



Sydney Cricket Ground Trust

**EVENT NOISE MONITORING - U2
THE JOSHUA TREE TOUR 2019, 22 AND
23 NOVEMBER 2019**

November 2019



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Executive Summary

Monitoring of noise levels at sensitive receptors in the area surrounding the Sydney Cricket Ground was undertaken during the U2: The Joshua Tree Tour 2019 concert (including sound checks and rehearsals) on the 22nd and 23rd November 2019 to determine compliance with the following noise criteria defined in the site's Noise Management Plan (NMP):

'During sound test(s), rehearsal(s) and concert(s), L_{Amax} and the L_{Cmax} measured at the monitoring locations will not exceed:

For activities conducted at the SCG: 70 dB(A) and 90dB(C).'

Throughout the monitoring, noise levels were recorded every two minutes, and observations were made as to the source of noise and potential exceedances at each location. The noise level recorded represents the highest RMS noise level recorded during the two minute period. Hence, even where exceedances are identified it is possible that for the majority of the two minute period, receptor noise levels were compliant with the NMP criteria.

During the sound checks on the 22nd November (intermittently from 10:00 am until 4:30 pm) monitoring was completed to confirm compliance and to determine if adjustments to the sound system were necessary to achieve compliance. Typically noise levels were below established criteria throughout the testing, with no measured exceedances occurring during the soundcheck including the loudest anticipated song. Any necessary adjustments to the sound system were programmed into the set by the FOH operators based on advice from the Event Monitoring staff.

Throughout the sound-checks, rehearsals, and event, monitoring staff provided live feedback to the FOH operators if adjustments were required to maintain compliance.

During the initial event night (Friday 22nd November) after the gates were opened and during interim periods between performances low volume music was generally only just audible external to the venue. During the support act (Noel Gallagher) and main performance (U2) the operating levels were generally below the criteria by 1-3 dB(A) or more, however on some infrequent occasions the measured levels were 1-3 dB(A) above the criteria as a result of elevated vocal performances. The C-weighted criteria representing the bass levels was not measured to exceed the criteria at any point.

Significant rain and lightning in the early evening of the Friday resulted in the commencement of performances being delayed. The main performance finished at 10:57 pm, immediately followed by a 2.5 minute lower volume song to disperse the crowd concluding at 10:59 pm. It is noted the prevention notice provides allowance for extension to 11:00 pm due to occurrence beyond the control of the SCGT. 11 complaints from 10 callers were received on the Friday night.

The event monitoring of the Saturday 23rd November were generally on-schedule despite light rain periods throughout. It was noted that the cloud cover remained present throughout the event (where they had dispersed later on the previous night) which may have resulted in some perception of clearer/louder levels external to the venue. Measured levels at the FOH mixing desk indicated levels were the same or lower than the previous nights performance and remained well managed on advisement from ENM. The main performance finished at 10:29 pm, immediately followed by a 2.5 minute lower volume song to disperse the crowd, and concluding at 10:32 pm. The low volume song was generally inaudible external to the venue.

It is noted that the measured elevated levels do not always constitute an exceedance due to the

allowances for elevated winds, rainfall, allowance for initial adjustments during a new performer (outlined in the NMP). Generally the review of compliance was applied conservatively.

In terms of exceedences, the measured maximum noise levels (during a 2-minute period) as a result of amplified music was above the dB(A) criteria for a total of 8 times across the two nights. The times of the exceedences are summarised below:

- *Friday 22nd November – 19:34, 21:08, 21:16; and*
- *Saturday 23rd November – 20:42, 20:58, 21:20, 20:20 and 22:18.*

It was noted that, on all occasions, the mixing desk operators were responsive to requests to reduce and adjust the operating volumes. All subsequent measurements fully complied with the criteria.

During the event complaints were received by the Trust and forwarded to the monitoring team for consideration. Based on the computational modelling predictions within the NMP, it was assumed levels would be lower than those at the compliance positions based on prevalent weather conditions, and were not directly investigated.

It was noted that in addition to this being the first major concert at the SCG in approximately 10 years, the inclement weather may have resulted in greater propagation of noise to areas not used to hearing event noise.

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1 INTRODUCTION

1.1 SCOPE OF ASSESSMENT

Sydney Cricket Ground Trust commissioned Air Noise Environment Pty Ltd (trading as Event Noise Management) to conduct event noise monitoring during the U2: The Joshua Tree Tour 2019 concert as required under the Noise Management Plan (NMP) for the facility¹.

This report presents a summary of the results of the monitoring and a comparison with the noise criteria for the event as defined in the NMP, and the venue Prevention notice noise level limits.

1.2 EVENT DETAILS

The concert event and line checks were held at the Sydney Cricket Ground (SCG) on Friday 22nd and Saturday 23rd November 2019. This report presents the noise monitoring methodology and results for the line checks and performance.

The approximate schedule for the amplified line checks, sound checks and event performances were as follows:

Friday:

- Line checks: 10:00 am - 12:00 pm.
- Rehearsal/sound checks: 2:00 am – 4:30 pm
- Gates/walk in music: 4:30pm
- Noel Gallagher: 6:30 pm – 7:30 pm
- U2: 8:10 pm – 10:30 pm

Saturday:

- Rehearsal/sound checks: 2:30 pm - 3:30 pm.
- Gates/walk in music: 4:30pm
- Noel Gallagher: 6:30 pm – 7:30 pm
- U2: 8:10 pm – 10:30 pm

It was noted as a result of inclement weather, the timing of soundchecks and some of the main show were adjusted slightly on the Friday night as follows:

- Noel Gallagher: 6:50 pm – 7:50 pm
- U2: 8:37 pm – 10:57 pm

The event was expected to be attended by approximately 42,000 patrons.

1.3 EVENT NOISE CRITERIA

Noise limits for concert events held at the SCG are provided in the site's NMP as follows:

¹ Sydney Cricket Ground - Noise Management Plan, Sydney Cricket & Sports Ground Trust (April 2019), prepared by Air Noise Environment Pty Ltd

'3.1.2 Concerts, Rehearsals and Sound Tests

Both dB(A) and dB(C) limits are specified for concerts, as a particular impact on local receptors of amplified music is low-tone bass sounds – measured in dB(C).

During sound test(s), rehearsal(s) and concert(s), LAmax and the LCmax measured at the monitoring locations will not exceed:

- *For activities conducted at the SCG: 70 dB(A) and 90 dB(C).'*

Section 6.2.1 of the NMP details the monitoring positions that must be considered as follows:

Monitoring Locations

For both sporting events and concerts attended monitoring locations will be as set out below.

For activities taking place at the SCG:

- *At a point within one (1) metre of the residential boundary nearest to the SCG, at the corner of Poate Road and Poate Lane, Centennial Park;*
- *At a point within one (1) metre of the residential boundary nearest to the SCG, at the corner of Leinster and Regent Streets, Paddington; and*
- *At a point within one (1) metre of the residential boundary nearest to the SCG, at the corner of Robertson Road and Martin Road (northern intersection), Moore Park.*

Section 3.2 of the NMP details the allowed timing of events as follows:

Time of Concerts, Rehearsals and Sound Tests

For the following activities, the following limits apply:

- *Concerts: A concert must not commence prior to 1000 hours or finish after 2230 hours on any day. Not with-standing the above concerts may continue until 2300 hours if an occurrence beyond the control of the SCGT delays the concert. The total length of a concert must not be greater than five (5) hours;*
- *Rehearsals: Rehearsals will not commence prior to 1000 hours or finish after 1900 hours. The total duration of rehearsals will be kept to an absolute minimum; and*
- *Sound Tests: Sound test(s) will not commence prior to 1000 hours or finish after 1900 hours. The total duration of sound tests will be kept to an absolute minimum.*

Number of Concerts

The combined number of concerts held on SCGT land, including the SCG and the SFS must not exceed an average of four (4) concerts per calendar year averaged over any five (5) year period.

The number of concerts held on Trust land, including the SCG, must not exceed six (6) concerts over any event period.

Note: For the purposes of this condition, the term "event period" means the period of twelve months after 1 July 2010, and each subsequent period of 12 months.

The NMP also presents the following considerations relevant to concert performance noise:

- *'An exceedence of the noise level limit by a maximum of 5 dB(A) and/or 5 dB(C) during a single five (5) minute period during the first ten (10) minutes of the performance of each new act will not be taken to be a breach of the limits.*
- *Noise levels measured when wind speed exceeds 5 m/s (at microphone height) should not be used to measure compliance with noise limits in the Notice, as wind generated noise may limit measurement accuracy. During periods of wind greater than 5 m/s the SCGT must continue to take all reasonable and feasible actions to minimise noise'*

The exemption for exceedances at the start of new performances is intended to give the mixing desk operators time to respond to changes in conditions (e.g. meteorology), or unfamiliarity with the system (new operator). Subsequent exceedances will be considered as normal.

2 MONITORING METHODOLOGY

2.1 MONITORING POSITIONS

Monitoring during the sound checks and rehearsal were undertaken at three fixed monitoring positions as required by the NMP. Table 2.1 presents a summary of the monitoring locations assessed during the event, with the monitoring positions identified on Figure 1.

TABLE 2.1: SUMMARY OF MONITORING POSITIONS

Position	Description
1	Fixed monitoring position located within 1 m of the residential boundary nearest to the SCG, at the corner of Poate Road and Poate Lane, Centennial Park
2	Fixed monitoring position located within 1 m of the residential boundary nearest to the SCG, at the corner of Leinster and Regent Streets, Paddington
3	Fixed monitoring position located within 1 m of the residential boundary nearest to the SCG, at the corner of Robertson Road and Martin Road (northern intersection), Moore Park

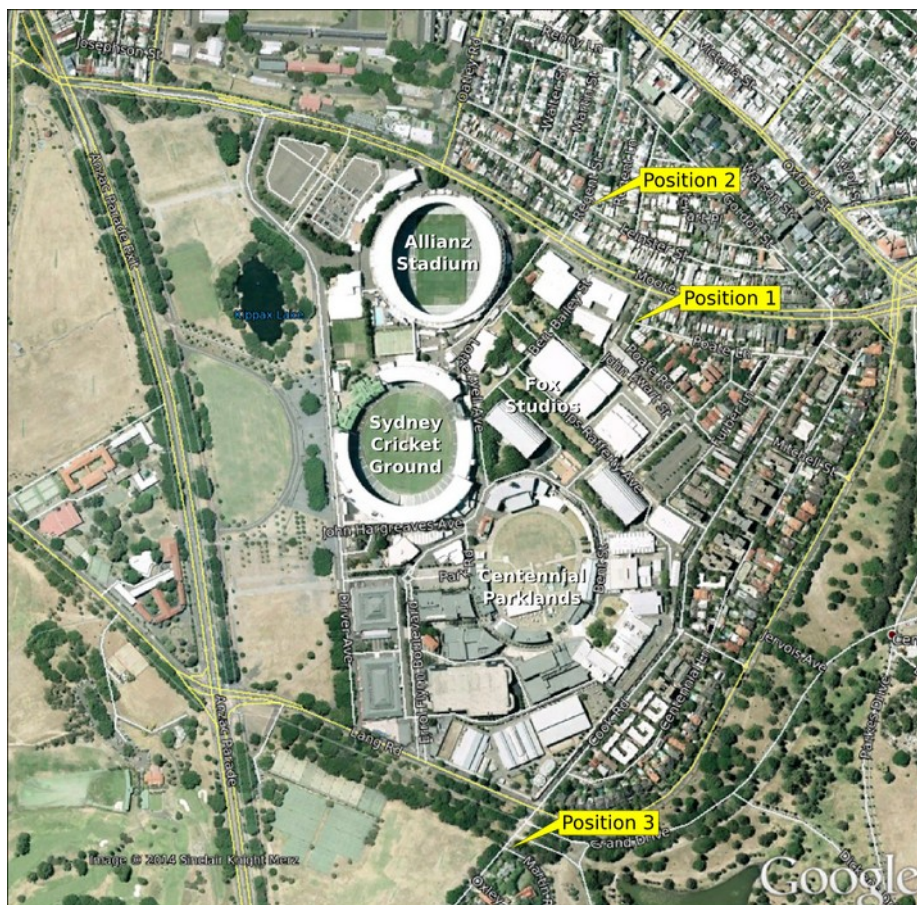


Figure 1: Noise Monitoring Positions (External Fixed Locations)

In addition to the external compliance monitoring, Event Noise Management staff were present at the front of house (FOH) position to advise the compliance status of noise levels to the production team throughout the event. It was noted that a dedicated sound engineer was in control of the overall volumes throughout the show (despite various mixing desk operators for specific performing artists), and ENM personnel were positioned in close proximity allowing swift advice when changes were required to operating volumes to maintain compliance.

2.2 OPERATORS

During the monitoring undertaken on 22nd and 23rd November 2019, Air Noise Environment personnel were located at each position identified in Figure 1. The monitoring exercise was undertaken by the following personnel:

- Mixing Desk (FOH): Beau Weyers, BEng(Mech), RPEQ, MAAS;
- Position 1: Rebecca Wilson: Ph.D, Env and Geo;
- Position 2: Daniel Richardson: Certificate III IDMT (Undergrad); and
- Position 3: Gyani Shankar Sharma: Ph.D, Mech Eng; and

2.3 MONITORING EQUIPMENT

Table 2.2 presents a summary of the equipment used the monitoring. The sound level meters used for the monitoring conform to Australian Standard 1259 "Acoustics - Sound Level Meters", (1990) Type 1 (precision sound level meter), and have an accuracy suitable for both field and laboratory use.

The sound level meters and calibrator have been checked, adjusted and aligned to conform to the Type 1 specifications by a third party NATA accredited laboratory within the last 24 months and issued with a conformance certificate.

TABLE 2.2: SUMMARY OF MONITORING EQUIPMENT

Position	Instrument Model	Instrument Serial	Instrument Calibration Due Date	Field Pre-Calibration	Field Post-Calibration
Front of House	Bruel & Kjaer 2250L	3006647	14/08/19	94.0 94.0	93.7 93.8
1	Norsonic 140	1405306	12/07/19	94.0 94.0	94.0 93.9
2	Norsonic 140	1404664	19/11/19	94.0 94.0	94.0 94.1
3	Norsonic 140	1404621	10/06/19	94.0 94.0	94.0 94.0
Field Calibrator	Bruel & Kjaer 4231	3009973	21/05/19	-	-

Field calibrations of each of the instruments were also undertaken prior to and immediately after the monitoring was completed. Less than 0.5 dB drift occurred over the measurement periods. All instruments were fitted with a windshield and monitoring was completed at a height of 1.5 m

above ground level.

It is noted that the monitoring results of the Position 3 instrumentation did not record the full data-sets for inclusion in the appendix. However during the event, Position 3 was staffed at all times and all live observations of the monitoring results confirmed full compliance with the criteria.

2.4 WEATHER CONDITIONS DURING THE EVENT

During the day-time on Friday 22nd November, during the line checks, sound checks, and rehearsal, moderate southerly winds prevailed, with generally low scattered cloud cover and high humidity.

Into the late afternoon, before the support act commenced, thunderstorms and rain commenced, and winds eased to light to moderate and south-south-easterly. The rain and lightning strikes in the area resulted in a delay of more than 30-minutes before commencement of the support act, who generally played through the rain. The rain continued until the main act commenced, which was significantly delayed due to weather. All efforts were made to ensure the performance did not exceed the extended 22:30 curfew (due to occurrences outside the control of the Trust).

The showers eased during the intermission before the main act, and cloud directly above the venue dispersed, though it was observed that the surrounding suburbs still had low cloud. Winds were occasionally moderately gusty and varying in direction, including a calm period at approximately 10:30pm. These varying wind conditions may have resulted in propagation of noise in various directions around the area. In addition the low cloud has the potential to elevate noise levels outside the venue (via reflections).

Monitoring generally took a conservative approach in not applying the 5 dB allowance due to high winds (greater than 5 m/s), and generally observations were able to be made during periods of low wind, between gusts. Additionally if monitoring results were attainable during light rain periods, they were also included for review and management of compliance. In lieu of external monitoring results (rain periods) the FOH monitoring staff member maintained a vigil on the levels that were compliant earlier in the event, and provided feedback to the mixing desk operators to maintain historically compliant levels.

On Saturday 23rd November, conditions were generally consistent throughout the day with light-to-moderate south and south-easterly winds. There were showers just prior to the support act, and light drizzle immediately after conclusion of the event. Minimal delays were incurred due to weather, and generally the sound and propagation external to the venue was clearer than the Friday.

Table 2.3 presents a summary of the meteorological data from Sydney Airport and Sydney Observatory Hill (rain periods) for the rehearsal afternoon and performance evenings. In addition, observations regarding rain and wind intensity were made by operators during the event.

TABLE 2.3: SUMMARY OF METEOROLOGICAL DATA

Date / Time	Temperature	Cloud	Cloud Base (m)	Cloud Type	Rain CBD (mm)	Rain Airport (mm)	Weather	Wind Direction	Wind Speed (km/hr)	Gust (km/hr)	Relative Humidity
Friday											
22/09:04am	13	Mostly clear	600	Cumulus	0	0	-	S	50	69	79
22/09:30am	12.8	-	-9999	-	0	0	-	S	52	65	79
22/10:00am	12.8	-	-9999	-	0	0	-	S	52	67	79
22/10:30am	14.6	Partly cloudy	360	Stratus	0	0	-	S	44	61	81
22/11:00am	14.6	Partly cloudy	360	Stratus	0	0	-	S	43	54	79
22/11:30am	14.5	Partly cloudy	360	Stratus	0	0	-	S	43	56	80
22/12:00pm	15.2	Partly cloudy	300	-	0	0	Haze	S	43	54	79
22/12:30pm	16	Partly cloudy	360	Stratus	0	0	-	SSE	39	48	76
22/01:00pm	16.6	Partly cloudy	420	Stratus	0	0	-	S	35	44	78
22/01:30pm	17	Partly cloudy	420	Cumulus	0	0	-	S	35	41	74
22/02:00pm	17.8	Partly cloudy	420	Cumulus	0	0	-	SSE	32	41	77
22/02:30pm	16.8	Partly cloudy	450	Cumulus	0	0	-	SSE	32	37	79
22/03:00pm	16.9	Mostly cloudy	300	-	0	0	Haze	SSE	30	35	77
22/03:30pm	17.9	Partly cloudy	450	Stratocumulus	0	0	-	SSE	26	32	75
22/04:00pm	18	Partly cloudy	510	Stratocumulus	0	0	-	SSE	24	30	76
22/04:30pm	17.9	Partly cloudy	510	Stratocumulus	0	0	Thunder	S	24	41	82
22/05:00pm	19.1	Partly cloudy	540	Cumulus	-	0	-	SSE	15	19	78
22/05:30pm	19.3	Mostly clear	450	Stratus	-	0	Thunderstorm	SSE	13	22	80
22/05:50pm	20.7	Partly cloudy	450	Stratus	-	0	Thunder	SE	6	11	83
22/06:00pm	18.8	Mostly cloudy	300	-	4.4	0.2	Recent thunderstorm	SSE	13	17	85
22/06:30pm	18.9	Mostly clear	450	Stratus	5.2	1	Showers	SSW	15	28	89
22/07:00pm	19.3	Mostly clear	510	Stratus	6	1	-	SSE	13	19	87
22/07:30pm	17.6	Mostly clear	660	Cumulus	6.2	1.2	Showers	SE	20	28	88
22/08:00pm	18	Mostly clear	900	Cumulus	6.2	1.2	-	ENE	19	33	87
22/08:30pm	18.2	Mostly clear	1350	Stratocumulus	6.2	1.2	-	SSW	19	24	88
22/09:00pm	18.1	Mostly cloudy	1500	-	6.2	1.2	Haze	SSW	19	22	85
22/09:30pm	17	-	-9999	-	6.2	1.2	-	S	24	28	85
22/10:00pm	18	Mostly clear	1200	Stratocumulus	6.2	1.2	-	SW	17	28	82
22/10:30pm	21.8	Mostly clear	660	Cumulus	6.2	1.2	-	CALM	0	7	81
22/11:00pm	18.5	Mostly clear	900	Cumulus	6.2	1.2	-	SE	13	19	84
22/11:30pm	18.1	Mostly clear	510	Stratus	6.2	1.2	-	SSE	15	20	84
23/12:00am	18.1	Mostly cloudy	300	-	6.2	1.2	Haze	S	19	24	88
SATURDAY											
23/09:30am	17.6	Partly cloudy	360	Stratus	0	0	-	SSW	19	33	86
23/10:00am	18.2	Mostly clear	390	Stratus	0	0	-	SSW	17	20	85
23/10:30am	18.7	Mostly clear	390	Stratus	0	0	-	S	17	20	83
23/11:00am	18.6	Mostly clear	360	Stratus	0	0	-	S	20	28	81
23/11:30am	18.5	Mostly clear	360	Stratus	0	0	-	S	17	20	81
23/12:00pm	18.9	Cloudy	300	-	0	0	Haze	S	17	22	82
23/12:30pm	18.4	Partly cloudy	420	Stratus	0	0	-	S	19	24	80
23/01:00pm	20.3	Partly cloudy	420	Stratus	0	0	-	S	19	26	81
23/01:30pm	19.9	Partly cloudy	450	Stratus	0	0	-	S	17	20	78
23/02:00pm	20.1	Partly cloudy	420	Stratus	0	0	-	SSE	17	20	77
23/02:30pm	20.3	Mostly clear	450	Stratus	0	0	-	ESE	17	20	73
23/03:00pm	20.7	Cloudy	300	-	0	0	Haze	ESE	15	17	71
23/03:30pm	20.9	Mostly clear	480	Stratus	0	0	-	SE	15	17	72
23/04:00pm	20.2	Mostly clear	450	Stratus	0	0	-	SE	17	20	77
23/04:30pm	19.6	Mostly clear	360	Stratus	0	0	Showers	ESE	15	19	76
23/05:00pm	19.2	Mostly clear	450	Stratus	0.4	0	-	ESE	17	19	78
23/05:30pm	21.4	Mostly clear	420	Stratus	0.4	0	Showers	ESE	9	17	80
23/06:00pm	20.6	Cloudy	300	-	0.4	0	Haze	SE	13	17	78
23/06:30pm	19.3	Mostly clear	420	Stratus	0.4	0	-	SE	19	24	77
23/07:00pm	19.3	Mostly clear	660	Cumulus	0.4	0	-	SE	19	24	79
23/07:30pm	18.8	Mostly clear	510	Stratus	0.4	0	-	SSE	20	26	79
23/08:00pm	19.1	Partly cloudy	510	Stratus	0.4	0	-	SE	19	26	80
23/08:30pm	19	Mostly clear	420	Stratus	0.4	0	-	SE	19	26	81
23/09:00pm	18	Cloudy	300	-	0.4	0	Haze	SSE	24	32	81
23/09:30pm	18.1	Mostly clear	420	Stratus	0.4	0	-	SSE	22	32	81
23/10:00pm	18.8	Mostly clear	480	Stratus	0.4	0	-	SE	22	32	81
23/10:30pm	17.1	Partly cloudy	420	Stratus	0.4	0	Drizzle	SSE	26	33	84
23/11:00pm	17.8	Partly cloudy	420	Stratus	0.4	0	-	SE	24	32	83
23/11:30pm	17.2	Mostly clear	420	Stratus	0.4	0	-	SE	24	30	77
24/12:00am	15.8	Partly cloudy	300	-	0.4	0	Haze	S	33	37	79

3 RESULTS OF MONITORING

3.1 MONITORING RESULTS

Noise monitoring results were recorded at each location every² two minutes of amplification throughout the monitoring periods:

- Friday – 10:00 am to 11:00 pm
- Saturday – 12:00 pm to 10:30 pm

During each two minute period notes were also made regarding the sources of noise in the area and the source of any potential exceedances of the noise criteria. It is noted that the noise level recorded represents the highest RMS (Root Mean Square) noise level recorded during the two minute period. Hence, even where exceedances are identified it is possible that for the majority of the two minute period, receptor noise levels were compliant with the NMP criteria.

The measured noise levels and associated notes that were recorded during the monitoring are presented in Appendix B. During the event performances it was identified that noise levels from the event were generally within the criteria defined in the site's NMP throughout the noise monitoring, with only 9 occurrences of an exceedance of the maximum dB(A) criteria during a 2-minute period. The dB(C) criteria, highlighting the low frequency bass content of the music, was never within 3 dB of the criteria.

The following typical event noise levels were observed:

- At P1: generally between 62 dB(A) and 69 dB(A)
- At P2: generally between 62 dB(A) and 67 dB(A)
- At P3: rarely above 60 dB(A) and barely inaudible for majority of the monitoring.

During the line checks/sound checks and event of the 22nd and 23rd of November, Event Noise Management (ENM) staff completed tests to determine adjustments and acceptable volumes for the sound system to maintain compliance for external noise levels.

If required these changes could have included reduction of the volume of specific frequencies and identification of speaker arrays with potential to influence noise external to the venue. Generally it was identified that the A-weighted criteria was most likely to exceed as a result of transient vocals from the lead singer of U2. The sound engineer made adjustments to maintain achieve compliance, and programmed them into the system.

During the sound checks on the 22nd November (intermittently from 10:00 am until 4:30 pm) Event Noise Management (ENM) staff monitored externally to confirm compliance and to determine if adjustments to the sound system were necessary to reduce external noise levels to achieve compliance. Typically noise levels were well below established criteria throughout the testing, with no measured exceedances occurring during the soundcheck including the loudest anticipated song. Adjustments to the sound system were programmed into the set by the FOH operators based on advice from the Event Monitoring staff.

Throughout the sound-checks, rehearsals, and event, monitoring staff provided live feedback to the FOH operators if adjustments were required to maintain compliance.

² *Short periods of rain impedance and battery changes resulted in brief periods of pause. Observations were continued throughout.*

It was noted that south-south-easterly winds were prevalent during the checks, and were expected to continue through the event of Friday 22nd November.

During the initial event night (Friday 22nd November) after the gates were opened and during interim periods between performances low volume music was generally only just audible external to the venue. During the support act (Noel Gallagher) and main performance (U2) the operating levels were generally below the criteria by 1-3 dB(A) or more, however on some infrequent occasions the measured levels were 1-3 dB(A) above the criteria as a result of elevated vocal performances. The C-weighted criteria representing the bass levels was not measured to exceed the criteria at any point.

Significant rain and lightning in the early evening of the Friday resulted in the performances being delayed to commence. The main performance finished at 10:57 pm, immediately followed by a 2.5 minute lower volume song to disperse the crowd concluding at 10:59 pm. It is noted the prevention notice provides allowance for extension to 11:00 pm due to occurrence beyond the control of the SCGT.

The event monitoring of the Saturday 23rd November were generally on-schedule despite light rain periods throughout. It was noted that the cloud cover remained present throughout the event (where they had dispersed later on the previous night) which may have resulted in some perception of clearer/louder levels external to the venue. Measured levels at the FOH mixing desk indicated levels were the same or lower than the previous nights performance and remained well managed on advisement from ENM. The main performance finished at 10:29 pm, immediately followed by a 2.5 minute lower volume song to disperse the crowd concluding at 10:32 pm generally inaudible external to the venue.

It is noted that the measured elevated levels do not always constitute an exceedance due to the allowances for elevated winds, rainfall, and allowance for initial adjustments during a new performer (outlined in the NMP). Generally the review of compliance was applied conservatively.

3.2 MANAGEMENT

Throughout the duration of the amplified activities the ENM staff monitoring externally were diligent and quick to inform FOH when the noise levels were within 3 dB of the noise criteria. In all cases of measured elevated levels, the operators were very responsive to instruction from ENM staff to reduce levels, and the general programming remained at least 3 dB below the criteria.

With regards to weather conditions, rain occurred during the majority of performances, with low dense cloud contributing to propagation of noise external to the venue. Winds were predominately south-south-easterly, and low cloud cover and rain resulted in potential to elevate noise levels at the nearest receptors and the monitoring locations at Poate Road and Regents Street.

Monitoring generally took a conservative approach in not applying the 5 dB correction due to high winds, and generally observations were able to be made between gusts. Additionally if monitoring results were attainable during light rain periods, they were also included in review, and management of compliance. In lieu of external monitoring results (rain periods) the FOH monitoring staff member maintained a vigil on the levels that were compliant earlier in the event, and provided feedback to the mixing desk operators to maintain historically compliant levels.

During the show, SCGT staff and Event Noise Management staff continually informed the sound engineers whenever levels were approaching the criteria (within 3 dB) in order to maintain compliant operating volumes. It was acknowledged that the low cloud and wet surfaces resulted in greater propagation of noise than normal, and despite a brief (< 5 seconds) exceedance of the criteria during the sound testing, the operators were found to be highly responsive to requests, and planned to remain below the criteria generally operating with a buffer to allow for the 'big vocal notes'.

During the support act of the Saturday performances it was identified that the low cloud and other meteorological conditions were contributing to levels approximately 1 dB higher external to the venue compared to the Friday performance. The FOH operators were informed, and recommended to program the show at least 1 dB lower than the previous night until such a time as the impacts could be reviewed.

On the Friday it was noted that the commencement of the event was delayed due to significant rain and a thunder/lightning storm in close proximity to the venue. As a result the performance was delayed over 30 minutes, with the support act performing through the rain, and the headline act (U2) commencing with a shorter than scheduled gap between the performances in an effort to ensure the performance (programmed to run 2hrs 16minutes) would conclude within the allocated time of 11:00 pm.

The event personnel were informed that the NMP requires the event to conclude at 10:30 pm, with a caveat to allow extension until 11:00 pm on the Friday as a result of inclement weather.

At conclusion of the performances a much lower volume short (2.5 minutes) musical track was played to clearly identify to the patrons the main event has concluded and to commence egress calmly. These both occurred just prior to curfew and concluded shortly after on each night. Measurements and observations external to the venue indicated these tracks were barely audible.

Appendix B presents a summary of the recorded noise levels and observations during the sound check, rehearsal, and main event.

3.3 CONCERT HOTLINE

During the event complaints were received by the Trust and forwarded to the monitoring team for consideration. Based on the computational modelling predictions within the NMP, it was assumed levels would be lower than those at the compliance positions based on prevalent weather conditions, and were not directly investigated.

11 complaints were received on the Friday from 10 unique complainants, and 1 on the Saturday. It should be noted the operating volumes were almost identical both nights, with only the weather likely to have resulted in changes to the propagation external to the venue (wind speed and direction, rain and wet surfaces, cloud cover).

Table 2.3 presents a summary of the location and times the complaints were received.

TABLE 2.3: SUMMARY OF METEOROLOGICAL DATA

Time / Date	Complaint Details
22/11/19 14:45	Collins Lane near Crown Street Surry Hills
22/11/19 15:10	Roper Street Surry Hills near Brett Whitley gallery
22/11/19 15:30	3 Collins Lane Surry Hills
22/11/19 15:42	70-78 Cook Road, Centennial Park
22/11/19 15:42	Noble Street Surry Hills Asking if we are compliant and wanted to speak to somebody very angry
22/11/19 16:30	Complaint sent to EPA re noise complaint
22/11/19 19:47	Chapman Street Surry Hills (Note: same complainant as 15:42, providing different address)
22/11/19 21:11	Maloney Street Mascot
22/11/19 21:00	Noise complaint 9pm from Coogee (recorded through social media)
22/11/19 21:00	Noise complaint 9pm from Kingsford (recorded through social media)
22/11/19 22:30	5 Fouveaux Street Surry Hills
23/11/19 18:35	780 Bourke Street Redfern

3.4 REVIEW OF EXCEEDANCES

Table 3.1 presents a summary of the 2-minute monitoring periods, where amplified music from the venue resulted in an L_{Amax} above the criteria. A total of 8 occurrences of a measured maximum (during a 2-minute period) above the dB(A) criteria as a result of the event noise were observed across the two nights, with an additional period of elevated levels within the first 10-minutes of the performance, whereby the mixing desk operators were notified to adjust the set volumes.

At Position 2, the ambient noise was defined by idle vehicles, moving traffic and pedestrian traffic, and it was often hard to distinguish exact contribution of music to measured noise levels. Where the music was clearly audible and traffic noise generally reduced, levels were assessed conservatively by assuming measured noise levels were defined exclusively by amplified concert music.

It is also noted the the low cloud, elevated winds, and rain were all generally confounding effects, and the FOH mixing desk/production staff were responsive in maintaining slightly lower volumes due to the weather-related constraints, in an attempt to maintain compliance externally.

On Friday 22nd November, during U2’s rehearsal, the external monitoring team recorded a maximum of 70 dB(A), a level at the criteria, from the vocalist singing a loud chorus (identified by the FOH operators as the anticipated loudest song). ENM staff at FOH were informed of the level and relayed the information to the mixing desk operators of the specific dB level beyond which the criteria exceeded externally. The necessary adjustment was programmed such that the resulting ‘loudest song’ should maintain compliance externally.

All subsequent measurements fully complied with the criteria, throughout the rehearsals, soundchecks and event of the 22nd and 23rd November 2019.

It was noted on all occasions that the mixing desk operators were responsive to requests to reduce and adjust the operating volumes. Some amendment to the system was required as a result of the rain (elevated humidity, low cloud, and wet surfaces can result in greater propagation of noise, especially at low frequencies). It is also noted that periods of the monitoring were also completed in the rain, which may have influenced the measurement results.

The Noise Management Plan identifies that:

- *'An exceedance of the noise level limit by a maximum of 5 dB(A) and/or 5 dB(C) during a single five (5) minute period during the first ten (10) minutes of the performance of each new act will not be taken to be a breach of the limits.*
- *Noise levels measured when wind speed exceeds 5 m/s (at microphone height) should not be used to measure compliance with noise limits in the Notice, as wind generated noise may limit measurement accuracy. During periods of wind greater than 5 m/s the SCGT must continue to take all reasonable and feasible actions to minimise noise'*

Review of these allowances identify that the single measured elevated level, occurring during elevated winds, does not constitute an exceedance of the NMP criteria. Monitoring generally took a conservative approach in not applying the 5 dB correction due to high winds, and generally observations were able to be made between gusts. Additionally if monitoring results were attainable during light rain periods, they were also included in review, and management of compliance.

Overall the volume of the event was well managed, with mixing desk operators working actively to minimise their impact on surrounding neighbourhood, and sound checks and rehearsals were kept to a minimum.

TABLE 3.1: SUMMARY OF MEASURED ELEVATED LEVELS

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
Friday – Position 1 (Poate)			
19:34 pm	73.2	82.5	Exceedance: Amplification defining level 3 dB above dBA criteria . FOH informed and requested to reduce maximum volumes. Typical average volumes are >3 dB compliant Response ENM staff at FOH relayed: It was an erroneous/unplanned spike and the mixing desk operator suggested it's unlikely to occur again. Other: rain, wind, vehicles contributing
21:08 pm	75.1	84.2	Exceedance: Amplification defining level 1 dB above dBA criteria . FOH informed and requested to reduce maximum volumes. Typical average volumes are >3 dB compliant Response ENM staff at FOH relayed: It was a vocal spike and mixing desk operators were informed and requested to adjust the set down 1 dB. Other: vehicles defining maximums

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
21:16 pm	74.2	82.2	<p>Exceedance: Amplification defining level 2 dB above dBA criteria. FOH informed and requested to reduce maximum volumes. Typical average volumes include sustained 70 dBA vocal for 2-minutes.</p> <p>Response ENM staff at FOH relayed: The loudest anticipated song of the night, however mixing desk operators were informed and requested to adjust the programming of the song down 2 dB for following night (pending weather review).</p> <p>Other: vehicles defining maximums</p>
Friday – Position 2 (Regent)			
20:44 pm	74.6	81.7	<p>Elevated Level: Amplification defining level 3 dB above dBA criteria. FOH informed and requested to reduce maximum volumes. Typical average volumes include 67-68 dBA during the 2-minutes.</p> <p>Other: vehicles defining dBA maximum and may be contributing to measured exceedance (up to 3 dB addition to result). Corrected exceedance would be closer to 1.6 dBA.</p> <p>Response ENM staff at FOH relayed: The loudest anticipated song of the night, however mixing desk operators were informed and requested to adjust the programming of the song down 2 dB for following night (pending weather review).</p> <p>Notes: It is noted this occurred within the first 10-minutes of the set, and adjustments were made immediately.</p> <p>This does not constitute an exceedance.</p>
Saturday – Position 1 (Poate)			
20:42 pm	71.2	86.1	<p>Exceedance: Amplification defining level 1 dB above dBA criteria. FOH informed and requested to reduce maximum volumes. Typical average volumes are >3 dB compliant</p> <p>Response ENM staff at FOH relayed: FOH levels had increased in the 2-minute period, and mixing desk operators were informed to reduce a minimum of 1 dB, targeting 2 dB.</p> <p>Other: vehicles defining maximums</p>
20:58 pm	78.7	82.4	<p>Exceedance: Amplification defining level 1 dB above dBA criteria. FOH informed and requested to reduce maximum volumes. Typical average volumes are 67 dBA (3 dB compliant)</p> <p>Response ENM staff at FOH relayed: It was a cumulative spike in the set, and mixing desk operators were informed and requested to adjust the set down 1 dB.</p> <p>Other: vehicles defining maximums</p>
21:20 pm	73.5	81.9	<p>Exceedance: Amplification defining level 1 dB above dBA criteria. FOH informed and requested to reduce maximum volumes. Typical average volumes are 67 dBA (3 dB compliant)</p> <p>Response ENM staff at FOH relayed: FOH levels had increased in the 2-minute period, and mixing desk operators were informed to reduce a minimum of 1 dB.</p> <p>Other: vehicles defining maximums</p>
Saturday – Position 2 (Regent)			
20:20 pm	71.5	81.4	<p>Exceedance: Amplification defining level maximum 1.5 dB above dBA criteria. FOH informed and requested to reduce maximum volumes.</p> <p>Response ENM staff at FOH relayed: It was a vocal spike and mixing desk operators were informed and requested to adjust the set down 1 dB.</p> <p>Other: vehicles/pedestrians contributing, defining maximums</p>

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
22:18 pm	71.3	76.2	<p>Exceedence: Amplification defining level 1.3 dB above dBA criteria. FOH informed and requested to reduce maximum volumes. Typical average volumes include sustained 70 dBA vocal for 2-minutes.</p> <p>Response ENM staff at FOH relayed: FOH levels had increased in the 2-minute period, and mixing desk operators were informed to reduce a minimum of 1 dB.</p> <p>Other: vehicles/pedestrians contributing to maximums</p>

APPENDIX A

ACOUSTIC GLOSSARY

APPENDIX A: GLOSSARY OF ACOUSTIC TERMINOLOGY

A-Weighting	A response provided by an electronic circuit which modifies sound in such a way that the resulting level is similar to that perceived by the human ear.
dB (decibel)	This is the scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and the reference pressure (0.00002 N/m ²).
dB(A)	This is a measure of the overall noise level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
dB(C)	This is a standard weighting of the audible frequencies, commonly used for the measurement of Peak Sound Pressure level.
Facade Noise Level	Refers to a sound pressure level determined at a point close to an acoustically reflective surface (in addition to the ground). Typically a distance of 1 metre is used.
Free Field	Refers to a sound pressure level determined at a point away from reflective surfaces other than the ground with no significant contribution due to sound from other reflective surfaces; generally as measured outside and away from buildings.
Hertz (Hz)	A measure of the frequency of sound. It measures the number of pressure peaks per second passing a point when a pure tone is present.
L_{Aeq} Equivalent Continuous Sound Level	This is the equivalent steady sound level in dB(A) containing the same acoustic energy as the actual fluctuating sound level over the given period. For a steady sound with small fluctuations, its value is close to the average sound pressure level.
L_{A90,T}	This is the dB(A) level exceeded 90% of the time, T.
L_{A10,T}	This is the dB(A) level exceeded 10% of the time, T.
L_{Amax}	is the maximum A-weighted sound pressure level recorded over the period stated.
L_{Cmax}	is the maximum C-weighted sound pressure level recorded over the period stated.

APPENDIX B

DETAILED MONITORING DATA (FIXED POSITIONS)



EVENT NOISE MANAGEMENT

Project Number:	5858	Date:	FRI 22/11/2019
Project Description:	U2: The Joshua Tree Tour (Rehearsal/Line-checks/Event)		
Monitoring Location:	1 - SCG at Poate Road / Poate Lane		
Operator:	Rebecca Wilson		
Instrument:	Nor 140 (2)	Calibrator Model:	Bruel&Kjaer
Instrument Serial:	1405306	Calibrator Serial:	3009973
Instrument NATA Calibration Date:	12/07/19	Calibrator NATA Calibration Date:	21/05/19
Pre-calibration:	94.0	Post calibration:	94.0

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
10:00 – 10:22	-	-	Observations only. Wind in trees, vehicles (Moore Park Road and Poate Road), utility and construction work nearby
10:24 – 10:28	74.1	86.5	Wind in trees, vehicles (Moore Park Road and Poate Road), utility and construction work nearby
10:30	-	-	Utility workers departing
10:32	61	67	Vehicles, wind
10:38 10:46	69	-	Venue: Audible amplified music Other: wind, maximum from vehicles
10:48	71.4	81.2	
10:50	66	80.1	
10:52	71.5	90	
10:54	66.6	79.1	
10:56	66.5	82.9	Venue: None Other: wind occasionally gusty, maximum from vehicles
10:58	62.6	85.7	
11:00	70.2	79.9	
11:02	63.1	81.5	
11:04	69.4	85	
11:06	66.1	85.5	
11:08	66.4	83.4	Venue: Minimal, but occasionally audible (not louder than wind in trees) Other: wind, maximum from vehicles
11:10	72.4	77.9	
11:12	74	83.2	
11:14	81.1	83.7	Venue: Minimal, but occasionally audible (not louder than wind in trees) Other: wind, vehicles, maximum from diesel truck
11:16	74.3	93.2	Venue: Minimal, but occasionally audible Other: wind, maximum from vehicles
11:18	64	84.3	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
11:20	73.6	89.7	Venue: None Other: wind, maximum from vehicles
11:22	69.4	84.2	
11:24	68	82.2	
11:26	70.1	80.1	
11:28	70.4	89.1	
11:30	68.1	83.6	
11:32	76.3	81.1	
11:34	69.1	78.8	
11:36	66.2	79.1	
11:38	85.5	86.5	
11:40	66.1	73	
11:42	68	83.1	
11:44	65.6	80.6	
11:46	74.2	81.3	
11:48	74.2	87.1	
11:50	70.1	75.5	Venue: None Other: dog barking, lawn work, wind, vehicles
11:52	68.3	77.6	
11:54	63	77.3	
11:56	78.4	85.3	
11:58	70	78.5	
12:00	75.1	79.9	Venue: None Other: wind, vehicles
12:02	85.4	95.2	Venue: None Other: wind, vehicles, maximum from motorcycle
12:04	62.6	83	Venue: None Other: wind, vehicles
12:06	79.6	80.3	
12:08	73.5	84.2	
12:10	73.7	84.6	
12:12			Break for SCGT Inactivity
-	-	-	-
13:40			Weather: Sunny, less wind than the morning
13:42	69	80.9	Venue: None Other: birds, vehicles, dog barking
13:44	70.4	84.5	
13:46	72.2	90.5	
13:48	74.5	81	
13:50	74.9	82.9	
13:52	68.6	78.6	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
13:54	64.1	77	
13:56	70.3	76.6	Venue: None Other: birds, vehicles, dog barking
13:58	73.3	83.1	
14:00	66.9	80.7	
14:02	89.2	97.5	Venue: None Other: vehicles, diesel truck, motorcycle
14:04	66.4	76.7	Venue: None Other: birds, wind, vehicles
14:06	68.7	80.2	
14:08	57.3	75.6	
14:10	72.4	83.4	
14:12	72.2	83.9	
14:14	74.1	76.1	
14:16	76.3	94	Venue: Bass audible, below criteria levels Other: birds, wind, vehicles, truck defining maximums
14:18	69.1	72.6	Venue: Drums audible, below criteria levels Other: wind, vehicles defining maximum
14:20	67.2	83.1	
14:22	63.8	77.4	
14:24	69.1	77.3	
14:26	69.8	76.5	
14:28	76	83.4	
14:30	82.7	90.9	Venue: Drums audible, below criteria levels Other: wind, vehicles, truck defining maximum
14:32	73	82.8	Venue: Drums audible, below criteria levels Other: wind, vehicles defining maximum
14:34	71.2	74.5	
14:36	64.9	80.5	
14:38	67.3	84.5	
14:40	84.3	95.8	Venue: Instruments audible, below criteria levels (60A, 73C highest so far) Other: wind, vehicles, motorcycle defining maximum
14:42	85.3	95	Venue: Instruments audible, below criteria levels Other: wind, vehicles, motorcycle defining maximum
14:44	69.2	82.3	Venue: Instruments audible, below criteria levels Other: birds, wind, vehicles defining maximum
14:46	65.9	74.8	
14:48	70.7	76.4	
14:50	72.3	80.6	
14:52	66.8	82.8	Venue: Instruments audible, below criteria levels (65A, 82C loudest maximum from venue, coincident with other noise sources) Other: wind, vehicles, motorcycle defining maximum
14:54	71.3	78.1	
14:56	68.8	82.5	
14:58	77.8	89	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
15:00	69	82.5	
15:02	83	92.6	Venue: Instruments audible, below criteria levels Other: wind, vehicles, large truck defining maximum
15:04	67.2	78.9	Venue: Instruments audible, below criteria levels Other: wind, dog barking, vehicles defining maximum
15:06	66.9	76.3	
15:08	69	78.4	
15:10	70.9	87.6	
15:12	78.6	101.3	Venue: Instruments audible, below criteria levels Other: wind, vehicles, diesel vehicle defining maximum
15:14	73.9	91.7	Venue: Instruments audible, below criteria levels (62A, 73C highest during period) Other: wind, vehicles defining maximum
15:16	72.6	80.8	
15:18	73.4	83.4	Venue: Instruments audible, reverberant, 67A maximum. Correlated to FOH to give operators a target. Other: wind, vehicles defining maximum
15:20	69.5	76.1	Venue: Instruments audible, below criteria levels (65A, 73C highest during period) Other: wind, vehicles defining maximum
15:22	73.2	87.5	
15:24	69.2	81.7	
15:26	67.3	81.8	
15:28	71.6	74.4	
15:30	75.2	82.1	
15:32	69.8	79.5	Venue: Instruments audible, below criteria levels (65A, 76C highest during period) Other: wind, vehicles defining maximum
15:34	79.2	81.8	
15:36	82.4	82.5	Venue: None Other: wind, birds, vehicles defining maximum
15:38	69.6	80.6	
15:40	73	80.2	
15:42	73.3	82.3	
15:44	72.8	79.1	
15:46	72.7	74.9	
15:48	67.8	82.3	Venue: None Other: wind, birds, dog barking, vehicles defining maximum
15:50	67.6	74.5	
15:52	71.1	86.8	Venue: None Other: wind, birds, vehicles defining maximum (including motorcycle, and large van)
15:54	70.7	85.2	
15:56	68	83.7	
15:58	67.7	73.8	
16:00	66.6	78.8	
16:02	-	-	Break for SCGT Inactivity
-	-	-	-

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
			Weather: Cloudy, occasional thunder and lightning
16:52	70.1	78.8	Venue: None Other: wind, distant thunder, vehicles defining maximum
16:54	69.3	78.1	
16:56	69.6	87.6	
16:58	71.4	79.2	
17:00	85.7	99.2	Venue: Just audible on occasion (house music for crowd before main acts) 50A, 67C highest Other: wind, vehicles defining maximum A, thunder defining maximum C
17:02	68.5	87	
17:04	76.5	85.9	
17:06	66.7	82.3	
17:08	78.3	84	
17:10	-	-	Monitoring Paused for Rain – observations continue
-	-	-	-
17:42	53.5	73.8	Venue: Just audible on occasion (house music for crowd before main acts) 62A, 70C highest Other: wind, thunder, vehicles defining maximums
17:44	75.6	79.8	
17:46	70.2	85.8	
17:48	71.6	83.9	
17:50	74.9	89	
17:52	84.1	92.1	
17:54	-	-	Monitoring Paused for Rain – observations continue
-	-	-	-
18:02	72.3	88.7	Venue: Just audible on occasion (house music for crowd before main acts) 62A, 70C highest Other: wind, vehicles defining maximums
18:04	82.6	94.2	
18:06	86.6	87.7	
18:08	86.2	89.8	
18:10	-	-	Monitoring Paused for Rain – observations continue
18:50	65.1	73.2	Venue: Just audible on occasion (house music for crowd before main acts) 62A, 66C highest Other: rain, pedestrians talking, vehicles defining maximums
18:52	62.2	71.7	
18:54	69.6	90.1	Venue: Support Act Noel Gallagher starting. Clearly audible, up to 62A 80C Other: rain, pedestrians talking, vehicles defining maximums
18:56	66.5	83.6	
18:58	70.5	82.8	
19:00	74	93.5	
19:02	69.3	85	Venue: Clearly audible, compliant Other: rain, pedestrians talking, vehicles defining maximums
19:04	72.3	81.5	Venue: Clearly audible, compliant Other: rain, wind, vehicles defining maximums
19:06	73.2	83.4	
19:08	73	84	
19:10	72.8	82.2	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
19:12	75.1	83.4	
19:14	70	78.1	
19:16	73.4	83.9	Venue: Clearly audible, compliant Other: rain, pedestrians talking, vehicles defining maximums
19:18	80.8	96.1	
19:20	77.5	90.6	Venue: Clearly audible, compliant Other: rain, wind, vehicles defining maximums
19:22	74.1	81.2	
19:24	73.8	80.6	
19:26	78	86.8	
19:28	63.8	79.5	
19:30			
19:32	74.3	81.6	
19:34	73.2	82.5	Venue: Clearly audible, generally >3 dB compliant, single note up to 73 dBA FOH informed exceedance Other: rain, wind, vehicles contributing
19:36	78.4	81.8	Venue: Clearly audible, compliant Other: rain, pedestrians talking, vehicles defining maximums
19:38	84.7	85.9	
19:40	71.3	77.9	Venue: Clearly audible, compliant Other: rain, vehicles defining maximums
19:42	70.6	84.1	Venue: Clearly audible, compliant Other: rain, pedestrians talking, vehicles defining maximums
19:44	65.7	77	Venue: Clearly audible, compliant Other: rain, vehicles defining maximums
19:46	65.2	83.9	
19:48	82.3	86.5	
19:50	68	81.3	Venue: None Other: vehicles defining maximums
19:52	77.4	85.1	
19:54	71.3	85	
19:56	68	79.4	
19:58	77.2	90.2	
20:00	74.9	82.6	
20:02	73	80.8	
20:04	69.8	76.7	Venue: None Other: vehicles defining maximums
20:06	70.8	89.4	
20:08	69.1	81.9	
20:10	67	79.1	Venue: Interim 'house' music increasing to audibility, no levels within 5 dB of criteria Other: occasional pedestrians talking, vehicles defining maximums
20:12	72.3	84	
20:14	67.2	79.1	
20:16	63	71.1	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
20:18	72.1	90.9	
20:20	67.9	76.2	
20:22	65.9	74.1	
20:24	65	74.1	
20:26	72	85.3	
20:28	74.5	78.9	
20:30	65.3	70.5	
20:32	64.5	76.8	Venue: Interim 'house' music increasing to audibility, no levels within 5 dB of criteria.
20:34	67.8	76.7	20:33 observed the stage lights going off. Other: occasional pedestrians talking, vehicles defining maximums
20:36	70.2	84.7	Venue: Main act U2 commenced 20:37. Levels confounded with traffic up to 67 dBA from music alone. Other: vehicles defining maximums
20:38	69.9	78.1	
20:40	75.2	83.1	
20:42	84.7	84.9	Venue: Levels confounded with traffic up to 71 dBA. Music alone <67 dB(A). Other: vehicles defining maximums
20:44	71.8	82.7	Venue: Levels confounded with traffic 62-72 dBA. Music alone <67 dB(A). Other: vehicles defining maximums
20:46	83.3	87.5	
20:48	71.8	83.4	
20:50	71.2	85.2	
20:52	70.9	82.4	
20:54	72.3	86.6	Venue: Clearly audible, single note up to 69 dBA. Generally <65 dBA. Compliant. FOH informed Other: vehicles defining maximum dBA and maximum dBC
20:56	73	85.5	Venue: Clearly audible, single note up to 68 dBA, <80 dBC. Generally >3 dB. Compliant. FOH informed Other: vehicles defining maximum dBA and maximum dBC
20:58	73.1	84.8	
21:00	71.5	86.6	Venue: Clearly audible, single note up to 69.5 dBA. Generally >3 dB compliant. FOH informed Other: vehicles defining maximum dBA and maximum dBC
21:02	78.2	86.1	
21:04	71.8	80.7	
21:06	69.1	84.3	
21:08	75.1	84.2	Venue: Clearly audible, generally >3 dB and compliant. Single note 71 dBA exceedance FOH informed Other: vehicles defining maximum dBA and maximum dBC
21:10	75.2	85.2	Venue: Clearly audible however >3 dB below criteria. Other: vehicles defining maximum dBA and maximum dBC
21:12	70.7	81	
21:14	75.6	84.3	
21:16	74.2	82.2	Venue: Clearly audible, sustained singing 70 dBA, one note up to 72 dBA, Exceedance. FOH informed
21:18	74.2	83.6	Other: vehicles defining maximums

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
21:20	71.6	83.6	Venue: Clearly audible however >3 dB below criteria. Other: vehicles and/pedestrians defining maximum dBA and maximum dBC
21:22	72.1	83.4	
21:24	70.5	82.4	
21:26	71.3	81.1	Venue: During reduced traffic identified as 63 dBA, 75 dBC. Other: vehicles and/pedestrians defining maximum dBA and maximum dBC
21:28	75.4	80.8	Venue: During reduced traffic identified as 66 dBA, 73 dBC. Other: vehicles and/pedestrians defining maximum dBA and maximum dBC
21:30	73.6	86.1	Venue: Clearly audible however >3 dB below criteria. Other: vehicles and/pedestrians defining maximum dBA and maximum dBC
21:32	68.2	77.3	
21:34	72.8	79.7	
21:36	73.1	80.3	Venue: Clearly audible, maximum of 68 dBA and 77dBC. FOH informed approaching limits. Other: vehicles defining maximum dBA and maximum dBC
21:38	70.8	80.1	Venue: Clearly audible however generally >3 dB below criteria, and never above criteria. Other: vehicles defining maximum dBA and maximum dBC
21:40	73.9	82.4	
21:42	73.1	81.8	
21:44	67.6	83.3	
21:46	77.1	82	
21:48	68.6	80.4	
21:50	66.7	77.1	
21:52	70.8	87.1	
21:54	70.4	83.1	
21:56	64.3	77.8	Venue: Clearly audible however generally >3 dB below criteria, and never above criteria. Other: vehicles defining maximum dBA and maximum dBC
21:58	71.9	84.3	
22:00	68.2	84.4	Venue: Clearly audible however generally >3 dB below criteria, and never above criteria. Other: garage door opening nearby, vehicles defining maximum dBA and maximum dBC
22:02	67.9	76.7	Venue: Clearly audible however generally >3 dB below criteria, and never above criteria. Other: vehicles defining maximum dBA and maximum dBC
22:04	67.6	78.6	
22:06	65.6	79.2	
22:08	66.6	80.9	
22:10	71.9	82.7	
22:12	64.8	76.6	Venue: Clearly audible however generally >3 dB below criteria, and never above criteria. Crowd cheers audible. Other: vehicles defining maximum dBA and maximum dBC

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
22:14	69.6	86.8	Venue: Clearly audible however generally >3 dB below criteria, and never above criteria. Other: vehicles defining maximum dBA and maximum dBC
22:16	68.1	80	
22:18	69.8	83.3	
22:20	65	79.1	Venue: Clearly audible however generally >3 dB below criteria, and never above criteria. Other: vehicles defining maximum dBA and maximum dBC
22:22	62	78.7	
22:24	70.2	80	
22:26	65.2	80.5	
22:28	86.8	86.9	Venue: Clearly audible however generally >3 dB below criteria, and never above criteria. Other: pedestrian talking to monitoring staff and vehicles defining maximum dBA and maximum dBC
22:30	65.2	74.1	Venue: Clearly audible however generally >3 dB below criteria, and never above criteria. Other: vehicles defining maximum dBA and maximum dBC
22:32	63.9	71.3	
22:34	68.6	80.5	
22:36	72.3	81.9	
22:38	69.5	79.7	
22:40	68.3	79.3	
22:42	66.1	78.9	
22:44	68.9	77.7	
22:46	69.8	82	Venue: Clearly audible however generally >3 dB below criteria, and never above criteria. Other: pedestrian talking into microphone defining maximum dBA and maximum dBC
22:48	86.5	85.8	
22:50	67.2	76	
22:52	69.7	74.9	Venue: Clearly audible 'finale'. Generally >3 dB below criteria. FOH informed of brief spike to 69.7 dBA. Other: vehicles and pedestrians defining maximum dBA and maximum dBC
22:54	62.3	76.2	Venue: Event noise just barely audible. Other: vehicles and pedestrians defining maximum dBA and maximum dBC
22:56	65.1	76.8	
22:58	65.6	77.8	Venue: Event noise just barely audible (low volume 'house music'). Other: vehicles and pedestrians defining maximum dBA and maximum dBC
23:00	70.5	85	Venue: Event noise inaudible. Other: vehicles and pedestrians defining maximum dBA and maximum dBC



EVENT NOISE MANAGEMENT

Project Number:	5858	Date:	FRI 22/11/2019
Project Description:	U2: The Joshua Tree Tour (Rehearsal/Line-checks/Event)		
Monitoring Location:	2 - SCG at Leinster and Regent Streets		
Operator:	Daniel Richardson		
Instrument:	Nor 140 (9)	Calibrator Model:	Bruel&Kjaer
Instrument Serial:	1404664	Calibrator Serial:	3009973
Instrument NATA Calibration Date:	19/11/19	Calibrator NATA Calibration Date:	21/05/19
Pre-calibration:	94.0	Post calibration:	94.0

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
10:00 – 10:16	-	-	Observations only. Wind in trees, vehicles (Moore Park Road, and Regent Street)
10:18	80.8	82.5	Venue: None Other: wind, vehicles
10:20	73.2	84.9	
10:22	73.6	89.7	
10:24	74.1	86.5	
-	-	-	-
10:44	71.1	80.7	Venue: Just barely audible during breaks in traffic, approximately 60A, 70C maximum Other: wind, vehicles, defining maximums
10:46	76.2	79	
10:48	72.9	81.8	
10:50	77.6	85.4	Venue: None Other: wind, vehicles, defining maximums
10:52	79.9	85.3	Venue: Just barely audible during breaks in traffic Other: wind, vehicles, construction, defining maximums
10:54	69	83.2	
10:56	73.1	84.8	
10:58	72.4	81.7	
11:00	70.2	76	
11:02	70.7	80.2	
11:04	78.5	80.8	
11:06	72.5	86.1	
11:08	80.7	87.2	
11:10	68.7	77.6	
11:12	74.3	86.5	
11:14	80.9	90.4	
11:16	68.8	81.3	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
11:18	76	83.2	Venue: None Other: wind, vehicles, defining maximums
11:20	73.3	79.2	
11:22	74.9	83.7	
11:24	83.3	83.9	
11:26	79	80.1	
11:28	72.7	82.4	
11:30	72.9	78.3	
11:32	76.4	83.2	
11:34	75.5	82.7	
11:36	68.5	75.3	
11:38	87.5	95	Venue: None Other: wind, vehicles, motorcycle defining maximums
11:40	76.1	82.5	Venue: None Other: wind, vehicles, defining maximums
11:42	71.8	83.8	
11:44	75.5	85.6	
11:46	73.9	84	
11:48	71.3	82.2	
11:50	74.7	82.5	
11:52	68.3	84.3	
11:54	74	86.4	
11:56	66.8	87.5	
11:58	67.2	83.8	
12:00	69.5	80.7	
12:02	81.6	86.4	
12:04	77.3	89	
12:06	71.7	81	
12:08	75.4	78.2	
12:10	-	-	Break for SCGT Inactivity
-	-	-	-
13:40	92.7	91.7	Venue: None Other: vehicles, loud motorbike, defining maximum
13:42	91.9	90.9	
13:44	73	82.7	Venue: None Other: vehicles, wind, trucks, construction activities, music from a nearby house, defining maximums
13:46	68	78.9	
13:48	86.9	86.2	
13:50	69.7	81.7	
13:52	67.5	78	
13:54	74.6	85.6	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
13:56	65.2	81	
13:58	68.6	83.9	
14:00	68.3	80.4	
14:02	79.8	95	Venue: None Other: vehicles, loud motorbike, defining maximum
14:04	66.5	78.7	Venue: None Other: vehicles, wind, trucks, construction activities, music from a nearby house, defining maximums
14:06	81	88.4	
14:08	70.4	79.6	
14:10	68.5	79	
14:12	67	78.7	
14:14	76.6	83.6	Venue: Drums audible, >5 dB below criteria Other: vehicles and other ambient activities defining maximum
14:16	65.1	79.3	
14:18	69.7	77.8	
14:20	69.8	83.5	
14:22	69.8	83.9	
14:24	66.6	79	
14:26	81.1	81.9	
14:28	72.1	77.9	Venue: Drums audible, >3 dB below criteria Other: vehicles and other ambient activities defining maximum
14:30	71.2	84.5	
14:32	85.8	84.9	Venue: Drums audible, >3 dB below criteria Other: vehicles and other ambient activities defining maximum
14:34	69.3	78.5	Venue: None Other: vehicles defining maximum
14:36	77.7	87.2	Venue: Drums audible, >5 dB below criteria Other: vehicles and other ambient activities, motorbike defining maximum
14:38	67.6	82	Venue: Instruments dominant up to 67.6A 82C. Informed FOH approaching dBA criteria. Other: vehicles and other ambient activities contributing.
14:40	74.3	83.9	Venue: Instruments clearly audible Other: vehicles and other ambient activities defining maximum
14:42	69.7	84.9	Venue: Instruments occasionally audible Other: music from nearby resident clearly audible, vehicles and other ambient activities defining maximum
14:44	74	82.4	Venue: None Other: vehicles defining maximum
14:46	69.2	75.4	
14:48	68.7	85.3	Venue: Music audible in breaks of traffic, >3 dB below criteria Other: vehicles defining maximum
14:50	70.5	84	Venue: Music measured up to 71 dBA, coincident with vehicles (approx. 68 dBA after corrections). Informed FOH of high levels. Other: vehicles defining maximum
14:52	75.1	82.6	Venue: None

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
14:54	77.1	81.2	
14:56	73.4	81.1	Other: vehicles defining maximum
14:58	70.7	79.3	
15:00	64.9	76.5	
15:02	74.6	82.5	
15:04	72.2	86	
15:06	70.9	86.2	Venue: Music audible in breaks of traffic, >3 dB below criteria
15:08	72.2	79	Other: vehicles defining maximum
15:10	76.3	84.4	
15:12	73.7	82	
15:14	79.1	80.9	
15:16	68.6	85.8	Venue: Music defining period, maximum of 68.6A and 85.8C, FOH informed approaching dBA limit. Other: vehicles contributing.
15:18	75	86.7	
15:20	67.5	78.6	Venue: Music audible in breaks of traffic, >3 dB below criteria
15:22	71.6	84.1	Other: vehicles defining maximum
15:24	73.2	81.6	
15:26	69.4	81.4	Venue: None
15:28	64.6	82	Other: vehicles and pedestrians defining maximum
15:30	72.3	81.1	
15:32	76.7	81.4	Venue: Music audible in breaks of traffic, >3 dB below criteria
15:34	79.1	81.4	Other: vehicles and pedestrians defining maximum
15:36	74.9	82.5	
15:38	74.5	78.7	
15:40	73.3	80.8	
15:42	70.4	78.8	
15:44	79.4	88.9	
15:46	68.9	79.6	
15:48	76	89.9	Venue: None
15:50	68.6	78.1	Other: vehicles and pedestrians defining maximum
15:52	68.1	79.4	
15:54	64.8	77.3	
15:56	83	83.8	
15:58	78	81.1	
16:00	67.4	75.6	
16:02	83.2	83.1	Venue: None

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
16:04	67.7	88.4	Other: vehicles and pedestrians defining maximum
16:06	79.8	81.3	
16:08	70.9	79.5	
16:10	68.5	79.5	
16:12	68.3	81.8	
16:14	66	80.7	
16:16	76.9	80.5	
16:18	68.7	82.2	
16:20	74.3	86	
16:22	85.5	84.8	
16:24	75.2	85.8	
16:26	70.6	80.4	
16:28	81.1	86.2	
16:30	67.7	81.2	
16:32	78.4	86	Venue: None Other: vehicles and thunder, intermittent rain defining maximums. Monitoring shifted to undercover location closer to the nearby Hotel temporarily.
16:34	-	-	
16:36	78.9	79.3	
16:38	68.5	79.5	
-	-	-	
16:50	85.5	84.8	
16:52	75.1	85.8	
16:54	69.8	80.4	
16:56			
16:58	87.7	81.2	
-	-	-	
19:34	89.2	89.8	Venue: Some low volume music audible, assume intermission 'house music' Other: vehicles and pedestrian traffic defining maximums.
19:36	75.7	80.7	
19:38	85.6	86.4	
19:40	73.7	79.5	
19:42	76.7	83.2	
19:44	76.1	85.5	
19:46	96.1	94.9	
19:48	83.5	96	
19:50	93.1	92.1	
19:52	85.8	85.6	
19:54	79	87.1	
19:56	72.1	80.2	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
19:58	67.5	78.2	Other: vehicles, pedestrian traffic, and hotel noise defining maximums.
20:00	80.1	82.1	
20:02	67.6	82.6	
20:04	95.5	94.3	
20:06	71.1	86.4	
20:08	92	91.1	Venue: Music increased in volume, still significantly below criteria (> 5 dB). Other: vehicles, pedestrian traffic, and hotel noise defining maximums.
20:10	71.9	84.5	
20:12	67.3	81.8	
20:14			
20:16	75.1	82.6	
20:18	74.5	77.5	
20:20	71.4	76.8	
20:22	73.8	90.6	
20:24	65.1	76.7	
20:26	74.9	93.3	
20:28	65.4	80.7	Venue: Music further increased in volume, still significantly below criteria (> 5 dB). Other: vehicles, pedestrian traffic, and hotel noise defining maximums.
20:30	80.1	83.1	
20:32	79.2	81	Venue: Main act U2 commenced 20:37. Levels up to 69.5 dBA from music alone. FOH informed close to criteria. Other: vehicles defining maximums
20:34	73.2	79.1	
20:36	73.4	79.2	Venue: Levels generally operating within 3-5 dB range below the dBA criteria. Other: vehicles defining maximums
20:38	76.7	84.5	
20:40	74.1	88	
20:42	72.3	81.1	Venue: Music generally 67-68 dBA, single maximum at 73 dBA, exceedance. FOH informed to reduce. Other: vehicles defining dBA maximum and may be contributing to measured exceedance (up to 3 dB addition to result)
20:44	74.6	81.7	
20:46	73.4	83	Venue: Levels generally operating > 3 dB below criteria, with music maximums within 3 dB of the dBA criteria. Compliant Other: vehicles defining maximums
20:48	71	84.1	
20:50	71.9	81.6	
20:52	72.8	83.1	
20:54	76.4	85.5	
20:56	81.6	83.2	
20:58	69.3	80.6	
21:00	69.2	81.3	
21:02	70.4	80.7	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
21:04	70.1	82.9	
21:06	72.4	83.7	
21:08	78.8	87.9	
21:10	117.7	118.4	Venue: Levels generally operating within 3-5 dB range below the dBA criteria. Other: Pedestrian / patron yelling into microphone, vehicles defining maximums
21:12	79.7	84.7	Venue: Levels generally operating within 3-5 dB range below the dBA criteria. Other: vehicles, motorbike defining maximums
21:14	74.2	84	Venue: Levels generally operating within 3 dB below the dBA criteria. Other: vehicles defining maximums
21:16	73.9	83.8	
21:18	84.7	84.1	
21:20	71.1	82.2	
21:22	73	81	
21:24	69.2	80.8	
21:26	76.8	82.6	
21:28	76.9	80	
21:30	94	92.8	Venue: Levels generally operating within 3 dB below the dBA criteria. Other: vehicles and fireworks to the north, defining maximums
21:32	71.1	81	Venue: Levels generally operating within 3 dB below the dBA criteria. Other: vehicles defining maximums
21:34	72	78.7	
21:36	72.4	80.5	
21:38	69.6	80.8	
21:40	69.9	80.4	
21:42	66.1	78.7	Venue: Levels generally operating >3 dB below the dBA criteria. Other: vehicles defining maximums
21:44	66.1	80	
21:46	67.9	78.2	
21:48	71.3	80.3	Venue: Levels generally operating within 3 dB below the dBA criteria. Other: vehicles and frequent car doors defining maximums
21:50	69.2	81.8	
21:52	67.2	80.2	
21:54	71.8	81.6	
21:56	67.3	79.7	
21:58	68.1	80.7	
22:00	76.3	94	Venue: Levels generally operating within 3 dB below the dBA criteria. Other: vehicles, car horn defining maximums
22:02	85.6	85.4	Venue: Levels generally operating within 3 dB below the dBA criteria. Other: vehicles and frequent car doors defining maximums

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
22:04	69.2	77	Venue: Levels generally operating within 3 dB below the dBA criteria, maximum clear at 69.2A 77C. Compliant Other: vehicles contributing
22:06	70	79.7	Venue: Levels generally operating >3 dB below the dBA criteria. Other: vehicles defining maximums
22:08	72	82.5	
22:10	69.9	80.6	
22:12	66.8	81.2	
22:14	65.3	77.6	
22:16	68.4	83.5	
22:18	72.9	99	Venue: Levels generally operating >3 dB below the dBA criteria. Other: vehicles / motorcycle defining maximums
22:20	71.7	81.1	Venue: Levels generally operating >3 dB below the dBA criteria. Other: vehicles defining maximums
22:22	72.7	83.5	
22:24	65.4	82.5	
22:26	75.8	78.5	
22:28	83.2	82.3	
22:30	65.2	75.9	
22:32	73.1	78.5	
22:34	63.7	77.8	
22:36	64.7	79.2	
22:38	65.1	78.5	
22:40	72.1	80.6	Venue: Music volume reduced, levels generally operating >5 dB below the dBA criteria, >10 dB below dBC criteria Other: vehicles, pedestrians, car doors defining maximums
22:42	88.8	89	
22:44	73.1	82.7	
22:46	84.6	85	
22:48	71.7	79.1	
22:50	78.9	91.6	Batteries on instrument ran out. Observations continued to identify if levels increase. Generally inaudible after 22:57. Vehicles, pedestrians, car doors continue to define the noise character of the area.
22:52	65.2	80.5	
22:54 – 23:00	-	-	



EVENT NOISE MANAGEMENT

Project Number:	5858	Date:	FRI 22/11/2019
Project Description:	U2: The Joshua Tree Tour (Rehearsal/Line-checks/Event)		
Monitoring Location:	3 - SCG at Robertson Road and Martin Road		
Operator:	Gyani Shankar Sharma		
Instrument:	Nor 140 (1)	Calibrator Model:	Bruel&Kjaer
Instrument Serial:	1404621	Calibrator Serial:	3009973
Instrument NATA Calibration Date:	10/06/19	Calibrator NATA Calibration Date:	21/05/19
Pre-calibration:	94.0	Post calibration:	94.0

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
10:00 – 11:58	-	-	Venue: just audible on occasion Other: Traffic
14:00 – 15:46	-	-	Venue: just audible on occasion Other: Traffic
15:46 – 19:52	-	-	No monitoring, significant rain periods
19:54 – 22:08	-	-	Venue: just audible on occasion Other: Traffic
22:10	64.6	72.0	Venue: just audible on occasion Other: Traffic
22:12	69.2	73.1	Venue: Music clearly audible, 5 dBA louder than any other periods Other: traffic
22:14	76.2	76.7	Venue: just audible Other: Bus reversing, horn, defining maximums
22:16	53.7	66.1	Venue: barely audible Other: Traffic
22:18 – 23:00	-	-	Venue: just audible on occasion Other: Traffic

Note: the monitoring results of the Position 3 instrumentation did not record the full data-sets for inclusion in the appendix. However during the event the position was staffed throughout and all live observations of the monitoring results included full compliance.



EVENT NOISE MANAGEMENT

Project Number:	5858	Date:	SAT 23/11/2019
Project Description:	U2: The Joshua Tree Tour (Rehearsal/Line-checks/Event)		
Monitoring Location:	1 - SCG at Poate Road / Poate Lane		
Operator:	Rebecca Wilson		
Instrument:	Nor 140 (2)	Calibrator Model:	Bruel&Kjaer
Instrument Serial:	1405306	Calibrator Serial:	3009973
Instrument NATA Calibration Date:	12/07/19	Calibrator NATA Calibration Date:	21/05/19
Pre-calibration:	94.0	Post calibration:	93.9

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
13:04	70.3	72.6	Venue: None Other: vehicles, birds
13:06	68.6	78	
13:08	65.4	75	
13:10	69.7	79.8	
13:12	86.5	86.4	Venue: None Other: vehicles, birds, aircraft
13:14	76.2	84.5	Venue: None Other: vehicles, birds, dog barking
13:16	62	79.5	Venue: None Other: vehicles, birds, trucks
13:18	65.9	75.9	Venue: None Other: vehicles, birds
13:20	68.5	77.6	
13:22	72.1	76.2	
13:24	67.4	77.9	
13:26	69.6	79.8	
13:28	68.9	85.1	
13:30	71.9	75.9	
13:32	69.8	81	
13:34	66	73.8	
13:36	68.9	81.3	
13:38	72.1	85.4	
13:40	70.6	76.2	
13:42	69.5	76.1	
13:44	76.7	81.2	
13:46	67.1	84.7	
13:48	67.3	74.1	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
13:50	70.2	73.5	
13:52	67.9	75.5	
13:54	70.1	78.6	
13:56	69.6	73.2	
13:58	69.6	77.3	
14:00	70	76	
14:02	64.9	74.1	Venue: None Other: vehicles, birds
14:04	66.4	80.5	
14:06	67.2	78.1	
14:08	70.4	76.9	
14:10	70.4	77.9	
14:12	75.8	85.1	
14:14	68.8	77.1	
14:16	67.7	75.5	Venue: None Other: vehicles, birds, helicopters
14:18	77.9	78	
14:20	73.6	82	Venue: None Other: vehicles, birds
14:22	75.1	92.7	
14:24	60.5	71	
14:26	67.9	77.6	Venue: None Other: vehicles, birds, garage door lifting
14:28	69.6	74.9	
14:30	66.4	81.5	Venue: None Other: vehicles, birds
14:32	69	75.6	
14:34	71.4	82	Venue: None Other: vehicles, birds, conversation
14:36	78.8	101.4	Venue: None Other: vehicles, birds, local loud vehicles defining high maximum
14:38	69.4	77.5	Venue: None Other: vehicles, birds
14:40	75.9	84.6	
14:42	58.3	68.2	Venue: Audible music, low volumes Other: vehicles, birds
14:44	70.7	74.3	
14:46	81	93	Venue: Audible music, low volumes Other: vehicles, birds, motorcycle maximum
14:48	67.8	79.7	Venue: Audible music, low volumes Other: vehicles, birds, defining maximums
14:50	80.7	95.2	
14:52	70	95.7	
14:54	79.2	80.8	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
14:56	81.3	81.4	
14:58	83.8	83.7	
15:00	79.9	85	Venue: Audible music, low volumes
15:02	83	85.1	Other: pedestrians talking near microphone, vehicles, birds, defining maximums
15:04	80.5	82.5	
15:06	80.9	82.2	
15:08	70.8	76	
15:10	65.9	74.8	
15:12	66.3	76.3	
15:14	67.6	84.4	
15:16	66.8	77.1	
15:18	66.4	73.8	
15:20	61.3	78.8	Venue: Audible music, low volumes
15:22	73.6	89.4	Other: vehicles, birds, defining maximums
15:24	66.1	86.9	
15:26	70.5	80.1	
15:28	70.7	76.9	
15:30	71.7	82.9	
15:32	67.2	77.9	
15:34	69.6	82.5	
15:36	86.6	84.9	
15:38	-	-	Break for SCGT Inactivity
-	-	-	-
16:04	77.1	78.7	Venue: None Other: vehicles, birds
16:06	89.3	100.2	Venue: None Other: vehicles, birds, motorbike
16:08	72.8	89.1	
16:10	64.7	72.8	
16:12	66.9	78.3	Venue: None
16:14	75.3	91.4	Other: vehicles, birds
16:16	68.2	72	
16:18	75	78.6	
16:20			Break for SCGT Inactivity
-	-	-	-
17:38			High clouds above whole area
17:40	62.5	71.2	Venue: None

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise	
17:42	80.3	85.6	Other: vehicles, birds	
17:44	67.3	74.6		
17:46	70.4	77.7		
17:48	86.3	86.2	Venue: None Other: pedestrian conversation near microphone, vehicles, birds	
17:50	85.1	85		
17:52	70.4	89.8		
17:54	67.6	74.5		
17:56	71	82.1		
17:58	67.6	84		
18:00	78.3	79.2		
18:02	78.2	82.8		
18:04	69.3	78.8		
18:06	76	90.6		
18:08	81.4	83.9	Venue: None Other: vehicles, birds	
18:10	68.5	75.7		
18:12	85	95.3		
18:14	69.4	77.6		
18:16	74.6	75.3		
18:18	69.9	80.3		
18:20	67.7	74		
18:22	73.7	82.8		
18:24	69.7	78.9		Venue: Just audible. Ambient noise much louder. Other: vehicles, birds
18:26	69.2	78.8		Venue: None Other: vehicles, birds
18:28	69.3	74.8		
18:30	70.6	87.8	Venue: Just audible. Ambient noise much louder. Other: vehicles, birds	
18:32	73	88	Venue: Support Act Noel Gallagher starting, clearly audible. Compliant by >3 dB. Other: vehicles, birds defining maximums.	
18:34	76.9	80	Venue: Clearly audible. Other: vehicles, birds defining maximums.	
18:36	75	85.6	Venue: Clearly audible Other: pedestrian conversation near microphone, vehicles, birds, defining maximums	
18:38	72.6	87.2	Venue: Clearly audible. Other: vehicles, birds defining maximums.	
18:40	70.1	79.8		
18:42	69.9	79		
18:44	69.5	79.2		

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
18:46	73.5	78.5	
18:48	81.4	82.5	Venue: Clearly audible Other: pedestrian conversation near microphone, vehicles, birds, defining maximums
18:50	77.1	98.9	Venue: Clearly audible.
18:52	71.6	79.9	Other: vehicles, birds defining maximums.
18:54	66.6	78.6	Venue: Clearly audible Other: dog barking, vehicles, birds, defining maximums
18:56	64.1	80	Venue: Clearly audible.
18:58	80.4	81.5	Other: vehicles, birds defining maximums.
19:00	74	79.3	Venue: Clearly audible Other: pedestrian conversation near microphone, vehicles, birds, defining maximums
19:02	69.2	86.6	Venue: Clearly audible. Other: vehicles, birds defining maximums.
19:04	70	85.9	
19:06	65.9	78	
19:08	73.4	80.8	
19:10	71.8	83.2	
19:12	77.4	85.6	
19:14	70.3	79.3	
19:16	70.3	80	
19:18	80.1	81.7	Venue: Clearly audible Other: pedestrian conversation near microphone, vehicles, birds, defining maximums
19:20	69.6	88.7	Venue: Clearly audible.
19:22	65.4	75.5	Other: vehicles, birds defining maximums.
19:24	71.5	80	Venue: Clearly audible, typically 63C 72C, maximums of 65A 76C Other: vehicles, birds defining maximums.
19:26	74.5	74.3	Venue: Clearly audible. Other: vehicles, birds defining maximums.
19:28	60.9	67.8	
19:30	63.3	74.6	
19:32	66	74.8	Venue: Just audible intermission 'house music'
19:34	66.5	71.2	Other: pedestrian conversation near microphone, vehicles, birds, defining maximums
19:36	80.3	80.8	
19:38			Break for SCGT Inactivity
-	-	-	-
20:08			U2 Started early 20:08
20:10	80.1	82.3	Venue: Main act U2 commence, clearly audible. Other: Significant vehicle activity defining maximums

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
20:12	72	80.2	Venue: Clearly audible, 65A and 75C music maximums Other: Vehicles defining maximums
20:14	67.6	79.1	Venue: Clearly audible however >3 dB below criteria. Other: vehicles defining maximum dBA and maximum dBC
20:16	72.1	78.5	
20:18	68.3	78.7	
20:20	68.5	81.2	Venue: Clearly audible, U2 lead singer up to 67A. FOH informed Other: Vehicles defining maximums
20:22	64.4	80	Venue: Clearly audible however >3 dB below criteria. Other: vehicles defining maximum dBA and maximum dBC
20:24	67.2	77.9	
20:26	69.5	82.4	
20:28	69.9	84.8	
20:30	68.8	83.6	
20:32	69.7	82.7	Venue: Clearly audible generally >3 dB below criteria. Maximum at 68.5A 82C. Compliant. FOH informed Other: vehicles defining maximum dBA and maximum dBC
20:34	70.5	80.5	Venue: Clearly audible however >3 dB below criteria. Other: vehicles defining maximum dBA and maximum dBC
20:36	66.3	80.9	
20:38	67.2	76.5	
20:40	67.1	82.3	
20:42	71.2	86.1	Venue: Clearly audible generally >3 dB below criteria. Maximum at 71A exceedance. FOH informed Other: vehicles defining maximum dBA and maximum dBC
20:44	70.3	84.2	Venue: Clearly audible however >3 dB below criteria. Other: vehicles defining maximum dBA and maximum dBC
20:46	69.6	81.6	
20:48	68.5	80.8	
20:50	71.6	81.9	
20:52	73.6	82.6	
20:54	68.4	82.8	
20:56	72.8	82.1	
20:58	78.7	82.4	Venue: Clearly audible generally 67 dBA. Maximum at 71A exceedance. FOH informed Other: vehicles defining maximum dBA and maximum dBC
21:00	69.7	80.9	Venue: Clearly audible however >3 dB below criteria. Occasional vocal spikes never exceeding criteria. Other: vehicles defining maximum dBA and maximum dBC
21:02	65.8	78.1	
21:04	76.4	82.5	
21:06	72.6	79.9	
21:08	70	80.6	
21:10	68.3	80.3	
21:12	72.2	85.2	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
21:14	69.6	74.9	
21:16	67.1	79.1	
21:18	71.2	81.8	Venue: Clearly audible generally 67 dBA. Maximum at 68A compliant. FOH informed Other: vehicles defining maximum dBA and maximum dBC
21:20	73.5	81.9	Venue: Clearly audible generally 67 dBA. Maximum at 71A exceedance. FOH informed Other: vehicles defining maximum dBA and maximum dBC
21:22	70.9	81.5	
21:24	72.1	83.7	Venue: Clearly audible however >3 dB below criteria. Occasional vocal spikes never exceeding criteria.
21:26	68.7	79.6	Other: vehicles defining maximum dBA and maximum dBC
21:28	70.3	81.3	
21:30	74.5	81.6	Venue: Clearly audible generally 67 dBA. Maximum at 68.5A 78C compliant. FOH informed Other: vehicles defining maximum dBA and maximum dBC
21:32	75.8	78.9	Venue: Clearly audible generally 67 dBA. Maximum at 69A 77C compliant. FOH informed Other: vehicles defining maximum dBA and maximum dBC
21:34	78	84.3	Venue: Clearly audible generally 67 dBA. Maximum at 68A. FOH informed Other: vehicles defining maximum dBA and maximum dBC
21:36	76.7	88.3	
21:38	89.7	90.9	
21:40	74.6	81.2	
21:42	64	77.9	
21:44	70.5	79.8	
21:46	70.5	79	
21:48	70.5	82.3	
21:50	69.1	82.7	Venue: Clearly audible however >3 dB below criteria. Occasional vocal spikes never exceeding criteria.
21:52	67.8	79.3	Other: vehicles defining maximum dBA and maximum dBC
21:54	66.9	79.4	
21:56	71.6	80.6	
21:58	69.9	80.1	
22:00	64.5	71.8	
22:02	68.2	74.6	
22:04	76.6	77.6	
22:06	76.3	82.9	
22:08	70	81.7	Venue: Clearly audible generally 66 dBA. Maximum at 69A. FOH informed Other: vehicles defining maximum dBA and maximum dBC
22:10	69.4	81.5	Venue: Clearly audible however >3 dB below criteria. Occasional vocal spikes never exceeding criteria. Other: vehicles defining maximum dBA and maximum dBC

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
22:12	68.2	83.4	Venue: Clearly audible however >3 dB below criteria. Occasional vocal spikes never exceeding criteria. Other: vehicles defining maximum dBA and maximum dBC
22:14	72.1	79.9	
22:16	69.8	86.3	
22:18	66.7	74.9	
22:20	70.6	79.7	
22:22	75.6	81.5	
22:24	65.9	83.5	
22:26	69.8	81.6	
22:28	68.6	78.3	
22:30	71	83.2	Venue: Main act concluded just prior to 22:30, just audible 'house music' (INXS) played for 2.5minutes. Other: Vehicles and crowds departing significantly louder than music.
22:32	67	73.5	All amplification ceased at 22:33
22:34	80.7	82.8	Vehicles and pedestrians.



EVENT NOISE MANAGEMENT

Project Number:	5858	Date:	FRI 22/11/2019
Project Description:	U2: The Joshua Tree Tour (Rehearsal/Line-checks/Event)		
Monitoring Location:	2 - SCG at Leinster and Regent Streets		
Operator:	Daniel Richardson		
Instrument:	Nor 140 (9)	Calibrator Model:	Bruel&Kjaer
Instrument Serial:	1404664	Calibrator Serial:	3009973
Instrument NATA Calibration Date:	19/11/19	Calibrator NATA Calibration Date:	21/05/19
Pre-calibration:	94.0	Post calibration:	94.1

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
13:02	69.5	84.3	Venue: None Other: Traffic, pedestrians
13:04	84.1	83.7	Venue: Just audible guitar Other: Traffic, pedestrians defining maximums
13:06	71.3	80.2	Venue: None Other: Traffic, pedestrians
-	-	-	-
13:12	92	90.7	Venue: None Other: Traffic, pedestrians, commercial aircraft defining maximum
13:14	82.8	83.2	Venue: None Other: Traffic, pedestrians
13:16	85.1	88.8	Venue: None Other: Traffic, pedestrians, loud performance vehicle defining maximum
13:18	68.5	76.3	Venue: None Other: Traffic, pedestrians
13:20	70.7	76.3	
13:22	66.5	80.5	
13:24	85	83.3	
13:26	65.2	73.5	
13:28	73.3	78.8	
13:30	67.8	79.2	
13:32	67.6	75.2	
13:34	89.4	95.1	Venue: None Other: Traffic, pedestrians talking into microphone
13:36	66.7	79.1	Venue: None Other: Traffic, pedestrians
13:38	68	81.2	
13:40	68.3	76.4	
13:42	67.8	75.2	
13:44	72.4	82.2	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
13:46	75.6	77.7	Venue: None Other: Traffic, pedestrians
13:48	72.2	82.2	
13:50	66.3	82	
13:52	67.3	84.8	
13:54	72.7	87.8	
13:56	79.3	82.8	
13:58	69.5	76.8	
14:00	69.5	83.8	
14:02	68.5	78.3	
14:04	67.6	81	
14:06	68	78	
14:08	69.3	76.8	
14:10	70.2	87	
14:12	76.4	86.5	
14:14	71.6	81.3	
14:16	71.3	77.9	Venue: None Other: Traffic, pedestrians, helicopter defining maximums
14:18	66.9	80.7	
14:20	65.7	76.3	Venue: None Other: Traffic, pedestrians, nearby resident playing clarinet contributing to dBA
14:22	69.7	80.1	
14:24	69	87.3	
14:26	83.1	84	Venue: None Other: Traffic, pedestrians
14:28	64.2	75.4	
14:30	69	79.1	
14:32	65.2	76.8	
14:34	66.4	85.4	
14:36	63.6	83.3	
14:38	67.5	77.9	
14:40	68	84.3	
14:42	74.2	80.8	
14:44	67.3	75.7	
14:46	70.5	80.2	Venue: Just audible music, > 5dB below criteria Other: Traffic, pedestrians, defining measured levels
-	-	-	-
14:56	70.8	78.3	Venue: Just audible music, > 5dB below criteria Other: Traffic, pedestrians, defining measured levels
14:58	67	76.8	
15:00	66.5	80.9	Venue: None Other: Traffic, pedestrians

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
15:02	65.2	80.5	Venue: None Other: Traffic, pedestrians, nearby resident playing clarinet contributing to dBA
15:04	66.1	76.5	
15:06	74.7	79.3	
15:08	79.1	81.6	
15:10	85.2	87.1	Venue: None Other: Traffic, pedestrians, dog barking
15:12	69.4	85.7	Venue: None Other: Traffic, pedestrians, nearby resident playing clarinet contributing to dBA
15:14	91.7	91.3	Venue: None Other: Traffic, pedestrians, motorbike
15:16	65.6	77.1	Venue: None Other: Traffic, pedestrians, nearby resident playing clarinet contributing to dBA
15:18	76.3	80.5	
15:20	73.7	83.2	
15:22	69.8	85.2	
15:24	63.4	73.7	
15:26	79.7	83.1	Venue: None Other: Traffic, pedestrians, motorbike
15:28	71.7	76.8	Venue: None Other: Traffic, pedestrians, nearby resident playing clarinet contributing to dBA
15:30	77.1	84.2	
15:32	72.1	78.6	
15:34	64.3	73.9	
15:36	71.3	82	
15:38	80.1	83	
15:40	86.5	87	
15:42	65.7	80.8	
15:44	91.8	91.8	
15:46	76.3	78.5	
15:48	67.4	81	Venue: None Other: Traffic, pedestrians
15:50	74.7	80.6	
15:52	79.9	81	
15:54	81.7	83.3	
15:56	81.1	82.5	
15:58	64.8	79.5	
16:00	67.9	84.2	
16:02	74.6	89.4	
16:04	69.4	80.5	Venue: None Other: Traffic, pedestrians



Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
16:06	78.3	85.3	Venue: None Other: Traffic, pedestrians
16:08	75.6	82.3	
16:10	72.5	74.4	
16:12	69.2	82.1	
16:14	78.1	80.2	
16:16	72.9	81.2	
16:18	72.2	76.5	
16:20	74.6	85.1	
16:22	80.4	81.8	
16:24	78.9	82.3	
16:26	77.8	79.4	
-	-	-	-
16:32	58.4	67.2	Venue: None Other: Traffic, pedestrians
16:34	68.1	74.9	
16:36	67	78.5	
16:38	77.3	91.2	
16:40	65.6	78.3	
16:42	75.1	95.9	Venue: None Other: Traffic, pedestrians, loud car exhaust maximum
16:44	66.8	79.8	Venue: None Other: Traffic, pedestrians
16:46	67.2	78.6	
16:48	67.8	78.1	
16:50	68.3	82.1	
16:52	68.4	83	
16:54	70.6	80.5	
16:56	73	81.2	
16:58	71.3	75.3	
17:00	83	84.1	
17:02	82.5	83.7	
17:04	93	92.1	
17:06	78.4	79.9	
17:08	80.6	84.4	
17:10	76.4	86.1	
17:12	68.2	76.8	
17:14	67.4	82.6	
17:16	68	77.1	
17:18	67.7	78.9	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
17:20	77.6	83.7	Venue: music from 'gates' just audible.
17:22	74.3	80	Other: Traffic, pedestrians, car door slams defining maximums
17:24	84.2	92.2	Venue: music from 'gates' just audible. Other: Traffic, pedestrians, motorbike maximum
17:26	67.8	77.7	Venue: music from 'gates' just audible.
17:28	73.1	79.6	Other: Traffic, pedestrians, car door slams defining maximums
17:30	72.4	88.8	Rain – measurements may be impacted Venue: barely audible Other: Traffic and pedestrians
17:32	73.2	78.3	
17:34	92.4	91.6	
17:36	65.5	84.2	
17:38	86.9	85.8	
17:40	86	86.1	Venue: barely audible Other: Traffic, pedestrians, hotel patrons
17:42	65.1	78.6	
17:44	81.2	82.5	
17:46	68.4	86.8	
17:48	67.8	84.1	
17:50	75.9	76.7	Venue: barely audible Other: Traffic, pedestrians, hotel patrons, loud car exhaust maximum
17:52	89.7	89	
17:54	79.5	92.9	
17:56	73.1	79.5	Venue: barely audible Other: Traffic, pedestrians
17:58	72.7	81.5	
18:00	72.6	79.2	
18:02	85	89	
18:04	83.4	86.1	
18:06	70.2	83.6	
18:08	69.3	78.2	
18:10	70.5	77.5	Venue: barely audible Other: Traffic, pedestrians, hotel patrons
18:12	81	83.9	
18:14	69.7	81	
18:16	77.1	84.4	
18:18	68.2	76.7	
18:20	71.2	78.7	
18:22	80	82.9	
18:24	89.2	90.3	Venue: barely audible Other: Traffic, pedestrians, hotel patrons / pub karaoke
18:26	71.3	86.7	
18:28	78.7	80.1	
18:30	81.6	82.3	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
18:32	71.4	79.3	
18:34	80.6	82.9	
18:36	75.2	79.1	
18:38	70.6	80.6	
18:40	82.2	89.1	
18:42	80.3	82.2	
18:44	74.4	79.1	
18:46	69.1	77.6	
18:48	80.7	82.8	
18:50	71.2	81.8	Venue: Support Act Noel Gallagher clearly audible, >3 dB below criteria. Other: Traffic, pedestrians, hotel patrons / pub karaoke, defining measured levels.
18:52	70.7	78.4	
18:54	87.3	94.1	
18:56	95	94.8	
18:58	82.2	83.3	
19:00	71.9	81.8	
19:02	79.4	83	
19:04	94.4	94	
19:06	81.5	84	
19:08	87.9	87.8	
19:10	75	77.8	
19:12	67.2	77.6	
19:14	75	81	Venue: Support Act Noel Gallagher clearly audible, >3 dB below criteria. Minimal other noise during this period. Other: Traffic, pedestrians, hotel patrons / pub karaoke.
19:16	78.1	88	Venue: Support Act Noel Gallagher clearly audible, >3 dB below criteria. Other: Traffic, pedestrians, hotel patrons / pub karaoke, defining measured levels.
19:18	74.8	80.7	
19:20	68.8	79.3	
19:22	74.7	77.9	
19:24	88.3	87.6	
19:26	82.5	83.3	
19:28	93.6	93.3	Venue: None Other: Traffic, pedestrians, hotel patrons / pub karaoke, defining measured levels.
19:30	77.7	78.8	
19:32	86.1	86.2	
19:34	77.9	80.4	
19:36	66.9	75.7	
19:38	85.1	86.1	
19:40	74.6	77.4	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
19:42	71.6	77.1	Venue: None Other: Traffic, pedestrians, hotel patrons / pub karaoke, defining measured levels.
19:44	70.3	80.9	
19:46	81.1	83.9	
19:48	79.1	80.7	
19:50	57.3	69.2	
-	-	-	-
20:06	64.1	78.1	Venue: Minimal 'house music' during intermission
20:08	69.5	81.5	Other: Traffic, pedestrians defining measurements
20:10	76.7	82.1	Venue: Main act U2 commence, clearly audible. Generally >3 dBA below criteria. Compliant
20:12	76.9	81.1	Other: Significant vehicle activity defining maximums
20:14	74.2	83.4	Venue: Music generally within 3 dBA of criteria at 70A. Informed FOH.
20:16	77.6	83.8	Compliant
20:18	73.4	82.2	Other: vehicles/pedestrians contributing, defining maximums
20:20	71.5	81.4	Venue: Music defining measured levels, exceeding dBA criteria by 1.5 dBA, informed FOH.
			Other: vehicles/pedestrians contributing, defining maximums
20:22	87.9	87.3	Venue: Music generally >3 dBA below criteria.
			Other: vehicles/pedestrians contributing, defining maximums
20:24	69.7	75.8	Venue: Music defining measured levels, within 3 dBA of criteria. Informed FOH. Compliant
			Other: vehicles/pedestrians contributing, defining maximums
20:26	74.7	83	Venue: Music generally >3 dBA below criteria. Other: vehicles/pedestrians contributing, defining maximums
20:28	70.3	82.9	
20:30	73	78.2	
20:32	69.6	81	Venue: Music generally within 3 dBA of criteria, maximum from music at 69.6 dBA, informed FOH.
			Other: vehicles/pedestrians contributing, defining maximums
20:34	73.1	78.6	Venue: Music generally >3 dBA below criteria. Other: vehicles/pedestrians contributing, defining maximums
20:36	72.4	80.6	
20:38	80.7	80.8	
20:40	69.7	80.9	Venue: Music generally within 3 dBA of criteria, maximum from music at 69.7 dBA, informed FOH.
			Other: vehicles/pedestrians contributing, defining maximums
20:42	86.2	85.3	Venue: Music generally >3 dBA below criteria. Other: vehicles/pedestrians contributing, defining maximums
20:44	72.6	82.1	
20:46	71.4	81.7	
20:48	74.6	88.5	
20:50	72.7	81.6	
20:52	76.7	86	Venue: Music generally within 3 dBA of criteria.
20:54	68.6	82.7	Other: vehicles/pedestrians contributing, defining maximums

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
20:56	74.3	82.5	
20:58	68.6	81.9	Venue: Music generally >3 dBA below criteria, maximum at 67 dBA. FOH informed. Other: vehicles/pedestrians contributing, defining maximums
21:00	74.1	80.6	Venue: Music generally not above 64 dBA. Other: vehicles/pedestrians contributing, defining maximums
21:02	69.7	79.7	Venue: Music generally >3 dBA below criteria. Other: vehicles/pedestrians contributing, defining maximums
21:04	69.7	77.1	
21:06	78.5	81.2	
21:08	81.6	87.1	
21:10	84.3	90.8	
21:12	70.7	82.4	
21:14	65	78.7	
21:16	69.7	82	Venue: Music maximums generally within 3 dBA of criteria. Typical levels >3 dB below criteria. Other: vehicles/pedestrians contributing, defining maximums
21:18	72.3	88.9	
21:20	69.8	82.2	
21:22	73.9	84.1	
21:24	78.2	81.2	
21:26	89	88.6	Venue: Music maximums generally within 3 dBA of criteria. Typical levels >3 dB below criteria. Other: vehicles and patrons contributing, tyre squeal defining maximums
21:28	68.1	76.6	Venue: Music maximums generally within 3 dBA of criteria. Typical levels >3 dB below criteria. Other: vehicles and patrons contributing, defining maximums
21:30 – 21:44			Batteries on instrument ran out. Observations continued to identify if levels increase.
21:46	73.7	79.7	Venue: Typical levels >3 dB below criteria. Music maximum 68 dBA. FOH informed within 3 dB. Other: vehicles/pedestrians contributing, defining maximums
21:48	69.2	82.4	Venue: Typical levels >3 dB below criteria. Music maximum 69.2 dBA. FOH informed within 3 dB and increasing. Other: vehicles/pedestrians contributing, defining maximum dBC
21:50	73.2	82.1	Venue: Typical levels >3 dB below criteria. Music maximum 67 dBA. FOH informed improved. Other: vehicles/pedestrians contributing, defining maximums
21:52	68.3	74.8	Venue: Typical levels >3 dB below criteria. Other: vehicles/pedestrians contributing, defining maximums
21:54	69.7	79.1	
21:56	69.2	80.5	
21:58	70.4	79.6	
22:00	75.8	78	
22:02	69.3	77	
22:04	72.7	79.9	

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
22:06	81.1	83.6	Venue: Typical levels >3 dB below criteria. Other: vehicles, loud pedestrians defining maximums
22:08	81.4	84.3	Venue: Typical levels >3 dB below criteria, maximum from music at 67 dBA 73 dBC. Other: vehicles, loud pedestrians defining maximums
22:10	72.3	80.4	
22:12	69.4	84	
22:14	71.8	80.4	
22:16	63.7	76.8	
22:18	71.3	76.2	Venue: Typical levels >3 dB below criteria, maximum from music at 71.3 dBA exceeding criteria. FOH informed. Other: vehicles, loud pedestrians defining maximums
22:20	70.9	79.3	Venue: Typical levels >3 dB below criteria. Other: vehicles, loud pedestrians defining maximums
22:22	74.6	79.9	Venue: Typical levels >3 dB below criteria. Music maximum 69.5 dBA. FOH informed within 3 dB and increasing. Other: vehicles/pedestrians contributing, defining maximum dBC
22:24	68	77.8	Venue: Typical levels >3 dB below criteria. Music maximum 68 dBA. FOH informed within 3 dB and increasing. Other: vehicles/pedestrians contributing, defining maximum dBC
22:26	70.7	80.4	Venue: Typical levels >3 dB below criteria. Other: vehicles, loud pedestrians defining maximums
22:28	68.1	83.1	
22:30	67.8	78.9	
22:32	68.6	78.5	Venue: None audible. FOH informed a quieter 'house levels' track was playing for 2.5minutes to see the crowd out.
22:34	60.6	71.9	Other: vehicles, loud pedestrians defining maximums



EVENT NOISE MANAGEMENT

Project Number:	5858	Date:	FRI 22/11/2019
Project Description:	U2: The Joshua Tree Tour (Rehearsal/Line-checks/Event)		
Monitoring Location:	3 - SCG at Robertson Road and Martin Road		
Operator:	Gyani Shankar Sharma		
Instrument:	Nor 140 (1)	Calibrator Model:	Bruel&Kjaer
Instrument Serial:	1404621	Calibrator Serial:	3009973
Instrument NATA Calibration Date:	10/06/19	Calibrator NATA Calibration Date:	21/05/19
Pre-calibration:	94.0	Post calibration:	94.0

Time	L _{max} dB(A)	L _{max} dB(C)	Description of Noise
14:00 – 14:56	-	-	Venue: inaudible Other: Traffic
16:04 – 19:42	-	-	Venue: just audible on occasion Other: Traffic
20:10 – 22:32	-	-	Venue: just audible on occasion. Never within 5 dB of criteria Other: Traffic

Note: the monitoring results of the Position 3 instrumentation did not record the full data-sets for inclusion in the appendix. However during the event the position was staffed throughout and all live observations of the monitoring results included full compliance.