

Project:	28 Avenue Road, London, NW8 6BU	Date:	16/02/21
Client:	Vinay Mahtani	Ref:	3869



Project:	28 Avenue Road, London, NW8 6BU			
Client:	Vinay Mahtani			
Report Title:	Environmental Noise Survey			
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1.0 Introduction

It is proposed that a new residential property of address 28 Avenue Road will be built on existing grounds located behind Number 30 Avenue Road. During the works new mechanical plant items will potentially be introduced to 28 Avenue Road.

Paragon Acoustic Consultants Ltd has been commissioned to conduct an environmental noise survey to obtain statistical noise data to characterise the existing local background and ambient noise climate at the site and to derive noise limits to atmosphere based on Local Authority Noise Policy and other relevant guideline documents. This information shall be used at the appropriate stage of the project to determine if the proposed new mechanical plant selections will meet with the derived noise limits and if any noise mitigation measures shall be required.

Given the residential nature of the site, the possibility of 24-hour operation has been considered.

2.0 Site Description

2.1 Site Description

The proposed new property under consideration is 28 Avenue Road to be built on a plot of land situated at the rear of 30 Avenue Road. The sites lie within The London Borough of Camden. The City of Westminster boundary is situated on Avenue Road to the west of these sites, with properties on the west side of this road falling within Westminster City Council. The plot of land considered is roughly triangular in shape, with the north eastern boundary abutting the public open space of Primrose Hill.

30 Avenue Road itself is a large detached three storey residential property with its frontage on the B525 Avenue Road. Avenue Road is a busy two-way trafficked highway, to the west of which lie large detached residential properties and their associated grounds.

To the south of the site lies a block of flats known as The Pavilions of address 24-26 Avenue Road, St Johns Wood NW8. On the site south eastern boundary lies a residential property known as Primrose House. Behind (to the east of) these properties lie further residential flats off Rudwick Terrace.

To the north west of Number 30 Avenue Road plot lies the large detached residential premises of 32 Avenue Road. To the north/ north east of this property lies a large 2/3 storey residential property of address 1 Radlett Place, which shares the north western boundary of the site under consideration.

The site is illustrated by plan in Appendix A.

3.0 Existing Noise Climate

3.1 Road Traffic

Noise emanating from vehicular road traffic was deemed to provide a contribution to the ambient noise climate proximal to the nearest affected residential premises. The overall noise comprises both individual "event" type emissions from vehicles passing along local roads, and also continuous low frequency "rumble" due to middle distance traffic flows.

3.2 Rail Traffic

Rail traffic was not observed during the manned period at the start and end of the survey.

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3.3 Aircraft

Aircraft over flights were observed sporadically during the manned survey at the start and end of the period. Their contribution to the background noise climate will have been included within the measurements taken.

3.4 Mechanical Noise Sources

Mechanical noise sources were not audibly observed at the site, although ducting was noted to the east of the site thought to be associated with the block of flats known as The Pavilions.

3.5 Construction Noise

Construction noise was audible during the periods at the site. It is unusual for construction noise to occur prior to 08:00 hours and after 18:00 hours or at weekends and public holidays. The Local Authority usually also restrict construction hours where planning is required. As such, it is unlikely likely that construction noise will impact on the readings between 18:00 and 08:00 hours.

4.0 Environmental Noise Survey

4.1 Measurements

The noise monitoring took place between the following dates / times:

- Start : 26/02/2020 at 12:30 hours
- End : 28/02/2020 at 10:46 hours

The noise monitoring was generally un-manned and was undertaken at the locations as described below.

- **MP1:** On the rear (north east façade) high level balcony of 30 Avenue Road
- **MP2:** Within the grounds of the proposed site

The measurement location is illustrated on the site layout drawing in Appendix A.

Various statistical broad-band and spectral sound pressure level measurements were obtained during the survey. A measurement time interval $T_m = 15$ minutes was used for sampling. Measurements of the percentile level $L_{A90,T}$ were made using time weighting F as per clause 3.4 of BS 4142:2014.

The quantities recorded included:

- **L_{Aeq} :** the equivalent continuous A-weighted sound pressure level over the measurement period
- **L_{Amax} :** the maximum A-weighted sound pressure level for the measurement period
- **L_{A10} :** the A-weighted sound pressure level exceeded for 10% of the measurement period
- **L_{A90} :** the A-weighted sound pressure level exceeded for 90% of the measurement period

4.2 Weather During Survey Period

The weather conditions at the start of the manned period of the survey were dry and cold with a slight breeze. At the end of the survey the precipitation was occurring. Precipitation is likely to have occurred during the survey period, however, it is considered that the data obtained provided sufficient data to give the lowest likely background noise level for the plant operational period.

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4.3 Instrumentation

Sound pressure level measurements were obtained using the following instrumentation complying with the Type 1 specification of BS EN 60804, BS EN 60651, BS EN 60942, BS EN 61260, and BS EN 61672-1:

- **MP1:** Norsonic Type 118 Sound level analyser, serial number 31663 Norsonic Microphone serial number 62576
- **MP2:** Norsonic Type 118 Sound level analyser, serial number 31663 Norsonic Microphone serial number 62576

Calibration checks were made prior to and after completion of measurements using a Norsonic Type 1251 acoustical calibrator complying with Class 1 of BS EN 60942, calibration level 114.0 dB $\pm$ 0.3 dB, @ 1.0 kHz. All instrumentation carries a current manufacturer's certificate of conformance a copy of which is available upon request.

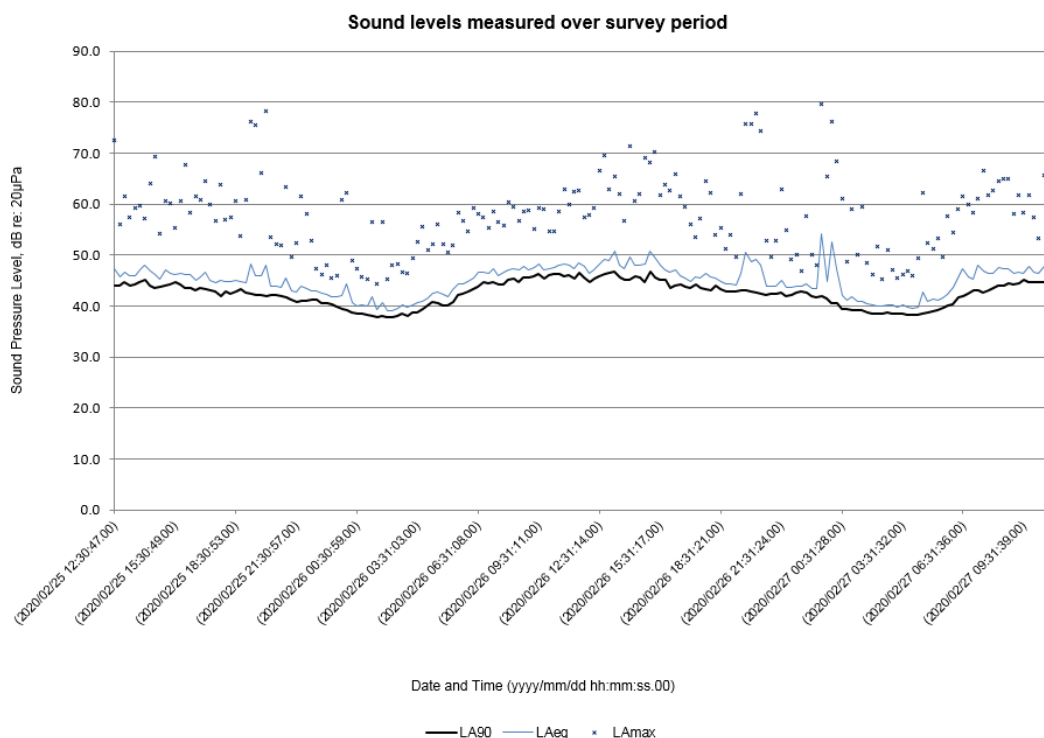
Additionally, the following equipment was used:

- Weather protection kits
- microphone outdoor protection kits
- Tripods

4.4 Results

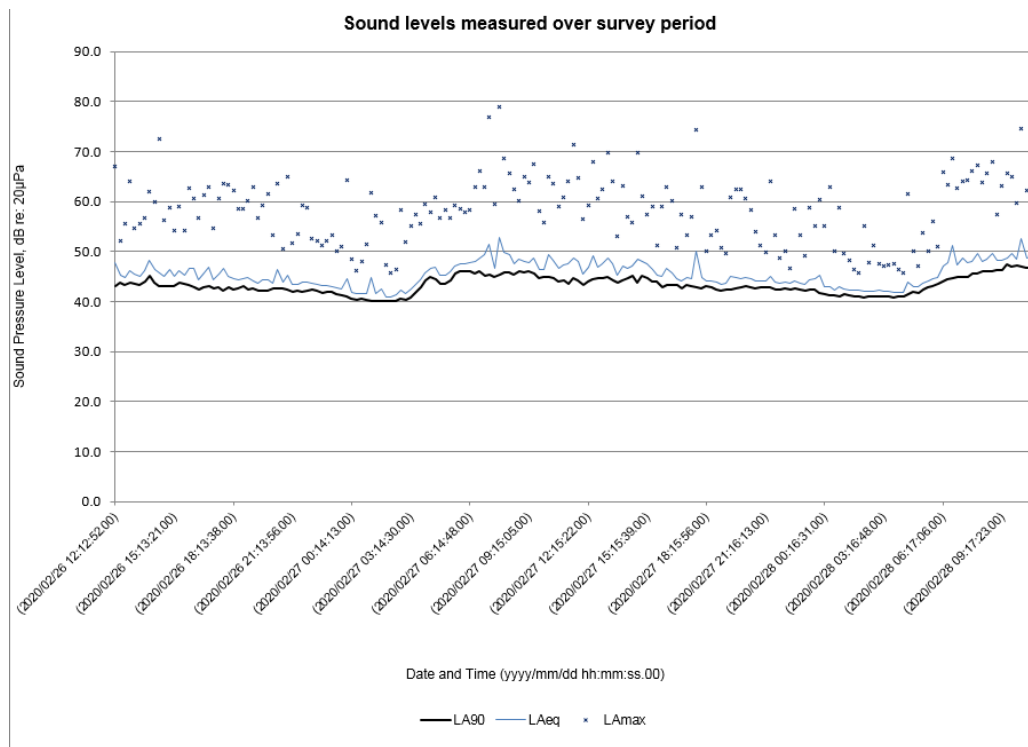
The recorded survey data is shown within Appendix B. Broadband sound pressure level data over the survey period (L_{A90} background levels, L_{Aeq} and L_{Amax} measurements) are shown graphically below:

Figure 1: Graphical Survey Data – MP1



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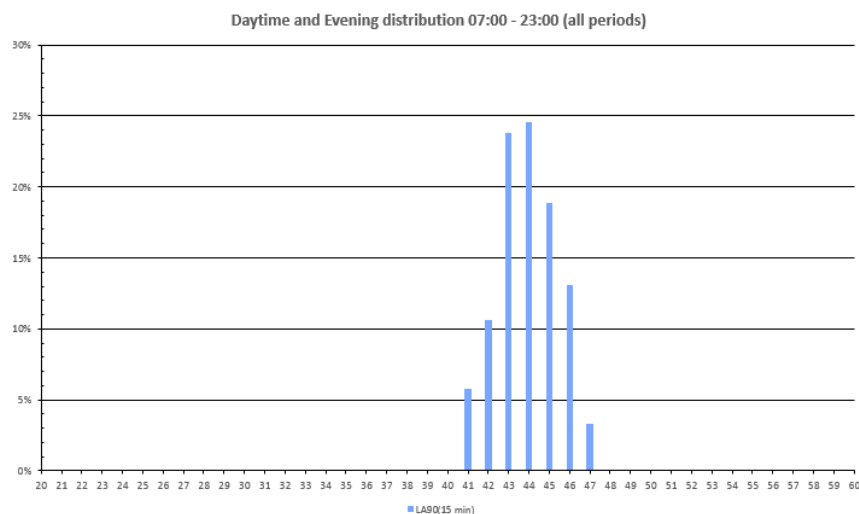
Figure 2: Graphical Survey Data – MP2



The L_{A90} background noise levels have been statistically assessed for daytime/evening and night-time periods in order to determine the values of the “Typically Lowest Existing Representative Background Noise Level”.

The following graphs show the results of the statistical assessment of L_{A90} background noise levels for the 15-minute sampling periods:

Figure 3: L90 distribution for Daytime and Evening periods over the survey duration – MP1



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Figure 4: L90 distribution for Night-time periods over the survey duration – MP1

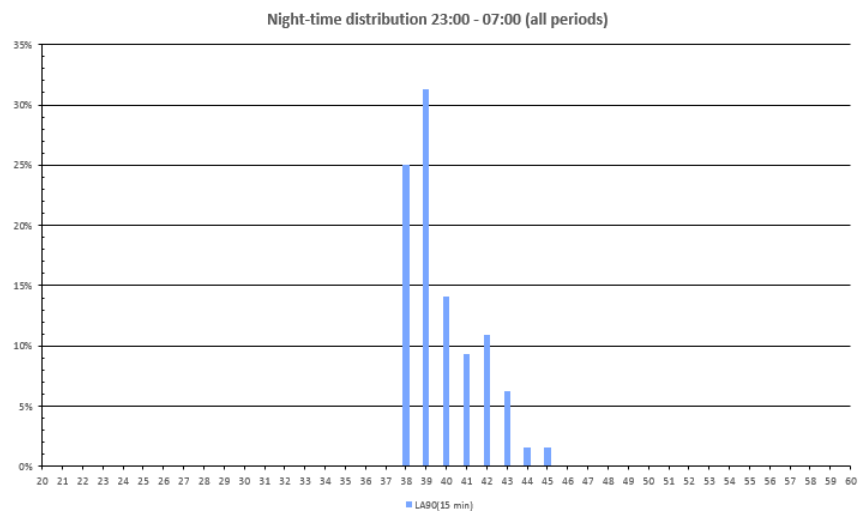
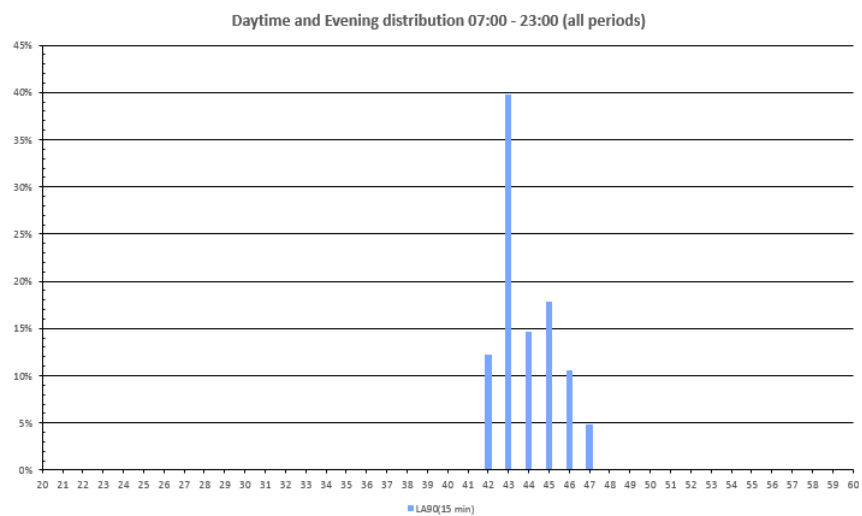
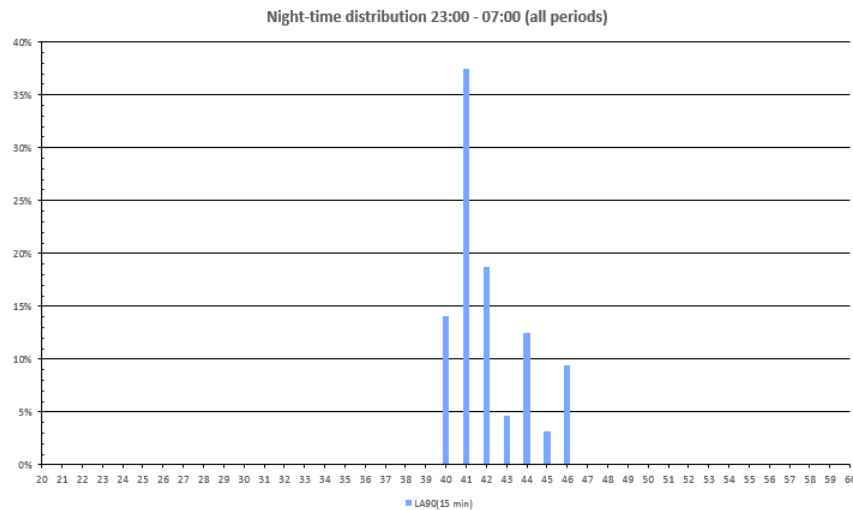


Figure 5: L90 distribution for Daytime and Evening periods over the survey duration – MP2



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Figure 6: L90 distribution for Night-time periods over the survey duration – MP2



For this distribution of data, the typically lowest existing representative background noise levels are considered to be as follows:

Table 1: Typically Lowest Existing Representative Background Noise Level

Measurement Position	Daytime / Evening 07:00-23:00 $L_{A90,(15\text{ min})}$	Night-time 23:00-07:00 $L_{A90,(15\text{ min})}$
MP1 measurement position	43 dB	38 dB
MP2 measurement position	43 dB	41 dB

It is considered reasonable in view of the varied receivers to use the lower background noise of the two typical background noise levels above.

5.0 Evaluation of External Noise Criteria

The local vicinity contains properties of mixed usage, which must be given due consideration in terms of acceptable levels of noise exposure from the new plant.

5.1 Noise Sensitive Properties

It is necessary to consider the requirements of the Local Authority. Recent correspondence from the London Borough of Camden advised the following:

“For the correct criterion, reference should be made the Noise Thresholds in Appendix 3 of the Local Plan 2017, specifically Table C/ the “Design Criterion of 10dB below background which increases to 15 dB if the noise source requires acoustic correction.

Table C of the Appendix 3 of the Local Plan 2017 *advises the following:*

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Table C: Noise levels applicable to proposed industrial and commercial developments (including plant and machinery)

Existing Noise sensitive receptor	Assessment Location	Design Period	LOAEL (Green)	LOAEL to SOAEL (Amber)	SOAL (Red)
Dwellings**	Garden used for main amenity (free field) and Outside living or dining or bedroom window (façade)	Day	'Rating level' 10dB* below background	'Rating level' between 9dB below and 5dB above background	'Rating level' greater than 5dB above background
Dwellings**	Outside bedroom window (façade)	Night	'Rating level' 10dB* below background and no events exceeding 57dBL _{Amax}	'Rating level' between 9dB below and 5dB above background or noise events between 57dB and 88dB L _{Amax}	'Rating level' greater than 5dB above background and/or events exceeding 88dBL _{Amax}

*10dB should be increased to 15dB if the noise contains audible tonal elements (day and night). However, if it can be demonstrated that there is no significant difference in the character of the residual background noise and the specific noise from the proposed development then this reduction may not be required. In addition, a frequency analysis (to include, the use of Noise Rating (NR) curves or other criteria curves) for the assessment of tonal or low frequency noise may be required.

**levels given are for dwellings, however, levels are use specific and different levels will apply dependent on the use of the premises.

The document confirms that the 'Rating Level' shall be required to be 10 dB below the background and this should be increased to 15dB if the noise contains audible tonal elements.

5.2 External Noise Criteria

The derived external noise criteria which the new building services plant shall be required to achieve are shown below:

Table 2: Limiting Noise Criteria applicable at the affected premises

Plant Location	Receptor	Daytime / Evening 07:00-23:00 L _{Art} , (15 min)	Night-time 23:00-07:00 L _{Art} , (15 min)
Any Location on the site	Day – Gardens used for main amenity, outside living and dining and bedroom windows ^[2] (façade). Night time – Outside bedroom windows ^[2] (façade). ^[3]	33 dB ^[1]	28 dB ^[1]

[1] Note: Noise levels to be assessed in accordance with BS4142:2014. L_{Art} is the "Rating" noise level that includes corrections for the character of the noise. A 5dB penalty shall be included where noise emitted from the proposed development will contain tones sufficient to attract attention at the receiver position/s.

[2] Note: The limiting noise levels are deemed to be considered at a position 1 metre outside the affected premises.

[3] Note: Levels given are for dwellings, however, levels are use specific and different levels will apply dependent on the use of the premises.

General note: It is taken that the noise Criteria apply at the surrounding third party premises. Noise levels may be exceeded external to windows of the client's premises.

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6.0 Conclusions

A detailed environmental noise survey has been undertaken to determine the underlying ambient and background noise climate.

Appropriate external noise criteria have been identified on the basis of Local Authority noise policy, and other industry standards, codes of practice and references. These external noise criteria will be used in the future selection of mechanical plant and any noise mitigation scheme necessary.

With due consideration to achieving compliance with these external noise criteria, future objections would not be expected in respect of noise emissions from any new fixed mechanical plant which may form part of the planning application.

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Appendix A: Site Plan



Red line – approximate site boundary

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Appendix B: Recorded Survey Data

MP1

1st day	LAeq	LAF(max)	L10	L90	2nd day	LAeq	LAF(max)	L10	L90	3rd day	LAeq	LAF(max)	L10	L90
00:00	0.00	0.00	0.00	0.00	(2020/02/26 07:01:08.00)	46.30	55.40	47.80	44.40	(2020/02/27 07:01:36.00)	45.30	58.20	46.60	43.00
00:00	0.00	0.00	0.00	0.00	(2020/02/26 07:16:08.00)	47.30	58.50	49.50	44.80	(2020/02/27 07:16:37.00)	48.00	61.10	51.70	43.20
00:00	0.00	0.00	0.00	0.00	(2020/02/26 07:31:08.00)	45.90	56.50	47.30	44.20	(2020/02/27 07:31:37.00)	46.90	66.60	48.10	42.60
00:00	0.00	0.00	0.00	0.00	(2020/02/26 07:46:09.00)	46.70	55.90	48.40	44.30	(2020/02/27 07:46:37.00)	46.30	61.70	47.30	43.10
00:00	0.00	0.00	0.00	0.00	(2020/02/26 08:01:09.00)	47.10	60.40	48.60	45.10	(2020/02/27 08:01:38.00)	46.50	62.60	47.60	43.50
00:00	0.00	0.00	0.00	0.00	(2020/02/26 08:16:09.00)	47.30	59.50	48.40	45.40	(2020/02/27 08:16:38.00)	47.60	64.60	49.30	44.10
00:00	0.00	0.00	0.00	0.00	(2020/02/26 08:31:09.00)	47.00	56.70	49.00	44.60	(2020/02/27 08:31:38.00)	47.40	64.50	48.90	44.10
00:00	0.00	0.00	0.00	0.00	(2020/02/26 08:46:10.00)	47.80	58.60	49.20	45.70	(2020/02/27 08:46:38.00)	47.40	65.00	49.00	44.40
00:00	0.00	0.00	0.00	0.00	(2020/02/26 09:01:10.00)	47.20	58.70	48.20	45.70	(2020/02/27 09:01:38.00)	46.50	58.10	48.20	44.30
00:00	0.00	0.00	0.00	0.00	(2020/02/26 09:16:10.00)	47.50	55.20	48.70	45.80	(2020/02/27 09:16:39.00)	46.70	61.70	47.90	44.40
00:00	0.00	0.00	0.00	0.00	(2020/02/26 09:31:11.00)	48.30	59.20	49.80	46.40	(2020/02/27 09:31:39.00)	46.50	58.30	47.70	45.10
00:00	0.00	0.00	0.00	0.00	(2020/02/26 09:46:11.00)	47.10	58.90	48.40	45.40	(2020/02/27 09:46:39.00)	47.70	61.70	49.10	44.80
00:00	0.00	0.00	0.00	0.00	(2020/02/26 10:01:11.00)	47.40	54.60	48.50	46.00	(2020/02/27 10:01:39.00)	46.60	57.30	47.90	44.70
00:00	0.00	0.00	0.00	0.00	(2020/02/26 10:16:11.00)	47.60	54.60	48.70	46.20	(2020/02/27 10:16:40.00)	46.50	53.20	47.90	44.70
00:00	0.00	0.00	0.00	0.00	(2020/02/26 10:31:12.00)	48.00	58.50	49.20	46.40	(2020/02/27 10:31:40.00)	47.70	65.70	48.20	44.60
00:00	0.00	0.00	0.00	0.00	(2020/02/26 10:46:12.00)	48.20	62.90	49.50	45.80	(2020/02/27 10:46:40.00)	48.10	67.00	47.30	44.60
00:00	0.00	0.00	0.00	0.00	(2020/02/26 11:01:12.00)	48.10	60.00	49.30	46.00	00:00	0.00	0.00	0.00	0.00
00:00	0.00	0.00	0.00	0.00	(2020/02/26 11:16:12.00)	47.40	62.50	49.20	45.30	00:00	0.00	0.00	0.00	0.00
00:00	0.00	0.00	0.00	0.00	(2020/02/26 11:31:13.00)	48.50	62.60	49.80	46.50	00:00	0.00	0.00	0.00	0.00
00:00	0.00	0.00	0.00	0.00	(2020/02/26 11:46:13.00)	47.70	57.50	49.20	45.60	00:00	0.00	0.00	0.00	0.00
00:00	0.00	0.00	0.00	0.00	(2020/02/26 12:01:13.00)	46.40	57.80	47.80	44.80	00:00	0.00	0.00	0.00	0.00
00:00	0.00	0.00	0.00	0.00	(2020/02/26 12:16:13.00)	47.10	59.30	48.40	45.40	00:00	0.00	0.00	0.00	0.00
(2020/02/25 12:30:47.00)	47.40	72.50	47.10	44.10	(2020/02/26 12:31:14.00)	48.30	66.50	49.50	45.90	00:00	0.00	0.00	0.00	0.00
(2020/02/25 12:45:47.00)	45.80	56.00	46.90	44.10	(2020/02/26 12:46:14.00)	49.10	69.50	50.60	46.40	00:00	0.00	0.00	0.00	0.00
(2020/02/25 13:00:47.00)	46.70	61.40	47.90	44.60	(2020/02/26 13:01:14.00)	48.90	62.80	50.70	46.60	00:00	0.00	0.00	0.00	0.00
(2020/02/25 13:15:47.00)	46.00	57.40	47.60	44.10	(2020/02/26 13:16:15.00)	50.70	65.30	52.30	46.80	00:00	0.00	0.00	0.00	0.00
(2020/02/25 13:30:48.00)	46.00	59.20	47.40	44.20	(2020/02/26 13:31:15.00)	48.00	62.00	49.70	45.50	00:00	0.00	0.00	0.00	0.00
(2020/02/25 13:45:48.00)	47.10	59.60	48.20	44.80	(2020/02/26 13:46:15.00)	47.30	56.60	48.90	45.20	00:00	0.00	0.00	0.00	0.00
(2020/02/25 14:00:48.00)	47.90	57.20	49.90	45.10	(2020/02/26 14:01:16.00)	49.70	71.40	50.80	45.20	00:00	0.00	0.00	0.00	0.00
(2020/02/25 14:15:48.00)	46.90	64.10	49.10	44.10	(2020/02/26 14:16:16.00)	48.10	60.70	49.80	45.90	00:00	0.00	0.00	0.00	0.00
(2020/02/25 14:30:48.00)	46.20	69.30	47.20	43.60	(2020/02/26 14:31:16.00)	48.10	61.90	49.60	45.60	00:00	0.00	0.00	0.00	0.00
(2020/02/25 14:45:49.00)	45.30	54.30	46.50	43.80	(2020/02/26 14:46:16.00)	48.20	69.00	48.00	44.80	00:00	0.00	0.00	0.00	0.00
(2020/02/25 15:00:49.00)	47.20	60.50	49.50	44.00	(2020/02/26 15:01:17.00)	50.80	68.20	52.90	46.70	00:00	0.00	0.00	0.00	0.00
(2020/02/25 15:15:49.00)	46.50	60.20	48.30	44.20	(2020/02/26 15:16:17.00)	49.50	70.10	50.60	45.70	00:00	0.00	0.00	0.00	0.00
(2020/02/25 15:30:49.00)	46.10	55.40	47.40	44.60	(2020/02/26 15:31:17.00)	47.90	61.70	49.70	45.20	00:00	0.00	0.00	0.00	0.00
(2020/02/25 15:45:50.00)	46.30	60.50	47.90	44.20	(2020/02/26 15:46:18.00)	47.10	63.80	48.20	45.10	00:00	0.00	0.00	0.00	0.00
(2020/02/25 16:00:50.00)	46.10	67.70	47.40	43.60	(2020/02/26 16:01:18.00)	46.60	62.70	48.40	43.50	00:00	0.00	0.00	0.00	0.00
(2020/02/25 16:15:50.00)	46.20	58.20	47.90	43.60	(2020/02/26 16:16:18.00)	47.00	65.80	47.80	44.10	00:00	0.00	0.00	0.00	0.00
(2020/02/25 16:30:50.00)	45.10	61.60	46.30	43.10	(2020/02/26 16:31:19.00)	46.00	61.50	47.10	44.20	00:00	0.00	0.00	0.00	0.00
(2020/02/25 16:45:51.00)	45.80	60.80	47.00	43.50	(2020/02/26 16:46:19.00)	45.50	59.50	46.60	43.80	00:00	0.00	0.00	0.00	0.00
(2020/02/25 17:00:51.00)	46.60	64.40	47.30	43.30	(2020/02/26 17:01:19.00)	44.90	56.10	46.00	43.50	00:00	0.00	0.00	0.00	0.00
(2020/02/25 17:15:52.00)	45.00	59.80	46.20	43.10	(2020/02/26 17:16:20.00)	45.80	53.60	47.00	44.30	00:00	0.00	0.00	0.00	0.00
(2020/02/25 17:30:52.00)	44.50	56.80	45.40	42.80	(2020/02/26 17:31:20.00)	45.40	57.10	46.70	43.60	00:00	0.00	0.00	0.00	0.00
(2020/02/25 17:45:52.00)	45.10	63.80	46.10	41.90	(2020/02/26 17:46:20.00)	46.40	64.60	47.00	43.40	00:00	0.00	0.00	0.00	0.00
(2020/02/25 18:00:52.00)	44.90	57.00	46.50	42.80	(2020/02/26 18:01:20.00)	45.70	62.20	46.40	43.20	00:00	0.00	0.00	0.00	0.00
(2020/02/25 18:15:53.00)	44.70	57.40	46.20	42.30	(2020/02/26 18:16:21.00)	45.50	53.90	46.90	43.90	00:00	0.00	0.00	0.00	0.00
(2020/02/25 18:30:53.00)	45.10	60.70	46.40	42.80	(2020/02/26 18:31:21.00)	44.80	55.30	46.10	43.40	00:00	0.00	0.00	0.00	0.00
(2020/02/25 18:45:53.00)	44.80	53.70	46.10	43.30	(2020/02/26 18:46:21.00)	44.30	51.30	45.40	42.80	00:00	0.00	0.00	0.00	0.00
(2020/02/25 19:00:54.00)	44.50	60.80	45.60	42.70	(2020/02/26 19:01:22.00)	44.40	54.00	45.60	42.80	00:00	0.00	0.00	0.00	0.00
(2020/02/25 19:15:54.00)	48.20	76.20	45.60	42.50	(2020/02/26 19:16:22.00)	44.20	49.70	45.40	42.90	00:00	0.00	0.00	0.00	0.00
(2020/02/25 19:30:54.00)	45.90	75.50	44.80	42.20	(2020/02/26 19:31:22.00)	46.30	61.90	46.30	43.10	00:00	0.00	0.00	0.00	0.00
(2020/02/25 19:45:55.00)	46.00	66.00	45.90	42.10	(2020/02/26 19:46:22.00)	50.60	75.80	47.70	43.10	00:00	0.00	0.00	0.00	0.00
(2020/02/25 20:00:55.00)	47.90	78.30	46.10	42.00	(2020/02/26 20:01:23.00)	48.80	75.80	46.00	42.90	00:00	0.00	0.00	0.00	0.00
(2020/02/25 20:15:56.00)	43.90	53.60	45.40	42.10	(2020/02/26 20:16:23.00)	49.10	77.80	45.40	42.70	00:00	0.00	0.00	0.00	0.00
(2020/02/25 20:30:56.00)	43.90	52.10	45.20	42.10	(2020/02/26 20:31:23.00)	47.90	74.40	45.50	42.30	00:00	0.00	0.00	0.00	0.00
(2020/02/25 20:45:56.00)	43.80	51.90	44.70	42.00	(2020/02/26 20:46:23.00)	43.90	52.70	45.20	42.10	00:00	0.00	0.00	0.00	0.00
(2020/02/25 21:00:56.00)	45.50	63.30	46.20	41.70	(2020/02/26 21:01:24.00)	43.80	49.60	44.90	42.50	00:00	0.00	0.00	0.00	0.00
(2020/02/25 21:15:56.00)	41.00	49.60	44.20	41.30	(2020/02/26 21:16:24.00)	43.90	52.70	45.10	42.50	00:00	0.00	0.00	0.00	0.00
(2020/02/25 21:30:57.00)	42.70	52.30	44.00	40.80	(2020/02/26 21:31:24.00)	45.00	62.90	45.20	42.70	00:00	0.00	0.00	0.00	0.00
(2020/02/25 21:45:57.00)	44.00	61.60	43.80	41.00	(2020/02/26 21:46:25.00)	43.70	54.90	44.80	42.00	00:00	0.00	0.00	0.00	0.00
(2020/02/25 22:00:57.00)	43.40	58.10	44.20	41.00	(2020/02/26 22:01:25.00)	43.60	49.10	44.70	42.20	00:00	0.00	0.00	0.00	0.00
(2020/02/25 22:15:57.00)	42.90	52.90	44.10	41.30	(2020/02/26 22:16:25.00)	44.00	50.10	45.00	42.70	00:00	0.00	0.00	0.00	0.00
(2020/02/25 22:30:57.00)	42.90	47.40	44.20	41.30	(2020/02/26 22:31:25.00)	43.90	46.90	44.80	42.80	00:00	0.00	0.00	0.00	0.00
(2020/02/25 22:45:58.00)	42.50	46.20	44.00	40.50	(2020/02/26 22:46:26.00)	44.40	57.60	45.10	42.70	00:00	0.00	0.00	0.00	0.00
(2020/02/25 23:00:58.00)	42.20	47.90	43.30	40.60	(2020/02/26 23:01:26.00)	43.50	50.10	44.70	42.00	00:00	0.00	0.00	0.00	0.00
(2020/02/25 23:15:58.00)	41.90	45.60	43.10	40.40	(2020/02/26 23:16:26.00)	43.40	48.00</							

