

## MONITORING FORM

If environmental reviews indicate the need of monitoring by JICA, JICA undertakes monitoring for necessary items that are decided by environmental reviews. JICA undertakes monitoring based on regular reports including measured data submitted by the project proponent. When necessary, the project proponent should refer to the following monitoring form for submitting reports.

When monitoring plans including monitoring items, frequencies and methods are decided, project phase or project life cycle (such as construction phase and operation phase) should be considered.

### 1. Responses/Actions to Comments and Guidance from Government Authorities and the Public

Monitoring Item	Monitoring Results during Report Period
ex. Responses/Actions to Comments and Guidance from Government Authorities	January- March 2023

### 2. Mitigation Measures

The summary of the Environmental Monitoring is shown below.

#### [Construction Phase]

Item	Parameter	Frequency and Duration	Locations(At least)
Air	PM <sub>10</sub>	2×24hours Twice/month For five years	15 locations
	PM <sub>2.5</sub>	2×24hours Twice/month For five years	15 locations
	SO <sub>2</sub>	2×24hours Twice/month For five years	15 locations
	NO <sub>x</sub>	2×24hours Twice/month For five years	15 locations
	HC	2×24hours Twice/month For five years	15 locations
	CO	2×24hours Twice/month For five years	15 locations
Water	Groundwaterquality	Once/6months For five years	10 locations
Noise	Noise Level (Leq and Lmax)	2×24hours Twice/month Once/week For five years	15 locations
Vibration	Vibration (ppV)	24hours Once/week For five years	8 locations
Soil	Heavy Metal	Once/6moths For five years	10 Locations
Ecology	Felled and planted	Once a year till all trees	All the trees felled and

	trees	that were to be planted by Delhi Government on behalf of DMRC, are planted	newly planted trees
Waste	Excavated Muck, C&D Waste, Hazardous waste, Medical Waste	For Each month	From all sites

**[Operation Phase]**

<b>Item</b>	<b>Parameter</b>	<b>Frequency and Duration</b>	<b>Locations</b>
Air	PM <sub>10</sub>	2×24hours Once/month For 5 years	8 locations
	PM <sub>2.5</sub>	24 hours Once/month For 5 years	8 locations
	SO <sub>2</sub>	24 hours Once/month For 5 years	8 locations
	NOX	24 hours Once/month For 5 years	8 locations
	HC	2×24hours Twice/month For five years	15 locations
	CO	2×24hours Twice/month For five years	15 locations
Water		Once/4months For 5 years	5locations(Depot)
Noise	Noise Level (Leq)	24hours Once/year For 5 years	8 locations (Sensitive Receptors along the elevated section)
Vibration	Vibration level Vrms	24hours Once/year For 5 years	18 locations (Sensitive Receptors along the elevated and underground section)

## 2.1 During Construction

When a measured value exceeds the standards, the value is written in bold letters.

### Air Quality (Ambient Air Quality)

Date: February 2023

Location: DC-02 (Yamuna Vihar to Bhajanpura) (Elevated)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>10</sub>	µg/m <sup>3</sup>	RMC Plant-303.5	314	100 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
		Jagatpur Village-272.75	286			
		Jharoda-300	364			
		Burari-268.50	305			
		Yamuna Vihar-289.50	310			
		Bhajanpura -284.50	298			
		Khajuri Khas-277.25	307			
		Soniya Vihar- 288	296			
		Yamuna Bed – 261.25	275			
Soorghat – 294.50	309					

Date: February 2023 Location: DC-01 (Keshopur to Pitampura) (Elevated)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
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PM <sub>10</sub>	µg/m <sup>3</sup>	PC Yard Mundka-224.10	250.42	100 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
		West Enclave- 334.21	382			
		Pushpanjali-261.0 5	305.77			
		Madhuban Chowk-183.77	194.58			
		North Pitampura-288.70	349.76			
		Deepali Chowk- 287.74	317			

Date: January 2023  
Ashram )(UG)

Location:DC-05 (Derawal Nagar to R.K.

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country 's Standar ds	Referred Internation al Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>10</sub>	µg/m <sup>3</sup>	Majlis Park CY- 394.25	404	100 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
		Majlis Park Batching Plant- 382.5	387			
		Derawal Nagar- 369.75	378			
		Ghantaghar-380	386			
		Pul Bangash-385.25	394			
		R. K. Ashram-377.5	389			
		Nabi Karim- 372.25	381			
Sadar bazaar-405.25	411					

Date: January 2023 Location: DC-04 (Sangam Vihar to Saket G Block (Elevated))

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>2.5</sub>	µg/m <sup>3</sup>	Khanpur-388.54	456.18	100 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
		Sangam Vihar-385.52	470.45			
		Casting Yard-247.68	302			
		Ambedkar Nagar-355.91	421.07			
		Saket G Block-286.85	331.49			

Date: February 2023  
Location: DC-08 (Aerocity to Kishangarh)(UG)

Location: DC-08 (Aerocity to Kishangarh)(UG)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>2.5</sub>	µg/m <sup>3</sup>	Mahipalpur-153.55	169.83	60 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
		VasantKunj- 198.3	200.65			
		Kishangarh 206.27	215.88			
		Batching Plant-231.14	275.32			
		Casting Yard-229.82				

Date: January 2023  
KishanGarh)(UG)

Location: DC-08 (Aerocity to

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
SO <sub>2</sub>	µg/ m <sup>3</sup>	Mahipalpur-23.08	28	80 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
		Vasantkunj- 13.38	19			
		Kishangarh- 13.42				
		Batching Plant- 14.74	16.68			
		Casting yard -16.06	17.66			
		25				

Date: January 2023  
KishanGarh))(UG)

Location: DC-08 (Aerocity to

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
NO <sub>x</sub>		Mahipalpur-36.74	55.1779.	80 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
		Vasantkunj- 68.43	5554.19			
		Kishangarh-35.94	55.23			
		Batching Plant-35.8				
		Casting yard -46.66	59			

Date: January 2023  
Ashram )(UG)

Location: DC-05 (Derawal Nagar to R.K.

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standard	Referred International	Remarks (Measurement Point, Frequency,
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				ds	Standards	Method, etc.)
PM <sub>2.5</sub>	µg/ m <sup>3</sup>	<b>Majlis Park CY- 200.25</b>	209 198	60 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
		<b>Majlis Park Batching Plant- 189.25</b>	189			
		<b>Derawal Nagar- 188.75</b>	192			
		<b>Ghantaghar-185</b>	196			
		<b>Pul Bangash-187.75</b>	196			
		<b>R. K. Ashram-181.75</b>	194			
		<b>Nabi Karim- 191.50</b>	216			
		<b>Sadar bazaar-205</b>				

Date: January 20232022  
R.K. Ashram )(UG)

Location:DC-05 (Derawal Nagar to

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country 's Standar ds	Referred Internation al Standards	Remarks (Measurement Point, Frequency, Method, etc.)
SO <sub>2</sub>	µg/ m <sup>3</sup>	<b>Majlis Park CY- 24.91</b>	31.42	80 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
		<b>Majlis Park Batching Plant- 23.96</b>	24.75			
		<b>Derawal Nagar- 22.09</b>	28.14			

		<b>Ghantaghar-24.97</b>	28.33			
		<b>Pul Bangash-27.98</b>				
		<b>R. K. Ashram-19.93</b>	32.19			
			23.17			
		<b>Nabi Karim- 22.46</b>				
			23.61			
		<b>Sadar bazaar-29.85</b>				
			33.42			

Date: January 2023  
Ashram )(UG)

Location:DC-05 (Derawal Nagar to R.K.

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
NO <sub>x</sub>	µg/ m <sup>3</sup>	<b>Majlis Park CY-62.73</b>	67.56	80 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
			58.42			
		<b>Majlis Park Batching Plant-55.18</b>	54.81			
		<b>Derawal Nagar-49.07</b>	55.81			
		<b>Ghantaghar-52.84</b>	64.77			
		<b>Pul Bangash-59.67</b>	48.63			
		<b>R. K. Ashram-46.74</b>	59.17			
		<b>Nabi Karim- 51.45</b>	63.39			
		<b>Sadar bazaar-61.10</b>				



Date: March 2023  
Ashram )(UG)

Location:DC-05 (Derawal Nagar to R.K.

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
CO	$\mu\text{g}/\text{m}^3$	Ghantagarh-1.86	1.86	4 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
		Pul Bangash-2.09	2.09			
		R. K. Ashram-2.16	2.19			
		Sadar bazaar-1.73	1.73			

Date: March 2023  
Kishnagarh)(UG)

Location:DC-08 (Aerocity to

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
CO	$\mu\text{g}/\text{m}^3$	Kishangarh-0.44	0.47	4 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC
		Mahipalpur-0.645	0.67			
		Aerocity-0.54	0.58			

Date: March 2023  
Kishnagarh)(UG)

Location:DC-08 (Aerocity to

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standar	Referred International	Remarks (Measurement Point, Frequency,
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				ds	Standards	Method, etc.)
HC	$\mu\text{g}/\text{m}^3$	<b>Kishangarh-BDL</b> <b>Mahipalpur-BDL</b> <b>Aerocity-BDL</b>	BDL BDL BDL	4 (24hours) (CPCB)	-	2×24hours Twice/month During entire civil construction stage or even later, if directed by DMRC

### Ground Water Quality (Drinking Water Quality: IS 10500:1991)

Date: January 2023

Location: DC-08 (Batching Plant)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
Color, Hazen units, Max		<1	-	5(25)	-	10 locations Once/6 months  During entire civil construction stage or even later, if directed by DMRC
Odour	-	Agreeable	-	Unobjectionable	-	
Taste	-	Agreeable	-	Agreeable	-	
Turbidity, NTU, Max	-	<1	-	5(10)	-	
pH Value	-	7.09	-	6.5-8.5	-	
Total Hardness (as $\text{CaCO}_3$ ), Max	mg/l	159	-	300(600)	-	
Iron (as Fe), max	mg/l	0.1	-	0.3(1.0)	-	
Chloride (as Cl), Max	mg/l	97.53	-	250(1000)	-	
Residual free Chlorine, Min	mg/l		-	0.2	-	
Fluoride (as F), Max	mg/l	BDL	-	1.0(1.5)	-	
Dissolved solids, Max	mg/l	180	-	500(2000)	-	
Sodium	Mg/l	88.71		-		

Potassium	Mg/l	1.49		-		
Nitrogen	Mg/l	0.67		-		
Phosphorous	Mg/l	BDL		-		
Organic Solid	Mg/l	180				
Oil& grease	Mg/l	BDL				
Cadmium	Mg/l			0.003		
Cynaide	Mg/l	BDL		0.05		
Lead	Mg/l	BDL		0.01		
Mercury	Mg/l	BDL		0.001		
Total Chromium	Mg/l	BDL		0.05		
Total arsenic	Mg/l	BDL		0.01		

Date: March2023

Location:DC-04 (Pushp vihar CY)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
Color,Hazen units,Max		Colourless	-	5(25)	-	10 locations Once/6 months
Odour	-	-Agreeable	-	Unobjectionable	-	
Taste	-	Agreeable	-	Agreeable	-	During entire civil construction stage or even later, if directed by DMRC
Turbidity,NTU,Max	-	<1	-	5(10)	-	
pH Value	-	7.14	-	6.5-8.5	-	
Total Hardness (as CaCO <sub>3</sub> ), Max	mg/l	93.10	-	300(600)	-	
Iron(as Fe),max	mg/l	BDL	-	0.3(1.0)	-	
Chloride(as Cl), Max	mg/l	25.93	-	250(1000)	-	
Residual free Chlorine, Min	mg/l	BDL	-	0.2	-	
Fluoride(as F), Max	mg/l	0.22	-	1.0(1.5)	-	
Dissolved solids, Max	mg/l	104	-	500(2000)	-	
Calcium(as Ca), Max	mg/l	25.53	-	75(200)	-	
Magnesium(as Mg), Max	mg/l	7.11	-	30(100)	-	
Copper(as Cu),	mg/l	BDL	-	0.05(1.5)	-	

Max					
Manganese(as Mn), Max	mg/l	BDL	-	0.1(0.3)	-
Sulphate(as SO <sub>4</sub> ), Max	mg/l	10.73	-	200(400)	-
Nitrate(as NO <sub>2</sub> ), Max	mg/l	3.38	-	45(100)	-
Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH),Max	mg/l	BDL	-	0.001(0.002)	-
Mercury(as Hg), Max	mg/l	BDL	-	0.001	-
Cadmium(as Cd), Max	mg/l	BDL	-	0.01	-
Selenium(as Se), Max	mg/l	BDL	-	0.01	-
Arsenic (as As), Max	mg/l	BDL	-	0.05	-
Cyanide(as CN), Max	mg/l	BDL	-	0.05	-
Lead(as Pb), Max	mg/l	BDL	-	0.05	-
Zinc(as Zn), Max	mg/l	BDL	-	5(15)	-
Anionic Detergents (as MBAS),Max	mg/l	BDL	-	0.2(1.0)	-
Chromium (as Cr <sup>6+</sup> ),Max	mg/l	BDL	-	0.05	-
Polynuclear aromatic hydrocarbons( as PAH),Max	mg/l	-	-	-	-
Mineral Oil	mg/l	BDL	-	0.01	-
Alkalinity, Max	mg/l	45.90	-	200(600)	-
Aluminum(as Al), Max	mg/l	BDL	-	0.03(0.2)	-
Boron,Max	mg/l	0.034	-	1(5)	-

Date:January 2023Location: DC-05 (Derawal Nagar)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
Color,Hazen units,Max		Colourless	-	5(25)	-	10 locations Once/6 months
Odour	-	-Agreeable	-	Unobjectionable	-	
Taste	-	Agreeable	-	Agreeable	-	During entire civil construction stage or even later, if directed by DMRC
Turbidity,NTU ,Max	-	<1	-	5(10)	-	
pH Value	-	7.68	-	6.5-8.5	-	
Total Hardness (as CaCO <sub>3</sub> ), Max	mg/l	179	-	300(600)	-	
Iron(as Fe) ,max	mg/l	0.07	-	0.3(1.0)	-	
Chloride(as Cl), Max	mg/l	121	-	250(1000)	-	
Residual free Chlorine, Min	mg/l	BDL	-	0.2	-	
Fluoride(as F <sup>-</sup> ), Max	mg/l	2.28	-	1.0(1.5)	-	
Dissolved solids, Max	mg/l	1573	-	500(2000)	-	
Calcium(as Ca), Max	mg/l	-	-	75(200)	-	
Magnesium(as Mg), Max	mg/l	-	-	30(100)	-	
Copper(as Cu), Max	mg/l	BDL	-	0.05(1.5)	-	
Manganese(as Mn), Max	mg/l	BDL	-	0.1(0.3)	-	
Sulphate(as SO <sub>4</sub> ), Max	mg/l	84.3	-	200(400)	-	
Nitrate(as NO <sub>2</sub> ), Max	mg/l	25.2	-	45(100)	-	
Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH),Max	mg/l	BDL	-	0.001(0.002)	-	
Mercury(as Hg),	mg/l	BDL	-	0.001	-	

Max						
Cadmium(as Cd), Max	mg/l	BDL	-	0.01	-	
Selenium(as Se), Max	mg/l	BDL	-	0.01	-	
Arsenic (as As), Max	mg/l	BDL	-	0.05	-	
Cyanide(as CN), Max	mg/l		-	0.05	-	
Lead(as Pb), Max	mg/l	BDL	-	0.05	-	
Zinc(as Zn), Max	mg/l	BDL	-	5(15)	-	
Anionic Detergents (as MBAS),Max	mg/l	BDL	-	0.2(1.0)	-	
Chromium (as Cr6+),Max	mg/l	BDL	-	0.05	-	
Polynuclear aromatic hydrocarbons( as PAH),Max	mg/l	-	-	-	-	
Mineral Oil	mg/l	BDL	-	0.01	-	
Alkalinity, Max	mg/l	151	-	200(600)	-	
Aluminum(as Al), Max	mg/l	BDL	-	0.03(0.2)	-	
Boron,Max	mg/l	BDL	-	1(5)	-	

Date: January 2023

Location: DC-05 (Majlis Park BP)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
Color,Hazen units,Max		Colourless	-	5(25)	-	10 locations Once/6 months
Odour	-	Agreeable	-	Unobjectionable	-	
Taste	-	Agreeable	-	Agreeable	-	During entire civil construction stage or even later, if directed by DMRC
Turbidity,NTU,Max	-	<1	-	5(10)	-	
pH Value	-	7.52	-	6.5-8.5	-	
Total Hardness	mg/l	173	-	300(600)	-	

(as CaCO <sub>3</sub> ), Max					
Iron(as Fe) ,max	mg/l	0.05	-	0.3(1.0)	-
Chloride(as Cl), Max	mg/l	118	-	250(1000)	-
Residual free Chlorine, Min	mg/l	BDL	-	0.2	-
Fluoride(as F), Max	mg/l	2.17	-	1.0(1.5)	-
Dissolved solids, Max	mg/l	1521	-	500(2000)	-
Calcium(as Ca), Max	mg/l		-	75(200)	-
Magnesium(as Mg), Max	mg/l		-	30(100)	-
Copper(as Cu), Max	mg/l	BDL-	-	0.05(1.5)	-
Manganese(as Mn), Max	mg/l	BDL	-	0.1(0.3)	-
Sulphate(as SO <sub>4</sub> ), Max	mg/l	82.4	-	200(400)	-
Nitrate(as NO <sub>2</sub> ), Max	mg/l	21.8	-	45(100)	-
Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH),Max	mg/l	BDL	-	0.001(0.002)	-
Mercury(as Hg), Max	mg/l	BDL	-	0.001	-
Cadmium(as Cd), Max	mg/l	BDL	-	0.01	-
Selenium(as Se), Max	mg/l	BDL	-	0.01	-
Arsenic (as As), Max	mg/l	BDL	-	0.05	-
Cyanide(as CN), Max	mg/l		-	0.05	-
Lead(as Pb), Max	mg/l	BDL	-	0.05	-
Zinc(as Zn), Max	mg/l	BDL	-	5(15)	-

Anionic Detergents (as MBAS),Max	mg/l	BDL	-	0.2(1.0)	-	
Chromium (as Cr6+),Max	mg/l	BDL	-	0.05	-	
Polynuclear aromatic hydrocarbons( as PAH),Max	mg/l		-	-	-	
Mineral Oil	mg/l	BDL	-	0.01	-	
Pesticides, Max	mg/l	-	-	Absent	-	
Radioactive Materials, Max a) Alpha emitters	Bq/l	-	-	-(0.1)	-	
Radioactive Materials, Max b) Beta emitters	Pci/l	-	-	-(1)	-	
Alkalinity, Max	mg/l	134	-	200(600)	-	
Aluminum(as Al), Max	mg/l	BDL	-	0.03(0.2)	-	
Boron,Max	mg/l	BDL	-	1(5)	-	

Date: January 2023  
DC-08(Vasant Kunj))

Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
pH Value	-	7.21	-	6.5-8.5	-	
Sodium(as Na)		88.71		-		
Potassium(as K)		1.49		-		
Chloride(as Cl), Max	mg/l	97.53	-	250(1000)	-	
Total Nitrogen (as N)		0.67		-	-	
Total Phosphorus(as P)		BDL		-	-	
Organic Matter		180			-	



Oi & Graese	mg/l	BDL	-	75(200)	-	
Mercury(as Hg), Max	mg/l	BDL	-	0.001	-	
Cadmium(as Cd), Max	mg/l	BDL	-	0.01	-	
Cyanide(as CN), Max	mg/l	BDL	-	0.05	-	
Lead (as Pb), Max	mg/l	BDL	-	0.05	-	
Chromium (as Cr <sup>6+</sup> ), Max	mg/l	BDL	-	0.05	-	
Arsenic (as As), Max	mg/l	BDL	-	0.05	-	

### Noise / Vibration

Date: February 2023 Location: DC-02 (Yamuna Vihar to Bhajanpura)(Elevated)

Item	Unit	Measured Value (Leq)	Measured Value (LMax)	Country's Standards (Environmental Management Manual by DMRC)	Occupancy	Remarks (Measurement Point, Frequency, Method, etc.)
Noise level (Leq) and Lmax	dB(A)	<b>Khajuri Khas</b> Leq (d)-72.9 Leq (n)-63.5 Lmin-48.6	77.9	<u>National Standards</u> <u>Area</u> Leq(d) Leq(n) Resi 55 45 Comm 65 55	Commercial/residence	30 locations 24 hours/time Once/week  During entire civil construction stage or even later, if directed by DMRC
		<b>Bhajanpura:</b> Leq (d)-71.6 Leq (n)-62.9 Lmin-51.9	79.7	Indstl 75 70 Silence 50 40		
		<b>Yamuna Vihar :</b> Leq (d)-69.1 Leq (n)-57.3 Lmin-48.3	80.4 86.2	<u>DMRC Env Manual</u> (when pre construction levels are not known) Resi Lmax Daytime: 75 Nighttime: 65		
		<b>Yamuna Bed:</b> Leq (d)-73.2 Leq (n)-64.7 Lmin-53.4	83.2 82.3			

		<b>Sonia Vihar :</b> Leq (d)-70.6 Leq (n)-64.4 Lmin-49.2  <b>Casting Yard :</b> Leq (d)-72.4 Leq (n)-64.9 Lmin-54.2  <b>Jagatpur :</b> Leq (d)-70.9 Leq (n)-63.6 Lmin-52.4  <b>Soorghat :</b> Leq (d)-71.3 Leq (n)-60.1 Lmin-50.3  <b>Jharoda :</b> Leq (d)-71.4 Leq (n)-67.7 Lmin-52.9  <b>Burari :</b> Leq (d)- 72.5 Leq (n)-66.3 Lmin-50.6	80.4	80.4	Comm & and Indstl At all time: 85	
Vibration level	RMS (mm/s)	-	--	Structures in good condition:25 in fair condition:12 in poor condition:5 Water supply Structures:5 Heritage structure/ Bridge structures:5	-	10locations 24hours/time Once/week During entire civil construction stage or even later, if directed by DMRC

Date: February2023      Location:DC-01 (Keshopur to Pitampura) (Elevated)

Item	Unit	Measured Value (Leq)	Measured Value (LMax)	Country's Standards (Environmental Management Manual by DMRC)	Occupancy	Remarks (Measurement Point, Frequency , Method, etc.)
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Noise level (Leq) and Lmax	dB(A)	<b>Mundka Casting Yard-</b> Leq (d)-59.83 Leq (n)-56.32 Lmin-44.5  <b>Madhuban Chowk-L</b> eq (d)-69.56 Leq (n)-69.31 Lmin-53.4  <b>North Pitampura-</b> Leq (d)-73.14 Leq (n)-71.25 Lmin-51.9  <b>West Enclave-</b> Leq (d)-71.42 Leq (n)-67.34 Lmin-42  <b>Puspanjali-</b> Leq (d)-70.55 Leq (n)-63.19 Lmin-48  <b>Deepali Chowk-</b> Leq (d)-69.59 Leq (n)-69.18 Lmin-50	86    97.8   93.6   96   99.8   95.8	<u>National Standards</u> <u>AreaLeq(d)Leq(n)</u> Resi 55 45 Comm 65 55 Indstl 75 70 Silence 50 40  <u>DMRC Env Manual</u> (when pre construction levels are not known) ResiLmax Daytime: 75 Nighttime: 65 Comm & and Indstl At all time: 85	Commercial / residence	30locations 24hours/time Once/week  During entire civil construction stage or even later, if directed by DMRC
Vibration level	RMS (mm/s)	-	-	Structures in good condition:25 in fair condition:12 in poor condition:5 Water supply Structures:5 Heritage structure/ Bridge structures:5	-	10locations 24hours/time Once/week During entire civil construction stage or even later, if directed by DMRC

Date:January 2023 Location:DC-04 (Sangam Vihar to Saket G block)(Elevated)

Item	Unit	Measured Value (Leq)	Measured Value (LMax)	Country's Standards (Environmental Management Manual by DMRC)	Occupancy	Remarks (Measurement Point, Frequency, Method, etc.)
Noise level (Leq) and Lmax	dB(A)	<p>Khanpur- Leq (d)-56.97 Leq (n)-54.28 Lmin-33</p> <p>Sangam Vihar-Leq (d)-70.61 Leq (n)-66.18 Lmin-47.8</p> <p>Casting Yard-Leq (d)-61.87 Leq (n)-60.69 Lmin-43.8</p> <p>Ambedkar Nagar- Leq (d)-66.81 Leq (n)-61.14 Lmin-55.0</p> <p>Saket G Block-Leq (d)-55.75 Leq (n)-50.60 Lmin-37.8</p>	<p>87.7</p> <p>94.5</p> <p>97.6</p> <p>88.0</p> <p>87.5</p>	<p><u>National Standards</u> <u>AreaLeq(d)Leq(n)</u> Resi 55 45 Comm 65 55 Indstl 75 70 Silence 50 40</p> <p><u>DMRC Env Manual</u> (when pre construction levels are not known) ResiLmax Daytime: 75 Nighttime: 65 Comm &amp; and Indstl At all time: 85</p>	Commercial / residence	<p>30locations 24hours/time Once/week</p> <p>During entire civil construction stage or even later, if directed by DMRC</p>
Vibration level	RMS (mm/s)	-	-	<p>Structures in good condition:25 in fair condition:12 in poor condition:5 Water supply Structures:5 Heritage structure/ Bridge structures:5</p>		<p>10locations 24hours/time Once/week</p> <p>During entire civil construction stage or even later, if directed by DMRC</p>

Date:January 2023 Location:DC-05 (Derawal Nagar rtoR.K. Ashram) (UG)

Item	Unit	Measured Value (Leq)	Measured Value (LMax)	Country's Standards (Environmental Management Manual by DMRC)	Occupancy	Remarks (Measurement Point, Frequency, Method, etc.)
Noise level (Leq) and Lmax	dB(A)	<b>GhantaGhar-</b> Leq (d)-69.1 Leq (n)-64.3 Lmin-51.5  <b>PulBangash</b> Leq (d)-67.5 Leq (n)-62.1 Lmin-49.3  <b>Nabi Karim-</b> Leq (d)-68.1 Leq (n)-60.8 Lmin-48.6  <b>R.K. Ashram</b> Leq (d)-65.1 Leq (n)-61.8 Lmin-48.8  <b>Majlis Park CY-</b> Leq (d)-74.1 Leq (n)-61.6 Lmin-53.2  <b>Majlis Park BP-</b> Leq (d)-73.5 Leq (n)63.7 Lmin-50.9  <b>Sadarbazaar-</b> Leq (d)-75.1 Leq (n)60.4 Lmin-50.8	79.4  77.67 8.3  74.8  85.78 1.4  84.6	<u>National Standards</u> <u>AreaLeq(d)Leq(n)</u> Resi 55 45 Comm 65 55 Indstl 75 70 Silence 50 40  <u>DMRC Env Manual</u> (when pre construction levels are not known) ResiLmax Daytime: 75 Nighttime: 65 Comm & and Indstl At all time: 85	Commercial / residence	30locations 24hours/time Once/week  During entire civil construction stage or even later, if directed by DMRC
Vibration level	RMS (mm/s)			Structures in good condition:25 in fair condition:12 in poor condition:5 Water supply Structures:5 Heritage structure/ Bridge structures:5	-	10locations 24hours/time Once/week  During entire civil construction stage or even later, if directed by DMRC

Date: January 2023 Location: DC-02 (Maujpur to Majlis Park) (Elevated)

Item	Unit	Measured Value (L <sub>eq</sub> )	Measured Value (L <sub>Max</sub> )	Country's Standards (Environmental Management Manual by DMRC)	Occupancy	Remarks (Measurement Point, Frequency, Method, etc.)
Noise level (Leq) and Lmax	dB(A)	Jharoda Leq (d)-71.3 Leq (n)-63.8 Lmin-51.3	75.8	<u>National Standards</u> <u>Area Leq(d) Leq(n)</u> Resi 55 45 Comm 65 55 Indstl 75 70 Silence 50 40	Commercial / residence	30 locations 24 hours/time Once/week  During entire civil construction stage or even later, if directed by DMRC
		Burari- Leq (d)-72.6 Leq (n)-58.2 Lmin-50.4	80.5	<u>DMRC Env Manual</u> (when pre construction levels are not known) Resi Lmax Daytime: 75 Nighttime: 65 Comm & and Indstl At all time: 85		
		Jagatpur- Leq (d)-72.6 Leq (n)-62.9 Lmin-49.7	76.2			
		Soorghat- Leq (d)-73.1 Leq (n)-63.5 Lmin-52.1	80.3			
		Yamuna Bed- Leq (d)-67.5 Leq(n)-52.4 Lmin-48.3	82.7			
		Khajuri Khas- Leq (d)-73.4 Leq (n) 57.6 Lmin-51.8	77.4			
		Bhajanpura- Leq (d)-74.3 Leq (n)-64.2 Lmin-50.6	79.9			
		Yamuna Vihar- Leq (d)-71.3 Leq (n)-61.7 Lmin-49.5	82.7			
Sonia Vihar- Leq (d)-72.5 Leq (n)-60.5 Lmin-50.4	75.8					

		Casting Yard- Leq (d)-71.5 Leq (n)53.5 Lmin-48.7				
Vibration level	RMS (mm/s)			Structures in good condition:25 in fair condition:12 in poor condition:5 Water supply Structures:5 Heritage structure/ Bridge structures:5	-	10locations 24hours/time Once/week  During entire civil construction stage or even later, if directed by DMRC

### Excavated soil (Leaching test)

Date:February 2023

Location:DC-06 (Aerocity Station)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
Mercury(as Hg)	mg/l	BDL	-	-	0.0005	In each Underground Construction Contract Once/6months During entire civil construction stage Samples should be taken from the underground lowest point.  -Report submitted in last quarter report of July to September 2020
Cadmium(as Cd)	mg/l	BDL	-	-	0.01	
Arsenic( as As)	mg/l	1.37	-	-	0.01	
Cyanide(as CN)	mg/l	BDL	-	-	Not detected	
Lead(as Pb)	mg/l	6	-	-	0.01	
Chromium(as Cr6+)	mg/l	3.43	-	-	0.05	

Date: January 2023

Location: DC-08 (KishanGarh)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
Mercury(as Hg)	mg/l	BDL	-	-	0.0005	In each Underground Construction Contract Once/6months During entire civil construction stage Samples should be taken from the underground lowest point.
Cadmium(as Cd)	mg/l	BDL	-	-	0.01	
Arsenic(as As)	mg/l	1.66	-	-	0.01	
Cyanide(as CN)	mg/l	BDL	-	-	Not detected	
Lead(as Pb)	mg/l	7.34	-	-	0.01	
Chromium(as Cr6+)	mg/l	2.53	-	-	0.05	

Date: March 2023

Location: DC-05 (DerawalNagarstation)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
Mercury(as Hg)	mg/l	BDL	-	-	0.0005	In each Underground Construction Contract Once/6months During entire civil construction stage Samples should be taken from the underground lowest point.
Cadmium(as Cd)	mg/l	BDL	-	-	0.01	
Arsenic(as As)	mg/l	BDL	-	-	0.01	
Cyanide(as CN)	mg/l	BDL	-	-	Not detected	
Lead(as Pb)	mg/l	BDL	-	-	0.01	
Chromium(as Cr6+)	mg/l	BDL	-	-	0.05	
pH	-	7.71			6.5 -7.2	
Sodium	Mg/100g m	10.73			-	
Potassium	Kg/Ha	132			140-280	
Chloride	Mg/Kg	213			-	
Nitrogen	Kg/Ha	128			280	
Organic Matter	%/mass	0.89			-	



Phosphorous	Kg/ Ha	4.21			28	
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Date: March 2023

Location: DC-05 (Nabi Karim station))

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
Mercury(as Hg)	mg/l	BDL	-	-	0.0005	In each Underground Construction Contract Once/6months During entire civil construction stage Samples should be taken from the underground lowest point.
Cadmium(as Cd)	mg/l	BDL	-	-	0.01	
Arsenic(as As)	mg/l	BDL	-	-	0.01	
Cyanide(as CN)	mg/l	BDL	-	-	Not detected	
Lead(as Pb)	mg/l	BDL	-	-	0.01	
Chromium(as Cr6+)	mg/l	BDL	-	-	0.05	
pH	-	7.68			6.5 -7.2	
Sodium	Mg/100g m	9.23			-	
Potassium	Kg/ Ha	114			140	
Chloride	Mg/ Kg	267			-	
Nitrogen	Kg/ Ha	112			280	
Organic Matter	%/mass	0.91			-	
Phosphorous	Kg/ Ha	2.47			28	

Date: March 2023

Location: DC-07 (Tughlakabad station)

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
pH		6.85	-	-	6.5-7.5	In each Underground Construction Contract Once/6months During entire civil construction stage Samples
Sodium	Mg/ kg	4.2	-	-	-	
Potassium	Mg/ kg	6.4	-	-	-	
Phosphorus	Mg/ kg	1	-	-	28	
Organic matter	%	7.4	-	-	-	

Zinc	Mg/kg	bdl	-	-	-	should be taken from the underground lowest point.
Lead (as Pb)	mg/l	BDL	-	-	0.01	
Oil& grease	mg/kg	4.1	-	-	-	
Magnesium	Mg/kg	41.1	-	-	-	
Chlorides	Mg/kg	0.03	-	-	-	
Nitrogen	%	1.02	-	-	280	

### Excavated soil (Amount)

Line	<u>Excavated Amount till date</u> <u>Approx.(m<sup>3</sup>)</u>	Name of Site	Disposed Amount till date Approx.(m <sup>3</sup> )
Line-7	78390.28	DC-02	78390.28
Line-8	37843	DC-01	37843
Line-8	179830.2	DC-06	179830.2
Line-10	22279	DC-04	22157
Line-10	30486.8	DC-26	30486.8
Line-10	111120.569	DC-08	111120.569
Line-10	39030	DC-09	266948
Line-8	45357	DC-03	4537
Line-8	44435	DC-05	44405

### Ecological Monitoring(Flora Monitoring)

Site	Permission to fell trees	No. of trees actually felled	No of trees planted	No of trees transplanted	Location of plantation
DC-01	1801	349	Compensatory Plantation in the ration of 1: 10 i.e. 10 * no. of trees felled to be planted by Delhi Development Authority on behalf of DMRC	355	
DC-02	1468	461		775	
DC-03	833	28		684	
DC-04	872	680		551	
DC-05	1299	146		796	

DC-06	152	30		67	
DC-07	668	158		407	
DC-08	711	702		579	
DC-09	1186	1181		1361	

### Construction and Demolition waste (Amount)

Line	<u>Generated Amount till date</u> <u>Approx.(MT)</u>	Name of Site	Disposed Amount till date Approx.(MT)
Line-7	27757.9	DC-02	27723.69
Line-8	7632	DC-01	7484
Line-8	1608	DC-03R	1430.74
Line-8	6404.26	DC-06	6404.26
Line-10	2752	DC-04	2676.64
Line-10	1659..96	DC-26	1647.66
Line-10	3954.43	DC-07	3315.76
Line-10	5225.6	DC-09	4653.71

### Hazardous waste (Litres)

Line	<u>Generated till date</u> <u>(Litre)</u>	Name of Disposed Site	Disposed till date (Litre)
Line-7	1410	DC-02	1320
Line-8	1940	DC-03R	1865
Line-8		DC-06	3125
Line-8	430	DC-05	0
Line-10	5026	DC-04	3283
Line-10	498	DC-07	332.5

## 2.2 During Operation

When a measured value exceeds the standards, the value is written in bold letters.

### Air Quality (Ambient Air Quality)

Date:Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>10</sub>	µg/m <sup>3</sup>	-	-	100 (24hours) (CPCB)	IS 5182 (Part 23)	48hours/time Once/month For 3 years

**Air Quality (Ambient Air Quality)**

Date: Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>10</sub>	µg/m <sup>3</sup>	-	-	100 (24hours) (CPCB)	IS 5182 (Part 23)	48hours/time Once/month For 3 years

**Air Quality (Ambient Air Quality)**

Date: Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>10</sub>	µg/m <sup>3</sup>	-	-	100 (24hours) (CPCB)	IS 5182 (Part 23)	48hours/time Once/month For 3 years

**Air Quality (Ambient Air Quality)**

Date: Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>10</sub>	µg/m <sup>3</sup>	-	-	100 (24hours) (CPCB)	IS 5182 (Part 23)	48hours/time Once/month For 3 years

**Air Quality (Ambient Air Quality)**

Date: Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)

PM <sub>10</sub>	µg/m <sup>3</sup>	-	-	100 (24hours) (CPCB)	IS 5182 (Part 23)	48hours/time Once/month For 3 years
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**Air Quality (Ambient Air Quality)**

Date:Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>10</sub>	µg/m <sup>3</sup>	-	-	100 (24hours) (CPCB)	IS 5182 (Part 23)	48hours/time Once/month For 3 years

**Air Quality (Ambient Air Quality)**

Date:Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>10</sub>	µg/m <sup>3</sup>	-	-	100 (24hours) (CPCB)	IS 5182 (Part 23)	48hours/time Once/month For 3 years

**Air Quality (Ambient Air Quality)**

Date:Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>10</sub>	µg/m <sup>3</sup>	-	-	100 (24hours) (CPCB)	IS 5182 (Part 23)	48hours/time Once/month For 3 years

**Air Quality (Ambient Air Quality)**

Date:Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>10</sub>	µg/m <sup>3</sup>	-	-	100 (24hours) (CPCB)	IS 5182 (Part 23)	48hours/time Once/month For 3 years

**Air Quality (Ambient Air Quality)**

Date:Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
PM <sub>10</sub>	µg/m <sup>3</sup>	-	-	100 (24hours) (CPCB)	IS 5182 (Part 23)	48hours/time Once/month For 3 years

**Effluent at Depot**

Date: Location: Vinod Nagar

Item	Unit	Measured Value (Mean)		Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
		Inlet	Outlet				
pH	-			-	5.5-9.0	IS 3025(part-11) 1983- RA:2017	(Depot) Once/4months For 3 years
TSS	mg/l			-	100	IS 3025(part-17) 1984- RA:2017	
BOD	mg/l			-	30	IS 3025(part-44) 1993- RA:2017	
COD	mg/l			-	250	IS 3025(part-58) 2006- RA:2017	
Oil/Grease	mg/l			-	10	IS 3025(part-11) 1991- RA:2019	

**Effluent at Depot**

Date: July 2022 Location: Kalindi Kunj Depot

Item	Unit	Measured Value (Mean)		Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
		Inlet	Outlet				
pH	-			-	5.5-9.0	IS 3025(part-11) 1983- RA:2017	(Depot) Once/4months For 3 years
TSS	mg/l			-	100	IS 3025(part-17)	

						) 1984- RA:2017	
BOD	mg/l			-	30	IS 3025(part-44 ) 1993- RA:2017	
COD	mg/l			-	250	IS 3025(part-58 ) 2006- RA:2017	
Oil/Grease	mg/l			-	10	IS 3025(part-11 ) 1991- RA:2019	

**Effluent at Depot**

Date: July 2022 Location: Ajrona Depot

Item	Unit	Measured Value (Mean)		Measured Value (Max.)	Country's Standards	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
		Inlet	Outlet				
pH	-		-	-	5.5-9.0	IS 3025(part-11 ) 1983- RA:2017	(Depot) Once/4months For 3 years
TSS	mg/l		-	-	100	IS 3025(part-17 ) 1984- RA:2017	
BOD	mg/l		-	-	30	IS 3025(part-44 ) 1993- RA:2017	
COD	mg/l		-	-	250	IS 3025(part-58 ) 2006- RA:2017	
Oil/Grease	mg/l		-	-	10	IS 3025(part-11 ) 1991- RA:2019	

**Ground Water Quality(Drinking Water Quality:IS 10500:1991)**

Date: Location:

Item	Unit	Measured Value (Mean)	Measured Value (Max.)	Country's Standards (IS 10500:1991)	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)
Turbidity, NTU, Max	-	-	-	5(10)	IS:3025(part-10)	

pH Value	-	-	-	6.5-8.5	IS:3025(part-11)
Total Hardness (as CaCO <sub>3</sub> ), Max	mg/l	-	-	300(600)	IS:3025(part-21)
Iron(as Fe), max	mg/l	-	-	0.3(1.0)	IS:3025(part-53)
Dissolved solids, Max	mg/l	-	-	500(2000)	IS:3025(part-16)
Calcium(as Ca), Max	mg/l	-	-	75(200)	IS:3025(part-40)
Magnesium(as Mg), Max	mg/l	-	-	30(100)	IS:3025(part-46)
Sulphate(as SO <sub>4</sub> ), Max	mg/l	-	-	200(400)	IS:3025(part-24)
Nitrate(as NO <sub>2</sub> ), Max	mg/l	-	-	45(100)	IS:3025(part-34)
Lead(as Pb), Max	mg/l	-	-	0.05	IS:3025(part-47)
Zinc(as Zn), Max	mg/l	-	-	5(15)	IS:3025(part-49)
Alkalinity, Max	mg/l	-	-	200(600)	IS:3025(part-23)
Aluminum(as Al), Max	mg/l	-	-	0.03(0.2)	IS:3025(part-)
TSS	mg/l	-	-	600	IS:3025(part-)

### Noise / Vibration

Date:

Location:

Item	Unit	Measured Value (L <sub>eq</sub> )	Measured Value (L <sub>Max</sub> )	Country's Standards	Occupancy	Remarks (Measurement Point, Frequency, Method, etc.)
Noise level (Leq) and Lmax	dB(A)	Leq (d)- Leq (n)- Lmin-		<u>National Standards</u> <u>AreaLeq(d)Leq(n)</u> Resi 55 45 Comm 65 55 Indstl 75 70 Silence 50 40	Commercial/residence	15locations 24hours/time Once/month



Date: Location:

Item	Unit	Measured Value (Leq)	Measured Value (LMax)	Country's Standards	Occupancy	Remarks (Measurement Point, Frequency, Method, etc.)
Noise level (Leq) and Lmax	dB(A)	Leq (d)- Leq (n)- Lmin-		<u>National Standards</u> <u>AreaLeq(d)Leq(n)</u> Resi 55 45 Comm 65 55 Indstl 75 70 Silence 50 40	Commercial/residence	15locations 24hours/time Once/month

Date: Location:

Item	Unit	Measured Value (Leq)	Measured Value (LMax)	Country's Standards	Occupancy	Remarks (Measurement Point, Frequency, Method, etc.)
Noise level (Leq) and Lmax	dB(A)	Leq (d)- Leq (n)- Lmin-		<u>National Standards</u> <u>AreaLeq(d)Leq(n)</u> Resi 55 45 Comm 65 55 Indstl 75 70 Silence 50 40	Commercial/residence	15locations 24hours/time Once/month

Date: Location:

Item	Unit	Measured RMS Value (Mean)	Measured RMS Value (Max.)	Country's Standards Max. PPV mm/s	Referred International Standards	Remarks (Measurement Point, Frequency, Method, etc.)

Vibration level	mm/s			Structures in:- Good condition = 25 Fair condition = 12 Poor condition = 5 Water supply structures = 5 Heritage structures = 5	Federal Transit Administration (FTA), US	As and when complaint arises at the ground floor of building above the tunnel.
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