

**BEFORE DUNEDIN CITY COUNCIL
LUC-2017-319**

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of an application for resource consent by BP Oil New Zealand Limited for redevelopment at BP Mosgiel, 70 – 76 Gordon Road, Mosgiel, Dunedin

**STATEMENT OF EVIDENCE OF PETER MICHAEL RUNCIE ON BEHALF OF BP
OIL NEW ZEALAND LIMITED**

ACOUSTICS

Dated: 29 November 2017

 **Simpson Grierson**
Barristers & Solicitors

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INTRODUCTION

Qualifications and experience

1. My full name is Peter Michael Runcie. I am an Associate Consultant specialising in acoustics and vibration at SLR Consulting NZ Limited (**SLR**). SLR is a global environmental and advisory consultancy of approximately 1,500 people serving business, regulatory and government clients in a wide range of sectors. I have been in this role since August 2016.
2. I have worked in the field of acoustic consultancy for more than ten years. In my career I have worked on a range of projects within the United Kingdom, Europe, Middle East, Australia and New Zealand. My work has involved a wide range of acoustic assessments, including numerous service station assessments throughout New Zealand.
3. I hold a Bachelor of Science Degree with Honours in Audio Technology from the University of Salford in England.
4. I am a full member of both the Institute of Acoustics (UK) and the Acoustical Society of New Zealand. I am also SLR's New Zealand representative for the Association of Australasian Acoustical Consultants.
5. BP Oil New Zealand Limited (**BP Oil**) proposes to remove the existing workshop and redevelop the existing service station (currently at 72-76 Gordon Road) to incorporate the land at 70 Gordon Road. The proposed service station comprises a BP Connect shop, new canopy with fuel pumps underneath and carwash with amenity island (**the carwash**).
6. SLR was commissioned by BP Oil to evaluate the potential acoustic effects from operational noise associated with the proposed redevelopment and, if necessary, identify appropriate noise control measures with the intention of achieving reasonable noise limits with reference to the Dunedin City Plan.

7. In preparing my evidence, I have reviewed:

- (a) Assessment of Environmental Effects (**AEE**): Application to Dunedin City Council (**Council**) for redevelopment at BP Mosgiel, 70 – 76 Gordon Road, Mosgiel, Dunedin. June 2017;
- (b) the Letter Report dated 13 April 2016 Response to request for further information prepared by Incite;
- (c) the Council's section 95B report, dated 20 September 2017;
- (d) all submissions received on land use application to the Council;
- (e) the Council's section 42A Officer's Report and Appendices; and
- (f) evidence prepared by **Mr John Chandler** (BP Oil), **Ms Fiona Small** (Planning), **Mr Chris Rossiter** (Traffic) and **Mr Paul Gilbey** (Lighting).

Code of Conduct

8. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2014 and that I have complied with it when preparing my evidence. Other than when I state that I am relying on the advice of another person, this evidence is entirely within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of evidence

9. In this brief of evidence, I will discuss:

- (a) performance standards requirements (District Plan Map 62 of the District Plan);
- (b) description of site (in relation to noise sources etc);
- (c) key findings and conclusions from the acoustic assessment dated 13 June 2017 (**the SLR report**); and
- (d) the submissions of Gwendoline Bambery, Ian Berry, Craig Byers, Judith and Eric Kirby, Victor and Gertruda McDonald, Leon Roff and Michael and Nicola Stuart.

EXECUTIVE SUMMARY

10. My evidence:

- (a) identifies reasonable noise limits for the proposed service station activity based on the District Plan noise limits and the existing noise environment;
- (b) provides predicted noise emission levels at the surrounding residential properties due to the operation of the service station;
- (c) assesses the predicted noise emission levels against the identified noise limits;
- (d) discusses the effects of those noise levels at the nearest residential properties;
- (e) provides recommended noise mitigation measures to reduce and control noise emissions in accordance with the noise limits; and
- (f) provides responses to the submissions received which raised noise as a concern.

11. In conclusion my evidence finds that the predicted noise levels, with mitigation measures in place, are compliant in effect with the identified noise limits and are, therefore, reasonable when considered against the requirements of Section 16 of the Resource Management Act 1991 (**the RMA**).

NOISE PERFORMANCE STANDARDS AND THE EXISTING NOISE ENVIRONMENT

12. The overarching requirement for the control of noise is identified in Section 16 of the RMA, as reproduced below.

Every occupier of land (including any premises and any coastal marine area), and every person carrying out an activity in, on, or under a water body or the coastal marine area, shall adopt the best practicable option to ensure that the emission of noise from that land or water does not exceed a reasonable level.

13. District Plan Map 62 identifies the permitted activity noise limits for daytime, shoulder and night-time periods in the Mosgiel area. The District Plan noise limits for the site are:
- (a) 50 dB L_{A10} – Daytime (8:00 am and 6:00 pm.);
 - (b) 45 dB L_{A10} – Shoulder Periods (between 7:00 am and 8:00 am and between 6:00 pm and 9:00 pm, Monday to Friday and between 6:00 pm and 9:00 pm Saturday); and
 - (c) 40 dB L_{A10} – Night-time (between the hours of 9:00 pm on any night and 7:00 am the following day and includes 24 hours on Sundays and statutory holidays).
14. Based on conversations between Fiona Small and the Council during the pre-application meeting it is understood that, given the changes in community expectations and business operations since the rule was established, the District Plan reference to the whole of Sunday and statutory holidays as 'night-time' is accepted by Dunedin City Council to be somewhat out-of-date. This approach is reflected in Section 9.3.6 of the Dunedin City Council Second Generation District Plan (**the 2GP**) which identifies noise limits based on the hours of operation (7 am – 7 pm, 7 pm – 10 pm and 10 pm – 7 am) irrespective of the day. It is also worth noting that the periods in the 2GP are also extended (daytime starts earlier and night-time finishes later) when compared to the current District Plan hours.

15. I agree that treating Sunday and statutory-holidays as 'night-time' is out-of-date and not an appropriate approach to setting reasonable noise limits. The purpose of 'night-time' noise limits is to provide a level of sleep protection which is not afforded to daytime periods. Accordingly, I have proposed that Sundays and statutory holidays are treated the same (with respect to noise limits) as Saturdays, resulting in the following noise limits which, in my opinion, are appropriate to the BP proposal and its context:
- (a) 50 dB L_{A10} – Daytime (between 8:00 am and 6:00 pm);
 - (b) 45 dB L_{A10} – Shoulder Periods (between 7:00 am and 8:00 am Monday to Friday and between 6:00 pm and 9:00 pm every day); and
 - (c) 40 dB L_{A10} – Night-time (between the hours of 9:00 pm on any night and 7:00 am Monday to Friday, and also between 7:00 am and 8:00 am Saturday, Sunday and statutory holidays).
16. I consider the proposed noise limits in Paragraph 15 to be reasonable and therefore achieve the requirements of Section 16 of the RMA.
17. For the purpose of defining the existing noise environment and to review whether the noise limits are suitable with respect to the existing noise environment, noise monitoring was undertaken by SLR on Tuesday 11 April 2017¹ between 16:00 – 08:00. The survey was undertaken at the rear of the 70-76 Gordon Road close to the boundary with 41A Irvine Street. This position was selected to measure ambient noise levels set back away from Gordon Road (i.e. at the likely quietest locations around the site where road traffic noise is lower). The survey period encompassed evening and morning periods (shoulder periods as defined in the District Plan) and a night-time period. Free flowing traffic on Gordon Road was noted to be the principal source of noise in the area with minor contributions from the existing service station and other nearby business operations. A summary of the average ambient noise survey results is provided in **Table 1** along with and the corresponding

¹ Measurements were undertaken using a Svan 957 sound level meter (serial number 20670) in general accordance with NZS 6801: 1999 *Acoustics - Measurement of sound*. The calibration of the sound level

noise limits from the operative District Plan and 2GP for comparison. The results are presented graphically in **Appendix A**.

Table 1 Average ambient noise survey results at rear of site, dB L_{A10}

District Plan Period	Measured Level		District Plan Limit	
	LA10	LAeq	Operative	2GP
Shoulder (7:00 am – 8:00 am and 6:00 pm – 9:00 pm)	52	49	45 dB L _{A10}	45 dB L _{Aeq}
Night-time (9:00 pm – 7:00 am)	41	40	40 dB L _{A10}	40 dB L _{Aeq}

18. The results of the noise survey show that the existing average levels are higher than the operative District Plan and 2GP shoulder period noise limits and consistent with the night-time limits. That means that the existing noise environment at the properties surrounding the site and experienced by the submitters on this proposal, even at the quietest locations, is consistent or with or higher than the operative district plan standards. The purpose of this is to put the noise effects of the BP proposal into context.
19. Intermittent periods of higher noise levels (over 45 dB L_{A10}) were measured at the rear of the site during the middle of the night. Whilst it is not possible to confirm the exact source(s) of these noise levels (as the survey was unattended), the levels are consistent with what would be expected to be generated by vehicle movements on Gordon Road.
20. To provide further context, attended 'spot' noise measurements were also undertaken at the front of 70-76 Gordon Road. These measurements found that noise levels at properties fronting on to Gordon Road were 10-15 dB higher – as would be expected due to being closer and more exposed to the road (the principal noise source in the area).

meter was checked before and after the measurements and was found to be within an acceptable margin of the reference signal.

BP'S PROPOSAL

- 21.** BP proposes to remove the existing car workshop activity and redevelop the existing service station (currently at 72-76 Gordon Road) to incorporate the land at 70 Gordon Road. The proposed service station comprises a BP Connect shop, new canopy with fuel pumps underneath and the carwash.
- 22.** The fuel sales and shop components of the new service station are proposed to operate 24 hours per day, 7 days per week; the carwash is proposed to operate between 7:00 am to 9:00 pm, Monday to Friday and 8:00 am to 9:00 pm Saturday, Sunday and statutory holidays (noted to match the daytime and shoulder periods). There is no proposed carwash operation during night-time hours.
- 23.** The site is bounded by immediately neighbouring residential zoned properties to the north, south and west and by Gordon Road to the east. The site and surrounding area is generally flat with the land to the west (rear) of the site dropping by approximately 600 mm at the site boundary.
- 24.** A noise assessment of the proposed service station development was undertaken as detailed in the SLR report. The noise assessment was based on assumptions formed from a combination of my experience undertaking numerous assessments of similar service stations, measurements of other similar activities (including carwash operation at other BP sites), provided operational and traffic data and manufacturer's published noise data for heating and ventilation units. The principal noise generating activities on site are:

 - (a) vehicle movements on and off the site (doors closing and patron noise are not expected to be acoustically significant activities and are accounted for in the source noise levels);
 - (b) the operation of the carwash and amenity island, including vacuum cleaning unit and tyre refilling; and
 - (c) the operation of mechanical plant (heating and ventilation units) serving the shop.

25. Background music is often played on the service station forecourt; however, it is carefully controlled to a low level audible only at the pumps. As such, it is not a significant source of noise and does not contribute to noise levels off site.
26. Measures to reduce the emission of noise from the development have been incorporated into the proposal in order to control noise to surrounding properties. These mitigation measures (as detailed in the SLR report) were factored into the noise assessment and summarised below:
- (a) roller shutter carwash doors;
 - (b) selection of quiet mechanical plant;
 - (c) acoustically effective boundary screening around the mechanical plant compound; and
 - (d) acoustically effective boundary screening to the north, west and south – varying from 2 m to 3 m above ground level as noted on the submitted plans – to control vehicle and carwash noise.
27. The refilling of the underground fuel storage tanks is not expected to be an acoustically significant activity. The fuel deliveries are gravity fed, do not require the use of pumps, and truck engines are required to be off during refuelling. Furthermore, the identified vehicle path and remote filling points are located close to Gordon Road and designed to avoid the need to reverse on site. Noise from fuel deliveries, and other delivery vehicles, is therefore expected to be comparable to that of noise from similar sized vehicles currently using the surrounding road network.
28. A SoundPLAN environmental noise prediction model was used to calculate the noise levels at the most exposed properties surrounding the site. SoundPLAN software is a recognised noise prediction tool that utilises internationally-approved algorithms (*ISO 9613 Acoustics – Attenuation of Sound during Propagation Outdoors*) for the calculation of noise propagation and attenuation through the built and natural

environment. The model takes into account the relative heights of surrounding buildings and structures and the land topography.

29. The predicted worst-case noise levels from the proposed activities referenced in paragraph 24, i.e., all sources occurring simultaneously, at the most exposed surrounding properties are set out in **Table 2**. The reference to “Compliance” in the table below is to the noise limits I have assessed as appropriate for this proposal at this site at paragraph 15 of this evidence, whereas “Compliance*” denotes an imperceptible (1-2 dB) exceedance of those noise limits.

Table 2 Predicted activity noise levels at surrounding receivers

Receiver	Predicted activity noise level, dB LA10			Expected outcome
	Daytime (Limit = 50)	Shoulder Period (Limit = 45)	Night-time (Limit = 40)	
2 Mure Street	45	43	33	Compliance
35 Irvine Street	42	42	42	Compliance*
37 Irvine Street	43	41	40	Compliance
37A Irvine Street	44	42	41	Compliance*
39A Irvine Street	44	42	40	Compliance
41A Irvine Street	40	38	34	Compliance
68 Gordon Road	47	45	38	Compliance
69 Gordon Road	46	44	40	Compliance
71 Gordon Road	46	44	42	Compliance*
73 Gordon Road	45	43	42	Compliance*
75 Gordon Road	44	42	41	Compliance*
77 Gordon Road	43	41	40	Compliance
78 Gordon Road	37	37	37	Compliance
79 Gordon Road	41	39	38	Compliance

30. The results in **Table 2** show that the predicted noise levels generated by the proposed development comply with the daytime and shoulder period noise limits (the proposed operational hours of the carwash) with an imperceptible exceedance of the night-time noise limits at five of the surrounding receivers. Noting, a difference in noise levels of 1-2 dB is so slight as to be generally imperceptible to the human ear; therefore the minor exceedances of the night-time limit at a small number of

properties would be perceived as no different to the receiver. The effect of these exceedances is therefore considered less than minor.

31. It is worth noting here that the 2GP noise limits use the statistical descriptor L_{Aeq} ; as a general rule of thumb L_{A10} levels are 2-3 dB higher than corresponding L_{Aeq} levels. This means that the 2GP limits, which use the same number are in effect 2-3 dB more relaxed (e.g. the 2GP night-time limit of 40 dB L_{Aeq} is equivalent to 42-43 dB L_{A10} , higher than the operative District Plan limits). Therefore, the activity noise levels in **Table 2** demonstrate compliance with the 2GP plan limits, without the need to take into consideration the more relaxed hours in the 2GP.
32. Furthermore, the results of the noise survey show that the predicted activity noise would be less than the existing average ambient L_{A10} levels during the shoulder periods and consistent with the existing average night-time L_{A10} levels.
33. The predicted night-time activity noise levels are based on the busiest hour of vehicle movements on and off the site (likely to be during the early morning commuter period). With the exception of 35 Irving Street (which is the receiver most exposed to the plant area) the night-time noise levels at all other surrounding receivers are controlled by vehicle movements.
34. As identified in paragraph 19 of my evidence, occasional vehicle movements on Gordon Road currently generate noise levels of up to 45 dB L_{A10} during the middle of the night at the receivers behind the site. With the inclusion of the proposed acoustic boundary screening, **Table 2** shows that noise levels generated by vehicle movements on the site during the peak hour are lower than this existing level of occasional traffic noise. Noise levels at these receivers can therefore be expected to be largely unchanged when compared to the existing levels during the majority of the night-time period.

35. The night-time plant noise levels at 35 Irving Street are acoustically screened to levels comparable with what might be expected (and would be permitted) from a heat pump installed at a neighbouring house.
36. As such, it is my opinion that the noise effects of this proposal would be reasonable.
37. On the basis of the above identified mitigation measures and resulting activity noise levels, I consider it reasonable to conclude that the activity noise levels associated with the proposed service station would not result in an adverse impact at the surrounding properties.

SUBMISSIONS

Submission of Gwendoline Bambery

38. The submitter raises concern with regards to the potential noise generated by activities on the site, including the potential increased noise from:
- (a) traffic entering and exiting the station – doors, people talking etc.;
 - (b) heavy vehicle movements;
 - (c) carwash; and
 - (d) plant noise such as music, heating and ventilation.
39. In paragraphs 24-28 of my evidence I have described how each of the above submitter-raised noise sources has been identified and included in the assessment of noise effects. I have also demonstrated how such activities are proposed to be mitigated to reasonable noise levels with reference to the District Plan noise limits for daytime, shoulder and night-time periods. In further support of this I have provided a comparison with the existing ambient noise levels during the quieter shoulder and night-time periods to demonstrate that the predicted activity noise levels are consistent with the existing ambient noise environment.

40. The potential for adverse weather effects to exacerbate noise levels is also raised by the submitter. The noise predictions use the internationally accepted methodology detailed in ISO 9613 9613-2:1996. This methodology assumes weather conditions favourable to the transmission of noise (i.e. wind from the source to the receiver), and as such, represents what I consider to be an appropriately conservative approach.

Submission of Ian Berry

41. The submitter raises concern regarding potential noise from the carwash and gatherings of young people in the wash area in the early morning.
42. Paragraphs 24-28 of my evidence describe how noise from the carwash and the mitigation measures proposed to control it has been included in the assessment. In summary, the cumulative noise from the proposed activity (which includes the carwash as well as other noise sources) effectively complies with the nominated noise limits and is consistent with the existing ambient noise environment.
43. The carwash is only proposed to be operated during daytime and shoulder periods; there is no proposed night-time or early morning use. Gathering of young people in the wash area during the early morning, when the equipment is not operational (or indeed at all), is outside of my expertise and I defer to the evidence of other experts in that regard. However, I understand that gathering groups are uncommon and generally discouraged by the safety and security measures implemented, as discussed in more detail in Mr Chandler's evidence.

- 44.** The submitter raises concerns, including:
- (a) the evidence base on which the assessment of the carwash was undertaken;
 - (b) the appropriateness of Sundays and statutory holidays being treated the same as Saturdays;
 - (c) noise from the carwash;
 - (d) the appropriateness of the assumptions from the noise prediction model.
- 45.** By necessity, as the proposed development has not been constructed, direct measurement of noise from the development cannot be undertaken. Accordingly, the SLR noise assessment was undertaken by way of predictions based upon detailed understanding of the proposed sources of noise and robust noise emission data. The nature of predictions requires assumptions to be made as to the noise sources and operation of these noise sources. This is common in almost all resource consent applications and does not detract from the validity of the assessment.
- 46.** As noted in paragraph 24 of my evidence and within the SLR report, the assessment of noise from the carwash is based on measurements I have undertaken at similar carwash operations at other BP service stations in New Zealand. The same is true of vehicle movements and the amenity island. The amenity island (vacuum and air hose) is noted to be located between the carwash building and neighbouring properties, which provides significant screening of this potential noise source. The assessment of other noise sources forming part of the proposed development (mechanical plant) is based on manufacturer's published noise data. As such, the basis for the assessment (using information from similar service stations) is considered sufficiently robust, appropriate and evidence-based to enable an assessment of effects.

47. As noted in the submission, the measured carwash noise level used in my assessment is 60 dB L_{A10} at 10 m during the noisiest wash cycle. However, it is important to bear in mind that this level is at a position 10 m directly in front of the carwash exit or entry and that noise is directional. Resulting noise, therefore, is not equal in all directions from this source. The SoundPLAN noise prediction model considers the complex propagation of sound, the directivity of the noise source(s) and the acoustic screening provided by the boundary fencing, identifying compliant noise levels. Therefore, whilst the carwash building is closer than 10 m, the submitters comment that it is “*abundantly clear*” carwash noise levels will exceed the levels in the District Plan, although incorrect, is understandable given that sound is a complex topic.
48. The total noise generated by the operation of the development (including the carwash and other noise sources) with the identified mitigation in place complies in effect with the nominated noise limits. Furthermore, the predicted noise levels are consistent with the existing ambient noise environment and can therefore be considered reasonable in the context of Section 16 of the RMA.
49. I have identified earlier in my evidence (paragraphs 14-16) that the use of night-time noise limits on Sundays and statutory holidays does not reflect current social expectations or those of the Council. This is consistent with Council’s own interpretation based on the assessment periods in the 2GP.
50. Mr Byers suggests operating outside of the hours of 8:00 am – 6:00 pm and on statutory holidays is not appropriate and would impact the outdoor amenity of adjacent residents. With respect to this, I note that the existing service station operational hours are 6:00 am – 11:00 pm seven days a week. Further to this, the nominated noise limits (derived from the District Plan) are intended to provide reasonable amenity based on the time of day and the residential nature of the receiving site.

- 51.** The submitters raise the following concerns with noise associated with the proposed development:
- (a) cars idling on site;
 - (b) noisy cleaning activities throughout the day and night; and
 - (c) increased traffic noise from Gordon Road, particularly deliveries and large heavy vehicles braking/accelerating at night.
- 52.** Cars idling on site represent a low level of noise, vehicles on service station sites make more noise when accelerating than idling (a typical difference I have measured shows idling cars to be some 6-7 dB quieter). The proposed acoustic boundary screening is designed to be effective at reducing vehicle acceleration noise and, as such, will also be effective in controlling the lower level of noise generated by idling vehicles.
- 53.** The proposed carwash hours are limited to daytime and shoulder periods with no use at night. Through the use of the identified mitigation measures (roller shutter doors closed during cycles and boundary fencing) noise levels associated with the use of the carwash and amenity island shall be controlled to meet the identified daytime and shoulder period noise limits.
- 54.** I understand that the majority of vehicles visiting service stations come from traffic already passing the site and therefore there is limited projected increase in traffic levels along Gordon Road. I defer to the evidence of Mr Chris Rossiter for matters relating to traffic. However, to provide some context that a noticeable increase in traffic noise levels from Gordon Road is unlikely, the volume of traffic on Gordon Road would need to approximately double in order to give rise to a noticeable (3 dB or greater) increase in noise.
- 55.** Noise due to refuelling and delivery vehicles is expected to be no different to that of noise from similar sized vehicles already using the surrounding road network servicing other local businesses. When on

site, delivery truck engines are required to be off and noise generated by other vehicles delivering goods to the shop will be comparable to other vehicles visiting the site to refuel. This has been captured within the noise assessment.

Submission of Victor and Gertruda McDonald

- 56. The submitters raise general concern regarding the noise effects of the proposed development with particular concern regarding the service station attracting groups of people and noisy car radios.
- 57. I refer to paragraphs 30-36 from earlier in my evidence with respect to potential noise effects.
- 58. In my experience, night-time activity at service stations is limited to occasional passing vehicles visiting to refuel. I refer to paragraph 43 of my evidence with respect to the potential for gathering groups.
- 59. Whilst people with noisy car radios on the site cannot be completely ruled out, just as people with noisy car radios on Gordon Road causing a similar potential disturbance cannot be ruled out, the likelihood of this occurring is minimal in my experience and I do not consider it to be an issue.

Submission of Michael and Nicola Stuart

- 60. The submitters raise concerns regarding noise relating to the proposed hours of operation, the inclusion of a café facility inside the shop and from customer vehicles.
- 61. The carwash and amenity island are to be turned off at night, this limits noise-generating activities to only the mechanical plant and vehicles refuelling. Noise from both of these sources is predicted to be consistent with the existing ambient noise levels.
- 62. As the proposed café is inside the shop, accessed through automatically closing doors, with no outdoor seating and typically

frequented by customers already visiting the site to refuel, there is limited opportunity for this activity to give rise to noise effects at the surrounding properties.

63. Noise from vehicles visiting the service station is included within the assessment. In my experience, noise from vehicles leaving service station sites is comparable to (or due to travelling at lower speeds often less than) vehicles using the adjoining public road. I have already commented this on earlier in paragraph 34 of my evidence; i.e., vehicles using the proposed service station at night are likely to generate similar or lower levels of noise as those already using Gordon Road.

Submission of Leon Roff

64. The submitter raises concerns regarding noise from traffic and from the carwash and amenity island.
65. I refer to paragraphs 30-36 from earlier in my evidence with respect to potential noise effects from these noise sources.

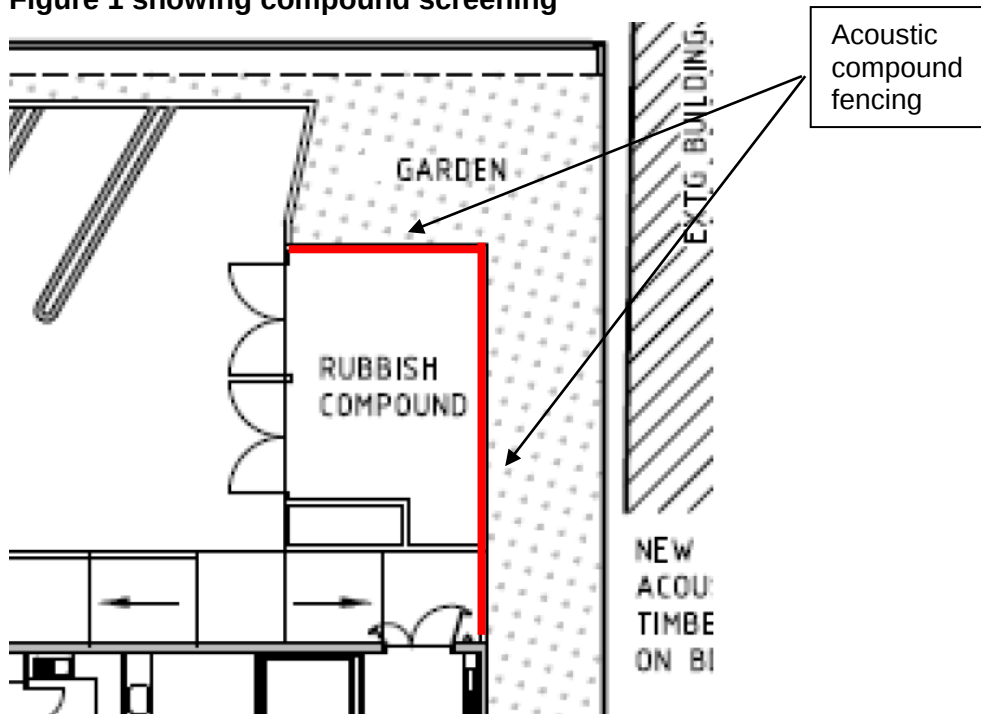
OFFICER'S REPORT AND CONSENT CONDITIONS

66. I have read the processing planner's report dated 21 November 2017 and for the reasons identified earlier in my evidence I disagree with the summary that noise effects will be more than minor.
67. Comment is made by the Environmental Health Department in paragraph 84 regarding a lack of information about the carwash and the elements that generate noise. The noise generating elements of the carwash operate only when the carwash is in use and are located within the carwash building not on the roof.
68. In paragraph 85 the processing planner comments on the measured ambient noise levels, these are presented graphically in Appendix A. As noted in paragraphs 19 and 34 of my evidence, occasional night-time vehicle movements on Gordon Road currently generate noise levels

higher than those predicted by the proposed activity following the installation of acoustic boundary screening.

69. It is also noted in the report that the Environmental Health Department is of the opinion that sufficient additional information was not provided on the nature of the compound screening. For clarity, the plant compound is to be formed of acoustically effective fencing; this screening is to be 2.5 m above ground level and surrounds the plant compound on two sides to mitigate noise to the closest receivers as shown in **Figure 1** below.

Figure 1 showing compound screening



70. In paragraph 86 the processing planner notes that use of the service station in the early morning and late evening will contribute more effects from noise. There appears to be little evidence to support this position and it is noted to go against the hours of use of the existing service station. Furthermore, noise from occasional vehicles using the site during the night-time has been demonstrated to be similar, or less than, that generated by existing vehicles already using the road at night.

71. Paragraphs 88 and 89 reference the concerns of submitters with regard to the acoustic assessment not being site-specific, concluding that they consider the effects to be adverse. This concern, in my opinion, is misplaced. As noted in the SLR report and again in my evidence the assessment is very much site specific. Noise levels have been predicted at the surrounding residential properties based on an acoustic model of the site and surroundings created specifically for this project and using data from previously measured BP service stations. The predicted noise levels have been assessed against daytime, shoulder period and night-time limits and against the existing noise environment. The results of the assessment found that the effects, in my opinion, are less than minor.
72. Paragraph 92 identifies that construction noise limits should be addressed by a condition of consent with limits based on the guidance in NZS 6803: 1999 *Acoustics – Construction Noise*. I support this proposal and condition.
73. The processing planner recommended draft conditions reference the District Plan noise standards with no modification of assessment periods. As discussed in detail earlier in my evidence (paragraphs 14 - 16), I do not believe that Sundays and statutory holidays should be considered as night-time periods with respect to noise limits. I have therefore made suggested reasonable modifications to the periods that seek to reflect this whilst providing a suitable level of amenity. I recommend that condition 2 be modified as follows:

2. The consent holder must ensure noise from activity taking place on the site does not exceed the following noise limits:

50 dB L_{A10} – Daytime (between 8:00 am and 6:00 pm);

*45 dB L_{A10} – Shoulder Periods (between 7:00 am and 8:00 am Monday to Friday and between 6:00 pm and 9:00 pm every day);
and*

40 dB L_{A10} – Night-time (between the hours of 9:00 pm on any night and 7:00 am Monday to Friday, and also between 7:00 am and 8:00 am Saturday, Sunday and statutory holidays).

74. Proposed condition 5 seeks to control the operational hours of the service station and carwash. Whilst I understand the intention of this condition, it is my opinion that requiring compliance with the above noise limits (which seek to provide a suitable level of residential amenity) will by default control which activities can take place. For example, required compliance with the night-time noise limits will control the operation of the carwash to daytime and shoulder periods only. In my opinion, from a noise perspective, there is likely to be no perceptible acoustic benefit from restricting the service station hours to midnight. Mechanical plant serving the station by necessity operates 24 hours a day irrespective, and noise from occasional vehicles using the site during the night-time has been demonstrated to be similar, or less than, that generated by existing vehicles already using the road at night.
75. However, if such a condition is deemed necessary in order to provide confidence around the operation of the service station, my recommendation would be to modify it as follows:

5. The carwash must be restricted to the following hours of operation; 7:00 am to 9:00 pm Monday to Friday and 8:00 am to 9:00 pm Saturdays, Sundays and statutory holidays.

CONCLUSION

76. I have identified noise limits for the proposed service station activity based on the District Plan noise limits and the existing noise environment – noting that road traffic is a controlling noise source in the area.
77. I have undertaken an assessment of noise effects associated with the proposed service station based on my experience and measurements of other similar activities. This assessment shows that, with the inclusion of identified mitigation measures, the level of noise generated by the proposed service station during daytime, shoulder and night-time periods at the surrounding sites is reasonable. Based on this I consider the effects of noise from the proposal to be less than minor in effect.

78. I have proposed slight modifications to the processing planners draft conditions of consent.

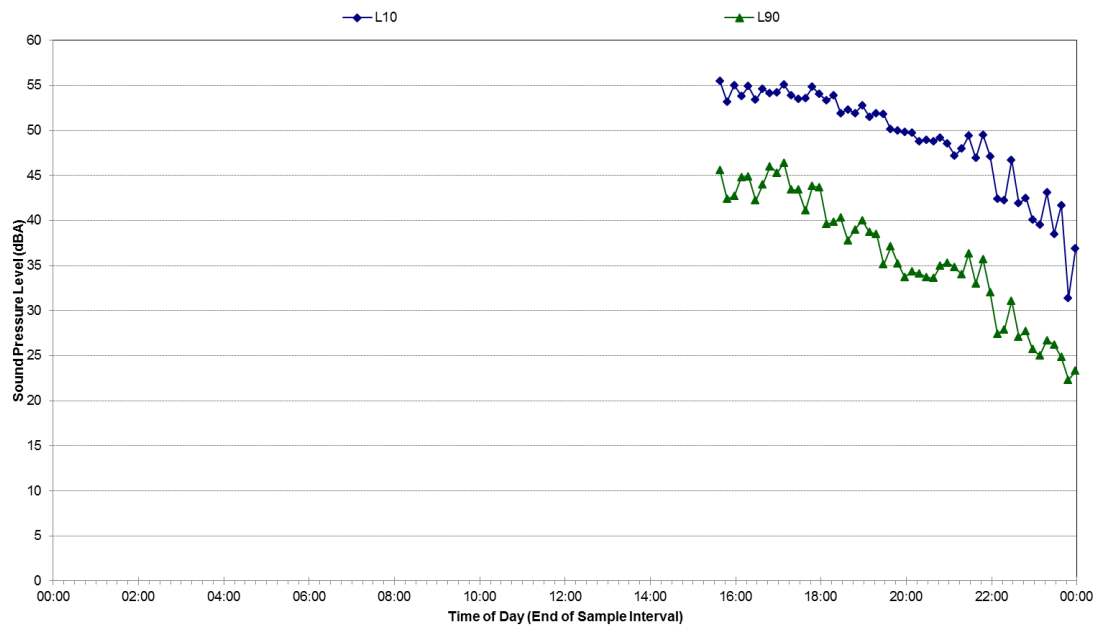
A handwritten signature in black ink, consisting of a stylized 'P' followed by a horizontal line and a small dot.

Peter Runcie

29 November 2017

Appendix A

Statistical Ambient Noise Levels Rear of site behind proposed carwash - Monday, 10 April 2017



Statistical Ambient Noise Levels Rear of site behind proposed carwash - Tuesday, 11 April 2017

