCA01	43 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	24	13	18	18		
1993447	NCA01	44 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	20	0	0	0	0	27	27	19	19		
1995532	NCA01	44 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	32	19	23	23		
1995039	NCA01	45 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	30	30	29	29		
1994459	NCA01	45 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	35	38	0	0	26	33	33	31	31	31		
1994951	NCA01	45 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	30	30	17	17		
1994894	NCA01	45 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	31	30	22	22		
1994098	NCA01	45 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	33	0	0	0	0	36	27	26	26		
1994529	NCA01	46 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	21	0	0	0	0	27	27	13	13		
1994020	NCA01	46 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	30	18	23	23		
1995296	NCA01	47 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	24	26	27	27		
1993892	NCA01	47 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	35	38	0	0	0	26	33	33	30	30		
1994781	NCA01	47 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	29	29	18	18		
1993682	NCA01	47 MIANGA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	28	28	18	18		
1993515	NCA01	47 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	33	0	0	0	0	36	27	26	26		
1994955	NCA01	47 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	23	12	18	18		
1994008	NCA01	48 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0												



Receivers			Land use	NML						Trenching				HDD						Pull through	Welding	
				Sleep disturbance			Standard hours			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10	
Ref	NCA	Address		Highly noise affected	Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)				Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding	
Exceedance legend				>75dBA (highly affected)			1 - 10dB > night NML			10 - 20 dB > night NML	20-30 > night NML		30+ dB > night NML	0-10 dB > day NML			10-20 dB > day NML					
1993425	NCA01	51 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	0	0	32	24	23
1995081	NCA01	51 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	25	13	19
1993959	NCA01	52 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	0	28	26	22
1993269	NCA01	52 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	28	28	22
1995133	NCA01	52 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	30	24	22
1995314	NCA01	53 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	29	25	20
1993382	NCA01	53 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	37	39	0	0	0	0	28	35	32	32
1995517	NCA01	53 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	30	24	23
1994917	NCA01	53 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	23	23	19
1994426	NCA01	54 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	27	26	22
1995156	NCA01	54 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	28	28	22
1995413	NCA01	54 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	29	24	21
1995129	NCA01	55 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	0	18	19	19
1995494	NCA01	55 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	33	0	0	0	0	0	34	26	26
1994957	NCA01	55 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	34	41	0	0	0	0	26	35	34	33
1994258	NCA01	55 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	0	30	25	18
1993350	NCA01	55 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	0	24	24	14
1993635	NCA01	56 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	0	31	26	24
1994940	NCA01	56 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	29	27	19
1994997	NCA01	56 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	29	24	22
1993652	NCA01	57 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	34	0	0	0	0	0	24	24	23
1993605	NCA01	57 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	18	0	0	0	0	0	26	26	16
1995542	NCA01	57 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	0	30	30	21
1993344	NCA01	57 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	24	37	33	31
1995499	NCA01	57 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	0	31	24	22
1995175	NCA01	57 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	0	24	24	14
1994857	NCA01	57A FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	25	26	26	23
1995514	NCA01	58 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	34	0	0	0	0	25	28	26	27
1994331	NCA01	58 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	30	26	22
1994928	NCA01	58 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	29	28	19
1994219	NCA01	58 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	28	26	22
1993216	NCA01	59 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	34	0	0	0	0	0	27	27	26
1993281	NCA01	59 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	26	32	32	30
1994968	NCA01	59 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	34	0	0	0	0	0	35	27	26
1994160	NCA01	59 JENKINS ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	33	38	0	0	0	25	37	32	31	27
1994770	NCA01	59 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	0	26	25	25
1995523	NCA01	59 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	23	23	14
1993881	NCA01	59 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	0	24	24	13
1993727	NCA01	6 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	19	0	0	0	0	0	16	14	12
1995410	NCA01	6 BARDESS CR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	29	29	28
1994720	NCA01	6 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	25	29	29
1994070	NCA01	6 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	27	25	25
1993908	NCA01	6 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	24	30	20	19	26
1994580	NCA01	6 ROBERT ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	35	36	0	0	0	0	26	36	36	28
1994124	NCA01	6 WARRAH PL, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	24	24	19	14	24
1994168	NCA01	60 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	25	31	31	30
1993552	NCA01	60 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	17	0	0	0	0	0	19	18	13
1995317	NCA01	60 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	0	29	29	21
1994886	NCA01	60 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	0	26	26	13
1994483	NCA01	60 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	30	24	23
1995181	NCA01	61 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	30	27	26
1994388	NCA01	61 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	26	32	32	31	31
1993275	NCA01	61 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	0	26	26	18
1994087	NCA01	61 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	0	26	26	15
1994512	NCA01	61 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	33	0	0	0	0	0	33	26	25
1994978	NCA01	61 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	23	0	0	0	0	0	22	22	10
1995383	NCA01	62 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	24	31	31	28
1995321	NCA01	62 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	23	0	0	0	0	0	25	25	14
1995192	NCA01	62 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	29	28	21
1993231	NCA01	62 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	0	20	19	12
1993239	NCA01	62 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	0	30	24	24
1995199	NCA01	63 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	28	25	25
1994352	NCA01	63 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	33	0	0	0	24	28	28	29	29
1993194	NCA01	63 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	0	31	25	25
1995436	NCA01	63 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	31	24	22
1995447	NCA01	63 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	29	24	22
1994000	NCA01	63 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0				



Receivers			Land use	Trenching						HDD						Pull through		Welding						
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10			
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	LAeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend				>75dBA (highly affected)	1 - 10dB > night NML	10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML	10-20 dB > day NML														
1993775	NCA01	68 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	0	0	26	26	19	
1994431	NCA01	68 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	19	0	0	0	0	0	0	21	16	11	
1994686	NCA01	68 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	0	31	26	23	
1994812	NCA01	69 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	41	0	0	0	0	25	40	34	33		
1993756	NCA01	69 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	0	25	25	20	
1993867	NCA01	69 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	0	0	27	20	24	
1994441	NCA01	69 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	0	0	32	24	22	
1994456	NCA01	7 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	20	0	0	0	0	0	0	18	15	13	
1993490	NCA01	7 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	0	32	38	36	
1994044	NCA01	7 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	0	28	25	25	
1993538	NCA01	7 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	17	28	27	17		
1994116	NCA01	7 ROBERT ST, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	34	0	0	0	0	27	33	33	27		
1995541	NCA01	7 WARRAH PL, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	0	24	29	28	23		
1994315	NCA01	70 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	25	38	32	31		
1994371	NCA01	70 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	23	0	0	0	0	0	23	23	15		
1993268	NCA01	70 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	0	27	27	22		
1995461	NCA01	70 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	0	0	30	24	24		
1993205	NCA01	71 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	25	35	32	31		
1994907	NCA01	71 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	0	28	25	21		
1993579	NCA01	71 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	0	21	12	17		
1995357	NCA01	71 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	0	0	28	27	23		
1995454	NCA01	72 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	25	39	32	31		
1994853	NCA01	72 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	16	0	0	0	0	0	17	14	14		
1994322	NCA01	72 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	34	29	20		
1993773	NCA01	72 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	0	0	32	25	24		
1993508	NCA01	73 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	25	38	32	31		
1995524	NCA01	73 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	0	0	24	24	21		
1993630	NCA01	73 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	0	30	19	22		
1994863	NCA01	73 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	0	28	27	22		
1994259	NCA01	74 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	24	38	31	31		
1995090	NCA01	74 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	17	0	0	0	0	0	18	18	15		
1993899	NCA01	74 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	0	29	27	22		
1993617	NCA01	74 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	0	0	32	25	24		
1994517	NCA01	75 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	25	37	32	31		
1994484	NCA01	75 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	23	23	17		
1995371	NCA01	75 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	0	23	13	15		
1993875	NCA01	75 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	0	27	25	21		
1994828	NCA01	75 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	0	27	27	20		
1994015	NCA01	76 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	24	34	31	31		
1994999	NCA01	76 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	0	22	22	14		
1993145	NCA01	76 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	17	29	29	20		
1994134	NCA01	76 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	33	0	0	0	0	0	36	27	27		
1994554	NCA01	77 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	25	34	32	30		
1993592	NCA01	77 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	24	24	18		
1995151	NCA01	77 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	0	21	10	21		
1993364	NCA01	77 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	0	29	25	21		
1994418	NCA01	78 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	27	34	31	32		
1993668	NCA01	78 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	23	0	0	0	0	23	26	22	16		
1994913	NCA01	78 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	19	0	0	0	0	0	26	26	13		
1995481	NCA01	78 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	23	30	29	19		
1995101	NCA01	78 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	0	34	27	26		
1994855	NCA01	79 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	40	0	0	0	0	25	39	33	32		
1995280	NCA01	79 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	32	40	0	0	0	0	25	37	32	32		
1994347	NCA01	79 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	28	0	0	0	0	0	22	22	18		
1993818	NCA01	79 PANORAMA DR, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	0	21	10	11		
1994761	NCA01	79 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	0	29	25	22		
1994023	NCA01	8 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	23	0	0	0	0	0	17	12	12		
1993407	NCA01	8 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	38	0	0	0	0	0	31	28	28		
1994670	NCA01	8 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	0	29	26	26		
1994247	NCA01	8 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	24	30	20	19		
1994100	NCA01	8 WARRAH PL, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	24	28	26	19		
1994149	NCA01	80 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	24	41	31	32		
1993384	NCA01	80 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	32	25	24		
1994583	NCA01	80-84 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	17	0	0	0	0	0	24	24	12		
1995137	NCA01	81 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	40	0	0	0	0	25	39	32	32		
1995414	NCA01	81 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0													



Receivers			Land use	Trenching						HDD						Pull through		Welding										
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10							
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding				
Exceedance legend				>75dBA (highly affected)	1 - 10dB > night NML	10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML	10-20 dB > day NML																		
1993394	NCA01	89 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	0	0	0	0	22	19	18			
1995408	NCA01	89 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	0	0	0	32	25	24			
1993672	NCA01	9 AMINYA PL, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	17	0	0	0	0	0	0	0	0	15	12	11			
1993467	NCA01	9 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	0	0	0	32	30	30			
1993782	NCA01	9 BRISTOL PDE, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	40	0	0	0	0	0	0	0	0	32	36	35			
1994932	NCA01	9 FAIRLOCH AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	36	0	0	0	0	0	0	0	0	29	28	27			
1994410	NCA01	9 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	22	0	0	0	0	0	0	0	0	23	21	14			
1994905	NCA01	9 KOTARA CR, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	23	0	0	0	0	0	0	0	0	25	25	16			
1993358	NCA01	90 FARMBOROUGH RD, FARMBOROUGH HEIGHTS N	Residential	57	75	52	49	42	42	52	0	0	0	41	0	0	0	0	0	0	26	0	44	33	32			
1994433	NCA01	90 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	23	0	0	0	0	0	0	0	0	17	14	15			
1993208	NCA01	90 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	24	0	0	0	0	0	0	0	0	22	16	16			
1995016	NCA01	91 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	41	0	0	0	0	0	24	0	0	43	34	33			
1993855	NCA01	91 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	0	0	0	24	24	17			
1995190	NCA01	91 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	0	0	0	31	25	23			
1994229	NCA01	92 FARMBOROUGH RD, FARMBOROUGH HEIGHTS N	Residential	57	75	52	49	42	42	52	0	0	0	40	0	0	0	0	0	24	0	0	40	33	33			
1994618	NCA01	92 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	0	0	0	22	18	19			
1994751	NCA01	93 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	43	0	0	0	0	0	24	0	0	43	36	36			
1994565	NCA01	93 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	25	0	0	0	0	0	0	0	0	24	24	17			
1994690	NCA01	93 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	0	0	0	0	0	32	28	25			
1994611	NCA01	94 FARMBOROUGH RD, FARMBOROUGH HEIGHTS N	Residential	57	75	52	49	42	42	52	0	0	0	39	0	0	0	0	0	9	0	0	36	32	31			
1993974	NCA01	94 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	19	0	0	0	0	0	0	0	0	20	13	12			
1993894	NCA01	95 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	41	0	0	0	0	0	24	0	0	43	34	34			
1993629	NCA01	95 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	18	0	0	0	0	0	0	0	0	14	15	13			
1994908	NCA01	95 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	0	0	0	31	26	23			
1995331	NCA01	96 FARMBOROUGH RD, FARMBOROUGH HEIGHTS N	Residential	57	75	52	49	42	42	52	0	0	0	32	0	0	0	0	0	16	0	0	34	27	25			
1994047	NCA01	96 FARMBOROUGH RD, FARMBOROUGH HEIGHTS N	Residential	57	75	52	49	42	42	52	0	0	0	40	0	0	0	0	0	17	0	0	40	33	33			
1994029	NCA01	96 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	21	0	0	0	0	0	0	0	0	17	13	12			
1994709	NCA01	97 FARMBOROUGH RD, UNANDERRA	Residential	57	75	52	49	42	42	52	0	0	0	41	0	0	0	0	0	24	0	0	43	34	34			
1994843	NCA01	97 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	29	0	0	0	0	0	0	0	0	30	28	23			
1994744	NCA01	98 FARMBOROUGH RD, FARMBOROUGH HEIGHTS N	Residential	57	75	52	49	42	42	52	0	0	0	40	0	0	0	0	0	0	0	0	43	33	32			
1993530	NCA01	98 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	0	0	0	24	20	22			
1994486	NCA01	99 FARMBOROUGH RD, FARMBOROUGH HEIGHTS N	Residential	57	75	52	49	42	42	52	0	0	0	41	0	0	0	0	0	24	0	0	41	34	34			
1995003	NCA01	99 IOLA AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	0	0	0	20	18	17			
1994608	NCA01	99 STANLEY AV, FARMBOROUGH HEIGHTS	Residential	57	75	52	49	42	42	52	0	0	0	30	0	0	0	0	0	0	0	0	30	26	23			
1993872	NCA01	FARMBOROUGH ROAD PUBLIC SCHOOL 56 FARMBO	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	0	26	0	0	32	32	28			
1993506	NCA01	FARMBOROUGH ROAD PUBLIC SCHOOL 56 FARMBO	Residential	57	75	52	49	42	42	52	0	0	0	33	0	0	0	0	0	22	0	0	29	26	25			
1993971	NCA01	FARMBOROUGH ROAD PUBLIC SCHOOL 56 FARMBO	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	0	0	21	0	0	29	25	23			
1994970	NCA01	FARMBOROUGH ROAD PUBLIC SCHOOL 56 FARMBO	Residential	57	75	52	49	42	42	52	0	0	0	31	0	0	0	0	0	26	0	0	31	31	23			
1993315	NCA01	FARMBOROUGH ROAD PUBLIC SCHOOL 56 FARMBO	Residential	57	75	52	49	42	42	52	0	0	0	27	0	0	0	0	0	25	0	0	25	23	21			
1994661	NCA01	UNIT 1 100 FARMBOROUGH RD, FARMBOROUGH H	Residential	57	75	52	49	42	42	52	0	0	0	37	0	0	0	0	0	0	0	0	36	32	32			
1994732	NCA01	UNIT 1 141 FARMBOROUGH RD, FARMBOROUGH H	Residential	57	75	52	49	42	42	52	0	0	0	41	0	0	0	0	0	0	0	0	42	40	41			
1993172	NCA01	UNIT 1 141 FARMBOROUGH RD, FARMBOROUGH H	Residential	57	75	52	49	42	42	52	0	0	0	40	0	0	0	0	0	0	0	0	42	37	37			
1995361	NCA01	UNIT 08 FARMBOROUGH RD, FARMBOROUGH H	Residential	57	75	52	49	42	42	52	0	0	0	35	0	0	0	0	0	0	0	0	26	23	30			
1995246	NCA01	UNIT 45 STANLEY AV, FARMBOROUGH HEIGHT	Residential	57	75	52	49	42	42	52	0	0	0	26	0	0	0	0	0	0	0	0	24	12	19			
1993373	NCA02	1 HESSELL ST, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	37	0	0	0	0	0	28	0	0	34	34	31			
1994813	NCA02	1 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	35	65	0	0	0	0	0	27	0	0	65	47	48			
1993612	NCA02	1 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	43	0	0	0	0	0	25	0	0	42	34	34			
1994872	NCA02	1 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	37	0	0	0	0	0	26	0	0	36	34	27			
1994072	NCA02	1/172-174 PRINCES HWY, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	38	37	0	0	0	0	0	27	0	0	40	35	28			
1994408	NCA02	1/172-174 PRINCES HWY, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	36	31	0	0	0	0	0	27	0	0	35	35	25			
1993821	NCA02	10 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	37	0	0	0	0	0	26	0	0	34	34	30			
1995305	NCA02	10 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	35	36	0	0	0	0	0	25	0	0	35	35	34			
1993292	NCA02	10 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	35	0	0	0	0	0	25	0	0	33	33	30			
1995405	NCA02	11 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	55	0	0	0	0	0	24	0	0	58	49	49			
1995534	NCA02	11 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	35	48	0	0	0	0	0	25	0	0	44	41	40			
1995103	NCA02	11 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	30	0	0	0	0	0	21	0	0	41	28	25			
1995282	NCA02	12 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	31	0	0	0	0	0	26	0	0	34	34	29			
1995353	NCA02	12 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	41	0	0	0	0	0	25	0	0	35	34	35			
1993825	NCA02	12 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	36	0	0	0	0	0	25	0	0	33	33	30			
1994802	NCA02	13 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	46	0	0	0	0	0	24	0	0	49	41	44			
1994895	NCA02	13 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52																		



Receivers			Land use	Trenching						HDD						Pull through	Welding							
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10			
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	LAeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend				>75dBA (highly affected)		1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML								
1995474	NCA02	180 PRINCES HWY, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	38	39	0	0	0	0	27	40	35	29		
1994603	NCA02	19 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	47	0	0	0	0	17	48	38	39		
1995000	NCA02	19 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	31	0	0	0	0	25	32	31	24		
1994539	NCA02	19 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	31	0	0	0	0	27	31	30	27		
1993253	NCA02	2 HESSELL ST, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	36	0	0	0	0	26	33	33	30		
1993772	NCA02	2 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	37	41	0	0	0	0	29	42	31	32		
1994430	NCA02	2 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	35	0	0	0	0	25	34	34	26		
1994420	NCA02	2 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	35	38	0	0	0	0	27	34	34	28		
1995122	NCA02	2/172-174 PRINCES HWY, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	36	30	0	0	0	0	27	35	35	18		
1994196	NCA02	20 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	39	0	0	0	0	26	38	34	29		
1993989	NCA02	20 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	37	0	0	0	0	26	35	34	28		
1995006	NCA02	20 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	46	0	0	0	0	24	45	40	39		
1994032	NCA02	20 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	36	0	0	0	0	25	35	32	30		
1994002	NCA02	21 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	48	0	0	0	0	0	51	42	42		
1993329	NCA02	21 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	32	0	0	0	0	24	33	28	27		
1993392	NCA02	21 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	30	32	0	0	0	0	23	34	26	25		
1994620	NCA02	22 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	36	36	0	0	0	0	28	37	34	27		
1993688	NCA02	22 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	46	0	0	0	0	24	43	37	40		
1994636	NCA02	22 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	38	0	0	0	0	24	38	30	30		
1993690	NCA02	22 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	36	0	0	0	0	24	35	32	30		
1993266	NCA02	22 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	33	0	0	0	0	25	33	32	26		
1995188	NCA02	23 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	36	0	0	0	0	22	38	30	30		
1995032	NCA02	24 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	37	0	0	0	0	26	35	34	29		
1994800	NCA02	24 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	44	0	0	0	0	24	45	35	37		
1995343	NCA02	24 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	37	0	0	0	0	24	38	32	30		
1995033	NCA02	25 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	35	0	0	0	0	26	36	28	27		
1994753	NCA02	26 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	37	0	0	0	0	26	35	34	27		
1994199	NCA02	26 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	48	0	0	0	0	25	47	39	40		
1994846	NCA02	26 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	37	0	0	0	0	24	37	32	30		
1993424	NCA02	27 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	40	0	0	0	0	24	38	31	32		
1993888	NCA02	28 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	37	0	0	0	0	25	37	34	25		
1993832	NCA02	28 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	48	0	0	0	0	24	47	39	40		
1994705	NCA02	28 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	34	0	0	0	0	27	35	34	28		
1995489	NCA02	29 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	40	0	0	0	0	24	42	28	28		
1994700	NCA02	3 HESSELL ST, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	38	0	0	0	0	25	32	32	31		
1993533	NCA02	3 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	60	0	0	0	0	24	61	49	51		
1993656	NCA02	3 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	42	0	0	0	0	25	41	33	36		
1993703	NCA02	3 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	32	0	0	0	0	25	34	34	24		
1994319	NCA02	30 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	43	0	0	0	0	27	42	34	30		
1993212	NCA02	30 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	36	0	0	0	0	25	38	34	27		
1994006	NCA02	30 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	47	0	0	0	0	24	49	42	41		
1994676	NCA02	30 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	35	0	0	0	0	27	35	34	29		
1993626	NCA02	31 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	38	0	0	0	0	26	36	30	38		
1994717	NCA02	32 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	47	0	0	0	0	25	45	34	34		
1994986	NCA02	32 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	48	0	0	0	0	24	50	39	41		
1994494	NCA02	32 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	35	0	0	0	0	24	36	31	31		
1994696	NCA02	32 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	36	0	0	0	0	24	43	31	31		
1994400	NCA02	33 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	42	0	0	0	0	26	42	35	37		
1994188	NCA02	34 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	50	0	0	0	0	25	37	34	27		
1993622	NCA02	34 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	33	0	0	0	0	24	35	31	28		
1994019	NCA02	35 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	39	0	0	0	0	22	38	29	32		
1994671	NCA02	36 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	36	49	0	0	0	0	27	50	37	38		
1994647	NCA02	36 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	38	0	0	0	0	24	38	30	32		
1994390	NCA02	37 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	42	0	0	0	0	23	43	31	34		
1995083	NCA02	38 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	50	0	0	0	0	25	51	35	39		
1994914	NCA02	4 HESSELL ST, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	35	0	0	0	0	25	33	33	31		
1993726	NCA02	4 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	37	38	0	0	0	0	29	40	35	29		
1993272	NCA02	4 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	35	34	0	0	0	0	28	33	33	25		
1994511	NCA02	4 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	34	31	0	0	0	0	25	33	33	20		
1994716	NCA02	4 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	33	0	0	0	0	25	33	33	29		
1994769	NCA02	4/172-174 PRINCES HWY, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	36	38	0	0	0	0	20	39	35	29		
1994101	NCA02	40 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	53	0	0	0	0	25	51	36	40		
1994688	NCA02	42 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	52	0	0	0	0	25	53	40	41		
1994333	NCA02	44 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	52	0	0	0	0	25	53	39	41		
1993732	NCA02	46 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	55	0	0	0	0	24	56	44	43		
1993433	NCA02	48 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	35	54	0	0	0	0	8	55	43	43		
1995292	NCA02	5 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	60										



Receivers			Land use	Trenching						HDD						Pull through	Welding						
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10		
Ref	NCA	Address	Standard hours	Highly noise affected	Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend			>75dBA (highly affected)		1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML								
1994267	NCA02	9 STRATFORD RD, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	33	45	0	0	0	25	39	42	41		
1993393	NCA02	9 THORNBURY AV, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	35	32	0	0	0	25	36	36	27		
1993176	NCA02	UNIT 1 58 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	31	44	0	0	0	24	42	33	37		
1994651	NCA02	UNIT 7 ORANA PDE, UNANDERRA	Residential	59	75	54	49	41	41	52	0	0	32	58	0	0	0	24	60	50	51		
1995568	NCA03	1 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	43	0	0	0	24	33	38	33	2		
1995324	NCA03	1 LUSO DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	42	41	0	0	0	30	43	41	32		
1995610	NCA03	1 RESOLUTION DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	23	39	0	0	22	25	33	40	30	2		
1995579	NCA03	1 RESOLUTION DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	24	39	0	0	24	26	33	38	27	2		
1993665	NCA03	1 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	34	43	0	0	0	24	45	34	34		
1993826	NCA03	1/10 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	40	36	0	0	0	26	31	39	27		
1993428	NCA03	1/10 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	44	36	0	0	0	26	32	42	28		
1993647	NCA03	1/10 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	33	33	0	0	0	9	28	36	24		
1995288	NCA03	1/11 WAVERLEY DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	35	34	0	0	0	18	25	36	25		
1995099	NCA03	1/12-14 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	46	36	0	0	0	32	42	42	27		
1994416	NCA03	1/12-14 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	45	32	0	0	0	31	40	40	14		
1995592	NCA03	1/2 RESOLUTION DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	27	40	0	0	24	30	36	40	32	2		
1995567	NCA03	1/2 RESOLUTION DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	25	39	0	0	25	28	35	40	29	2		
1993853	NCA03	1/22 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	37	0	0	0	0	28	39	37		
1994349	NCA03	1/22 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	38	0	0	0	0	28	41	29		
1994156	NCA03	1/22 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	37	0	0	0	0	27	39	27		
1994243	NCA03	1/254 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	38	0	0	0	0	32	39	28		
1993423	NCA03	1/254 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	42	34	0	0	0	0	36	35	25		
1995051	NCA03	1/34 INVESTIGATOR DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	34	0	0	0	29	33	39	25		
1993151	NCA03	1/38 INVESTIGATOR DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	43	35	0	0	0	23	31	40	26		
1995598	NCA03	1/4 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	0	0	0	17	32	31	31	2		
1995020	NCA03	1/5 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	47	34	0	0	0	26	31	43	26		
1994337	NCA03	1/5 LUSO DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	37	36	0	0	0	0	28	38	29		
1995154	NCA03	1/7 LUSO DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	42	0	0	0	0	29	43	34		
1993921	NCA03	10 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	42	36	0	0	0	17	29	40	29		
1993768	NCA03	10 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	0	0	0	0	32	37	31	2		
1995572	NCA03	10 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	0	0	0	0	32	39	35	2		
1994348	NCA03	10 LUSO DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	26	41	0	0	0	0	16	43	33		
1994281	NCA03	10 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	46	0	0	0	17	36	41	30	2		
1994140	NCA03	10 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	45	0	0	0	0	34	41	19	2		
1993190	NCA03	10-12 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	35	49	0	0	0	0	25	38	31		
1993713	NCA03	10-12 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	36	45	0	0	0	0	26	47	35		
1995121	NCA03	10-12 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	35	47	0	0	0	0	25	42	35		
1995600	NCA03	11 CHARCOAL CL, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	27	41	0	0	0	25	30	43	25	2		
1995076	NCA03	11 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	44	34	0	0	0	25	30	39	25		
1993613	NCA03	11 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	0	0	0	0	31	29	23	2		
1993699	NCA03	11 LUSO DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	45	0	0	0	0	29	47	35		
1995581	NCA03	11 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	23	46	0	0	0	26	33	41	29	2		
1994473	NCA03	12 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	46	0	0	0	22	34	41	27	2		
1995533	NCA03	12 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	47	0	0	0	0	32	42	32	2		
1995236	NCA03	13 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	45	34	0	0	0	0	30	42	25		
1994422	NCA03	13 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	0	0	0	0	31	37	28	2		
1995440	NCA03	13 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	24	53	0	0	0	0	20	52	40		
1995207	NCA03	1-3 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	42	0	0	0	0	25	44	32		
1993900	NCA03	1-3 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	35	45	0	0	0	0	25	48	37		
1993304	NCA03	1-3 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	45	0	0	0	0	28	47	36		
1993230	NCA03	13 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	32	50	0	0	0	0	22	52	41		
1993697	NCA03	13 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	26	48	0	0	0	0	21	49	38		
1994854	NCA03	13 WAVERLEY DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	36	34	0	0	0	19	27	37	25		
1994028	NCA03	13-23 INVESTIGATOR DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	0	0	0	0	32	36	36	2		
1994520	NCA03	14 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	0	0	0	0	31	38	33	2		
1995276	NCA03	14 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	40	0	0	0	0	34	38	30	2		
1994359	NCA03	14 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	37	0	0	0	0	11	30	28	2		
1993792	NCA03	14 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	35	48	0	0	0	0	24	49	37		
1994525	NCA03	14 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	35	47	0	0	0	0	25	48	37		
1993724	NCA03	14 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	46	0	0	0	23	32	41	28	2		
1993843	NCA03	14/10 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	34	49	0	0	0	0	16	50	39		
1994018	NCA03	15 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	45	34	0	0	0	0	32	43	26		
1994409	NCA03	15 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	42	0	0	0	0	33	38	32	2		
1994147	NCA03	15 WAVERLEY DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	36	33	0	0	0	17	25	34	23		
1993600	NCA03	16 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	34	49	0	0	0	0	25	50	38		
1993859	NCA03	16 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	37	49	0	0	0	0	27	52	40		
1993213	NCA03	16 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	49	0	0	0	0	34	43	31	2		
1994417	NCA03	16 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	49	0	0	0	0	32	37	29	2		



Receivers			Land use	Trenching						HDD						Pull through		Welding					
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10		
Ref	NCA	Address	Standard hours	Highly noise affected	Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend			>75dBA (highly affected)		1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML								
1995607	NCA03	2 RESOLUTION DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	39	0	0	13	25	34	38	31	31	2		
1994609	NCA03	2 WAVERLEY DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	41	34	0	0	0	0	25	38	38	25		
1994584	NCA03	2/12-14 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	45	34	0	0	0	0	30	42	42	26		
1993159	NCA03	2/22 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	38	37	0	0	0	0	28	39	36	28		
1993631	NCA03	2/5 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	46	34	0	0	0	15	21	42	42	26		
1995565	NCA03	2/6 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	41	0	0	0	0	34	38	31	31	2		
1995573	NCA03	2/6 RESOLUTION DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	28	39	0	0	30	31	38	42	28	28	2		
1993924	NCA03	2/7 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	40	0	0	0	0	34	40	28	28	2		
1994581	NCA03	20 PRINCE OF WALES AVENUE, UNANDERRA	Community Use	45	45	45	45	45	45	0	0	55	0	0	0	0	32	39	43	43	2		
1993444	NCA03	20-22 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	34	54	0	0	0	0	22	54	42	42		
1993285	NCA03	20-22 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	33	52	0	0	0	0	23	53	41	41		
1994839	NCA03	20-22 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	33	57	0	0	0	0	25	56	42	43		
1994153	NCA03	21 CANTERBURY RD, KEMBLA GRANGE	Industrial/Utilitie	75	75	75	75	75	75	0	0	0	49	0	0	0	0	0	46	37	36		
1993465	NCA03	21 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	33	38	0	0	0	0	23	40	37	29		
1994354	NCA03	21 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	43	38	0	0	0	0	28	43	43	29		
1994596	NCA03	21 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	45	36	0	0	0	0	31	44	44	27		
1993256	NCA03	21 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	56	0	0	0	24	32	42	36	36	2		
1995580	NCA03	218 BERKELEY RD, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	40	0	0	0	0	0	35	39	32	25		
1993963	NCA03	22 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	37	35	0	0	0	0	26	38	35	27		
1995587	NCA03	221 BERKELEY RD, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	26	39	0	0	26	29	35	39	31	31	2		
1995068	NCA03	22-24 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	41	0	0	0	0	31	38	31	31	2		
1993558	NCA03	22-24 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	41	0	0	0	0	33	38	21	21	2		
1994728	NCA03	23 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	50	0	0	0	2	15	28	32	32	2		
1993163	NCA03	23 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	54	0	0	0	17	32	41	36	36	2		
1995116	NCA03	235 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	49	0	0	0	0	29	34	43	43	2		
1993489	NCA03	235-241 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	37	37	0	0	0	0	28	39	36	28		
1994780	NCA03	239 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	43	35	0	0	0	26	31	40	40	26		
1994277	NCA03	239 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	42	31	0	0	0	25	31	39	39	23		
1995328	NCA03	239 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	44	34	0	0	0	27	32	40	40	25		
1993419	NCA03	24-26 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	45	41	0	0	0	0	31	45	45	32		
1995475	NCA03	243-245 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	35	48	0	0	0	0	25	49	37	37		
1994453	NCA03	243A PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	38	48	0	0	0	0	29	49	38	38		
1994085	NCA03	244 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	46	34	0	0	0	0	28	31	43	25		
1993501	NCA03	244 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	48	0	0	0	0	31	34	42	42	2		
1994112	NCA03	244 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	49	32	0	0	0	27	31	44	44	23		
1995247	NCA03	245 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	42	35	0	0	0	12	28	40	40	26		
1993556	NCA03	247 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	41	33	0	0	0	16	30	40	40	25		
1994311	NCA03	247 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	42	33	0	0	0	11	29	39	39	24		
1993348	NCA03	249 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	34	53	0	0	0	0	24	52	40	40		
1993398	NCA03	25 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	42	39	0	0	0	0	27	41	41	30		
1993954	NCA03	25 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	43	39	0	0	0	0	30	43	43	30		
1995228	NCA03	250 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	47	32	0	0	0	26	31	45	45	23		
1994994	NCA03	250 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	45	34	0	0	0	28	34	43	43	25		
1993907	NCA03	251 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	33	58	0	0	0	0	24	58	44	45		
1994046	NCA03	252 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	45	33	0	0	0	27	32	43	43	24		
1993586	NCA03	253 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	33	55	0	0	0	0	24	56	44	44		
1995114	NCA03	253-257 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	38	37	0	0	0	0	29	37	36	26		
1994239	NCA03	254 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	44	34	0	0	0	21	29	40	40	25		
1994836	NCA03	254 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	42	30	0	0	0	26	32	34	34	24		
1993916	NCA03	254 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	42	34	0	0	0	26	31	36	36	25		
1993332	NCA03	254 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	44	32	0	0	0	13	24	36	36	23		
1994524	NCA03	255 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	32	56	0	0	0	0	24	57	45	45		
1995231	NCA03	257-273 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	30	50	0	0	0	0	0	48	39	38		
1993985	NCA03	257-273 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	31	57	0	0	0	0	20	56	46	45		
1995332	NCA03	26 INVESTIGATOR DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	38	30	0	0	0	28	31	35	35	22		
1993815	NCA03	260 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	43	35	0	0	0	0	30	41	41	26		
1995342	NCA03	260 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	41	36	0	0	0	0	32	38	38	24		
1994369	NCA03	262 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	40	35	0	0	0	29	39	39	27	29		
1995515	NCA03	264 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	40	38	0	0	0	0	28	40	36	29		
1994078	NCA03	264 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	37	38	0	0	0	0	30	40	33	29		
1993939	NCA03	27 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	41	0	0	0	0	0	27	43	41	32		
1993693	NCA03	270 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	38	37	0	0	0	0	28	39	36	29		
1994594	NCA03	270 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	39	37	0	0	0	0	27	39	36	28		
1994414	NCA03	275 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	30	52	0	0	0	0	0	49	40	39		
1993787	NCA03	275 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	0	55	0	0	0	0	0	46	38	39		
1995284	NCA03	277 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	0	0	0	55	0	0	0	0	0	46	39	39		
1994768	NCA03	279 PRINCES HWY, KEMBLA GRANGE	Industrial/Utilitie	75	75	75	75	75	75	0	0	0	55	0	0	0	0	0	43	39	38		
1993431	NCA03	281 PRINCES HWY, KEMBLA GRANGE	Industrial/Utilitie	75	75	75	75	75	75	0	0	0	55	0	0	0	0	0	46	39	38		



Receivers				Land use	Trenching						HDD						Pull through		Welding					
					NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10		
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend				>75dBA (highly affected)		1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML								
1994760	NCA03	31 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	41	0	0	0	27	44	39	33			
1994826	NCA03	32 INVESTIGATOR DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	34	0	0	0	27	33	39	25			
1993383	NCA03	32 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	42	0	0	0	0	31	38	32	2			
1994763	NCA03	32-34 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	34	31	0	0	0	0	24	33	16			
1994031	NCA03	32-34 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	37	45	0	0	0	0	27	46	35			
1993584	NCA03	32-34 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	19	45	0	0	0	0	6	46	35			
1994803	NCA03	33 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	36	0	0	0	0	26	39	29			
1995094	NCA03	34-40 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	0	0	0	0	30	38	33	2			
1994238	NCA03	34-40 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	46	0	0	0	0	31	37	36	2			
1994254	NCA03	34-40 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	46	0	0	0	0	31	38	36	2			
1994368	NCA03	34-40 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	45	0	0	0	0	33	37	36	2			
1993411	NCA03	34-40 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	46	0	0	0	0	31	38	35	2			
1995403	NCA03	34-40 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	45	0	0	0	0	31	39	35	2			
1993165	NCA03	34-40 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	44	0	0	0	0	31	38	30	2			
1995469	NCA03	35 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	38	0	0	0	0	26	41	37	30		
1993814	NCA03	36 INVESTIGATOR DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	42	34	0	0	0	29	33	38	24			
1995031	NCA03	37 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	42	0	0	0	0	28	45	39	34		
1993369	NCA03	38 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	42	0	0	0	0	28	44	37	33		
1994310	NCA03	38 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	40	0	0	0	0	27	43	39	31		
1994036	NCA03	4 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	46	37	0	0	0	26	30	44	44	28		
1995562	NCA03	4 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	40	0	0	0	0	36	40	31	31	2		
1995425	NCA03	4 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	42	0	0	0	0	28	43	39	32		
1994155	NCA03	4 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	37	44	0	0	0	0	26	45	36	33		
1995411	NCA03	4 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	43	0	0	0	0	34	40	29	2	2		
1995535	NCA03	4 WAVERLEY DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	40	36	0	0	0	0	28	39	37	27		
1995603	NCA03	4/220-222 BERKELEY RD, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	0	0	0	0	36	30	30	2	2		
1994326	NCA03	4/3 LUSO DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	39	0	0	0	0	27	41	38	30		
1993173	NCA03	4/3 WAVERLEY DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	37	34	0	0	0	15	24	37	29	26		
1994367	NCA03	40 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	41	0	0	0	0	27	43	40	32		
1995434	NCA03	41 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	41	0	0	0	0	28	43	38	33		
1995500	NCA03	42 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	41	0	0	0	0	29	42	38	32		
1994273	NCA03	42 INVESTIGATOR DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	42	36	0	0	0	29	31	41	41	28		
1993475	NCA03	42 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	47	0	0	0	0	31	39	38	38	2		
1993851	NCA03	42 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	46	0	0	0	0	31	38	36	36	2		
1993545	NCA03	42 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	47	0	0	0	0	31	38	36	36	2		
1995019	NCA03	42 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	48	0	0	0	0	34	42	37	37	2		
1994095	NCA03	43 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	36	42	0	0	0	0	25	42	36	31		
1993694	NCA03	45 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	33	40	0	0	0	0	24	43	33	32		
1994387	NCA03	46 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	41	0	0	0	0	27	43	37	32		
1995163	NCA03	4-6 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	30	41	0	0	0	0	42	33	32	32		
1993215	NCA03	4-6 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	13	44	0	0	0	0	0	47	36	36		
1994058	NCA03	4-6 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	27	45	0	0	0	0	7	46	37	36		
1993912	NCA03	4-6 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	28	41	0	0	0	0	19	25	30	30		
1995022	NCA03	4-6 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	33	35	0	0	0	0	24	35	33	26		
1994652	NCA03	4-6 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	35	45	0	0	0	0	24	48	38	37		
1995318	NCA03	4-6 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	33	45	0	0	0	0	24	48	37	37		
1993970	NCA03	47 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	34	40	0	0	0	0	24	43	34	32		
1993242	NCA03	48 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	33	0	0	0	0	27	38	38	27		
1995310	NCA03	48 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	40	46	0	0	0	0	29	48	39	36		
1993993	NCA03	48 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	46	0	0	0	0	29	48	39	36		
1993677	NCA03	49-51 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	34	40	0	0	0	0	25	42	33	31		
1995588	NCA03	5 CHARCOAL CL, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	25	38	0	0	27	27	35	40	30	2	2		
1995612	NCA03	5 CHARCOAL CL, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	26	39	0	0	24	26	33	40	29	2	2		
1993744	NCA03	5 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	48	35	0	0	0	22	31	43	43	26		
1995613	NCA03	5 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	42	0	0	13	32	39	31	31	2	2		
1994082	NCA03	5 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	32	44	0	0	0	0	25	45	36	36		
1993539	NCA03	5 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	36	44	0	0	0	0	25	46	35	35		
1995557	NCA03	5 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	44	0	0	24	36	41	30	30	2	2		
1995614	NCA03	5 RESOLUTION DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	24	37	0	0	24	27	31	36	23	23	2		
1995566	NCA03	5 RESOLUTION DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	25	34	0	0	25	26	35	37	13	13	2		
1995577	NCA03	5 RESOLUTION DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	26	36	0	0	25	28	32	37	20	20	2		
1995582	NCA03	5 RESOLUTION DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	24	36	0	0	27	20	27	28	28	2	2		
1993860	NCA03	5 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	34	43	0	0	0	0	25	45	36	35		
1994292	NCA03	5 WAVERLEY DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	39	33	0	0	0	15	22	37	37	24		
1994959	NCA03	5/245 NOLAN ST, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	42	34	0	0	0	7	28	41	41	26		
1995261	NCA03	5/3 WAVERLEY DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	38	33	0	0	17	23	36	35	24	24		
1995069	NCA03	5/40 INVESTIGATOR DR, UNANDERRA																						



Receivers				Trenching						HDD						Pull through		Welding			
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10
Ref	NCA	Address	Land use	Standard hours	Highly noise affected	Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator		Pulling conduit through bore	Pipe welding	
Exceedance legend				>75dBA (highly affected)		1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML					
1994481	NCA03	636A NORTHCLIFFE DR, KEMBLA GRANGE	Commercial/Bus	70	70	70	70	70	70	70	0	0	0	0	0	0	0	39	30	30	
1993926	NCA03	64 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	34	42	0	0	0	43	34	33	
1995078	NCA03	640 NORTHCLIFFE DR, KEMBLA GRANGE	Commercial/Bus	70	70	70	70	70	70	70	0	0	0	48	0	0	0	43	34	34	
1994541	NCA03	640 NORTHCLIFFE DR, KEMBLA GRANGE	Commercial/Bus	70	70	70	70	70	70	70	0	0	0	48	0	0	0	41	33	32	
1995554	NCA03	7 CHARCOAL CL, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	27	42	0	0	29	29	28	28	2	
1993449	NCA03	7 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	47	33	0	0	26	45	45	24	
1993399	NCA03	7 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	42	0	0	0	34	40	27	2	
1993823	NCA03	7 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	33	46	0	0	0	25	47	38	
1993564	NCA03	7 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	35	48	0	0	0	24	47	36	
1995555	NCA03	7 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	43	0	0	0	23	33	40	27	2
1995570	NCA03	7 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	44	0	0	0	24	34	37	27	2
1995606	NCA03	7 RESOLUTION DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	26	38	0	0	28	28	34	40	30	2
1993528	NCA03	7 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	34	45	0	0	0	24	47	36	36
1994462	NCA03	7 WAVERLEY DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	37	35	0	0	16	21	37	29	26
1994766	NCA03	8 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	47	36	0	0	0	27	30	46	27
1994506	NCA03	8 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	40	0	0	0	0	33	39	31	2
1994157	NCA03	8 LUSO DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	42	0	0	0	30	44	41	33
1994218	NCA03	8 LUSO DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	40	38	0	0	0	30	41	34	30
1995497	NCA03	8 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	36	47	0	0	0	28	46	36	35
1994478	NCA03	8 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	44	0	0	0	0	34	41	29	2
1994698	NCA03	8 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	32	45	0	0	0	24	47	37	36
1993503	NCA03	8/20 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	43	37	0	0	0	26	41	41	29
1995575	NCA03	9 CHARCOAL CL, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	27	41	0	0	27	28	39	43	29	2
1994205	NCA03	9 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	48	33	0	0	0	28	32	41	24
1994626	NCA03	9 INVESTIGATOR DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	37	0	0	0	0	31	35	32	2
1993761	NCA03	9 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	0	0	0	0	31	37	29	2
1995093	NCA03	9 LUSO DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	34	41	0	0	0	29	43	33	32
1995152	NCA03	9 LUSO DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	37	42	0	0	0	29	43	33	32
1995604	NCA03	9 PRINCE OF WALES AVENUE, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	45	0	0	0	26	36	43	33	2
1993360	NCA03	9 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	35	47	0	0	0	24	49	38	38
1994167	NCA03	9 SYLVESTER AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	31	47	0	0	0	24	49	38	37
1995482	NCA03	9 WAVERLEY DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	34	34	0	0	17	23	37	29	26
1994435	NCA03	9/20 DOYLE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	43	40	0	0	0	30	42	42	31
1995379	NCA03	9-11 ORANGEGROVE AV, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	36	50	0	0	0	27	52	41	40
1994934	NCA03	SHOP 1 1 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	47	0	0	0	0	32	41	34	2
1995584	NCA03	SHOP 3 13-15 PRINCE OF WALES AVENUE, UNA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	46	0	0	0	24	33	41	29	2
1995585	NCA03	SHOP 3 13-15 PRINCE OF WALES AVENUE, UNA	Industrial/Utilitie	75	75	75	75	75	75	75	0	23	48	0	0	0	26	36	44	30	2
1995564	NCA03	SHOP 4 13-15 PRINCE OF WALES AVENUE, UNA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	46	0	0	0	22	31	41	35	2
1995574	NCA03	SHOP 4 13-15 PRINCE OF WALES AVENUE, UNA	Industrial/Utilitie	75	75	75	75	75	75	75	0	21	50	0	0	0	24	33	43	30	2
1995295	NCA03	UNANDERRA MOTOR REGISTRY 42 NOLAN ST, U	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	53	0	0	0	0	31	36	46	2
1993571	NCA03	UNIT 8 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	0	0	0	0	33	37	35	2
1995595	NCA03	UNIT 8 LADY PENRHYN DR, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	41	0	0	0	0	30	31	31	2
1994809	NCA03	UNIT 3 47 PRINCES HWY, UNANDERRA	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	35	50	0	0	0	24	50	39	39
1993998	NCA03	UNIT 3 89-295 PRINCES HWY, KEMBLA GRANG	Industrial/Utilitie	75	75	75	75	75	75	75	0	0	0	54	0	0	0	0	44	37	36
1996777	NCA03		Industrial/Utilitie	75	75	75	75	75	75	75	0	25	36	0	0	27	28	35	39	26	2
1996687	NCA03		Industrial/Utilitie	75	75	75	75	75	75	75	0	25	38	0	0	27	27	35	39	22	2
1996953	NCA03		Industrial/Utilitie	75	75	75	75	75	75	75	0	25	36	0	0	27	27	35	39	21	2
1994808	NCA03		Industrial/Utilitie	75	75	75	75	75	75	75	0	0	0	53	0	0	0	44	38	37	37
1994692	NCA03		Industrial/Utilitie	75	75	75	75	75	75	75	0	0	0	40	0	0	0	41	32	31	31
1994557	NCA04	1 HOAD PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	40	0	0	0	12	19	39	39	2
1995351	NCA04	1 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	42	0	0	0	14	26	39	39	2
1995513	NCA04	1 NEWCOMBE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	0	0	0	0	28	40	40	2
1993491	NCA04	1 NEWCOMBE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	41	0	0	0	0	28	41	41	2
1994701	NCA04	1 ROCHE PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	48	0	0	0	0	27	34	43	2
1994048	NCA04	1 ROSEWALL PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	46	0	0	0	0	25	42	42	2
1994956	NCA04	1 ROSEWALL PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	45	0	0	0	0	27	42	42	2
1994630	NCA04	1 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	57	0	0	0	0	27	34	45	2
1995325	NCA04	10 HOAD PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	47	0	0	0	21	27	42	42	2
1993203	NCA04	10 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	53	0	0	0	0	25	30	43	2
1994964	NCA04	10 NEWCOMBE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	42	0	0	0	19	25	40	40	2
1994729	NCA04	10 ROSEWALL PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	50	27	0	0	0	31	50	50	19
1993460	NCA04	10 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	71	0	0	0	0	27	34	48	2
1995140	NCA04	11 HOAD PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	50	0	0	0	26	31	40	40	2
1994656	NCA04	11 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	41	0	0	0	0	28	37	37	2
1993705	NCA04	11 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	40	0	0	0	0	27	40	40	2
1993935	NCA04	11 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	52	0	0	0	14	25	38	38	2
1994699	NCA04	11 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	50	0	0	0	17	31	40	40	2
1994364	NCA04	11 NEWCOMBE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	51	33	0	0	0	29	51	51	24
1993797	NCA04	11 ROSEWALL PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	46	32	0	0	0	28	45	45	



Receivers			Land use	Trenching						HDD						Pull through		Welding				
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10	
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	LAeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator				Pulling conduit through bore	Pipe welding
Exceedance legend				>75dBA (highly affected)		1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML						
1993413	NCA04	14 NEWCOMBE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	0	0	0	11	21	42	42	2	
1995400	NCA04	14 ROSEWALL PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	47	33	0	0	0	29	46	46	24	
1993807	NCA04	14 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	72	0	0	0	27	31	50	50	2	
1995397	NCA04	15 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	0	0	0	0	28	42	42	2	
1993581	NCA04	15 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	51	0	0	0	21	31	39	39	2	
1994083	NCA04	15 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	57	0	0	0	27	32	50	50	2	
1994868	NCA04	16 HOAD PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	52	0	0	0	13	17	50	50	2	
1995098	NCA04	16 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	45	0	0	0	0	28	45	45	2	
1993224	NCA04	16 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	52	0	0	0	26	30	45	45	2	
1994355	NCA04	16 NEWCOMBE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	54	0	0	0	25	29	48	48	2	
1995448	NCA04	16 ROSEWALL PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	47	31	0	0	0	31	45	45	21	
1993554	NCA04	16 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	70	0	0	0	27	33	46	46	2	
1994180	NCA04	17 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	0	0	0	0	28	43	43	2	
1993524	NCA04	17 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	50	0	0	0	21	31	42	42	2	
1995229	NCA04	17 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	58	0	0	0	27	31	51	51	2	
1994375	NCA04	18 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	45	0	0	0	0	31	43	43	2	
1994948	NCA04	18 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	51	0	0	0	27	30	46	46	2	
1994330	NCA04	18 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	75	0	0	0	27	31	54	54	2	
1994694	NCA04	180 BERKELEY RD, BERKELEY 06	Community Use	45	45	45	45	45	45	45	0	0	53	0	0	24	32	42	37	37	2	
1993507	NCA04	180 BERKELEY RD, BERKELEY 06	Community Use	45	45	45	45	45	45	45	0	0	56	0	0	0	10	16	38	38	2	
1994279	NCA04	180 BERKELEY RD, BERKELEY 06	Community Use	45	45	45	45	45	45	45	0	0	58	0	0	0	29	35	42	42	2	
1994203	NCA04	180 BERKELEY RD, BERKELEY 06	Community Use	45	45	45	45	45	45	45	0	0	58	0	0	0	9	15	42	42	2	
1993492	NCA04	180 BERKELEY RD, BERKELEY 06	Community Use	45	45	45	45	45	45	45	0	0	63	0	0	0	33	41	42	42	2	
1994933	NCA04	19 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	46	0	0	0	0	28	45	45	2	
1993498	NCA04	19 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	0	0	0	23	31	43	43	2	
1994941	NCA04	19 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	57	0	0	0	27	31	52	52	2	
1994488	NCA04	2 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	41	0	0	0	14	24	36	36	2	
1994777	NCA04	2 NEWCOMBE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	0	0	0	10	19	38	38	2	
1995149	NCA04	2 ROSEWALL PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	0	0	0	0	24	49	49	2	
1993520	NCA04	2 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	66	0	0	0	29	34	45	45	2	
1994249	NCA04	2 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	69	0	0	0	28	34	41	41	2	
1993338	NCA04	20 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	47	28	0	0	0	28	46	46	20	
1995304	NCA04	20 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	29	0	0	0	28	44	44	21	
1994776	NCA04	20 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	74	0	0	0	27	31	56	56	2	
1993898	NCA04	20 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	70	0	0	0	24	31	56	56	2	
1994749	NCA04	201 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	41	0	0	0	11	20	35	35	2	
1993366	NCA04	203 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	42	0	0	0	13	28	37	37	2	
1994139	NCA04	204 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	45	0	0	0	17	27	37	37	2	
1993470	NCA04	205 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	42	0	0	0	15	26	38	38	2	
1994632	NCA04	206 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	45	0	0	0	23	27	36	36	2	
1994926	NCA04	207 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	42	0	0	0	16	24	38	38	2	
1995132	NCA04	208 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	0	0	0	25	30	41	41	2	
1994637	NCA04	209 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	0	0	0	15	26	37	37	2	
1994902	NCA04	21 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	0	0	0	0	29	43	43	2	
1994343	NCA04	21 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	51	0	0	0	24	31	39	39	2	
1994295	NCA04	21 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	57	0	0	0	27	31	53	53	2	
1994522	NCA04	210 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	0	0	0	25	31	46	46	2	
1995250	NCA04	211 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	45	0	0	0	14	31	40	40	2	
1994241	NCA04	212 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	48	0	0	0	20	33	43	43	2	
1995496	NCA04	213 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	46	0	0	0	16	33	43	43	2	
1995218	NCA04	214 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	0	0	0	26	31	43	43	2	
1994642	NCA04	216 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	0	0	0	25	31	43	43	2	
1993819	NCA04	217 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	46	0	0	0	25	32	42	42	2	
1995164	NCA04	218 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	48	0	0	0	24	31	42	42	2	
1993395	NCA04	219 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	46	0	0	0	25	32	42	42	2	
1993509	NCA04	22 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	26	0	0	0	28	44	44	18	
1994088	NCA04	22 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	69	0	0	0	22	30	55	55	2	
1994602	NCA04	220 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	48	0	0	0	27	34	42	42	2	
1995010	NCA04	222 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	48	0	0	0	16	21	39	39	2	
1994654	NCA04	224 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	48	0	0	0	23	31	42	42	2	
1994806	NCA04	226 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	48	0	0	0	24	34	42	42	2	
1994068	NCA04	228 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	0	0	0	23	34	43	43	2	
1995518	NCA04	23 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	0	0	0	0	31	43	43	2	
1995462	NCA04	23 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	50	0	0	0	23	33	38	38	2	
1994179	NCA04	23 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	57	0	0	0	27	31	55	55	2	
1994783	NCA04	230 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	50	0	0	0	20	30	42	42	2	
1993692	NCA04	232 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	51	0	0	0	23	29	43	43	2	
1993323	NCA04	234 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	52	0	0	0	21	28	44	44	2	
1995390	NCA04	236 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	56	0								



Receivers			Land use	Trenching						HDD						Pull through		Welding			
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator		Pulling conduit through bore	Pipe welding	
Exceedance legend				>75dBA (highly affected)	1 - 10dB > night NML	10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML	10-20 dB > day NML											
1994629	NCA04	3 ROCHE PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	0	0	0	22	31	35	35	2
1995257	NCA04	3 ROSEWALL PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	47	0	0	0	27	27	46	46	2
1994266	NCA04	3 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	57	0	0	25	33	46	46	2	
1995216	NCA04	30 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	45	33	0	0	31	44	44	44	24
1994628	NCA04	30 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	67	0	0	24	30	61	61	2	
1993386	NCA04	31 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	24	0	0	23	42	42	42	17
1994061	NCA04	32 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	45	34	0	0	28	45	45	45	25
1994353	NCA04	32 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	68	0	0	24	30	63	63	2	
1994492	NCA04	33 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	42	24	0	0	28	41	41	41	17
1995007	NCA04	33 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	24	0	0	28	42	42	42	16
1993893	NCA04	34 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	48	34	0	0	29	46	46	46	25
1993711	NCA04	34 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	67	32	0	24	29	62	62	62	24
1993438	NCA04	35 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	30	0	0	28	43	43	43	22
1994389	NCA04	35 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	41	27	0	0	28	41	41	41	19
1994125	NCA04	35 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	51	35	0	0	30	50	50	50	26
1993221	NCA04	36 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	48	36	0	0	31	47	47	47	28
1995238	NCA04	36 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	65	33	0	26	30	60	60	60	24
1993180	NCA04	37 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	33	0	0	28	43	43	43	24
1994573	NCA04	37 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	50	33	0	0	30	49	49	49	24
1993708	NCA04	37 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	51	31	0	0	29	51	51	51	23
1994222	NCA04	38 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	60	33	0	0	28	57	57	57	24
1994142	NCA04	39 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	34	0	0	31	43	43	43	25
1994613	NCA04	39 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	32	0	0	29	48	48	48	24
1993480	NCA04	4 HOAD PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	41	0	0	13	23	38	38	38	2
1993801	NCA04	4 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	53	0	0	19	26	41	41	41	2
1993590	NCA04	4 NEWCOMBE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	40	0	0	0	21	36	36	36	2
1994436	NCA04	4 ROCHE PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	0	0	22	31	39	39	39	2
1995526	NCA04	4 ROSEWALL PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	31	0	0	28	49	49	49	23
1994862	NCA04	4 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	71	0	0	26	31	46	46	46	2
1994212	NCA04	40 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	58	33	0	0	29	55	55	55	24
1994398	NCA04	41 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	34	0	0	28	43	43	43	26
1993776	NCA04	41 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	32	0	0	29	48	48	48	23
1995064	NCA04	42 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	57	33	0	0	29	55	55	55	24
1993196	NCA04	43 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	34	0	0	28	43	43	43	26
1994076	NCA04	43 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	48	30	0	0	29	47	47	47	23
1993966	NCA04	44 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	54	36	0	0	27	53	53	53	27
1993981	NCA04	45 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	35	0	0	28	43	43	43	26
1993604	NCA04	45 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	47	31	0	0	29	47	47	47	23
1994403	NCA04	46 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	53	33	0	0	29	52	52	52	25
1993829	NCA04	47 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	46	35	0	0	31	46	46	46	26
1995048	NCA04	47 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	47	34	0	0	29	47	47	47	25
1993414	NCA04	48 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	54	31	0	0	32	53	53	53	23
1993234	NCA04	49 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	46	35	0	0	28	46	46	46	26
1994447	NCA04	49 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	46	32	0	0	31	46	46	46	24
1995349	NCA04	5 HOAD PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	41	0	0	14	26	37	37	37	2
1993175	NCA04	5 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	42	0	0	10	23	39	39	39	2
1994220	NCA04	5 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	53	0	0	17	23	47	47	47	2
1993378	NCA04	5 ROCHE PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	0	0	23	31	41	41	41	2
1995419	NCA04	5 ROSEWALL PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	47	0	0	0	28	47	47	47	2
1995409	NCA04	5 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	58	0	0	25	31	47	47	47	2
1993748	NCA04	50 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	51	36	0	0	29	50	50	50	27
1993429	NCA04	51 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	38	0	0	28	44	44	44	29
1994049	NCA04	51 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	46	35	0	0	29	46	46	46	26
1994562	NCA04	52 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	51	28	0	0	32	50	50	50	20
1994619	NCA04	54 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	51	34	0	0	32	50	50	50	25
1995119	NCA04	56 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	50	33	0	0	32	49	49	49	25
1993351	NCA04	56 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	35	0	0	29	48	48	48	25
1994682	NCA04	58 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	47	34	0	0	29	47	47	47	25
1993516	NCA04	6 HOAD PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	36	0	0	13	22	34	32	32	2
1993531	NCA04	6 HOPMAN CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	37	0	0	0	26	36	35	35	2
1994890	NCA04	6 HUNT PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	52	0	0	22	29	42	42	42	2
1993415	NCA04	6 NEWCOMBE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	36	0	0	0	19	35	35	35	2
1995465	NCA04	6 NEWCOMBE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	44	0	0	11	19	41	41	41	2
1993641	NCA04	6 ROCHE PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	43	0	0	16	31	39	39	39	2
1993742	NCA04	6 ROSEWALL PL, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	34	0	0	29	48	48	48	26
1993701	NCA04	6 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	70	0	0	27	32	47	47	47	2
1993282	NCA04	60 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	49	25	0	0	31	48	48	48	21
1994979	NCA04	62 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	47	35	0	0	29	46	46	46	26
1993943	NCA04	64 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52											



Receivers			Land use	NML					Trenching				HDD						Pull through	Welding	
				Sleep disturbance		Standard hours			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10	
Ref	NCA	Address		Highly noise affected	Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)				Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend				>75dBA (highly affected)			1 - 10dB > night NML			10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML			10-20 dB > day NML					
1994309	NCA04	9 WARWICK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	57	0	0	0	17	31	44	44	2
1995544	NCA04	WOLLONGONG CREMATORIUM 176 BERKELEY RD,	Conservation/Na	60	60	60	60	60	60	60	0	26	54	0	0	29	36	50	33	33	2
1993897	NCA05	1 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	30	0	0	6	10	31	28	28	2
1995045	NCA05	1 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	27	0	0	6	10	31	25	25	2
1994362	NCA05	1 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	32	0	0	6	12	33	29	29	2
1993670	NCA05	1 NORFOLK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	27	0	0	0	18	30	20	20	2
1995441	NCA05	1 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	0	0	0	22	22	16	16	2
1993238	NCA05	1 YORK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	14	31	0	0	5	32	24	23	23
1993544	NCA05	10 CHESHIRE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	24	0	0	0	27	23	23	23	2
1994958	NCA05	10 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	20	20	19	19	2
1995086	NCA05	10 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	0	0	0	11	22	18	18	2
1995391	NCA05	10 YORK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	30	0	0	13	32	21	20	20
1994228	NCA05	104 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	28	0	0	13	26	18	16	16
1994012	NCA05	11 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	11	22	22	22	2
1993766	NCA05	11 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	25	0	0	0	17	21	21	21	2
1994595	NCA05	11 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	0	0	0	24	21	19	19	2
1993560	NCA05	12 CHESHIRE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	22	26	26	26	2
1993917	NCA05	12 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	24	0	0	0	20	22	19	19	2
1993540	NCA05	12 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	18	21	18	18	2
1994151	NCA05	12 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	23	0	0	0	14	23	20	20	2
1993279	NCA05	13 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	9	23	21	21	2
1995393	NCA05	13 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	13	24	22	22	2
1994394	NCA05	13 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	28	0	0	0	28	23	23	23	2
1995097	NCA05	14 CHESHIRE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	16	20	17	17	2
1995157	NCA05	14 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	24	0	0	0	20	22	19	19	2
1994062	NCA05	14 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	0	0	0	16	20	17	17	2
1995530	NCA05	14B NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	16	21	20	20	2
1993160	NCA05	14F NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	16	22	22	22	2
1995439	NCA05	14F NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	22	26	26	26	2
1993471	NCA05	15 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	27	0	0	0	18	28	19	19	2
1993638	NCA05	15 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	25	0	0	0	28	24	24	24	2
1994370	NCA05	16 CHESHIRE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	18	0	0	0	6	20	18	18	2
1993698	NCA05	16 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	20	20	17	17	2
1995186	NCA05	16 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	25	0	0	0	20	21	21	21	2
1993639	NCA05	17 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	17	25	17	17	2
1994246	NCA05	17 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	29	0	0	0	28	29	29	29	2
1995306	NCA05	18 CHESHIRE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	19	0	0	0	10	20	18	18	2
1993903	NCA05	18 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	0	0	0	20	25	17	17	2
1994283	NCA05	18 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	24	0	0	0	23	24	24	24	2
1995088	NCA05	19 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	20	26	17	17	2
1994564	NCA05	19 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	27	0	0	0	29	27	27	27	2
1993293	NCA05	1B YORK ST, BERKELEY 06	Conservation/Na	60	60	60	60	60	60	60	0	0	20	33	0	0	12	36	26	26	25
1995127	NCA05	2 CHESHIRE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	25	25	21	21	2
1993147	NCA05	2 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	33	0	0	0	23	27	27	27	2
1993965	NCA05	2 NORFOLK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	17	23	19	19	2
1993627	NCA05	2 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	23	0	0	0	22	24	17	17	2
1993666	NCA05	2 YORK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	18	33	0	0	10	33	25	25	25
1995316	NCA05	20 CHESHIRE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	9	22	22	22	2
1995023	NCA05	20 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	0	0	0	20	27	18	18	2
1994880	NCA05	20 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	24	0	0	0	21	24	24	24	2
1995457	NCA05	21 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	25	0	0	0	17	25	17	17	2
1994127	NCA05	21 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	25	0	0	0	26	25	22	22	2
1993822	NCA05	22 CHESHIRE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	16	0	0	0	6	19	16	16	2
1995146	NCA05	22 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	19	16	16	16	2
1995002	NCA05	23 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	21	26	17	17	2
1995220	NCA05	23 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	17	22	22	22	2
1994108	NCA05	24 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	0	0	0	21	22	16	16	2
1995184	NCA05	24 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	20	23	16	16	2
1993222	NCA05	24 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	31	0	0	0	26	30	30	30	2
1993983	NCA05	25 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	25	0	0	0	18	25	17	17	2
1993729	NCA05	25 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	23	0	0	0	17	23	23	23	2
1995376	NCA05	25 PENNANT CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	32	0	0	6	10	31	30	30	2
1995480	NCA05	26 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	20	23	16	16	2
1995274	NCA05	26 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	30	0	0	0	27	30	30	30	2
1993510	NCA05	27 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	25	0	0	0	0	25	17	17	2
1995365	NCA05	27 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	20	0	0	0	9	19	19	19	2
1994505	NCA05	27 PENNANT CR, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	31	0	0	6	13	33	31	31	2
1994336	NCA05	28 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	24	0	0	0	24	22	19	19	2
1994984	NCA05	28 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	31	0							



Receivers			Land use	Trenching						HDD						Pull through	Welding							
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10			
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	LAeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend				>75dBA (highly affected)						1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML				
1994269	NCA05	35 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	0	0	17	17	17	2		
1993752	NCA05	35 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	24	0	0	0	0	0	18	24	24	2		
1993406	NCA05	36 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	0	0	13	25	25	2		
1994668	NCA05	37 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	0	0	18	26	26	2		
1993462	NCA05	38 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	0	0	8	21	21	2		
1994896	NCA05	38B NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	28	0	0	0	0	0	23	23	23	2		
1995147	NCA05	38F NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	29	0	0	0	0	0	23	22	22	2		
1993614	NCA05	4 CHESHIRE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	24	0	0	0	0	0	23	22	19	2		
1994382	NCA05	4 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	0	0	21	22	22	2		
1995459	NCA05	4 NORFOLK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	24	0	0	0	0	0	13	27	21	2		
1993702	NCA05	4 NORFOLK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	25	0	0	0	0	0	16	24	22	2		
1993546	NCA05	4 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	0	0	0	0	0	23	17	17	2		
1994707	NCA05	4 YORK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	18	29	0	0	0	0	10	31	22	21		
1994547	NCA05	40 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	27	0	0	0	0	0	21	25	25	2		
1993346	NCA05	42 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	23	0	0	0	0	0	21	21	21	2		
1995338	NCA05	44 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	0	0	21	22	22	2		
1994376	NCA05	46 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	0	0	20	22	22	2		
1993621	NCA05	48 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	29	0	0	0	0	0	23	27	27	2		
1995167	NCA05	5 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	30	0	0	0	0	0	11	27	27	2		
1993232	NCA05	5 NORFOLK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	27	0	0	0	0	0	16	28	20	2		
1995367	NCA05	5 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	0	0	0	0	0	23	21	17	2		
1994443	NCA05	5 STAFFORD ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	29	0	0	0	0	0	11	29	26	2		
1994718	NCA05	52 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	29	0	0	0	0	0	21	23	23	2		
1995232	NCA05	54 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	27	0	0	0	0	0	21	26	26	2		
1994356	NCA05	56 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	24	0	0	0	0	0	8	23	23	2		
1994824	NCA05	6 CHESHIRE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	24	0	0	0	0	0	24	22	19	2		
1994074	NCA05	6 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	28	0	0	0	0	0	21	23	23	2		
1994209	NCA05	6 NORFOLK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	27	0	0	0	0	0	13	29	23	2		
1995029	NCA05	6 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	25	0	0	0	0	0	28	25	19	2		
1993534	NCA05	6 STAFFORD ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	29	0	0	0	0	0	9	28	25	2		
1994257	NCA05	6 YORK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	18	28	0	0	0	0	4	31	20	20		
1993994	NCA05	60B NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	30	0	0	0	0	0	23	24	24	2		
1995473	NCA05	60E NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	34	0	0	0	0	0	27	28	28	2		
1994892	NCA05	60E NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	31	0	0	0	0	0	23	25	25	2		
1993289	NCA05	62E NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	31	0	0	0	0	0	25	31	25	2		
1995487	NCA05	62E NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	32	0	0	0	0	0	25	35	28	2		
1993687	NCA05	64B NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	28	0	0	0	0	0	20	35	25	2		
1993481	NCA05	64E NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	27	0	0	0	0	0	13	35	25	2		
1994446	NCA05	7 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	28	0	0	0	0	0	14	26	26	2		
1993397	NCA05	7 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	0	0	23	21	18	2		
1993388	NCA05	7 STAFFORD ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	25	0	0	0	0	0	12	24	23	2		
1994540	NCA05	7 STAFFORD ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	25	0	0	0	0	0	9	26	23	2		
1993290	NCA05	7 YORK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	19	33	0	0	0	0	11	36	26	25		
1994627	NCA05	8 CHESHIRE ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	0	0	25	26	26	2		
1993862	NCA05	8 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	28	0	0	0	0	0	20	21	21	2		
1994598	NCA05	8 NORFOLK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	27	0	0	0	0	0	14	29	24	2		
1993179	NCA05	8 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	0	0	0	0	0	15	26	18	2		
1994738	NCA05	8 STAFFORD ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	0	0	15	26	23	2		
1994563	NCA05	8 YORK ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	28	0	0	0	0	11	29	21	20		
1993412	NCA05	9 NOLAN ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	26	0	0	0	0	0	11	24	24	2		
1994916	NCA05	9 NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	22	0	0	0	0	0	13	21	18	2		
1994080	NCA05	90B NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	23	35	0	0	0	0	17	38	28	27		
1995182	NCA05	90E NOTTINGHAM ST, BERKELEY 06	Residential	60	75	55	53	42	42	52	0	0	21	33	0	0	0	0	12	36	26	25		
1995013	NCA06	1 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	36	0	0	0	0	0	34	25	25	25		
1995337	NCA06	1/4 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	41	0	0	0	0	0	0	28	27	26		
1994276	NCA06	1/4 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	42	0	0	0	0	0	0	26	29	28		
1993189	NCA06	1/4 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	42	0	0	0	0	0	0	28	27	27		
1995077	NCA06	1/8 MANIKATO PL, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	39	0	0	0	0	0	0	34	26	25		
1994756	NCA06	1/8 MANIKATO PL, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	40	0	0	0	0	0	0	34	27	26		
1994765	NCA06	10 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	43	0	0	0	0	0	0	35	28	27		
1994457	NCA06	10 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	44	0	0	0	0	0	0	34	30	29		
1995452	NCA06	10 MANIKATO PL, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	37	0	0	0	0	0	0	34	25	24		
1993587	NCA06	14 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	48	0	0	0	0	0	0	34	30	30		
1993675	NCA06	14 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	47	0	0	0	0	0	0	39	30	29		
1994251	NCA06	14 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	47	0	0	0	0	0	0	37	30	30		
1994507	NCA06	14 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	50	0	0	0	0	0	0	37	31	30		
1995104	NCA06	14A KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	51	0	0	0	0	0</						



Receivers			Land use	NML						Trenching				HDD						Pull through		Welding	
				Sleep disturbance			Standard hours			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10		
Ref	NCA	Address		Highly noise affected	Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)				Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding		
Exceedance legend				>75dBA (highly affected)			1 - 10dB > night NML			10 - 20 dB > night NML	20-30 > night NML		30+ dB > night NML	0-10 dB > day NML			10-20 dB > day NML						
1995416	NCA06	3 MANIKATO PL, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	39	0	0	0	0	0	34	28	27	
1993152	NCA06	3 MANIKATO PL, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	38	0	0	0	0	0	34	25	24	
1994585	NCA06	3/4 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	41	0	0	0	0	0	30	29	28	
1994022	NCA06	3/4 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	39	0	0	0	0	0	33	26	26	
1994675	NCA06	3/4 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	41	0	0	0	0	0	30	29	28	
1993995	NCA06	3/6 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	42	0	0	0	0	0	33	29	28	
1995340	NCA06	3/6 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	41	0	0	0	0	0	29	28	27	
1993371	NCA06	375 NORTHCLIFFE DR, KEMBLA GRANGE	Recreational/Op	60	60	60	60	60	60	60	0	0	0	47	0	0	0	0	0	36	32	31	
1993669	NCA06	375 NORTHCLIFFE DR, KEMBLA GRANGE	Recreational/Op	60	60	60	60	60	60	60	0	0	0	46	0	0	0	0	0	36	30	31	
1994313	NCA06	375 NORTHCLIFFE DR, KEMBLA GRANGE	Recreational/Op	60	60	60	60	60	60	60	0	0	0	49	0	0	0	0	0	38	33	32	
1994526	NCA06	4 MANIKATO PL, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	41	0	0	0	0	0	35	27	27	
1993248	NCA06	4 MANIKATO PL, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	39	0	0	0	0	0	34	26	25	
1994306	NCA06	4 TRIFECTA PL, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	37	0	0	0	0	0	37	29	28	
1995407	NCA06	5 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	44	0	0	0	0	0	37	29	29	
1993276	NCA06	5 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	41	0	0	0	0	0	35	27	26	
1994884	NCA06	5 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	42	0	0	0	0	0	35	27	26	
1993325	NCA06	6 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	43	0	0	0	0	0	31	29	29	
1993361	NCA06	6 MANIKATO PL, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	38	0	0	0	0	0	34	25	24	
1993263	NCA06	6 MANIKATO PL, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	38	0	0	0	0	0	34	25	24	
1995375	NCA06	6 TRIFECTA PL, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	36	0	0	0	0	0	35	26	26	
1993737	NCA06	8 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	43	0	0	0	0	0	37	30	29	
1994404	NCA06	8 KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	41	0	0	0	0	0	36	28	27	
1994532	NCA06	8A KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	42	0	0	0	0	0	31	28	27	
1994650	NCA06	8A KINGSTON TOWN DR, KEMBLA GRANGE	Residential	59	75	54	49	41	41	52	0	0	0	44	0	0	0	0	0	33	30	30	
1993309	NCA06	TORRINGTON LODGE 1 MANIKATO PL, KEMBLA G	Residential	59	75	54	49	41	41	52	0	0	0	39	0	0	0	0	0	37	28	27	
1993252	NCA06	TORRINGTON LODGE 1 MANIKATO PL, KEMBLA G	Residential	59	75	54	49	41	41	52	0	0	0	39	0	0	0	0	0	35	26	25	
1994837	NCA06	TORRINGTON LODGE 1 MANIKATO PL, KEMBLA G	Residential	59	75	54	49	41	41	52	0	0	0	41	0	0	0	0	0	34	26	27	
1993803	NCA06	TORRINGTON LODGE 1 MANIKATO PL, KEMBLA G	Residential	59	75	54	49	41	41	52	0	0	0	39	0	0	0	0	0	34	26	26	
1993543	NCA06	TORRINGTON LODGE 1 MANIKATO PL, KEMBLA G	Residential	59	75	54	49	41	41	52	0	0	0	39	0	0	0	0	0	36	27	27	
1995183	NCA06	TORRINGTON LODGE 1 MANIKATO PL, KEMBLA G	Residential	59	75	54	49	41	41	52	0	0	0	39	0	0	0	0	0	33	26	25	
1993184	NCA06	TORRINGTON LODGE 1 MANIKATO PL, KEMBLA G	Residential	59	75	54	49	41	41	52	0	0	0	41	0	0	0	0	0	37	29	28	
1994704	NCA06	0	Industrial	75	75	75	75	75	75	75	0	0	0	50	0	0	0	0	0	37	32	31	
1996976	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	38	0	0	30	31	36	35	26	26	2	
1996745	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	25	43	0	0	22	28	34	43	20	20	2	
1996972	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	35	46	0	0	33	38	46	29	0	0	2	
1996388	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	35	45	0	0	33	41	41	32	0	0	2	
1996426	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	33	43	0	0	32	38	40	26	0	0	2	
1996799	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	34	42	0	0	33	42	39	30	0	0	2	
1996385	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	30	44	0	0	29	33	37	46	25	25	2	
1996427	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	27	53	0	0	28	29	42	54	27	27	2	
1996386	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	33	42	0	0	32	37	41	24	0	0	2	
1996936	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	35	45	0	0	33	40	39	27	0	0	2	
1996743	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	25	42	0	0	27	27	37	44	29	29	2	
1996938	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	43	0	0	28	32	32	46	26	26	2	
1996744	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	27	40	0	0	29	30	38	43	27	27	2	
1996961	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	34	44	0	0	33	38	40	30	0	0	2	
1996424	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	48	0	0	29	33	38	49	26	26	2	
1996422	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	51	0	0	29	32	36	53	24	24	2	
1996929	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	27	53	0	0	28	29	42	55	27	27	2	
1996419	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	38	0	26	30	31	39	38	25	25	2	
1997004	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	30	44	0	0	29	33	38	46	25	25	2	
1996751	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	30	44	0	0	29	33	40	46	25	25	2	
1997052	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	55	0	0	29	28	38	57	26	26	2	
1996795	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	44	0	0	28	31	35	47	27	27	2	
1996443	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	27	50	0	0	28	30	33	53	28	28	2	
1996649	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	48	0	0	29	31	34	50	26	26	2	
1997041	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	60	0	0	29	29	38	57	26	26	2	
1996444	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	45	0	0	28	32	39	46	26	26	2	
1996448	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	44	0	0	29	32	37	46	26	26	2	
1996380	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	27	46	0	0	27	30	35	48	28	28	2	
1996501	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	35	46	0	0	34	40	41	32	0	0	2	
1996445	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	35	45	0	0	33	40	42	31	0	0	2	
1997054	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	35	47	0	0	34	41	40	32	0	0	2	
1996796	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	44	0	0	28	32	33	46	26	26	2	
1996511	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	26	41	0	0	25	30	36	41	17	17	2	
1996648	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	31	43	0	25	32	34	45	42	24	24	2	
1996512	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	38	0	26	30	31	40	39	25	25	2	
1996647	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	36	46	0	0	34	44	40	34	0	0	2	
1997028	NCA07	Unknown	Industrial	75	75	75	75	75															



Receivers			Land use	Trenching						HDD						Pull through		Welding						
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10			
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	LAeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend				>75dBA (highly affected)		1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML								
1996564	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	42	0	0	30	41	26	26	2				
1996858	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	25	51	0	0	28	38	51	28	2				
1996723	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	34	44	0	0	33	39	31	0	2				
1996821	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	36	47	0	0	34	43	32	0	2				
1996560	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	34	43	0	0	32	37	39	28	2				
1996722	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	38	0	0	30	31	39	40	2				
1996713	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	49	0	0	28	31	36	52	2				
1996823	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	36	45	0	0	34	44	39	34	2				
1996393	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	24	41	0	0	23	27	34	41	2				
1996550	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	35	46	0	0	33	41	41	32	2				
1996825	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	23	37	60	0	28	36	40	55	37	2				
1996818	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	25	44	0	0	27	27	37	46	2				
1996397	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	24	35	51	0	27	34	38	50	39	2				
1996561	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	33	45	0	24	33	36	47	39	2				
1996824	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	34	44	0	0	33	38	39	31	2				
1996866	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	30	40	0	25	31	33	42	40	2				
1996898	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	26	52	0	0	27	28	38	51	2				
1996705	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	24	36	56	0	28	35	39	56	39	2				
1996527	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	34	43	0	0	33	41	40	24	2				
1996890	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	25	40	0	0	22	28	31	40	2				
1996407	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	27	49	0	0	27	30	34	50	2				
1996738	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	48	0	0	29	33	37	48	2				
1996740	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	36	47	0	0	34	42	41	32	2				
1996805	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	35	46	0	0	34	42	40	34	2				
1996703	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	26	47	0	0	27	28	35	48	2				
1996414	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	33	47	0	26	33	36	50	40	2				
1996640	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	24	41	0	0	23	22	30	44	2				
1996911	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	26	46	0	0	27	29	37	46	2				
1996631	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	45	0	0	29	33	37	47	2				
1996710	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	24	37	60	0	28	36	40	58	38	2				
1996734	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	33	44	0	24	33	36	47	39	2				
1996883	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	34	44	0	0	33	41	40	29	2				
1996808	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	27	46	0	0	27	30	35	48	2				
1996869	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	36	47	0	0	34	42	40	33	2				
1996404	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	37	56	0	27	36	41	46	31	2				
1996887	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	24	40	0	0	0	27	33	38	2				
1996530	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	34	44	0	0	33	38	40	24	2				
1996406	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	38	0	26	30	31	40	38	2				
1996736	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	34	65	0	27	33	37	59	40	2				
1996620	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	32	44	0	0	31	38	37	28	2				
1996405	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	43	0	0	29	33	37	45	2				
1996673	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	26	46	0	0	27	30	32	48	2				
1996775	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	34	42	0	0	33	41	39	21	2				
1996460	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	33	53	0	26	33	36	55	40	2				
1996490	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	35	44	0	0	33	43	38	31	2				
1997067	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	41	0	26	30	32	42	38	2				
1996368	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	37	57	0	28	36	40	52	37	2				
1997066	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	44	0	0	29	32	36	46	2				
1996766	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	33	42	0	0	32	37	41	27	2				
1996782	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	30	40	0	26	31	33	42	36	2				
1997061	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	23	40	0	0	0	27	33	40	2				
1996684	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	24	41	0	0	27	27	37	43	2				
1996372	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	27	38	0	0	29	30	38	40	2				
1996492	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	33	50	0	0	32	36	52	37	2				
1996457	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	26	48	0	0	26	29	40	50	2				
1996459	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	25	54	0	0	24	28	36	53	2				
1997063	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	29	45	0	0	29	33	37	46	2				
1996466	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	36	46	0	0	34	43	40	34	2				
1997068	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	36	45	0	0	34	43	39	34	2				
1996464	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	26	45	0	0	27	29	34	46	2				
1996364	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	31	41	0	24	32	34	43	40	2				
1996366	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	37	0	26	30	31	39	38	2				
1996485	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	36	51	0	27	35	40	45	34	2				
1996676	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	33	41	0	0	31	36	40	26	2				
1996768	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	26	49	0	0	27	30	38	49	2				
1996365	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	32	49	0	24	33	36	51	40	2				
1996484	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	28	66	0	0	28	29	43	62	2				
1996789	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	27	40	0	0	29	31	39	43	2				
1996693	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	31	41	0	25	32	34	43	40	2				
1996461	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	35	63	0	27	34	38	57	40	2				
1996794	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	34	55	0	27	33	37	55	38	2				
1996786	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	35	44	0	0	33	41	40	24	2				
1996362	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	27	53	0	0	28	29	33	54	2				
1996363	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	27	50	0	0	28	31	32	52	2				
1996486	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	25	56	0	0	25	28	37	54	2				
1996367	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	26	41	0	0	29	28	37	43	2				
1996769	NCA07	Unknown	Industrial	75	75	75	75	75	75	75	0	26	46	0	0	27	30</							

Receivers			Land use	Trenching						HDD						Pull through		Welding					
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10		
Ref	NCA	Address	Standard hours	Highly noise affected	Weekend day	Evening	Night	LAeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend			>75dBA (highly affected)			1 - 10dB > night NML		10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML			10-20 dB > day NML									
1996452	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	29	46	0	0	29	33	36	47	25	25	2		
1996355	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	31	46	0	26	31	34	48	43	24	24	2		
1996761	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	30	38	0	25	30	33	41	37	24	24	2		
1996377	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	36	51	0	26	35	39	46	30	0	0	2		
1996780	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	24	42	0	0	23	27	34	42	26	19	2		
1996679	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	28	65	0	0	28	29	40	62	27	27	2		
1997057	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	27	50	0	0	28	29	42	52	27	27	2		
1996653	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	33	45	0	24	33	36	48	40	0	0	2		
1996779	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	25	40	0	0	26	27	37	43	28	28	2		
1997073	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	26	47	0	0	27	28	39	48	28	28	2		
1996456	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	24	44	0	0	23	27	34	44	26	20	2		
1996468	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	27	38	0	0	29	30	38	41	27	27	2		
1996477	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	24	41	0	0	23	27	34	41	26	17	2		
1996671	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	27	37	0	0	29	30	38	39	26	26	2		
1996467	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	25	42	0	0	26	26	36	44	27	27	2		
1996357	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	25	41	0	0	27	27	37	43	28	28	2		
1996678	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	35	49	0	27	34	40	46	35	0	0	2		
1996806	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	27	39	0	0	29	29	37	42	27	27	2		
1996760	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	25	62	0	0	25	28	37	60	30	30	2		
1996727	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	26	50	0	0	27	29	39	50	30	30	2		
1996411	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	36	49	0	0	34	43	40	32	0	0	2		
1996700	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	27	56	0	0	28	29	41	55	28	28	2		
1996765	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	27	52	0	0	27	27	35	52	28	28	2		
1996787	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	33	61	0	27	32	36	57	42	19	19	2		
1997056	NCA07	Unknown	Industrial	75	75	75	75	75	75	0	33	42	0	0	32	37	40	27	0	0	2		
1995789	NCA08	Unknown	Residential	53	75	48	47	47	47	0	26	40	0	0	26	40	35	31	0	0	2		
1995630	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	39	0	0	31	40	35	31	0	0	2		
1996242	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	40	0	0	31	37	34	29	0	0	2		
1996238	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	37	0	0	31	37	32	29	0	0	2		
1995653	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	40	0	0	32	40	34	19	0	0	2		
1996236	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	38	0	0	31	39	34	24	0	0	2		
1995779	NCA08	Unknown	Residential	53	75	48	47	47	47	0	36	40	0	0	34	41	34	30	0	0	2		
1995810	NCA08	Unknown	Residential	53	75	48	47	47	47	0	31	37	0	0	30	35	32	20	0	0	2		
1995788	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	38	0	0	32	39	32	18	0	0	2		
1996246	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	37	0	0	31	37	32	24	0	0	2		
1995819	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	40	0	0	31	41	35	29	0	0	2		
1996249	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	38	0	0	32	39	34	24	0	0	2		
1995891	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	36	0	0	31	37	32	24	0	0	2		
1995817	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	39	0	0	31	39	33	30	0	0	2		
1995850	NCA08	Unknown	Residential	53	75	48	47	47	47	0	31	36	0	0	30	37	33	31	0	0	2		
1996313	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	37	0	0	31	37	34	24	0	0	2		
1995633	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	39	0	0	32	39	34	31	0	0	2		
1996311	NCA08	Unknown	Residential	53	75	48	47	47	47	0	34	38	0	0	32	38	31	17	0	0	2		
1996212	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	40	0	0	31	38	36	30	0	0	2		
1996211	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	38	0	0	31	38	32	29	0	0	2		
1996219	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	40	0	0	31	39	35	26	0	0	2		
1996220	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	37	0	0	30	38	34	30	0	0	2		
1995863	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	36	0	0	31	37	32	29	0	0	2		
1996215	NCA08	Unknown	Residential	53	75	48	47	47	47	0	34	40	0	0	32	40	35	19	0	0	2		
1995775	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	38	0	0	31	39	35	30	0	0	2		
1995865	NCA08	Unknown	Residential	53	75	48	47	47	47	0	35	41	0	0	34	42	35	24	0	0	2		
1996340	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	40	0	0	31	41	36	29	0	0	2		
1996213	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	37	0	0	31	37	32	29	0	0	2		
1995806	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	37	0	0	30	37	34	31	0	0	2		
1995625	NCA08	Unknown	Residential	53	75	48	47	47	47	0	35	40	0	0	33	40	35	29	0	0	2		
1996330	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	38	0	0	32	38	32	23	0	0	2		
1995778	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	39	0	0	32	40	34	31	0	0	2		
1996233	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	39	0	0	31	39	32	23	0	0	2		
1996235	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	37	0	0	30	38	34	30	0	0	2		
1995776	NCA08	Unknown	Commercial	70	70	70	70	70	70	0	34	40	0	0	32	41	33	21	0	0	2		
1996228	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	38	0	0	31	38	35	29	0	0	2		
1995859	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	37	0	0	30	38	34	30	0	0	2		
1995808	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	37	0	0	30	37	32	25	0	0	2		
1996334	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	38	0	0	31	38	34	23	0	0	2		
1996308	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	39	0	0	32	39	32	18	0	0	2		
1995840	NCA08	Unknown	Residential	53	75	48	47	47	47	0	34	39	0	0	33	39	32	29	0	0	2		
1996273	NCA08	Unknown	Residential	53	75	48	47	47	47	0	35	40	0	0	33	40	35	22	0	0	2		
1995877	NCA08	Unknown	Residential	53	75	48	47	47	47	0	33	37	0	0	31	38	33	25	0	0	2		
1996275	NCA08	Unknown	Commercial	70	70	70	70	70	70	0	36	43	0	0	35	40	34	31	0	0	2		
1995838	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	37	0	0	30	37	33	31	0	0	2		
1995667	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	38	0	0	31	39	35	30	0	0	2		
1995875	NCA08	Unknown	Residential	53	75	48	47	47	47	0	31	39	0	0	30	40	32	21	0	0	2		
1995841	NCA08	Unknown	Residential	53	75	48	47	47	47	0	31	36	0	0	30	37	31	29	0	0	2		
1996271	NCA08	Unknown	Residential	53	75	48	47	47	47	0	32	36	0	0	31	36	31	23	0	0	2</		



Receivers			Land use	Trenching						HDD						Pull through	Welding						
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10		
Ref	NCA	Address	Standard hours	Highly noise affected	Weekend day	Evening	Night	LAeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend			>75dBA (highly affected)	1 - 10dB > night NML	10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML	10-20 dB > day NML														
1995845	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	30	38	34	30	0	0	0	2
1996258	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	39	0	0	31	38	35	24	0	0	0	2
1995766	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	38	0	0	31	38	32	30	0	0	0	2
1996260	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	30	37	32	25	0	0	0	2
1995774	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	38	0	0	31	39	33	21	0	0	0	2
1995649	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	38	0	0	31	38	32	21	0	0	0	2
1996307	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	37	0	0	31	38	31	23	0	0	0	2
1995846	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	31	37	31	20	0	0	0	2
1996254	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	31	37	31	29	0	0	0	2
1996261	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	35	41	0	0	34	40	33	30	0	0	0	2
1996341	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	40	0	0	32	40	34	31	0	0	0	2
1995821	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	31	38	32	29	0	0	0	2
1995822	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	39	0	0	31	40	35	31	0	0	0	2
1995637	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	34	41	0	0	32	42	34	31	0	0	0	2
1995787	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	35	41	0	0	34	41	34	24	0	0	0	2
1996262	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	30	37	32	24	0	0	0	2
1995648	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	36	0	0	30	36	30	19	0	0	0	2
1995844	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	36	42	0	0	34	43	35	31	0	0	0	2
1995820	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	40	0	0	31	41	35	31	0	0	0	2
1995782	NCA08	Unknown	Commercial	70	70	70	70	70	70	70	0	33	41	0	0	32	42	36	22	0	0	0	2
1995934	NCA08	Unknown	Commercial	70	70	70	70	70	70	70	0	37	45	0	0	35	46	38	32	0	0	0	2
1995802	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	38	0	0	30	38	34	30	0	0	0	2
1996089	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	39	0	0	32	40	33	31	0	0	0	2
1995711	NCA08	Unknown	Commercial	70	70	70	70	70	70	70	0	35	41	0	0	34	42	33	17	0	0	0	2
1995752	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	34	40	0	0	32	41	34	25	0	0	0	2
1996106	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	36	0	0	30	37	33	30	0	0	0	2
1996104	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	38	0	0	30	39	34	28	0	0	0	2
1995926	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	40	0	0	32	41	35	31	0	0	0	2
1995712	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	34	37	0	0	32	37	32	23	0	0	0	2
1995794	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	31	37	33	23	0	0	0	2
1996351	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	35	41	0	0	34	39	34	30	0	0	0	2
1996083	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	39	0	0	32	39	32	24	0	0	0	2
1996086	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	31	37	32	29	0	0	0	2
1995801	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	36	0	0	29	37	32	31	0	0	0	2
1996348	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	31	34	0	0	30	35	32	24	0	0	0	2
1995737	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	38	0	0	32	38	34	29	0	0	0	2
1996107	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	38	0	0	31	39	34	29	0	0	0	2
1995622	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	38	0	0	31	38	35	30	0	0	0	2
1995803	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	40	0	0	32	40	35	26	0	0	0	2
1995691	NCA08	Unknown	Commercial	70	70	70	70	70	70	70	0	33	38	0	0	32	39	32	24	0	0	0	2
1995910	NCA08	Unknown	Commercial	70	70	70	70	70	70	70	0	35	44	0	0	33	43	36	31	0	0	0	2
1996155	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	36	0	0	30	37	32	29	0	0	0	2
1995686	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	31	37	31	29	0	0	0	2
1995908	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	41	0	0	31	39	37	29	0	0	0	2
1996147	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	34	40	0	0	30	41	35	26	0	0	0	2
1995697	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	36	43	0	0	35	43	36	31	0	0	0	2
1996117	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	34	40	0	0	32	40	33	30	0	0	0	2
1996115	NCA08	Unknown	Commercial	70	70	70	70	70	70	70	0	36	40	0	0	34	40	33	23	0	0	0	2
1996109	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	38	0	0	31	38	32	30	0	0	0	2
1995758	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	42	0	0	32	43	37	31	0	0	0	2
1996137	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	35	41	0	0	34	42	34	31	0	0	0	2
1996135	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	36	41	0	0	35	41	32	22	0	0	0	2
1995980	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	36	0	0	30	37	32	26	0	0	0	2
1996131	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	35	40	0	0	33	39	35	25	0	0	0	2
1996016	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	39	0	0	31	38	35	30	0	0	0	2
1995989	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	30	38	34	30	0	0	0	2
1996010	NCA08	Unknown	Commercial	70	70	70	70	70	70	70	0	34	41	0	0	33	42	34	31	0	0	0	2
1996008	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	31	38	35	26	0	0	0	2
1996354	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	36	0	0	31	37	30	17	0	0	0	2
1996030	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	40	0	0	31	38	36	34	0	0	0	2
1996026	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	36	41	0	0	34	42	36	33	0	0	0	2
1996023	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	30	38	34	30	0	0	0	2
1995735	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	34	41	0	0	32	41	34	31	0	0	0	2
1995740	NCA08	Unknown	Commercial	70	70	70	70	70	70	70	0	34	39	0	0	32	39	32	29	0	0	0	2
1995993	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	36	43	0	0	35	42	34	25	0	0	0	2
1995992	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	40	0	0	31	40	35	29	0	0	0	2
1995736	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	31	38	32	30	0	0	0	2
1996007	NCA08	Unknown	Commercial	70	70	70	70	70	70	70	0	37	45	0	0	35	46	37	31	0	0	0	2
1996001	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	39										

Receivers			Land use	Trenching						HDD						Pull through	Welding											
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10							
Ref	NCA	Address	Standard hours	Highly noise affected	Weekend day	Evening	Night	LAeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding					
Exceedance legend			>75dBA (highly affected)	1 - 10dB > night NML	10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML	10-20 dB > day NML																			
1996054	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	39	0	0	32	39	32	19	0	0	2						
1995987	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	38	0	0	31	39	32	30	0	0	2						
1996051	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	37	0	0	30	37	33	16	0	0	2						
1995902	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	38	0	0	31	39	32	30	0	0	2						
1996176	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	39	0	0	31	39	36	33	0	0	2						
1996162	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	39	0	0	31	38	35	30	0	0	2						
1995905	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	38	0	0	31	38	36	23	0	0	2						
1995899	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	37	0	0	31	38	32	29	0	0	2						
1995904	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	38	0	0	31	39	33	17	0	0	2						
1995977	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	40	0	0	32	41	35	31	0	0	2						
1995764	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	33	41	0	0	31	39	37	31	0	0	2						
1996174	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	36	0	0	30	37	32	26	0	0	2						
1996172	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	32	36	0	0	30	37	32	25	0	0	2						
1996164	NCA08	Unknown	Commercial	70	70	70	70	70	70	70	0	34	41	0	0	32	41	33	22	0	0	2						
1995719	NCA08	Unknown	Commercial	70	70	70	70	70	70	70	0	34	40	0	0	32	40	33	30	0	0	2						
1996079	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	34	41	0	0	32	42	38	20	0	0	2						
1995628	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	35	42	0	0	33	43	33	31	0	0	2						
1995957	NCA08	Unknown	Residential	53	75	48	47	47	47	57	0	34	41	0	0	32	41	34	30	0	0	2						
1996043	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	37	0	0	41	31	27	0	0	0	0	2						
1995722	NCA09	Unknown	Residential	49	75	44	44	44	44	54	45	36	0	0	38	32	0	0	0	0	0	2						
1996041	NCA09	Unknown	Residential	49	75	44	44	44	44	54	31	37	0	0	40	31	27	0	0	0	0	2						
1996040	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	33	0	0	36	31	0	0	0	0	0	2						
1996044	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	39	0	0	43	34	29	0	0	0	0	2						
1996052	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	39	0	0	42	31	27	0	0	0	0	2						
1996055	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	37	0	0	41	35	30	24	0	0	0	2						
1995721	NCA09	Unknown	Residential	49	75	44	44	44	44	54	35	38	0	0	42	34	30	26	0	0	0	2						
1996048	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	36	0	0	39	32	28	24	0	0	0	2						
1996033	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	30	0	0	33	27	0	0	0	0	0	2						
1996036	NCA09	Unknown	Residential	49	75	44	44	44	44	54	35	37	0	0	40	35	30	24	0	0	0	2						
1996035	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	31	0	0	35	28	0	0	0	0	0	2						
1996034	NCA09	Unknown	Residential	49	75	44	44	44	44	54	29	33	0	0	36	31	27	24	0	0	0	2						
1995724	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	31	0	0	34	28	0	0	0	0	0	2						
1996039	NCA09	Unknown	Residential	49	75	44	44	44	44	54	30	36	0	0	37	31	27	24	0	0	0	2						
1995723	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	32	0	0	35	31	25	24	0	0	0	2						
1996038	NCA09	Unknown	Residential	49	75	44	44	44	44	54	47	31	0	0	39	30	0	0	0	0	0	2						
1996037	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	35	0	0	37	30	0	0	0	0	0	2						
1996071	NCA09	Unknown	Residential	49	75	44	44	44	44	54	45	37	0	0	39	31	0	0	0	0	0	2						
1996067	NCA09	Unknown	Residential	49	75	44	44	44	44	54	43	33	0	0	36	30	0	0	0	0	0	2						
1995716	NCA09	Unknown	Residential	49	75	44	44	44	44	54	29	33	0	0	36	31	27	0	0	0	0	2						
1996066	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	31	0	0	30	27	0	0	0	0	0	2						
1995715	NCA09	Unknown	Residential	49	75	44	44	44	44	54	31	34	0	0	34	32	27	24	0	0	0	2						
1995714	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	35	0	0	38	31	27	24	0	0	0	2						
1996075	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	38	0	0	41	29	27	0	0	0	0	2						
1996074	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	38	0	0	41	32	27	0	0	0	0	2						
1996073	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	40	0	0	43	32	27	0	0	0	0	2						
1996060	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	34	0	0	34	30	27	0	0	0	0	2						
1996059	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	40	0	0	43	34	30	0	0	0	0	2						
1996057	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	38	0	0	40	31	0	0	0	0	0	2						
1995720	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	35	0	0	38	30	0	0	0	0	0	2						
1996061	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	36	0	0	36	31	27	0	0	0	0	2						
1996065	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	39	0	0	43	32	27	0	0	0	0	2						
1996064	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	34	0	0	37	29	0	0	0	0	0	2						
1996063	NCA09	Unknown	Residential	49	75	44	44	44	44	54	47	39	0	0	41	32	0	0	0	0	0	2						
1996062	NCA09	Unknown	Residential	49	75	44	44	44	44	54	45	36	0	0	38	30	0	0	0	0	0	2						
1996000	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	31	0	0	33	28	0	0	0	0	0	2						
1995997	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	35	0	0	38	32	27	25	0	0	0	2						
1995995	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	39	0	0	42	32	29	0	0	0	0	2						
1995990	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	37	0	0	33	32	27	26	0	0	0	2						
1996002	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	36	0	0	40	31	0	0	0	0	0	2						
1996005	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	37	0	0	40	31	27	0	0	0	0	2						
1996004	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	38	0	0	41	30	27	0	0	0	0	2						
1995733	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	29	0	0	32	28	0	0	0	0	0	2						
1996003	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	40	0	0	44	32	27	0	0	0	0	2						
1995738	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	39	0	0	42	35	30	0	0	0	0	2						
1995978	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	39	0	0	42	35	30	0	0	0	0	2						
1995976	NCA09	Unknown	Residential	49	75	44	44	44	44	54	43	36	0	0	39	31	0	0	0	0	0	2						
1995739	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	35	0	0	38	30	0	0	0	0	0	2						
1995979	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	40	0	0	43	32	28	0	0	0	0	2						
1995988	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	37	0	0	40	31	29	0	0	0	0	2						
1995985	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	36	0	0	40	32	27	17	0	0	0	2						
1995981	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	37	0	0	40	31	0	0	0	0	0	2						
1996024	NCA09	Unknown	Residential	49	75	44	44	44	44	54																		



Receivers			Land use	NML						Trenching				HDD						Pull through	Welding			
				Standard hours		Highly noise affected		Sleep disturbance		Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10			
Ref	NCA	Address		Weekend day	Evening	Night	L <sub>Aeq</sub> , 15min	L <sub>max</sub>	Excavation, pipe laying, backfill and compaction (standard hours only)				Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding				
Exceedance legend				>75dBA (highly affected)	1 - 10dB > night NML			10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML			10-20 dB > day NML										
1996078	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	32	0	0	35	28	0	0	0	0	0	0	0	2
1996140	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	39	0	0	43	34	30	0	0	0	0	0	0	2
1996139	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	38	0	0	41	32	27	0	0	0	0	0	0	2
1996138	NCA09	Unknown	Residential	49	75	44	44	44	44	54	31	35	0	0	38	31	27	23	0	0	0	0	0	2
1996134	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	37	0	0	40	31	0	0	0	0	0	0	0	2
1996141	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	34	0	0	38	31	27	24	0	0	0	0	0	2
1996145	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	38	0	0	40	31	0	0	0	0	0	0	0	2
1995689	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	37	0	0	40	31	0	0	0	0	0	0	0	2
1996144	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	38	0	0	41	31	27	0	0	0	0	0	0	2
1996143	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	37	0	0	40	31	0	0	0	0	0	0	0	2
1996129	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	40	0	0	43	32	27	0	0	0	0	0	0	2
1996128	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	36	0	0	39	30	0	0	0	0	0	0	0	2
1996126	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	40	0	0	44	34	27	0	0	0	0	0	0	2
1996123	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	39	0	0	43	35	30	0	0	0	0	0	0	2
1995693	NCA09	Unknown	Residential	49	75	44	44	44	44	54	34	38	0	0	41	34	30	26	0	0	0	0	0	2
1996133	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	36	0	0	40	31	0	0	0	0	0	0	0	2
1996132	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	34	0	0	37	31	27	0	0	0	0	0	0	2
1996130	NCA09	Unknown	Residential	49	75	44	44	44	44	54	35	36	0	0	39	31	27	0	0	0	0	0	0	2
1996159	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	35	0	0	39	31	29	0	0	0	0	0	0	2
1995685	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	39	0	0	42	32	27	0	0	0	0	0	0	2
1996158	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	37	0	0	41	31	26	0	0	0	0	0	0	2
1996160	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	37	0	0	40	31	0	0	0	0	0	0	0	2
1996165	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	35	0	0	38	31	27	0	0	0	0	0	0	2
1996161	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	40	0	0	44	34	27	0	0	0	0	0	0	2
1995684	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	38	0	0	42	32	28	18	0	0	0	0	0	2
1996149	NCA09	Unknown	Residential	49	75	44	44	44	44	54	35	36	0	0	40	31	0	0	0	0	0	0	0	2
1996148	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	42	0	0	45	35	30	0	0	0	0	0	0	2
1995688	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	37	0	0	40	31	0	0	0	0	0	0	0	2
1996146	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	37	0	0	40	31	0	0	0	0	0	0	0	2
1996150	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	39	0	0	42	32	27	0	0	0	0	0	0	2
1996154	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	35	0	0	39	30	0	0	0	0	0	0	0	2
1996153	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	37	0	0	39	31	0	0	0	0	0	0	0	2
1996152	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	31	0	0	34	28	0	0	0	0	0	0	0	2
1995687	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	37	0	0	40	31	0	0	0	0	0	0	0	2
1995708	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	40	0	0	44	34	30	0	0	0	0	0	0	2
1996095	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	37	0	0	41	29	29	0	0	0	0	0	0	2
1996094	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	38	0	0	41	31	27	0	0	0	0	0	0	2
1995709	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	36	0	0	40	31	0	0	0	0	0	0	0	2
1996096	NCA09	Unknown	Residential	49	75	44	44	44	44	54	35	35	0	0	39	30	0	0	0	0	0	0	0	2
1996100	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	39	0	0	44	31	27	0	0	0	0	0	0	2
1996098	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	33	0	0	34	29	0	0	0	0	0	0	0	2
1995703	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	35	0	0	39	31	27	0	0	0	0	0	0	2
1996097	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	40	0	0	43	35	30	24	0	0	0	0	0	2
1996082	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	40	0	0	43	32	27	0	0	0	0	0	0	2
1996081	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	33	0	0	36	29	0	0	0	0	0	0	0	2
1996080	NCA09	Unknown	Residential	49	75	44	44	44	44	54	35	39	0	0	42	34	30	0	0	0	0	0	0	2
1996087	NCA09	Unknown	Residential	49	75	44	44	44	44	54	34	38	0	0	41	32	28	24	0	0	0	0	0	2
1996092	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	35	0	0	38	30	0	0	0	0	0	0	0	2
1996091	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	37	0	0	40	31	27	0	0	0	0	0	0	2
1996090	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	39	0	0	43	33	26	0	0	0	0	0	0	2
1996088	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	38	0	0	41	31	27	0	0	0	0	0	0	2
1996118	NCA09	Unknown	Residential	49	75	44	44	44	44	54	31	34	0	0	37	31	26	24	0	0	0	0	0	2
1996114	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	37	0	0	40	31	27	0	0	0	0	0	0	2
1995699	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	36	0	0	39	32	27	0	0	0	0	0	0	2
1996113	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	41	0	0	44	34	27	0	0	0	0	0	0	2
1995698	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	35	0	0	37	30	0	0	0	0	0	0	0	2
1996122	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	40	0	0	43	31	27	0	0	0	0	0	0	2
1996121	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	34	0	0	35	33	29	0	0	0	0	0	0	2
1996120	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	35	0	0	37	30	0	0	0	0	0	0	0	2
1996119	NCA09	Unknown	Residential	49	75	44	44	44	44	54	46	37	0	0	41	31	27	0	0	0	0	0	0	2
1995701	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	38	0	0	41	31	27	0	0	0	0	0	0	2
1996102	NCA09	Unknown	Residential	49	75	44	44	44	44	54	45	36	0	0	39	31	0	0	0	0	0	0	0	2
1995702	NCA09	Unknown	Residential	49	75	44	44	44	44	54	43	35	0	0	38	30	0	0	0	0	0	0	0	2
1996101	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	35	0	0	38	32	27	24	0	0	0	0	0	2
1996112	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	34	0	0	37	29	0	0	0	0	0	0	0	2
1996108	NCA09	Unknown	Residential	49	75	44	44	44	44	54	43	34	0	0	37	30	0	0	0	0	0	0	0	2
1995700	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	38												

Receivers			Land use	NML						Trenching				HDD						Pull through		Welding			
				Standard hours		Highly noise affected		Sleep disturbance		Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10				
Ref	NCA	Address		Weekend day	Evening	Night	L15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)				Drilling, reaming including mud pumps, recyle and generator						Pulling conduit through bore	Pipe welding					
Exceedance legend			>75dBA (highly affected)	1 - 10dB > night NML			10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML			10-20 dB > day NML												
1995883	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	35	0	0	39	30	0	0	0	0	0	0	0	0	2
1995881	NCA09	Unknown	Residential	49	75	44	44	44	44	54	34	37	0	0	40	32	28	24	0	0	0	0	0	0	2
1995770	NCA09	Unknown	Residential	49	75	44	44	44	44	54	30	34	0	0	37	31	29	24	0	0	0	0	0	0	2
1995884	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	39	0	0	41	30	28	0	0	0	0	0	0	0	2
1995890	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	36	0	0	39	32	27	24	0	0	0	0	0	0	2
1995887	NCA09	Unknown	Residential	49	75	44	44	44	44	54	45	38	0	0	40	31	27	0	0	0	0	0	0	0	2
1995885	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	37	0	0	40	31	27	0	0	0	0	0	0	0	2
1995772	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	33	0	0	36	29	0	0	0	0	0	0	0	0	2
1995873	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	25	0	0	32	22	0	0	0	0	0	0	0	0	2
1995872	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	36	0	0	39	31	27	0	0	0	0	0	0	0	2
1995773	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	36	0	0	38	31	0	0	0	0	0	0	0	0	2
1995874	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	39	0	0	42	33	28	26	0	0	0	0	0	0	2
1995879	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	38	0	0	41	34	31	0	0	0	0	0	0	0	2
1995771	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	41	0	0	44	34	30	0	0	0	0	0	0	0	2
1995878	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	31	0	0	35	29	0	0	0	0	0	0	0	0	2
1995876	NCA09	Unknown	Residential	49	75	44	44	44	44	54	45	38	0	0	40	31	27	0	0	0	0	0	0	0	2
1995790	NCA09	Unknown	Residential	49	75	44	44	44	44	54	43	37	0	0	40	31	0	0	0	0	0	0	0	0	2
1995811	NCA09	Unknown	Residential	49	75	44	44	44	44	54	47	36	0	0	40	31	0	0	0	0	0	0	0	0	2
1995791	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	39	0	0	42	32	27	0	0	0	0	0	0	0	2
1995809	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	39	0	0	42	33	0	0	0	0	0	0	0	0	2
1995812	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	36	0	0	39	31	27	0	0	0	0	0	0	0	2
1995816	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	29	0	0	32	28	0	0	0	0	0	0	0	0	2
1995815	NCA09	Unknown	Residential	49	75	44	44	44	44	54	34	37	0	0	41	32	27	0	0	0	0	0	0	0	2
1995813	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	34	0	0	37	32	28	24	0	0	0	0	0	0	2
1995799	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	37	0	0	40	32	28	24	0	0	0	0	0	0	2
1995798	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	40	0	0	43	32	27	0	0	0	0	0	0	0	2
1995797	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	31	0	0	35	29	0	0	0	0	0	0	0	0	2
1995796	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	38	0	0	41	31	27	0	0	0	0	0	0	0	2
1995800	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	29	0	0	34	28	0	0	0	0	0	0	0	0	2
1995807	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	38	0	0	41	32	27	0	0	0	0	0	0	0	2
1995793	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	36	0	0	39	30	0	0	0	0	0	0	0	0	2
1995805	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	33	0	0	36	29	0	0	0	0	0	0	0	0	2
1995804	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	34	0	0	35	29	0	0	0	0	0	0	0	0	2
1995784	NCA09	Unknown	Residential	49	75	44	44	44	44	54	45	40	0	0	43	34	29	0	0	0	0	0	0	0	2
1995835	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	35	0	0	38	30	0	0	0	0	0	0	0	0	2
1995834	NCA09	Unknown	Residential	49	75	44	44	44	44	54	34	34	0	0	37	31	27	23	0	0	0	0	0	0	2
1995837	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	36	0	0	39	31	0	0	0	0	0	0	0	0	2
1995847	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	28	0	0	32	25	0	0	0	0	0	0	0	0	2
1995843	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	36	0	0	39	30	0	0	0	0	0	0	0	0	2
1995842	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	40	0	0	45	32	25	0	0	0	0	0	0	0	2
1995839	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	41	0	0	44	34	29	0	0	0	0	0	0	0	2
1995825	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	40	0	0	43	31	29	0	0	0	0	0	0	0	2
1995824	NCA09	Unknown	Residential	49	75	44	44	44	44	54	34	37	0	0	41	34	30	26	0	0	0	0	0	0	2
1995823	NCA09	Unknown	Residential	49	75	44	44	44	44	54	35	24	0	0	30	20	0	0	0	0	0	0	0	0	2
1995818	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	40	0	0	43	33	26	0	0	0	0	0	0	0	2
1995826	NCA09	Unknown	Residential	49	75	44	44	44	44	54	31	35	0	0	38	32	27	24	0	0	0	0	0	0	2
1995785	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	36	0	0	39	30	0	0	0	0	0	0	0	0	2
1995829	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	37	0	0	41	34	29	0	0	0	0	0	0	0	2
1995828	NCA09	Unknown	Residential	49	75	44	44	44	44	54	43	36	0	0	39	30	0	0	0	0	0	0	0	0	2
1995827	NCA09	Unknown	Residential	49	75	44	44	44	44	54	28	33	0	0	36	30	27	23	0	0	0	0	0	0	2
1995892	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	41	0	0	45	31	28	0	0	0	0	0	0	0	2
1995944	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	30	0	0	36	29	0	0	0	0	0	0	0	0	2
1995943	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	34	0	0	38	28	0	0	0	0	0	0	0	0	2
1995941	NCA09	Unknown	Residential	49	75	44	44	44	44	54	47	36	0	0	40	32	0	0	0	0	0	0	0	0	2
1995749	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	41	0	0	38	32	29	0	0	0	0	0	0	0	2
1995748	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	33	0	0	36	30	0	0	0	0	0	0	0	0	2
1995949	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	37	0	0	40	29	0	0	0	0	0	0	0	0	2
1995948	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	31	0	0	35	29	0	0	0	0	0	0	0	0	2
1995946	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	40	0	0	41	31	27	0	0	0	0	0	0	0	2
1995945	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	39	0	0	42	31	27	0	0	0	0	0	0	0	2
1995936	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	37	0	0	41	32	27	0	0	0	0	0	0	0	2
1995935	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	38	0	0	42	32	27	0	0	0	0	0	0	0	2
1995933	NCA09	Unknown	Residential	49	75	44	44	44	44	54	31	34	0	0	37	32	29	0	0	0	0	0	0	0	2
1995932	NCA09	Unknown	Residential	49	75	44	44	44	44	54	34	37	0	0	40	32	27	0	0	0	0	0	0	0	2
1995937	NCA09	Unknown	Residential	49	75	44	44	44	44	5															



Receivers			Land use	NML						Trenching				HDD						Pull through	Welding			
				Standard hours		Highly noise affected		Sleep disturbance		Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10			
Ref	NCA	Address		Weekend day	Evening	Night	L15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)				Drilling, reaming including mud pumps, recycle and generator						Pulling conduit through bore	Pipe welding				
Exceedance legend				>75dBA (highly affected)	1 - 10dB > night NML			10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML			10-20 dB > day NML										
1995903	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	35	0	0	38	31	26	0	0	0	0	0	0	2
1995901	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	36	0	0	39	30	0	0	0	0	0	0	0	2
1995907	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	37	0	0	40	31	0	0	0	0	0	0	0	2
1995911	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	38	0	0	41	31	27	0	0	0	0	0	0	2
1995759	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	31	0	0	34	28	0	0	0	0	0	0	0	2
1995909	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	34	0	0	37	30	0	0	0	0	0	0	0	2
1995761	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	35	0	0	38	30	0	0	0	0	0	0	0	2
1995895	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	39	0	0	43	33	27	0	0	0	0	0	0	2
1995894	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	32	0	0	36	29	0	0	0	0	0	0	0	2
1995765	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	41	0	0	44	35	30	24	0	0	0	0	0	2
1995893	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	36	0	0	39	34	30	26	0	0	0	0	0	2
1995896	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	31	0	0	36	30	0	0	0	0	0	0	0	2
1995763	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	30	0	0	32	25	0	0	0	0	0	0	0	2
1995900	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	36	0	0	39	31	0	0	0	0	0	0	0	2
1995898	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	27	0	0	31	25	0	0	0	0	0	0	0	2
1995897	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	37	0	0	40	29	26	0	0	0	0	0	0	2
1995924	NCA09	Unknown	Residential	49	75	44	44	44	44	54	46	35	0	0	38	30	0	0	0	0	0	0	0	2
1995923	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	32	0	0	37	29	0	0	0	0	0	0	0	2
1995756	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	35	0	0	38	30	0	0	0	0	0	0	0	2
1995925	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	36	0	0	39	32	27	17	0	0	0	0	0	2
1995930	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	38	0	0	41	31	29	0	0	0	0	0	0	2
1995753	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	31	0	0	34	28	0	0	0	0	0	0	0	2
1995929	NCA09	Unknown	Residential	49	75	44	44	44	44	54	45	37	0	0	40	31	27	0	0	0	0	0	0	2
1995927	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	34	0	0	37	30	25	24	0	0	0	0	0	2
1995916	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	36	0	0	38	32	0	0	0	0	0	0	0	2
1995915	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	24	0	0	36	20	0	0	0	0	0	0	0	2
1995913	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	31	0	0	34	29	0	0	0	0	0	0	0	2
1995912	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	36	0	0	39	30	0	0	0	0	0	0	0	2
1995917	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	42	0	0	45	34	30	0	0	0	0	0	0	2
1995921	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	38	0	0	41	31	27	0	0	0	0	0	0	2
1995920	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	38	0	0	41	33	0	0	0	0	0	0	0	2
1995919	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	38	0	0	43	27	26	0	0	0	0	0	0	2
1995757	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	31	0	0	36	29	0	0	0	0	0	0	0	2
1996256	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	37	0	0	40	31	29	0	0	0	0	0	0	2
1996253	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	31	0	0	34	28	0	0	0	0	0	0	0	2
1996251	NCA09	Unknown	Residential	49	75	44	44	44	44	54	46	35	0	0	38	30	0	0	0	0	0	0	0	2
1996257	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	35	0	0	39	32	27	24	0	0	0	0	0	2
1996264	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	40	0	0	43	32	27	0	0	0	0	0	0	2
1996263	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	41	0	0	44	34	30	0	0	0	0	0	0	2
1996259	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	39	0	0	42	32	27	0	0	0	0	0	0	2
1996250	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	34	0	0	38	31	27	0	0	0	0	0	0	2
1995651	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	36	0	0	39	31	0	0	0	0	0	0	0	2
1996241	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	42	0	0	46	35	27	0	0	0	0	0	0	2
1996240	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	37	0	0	41	34	27	0	0	0	0	0	0	2
1996243	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	39	0	0	43	33	28	24	0	0	0	0	0	2
1996247	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	34	0	0	37	29	0	0	0	0	0	0	0	2
1995650	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	40	0	0	43	34	29	0	0	0	0	0	0	2
1996244	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	36	0	0	39	31	27	0	0	0	0	0	0	2
1996265	NCA09	Unknown	Residential	49	75	44	44	44	44	54	46	39	0	0	42	33	0	0	0	0	0	0	0	2
1996280	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	37	0	0	40	31	0	0	0	0	0	0	0	2
1995644	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	33	0	0	37	30	0	0	0	0	0	0	0	2
1996285	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	34	0	0	38	29	0	0	0	0	0	0	0	2
1995643	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	29	0	0	32	28	0	0	0	0	0	0	0	2
1996281	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	40	0	0	43	32	27	0	0	0	0	0	0	2
1995645	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	36	0	0	40	31	27	0	0	0	0	0	0	2
1996269	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	37	0	0	40	31	27	0	0	0	0	0	0	2
1996267	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	40	0	0	43	33	28	24	0	0	0	0	0	2
1995647	NCA09	Unknown	Residential	49	75	44	44	44	44	54	30	34	0	0	37	34	27	24	0	0	0	0	0	2
1995646	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	28	0	0	35	29	0	0	0	0	0	0	0	2
1996272	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	38	0	0	41	29	26	0	0	0	0	0	0	2
1996270	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	26	0	0	32	27	0	0	0	0	0	0	0	2
1995652	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	25	0	0	33	27	0	0	0	0	0	0	0	2
1996216	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	42	0	0	45	32	27	0	0	0	0	0	0	2
1996214	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	38	0	0	41	31	27	0	0	0	0	0	0	2
1996210	NCA09	Unknown	Residential	49	75	44	44	44	44	54	43	37	0	0	39	31	0	0	0	0	0	0	0	2
1995662	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	39	0	0	43	32	27	0	0	0	0	0	0	2
1996222	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	37	0	0	40	31								

Receivers			Land use	Trenching						HDD						Pull through	Welding							
				NML			Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10			
Ref	NCA	Address		Standard hours	Highly noise affected	Weekend day	Evening	Night	L Aeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)						Drilling, reaming including mud pumps, recyle and generator				Pulling conduit through bore	Pipe welding		
Exceedance legend				>75dBA (highly affected)	1 - 10dB > night NML	10 - 20 dB > night NML	20-30 > night NML	30+ dB > night NML	0-10 dB > day NML	10-20 dB > day NML														
1995660	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	34	0	0	37	31	27	0	0	0	0	0	0	2
1996224	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	38	0	0	41	32	27	0	0	0	0	0	0	2
1996226	NCA09	Unknown	Residential	49	75	44	44	44	44	54	46	32	0	0	38	26	0	0	0	0	0	0	0	2
1996229	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	37	0	0	40	35	30	24	0	0	0	0	0	2
1996227	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	25	0	0	28	21	0	0	0	0	0	0	0	2
1995658	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	31	0	0	34	29	0	0	0	0	0	0	0	2
1996331	NCA09	Unknown	Residential	49	75	44	44	44	44	54	43	32	0	0	37	30	0	0	0	0	0	0	0	2
1996329	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	32	0	0	37	31	0	0	0	0	0	0	0	2
1996328	NCA09	Unknown	Residential	49	75	44	44	44	44	54	35	39	0	0	42	34	30	24	0	0	0	0	0	2
1996335	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	36	0	0	39	31	0	0	0	0	0	0	0	2
1996338	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	38	0	0	43	29	26	0	0	0	0	0	0	2
1995624	NCA09	Unknown	Residential	49	75	44	44	44	44	54	31	34	0	0	30	32	27	24	0	0	0	0	0	2
1996337	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	39	0	0	43	30	29	0	0	0	0	0	0	2
1995627	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	37	0	0	39	31	0	0	0	0	0	0	0	2
1996323	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	34	0	0	37	32	28	24	0	0	0	0	0	2
1996322	NCA09	Unknown	Residential	49	75	44	44	44	44	54	30	33	0	0	30	31	27	24	0	0	0	0	0	2
1996321	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	38	0	0	40	31	27	0	0	0	0	0	0	2
1996324	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	28	0	0	34	26	0	0	0	0	0	0	0	2
1996327	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	36	0	0	39	31	0	0	0	0	0	0	0	2
1996326	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	34	0	0	37	32	28	27	0	0	0	0	0	2
1996325	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	38	0	0	41	32	27	0	0	0	0	0	0	2
1996339	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	35	0	0	39	34	30	24	0	0	0	0	0	2
1995620	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	31	0	0	34	28	0	0	0	0	0	0	0	2
1996353	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	38	0	0	41	33	0	0	0	0	0	0	0	2
1996350	NCA09	Unknown	Residential	49	75	44	44	44	44	54	31	33	0	0	37	31	27	0	0	0	0	0	0	2
1995619	NCA09	Unknown	Residential	49	75	44	44	44	44	54	26	33	0	0	31	31	27	24	0	0	0	0	0	2
1995615	NCA09	Unknown	Residential	49	75	44	44	44	44	54	44	38	0	0	41	30	0	0	0	0	0	0	0	2
1995616	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	30	0	0	33	27	0	0	0	0	0	0	0	2
1995617	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	33	0	0	36	29	0	0	0	0	0	0	0	2
1996349	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	36	0	0	39	30	0	0	0	0	0	0	0	2
1996343	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	30	0	0	34	29	0	0	0	0	0	0	0	2
1996342	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	37	0	0	37	29	26	0	0	0	0	0	0	2
1995623	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	35	0	0	38	30	0	0	0	0	0	0	0	2
1996344	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	30	0	0	33	28	0	0	0	0	0	0	0	2
1995621	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	28	0	0	32	28	0	0	0	0	0	0	0	2
1996346	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	32	0	0	36	30	0	0	0	0	0	0	0	2
1996345	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	37	0	0	40	31	27	0	0	0	0	0	0	2
1995631	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	35	0	0	39	34	30	23	0	0	0	0	0	2
1996295	NCA09	Unknown	Residential	49	75	44	44	44	44	54	31	37	0	0	41	34	30	26	0	0	0	0	0	2
1996294	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	35	0	0	38	32	28	24	0	0	0	0	0	2
1995640	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	31	0	0	36	30	0	0	0	0	0	0	0	2
1995639	NCA09	Unknown	Residential	49	75	44	44	44	44	54	43	37	0	0	40	31	0	0	0	0	0	0	0	2
1996299	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	30	0	0	34	29	0	0	0	0	0	0	0	2
1996298	NCA09	Unknown	Residential	49	75	44	44	44	44	54	43	33	0	0	35	29	0	0	0	0	0	0	0	2
1996297	NCA09	Unknown	Residential	49	75	44	44	44	44	54	39	40	0	0	39	32	27	0	0	0	0	0	0	2
1996292	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	31	0	0	35	29	0	0	0	0	0	0	0	2
1996287	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	33	0	0	36	29	0	0	0	0	0	0	0	2
1995642	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	39	0	0	42	32	27	0	0	0	0	0	0	2
1996286	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	33	0	0	36	29	0	0	0	0	0	0	0	2
1996288	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	41	0	0	45	34	30	0	0	0	0	0	0	2
1996291	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	39	0	0	42	31	27	0	0	0	0	0	0	2
1996290	NCA09	Unknown	Residential	49	75	44	44	44	44	54	45	40	0	0	42	31	0	0	0	0	0	0	0	2
1995641	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	35	0	0	39	30	0	0	0	0	0	0	0	2
1996300	NCA09	Unknown	Residential	49	75	44	44	44	44	54	45	38	0	0	41	31	27	0	0	0	0	0	0	2
1996314	NCA09	Unknown	Residential	49	75	44	44	44	44	54	41	31	0	0	35	29	0	0	0	0	0	0	0	2
1996310	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	40	0	0	44	34	30	0	0	0	0	0	0	2
1996309	NCA09	Unknown	Residential	49	75	44	44	44	44	54	40	30	0	0	34	28	0	0	0	0	0	0	0	2
1996316	NCA09	Unknown	Residential	49	75	44	44	44	44	54	36	40	0	0	40	32	28	24	0	0	0	0	0	2
1996319	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	35	0	0	38	30	0	0	0	0	0	0	0	2
1996317	NCA09	Unknown	Residential	49	75	44	44	44	44	54	37	30	0	0	34	28	0	0	0	0	0	0	0	2
1995632	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	33	0	0	36	30	0	0	0	0	0	0	0	2
1996306	NCA09	Unknown	Residential	49	75	44	44	44	44	54	42	31	0	0	34	28	0	0	0	0	0	0	0	2
1996302	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	41	0	0	45	35	30	24	0	0	0	0	0	2
1996301	NCA09	Unknown	Residential	49	75	44	44	44	44	54	38	30	0	0	34	28	0	0	0	0	0	0	0	2
1995638	NCA09	Unknown	Residential	49	75	44	44	44	44	54	32	35	0	0	38	32	27	17	0	0	0	0	0	2
1996303	NCA09	Unknown	Residential	49	75	44	44	44	44	54	33	36	0	0	39	32	27	0	0	0	0	0	0	2
1996305	NCA09	Unknown	Residential	49	75	44	44	44	44	54	34	37	0	0	41	34	30</							









Receivers			Land use	NML						Trenching				HDD						Pull through	Welding
				Sleep disturbance			Section 1.1	Section 1.2	Section 2 (east)	Section 2 (west)	HDD04	HDD05	HDD06	HDD07	HDD08	HDD10	HDD10	HDD10			
Ref	NCA	Address	Standard hours	Highly noise affected	Weekend day	Evening	Night	LAeq, 15min	Lmax	Excavation, pipe laying, backfill and compaction (standard hours only)				Drilling, reaming including mud pumps, recycle and generator						Pulling conduit through bore	Pipe welding
Exceedance legend			>75dBA (highly affected)			1 - 10dB > night NML		10 - 20 dB > night NML		20-30 > night NML		30+ dB > night NML		0-10 dB > day NML		10-20 dB > day NML					
1997050	NCA10	Unknown	75	75	75	75	75	75	75	24	37	38	0	27	36	39	33	20	0	0	2
1997049	NCA10	Unknown	75	75	75	75	75	75	75	19	34	47	0	21	33	44	42	33	0	0	2
1997047	NCA10	Unknown	75	75	75	75	75	75	75	37	32	0	0	36	27	27	22	0	0	0	2
1996462	NCA10	Unknown	75	75	75	75	75	75	75	34	36	0	0	36	30	31	26	0	0	0	2
1996381	NCA10	Unknown	75	75	75	75	75	75	75	36	35	0	0	35	35	34	27	0	0	0	2
1997055	NCA10	Unknown	75	75	75	75	75	75	75	59	39	0	0	49	33	28	0	0	0	0	2
1996650	NCA10	Unknown	75	75	75	75	75	75	75	30	46	34	0	35	49	40	34	30	0	0	2
1996633	NCA10	Unknown	75	75	75	75	75	75	75	27	34	35	0	30	38	37	32	25	0	0	2
1996652	NCA10	Unknown	75	75	75	75	75	75	75	34	42	0	0	35	45	41	31	27	0	0	2
1996672	NCA10	Unknown	75	75	75	75	75	75	75	33	34	0	0	35	33	28	27	0	0	0	2
1996706	NCA10	Unknown	75	75	75	75	75	75	75	33	54	0	0	33	57	41	33	30	0	0	2
1996645	NCA10	Unknown	75	75	75	75	75	75	75	42	44	0	0	44	40	27	0	0	0	0	2
1996635	NCA10	Unknown	75	75	75	75	75	75	75	46	34	0	0	39	33	26	0	0	0	0	2
1996680	NCA10	Unknown	75	75	75	75	75	75	75	28	56	46	0	32	47	58	40	34	0	0	2
1996643	NCA10	Unknown	75	75	75	75	75	75	75	38	32	0	0	38	31	21	18	0	0	0	2
1996674	NCA10	Unknown	75	75	75	75	75	75	75	39	56	0	0	45	42	29	26	0	0	0	2
1996704	NCA10	Unknown	75	75	75	75	75	75	75	46	39	0	0	46	35	33	27	0	0	0	2
1996644	NCA10	Unknown	75	75	75	75	75	75	75	27	40	41	0	31	40	43	41	33	0	0	2
1996659	NCA10	Unknown	75	75	75	75	75	75	75	52	34	0	0	37	30	0	0	0	0	0	2
1996690	NCA10	Unknown	75	75	75	75	75	75	75	32	36	0	0	35	31	32	29	0	0	0	2
1996767	NCA10	Unknown	75	75	75	75	75	75	75	34	57	0	0	34	58	38	31	28	0	0	2
1996828	NCA10	Unknown	75	75	75	75	75	75	75	30	38	0	0	29	41	37	36	33	0	0	2
1996709	NCA10	Unknown	75	75	75	75	75	75	75	49	36	0	0	39	30	0	0	0	0	0	2
1996390	NCA10	Unknown	75	75	75	75	75	75	75	33	56	44	0	36	55	55	38	33	0	0	2
1996815	NCA10	Unknown	75	75	75	75	75	75	75	36	37	0	0	36	38	37	30	0	0	0	2
1996695	NCA10	Unknown	75	75	75	75	75	75	75	53	43	0	0	56	43	42	33	30	0	0	2
1996692	NCA10	Unknown	75	75	75	75	75	75	75	45	36	0	0	44	32	29	24	0	0	0	2
1996944	NCA10	Unknown	75	75	75	75	75	75	75	29	48	37	0	33	49	45	34	22	0	0	2
1997036	NCA10	Unknown	75	75	75	75	75	75	75	34	39	0	0	36	34	24	27	0	0	0	2
1997031	NCA10	Unknown	75	75	75	75	75	75	75	28	26	18	0	27	27	25	20	10	0	0	2
1996762	NCA10	Unknown	75	75	75	75	75	75	75	52	34	0	0	39	21	0	0	0	0	0	2
1996616	NCA10	Unknown	75	75	75	75	75	75	75	35	45	0	0	40	45	28	29	0	0	0	2
1996757	NCA10	Unknown	75	75	75	75	75	75	75	40	45	0	0	42	44	41	33	29	0	0	2