Project:	Shatin Central Link Rail Operational GBN Asse	ssment		Train Spee	ed: 95 kph
NSR Ref.:	DIH-1-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Tsui Chuk Garden Block 5	Up Track	0	75	75
Assessed Floor	1	Down Track	0	75	75
Item:	1				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D064	15	67	75[1]
Down Track	D064	15	67	75[1]

								Frequ	uency	(Hz)								
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re '	1 lb/in ^{0.5}		38.0	42.0	41.0	39.0	38.0	42.0	45.0	46.0	46.0	42.0	41.0	40.0	37.0	38.0	35.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 2	10 ⁻⁶ in/s*in ^{0.} '	⁵/lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Up Track Vib. Level	dB re 2	10 ⁻⁶ in/sec		37.8	43.3	41.4	36.7	30.1	31.2	24.4	26.8	23.3	21.9	29.9	34.3	34.9	41.4	29.6
Down Track Calculation	n																	
FDL	dB re '	1 lb/in ^{0.5}		38.0	42.0	41.0	39.0	38.0	42.0	45.0	46.0	46.0	42.0	41.0	40.0	37.0	38.0	35.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 2	10 ⁻⁶ in/s*in ^{0.}	⁵/lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re ´	10 ⁻⁶ in/sec		37.8	43.3	41.4	36.7	30.1	31.2	24.4	26.8	23.3	21.9	29.9	34.3	34.9	41.4	29.6
Total of Up and Down 1	Fracks	Calculatio	n															
Total Vibration Level Out	tside Βι	uilding		40.8	46.3	44.4	39.7	33.1	34.2	27.4	29.8	26.3	24.9	32.9	37.3	37.9	44.4	32.6
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level		1/3 0	ct, aB	56.8	62.3	60.4	55.7	48.9	49.6	42.6	44.8	41.1	38.9	45.9	49.3	48.9	55.1	43.3
Predicted Noise Level		0	ct, aB			65.0			52./			47.1			53.0			55.4
L _{max}			dB(A)	52.7														
L _{eq,30mins}			dB(A)	39.5														
Noise Criteria			dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operatio	nal GBN Assessment		Train Spee	ed: 90 kph
NSR Ref.:	DIH 2-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Pak Yuen House	Up Track	295	65	302
Assessed Floor	1	Down Track	290	65	297
Item:	2				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D049	19	60	302[1]
Down Track	D049	19	60	297[1]

										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 2	1 lb/in ^{0.5}		37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re '	10 ⁻⁶ in/s*in ^{0.} '	⁵ /lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Up Track Vib. Level	dB re 2	10 ⁻⁶ in/sec		37.3	42.8	40.9	36.2	29.6	30.7	23.9	26.3	22.8	21.4	29.4	33.8	34.4	40.9	29.1
Down Track Calculation	n																	
FDL	dB re '	1 lb/in ^{0.5}		37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re '	10 ⁻⁶ in/s*in ^{0.}	⁵ /lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re 1	10 ⁻⁶ in/sec		37.3	42.8	40.9	36.2	29.6	30.7	23.9	26.3	22.8	21.4	29.4	33.8	34.4	40.9	29.1
Total of Up and Down 1	Fracks	Calculatio	1															
Total Vibration Level Out	tside Βι	uilding		40.3	45.8	43.9	39.2	32.6	33.7	26.9	29.3	25.8	24.4	32.4	36.8	37.4	43.9	32.1
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Level	1	1/2 0	ot dP	56.2	61.9	50.0	EE 0	10 A	40.4	42.4	44.2	40 E	20 4	AE A	40.0	A 0 A	EAG	42.0
Predicted Noise Level		1/3 0	ot dB	50.3	01.8	59.9	99.Z	40.4	49.1	42.1	44.3	40.0	JO.4	45.4	40.0 52.6	40.4	34.0	42.0 54 0
		0		52.2		04.5			52.5			+0.0			52.0			54.5
⊢max				52.5														
Leq,30mins			aB(A)	39.3														
Noise Criteria			dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational	GBN Assessment		Train Spee	ed: 90 kph
NSR Ref.:	DIH-3-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Wah Yuen House	Up Track	102	50	114
Assessed Floor	1	Down Trac	k 100	50	112
Item:	3				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D028	22	44	114[1]
Down Track	D028	22	44	112[1]

										Frequ	Jency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1	lb/in ^{0.5}		37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10)⁻ ⁶ in/s*in ^{0.5}	/lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Up Track Vib. Level	dB re 10)⁻ ⁶ in/sec		37.3	42.8	40.9	36.2	29.6	30.7	23.9	26.3	22.8	21.4	29.4	33.8	34.4	40.9	29.1
Down Track Calculation	n																	
FDL	dB re 1	lb/in ^{0.5}		37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10)⁻ ⁶ in/s*in ^{0.5}	/lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re 10)⁻ ⁶ in/sec		37.3	42.8	40.9	36.2	29.6	30.7	23.9	26.3	22.8	21.4	29.4	33.8	34.4	40.9	29.1
Total of Up and Down 1	Fracks C	alculation	1															
Total Vibration Level Out	tside Buil	ding		40.3	45.8	43.9	39.2	32.6	33.7	26.9	29.3	25.8	24.4	32.4	36.8	37.4	43.9	32.1
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dredicted Naise Level	1	1/2 0		50.0	64.0	50.0		40.4	40.4	40.4	44.2	40.0	20.4	45.4	40.0	40.4	54.0	40.0
Predicted Noise Level		1/3 00	π, αΒ	56.3	01.8	59.9 64 F	55.2	48.4	49.1	42.1	44.3	40.6	38.4	45.4	40.0	4ŏ.4	54.6	42.8
Fredicted NOISE Level		00		50.0		04.9			52.3			40.0			52.0			54.9
∟max			ив(А)	52.3														
L _{eq,30mins}			dB(A)	39.3														
Noise Criteria			dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operat	ional GBN Assessment		Train Spee	ed: 80 kph
NSR Ref.:	DIH-3-2		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Nga Yuen House	Up Track	135	45	142
Assessed Floor	1	Down Track	120	45	128
Item:	4				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D028	22	44	142[1]
Down Track	D028	22	44	128[1]

										Frequ	Jency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1	lb/in ^{0.5}		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10	0 ⁻⁶ in/s*in ^{0.5}	/lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Up Track Vib. Level	dB re 10	0 ⁻⁶ in/sec		36.3	41.8	39.9	35.2	28.6	29.7	22.9	25.3	21.8	20.4	28.4	32.8	33.4	39.9	28.1
Down Track Calculatio	n																	
FDL	dB re 1	lb/in ^{0.5}		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10	0 ⁻⁶ in/s*in ^{0.5}	/lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re 10	0 ⁻⁶ in/sec		36.3	41.8	39.9	35.2	28.6	29.7	22.9	25.3	21.8	20.4	28.4	32.8	33.4	39.9	28.1
Total of Up and Down	Fracks C	alculation	1															
Total Vibration Level Out	tside Bui	lding		39.3	44.8	42.9	38.2	31.6	32.7	25.9	28.3	24.8	23.4	31.4	35.8	36.4	42.9	31.1
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradiated Naiss Lavel	1	1/2 0			<u> </u>	50.0	54.0	47.4	40.4		40.0	20.0	07.4		47.0	47.4	53.0	44.0
Predicted Noise Level		1/3 00	λ, αΒ	55.3	60.8	58.9 62 F	54.2	47.4	48.1 54.2	41.1	43.3	39.6	37.4	44.4	4/.8	41.4	53.6	41.8 52.0
Fredicted NOISE Level		00		E4 0		03.5			91.Z			43.0			51.0			53.9
∟max			uB(A)	51.2														
L _{eq,30mins}			dB(A)	38.8														
Noise Criteria			dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operation	onal GBN Assessment		Train Spee	ed: 90 kph
NSR Ref.:	DIH-3-3		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Kwai Yuen House	Up Track	5	35	35
Assessed Floor	1	Down Track	15	35	38
Item:	5				

Selected Borehole Details:

		Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
ſ	Up Track	D002	24	34	35[1]
	Down Track	D002	24	34	38[1]

										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb/	′in ^{0.5}		37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ i	in/s*in ^{0.5} /l	b	-1.0	3.0	3.0	6.8	10.1	6.9	6.1	3.5	2.0	1.4	0.4	-0.1	0.0	-0.8	-3.7
Up Track Vib. Level	dB re 10 ⁻⁶	in/sec		36.5	44.5	43.5	45.3	47.6	48.4	50.6	49.0	47.5	42.9	40.9	39.4	36.5	36.7	30.9
Down Track Calculatio	n																	
FDL	dB re 1 lb/	′in ^{0.5}		37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ i	in/s*in ^{0.5} /l	b	-4.0	-0.2	0.5	4.3	7.3	2.4	1.2	-1.5	-4.4	-5.8	-4.8	-5.5	-5.0	-8.2	-11.7
Down Track Vib. Level	dB re 10 ⁻⁶	in/sec		33.6	41.3	41.0	42.8	44.8	43.9	45.7	44.0	41.1	35.7	35.8	34.0	31.5	29.3	22.9
Total of Up and Down	Fracks Cal	culation																
Total Vibration Level Out	tside Buildii	ng		38.3	46.2	45.4	47.2	49.4	49.7	51.8	50.2	48.4	43.7	42.1	40.5	37.7	37.4	31.5
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	1	4/0.0				01 -	<u> </u>	05.0	<u> </u>	07.0	05.0					40 -	40.4	40.0
Predicted Noise Level		1/3 001	, dB	54.3	62.2	61.4	63.2	65.2	65.1	67.0	65.2	63.2	57.7	55.1	52.5	48.7	48.1	42.2
Predicted Noise Level		Oct	., dB			67.1			70.7			67.8			57.6			49.1
L _{max}		d	B(A)	54.6														
Leg 30mins	1	d	B(A)	41.7														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A) 45

Yes

Noise Criteria

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GE	N Assessment		Train Spee	ed: 80 kph
NSR Ref.:	DIH-3-4		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Chui Yuen House	Up Track	55	45	71
Assessed Floor	1	Down Track	50	45	67
Item:	6				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D028	22	44	71[1]
Down Track	D028	22	44	67[1]

										Frequ	iencv	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation	onic			20	20	02	10	00	00	00	100	120	100	200	200	010	100	000
FDI	dB re 1 lb	/in ^{0.5}		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44 5	44 5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB	Y/N	N	00.0		00.0	01.0	00.0		.0.0				00.0	00.0	00.0	00.0	00.0
TIL	dB	Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	.) 0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ^{-€}	³ in/s*in ^{0.5} /	b	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Up Track Vib. Level	dB re 10 ⁻⁶	³in/sec		36.3	41.8	39.9	35.2	28.6	29.7	22.9	25.3	21.8	20.4	28.4	32.8	33.4	39.9	28.1
Down Track Calculatio	n																	
FDL	dB re 1 lb	/in ^{0.5}		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶	[ີ] ຈin/s*in ^{0.5} /	b	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re 10 ⁻⁶	ີ in/sec		36.3	41.8	39.9	35.2	28.6	29.7	22.9	25.3	21.8	20.4	28.4	32.8	33.4	39.9	28.1
Total of Up and Down	Fracks Ca	lculation																
Total Vibration Level Out	tside Build	ing		39.3	44.8	42.9	38.2	31.6	32.7	25.9	28.3	24.8	23.4	31.4	35.8	36.4	42.9	31.1
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due dista d Mais a Laval	1	4/2.0 -		0			54.0		40.4		40.0		07.4		47.0	47.4	50.0	44.0
Predicted Noise Level		1/3 001	ι, αΒ	55.3	60.8	58.9	54.2	47.4	48.1	41.1	43.3	39.6	31.4	44.4	47.8	47.4	53.6	41.8
Predicted NOISE LEVEL		UC:	t, dB			63.5			51.2			45.6			51.6			53.9
Lmax		d	R(A)	51.2														
L _{eg.30mins}		d	B(A)	38.8														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A) 45

Yes

Noise Criteria

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operation	al GBN Assessment		Train Spee	ed: 90 kph
NSR Ref.:	DIH-4-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Pang Ching Court	Up Track	210	70	221
Assessed Floor	1	Down Track	195	70	207
Item:	7				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D064	15	67	221[1]
Down Track	D064	15	67	207[1]

		T						Frequ	Jency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	37.	5 41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N	1														
TIL	dB Type 0) 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type C)														
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-0.2	2 1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	37.	3 42.8	40.9	36.2	29.6	30.7	23.9	26.3	22.8	21.4	29.4	33.8	34.4	40.9	29.1
Down Track Calculatio	n															
FDL	dB re 1 lb/in ^{0.5}	37.	5 41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N	1														
TIL	dB Type 0) 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type C)														
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-0.2	2 1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	37.	3 42.8	40.9	36.2	29.6	30.7	23.9	26.3	22.8	21.4	29.4	33.8	34.4	40.9	29.1
Total of Up and Down	Fracks Calculation															
Total Vibration Level Out	tside Building	40.	3 45.8	43.9	39.2	32.6	33.7	26.9	29.3	25.8	24.4	32.4	36.8	37.4	43.9	32.1
BCF	dB Y/N C)														
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due dista d Mais a Laval	1/0 O = t					40.4	40.4	40.4	44.0	40.0	00.4	45.4	40.0	40.4	= 4 0	40.0
Predicted Noise Level	1/3 OCt, 0	10 56. 10	5 61.8	59.9	55.2	48.4	49.1	42.1	44.3	40.6	38.4	45.4	48.8	48.4	54.6	42.8
rieuictea Noise Level	Uct, o		•	04.5			52.3			40.0			92.0			54.9
∟max	dB(A) 52	.3													
L _{eq,30mins}	dB(A) 39	.3													
Noise Criteria	dB(A) 45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

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Project:	Shatin Central Link Rail Operational GBN As	sessment		Train Spee	ed: 90 kph
NSR Ref.:	DIH-4-2		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Carbo Anglo-Chinese Kindergarden	Up Track	130	75	150
Assessed Floor	0	Down Track	115	75	137
Item:	8				

Selected B	orehole Details:			
	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dis
Up Track	D064	15	67	150[1]
Down Trac	k D064	15	67	137[1]
		Frequency (Hz)		

Unit		20) 25	32	40	50	63	80	100	125	160	200	250	315	400	500
dB re 1 lb/in ⁰	.5	37	5 41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
dB	Y/N N	1														
dB T	ype C) 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
dB T	ype C)														
dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	-0.	2 1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
dB re 10 ⁻⁶ in/s	sec	37	3 42.8	40.9	36.2	29.6	30.7	23.9	26.3	22.8	21.4	29.4	33.8	34.4	40.9	29.1
dB re 1 lb/in ⁰	.5	37	5 41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
dB	Y/N N	1														
dB T	ype C) (0	0	0	0	0	0	0	0	0	0	0	0	0	0
dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
dB T	ype C)														
dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	-0.	2 1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
dB re 10 ⁻⁶ in/s	ec	37	3 42.8	40.9	36.2	29.6	30.7	23.9	26.3	22.8	21.4	29.4	33.8	34.4	40.9	29.1
racks Calcul	ation															
side Building		40	3 45.8	43.9	39.2	32.6	33.7	26.9	29.3	25.8	24.4	32.4	36.8	37.4	43.9	32.1
dB	Y/N C)														
dB Fl	oor C) 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
dB		6.	0.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
dB		1() 10	10	10	10	10	10	10	10	10	10	10	10	10	10
	10 O at a		2 62 0	64.0	57 0	50.4			40.0		40.4		50.0	50.4	50.0	
										A*1 62						
	Unit dB re 1 lb/in ⁰ dB T dB T dB T dB re 10 ⁻⁶ in/s dB re 1 lb/in ⁰ dB re 1 lb/in ⁰ dB T dB T	Unit dB re 1 lb/in ^{0.5} dB Y/N N dB Type C dB Type C dB re 10 ⁻⁶ in/s*in ^{0.5} /lb dB re 10 ⁻⁶ in/sec dB re 1 lb/in ^{0.5} dB Y/N N dB Type C dB Type C dB re 10 ⁻⁶ in/s*in ^{0.5} /lb dB re 10 ⁻⁶ in/sec racks Calculation ide B wilding dB Y/N C dB Floor C dB Floor C dB dB	Unit 20 dB re 1 lb/in ^{0.5} 37. dB Y/N N dB Type 0 dB re 10 ⁻⁶ in/s*in ^{0.5} /lb -0. dB re 10 ⁻⁶ in/sec 37. side Building 40. dB Y/N 0 dB Floor 0 dB Floor 0 dB 61. 2 dB 10 10	Unit 20 25 dB re 1 lb/in ^{0.5} 37.5 41.5 dB Y/N N dB Type 0 dB Type 0 dB Type 0 dB Type 0 dB re 10 ⁻⁶ in/s*in ^{0.5} /lb -0.2 1.3 dB re 10 ⁻⁶ in/sec 37.5 41.5 dB re 10 ⁻⁶ in/sec 37.3 42.8 dB re 10 ⁻⁶ in/s*in ^{0.5} /lb 0 0 dB re 10 ⁻⁶ in/sec 37.3 42.8 ide Building 40.3 45.8 dB Y/N 0 0 dB Floor 0 0 dB Floor 0 0 dB 40.3 45.8 dB 10 10 10	Unit 20 25 32 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 dB Y/N N 0 0 0 dB Type 0 0 0 0 dB Type 0 0 0 0 0 dB re 10 ⁻⁶ in/s*in ^{0.5} /lb -0.2 1.3 0.4 0 0 0 dB re 10 ⁻⁶ in/sec 37.3 42.8 40.9 0 0 0 dB re 10 ⁻⁶ in/sec 37.5 41.5 40.5 0 0 0 dB re 10 ⁻⁶ in/sec 37.3 42.8 40.9 0 0 0 dB re 10 ⁻⁶ in/sec 37.3 42.8 40.9 7.3 42.8 40.9 racks Calculation ide Building 40.3 45.8 43.9 dB Y/N 0 0 0 0 0 dB Floor 0 0 0 2 2<	Unit 20 25 32 40 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 dB Type 0 0 0 0 0 0 dB re 10 ⁻⁶ in/s*in ^{0.5} /lb -0.2 1.3 0.4 -2.3 dB re 10 ⁻⁶ in/sec 37.3 42.8 40.9 36.2 dB re 10 ⁻⁶ in/sec 37.5 41.5 40.5 38.5 dB re 10 ⁻⁶ in/sec 37.3 42.8 40.9 36.2 dB re 10 ⁻⁶ in/sec 37.3 42.8 40.9 36.2 dB re 10 ⁻⁶ in/s*in ^{0.5} /lb 0 0 0 0 dB re 10 ⁻⁶ in/sec 37.3 42.8 40.9 36.2 racks Calculation 37.3 42.8 40.9 36.2 ide Building 40.3 45.8 43.9 39.2 dB YN 0 0 0	Unit 20 25 32 40 50 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 37.5 dB Y/N N 0 0 0 0 0 dB Type 0 0 0 0 0 0 dB Type 0 0 0 0 0 0 dB re 10^{-6} in/s*in ^{0.5} /lb -0.2 1.3 0.4 -2.3 -7.9 dB re 10^{-6} in/sec 37.3 42.8 40.9 36.2 29.6 dB re 10^{-6} in/sec 37.5 41.5 40.5 38.5 37.5 dB re 10^{-6} in/sec 37.3 42.8 40.9 36.2 29.6 dB re 10^{-6} in/sec 37.3 42.8 40.9 36.2 29.6 racks Calculation 37.3 42.8 40.9 36.2 29.6 racks Calculation 37.3 42.8 40.9 36.2	Unit 20 25 32 40 50 63 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 dB Y/N N 0 0 0 0 0 0 dB Type 0 0 0 0 0 0 0 dB Type 0 0 0 0 0 0 0 dB re 10^{-6} in/s*in ^{0.5} /lb -0.2 1.3 0.4 -2.3 -7.9 -10.8 dB re 10^{-6} in/sec 37.3 42.8 40.9 36.2 29.6 30.7 dB re $11b/in^{0.5}$ 37.5 41.5 40.5 38.5 37.5 41.5 dB re 10^{-6} in/sec 37.3 42.8 40.9 36.2 29.6 30.7 dB re 10^{-6} in/s*in ^{0.5} /lb 0 0 0 0 0 0 0 0 dB re 10^{-6} in/sec 37.3 42.8 40.9 36.2 29.6 30.7 rac	Unit 20 25 32 40 50 63 80 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 44.5 dB Y/N N 0 0 0 0 0 0 0 0 dB Type 0 0 0 0 0 0 0 0 0 dB re 10^{-6} in/s*in ^{0.5} /lb -0.2 1.3 0.4 -2.3 -7.9 -10.8 -20.6 dB re 10^{-6} in/s*in ^{0.5} /lb -0.2 1.3 0.4 -2.3 -7.9 -10.8 -20.6 dB re $11b/in^{0.5}$ 37.5 41.5 40.5 38.5 37.5 41.5 44.5 dB re 10^{-6} in/sec 37.3 42.8 40.9 36.2 29.6 30.7 23.9 dB re 10^{-6} in/s*in ^{0.5} /lb 0 0 0 0 0 0 0 0 0 dB re 10^{-6} in/s*in ^{0.5} /lb -2.2 1.3 0.4 -2.3 -7.9 -10.8	Unit 20 25 32 40 50 63 80 100 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 44.5 45.5 dB Y/N N 0	Unit 20 25 32 40 50 63 80 100 125 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 44.5 45.5 45.5 dB Y/N N 0	Unit 20 25 32 40 50 63 80 100 125 160 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 44.5 45.5 45.5 41.5 41.5 dB Y/N N 0 </td <td>Unit 20 25 32 40 50 63 80 100 125 160 200 dB re 1 lb/in^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 44.5 45.5 45.5 41.5 40.5 dB Type 0</td> <td>Unit 20 25 32 40 50 63 80 100 125 160 200 250 dB re 1 lb/in^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 44.5 45.5 45.5 45.5 41.5 40.5 39.5 dB Type 0</td> <td>Unit 20 25 32 40 50 63 80 100 125 160 200 250 315 dB re 1 lb/in^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 44.5 45.5 45.5 45.5 41.5 40.5 39.5 36.5 dB Y/N N 0<td>Unit 20 25 32 40 50 63 80 100 125 160 200 250 315 400 dB re 1 lb/in^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 45.5 45.5 45.5 41.5 40.5 39.5 36.5 37.5 dB Y/N N 0 <t< td=""></t<></td></td>	Unit 20 25 32 40 50 63 80 100 125 160 200 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 44.5 45.5 45.5 41.5 40.5 dB Type 0	Unit 20 25 32 40 50 63 80 100 125 160 200 250 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 44.5 45.5 45.5 45.5 41.5 40.5 39.5 dB Type 0	Unit 20 25 32 40 50 63 80 100 125 160 200 250 315 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 44.5 45.5 45.5 45.5 41.5 40.5 39.5 36.5 dB Y/N N 0 <td>Unit 20 25 32 40 50 63 80 100 125 160 200 250 315 400 dB re 1 lb/in^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 45.5 45.5 45.5 41.5 40.5 39.5 36.5 37.5 dB Y/N N 0 <t< td=""></t<></td>	Unit 20 25 32 40 50 63 80 100 125 160 200 250 315 400 dB re 1 lb/in ^{0.5} 37.5 41.5 40.5 38.5 37.5 41.5 45.5 45.5 45.5 41.5 40.5 39.5 36.5 37.5 dB Y/N N 0 <t< td=""></t<>

Predicted Noise Level	Oct, dB		(66.5		54.3		48.6		54.6		56.9
L _{max}	dB(A)	54.3										
L _{eq,30mins}	dB(A)	44[8]										
Noise Criteria	dB(A)	55[9]										
Compliance		Yes										

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.
 [3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 30*log(no. of events in 30mins per direction) - 30*lo

(3dB(A) correction is added to L _{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{ea.30mins} is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

[8] A 3dB(A) upward adjustment is made to account for the daytime headway of 22 EMU trains within a 30 minutes period.

[9] Daytime criteria are used for educational buildings, church and temple.

Project:	Shatin Central Link Rail Operatic	onal GBN Assessment		Train Spee	ed: 80 kph
NSR Ref.:	DIH-5-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Rainbow Home	Up Track	60	35	69
Assessed Floor	0	Down Track	25	35	43
Item:	9				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	34	69[1]
Down Track	D002	24	34	43[1]

										Frequ	Jency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1	lb/in ^{0.5}		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10	0 ⁻⁶ in/s*in ^{0.5}	/lb	-9.0	-9.8	-13.7	-15.2	-8.6	-18.7	-20.2	-11.6	-24.0	-23.5	-21.3	-13.0	-15.4	-14.9	-16.6
Up Track Vib. Level	dB re 10	0 ⁻⁶ in/sec		27.5	30.7	25.8	22.3	27.9	21.8	23.3	32.9	20.5	17.0	18.2	25.5	20.1	21.6	16.9
Down Track Calculation	n																	
FDL	dB re 1	lb/in ^{0.5}		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10	0 ⁻⁶ in/s*in ^{0.5}	/lb	-5.5	-1.7	-1.5	2.5	4.6	-1.1	-3.0	-4.5	-8.9	-10.7	-8.9	-7.3	-6.0	-9.6	-12.8
Down Track Vib. Level	dB re 10	0 ⁻⁶ in/sec		31.0	38.8	38.0	40.0	41.0	39.4	40.5	40.0	35.6	29.8	30.6	31.2	29.5	26.9	20.7
Total of Up and Down 1	Fracks C	Calculation	1															
Total Vibration Level Out	tside Bui	lding		32.6	39.5	38.2	40.1	41.3	39.5	40.6	40.8	35.7	30.1	30.9	32.2	30.0	28.0	22.2
BCF	dB	Y/N	0															
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due diete d Maine I avai	1	4/2.0		50.0			50.4	50.4	50.0	0	0		40.4	45.0	40.0	40.0		
Predicted Noise Level		1/3 00	λ, αΒ	50.6	57.5	50.2	58.1	59.1	50.9 62.9	57.8	57.8	52.5	46.1	45.9	46.2	43.0	40.7	34.9 44 7
rieuictea Noise Level		0		40.0		02.1			02.0			59.1			50.0			41.7
L _{max}			ав(А)	46.3														
L _{eq,30mins}			dB(A)	33.9														
Noise Criteria			dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational	GBN Assessment		Train Spee	ed: 80 kph
NSR Ref.:	DIH-5-2		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Residential premises	Up Trac	k 45	30	54
Assessed Floor	1	Down Tra	ck 10	30	32
Item:	10				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	54[1]
Down Track	D002	24	20	32[1]

									Frequ	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in	0.5	36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB	Y/N N															
TIL	dB 1	Гуре О	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB 1	Гуре О															
LSR	dB re 10 ⁻⁶ in/	's*in ^{0.5} /lb	2.0	-2.0	-5.5	-5.8	-1.3	-10.4	-12.2	-6.6	-21.3	-22.1	-14.0	-10.8	-12.5	-12.2	-15.1
Up Track Vib. Level	dB re 10 ⁻⁶ in/	sec	38.5	38.5	34.0	31.7	35.2	30.1	31.3	37.9	23.2	18.4	25.5	27.7	23.0	24.3	18.4
Down Track Calculation	n																
FDL	dB re 1 lb/in	0.5	36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB	Y/N N															
TIL	dB 1	Гуре О	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB 1	Гуре О															
LSR	dB re 10 ⁻⁶ in/	's*in ^{0.5} /lb	8.5	3.1	5.5	8.6	8.8	1.1	3.5	1.3	-5.9	-13.6	-7.3	-7.0	-6.6	-9.8	-10.8
Down Track Vib. Level	dB re 10 ⁻⁶ in/	sec	45.0	43.6	45.0	46.1	45.3	41.6	47.0	45.8	38.6	26.9	32.2	31.5	28.9	26.7	22.7
Total of Up and Down 1	Fracks Calcu	Ilation															
Total Vibration Level Out	tside Building		45.9	44.8	45.3	46.3	45.7	41.9	47.1	46.4	38.7	27.5	33.0	33.0	29.9	28.7	24.1
BCF	dB	Y/N 0															
BVR-up	dB F	loor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Lovel		1/3 Oct. dF	8 61 9	60.8	61 2	62.2	61 5	57 2	62.2	61 /	53 F	<i>A</i> 1 5	46.0	45.0	10.9	30 /	34.9
Predicted Noise Level		Oct dF	3 01.9	00.0	66.3	52.5	01.0	65.6	02.5	01.4	62.1	+1.3	+0.0	49.3	40.3	55.4	40.7
		dB(A	47 6		50.0			00.0			v =.1			10.0			
			35.2														
l⊶eq,30mins			1 35.2														
Noise Criteria		aB(A	/ 45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN	N Assessment		Train Spee	ed: 80 kph
NSR Ref.:	DIH-5-5		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Our Lady's Kindergarden	Up Track	110	40	117
Assessed Floor	0	Down Track	85	40	94
Item:	11				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	40	117[1]
Down Track	D018	28	40	94[1]

										Freq	iencv	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation	Onit			20	20	02	ΨU	00	00	00	100	120	100	200	200	010	400	000
FDI	dB re 1 lb	/in ^{0.5}		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44 5	44 5	40.5	39.5	38.5	35.5	36.5	33.5
CCE	dB	Y/N	N	00.0	10.0	00.0	01.0	00.0	10.0	10.0	11.0	11.0	10.0	00.0	00.0	00.0	00.0	00.0
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	.)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ^{-€}	³ in/s*in ^{0.5} /l	b	1.3	-4.7	-5.1	-7.1	-4.2	-7.0	-2.5	-16.1	-14.8	-15.6	-19.2	-13.0	-13.8	-18.8	-17.8
Up Track Vib. Level	dB re 10 ^{-€}	³in/sec		37.8	35.8	34.4	30.4	32.3	33.5	41.0	28.4	29.7	24.9	20.3	25.5	21.7	17.7	15.7
Down Track Calculatio	n																	
FDL	dB re 1 lb	/in ^{0.5}		36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶	ີ້ in/s*in ^{0.5} /l	b	1.3	-4.7	-5.1	-7.1	-4.2	-7.0	-2.5	-16.1	-14.8	-15.6	-19.2	-13.0	-13.8	-18.8	-17.8
Down Track Vib. Level	dB re 10 ⁻⁶	ີ in/sec		37.8	35.8	34.4	30.4	32.3	33.5	41.0	28.4	29.7	24.9	20.3	25.5	21.7	17.7	15.7
Total of Up and Down	Fracks Ca	lculation																
Total Vibration Level Out	tside Build	ing		40.8	38.8	37.4	33.4	35.3	36.5	44.0	31.4	32.7	27.9	23.3	28.5	24.7	20.7	18.7
BCF	dB	Y/N	0															
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Naise Level	1	1/2 Oct	dD	50 0	50.0	FE A	E4 4	E2 4	52.0	64.0	40.4	40 E	42.0	20.2	40 E	27.7	22.4	24.4
Predicted Noise Level		1/3 000	, uD dP	50.0	50.0	50.4	51.4	55.1	53.9 62 F	01.2	40.4	43.0 52.6	43.9	30.3	42.0	31.1	55.4	31.4 25 E
rieuicieu Noise Level		UCL	, UB	40.4		33.0			02.3			32.0			44.0			35.5
∟ _{max}		a	B(A)	43.1														
L _{eq,30mins}		d	B(A)	34[8]														

Compliance Yes Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A) 55[9]

Noise Criteria

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32*log(no. of events in 30*log(no. of$

(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{ea.30mins} is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

[8] A 3dB(A) upward adjustment is made to account for the daytime headway of 22 EMU trains within a 30 minutes period.

[9] Daytime criteria are used for educational buildings, church and temple.

Project:	Shatin Central Link Rail Operational GBN Ass	essment		Train Spee	ed: 85 kph
NSR Ref.:	DIH 6-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	WTS Fire Station and Quarters Block A	Up Track	5	30	30
Assessed Floor	1	Down Track	5	30	30
Item:	12				

		Selec	ted Bo	oreho	le Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	ո, m	Hole	e Dept	h, m	Sla	ant Dist	i, m
		Up T	rack		D002			2	4			20			30[1]	
		Down	Track		D002			2	4			20			30[1]	
								Freq	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	9.1	4.8	7.0	9.1	9.2	2.5	4.2	2.5	-4.6	-11.6	-5.8	-6.4	-6.2	-9.3	-10.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	46.1	45.9	47.1	47.1	46.2	43.5	48.2	47.5	40.5	29.4	34.3	32.7	29.8	27.8	23.6
Down Track Calculatio	n															
FDL	dB re 1 lb/in ^{0.5}	37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	9.1	4.8	7.0	9.1	9.2	2.5	4.2	2.5	-4.6	-11.6	-5.8	-6.4	-6.2	-9.3	-10.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	46.1	45.9	47.1	47.1	46.2	43.5	48.2	47.5	40.5	29.4	34.3	32.7	29.8	27.8	23.6
Total of Up and Down	Tracks Calculation															
Total Vibration Level Ou	tside Building	49.1	48.9	50.1	50.1	49.2	46.5	51.2	50.5	43.5	32.4	37.3	35.7	32.8	30.8	26.6
BCF	dB Y/N 0															
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/3 Oct, dB	65.1	64.9	66.1	66.1	65.0	61.9	66.4	65.5	58.3	46.4	50.3	47.7	43.8	41.5	37.3
Predicted Noise Level	Uct. dB			70.5			69.6			66.3			52.8			42.9

Predicted Noise Level	1/3 Oct, dB	65.1	64.9	66.1	66.1	65.0	61.9	66.4	65.5	58.3	46.4	50.3	47.7	43.8	41.5	37.3
Predicted Noise Level	Oct, dB			70.5			69.6			66.3			52.8			42.9
L _{max}	dB(A)	51.5														
L _{eq,30mins}	dB(A)	38.8														
Noise Criteria	dB(A)	45														
Compliance		Yes														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.
 [3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 30*log(no. of events in 30*log(no. of$ (3dB(A) correction is added to L _{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{ea.30mins} is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational G	BN Assessment		Train Spee	ed: 85 kph
NSR Ref.:	DIH-7-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Tropicana Gardens Block 2	Up Track	14	40	42
Assessed Floor	4	Down Track	58	40	70
Item:	13				

Selected Borehole Details:

_		Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
ſ	Up Track	D018	28	40	42[1]
	Down Track	D018	28	40	70[1]

								Freq	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	3.9	1.0	0.8	1.3	2.9	1.0	2.4	-2.5	-3.7	-2.6	1.7	4.6	5.8	7.2	9.2
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	38.0	39.1	37.8	36.4	36.9	39.1	43.4	39.6	38.3	35.5	38.8	40.6	38.8	41.2	40.3
Down Track Calculatio	n															
FDL	dB re 1 lb/in ^{0.5}	37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	2.2	-3.3	-3.8	-5.6	-2.8	-5.7	-1.9	-14.3	-13.2	-14.1	-17.5	-11.4	-12.3	-17.1	-16.2
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	36.3	34.7	33.2	29.4	31.2	32.3	39.1	27.8	28.8	23.9	19.5	24.6	20.7	17.0	14.8
Total of Up and Down	Fracks Calculation															
Total Vibration Level Out	tside Building	40.2	40.4	39.1	37.2	37.9	39.9	44.8	39.8	38.8	35.8	38.8	40.7	38.9	41.2	40.3
BCF	dB Y/N 0															
BVR-up	dB Floor 4	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due dista d Mais a Laural	4/2 O - t		50.4	40.4	47.0	47.7	40.0	54.0	40.0	47.0	40.0	45.0	10 -	40.0	45.0	45.0
Predicted Noise Level	1/3 Oct, d	B 50.2	50.4	49.1	47.2	47.7	49.3	54.0	48.8	47.6	43.8	45.8	46.7	43.9	45.9	45.0
Predicted NOISE Level	Oct, d	В	_	53.9			55.9			52.0			50.4			48.5
L _{max}	dB(A) 47.	5													
L _{eg.30mins}	dB(A) 34.8	3													

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A) 45

Yes

Noise Criteria

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational G	BN Assessment		Train Spee	ed: 85 kph
NSR Ref.:	DIH-7-2		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Tropicana Gardens Block 3	Up Track	10	40	41
Assessed Floor	4	Down Track	48	40	62
Item:	14				

Selected	Borehole	Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	40	41[1]
Down Track	D018	28	40	62[1]

				Frequency (Hz)														
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1	lb/in ^{0.5}		37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re 1	0 ⁻⁶ in/s*in ^{0.5}	/lb	4.0	1.5	1.1	2.5	4.0	3.0	3.7	0.8	-0.9	-0.9	4.3	6.6	7.7	9.0	10.4
Up Track Vib. Level	dB re 1	0⁻⁰in/sec		38.0	39.5	38.2	37.5	38.1	41.0	44.8	42.8	41.1	37.1	41.3	42.7	40.7	43.0	41.4
Down Track Calculation	n																	
FDL	dB re 1	lb/in ^{0.5}		37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re 1	0 ⁻⁶ in/s*in ^{0.5}	/lb	2.9	-2.3	-2.9	-4.6	-1.8	-4.7	-1.5	-12.9	-12.1	-13.0	-16.3	-10.2	-11.2	-15.8	-15.0
Down Track Vib. Level	dB re 1	0⁻⁰in/sec		37.0	35.7	34.1	30.5	32.2	33.3	39.5	29.1	29.9	25.0	20.7	25.8	21.8	18.2	16.0
Total of Up and Down 1	Fracks C	Calculation	1															
Total Vibration Level Out	tside Bui	ilding		40.5	41.0	39.6	38.3	39.1	41.7	45.9	43.0	41.4	37.4	41.3	42.7	40.8	43.0	41.4
BCF	dB	Y/N	0															
BVR-up	dB	Floor	4	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dВ			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Lovel		1/3 0/	t dB	50 F	51.0	19 F	18 2	18 0	51 1	55 1	52.0	50.2	45 A	18 2	48 7	45.8	47.7	46.1
Predicted Noise Level		0	ct dB	50.5	51.0	54.5		-10.3	57.2	55.1	52.0	54.7		40.5	52.6			50.0
			dB(A)	49 2								•						2010
-max				36 5														
l ←eq,30mins				30.5														
Noise Criteria	1		uB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Noise Criteria Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32*log(no. of events in 30*log(no. of$ (3dB(A) correction is added to L _{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{ea.30mins} is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GB	N Assessment		Train Spee	ed: 85 kph
NSR Ref.:	DIH-8-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Redemption Lutheran Church	Up Track	116	20	118
Assessed Floor	0	Down Track	163	20	164
Item:	15				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	118[1]
Down Track	D002	24	20	164[1]

				Frequency (Hz)														
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb/	′in ^{0.5}		37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶	in/s*in ^{0.6}	[;] /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re 10 ⁻⁶	in/sec		30.0	30.8	24.7	19.7	25.9	16.5	21.5	30.3	16.4	11.1	19.6	21.7	16.0	18.6	12.6
Down Track Calculation	n																	
FDL	dB re 1 lb/	/in ^{0.5}		37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶	in/s*in ^{0.6}	[;] /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶	in/sec		30.0	30.8	24.7	19.7	25.9	16.5	21.5	30.3	16.4	11.1	19.6	21.7	16.0	18.6	12.6
Total of Up and Down 1	Fracks Cal	culation	1															
Total Vibration Level Out	tside Buildi	ng		33.0	33.8	27.7	22.7	28.9	19.5	24.5	33.3	19.4	14.1	22.6	24.7	19.0	21.6	15.6
BCF	dB	Y/N	0															
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradiated Naisa Laval		1/2 0	at dD	54.0	E4 0	45.7	40.7	46.7	26.0	44 7	50.2	26.2	20.4	27.6	20.7	22.0	24.2	20.2
Predicted Noise Level		1/3 0	ct dB	51.0	51.6	40./ 53.1	40.7	40./	30.9 18 3	41./	50.3	30.Z	30.1	57.0	30./ /1 7	32.0	34.5	20.3 35.3
		0	$dR(\Delta)$	37 4		55.1						50.5			41.7			55.5
-max I				246														
Leq,30mins				24.0														
Noise Criteria			dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{eq.30mins} is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operatior	al GBN Assessment		Train Spee	ed: 80 kph
NSR Ref.:	DIH-9-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Shek On Building	Up Track	118	25	121
Assessed Floor	0	Down Track	156	25	158
Item:	16				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	121[1]
Down Track	D002	24	20	158[1]

									Frequ	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ⁰	0.5	36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB	Y/N N															
TIL	dB T	Гуре О	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB T	Гуре О															
LSR	dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/s	sec	29.5	30.3	24.2	19.2	25.4	16.0	21.0	29.8	15.9	10.6	19.1	21.2	15.5	18.1	12.1
Down Track Calculation	n																
FDL	dB re 1 lb/in ⁰	0.5	36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB	Y/N N															
TIL	dB T	Гуре О	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB T	Гуре О															
LSR	dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/s	sec	29.5	30.3	24.2	19.2	25.4	16.0	21.0	29.8	15.9	10.6	19.1	21.2	15.5	18.1	12.1
Total of Up and Down 1	racks Calcu	lation															
Total Vibration Level Out	side Building		32.5	33.3	27.2	22.2	28.4	19.0	24.0	32.8	18.9	13.6	22.1	24.2	18.5	21.1	15.1
BCF	dB	Y/N 0															
BVR-up	dB Fl	loor 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradicted Naice Laws		4/2 Oat dD	50 F	F4 0	45.0	40.0	40.0	20.4	44.0	40.0	05 7	00.0	07.4	20.0	24.5	22.0	07.0
Predicted Noise Level		1/3 UCT, dB	50.5	51.3	45.2	40.2	46.2	36.4	41.2	49.8	35./	29.6	37.1	38.2	31.5	33.8	27.8
Predicted Noise Level					92.5			41.1			50.0			41.2			34.8
L _{max}		dB(A)	36.8														
L _{eq,30mins}		dB(A)	27[8]														

Yes Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A) 55[9]

Noise Criteria

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d

(3dB(A) correction is added to L _{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{ea.30mins} is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

[8] A 3dB(A) upward adjustment is made to account for the daytime headway of 22 EMU trains within a 30 minutes period.

[9] Daytime criteria are used for educational buildings, church and temple.

Project:	Shatin Central Link Rail Operational GBN Asses	atin Central Link Rail Operational GBN Assessment							
NSR Ref.:	DIH-10-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m				
Location:	Hong Kong Sheung Keung Hui Nursing Home	Up Track	160	25	162				
Assessed Floor	1	Down Track	188	25	190				
Item:	17								
	Selected Borehole De	tails:							

				Bor	ehole	Ref.	Roc	khead	Depth	ı, m	Hole	Dept	th, m	Sla	ant Dist	, m
		Up T	rack		D002			24	4			20			162[1]	
		Down	Track		D002			24	4			20			190[1]	
								Frequ	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	29.5	30.3	24.2	19.2	25.4	16.0	21.0	29.8	15.9	10.6	19.1	21.2	15.5	18.1	12.1
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	36.5	40.5	39.5	37.5	36.5	40.5	43.5	44.5	44.5	40.5	39.5	38.5	35.5	36.5	33.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	29.5	30.3	24.2	19.2	25.4	16.0	21.0	29.8	15.9	10.6	19.1	21.2	15.5	18.1	12.1
Total of Up and Down 1	Fracks Calculation															
Total Vibration Level Out	side Building	32.5	33.3	27.2	22.2	28.4	19.0	24.0	32.8	18.9	13.6	22.1	24.2	18.5	21.1	15.1
BCF	dB Y/N 0															
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		-														
Predicted Noise Level	1/3 Oct, dB	48.5	49.3	43.2	38.2	44.2	34.4	39.2	47.8	33.7	27.6	35.1	36.2	29.5	31.8	25.8
Predicted Noise Level	Oct, dB			50.5			45.7			48.0			39.2			32.8
L _{max}	dB(A)	34.8														
L _{eq,30mins}	dB(A)	22.4														
Noise Criteria	dB(A)	45														
Compliance		Yes														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate. [2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual. [3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32*log(no. of events in 30*log(no. of$ (3dB(A) correction is added to L _{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{ea.30mins} is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Opera	ational GBN Assessment		Train Spee	ed: 35 kph
NSR Ref.:	DIH-11-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Lung Wan House	Up Track	75	25	79
Assessed Floor	1	Down Track	60	25	65
Item:	18	<u> </u>			

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	79[1]
Down Track	D002	24	20	65[1]

				1						Freau	uencv	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1	1 lb/in ^{0.5}		29.3	33.3	32.3	30.3	29.3	33.3	36.3	37.3	37.3	33.3	32.3	31.3	28.3	29.3	26.3
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re '	10 ⁻⁶ in/s*in ^{0.5} /	/lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re '	10 ⁻⁶ in/sec		20.3	21.1	15.0	10.0	16.2	6.8	11.8	20.6	6.7	1.4	9.9	12.0	6.3	8.9	2.9
Down Track Calculatio	n																	
FDL	dB re '	1 lb/in ^{0.5}		29.3	33.3	32.3	30.3	29.3	33.3	36.3	37.3	37.3	33.3	32.3	31.3	28.3	29.3	26.3
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re '	10 ⁻⁶ in/s*in ^{0.5} /	/lb	-1.7	-4.8	-9.6	-13.3	-6.3	-16.9	-16.4	-9.1	-23.4	-24.6	-15.6	-12.3	-14.7	-13.6	-16.6
Down Track Vib. Level	dB re '	10 ⁻⁶ in/sec		22.6	23.5	17.8	12.0	18.0	11.4	14.9	23.2	8.9	3.7	11.8	14.0	8.6	10.8	4.8
Total of Up and Down	Fracks	Calculation																
Total Vibration Level Out	tside Βι	uilding		24.6	25.5	19.6	14.2	20.2	12.7	16.6	25.1	11.0	5.7	13.9	16.1	10.6	12.9	6.9
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Naise Level		1/2 0	+ dD	40.6	44 E	25.6	20.2	26.0	20.4	24.0	40.4	25.0	40.7	26.0	20.4	24.6	22.6	47.6
Predicted Noise Level		1/3 00	ι,uD tdΡ	40.0	41.5	30.0 427	30.2	30.0	20.1	31.0	40.1	20.0 10 2	19.7	20.9	20.1	21.0	23.0	24 6
redicted NOISe Level		00				42.1			57.9			40.3			31.1			24.0
Lmax		C	іВ(A)	26.9														
Leg 30mins	1	c	B(A)	<20														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Noise Criteria Compliance dB(A) 45

Yes

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational G	BN Assessment		Train Spee	ed: 55 kph
NSR Ref.:	DIH-12-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Galaxia Tower B	Up Track	195	30	197
Assessed Floor	5	Down Track	180	30	182
Item:	19				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	197[1]
Down Track	D002	24	20	182[1]

									Frequ	lency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ^{0.5}	:	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	C	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	1	24.2	25.0	18.9	13.9	20.1	10.7	15.7	24.5	10.6	5.3	13.8	15.9	10.2	12.8	6.8
Down Track Calculation	n																
FDL	dB re 1 lb/in ^{0.5}	;	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	C	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec		24.2	25.0	18.9	13.9	20.1	10.7	15.7	24.5	10.6	5.3	13.8	15.9	10.2	12.8	6.8
Total of Up and Down 1	Fracks Calculation																
Total Vibration Level Out	tside Building		27.3	28.1	22.0	17.0	23.2	13.8	18.8	27.6	13.7	8.4	16.9	19.0	13.3	15.9	9.9
BCF	dB Y/N	0															
BVR-up	dB Floor	5	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Level	1/2 Oct	dP	25.2	26.4	20.0	25.0	24.0	24.2	26.0	24.6	20 F	14.4	24.0	22.0	16.2	19.6	12.6
Predicted Noise Level	1/3 Oct,	dD ·	35.3	30.1	30.0	25.0	31.0	21.2	20.0	34.0	20.5	14.4	21.9	25.0	10.5	10.0	12.0
	OCI,		21 6		57.5			52.5			54.0			23.5			13.0
⊢max	dE		21.0														
Leq,30mins	dE	3(A) <	20														
Noise Criteria	dE	3(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operation	al GBN Assessment		Train Spee	ed: 45 kph
NSR Ref.:	DIH-12-2		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Galaxia Tower E	Up Track	180	30	182
Assessed Floor	5	Down Track	160	30	163
Item:	20				

Selected Borehole Details:

_		Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
	Up Track	D002	24	20	182[1]
	Down Track	D002	24	20	163[1]

								Frequ	iencv	(Hz)						
Description	Lloit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Un Track Calculation	Offic	20	20	52	40	50	00	00	100	120	100	200	200	010	400	500
	15 411 (2.05	04.5	05.5	045	00 F	04.5	05.5	00.5	00.5	00.5	05.5	045	00 F	00.5	04.5	00.5
	dB re 1 lb/in	31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB Y/N N		_	_					_							
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	22.5	23.3	17.2	12.2	18.4	9.0	14.0	22.8	8.9	3.6	12.1	14.2	8.5	11.1	5.1
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	22.5	23.3	17.2	12.2	18.4	9.0	14.0	22.8	8.9	3.6	12.1	14.2	8.5	11.1	5.1
Total of Up and Down 1	Fracks Calculation															
Total Vibration Level Out	tside Building	25.5	26.3	20.2	15.2	21.4	12.0	17.0	25.8	11.9	6.6	15.1	17.2	11.5	14.1	8.1
BCF	dB Y/N 0															
BVR-up	dB Floor 5	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/3 Oct, dB	33.5	34.3	28.2	23.2	29.2	19.4	24.2	32.8	18.7	12.6	20.1	21.2	14.5	16.8	10.8
Predicted Noise Level	Oct, dB			35.5			30.7			33.0			24.2			17.9
L _{max}	dB(A)	19.8														
L _{eg.30mins}	dB(A)	<20														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A) 45

Yes

Noise Criteria

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN	N Assessment		Train Spee	ed: 85 kph
NSR Ref.:	DIH-13-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Canossa Primary School	Up Track	160	25	162
Assessed Floor	0	Down Track	200	25	202
Item:	21				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	162[1]
Down Track	D002	24	20	202[1]

										Frequ	Jency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re	1 lb/in ^{0.5}		37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ^{0.}	⁵/lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re	10 ⁻⁶ in/sec		30.0	30.8	24.7	19.7	25.9	16.5	21.5	30.3	16.4	11.1	19.6	21.7	16.0	18.6	12.6
Down Track Calculation	n																	
FDL	dB re	1 lb/in ^{0.5}		37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ^{0.}	⁵/lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re	10 ⁻⁶ in/sec		30.0	30.8	24.7	19.7	25.9	16.5	21.5	30.3	16.4	11.1	19.6	21.7	16.0	18.6	12.6
Total of Up and Down 1	racks	Calculatio	n															
Total Vibration Level Out	tside B	uilding		33.0	33.8	27.7	22.7	28.9	19.5	24.5	33.3	19.4	14.1	22.6	24.7	19.0	21.6	15.6
BCF	dB	Y/N	0															
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	1	4/0.0	-4 -10	54.6		45 -	40 -	40 -		44 -	50.0	<u> </u>	<u> </u>	07.0			04.6	00 C
Predicted Noise Level		1/3 0	ct, aB	51.0	51.8	45.7	40.7	46.7	36.9	41.7	50.3	36.2	30.1	37.6	38.7	32.0	34.3	28.3
Predicted Noise Level		0	ct, aB			53.1			48.3			50.5			41.7			35.3
L _{max}			dB(A)	37.4														
L _{eq,30mins}			dB(A)	28[8]														

Compliance Yes Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A) 55[9]

Noise Criteria

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in 30*log(no. of$

 $(3dB(A) \text{ correction is added to L}_{eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] L_{eq,30mins} is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

[8] A 3dB(A) upward adjustment is made to account for the daytime headway of 22 EMU trains within a 30 minutes period.

[9] Daytime criteria are used for educational buildings, church and temple.

Project:	Shatin Central Link Rail Operational	GBN Assessment		Train Spee	ed: 60 kph
NSR Ref.:	DIH-14-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Rhythm Garden Block 2	Up Track	45	25	51
Assessed Floor	1	Down Track	60	25	65
Item:	22	<u> </u>	•		

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	51[1]
Down Track	D002	24	20	65[1]

								Frequ	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	3.6	-1.0	-3.8	-1.1	1.6	-7.6	-10.5	-6.1	-20.8	-21.3	-13.6	-10.6	-12.0	-12.1	-14.9
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	37.6	37.0	33.2	33.9	35.6	30.4	30.5	35.9	21.2	16.7	23.4	25.4	21.0	21.9	16.1
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-1.7	-4.8	-9.6	-13.3	-6.3	-16.9	-16.4	-9.1	-23.4	-24.6	-15.6	-12.3	-14.7	-13.6	-16.6
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	32.3	33.2	27.5	21.7	27.7	21.1	24.6	32.9	18.6	13.4	21.4	23.7	18.3	20.4	14.4
Total of Up and Down 1	Fracks Calculation															
Total Vibration Level Out	tside Building	38.7	38.5	34.3	34.1	36.3	30.9	31.5	37.7	23.1	18.4	25.5	27.6	22.9	24.2	18.4
BCF	dB Y/N 0															
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dredicted Naise Level	4/2 Oct dB	547	54.5	50.0	50.4	50.4	40.0	40.7	50.7	27.0	20.4	20 F	20.0	22.0	24.0	00.4
Predicted Noise Level		54.7	54.5	50.3	50.1	52.1	40.3	40./	ə2.1	57.9	32.4	38.5	39.0	33.9	34.9	29.1
Fredicted Noise Level		20.0		30.9			34. U			52.9			42.1			35.9
∟max	dB(A)	39.0														
L _{eq,30mins}	dB(A)	27.8														
Noise Criteria	dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN	Assessment		Train Spee	ed: 60 kph
NSR Ref.:	DIH-14-2		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Rhythm Garden Block 5	Up Track	35	25	43
Assessed Floor	1	Down Track	50	25	56
Item:	23				

|--|

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	43[1]
Down Track	D002	24	20	56[1]

										Frequ	lency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1	lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 1	0 ⁻⁶ in/s*in ^{0.5}	/lb	6.0	0.6	-0.5	5.1	5.8	-3.3	-4.6	-4.4	-18.4	-19.6	-12.7	-10.0	-9.8	-11.5	-13.6
Up Track Vib. Level	dB re 1	0 ⁻⁶ in/sec		40.0	38.6	36.5	40.1	39.8	34.7	36.4	37.6	23.6	18.4	24.3	26.0	23.2	22.5	17.4
Down Track Calculation	n																	
FDL	dB re 1	lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 1	0 ⁻⁶ in/s*in ^{0.5}	/lb	0.9	-2.7	-6.6	-8.9	-3.2	-12.2	-13.4	-7.0	-21.6	-22.6	-14.2	-11.0	-12.8	-12.3	-15.2
Down Track Vib. Level	dB re 1	0 ⁻⁶ in/sec		34.9	35.3	30.4	26.1	30.8	25.8	27.6	35.0	20.4	15.4	22.8	25.0	20.2	21.7	15.8
Total of Up and Down	Fracks (Calculatior	1															
Total Vibration Level Out	tside Bu	iilding		41.2	40.3	37.4	40.2	40.3	35.2	36.9	39.5	25.3	20.2	26.6	28.5	24.9	25.1	19.7
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due dista d Mais a Laval	1	4/2.0		0	50.0	50.4		50.4		50.4		40.4			40.5		05.0	00.4
Predicted Noise Level		1/3 00	ג, מש	57.2	56.3	53.4	56.2	56.1	50.6	52.1	54.5	40.1	34.2	39.6	40.5	35.9	35.8	30.4
Predicted NOISE Level		0		40.0		00.3			30.4			54 ./			43.9			30.9
⊢max			aB(A)	40.8														
L _{eq,30mins}			dB(A)	29.6														
Noise Criteria			dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32*log(no. of events in 30*log(no. of$ (3dB(A) correction is added to L _{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{ea.30mins} is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational	GBN Assessment		Train Spee	ed: 60 kph
NSR Ref.:	DIH-14-3		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Rhythm Garden Block 8	Up Track	175	25	177
Assessed Floor	1	Down Track	185	25	187
Item:	24				

			Select	ed Bo	rehol	e Det	ails:										
					Bor	ehole	Ref.	Roc	khead	Depth	n, m	Hole	e Dept	h, m	Sla	ant Dist	, m
			Up Ti	rack		D002			24	4			20			177[1]	
			Down [·]	Track		D002			24	4			20			187[1]	
									Frequ	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /	lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec		30.0	30.8	24.7	19.7	25.9	16.5	21.5	30.3	16.4	11.1	19.6	21.7	16.0	18.6	12.6
Down Track Calculatio	n																
FDL	dB re 1 lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /	lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec		30.0	30.8	24.7	19.7	25.9	16.5	21.5	30.3	16.4	11.1	19.6	21.7	16.0	18.6	12.6
Total of Up and Down	Fracks Calculation																
Total Vibration Level Ou	tside Building		33.0	33.8	27.7	22.7	28.9	19.5	24.5	33.3	19.4	14.1	22.6	24.7	19.0	21.6	15.6
BCF	dB Y/N	0															
BVR-up	dB Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/3 Oct	t, dB	49.0	49.8	43.7	38.7	44.7	34.9	39.7	48.3	34.2	28.1	35.6	36.7	30.0	32.3	26.3
Predicted Noise Level	Oc	t, dB			51.0			46.2			48.5			39.7			33.3
L _{max}	d	B(A)	35.3														
L _{eq,30mins}	d	B(A)	24.1														
Noise Criteria	d	B(A)	45														
Compliance			Yes														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate. [2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual. [3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 30*log(no. of events in 30*log(no. of$ (3dB(A) correction is added to L _{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{ea.30mins} is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN Ass	sessment		Train Spee	ed: 60 kph
NSR Ref.:	DIH-14-4		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Canossa Primary School (San Po Kong)	Up Track	145	25	147
Assessed Floor	1	Down Track	160	25	162
Item:	25				
	Selected Borehole	Details:			

			0.0000			0 000	a										
					Bor	ehole	Ref.	Roc	khead	Depth	i, m	Hole	Dept	h, m	Sla	ant Dist	., m
			Up Tr	ack		D002			24	4			20			147[1]	
		D	own T	rack		D002			24	4			20			162[1]	
									Frequ	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ^{0.5}	3	34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /	'lb -	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	2	25.0	25.8	19.7	14.7	20.9	11.5	16.5	25.3	11.4	6.1	14.6	16.7	11.0	13.6	7.6
Down Track Calculatio	n																
FDL	dB re 1 lb/in ^{0.5}	3	34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /	'lb -	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	2	25.0	25.8	19.7	14.7	20.9	11.5	16.5	25.3	11.4	6.1	14.6	16.7	11.0	13.6	7.6
Total of Up and Down	Tracks Calculation																
Total Vibration Level Ou	tside Building	2	28.0	28.8	22.7	17.7	23.9	14.5	19.5	28.3	14.4	9.1	17.6	19.7	14.0	16.6	10.6
BCF	dB Y/N	0															
BVR-up	dB Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	1/2 0																
Predicted Noise Level	1/3 Oc	t, dB 4	44.0	44.8	38.7	33.7	39.7	29.9	34.7	43.3	29.2	23.1	30.6	31.7	25.0	27.3	21.3
Predicted Noise Level	Oc	t, dB			46.0			41.2			43.5			34.7			28.3
L _{max}	d	IB(A)	30.3														
L _{eq,30mins}	d	IB(A) <2	20[8]														
Noise Criteria	d	IB(A) 5	55[9]														
Compliance		L L	Yes														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 30*log(no. of events in 30mins per direction) - 30*log(no. of events in 3$

 $(3dB(A) \text{ correction is added to } L_{eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

[8] A 3dB(A) upward adjustment is made to account for the daytime headway of 22 EMU trains within a 30 minutes period.

[9] Daytime criteria are used for educational buildings, church and temple.

Project:	Shatin Central Link Rail Operational (GBN Assessment		Train Spee	ed: 55 kph
NSR Ref.:	DIH-14-5		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Rhythm Garden Block 1	Up Track	40	25	47
Assessed Floor	1	Down Track	50	25	56
ltem [.]	26				

			Sele	cted Bo	oreho	le Det	ails:										
					Bor	ehole	Ref.	Roc	khead	Depth	ι, m	Hole	e Dept	h, m	Sla	ant Dist	, m
			Up	Track		D002	2		24	4			20			47[1]	
			Dow	n Track		D002	2		24	4			20			56[1]	
									Frequ	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Jp Track Calculation																	
DL	dB re 1 lb/in ⁰).5	33.2	2 37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N N	1														
ĨL	dB T	ype C) 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0C	dB T	ype C)														
.SR	dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	5.1	-0.1	-1.9	3.0	4.3	-5.0	-7.8	-5.3	-19.7	-20.4	-13.2	-10.3	-11.0	-11.8	-14.3
Jp Track Vib. Level	dB re 10 ⁻⁶ in/s	sec	38.4	4 37.2	34.3	37.3	37.6	32.3	32.4	36.0	21.5	16.8	23.1	24.9	21.2	21.4	15.9
Down Track Calculation	n																
DL	dB re 1 lb/in ⁰).5	33.2	2 37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N N	١														
ĨL	dB T	ype C) 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-0C	dB T	ype C)														
.SR	dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	0.9	-2.7	-6.6	-8.9	-3.2	-12.2	-13.4	-7.0	-21.6	-22.6	-14.2	-11.0	-12.8	-12.3	-15.2
Down Track Vib. Level	dB re 10 ⁻⁶ in/s	sec	34.1	I 34.6	29.6	25.4	30.0	25.1	26.9	34.2	19.6	14.7	22.1	24.3	19.4	20.9	15.0
otal of Up and Down T	racks Calcu	lation															
otal Vibration Level Out	side Building		39.8	3 39.1	35.6	37.5	38.3	33.0	33.5	38.2	23.7	18.9	25.6	27.6	23.4	24.2	18.5
BCF	dB	Y/N C)														
3VR-up	dB FI	oor 1	l -2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
3VR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
redicted Noise Level	1	1/3 Oct, o	GB 55.8	55.1	51.6	53.5	54.1	48.4	48.7	53.2	38.5	32.9	38.6	39.6	34.4	34.9	29.2
redicted Noise Level		Oct, d	dB		58.4			56.0			53.4			42.8			35.9
-max		dB((A) 39	.4													

dB(A) Compliance Yes Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A)

eq,30r Noise Criteria

28.6

45

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.
 [3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32*log(no. of events in 30*log(no. of$ (3dB(A) correction is added to L _{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{ea.30mins} is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GB	N Assessment		Train Spee	ed: 60 kph
NSR Ref.:	DIH-14-6		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Rhythm Garden Block 3	Up Track	45	25	51
Assessed Floor	1	Down Track	60	25	65
Item:	27				

Selected Bo	rehole Details:			
	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	51[1]
Down Track	D002	24	20	65[1]

									Frage		(11-)						
				0.5		10	= 0		Frequ	Jency	(HZ)	100		0 = 0	0.15		
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
		-															
FDL	dB re 1 lb/in ^{0.8}	5	34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y	//N N	_										_				
	dB Ty	vpe 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Iy	/pe 0															
LSR	dB re 10 ⁻⁶ in/s	*in ^{0.5} /lb	3.6	-1.0	-3.8	-1.1	1.6	-7.6	-10.5	-6.1	-20.8	-21.3	-13.6	-10.6	-12.0	-12.1	-14.9
Up Track Vib. Level	dB re 10 ⁻⁶ in/s	ec	37.6	37.0	33.2	33.9	35.6	30.4	30.5	35.9	21.2	16.7	23.4	25.4	21.0	21.9	16.1
Down Track Calculation	n																
FDL	dB re 1 lb/in ^{0.6}	5	34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y	//N N															
TIL	dB Ty	vpe 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Ty	vpe 0															
LSR	dB re 10 ⁻⁶ in/s	*in ^{0.5} /lb	-1.7	-4.8	-9.6	-13.3	-6.3	-16.9	-16.4	-9.1	-23.4	-24.6	-15.6	-12.3	-14.7	-13.6	-16.6
Down Track Vib. Level	dB re 10 ⁻⁶ in/s	ес	32.3	33.2	27.5	21.7	27.7	21.1	24.6	32.9	18.6	13.4	21.4	23.7	18.3	20.4	14.4
Total of Up and Down 1	racks Calcula	ation															
Total Vibration Level Out	side Building		38.7	38.5	34.3	34.1	36.3	30.9	31.5	37.7	23.1	18.4	25.5	27.6	22.9	24.2	18.4
BCF	dB Y	(/N 0															
BVR-up	dB Flo	or 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/	3 Oct, dB	54.7	54.5	50.3	50.1	52.1	46.3	46.7	52.7	37.9	32.4	38.5	39.6	33.9	34.9	29.1
Predicted Noise Level		Oct, dB			56.9			54.0			52.9			42.7			35.9
L _{max}		dB(A)	39.0														
L _{eq,30mins}		dB(A)	27.8														
Noise Criteria		dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32*log(no. of events in 30*log(no. of$ (3dB(A) correction is added to L _{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{ea.30mins} is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

Project:	Shatin Central Link Rail Operational (GBN Assessm	nent		Train Spee	d: 60 kph
NSR Ref.:	DIH-15-1			Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Kam Wan House	- I	Up Track	100	25	103
Assessed Floor	0	D	own Track	85	25	89
Item:	28					

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	103[1]
Down Track	D002	24	20	89[1]

				Frequency (Hz)														
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb/i	n ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ i	n/s*in ^{0.5}	/lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re 10 ⁻⁶ i	n/sec		30.0	30.8	24.7	19.7	25.9	16.5	21.5	30.3	16.4	11.1	19.6	21.7	16.0	18.6	12.6
Down Track Calculation	n																	
FDL	dB re 1 lb/i	n ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ i	n/s*in ^{0.5}	/lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ i	n/sec		30.0	30.8	24.7	19.7	25.9	16.5	21.5	30.3	16.4	11.1	19.6	21.7	16.0	18.6	12.6
Total of Up and Down	Fracks Calo	culatior	1															
Total Vibration Level Out	tside Buildir	ng		33.0	33.8	27.7	22.7	28.9	19.5	24.5	33.3	19.4	14.1	22.6	24.7	19.0	21.6	15.6
BCF	dB	Y/N	0															
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Level	1	1/2 0/		51.0	E1 0	45.7	40.7	46.7	26.0	44 7	E0 2	26.2	20.4	27.6	20.7	22.0	24.2	20.2
Predicted Noise Level		1/3 00	st dR	51.0	51.0	40./ 53.0	40.7	40.7	30.9 48 2	41./	30.3	50.2	30.1	31.0	30.1 41 7	32.0	34.3	20.3 35 3
		0		37.2		55.0			40.2			50.5			4 1.7			55.5
⊷max				37.3														
Leq,30mins			aB(A)	26.1														
Noise Criteria			dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN As	ssessment		Train Spee	ed: 55 kph
NSR Ref.:	DIH-15-2		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Pik Hoi House	Up Track	75	25	79
Assessed Floor	0	Down Track	65	25	70
Item:	29				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	79[1]
Down Track	D002	24	20	70[1]

		Frequency (Hz)															
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /II	b	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec		29.2	30.0	23.9	18.9	25.1	15.7	20.7	29.5	15.6	10.3	18.8	20.9	15.2	17.8	11.8
Down Track Calculation	n																
FDL	dB re 1 lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /II	b	-2.7	-5.9	-10.8	-14.2	-7.1	-19.0	-17.8	-10.3	-24.4	-25.6	-16.4	-13.2	-15.7	-14.4	-17.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec		30.5	31.3	25.4	20.0	26.1	18.2	22.4	31.0	16.8	11.6	19.8	22.0	16.5	18.8	12.8
Total of Up and Down	Fracks Calculation																
Total Vibration Level Out	tside Building		32.9	33.8	27.8	22.5	28.7	20.2	24.7	33.3	19.3	14.0	22.4	24.5	18.9	21.4	15.4
BCF	dB Y/N	0															
BVR-up	dB Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradiated Naisa Laval	1/2 Oct	dD	50.0	E4 0	45.0	40 E	46 E	27.6	44.0	50.2	26.4	20.0	27.4	20 E	24.0	24.4	20.4
Predicted Noise Level	1/3 Oct	, ub	50.9	51.0	40.0	40.5	40.5	37.0	41.9	50.5	50.1	30.0	37.4	JO.J	51.9	34.1	20.1
			27.2		55.0			40.2			50.5			+1.5			55.1
⊢max	a	D(A)	31.2														
Leq,30mins	di	R(A)	26.4														
Noise Criteria	d	B(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN Asse	ssment		Train Spee	ed: 85 kph
NSR Ref.:	DIH-16-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Wong Tai Sin Temple	Up Track	22	35	41
Assessed Floor	0	Down Track	35	35	49
Item:	30				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	34	41[1]
Down Track	D002	24	34	49[1]

				Frequency (Hz)														
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1	lb/in ^{0.5}		37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 1	0 ⁻⁶ in/s*in ^{0.5}	/lb	-5.0	-1.0	-0.6	3.3	5.6	0.2	-1.6	-3.4	-7.0	-8.9	-6.8	-6.6	-5.5	-9.0	-12.4
Up Track Vib. Level	dB re 1	0 ⁻⁶ in/sec		32.1	40.1	39.4	41.3	42.6	41.2	42.4	41.6	38.0	32.1	33.2	32.5	30.6	28.0	21.7
Down Track Calculation	n																	
FDL	dB re 1	lb/in ^{0.5}		37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 1	0 ⁻⁶ in/s*in ^{0.5}	/lb	-6.4	-4.4	-4.7	-0.3	1.6	-4.4	-6.1	-7.2	-14.5	-15.0	-16.0	-9.6	-8.5	-11.4	-14.1
Down Track Vib. Level	dB re 1	0 ⁻⁶ in/sec		30.6	36.7	35.3	37.8	38.7	36.6	38.0	37.8	30.5	26.1	24.0	29.4	27.5	25.6	19.9
Total of Up and Down	Fracks (Calculatior	1															
Total Vibration Level Out	tside Bu	ilding		34.4	41.7	40.8	42.9	44.1	42.5	43.8	43.1	38.7	33.1	33.7	34.2	32.3	30.0	23.9
BCF	dB	Y/N	0															
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Level		1/2 04	t dP	E2 /	50 7	E0 0	60.0	61.0	50.0	61.0	60.4	55 F	40.4	40 7	40.0	45.2	42.7	26.6
Predicted Noise Level		1/3 00	st dP	JZ.4	59./	50.0 64 7	00.9	01.9	59.9 65.8	01.0	00.1	00.0 61 7	49.1	40./	40.Z	45.3	42.1	30.0 13 E
		00		10 0		04.7			05.0			51.7			52.4			45.0
⊢max				40.0														
Leq,30mins			aB(A)	36.1														
Noise Criteria			dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN	Assessment		Train Spee	ed: 85 kph
NSR Ref.:	DIH-17-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Chuk Yuen United Village	Up Track	15	30	34
Assessed Floor	0	Down Track	50	30	58
Item:	31				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	34[1]
Down Track	D002	24	20	58[1]

			Frequency (Hz)															
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation	•											.=0				0.0		000
FDL	dB re 1	lb/in ^{0.5}		37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 1	0 ⁻⁶ in/s*in ^{0.5}	/lb	8.0	2.6	4.2	8.2	8.4	0.3	2.1	-0.1	-9.1	-15.1	-8.7	-7.8	-7.2	-10.2	-11.4
Up Track Vib. Level	dB re 1	0 ⁻⁶ in/sec		45.1	43.6	44.2	46.2	45.4	41.4	46.1	45.0	36.0	25.9	31.3	31.3	28.9	26.8	22.6
Down Track Calculatio	n																	
FDL	dB re 1	lb/in ^{0.5}		37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 1	0 ⁻⁶ in/s*in ^{0.5}	/lb	-0.2	-3.3	-7.8	-12.0	-5.2	-14.0	-14.5	-7.4	-22.0	-23.1	-14.4	-11.1	-13.2	-12.4	-15.4
Down Track Vib. Level	dB re 1	0 ⁻⁶ in/sec		36.8	37.7	32.2	26.0	31.8	27.0	29.5	37.6	23.0	17.9	25.6	27.9	22.8	24.6	18.6
Total of Up and Down	Fracks (Calculation	1															
Total Vibration Level Out	tside Bu	ilding		45.7	44.6	44.5	46.2	45.6	41.5	46.2	45.7	36.2	26.6	32.3	32.9	29.8	28.9	24.1
BCF	dB	Y/N	0															
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Description of Market and the		4/0.0																
Predicted Noise Level		1/3 00	τ, αΒ	63.7	62.6	62.5	64.2	63.4	58.9	63.4	62.7	53.0	42.6	47.3	46.9	42.8	41.6	36.8
Predicted Noise Level		00	π, dB			68.0			67.1			63.2			50.9			42.8
L _{max}		(dB(A)	48.9														
L _{ea.30mins}		(dB(A)	36.2														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A) 45

Yes

Noise Criteria

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq.30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN Asse	essment		Train Spee	ed: 85 kph
NSR Ref.:	DIH-18-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Upper Wong Tai Sin Estate Po Sin House	Up Track	25	40	47
Assessed Floor	1	Down Track	30	40	50
Item:	32				
	Selected Borehole D				

					Bor	ehole	Ref.	Roc	khead	Depth	1, m	Hole	e Dept	ιh, m	Sla	ant Dist	i, m
			Up 7	rack	1	D018	5	í —	2	8			40			47[1]	i
			Down	Track		D018	;	Ĺ	2	.8		1	40			50[1]	
									Freq	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation					_	_					_	_					
FDL	dB re 1 lb/in	0.5	37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N N															I
TIL	dB	Туре 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре 0															I
LSR	dB re 10 ⁻⁶ in	/s*in ^{0.5} /lb	3.1	-0.8	-1.5	-3.0	-0.7	-3.4	-0.3	-10.8	-10.6	-10.8	-8.9	-5.9	-2.4	-1.7	4.2
Up Track Vib. Level	dB re 10 ⁻⁶ in	/sec	40.1	40.2	38.5	35.0	36.3	37.6	43.7	34.2	34.4	30.2	31.1	33.1	33.6	35.3	38.2
Down Track Calculation	0																
FDL	dB re 1 lb/in	0.5	37.0	41.0	40.0	38.0	37.0	41.0	44.0	45.0	45.0	41.0	40.0	39.0	36.0	37.0	34.0
CCF	dB	Y/N N	1														I
TIL	dB	Туре 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре 0															1
LSR	dB re 10 ⁻⁶ in	/s*in ^{0.5} /lb	3.3	-1.2	-2.0	-3.6	-1.2	-4.0	-0.9	-11.7	-11.2	-11.7	-11.8	-8.5	-7.6	-7.4	-5.2
Down Track Vib. Level	dB re 10 ⁻⁶ in	/sec	40.3	39.9	38.0	34.4	35.8	37.0	43.1	33.3	33.8	29.3	28.3	30.6	28.5	29.6	28.9
Total of Up and Down T	racks Calcu	ulation															
Total Vibration Level Out	side Building]	43.2	43.1	41.3	37.7	39.1	40.3	46.4	36.8	37.1	32.8	32.9	35.0	34.8	36.4	38.7
BCF	dB	Y/N 0															1
BVR-up	dB F	loor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due dista d Naisa I aval		4/2 0 - 4 - 4													45.0		
Predicted Noise Level		1/3 UCt, u	3 59.∠ D	59.1	57.3	53.7	54.9	55.7	61.6	51.8	51.9	46.8	45.9	47.0	45.8	47.1	49.4
Predicted Noise Levei		Uct, a	3		62.0			63.3			55.5			51.1			51.4
-max		ar(t	() 50.4	+													
L _{eq,30mins}		dB(A	() 37.7	1													
Noise Criteria		dB(/	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Yes

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32*log(no. of events in 30*log(no. of$ (3dB(A) correction is added to L _{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] L_{ea.30mins} is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

Project:	Shatin Central Link Rail Operational GBN Asse	ssment		Train Spee	d: 90 kph
NSR Ref.:	DIH-18-2		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Upper Wong Tai Sin Estate Tat Sin House	Up Track	35	45	57
Assessed Floor	1	Down Track	37	45	58
Item:	33				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D028	22	44	57[1]
Down Track	D028	22	44	58[1]

										Frea	Jency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re	1 lb/in ^{0.5}		37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ^{0.}	⁵ /lb	0.5	1.6	0.8	-1.7	-7.4	-9.0	-16.8	-17.5	-18.3	-17.1	-9.0	-3.9	0.0	5.3	0.1
Up Track Vib. Level	dB re	10 ⁻⁶ in/sec		38.0	43.1	41.3	36.8	30.1	32.5	27.7	28.1	27.2	24.4	31.6	35.6	36.5	42.8	34.6
Down Track Calculation	n																	
FDL	dB re	1 lb/in ^{0.5}		37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ^{0.}	⁵ /lb	0.4	1.5	0.7	-1.8	-7.5	-9.3	-17.4	-17.8	-19.0	-17.6	-9.3	-4.2	-0.4	5.0	-0.8
Down Track Vib. Level	dB re	10 ⁻⁶ in/sec		37.9	43.0	41.3	36.7	30.0	32.2	27.1	27.8	26.5	23.9	31.2	35.3	36.1	42.5	33.7
Total of Up and Down 1	Fracks	Calculatio	n															
Total Vibration Level Out	tside B	uilding		40.9	46.1	44.3	39.8	33.1	35.4	30.4	30.9	29.9	27.2	34.4	38.5	39.3	45.6	37.2
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Built (Alberta La Al	r	4/0.0																
Predicted Noise Level		1/3 0	ct, dB	56.9	62.1	60.3	55.8	48.9	50.8	45.6	45.9	44.7	41.2	47.4	50.5	50.3	56.3	47.9
Predicted Noise Level		0	oct, dB			64.9			53.7			49.1			54.4			56.9
				6.444	17.4	20.9	21.2	18.7	24.58	23.1	26.8	28.6	27.8	36.5	41.9	43.7	52.146	44.7
				4.409	54.7	123	131	73.5	287.4	205	481	721	601	4458	####	####	163909	####
L _{max}			dB(A)	54.3														
L _{eq,30mins}			dB(A)	41.3														
Noise Criteria			dB(A)	45														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) +$

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail	Operati	onal C	GBN A	Assess	sment						Train	Spee	ed: 90 kph		
NSR Ref.:	DIH-19-1							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	int Dist	, m
Location:	Lung Cheung Gov. Sec	ondary	Schoo	וכ		Up 7	Frack		40			45			60	
Assessed Floor	0					Down	Track		55			45			71	
Item:	34															
		Select	ed Bo	rehol	le Det	ails:										
				Bore	ehole	Ref.	Roc	khead	Depth	i, m	Hole	: Dept	h, m	Sla	nt Dist	, m
		Upli	rack	<u> </u>	D028			22	2		<u> </u>	44		60[1]		
		Down	Track	L	D028			22	2		44			Ĺ	71[1]	
	1							_		<i></i> ,						
<i></i>					10			Frequ	Jency	(Hz)	100		250			
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation	0.5															
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N															
	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	dB Turne O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	aB Type U				~ ~			40.7		~ ~ ~						
LSR	dB re 10 ^{-o} in/s*in ^{o.o} /lb	0.1	1.4	0.6	-2.0	-7.7	-9.9	-18.7	-18.3	-20.5	-18.6	-10.0	-4.8	-1.1	4.3	-2.7
Up Track Vib. Level	dB re 10 ^{-₀} in/sec	37.7	43.0	41.1	36.5	29.9	31.6	25.8	27.2	25.0	22.9	30.5	34.7	35.5	41.9	31.9
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0	1														
LSR	dB re 10 ^{-₀} in/s*in ^{0.5} /lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	37.3	42.8	40.9	36.2	29.6	30.7	23.9	26.3	22.8	21.4	29.4	33.8	34.4	40.9	29.1
Total of Up and Down T	Tracks Calculation															
Total Vibration Level Out	side Building	40.5	45.9	44.0	39.4	32.8	34.2	28.0	29.8	27.1	25.2	33.0	37.3	38.0	44.4	33.7
BCF	dB Y/N 0															
BVR-up	dB Floor 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	4/0.0.1.10	50.5			4	50.0	54.0	45.0	40.0	40.0	44.0	40.0	54.0	54.0		40.4
Predicted Noise Level	1/3 Oct, dB	58.5	63.9	62.0	57.4	50.6	51.6	45.2	46.8	43.9	41.2	48.0	51.3	51.0	57.1	46.4
Predicted Noise Level	Oct, dB			66.6			54.6			49.3			55.1			57.5
L _{max}	dB(A)	54.8														
L _{eq,30mins}	dB(A)	45[8]														
Noise Criteria	dB(A)	55[9]														
Compliance		Yes														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] $L_{eq,30mins} = L_{eq}$ (double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.
[8] A 3dB(A) upward adjustment is made to account for the daytime headway of 22 EMU trains within a 30 minutes period.

[9] Daytime criteria are used for educational buildings, church and temple.

Project:	Shatin Central Link Rail Operational GBN Ass	essment		Train Spee	ed: 90 kph
NSR Ref.:	DIH-20-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Baptist Rainbow Primary School	Up Track	95	45	105
Assessed Floor	0	Down Track	80	45	92
Item:	35				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D028	22	44	105[1]
Down Track	D028	22	44	92[1]

								Frequ	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	37.3	42.8	40.9	36.2	29.6	30.7	23.9	26.3	22.8	21.4	29.4	33.8	34.4	40.9	29.1
Down Track Calculatio	n															
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	37.3	42.8	40.9	36.2	29.6	30.7	23.9	26.3	22.8	21.4	29.4	33.8	34.4	40.9	29.1
Total of Up and Down	Tracks Calculation															
Total Vibration Level Out	tside Building	40.3	45.8	43.9	39.2	32.6	33.7	26.9	29.3	25.8	24.4	32.4	36.8	37.4	43.9	32.1
BCF	dB Y/N 0															
BVR-up	dB Floor 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	4/0.0 / 17	50.0		04.0					10.0	40.0	40.4		50.0	50 /	50.0	44.5
Predicted Noise Level	1/3 Uct, dE	58.3	63.8	61.9	57.2	50.4	51.1	44.1	46.3	42.6	40.4	47.4	50.8	50.4	56.6	44.8
Predicted Noise Level	Uct, dE			66.5			54.3			48.6			54.6			56.9
L _{max}	dB(A	54.3														
L _{eg.30mins}	dB(A	44[8]														

Compliance Yes

dB(A)

Noise Criteria

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

55[9]

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual. [3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.
[8] A 3dB(A) upward adjustment is made to account for the daytime headway of 22 EMU trains within a 30 minutes period.

[9] Daytime criteria are used for educational buildings, church and temple.

Project:	Shatin Central Link Rail Operational GBN	Assessment		Train Spee	d: 90 kph		
NSR Ref.:	DIH-21-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m		
Location:	Tin Wang Court Wang King House	Up Track	30	40	50		
Assessed Floor	1	Down Track	40	40	57		
Item:	36						

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	40	50[1]
Down Track	D018	28	40	57[1]

		Γ						Frequ	uency	(Hz)						
Description	Un <u>it</u>	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N	1														
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	3.3	-1.2	-2.0	-3.6	-1.2	-4.0	-0.9	-11.7	-11.2	-11.7	-11.8	-8.5	-7.6	-7.4	-5.2
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	40.8	40.3	38.5	34.9	36.3	37.5	43.6	33.8	34.3	29.8	28.8	31.1	28.9	30.1	29.3
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N]														
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	3.2	-1.8	-2.5	-4.1	-1.5	-4.4	-1.3	-12.4	-11.7	-12.5	-14.9	-9.7	-10.4	-13.4	-12.6
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	40.7	39.7	38.0	34.4	36.0	37.1	43.2	33.1	33.9	29.1	25.6	29.8	26.2	24.1	22.0
Total of Up and Down T	Fracks Calculation															
Total Vibration Level Out	tside Building	43.7	43.0	41.3	37.7	39.2	40.3	46.4	36.5	37.1	32.5	30.5	33.5	30.8	31.1	30.1
BCF	dB Y/N 0															
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Disadiated Noise Loval	1/2 Oct. dB	E0 7	59.0	E7 3	E2 7	55 O	EE 7	64 6	E4 E	E4 Q	46 E	42.5	45.5	44 Q	44.0	40.8
Predicted Noise Level		55.7	55.0	57.3	53.1	55.0	00.1 62.2	01.0	51.5	51.5	40.5	43.5	45.5	41.0	41.0	40.0
		46.4		02.0			03.5			55.5			40.0			44.5
∟max		40.4														
L _{eq,30mins}	dB(A)	33.4														
Noise Criteria	dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes
Project:	Shatin Central Link Rail	Operati	ional (3BN A	Asses	sment		Horiz	ontal [)ist m	Verti	Train	I Spee	ad:	90 ent Dist) kph
Nor Nel	DIN-22-1 Price Memorial Catholic	Drimar	N Sch	001			Track		80	лы, m	Veru	40	SI, 111	010	80	, 111
Accessed Floor		Primar	y Sund	101	l	Dowr	Track	├───	95		├───	40		├───	103	
Assessed Floor	U 27				I	Down	Hack	L	90		L	40		L	103	
item.	51	Soloct	had Br	roho		haile										
		Select	eu Du	Bor	ehole	Dof	Roc	khoad	Dentl		Hole	- Denf	th m	SI:	ant Diet	m
		Un T	rack	Don			1100	2	2 R	1, 111	11010	40		010	89[1]	, 111
		Down	Track	┝───	0010	2	├───	2	<u>2</u>		┝───	40		├───	103[1]	I
		Down	Haun	L	0010	·	L		5		L	40		L	105[1]	
	1							Freq	uency	(Hz)						
Description	Linit	20	25	32	10	50	63		1000 I 100	125	160	200	250	315	400	500
Description	Ufiit	20	20	JZ	40	50	05	00	100	120	100	200	200	315	400	500
	05	075	14 E	10 F	20 E	07 E	14 E	14 E	15 E	15 E		10 E	20 E	00 F	07 E	24.5
FDL	dB re 1 lb/in ^{~~}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N		~	~	~	~	~	~	~	~	~	~	~	~	~	~
	dB lype u	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		U	0	U	U	U	0	0	0	0	0	0	0	0	0	U
	dB iype u	1		~ 4	~ .						. – .					
LSR	dB re 10 ^{-°} in/s*in ^{°.} /lb	1.3	-4.7	-5.1	-7.1	-4.2	-7.0	-2.5	-16.1	-14.8	-15.6	-19.2	-13.0	-13.8	-18.8	-17.8
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	38.8	36.8	35.4	31.4	33.3	34.5	42.0	29.4	30.7	25.9	21.3	26.5	22.7	18.7	16.7
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N	1														
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0	1														
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	1.3	-4.7	-5.1	-7.1	-4.2	-7.0	-2.5	-16.1	-14.8	-15.6	-19.2	-13.0	-13.8	-18.8	-17.8
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	38.8	36.8	35.4	31.4	33.3	34.5	42.0	29.4	30.7	25.9	21.3	26.5	22.7	18.7	16.7
Total of Up and Down 7	Tracks Calculation															
Total Vibration Level Out	tside Building	41.8	39.8	38.4	34.4	36.3	37.5	45.0	32.4	33.7	28.9	24.3	29.5	25.7	21.7	19.7
BCF	IdB Y/N 0		00.0		c	00.0	0		u		20.0	2	20.0	20		
BVR-up	dB Floor 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		8														
Predicted Noise Level	1/3 Oct, dB	59.8	57.8	56.4	52.4	54.1	54.9	62.2	49.4	50.5	44.9	39.3	43.5	38.7	34.4	32.4
Predicted Noise Level	Oct, dB	,		60.9			63.5			53.7			45.9			36.6
L _{max}	dB(A)	44.1														
	dB(A)	34[8]														
Leq,30mins		54[0]														
Noise Criteria	uD(A)	20[9]														
Compliance		res														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] $L_{eq,30mins} = L_{eq}$ (double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.
[8] A 3dB(A) upward adjustment is made to account for the daytime headway of 22 EMU trains within a 30 minutes period.

[9] Daytime criteria are used for educational buildings, church and temple.

Project:	Shatin Central Link Rail Operational GBN Asse	ssment		Train Spee	ed: 90 kph
NSR Ref.:	DIH-23-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Tin Ma Court Chun On House	Up Track	100	40	108
Assessed Floor	1	Down Track	115	40	122
Item:	38				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	40	108[1]
Down Track	D018	28	40	122[1]

		Τ						Frequ	uency	(Hz)						
Description	Un <u>it</u>	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	1.3	-4.7	-5.1	-7.1	-4.2	-7.0	-2.5	-16.1	-14.8	-15.6	-19.2	-13.0	-13.8	-18.8	-17.8
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	38.8	36.8	35.4	31.4	33.3	34.5	42.0	29.4	30.7	25.9	21.3	26.5	22.7	18.7	16.7
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N	1														
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	1.3	-4.7	-5.1	-7.1	-4.2	-7.0	-2.5	-16.1	-14.8	-15.6	-19.2	-13.0	-13.8	-18.8	-17.8
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	38.8	36.8	35.4	31.4	33.3	34.5	42.0	29.4	30.7	25.9	21.3	26.5	22.7	18.7	16.7
Total of Up and Down T	Fracks Calculation															
Total Vibration Level Out	tside Building	41.8	39.8	38.4	34.4	36.3	37.5	45.0	32.4	33.7	28.9	24.3	29.5	25.7	21.7	19.7
BCF	dB Y/N 0															
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	4/2 0-4 -15	0	0	514	50.4	50.4	50.0	~~ ~	-7.4	10 E	10.0	07.0		00.7		22.4
Predicted Noise Level	1/3 UCT, aB	57.8	55.8	54.4	50.4	52.1	52.9	60.2	47.4	48.5	42.9	37.3	41.5	36.7	32.4	30.4
Predicted Noise Levei	UCT, UD			58.9			61.5			51.7			43.9			34.6
L _{max}	dB(A)	42.1														
L _{eq,30mins}	dB(A)	29.2														
Noise Criteria	dB(A)	45]

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail	Operat	ional C	GBN A	ssess	sment						Train	Spec	∍d:	90	i kph
NSR Ref.:	DIH-24-1							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	nt Dist	, m
Location:	Shing Wong Temple					Up 7	Frack		0			35			35	
Assessed Floor	1					Down	Track		5			35			35	
Item:	39															
		Select	ted Bo	rehol	e Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	i, m	Hole	Dept	h, m	Sla	nt Dist	, m
		Up T	rack		D002			24	4			34			35[1]	
		Down	Track		D002			24	4			34			35[1]	
	1															
								Freq	uency	(Hz)				. 		
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IOC	dB Type 0															
LSR	dB re 10 ^{-₀} in/s*in ^{0.5} /lb	-1.0	3.0	3.0	6.8	10.1	6.9	6.1	3.5	2.0	1.4	0.4	-0.1	0.0	-0.8	-3.7
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	36.5	44.5	43.5	45.3	47.6	48.4	50.6	49.0	47.5	42.9	40.9	39.4	36.5	36.7	30.9
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-1.0	3.0	3.0	6.8	10.1	6.9	6.1	3.5	2.0	1.4	0.4	-0.1	0.0	-0.8	-3.7
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	36.5	44.5	43.5	45.3	47.6	48.4	50.6	49.0	47.5	42.9	40.9	39.4	36.5	36.7	30.9
Total of Up and Down	Fracks Calculation															

Total Vibration Level C	utside E	Building		39.5	47.5	46.5	48.3	50.6	51.4	53.6	52.0	50.5	45.9	43.9	42.4	39.5	39.7	33.9
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Leve		1/3 0	ct dB	55.5	63.5	62.5	64.3	66.4	66.8	68.8	67.0	65.3	59.9	56.9	54.4	50.5	50.4	44.6

Predicted Noise Level	1/3 Oct, ab	55.5	63.5	02.J	04.3	00.4	00.0	00.0	67.0	65.5	59.9	50.9	04.4	50.5	50.4	44.0
Predicted Noise Level	Oct, dB	1		68.3			72.3			69.7			59.4			51.4
L _{max}	dB(A)	56.6														
L _{eq,30mins}	dB(A)	43.6														
Noise Criteria	dB(A)	45														
Compliance		Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail	Operati	ional C	GBN A	ssess	sment						Train	Spee	əd:	90) kph
NSR Ref.:	DIH-P1-1							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	int Dist	, m
Location:	Upper Wong Tai Sin Est	ate Pha	ase 3			Up T	rack		0			37			37	
Assessed Floor	2					Down	Track		5			28			28	
Item:	40															
		Select	ed Bo	rehol	e Det	ails:										
		-		Bor	ehole	Ref.	Rocl	khead	Depth	n, m	Hole	2 Dept	h, m	Sla	int Dist	., m
		Up Ti	rack		D002			24	4			34			37[1]	
		Down	Track		D002			24	4			20			28[1]	
								Freq	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation	0.5															
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB Turne 0	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
100	dB Type U			~ ~			~ .	~ .	~ ~	~ ~						
LSR	dB re 10 ^{-o} in/s*in ^{o.o} /lb	-3.6	0.1	0.8	4.7	7.8	3.1	2.1	-0.9	-3.6	-4.8	-4.1	-5.2	-4.9	-8.0	-11.4
Up Track Vib. Level	dB re 10 ^{-₀} in/sec	28.9	36.6	36.4	38.2	40.4	39.6	41.6	39.6	37.0	31.7	31.4	29.4	26.7	24.6	18.1
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	37.5	41.5	40.5	38.5	37.5	41.5	44.5	45.5	45.5	41.5	40.5	39.5	36.5	37.5	34.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
IOC	dB Type 0															
LSR	dB re 10 ^{-₀} in/s*in ^{0.5} /lb	9.7	6.6	8.6	9.6	9.6	3.9	4.9	3.7	-3.2	-9.7	-4.2	-5.7	-5.8	-8.8	-10.0
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	42.2	43.1	44.1	43.1	42.1	40.4	44.4	44.2	37.3	26.9	31.3	28.8	25.7	23.8	19.5
Total of Up and Down 1	Fracks Calculation															
Total Vibration Level Out	side Building	42.4	43.9	44.8	44.3	44.3	43.0	46.2	45.5	40.2	32.9	34.4	32.1	29.2	27.2	21.9
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dВ	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Level	1/3 Oct. dB	56 /	57 9	58.8	58 3	58 1	56 /	59 /	58 5	53.0	11 9	A5 A	12 1	38.2	35.9	30.6
Predicted Noise Level	Oct dB	50.4	57.5	63.1	50.5	50.1	62.9	55.4	50.5	59.7	44.5	40.4	47.6	50.2	55.5	37.0
	4B(A)	45 3		50.1			52.5			55.7			47.5			57.0
-max	UD(A)	40.0														
Leq,30mins	dB(A)	32.4														
Noise Criteria	dB(A)	45														
Compliance		Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) +$

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link I	Rail Operational C	GBN Assessr	nent		Train Spee	ed: 70 kph
NSR Ref.:	DIH-P2-1				Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	TBA			Up Track	75	20	78
Assessed Floor	2		C	Down Track	< 95	20	97
Item:	41						
		Selected Bo	rehole Deta	ils:			
			Borehole F	Ref. Roo	ckhead Depth, m	Hole Depth, m	Slant Dist, m
		Up Track	D002		24	20	78[1]
		Down Track	D002		24	20	97[1]

									Frequ	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ⁰).5	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB	Y/N N															
TIL	dB T	уре 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB T	уре 0															
LSR	dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/s	sec	26.3	27.1	21.0	16.0	22.2	12.8	17.8	26.6	12.7	7.4	15.9	18.0	12.3	14.9	8.9
Down Track Calculation	n																
FDL	dB re 1 lb/in ⁰).5	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB	Y/N N															
TIL	dB T	ype 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
ТОС	dB T	ype 0															
LSR	dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/s	sec	26.3	27.1	21.0	16.0	22.2	12.8	17.8	26.6	12.7	7.4	15.9	18.0	12.3	14.9	8.9
Total of Up and Down T	Fracks Calcu	lation															
Total Vibration Level Out	tside Building		29.3	30.1	24.0	19.0	25.2	15.8	20.8	29.6	15.7	10.4	18.9	21.0	15.3	17.9	11.9
BCF	dB	Y/N 0															
BVR-up	dB Fl	oor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Beerley and the first state			40.0							40.0	<u> </u>	00.4			010		
Predicted Noise Level	1	1/3 Oct, dB	43.3	44.1	38.0	33.0	39.0	29.2	34.0	42.6	28.5	22.4	29.9	31.0	24.3	26.6	20.6
Predicted Noise Level		UCT, dB			45.4			40.6			42.9			34.0			27.6
∟ _{max}		dB(A)	29.7														
L _{eq,30mins}		dB(A)	<20														
Noise Criteria		dB(A)	45														
Compliance			Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link	Rail Operational GBN Asses	sment		Train Spee	ed: 45 kph
NSR Ref.:	DIH-P2-2			Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	TBA		Up Track	0	20	20
Assessed Floor	2		Down Track	0	20	20
Item:	42					
		0 - I I D I - I - D -				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	20[1]
Down Track	D002	24	20	20[1]

										Frequ	Jency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb	/in ^{0.5}		31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re 10 ^{-€}	⁶ in/s*in ^{0.5}	/lb	14.6	12.9	14.2	14.1	14.6	15.1	16.5	15.8	14.2	8.3	8.7	4.7	2.3	5.0	5.1
Up Track Vib. Level	dB re 10 ⁻⁶	⁶ in/sec		41.1	43.4	43.7	41.6	41.1	45.6	50.0	50.3	48.7	38.8	38.2	33.2	27.8	31.5	28.6
Down Track Calculation	n																	
FDL	dB re 1 lb	/in ^{0.5}		31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re 10⁻	⁶ in/s*in ^{0.5}	/lb	14.6	12.9	14.2	14.1	14.6	15.1	16.5	15.8	14.2	8.3	8.7	4.7	2.3	5.0	5.1
Down Track Vib. Level	dB re 10 ⁻⁶	^₀ in/sec		41.1	43.4	43.7	41.6	41.1	45.6	50.0	50.3	48.7	38.8	38.2	33.2	27.8	31.5	28.6
Total of Up and Down	Fracks Ca	lculatior	1															
Total Vibration Level Out	tside Build	ing		44.1	46.4	46.7	44.6	44.1	48.6	53.0	53.3	51.7	41.8	41.2	36.2	30.8	34.5	31.6
BCF	dB	Y/N	0															
BVR-up	dB	Floor	2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due diete d Maine Laural	1	4/2.0	4 40	50.4	<u> </u>	<u> </u>	50.0	57.0	<u> </u>			64.5	52.0	50.0	40.0	20.0	40.0	40.0
Predicted Noise Level		1/3 00	ct, ab	58.1	60.4	60.7	58.6	57.9	62.0	66.2	66.3	64.5	53.8	52.2	46.2	39.8	43.2	40.3
Predicted NOISE Level		0		50 4		64.8			60.1			6ð./			53.4			45.0
L-max			aB(A)	53.4														
L _{eq,30mins}			dB(A)	43.5														
Noise Criteria	1		dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link	Rail Operational GBN Asses	sment		Train Spee	ed: 60 kph
NSR Ref.:	DIH-P2-3			Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	TBA		Up Track	0	20	20
Assessed Floor	2		Down Track	0	20	20
Item:	43					

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	20[1]
Down Track	D002	24	20	20[1]

										Frequ	Jency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re	1 lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ⁰	^{.5} /lb	14.6	12.9	14.2	14.1	14.6	15.1	16.5	15.8	14.2	8.3	8.7	4.7	2.3	5.0	5.1
Up Track Vib. Level	dB re	10 ⁻⁶ in/sec		43.6	45.9	46.2	44.1	43.6	48.1	52.5	52.8	51.2	41.3	40.7	35.7	30.3	34.0	31.1
Down Track Calculation	n																	
FDL	dB re	1 lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re	10⁻⁰in/s*in⁰	^{.5} /lb	14.6	12.9	14.2	14.1	14.6	15.1	16.5	15.8	14.2	8.3	8.7	4.7	2.3	5.0	5.1
Down Track Vib. Level	dB re	10 ⁻⁶ in/sec		43.6	45.9	46.2	44.1	43.6	48.1	52.5	52.8	51.2	41.3	40.7	35.7	30.3	34.0	31.1
Total of Up and Down 1	Fracks	Calculatio	n															
Total Vibration Level Out	tside Bı	uilding		46.6	48.9	49.2	47.1	46.6	51.1	55.5	55.8	54.2	44.3	43.7	38.7	33.3	37.0	34.1
BCF	dB	Y/N	0															
BVR-up	dB	Floor	2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradiated Naisa Laval		1/2 (hat dB	60.6	62.0	62.2	61.4	60.4	64 5	69.7	60 0	67.0	EC 2	E A 7	49.7	42.2	45.7	12 0
Predicted Noise Level		1/3 0	ot dB	00.0	02.9	67.2	01.1	00.4	04.5 70.6	00.7	00.0	74.2	50.5	54.7	40./	42.3	45.7	42.0 47 E
		, c		55.0		07.3			10.0			11.2			55.9			47.3
⊫max				55.9														
Leq,30mins			dR(A)	44.7														
Noise Criteria			dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link I	Rail Operational (RN Assessm	≥nt		Train Spee	d 60 kph
NSR Ref.:	DIH-P2-4				Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	TBA		L	Jp Track	30	20	36
Assessed Floor	2		Do	wn Track	45	20	49
Item:	44						
		Selected Bo	rehole Details	s:			
			Borehole Re	f. Roc	khead Depth, m	Hole Depth, m	Slant Dist, m
		Up Track	D002		24	20	36[1]
		Down Track	D002		24	20	49[1]

									Frequ	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y/	'N N															
TIL	dB Typ	be 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Typ	be 0															
LSR	dB re 10 ⁻⁶ in/s*i	n ^{0.5} /lb	7.6	2.1	2.9	7.7	7.9	-0.4	0.7	-1.4	-12.2	-16.6	-10.2	-8.5	-7.7	-10.6	-12.0
Up Track Vib. Level	dB re 10 ⁻⁶ in/se	с	36.6	35.1	34.9	37.7	36.9	32.6	36.7	35.6	24.8	16.4	21.8	22.5	20.3	18.4	14.0
Down Track Calculation	n																
FDL	dB re 1 lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y/	'N N															
TIL	dB Typ	be 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Typ	be 0															
LSR	dB re 10 ⁻⁶ in/s*i	n ^{0.5} /lb	4.7	-0.4	-2.6	2.0	3.6	-5.8	-9.4	-5.7	-20.4	-20.8	-13.4	-10.5	-11.6	-12.0	-14.7
Down Track Vib. Level	dB re 10 ⁻⁶ in/se	с	33.7	32.6	29.4	32.0	32.6	27.2	26.6	31.3	16.6	12.2	18.6	20.5	16.4	17.0	11.3
Total of Up and Down T	Fracks Calculat	tion															
Total Vibration Level Out	tside Building		38.4	37.0	36.0	38.8	38.3	33.7	37.1	36.9	25.4	17.8	23.5	24.6	21.8	20.8	15.9
BCF	dB Y/	N 0															
BVR-up	dB Floo	or 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due dista d Nation Laval	4/2		50.4	54.0	50.0	50.0	50.4	47.4	50.0	40.0	20.0	00.0	24.5	24.0	20.0	00 F	04.0
Predicted Noise Level	1/3		52.4	51.0	50.0	52.8	52.1	47.1	50.3	49.9	38.2	29.8	34.5	34.0	30.8	29.5	24.6
Predicted Noise Level					56.2			55.1			50.3			38.4			30.7
∟max		aB(A)	36.2														
L _{eq,30mins}		dB(A)	25.0														
Noise Criteria		dB(A)	45														
Compliance			Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN Asse	essment		Train Spee	ed: 35 kph
NSR Ref.:	KAT-P1-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Residential premises near Kai Tak Station	Up Track	75	15	76
Assessed Floor	2	Down Track	90	17	92
Item:	45				
	Selected Borehole D)etails:			

Selected	Bo	reho	le	De	tail	s:	

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	15	76[1]
Down Track	D018	28	15	92[1]

										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1	lb/in ^{0.5}		29.3	33.3	32.3	30.3	29.3	33.3	36.3	37.3	37.3	33.3	32.3	31.3	28.3	29.3	26.3
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
LSR	dB re 10) ⁻⁶ in/s*in ^{0.€}	⁵ /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10)⁻ ⁶ in/sec		50.1	52.1	45.9	37.2	29.0	29.9	28.1	27.3	23.9	21.0	19.2	20.1	17.0	14.9	11.7
Down Track Calculatio	n																	
FDL	dB re 1	lb/in ^{0.5}		29.3	33.3	32.3	30.3	29.3	33.3	36.3	37.3	37.3	33.3	32.3	31.3	28.3	29.3	26.3
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re 10)⁻ ⁶ in/s*in ^{0.€}	⁵ /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Down Track Vib. Level	dB re 10)⁻ ⁶ in/sec		40.1	42.1	35.9	27.2	19.0	19.9	18.1	17.3	13.9	11.0	9.2	10.1	7.0	4.9	1.7
Total of Up and Down	Fracks C	alculation	า															
Total Vibration Level Out	tside Buil	ding		50.5	52.5	46.3	37.6	29.4	30.3	28.5	27.7	24.3	21.4	19.6	20.5	17.4	15.3	12.1
BCF	dB	Y/N	0															
BVR-up	dB	Floor	2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due dista d Mais a Laval	1	4/2.0	-4 -10	645	00 F	<u> </u>	54.0	40.0	40.7	44.7	40.7	07.4	00.4	20.0	20.5	00.4	04.0	00.0
Predicted Noise Level		1/3 0		64.5	66.5	60.3	51.6	43.Z	43.7	41.7	40.7	37.1	33.4	30.6	30.5	26.4	24.0	20.8
rieulcted Noise Level		0				07.6			47.8			42.8			34.4			25.7
L-max			aB(A)	31.9														
L _{eq,30mins}			dB(A)	23.1														
Noise Criteria			dB(A)	45														

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32*log(no. of events in 30*log(no. of$ (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail	Operat	ional (GBN A	sses	sment						Trair	1 Spee	ed:	50) kph
NSR Ref.:	KAT-P1-2							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	int Dist	, m
Location:	Residential premises ne	ar Kai 1	Fak St	ation		Up 1	Frack		75			15			76	
Assessed Floor	2					Down	Track		90			17			92	
Item:	46															
		Select	ed Bo	reho	e Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	i, m	Hole	2 Dept	:h, m	Sla	int Dist	, m
		Up T	rack		D018			28	3			15			76[1]	
		Down	Track		D018			28	3			15			92[1]	
								Frequ	Jency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation	0.5															
FDL	dB re 1 lb/in ^{0.5}	32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
	dB Y/N N		•	•	•	•	•	•	•	•	•	~	•			•
	dB lype 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
	UD 10-6: (#: 0.5///	45.0	40.0	0.0	10	5 0	0.4	40.0	45.0	40.4	47.0	40.4	40.0	10.0	40.4	40.0
	dB re 10 °in/s*in***/lb	15.8	13.8	8.0	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-10.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10 ^{-∘} in/sec	43.2	45.2	39.0	30.3	22.1	23.0	21.2	20.4	17.0	14.1	12.3	13.2	10.1	8.0	4.8
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB dD Tune 1	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
	UB 10-6: (#: 0.5///	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	dB re 10 °in/s*in°°/lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Down Track Vib. Level	dB re 10 ^{-⁰} in/sec	53.2	55.2	49.0	40.3	32.1	33.0	31.2	30.4	27.0	24.1	22.3	23.2	20.1	18.0	14.8
Total of Up and Down 1	racks Calculation															
Total Vibration Level Out	side Building	53.6	55.6	49.4	40.7	32.5	33.4	31.6	30.8	27.4	24.5	22.7	23.6	20.5	18.4	15.2
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4 5 0	-4	-4 5-2	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB dB	0.0	0.0	0.0	0.0	5.8 2	5.4	5.Z	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
SAF	dB	10	2 10	10	2 10	2 10	2 10	2 10	2 10	2 10	2 10	2 10	2 10	2 10	2 10	10
	uD	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/3 Oct_dB	67.6	69.6	63.4	54.7	46.3	46.8	44.8	43.8	40.2	36.5	33.7	33.6	29.5	27.1	23.9
Predicted Noise Level	Oct. dB			70.7			50.8			45.9			37.5			28.8
L _{max}	dB(A)	35.0														
Lan 20mina	dR(Δ)	24.6														
-eq,sumins Noise Criteria		45														
Complianco	UD(A)	40 Voc														
compliance		162														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) +$

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN Asse	essment		Train Spee	ed: 70 kph
NSR Ref.:	KAT-P1-3		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Residential premises near Kai Tak Station	Up Track	55	15	57
Assessed Floor	2	Down Track	70	17	72
Item:	47				
	Selected Borehole D	etails:			

Selected	Borehole	Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	15	57[1]
Down Track	D018	28	15	72[1]

										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re	1 lb/in ^{0.5}		35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
LSR	dB re	10 ⁻⁶ in/s*in ⁰	^{0.5} /lb	17.9	15.6	10.0	4.3	-2.1	-6.1	-9.9	-12.3	-15.4	-14.2	-15.2	-12.6	-12.5	-15.9	-16.3
Up Track Vib. Level	dB re	10 ⁻⁶ in/sec		60.2	61.9	55.3	47.6	40.2	40.2	39.4	38.0	34.9	32.1	30.1	31.7	28.8	26.4	23.0
Down Track Calculatio	n																	
FDL	dB re	1 lb/in ^{0.5}		35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ⁰	^{).5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Down Track Vib. Level	dB re	10 ⁻⁶ in/sec		48.1	50.1	43.9	35.2	27.0	27.9	26.1	25.3	21.9	19.0	17.2	18.1	15.0	12.9	9.7
Total of Up and Down	Fracks	Calculatio	on															
Total Vibration Level Out	tside B	uilding		60.5	62.2	55.6	47.9	40.4	40.5	39.6	38.3	35.2	32.3	30.4	31.9	29.0	26.6	23.2
BCF	dB	Y/N	0															
BVR-up	dB	Floor	2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradiated Naiss Lavel	1	4/2 (74 5	76.0	60.6	64.0	54.0	F2 0	52.0	E4 2	49.0	44.2	44.4	44.0	20.0	25.2	24.0
Predicted Noise Level		1/3 (JCL, UB	74.5	/0.2	09.0	01.9	34. Z	53.9 50 5	52.0	51.5	40.0	44.5	41.4	41.9	30.0	35.3	31.9
I I I I I I I I I I I I I I I I I I I		,		42.6		11.2			50.5			53.5			40.0			37.0
⊑max	1			42.0														
Leq,30mins			dB(A)	30.7														
Noise Criteria			dB(A)	45														

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3$ (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail	Operati	ional C	GBN A	Assess	sment						Train	I Spee	ed:	65	5 kph
NSR Ref.:	KAT-P1-4							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	int Dist	, m
Location:	Residential premises ne	ar Kai 1	Tak Sta	ation		Uр Т	rack		80			15			81	
Assessed Floor	2					Down	Track		65			17			67	
Item:	48															
		Select	ed Bo	reho	le Det	ails:										
				Bor	ehole	Ref.	Rock	khead	Depth	i, m	Hole	: Dept	.h, m	Sla	int Dist	, m
		Up T	rack		D018			28	3			15		1	81[1]	
		Down	Track		D018			28	3			15			67[1]	
		-														
								Frequ	uency	(Hz)						_
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	45.5	47.5	41.3	32.6	24.4	25.3	23.5	22.7	19.3	16.4	14.6	15.5	12.4	10.3	7.1
Down Track Calculation	า															
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	16.5	14.4	9.1	2.7	-4.2	-7.6	-12.1	-14.1	-17.4	-16.3	-17.1	-15.0	-15.0	-18.2	-18.5
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	46.2	48.1	41.8	33.4	25.5	26.1	24.6	23.6	20.3	17.4	15.6	16.7	13.7	11.5	8.2
Total of Up and Down 1	racks Calculation															
Total Vibration Level Out	side Building	48.9	50.8	44.5	36.0	28.0	28.7	27.1	26.2	22.8	20.0	18.1	19.1	16.1	13.9	10.7
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dВ	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Level	1/3 Oct. dB	62.9	64.8	58 5	50.0	11.8	121	40.3	30.2	35.6	32.0	29.1	20.1	25.1	22.6	19.4
Predicted Noise Level	Oct dB	02.5	04.0	65.9	00.0	41.0	46.2	40.0	00.2	41.3	02.0	20.1	32.9	20.1	22.0	24.3
	dB(A)	30.4														
	dB(V)	<20														
-eq,summs Noiso Critoria		45														
Compliance	dB(A)	45 Voc														
		res														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) +$

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail	Operati	ional (GBN A	Assess	sment						Train	I Spee	əd:	60	kph
NSR Ref.:	KAT-P1-5	•				·		Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	nt Dist	, m
Location:	Residential premises ne	ar Kai T	rak St	ation \$	Site 1	Up T	Frack	·	10			15			18	
Assessed Floor	2				ļ	Down	Track		20			17			26	
Item:	49															
		Select	ed Bo	rehol	e Det	ails:										
				Bore	ehole	Ref.	Rock	<head< td=""><td>Depth</td><td>ı, m</td><td>Hole</td><td>Dept</td><td>:h, m</td><td>Sla</td><td>nt Dist</td><td>, m</td></head<>	Depth	ı, m	Hole	Dept	:h, m	Sla	nt Dist	, m
		Up Ir	rack	ļ	D018		ļ	28	3			15		 	18[1]	
		Down	Ггаск	l	D018			28	3			15		<u> </u>	26[1]	
								Fred	'onov	(니구)						
Description	Linit	20	25	20	40	50	63	PIEqu		(⊓∠) 125	160	200	250	215	400	500
Description	Ufiit	20	20	J2	40	50	05	00	100	120	100	200	200	315	400	500
	ID	24.0	20 U	27.0	25.0	24.0	20 U	41.0	42.0	12.0	20 0	27.0	26.0	22 U	24.0	21.0
		34.0	30.U	31.0	35.0	34.0	30.U	41.0	42.0	42.0	30.0	31.0	30.0	33.0	J4.U	31.0
			0	0	0	0	0	0	0	0	0	^	0	^	0	^
	DB Type o	3	_3	_3	_3	∪ _3	∪ _3	_3	_3	_3	_3	_3	∪ _3	U .3	∪ _3	_3
		-5	-5	-5	-5	-5	-0	-5	-0	-5	-5	-5	-5	-0	-5	-3
	UD 10 ⁻⁶ :/o*in ^{0.5} /lb	20.7	20.8	20 5	01 1	10.3	12.8	11 2	<u>ه م</u>	5 A	16	30	65	12	70	61
LOR La Track Vib Level		20.7 51.7	20.0 55.8	20.5 54 5	∠1.1 53.1	19.5	13.0	11. <u>~</u> ∕10.2	0.5 17 Q	э. ч лл д	1.0 26.6	3.0 27 ()	0.0 20 5	4.2 212	1.2 28.2	21 A
Dentation vib. Level		51.7	55.5	34.5	55.1	30.5	40.0	40.4	47.5	47.7	00.0	51.5	00.0	J4.2	JU.2	J -
DOWN TRACK Calculation	. <u>1</u>	24.0	20.0	27.0	25.0	24.0	20.0	44.0	40.0	40.0	20.0	27.0	26.0	22.0	24.0	21.0
FDL	dB re 1 lb/in***	34.0	38.0	37.0	35.0	34.0	38.0	41.u	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
			0	0	0	0	0	0	0	0	0	^	^	0	0	_
	dB iype u	U	U 2	U 3	U S	U 2	0	U 2	U 2	U 2	U 2	U 2	0 2	U S	U S	0
		-3	-3	-0	-0	-3	-3	-3	-3	-0	-3	-3	-3	-0	-3	-3
	$\frac{\text{OB}}{\text{AB}} = \frac{10^{-6} \text{in/e} \times \text{in}^{0.5}}{\text{Ib}}$	10.4	10.3	17 9	18.3	12.5	25	-21	-5.3	-87	-6.0	-75	-24	-36	-29	-69
		50.4	54.3	F1 0	F0.0	12.0	2.0	25.0	-0.0 22 7	-0.7 20.4	-0.0	-1.0 06 5	- <u>-</u>	-0.0 06 1	-2.0 00 1	-0.0
	dB re 10 In/sec	50.4	54.J	51.9	50.5	43.5	37.5	30.9	33.1	30.4	29.1	20.5	30.0	20.4	20.1	21.1
Total of Up and Down I	Tracks Calculation	54.1	50 1	FG /	55.0	F1 1	40.1	40.4	40 N	44.5	27.2	77 /	40.0	24.0	20.6	24.6
		54.1	50. I	50.4	55.0	51.1	49.1	49.4	40.0	44.0	31.5	31.4	40.0	34.5	30.0	34.0
	AB Floor 2	-4	-4	-4	-4	-4	-4	_4	-4	-4	-4	-4	-4	-4	-4	-4
EVIX-up EV/R - Resonance		60	60	60	60	58	54	52	50	48	40	30	20	- - 10	07	0.7
CTN		2	2	2	2	2.0	2	2.2	2	2	2	2	2.0	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
0/1	<u>, ub</u>			10			10	10	10					10		
Predicted Noise Level	1/3 Oct, dB	68.1	72.1	70.4	69.0	64.9	62.5	62.6	61.0	57.3	49.3	48.4	50.0	43.9	47.3	43.3
Predicted Noise Level	Oct, dB	j.		75.5			68.3			62.8			52.8			48.8
L _{max}	dB(A)	50.9														
L _{ea.30mins}	dB(A)	39.7														
Noise Criteria	dB(A)	45														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3$ (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operational GBN Asses	sment		Train Spee	ed: 55 kph
NSR Ref.:	KAT-P1-6		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Residential premises near Kai Tak Station Site 1	Up Track	180	15	181
Assessed Floor	2	Down Track	165	17	166
Item:	50				

Up Track D018 28 15	
	181[1]
Down Track D018 28 15	166[1]

									Freq	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 ll	b/in ^{0.5}	33.2	2 37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N N	1														
TIL	dB	Туре С	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре 1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
LSR	dB re 10	⁻⁶ in/s*in ^{0.5} /lb	15.8	3 13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10	⁻⁰in/sec	54.0	56.0	49.8	41.1	32.9	33.8	32.0	31.2	27.8	24.9	23.1	24.0	20.9	18.8	15.6
Down Track Calculatio	n																
FDL	dB re 1 I	b/in ^{0.5}	33.2	2 37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N N	1														
TIL	dB	Туре С	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре С)														
LSR	dB re 10	⁻⁶ in/s*in ^{0.5} /lb	15.8	3 13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Down Track Vib. Level	dB re 10	⁻ ⁶ in/sec	44.0	46.0	39.8	31.1	22.9	23.8	22.0	21.2	17.8	14.9	13.1	14.0	10.9	8.8	5.6
Total of Up and Down	Fracks Ca	alculation															
Total Vibration Level Out	tside Build	ding	54.	5 56.5	50.3	41.6	33.4	34.3	32.5	31.7	28.3	25.4	23.6	24.5	21.4	19.3	16.1
BCF	dB	Y/N C)														
BVR-up	dB	Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradicted Naiss Lavel	1	1/2 Oct -		. 70 5	64.2	FFC	47.0	47.7	45.7	44.7	44.4	27.4	24.6	24 E	20.4	20.0	24.0
Predicted Noise Level			ID 00.3	5 70.5	74.5	55.6	4/.Z	4/./ 54 7	43./	44./	41.1	57.4	54.0	34.5	50.4	20.0	24.0
rieuicieu Noise Level				•	/1.5			51./			40.0			30.3			29.1
L _{max}		dB(A) 35	.8													
Log 30mine		dB(A) 25	.0													

 Compliance
 Yes

 Notes:
 [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A)

45

Noise Criteria

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN Assessm KAT-P1-7							Assessment Train Speed: 75 kph								kph
NSR Ref.:	KAT-P1-7					Horizo	ontal D	Dist, m	Verti	cal Di	st, m	Sla	nt Dist	, m		
Location:	Residential premises ne	ar Kai ⊺	Tak Sta	ation		Up 1	rack		0			15			15	
Assessed Floor	2					Down	Track		0			17			17	
Item:	51															
		Select	ed Bo	rehol	e Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	n, m	Hole	: Dept	h, m	Sla	nt Dist	, m
		Up T	rack		D018			2	8			15			15[1]	
		Down	Track		D018			2	8			15			17[1]	
	1															
								Frequ	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	35.9	39.9	38.9	36.9	35.9	39.9	42.9	43.9	43.9	39.9	38.9	37.9	34.9	35.9	32.9
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	21.1	21.2	20.9	21.5	20.4	15.8	16.0	14.4	10.9	4.8	7.1	9.3	7.2	10.7	12.0
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	52.0	56.1	54.8	53.4	51.3	50.7	53.9	53.3	49.8	39.7	41.0	42.2	37.1	41.6	39.9
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	35.9	39.9	38.9	36.9	35.9	39.9	42.9	43.9	43.9	39.9	38.9	37.9	34.9	35.9	32.9
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	20.9	21.0	20.7	21.3	19.8	14.8	13.6	11.6	8.1	3.2	5.0	7.9	5.7	9.0	9.2
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	51.8	56.0	54.6	53.3	50.8	49.7	51.6	50.6	47.1	38.1	39.0	40.8	35.7	39.9	37.1
Total of Up and Down 1	Fracks Calculation															
Total Vibration Level Out	tside Building	54.9	59.1	57.7	56.4	54.1	53.3	55.9	55.2	51.7	42.0	43.1	44.6	39.5	43.9	41.8
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradicted Naice Level	1/2 Oct. dD	69.0	72.4	74 7	70.4	67.0	66.7	60.4	CO 0	64 E	54.0	E 4 4	FAG	40 E	50.6	50 E
Predicted Noise Level		00.9	13.1	76.6	70.4	07.9	00./ 72.0	09.1	00.2	04.0 60.9	54.0	54.1	04.0 57.0	40.0	52.0	50.5
redicted Noise Level		50.0		/0.0			12.0			09.0			57.9			54.7
⊫max	aB(A)	56.8														
L _{eq,30mins}	dB(A)	44.7														
Noise Criteria	dB(A)	45														
Compliance		Yes														
Notoo: [1] Lincor interne	lation has been applied t	o clant	dicton	oo wh	oro or	onronr	into									

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3$ (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operationa	al GBN Assessment		Train Spee	d: 70 kph
NSR Ref.:	TKW-1-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Parc 22	Up Track	85	15	86
Assessed Floor	1	Down Track	90	27	94
Item:	52				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	15	86[1]
Down Track	D002	24	20	94[1]

									Frequ	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ^{0.5}		35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5}	/lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec		51.1	53.1	46.9	38.2	30.0	30.9	29.1	28.3	24.9	22.0	20.2	21.1	18.0	15.9	12.7
Down Track Calculation	n																
FDL	dB re 1 lb/in ^{0.5}		35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5}	/lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec		31.3	32.1	26.0	21.0	27.2	17.8	22.8	31.6	17.7	12.4	20.9	23.0	17.3	19.9	13.9
Total of Up and Down	Fracks Calculation	1															
Total Vibration Level Out	tside Building		51.2	53.2	47.0	38.3	31.9	31.1	30.1	33.3	25.7	22.5	23.6	25.2	20.7	21.4	16.4
BCF	dB Y/N	0															
BVR-up	dB Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradiated Naisa Lavel	1/2 0-		67.2	60.2	62.0	54.2	47.7	46 F	45.3	40.2	40 E	26 F	26.6	27.0	24.7	22.4	27.4
Predicted Noise Level	1/3 00	t, αΒ t dΡ	01.2	09.2	03.0	54.5	41.1	40.0	40.3	40.3	40.0	30.3	30.0	31.Z	31.7	32.1	21.1
I	00		27 4		10.2			51.4			4J.Z			40.5			JJ.J
⊑max		uð(A)	37.1														
L _{eq,30mins}		dB(A)	25.3														
Noise Criteria		dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Ra	ail Operational (GBN Asses	sment			Train Spee	ed: 70 kph
NSR Ref.:	TKW-1-2					Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Sanford Mansion			Up T	rack	95	15	96
Assessed Floor	1			Down	Track	95	27	99
Item:	53							
		Selected Bo	rehole Det	tails:				
			Borehole	Ref.	Roc	khead Depth, m	Hole Depth, m	Slant Dist, m

D018

D002

28

24

15

20

96[1]

99[1]

Up Track

Down Track

								Frequ	uency	(Hz)		-				
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ТОС	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	51.1	53.1	46.9	38.2	30.0	30.9	29.1	28.3	24.9	22.0	20.2	21.1	18.0	15.9	12.7
Down Track Calculatio	n															
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N N	1														
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ТОС	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	31.3	32.1	26.0	21.0	27.2	17.8	22.8	31.6	17.7	12.4	20.9	23.0	17.3	19.9	13.9
Total of Up and Down	Tracks Calculation															
Total Vibration Level Ou	tside Building	51.2	53.2	47.0	38.3	31.9	31.1	30.1	33.3	25.7	22.5	23.6	25.2	20.7	21.4	16.4
BCF	dB Y/N 0															
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
—																
Predicted Noise Level	1/3 Oct, dB	67.2	69.2	63.0	54.3	47.7	46.5	45.3	48.3	40.5	36.5	36.6	37.2	31.7	32.1	27.1
Predicted Noise Level	Oct, dB			70.2			51.4			49.2			40.5			33.3
L _{max}	dB(A)	37.1														
L _{eq,30mins}	dB(A)	25.3														
Noise Criteria	dB(A)	45														
Compliance		Yes														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail	Operat	ional (GBN A	Assess	sment						Train	Spee	ed:	70) kph
NSR Ref.:	TKW-2-1							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	int Dist	, m
Location:	Skytower Tower 1					Up 1	Frack		140			15			141	
Assessed Floor	5					Down	Track		140			27			143	
Item:	54															
		Select	ed Bo	reho	le Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	i, m	Hole	Dept	h, m	Sla	int Dist	, m
		Up T	rack		D018			28	3			15			141[1]	
		Down	Track		D002			24	4			20			143[1]	
								Frequ	Jency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	51.1	53.1	46.9	38.2	30.0	30.9	29.1	28.3	24.9	22.0	20.2	21.1	18.0	15.9	12.7
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	31.3	32.1	26.0	21.0	27.2	17.8	22.8	31.6	17.7	12.4	20.9	23.0	17.3	19.9	13.9
Total of Up and Down 1	Fracks Calculation															
Total Vibration Level Out	side Building	51.2	53.2	47.0	38.3	31.9	31.1	30.1	33.3	25.7	22.5	23.6	25.2	20.7	21.4	16.4
BCF	dB Y/N 0															
BVR-up	dB Floor 5	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Level	1/2 Oct dB	50.2	61.2	55.0	46.2	20.7	29 F	27.2	40.2	32 F	28 F	28 E	20.2	22.7	24.4	10.4
Predicted Noise Level	Oct dB	55.2	01.2	62.2	40.5	39.1	43.4	57.5	40.5	41 2	20.5	20.0	32.5	23.1	24.1	25.3
	dB(A)	29.1											52.0			_0.0
Leg 30mins	dB(A)	<20														
Noise Criteria	dB(A)	45														
Compliance		Yes														
oompiiqiiloo		100														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.
 [3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] $L_{eq,30mins} = L_{eq}$ (double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Ra	Shatin Central Link Rail Operational GBN										Train	Spee	ed:	70	kph
NSR Ref.:	TKW-2-2							Horizo	ontal D)ist, m	Verti	cal Dis	st, m	Sla	nt Dist	, m
Location:	Skytower Tower 2					Up 7	Frack		140			15			141	
Assessed Floor	5					Down	Track		140			27			143	
Item:	55															
		Select	ted Bo	oreho	le Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	n, m	Hole	Dept	h, m	Sla	nt Dist	, m
		Up T	rack		D018			28	3			15			141[1]	
		Down	Track		D002			24	4			20			143[1]	
		-														
								Frequ	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	51.1	53.1	46.9	38.2	30.0	30.9	29.1	28.3	24.9	22.0	20.2	21.1	18.0	15.9	12.7
Down Track Calculatio	n															
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	31.3	32.1	26.0	21.0	27.2	17.8	22.8	31.6	17.7	12.4	20.9	23.0	17.3	19.9	13.9
Total of Up and Down	Tracks Calculation															
Total Vibration Level Ou	tside Building	51.2	53.2	47.0	38.3	31.9	31.1	30.1	33.3	25.7	22.5	23.6	25.2	20.7	21.4	16.4
BCF	dB Y/N 0	_														
BVR-up	dB Floor 5	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
BVR - Resonance	IdB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7

Predicted Noise Level	1/3 Oct, dB	59.2	61.2	55.0	46.3	39.7	38.5	37.3	40.3	32.5	28.5	28.6	29.2	23.7	24.1	19.1
Predicted Noise Level	Oct, dB			62.2			43.4			41.2			32.5			25.3
L _{max}	dB(A)	29.1														
L _{eq,30mins}	dB(A)	<20														
Noise Criteria	dB(A)	45														
Compliance		Yes														

2

2

10

2

10

2

10 10

2

2 2 2 2

10 10 10 10

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB

dB

CTN

SAF

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

2

10

2 2 2

10 10 10 10

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

2

10

2

10

Project:	Shatin Central Link Rail	Operat	ional (3BN /	Asses	sment						Train	I Spee	∋d:	70) kph
NSR Ref.:	TKW-2-3	•						Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	int Dist	., m
Location:	Skytower Tower 7				ļ	Up T	Frack		235			15			235	
Assessed Floor	5				ļ	Down	Track		260			27			261	
Item:	56															
		Select	ed Bo	rehol	le Det	ails:										
		. <u> </u>		Bor	ehole	Ref.	Rock	khead	Depth	ı, m	Hole	: Dept	:h, m	Sla	int Dist	., m
		Up T	rack	Ē	D018	-	[28	8		[15		[235[1]	_
		Down	Track	<u>і </u>	D002			24	4			20		ĺ	261[1]	
			- <u></u>					Frequ	Jency	(Hz)			0			
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation	0.5															
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N N	1	_		-	-	-	-	_	_	_	_	_	_	-	
	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
	dB Type U		10.0	~ ~		- 0	~ 4	10.0	0			10.4	10.0		10.4	10.0
LSR	dB re 10 ⁻ in/s*in ^{···} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10 ^{-⁵} in/sec	46.1	48.1	41.9	33.2	25.0	25.9	24.1	23.3	19.9	17.0	15.2	16.1	13.0	10.9	7.7
Down Track Calculation	vn Track Calculation															
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N N															ļ
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
	dB lype u	-							· · _						·	
LSR	dB re 10 ^{-o} in/s*in ^{0.0} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	26.3	27.1	21.0	16.0	22.2	12.8	17.8	26.6	12.7	7.4	15.9	18.0	12.3	14.9	8.9
Total of Up and Down T	Tracks Calculation															
Total Vibration Level Out	iside Building	46.2	48.2	42.0	33.3	26.9	26.1	25.1	28.3	20.7	17.5	18.6	20.2	15.7	16.4	11.4
BCF	dB Y/N 0															
BVR-up	dB Floor 5	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	ΊU	10	10	10	ΊU	10
Bradiated Naisa Laval	1/2 Oct. dE	54.2	56.2	50.0	41.3	347	22.5	22.2	25.2	27.5	22.5	23.6	24.2	18 7	10.1	14.1
Predicted Noise Level	1/3 Uct, uB	54.Z	50.2	50.0	41.5	34.1	33.5 29.4	J∠.J	35.5	21.5	23.5	23.0	24.2	10.7	19.1	20.2
		244		51.2			30.4			30.2			27.5			20.5
-max		24.1														
L _{eq,30mins}	dB(A)	<20														ļ
Noise Criteria	dB(A)	45														
Compliance		Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 3dB$

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Op	erational GBN Assessment		Train Spee	ed: 20 kph
NSR Ref.:	TKW-3-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Prince Ritz	Up Track	235	23	236
Assessed Floor	5	Down Track	255	23	256
Item:	57				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	236[1]
Down Track	D002	24	20	256[1]

										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re	1 lb/in ^{0.5}		24.5	28.5	27.5	25.5	24.5	28.5	31.5	32.5	32.5	28.5	27.5	26.5	23.5	24.5	21.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
тос	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in	^{5.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re	10 ⁻⁶ in/sec		15.5	16.3	10.2	5.2	11.4	2.0	7.0	15.8	1.9	-3.4	5.1	7.2	1.5	4.1	-1.9
Down Track Calculatio	n																	
FDL	dB re	1 lb/in ^{0.5}		24.5	28.5	27.5	25.5	24.5	28.5	31.5	32.5	32.5	28.5	27.5	26.5	23.5	24.5	21.5
CCF	dB	Y/N	N															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in	^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re	10 ⁻⁶ in/sec		15.5	16.3	10.2	5.2	11.4	2.0	7.0	15.8	1.9	-3.4	5.1	7.2	1.5	4.1	-1.9
Total of Up and Down	Fracks	Calculation	on															
Total Vibration Level Out	tside Bu	uilding		18.5	19.3	13.2	8.2	14.4	5.0	10.0	18.8	4.9	-0.4	8.1	10.2	4.5	7.1	1.1
BCF	dB	Y/N	0															
BVR-up	dB	Floor	5	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due dista d Nation Laval	1	4/0.4		00 F	07.0	04.0	40.0		40.4	47.0	05.0	44.7	5.0	40.4	44.0	7.5		2.0
Predicted Noise Level		1/3 (JCt, dB	26.5	27.3	21.2	16.2	22.2	12.4	17.2	25.8	11.7	5.6	13.1	14.2	1.5	9.8	3.8
I I I I I I I I I I I I I I I I I I I				42.0		20.5			23.1			20.0			17.2			11.1
∟max				12.0														
Leq,30mins			dB(A)	<20														
Noise Criteria			dB(A)	45														
Compliance				Yes														

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Proiect:	Shatin Central Link R	ail Operational GBN Asses	sment		Train Spee	ed: 45 kph
NSR Ref.:	TKW-3-2	F		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Prosperity House		Up Track	250	23	251
Assessed Floor	2		Down Track	270	23	271
Item:	58					
		Colocted Develople Det				

Selected Bo	orenole Details:			
	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	251[1]
Down Track	D002	24	20	271[1]

									Frequ	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ⁰	.5	31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB	Y/N N															
TIL	dB T	ype 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB T	ype 0															
LSR	dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/s	sec	22.5	23.3	17.2	12.2	18.4	9.0	14.0	22.8	8.9	3.6	12.1	14.2	8.5	11.1	5.1
Down Track Calculation	n																
FDL	dB re 1 lb/in ⁰	.5	31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB	Y/N N															
TIL	dB T	ype 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB T	ype 0															
LSR	dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/s	sec	22.5	23.3	17.2	12.2	18.4	9.0	14.0	22.8	8.9	3.6	12.1	14.2	8.5	11.1	5.1
Total of Up and Down 1	Fracks Calcul	ation															
Total Vibration Level Out	tside Building		25.5	26.3	20.2	15.2	21.4	12.0	17.0	25.8	11.9	6.6	15.1	17.2	11.5	14.1	8.1
BCF	dB	Y/N 0															
BVR-up	dB Fl	oor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due dista d Nation Laval			20.5	40.0	24.0	00.0	25.0	05.4	20.0	20.0	047	40.0	00.4	07.0	00 F	00.0	40.0
Predicted Noise Level	1		39.5	40.3	34.2	29.2	35.2	25.4	30.2	JO.O	24.7	10.0	20.1	21.2	20.5	22.0	10.0
Predicted Noise Level					41.5			30.7			39.0			30.2			23.0
∟ _{max}		dB(A)	25.8														
L _{eq,30mins}		dB(A)	<20														
Noise Criteria		dB(A)	45														
Compliance			Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32*log(no. of events in 30*log(no. of$ (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Proiect:	Shatin Central Link Rail Operational GBN Assessment								Train Speed: 45 kph							
NSR Ref.:	TKW-P1-1							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	ant Dist	, m
Location:	Residential premises ne	ar To K	wa W	an Sta	ation	Up 1	Frack		35			22			41	,
Assessed Floor	1					Down	Track		15			22			27	
Item:	59													<u> </u>		
		Select	ed Bo	reho	le Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	i, m	Hole	Dept	h, m	Sla	ant Dist	, m
		Up T	rack		D002			24	4			20			41[1]	
		Down	Track		D002			24	4			20			27[1]	
								Frequ	Jency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	6.5	1.0	0.2	6.1	6.6	-2.4	-3.0	-3.9	-17.7	-19.2	-12.5	-9.9	-9.2	-11.4	-13.3
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	33.0	31.5	29.7	33.6	33.1	28.1	30.5	30.6	16.8	11.3	17.0	18.6	16.3	15.1	10.2
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ^{-₀} in/s*in ^{0.5} /lb	10.0	7.4	9.3	9.9	9.8	4.5	5.2	4.2	-2.5	-8.7	-3.4	-5.4	-5.6	-8.5	-9.8
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	36.5	37.9	38.8	37.4	36.3	35.0	38.7	38.7	32.0	21.8	26.1	23.1	19.9	18.0	13.7
Total of Up and Down T	racks Calculation															
Total Vibration Level Out	side Building	38.1	38.8	39.3	38.9	38.0	35.8	39.3	39.4	32.1	22.2	26.6	24.4	21.5	19.8	15.3
BCF	dB Y/N 0															
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	αB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Lovel	1/3 Oct. dB	54.1	54.8	55 2	54 9	53.8	51 2	54 F	54 4	46.9	36.2	30 F	36.4	32 5	30.5	26.0
Predicted Noise Level	Oct dB	34.1	54.0	59.8	54.5	55.0	58.2	54.5	J7.7	55 1	50.2	55.0	11 8	52.5	50.5	20.0
		40.2	55.0			00.2			00.1			-1.0			01.0	
-max		20.2														
Leq,30mins	dB(A)	UD(A) 30.3														
Noise Criteria	dB(A)															
Compliance		Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail	Operational GBN Assessme	ent		Train Spee	ed: 65 kph
NSR Ref.:	MTW-6-1			Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Fok On Building		Jp Track	18	15	23
Assessed Floor	2	Do	wn Track	18	27	32
Item:	60					

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	15	23[1]
Down Track	D002	24	20	32[1]

Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1	lb/in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10) ⁻⁶ in/s*in ^{0.5}	/lb	19.8	19.9	19.0	19.7	15.6	7.4	1.6	-1.8	-5.2	-4.3	-4.9	0.4	-1.6	0.0	-4.0
Up Track Vib. Level	dB re 10)⁻ ⁶ in/sec		54.5	58.6	56.7	55.4	50.3	46.1	43.3	40.9	37.5	34.4	32.8	37.0	32.1	34.7	27.7
Down Track Calculation	n																	
FDL	dB re 1	lb/in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10)⁻ ⁶ in/s*in ^{0.5}	/lb	8.5	3.1	5.5	8.6	8.8	1.1	3.5	1.3	-5.9	-13.6	-7.3	-7.0	-6.6	-9.8	-10.8
Down Track Vib. Level	dB re 10)⁻ ⁶ in/sec		43.2	41.8	43.2	44.3	43.5	39.8	45.2	44.0	36.8	25.1	30.4	29.7	27.1	24.9	20.9
Total of Up and Down	Fracks C	alculatior	۱															
Total Vibration Level Out	tside Buil	ding		54.8	58.7	56.9	55.7	51.1	47.0	47.4	45.7	40.2	34.9	34.8	37.8	33.3	35.2	28.5
BCF	dB	Y/N	0															
BVR-up	dB	Floor	2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradiated Naisa Laure		4/2 0		60 0	70 7	70.0	60.7	64.0	60 A	60 C	50 7	E2 0	46.0	45.0	47.0	40.2	42.0	27.0
Predicted Noise Level		1/3 00	CT, OB	68.8	12.1	70.9	69.7	64.9	60.4	60.6	58.7	53.0	46.9	45.8	47.8	42.3	43.9	31.2
I I I I I I I I I I I I I I I I I I I		0		40.2		10.0			07.3			00.0			50.6			44./
⊑max				40.3														
L _{eq,30mins}			dB(A)	36.8														
Noise Criteria			dB(A)	45														

 Compliance
 Yes

 Notes:
 [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail	I Link Rail Operational GBN Assessment					- atol [<u></u>	Vorti	Train	I Sper	ed:	<u>65</u>	<u>5 kph</u>		
NSR Ref.:	MIW-6-2							HOLIT		JIST, III	veru		St, III	219		ί, m
Location:	HK Society for the Prote	ction or	Chila	ren	ļ		Track	──	10			15			18	
Assessed Floor	0				ļ	Down	Гаск	<u> </u>	10		<u> </u>	27		<u> </u>	29	
Item:	61	0-les(- hai	· - Def											
		Select	ed Po	Por	e Det	alls:			Denti			Dani				·
				BUIG	2018	Rei.	KUU	kneau 2	Depu	1, M	Huie	15	.h, m	Sia		ί, m
			Track	──	D010	,	──	2	3		──	20		──	20[1]	
		Down	llaun	L	Duuz		L		4		L	20		L	29[1]	
r	Γ					—	—	Fred		(니구)		—			—	
Description	Linit	20	25	22	40	50	63	FIEqu		(nz)	160	200	250	215	400	500
Description	Uhit	20	20	32	40	50	ნა	ōυ	100	120	100	200	200	310	400	500
		047	20.7	07.7	05.7	247	20.7	44 7	10.7	40.7	00.7	~7 7	20.7	00.7	247	24.7
FDL	dB re 1 lb/in	34.7	38.7	31.1	35.7	34.7	38.7	41.7	42.7	42.7	38.7	31.1	36.7	33.7	34.7	31.7
CCF	dB Y/N N		~	~	~	~	2	~	2	~	~	2	2	~	2	
	dB iype u	U 0	0	0	0	0	0	0	0	0	0	0	0	0	0	U
		U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
	dB iype u	1														!
LSR	dB re 10 ^{-°} in/s*in ^{°.} ′/lb	20.7	20.8	20.5	21.1	19.3	13.8	11.2	8.9	5.4	1.6	3.0	6.5	4.2	7.2	6.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	55.4	59.5	58.2	56.8	54.0	52.5	52.9	51.6	48.1	40.3	40.7	43.2	37.9	41.9	38.1
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N	1														ļ
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0	1														ļ
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	9.4	5.7	7.8	9.4	9.4	3.2	4.5	3.1	-3.9	-10.6	-5.0	-6.0	-6.0	-9.0	-10.2
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	44.1	44.4	45.5	45.0	44.1	41.9	46.2	45.8	38.8	28.1	32.7	30.7	27.7	25.7	21.5
Total of Up and Down T	Tracks Calculation															
Total Vibration Level Out	tside Building	55.7	59.7	58.4	57.1	54.4	52.8	53.8	52.6	48.6	40.5	41.3	43.4	38.3	42.0	38.2
BCF	dB Y/N 0	1														
BVR-up	dB Floor 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
<u></u>																
Predicted Noise Level	1/3 Oct, dB	73.7	77.7	76.4	75.1	72.2	70.2	71.0	69.6	65.4	56.5	56.3	57.4	51.3	54.7	50.9
Predicted Noise Level	Oct, dB	1		81.3			76.0			71.1			60.5			56.2
L _{max}	dB(A)	58.7]
L _{eg,30mins}	dB(A)	50[8]														ļ
Noise Criteria	dB(A)	55[9]														l
Compliance		Yes														l

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] $L_{eq,30mins} = L_{eq}$ (double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in 30*log(no. (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.
[8] A 3dB(A) upward adjustment is made to account for the daytime headway of 22 EMU trains within a 30 minutes period.

[9] Daytime criteria are used for educational buildings, church and temple.

Project:	Shatin Central Link Rail Operational GBN Asses	sment		Train Spee	d: 65 kph
NSR Ref.:	MTW-6-3		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Chung Nam Mansion	Up Track	20	15	25
Assessed Floor	2	Down Track	20	27	34
Item:	62				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	15	25[1]
Down Track	D002	24	20	34[1]

		Frequency (Hz)														
Descripti <u>on</u>	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N	1														
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	19.6	19.5	18.3	18.8	13.6	4.2	-0.9	-4.1	-7.5	-5.4	-6.7	-1.5	-3.0	-2.0	-6.0
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	54.2	58.2	55.9	54.4	48.2	42.8	40.8	38.6	35.2	33.3	31.0	35.2	30.7	32.7	25.7
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N	1														
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	8.0	2.6	4.2	8.2	8.4	0.3	2.1	-0.1	-9.1	-15.1	-8.7	-7.8	-7.2	-10.2	-11.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	42.7	41.3	41.9	43.9	43.1	39.0	43.8	42.6	33.6	23.6	29.0	28.9	26.5	24.5	20.3
Total of Up and Down T	Fracks Calculation															
Total Vibration Level Out	tside Building	54.5	58.3	56.1	54.8	49.4	44.4	45.6	44.1	37.5	33.7	33.1	36.1	32.1	33.4	26.8
BCF	dB Y/N 0															.
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Duralistad Naipo Loval	1/2 Oct dE	1 00 5	70.2	70.4	<u>~~ 0</u>	~ ~ ~	-70	-0.0	-7 A	50.2	45.7	44.4	46.4	44 4	40.4	25 E
Predicted Noise Level		C.60	12.3	70.1	0 0.0	0 3.∠	57.0 CE A	50.0	57.1	50.J	45.7	44.1	40.1 40.0	41.1	42.1	35.0 42 Q
		166		/ 3.4			03.4			JO. 2			43.0			42.5
⊑max		40.0														ļ
L _{eq,30mins}	dB(A)	35.1														ļ
Noise Criteria	dB(A)	45														l

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operational GBN A	ssessment		Train Spee	d: 65 kph
NSR Ref.:	MTW-6-4		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Pok Oi Lau	Up Track	12	15	19
Assessed Floor	0	Down Track	12	27	30
Item:	63				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	15	19[1]
Down Track	D002	24	20	30[1]

				Frequency (Hz)														
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb	/in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ⁻	⁶ in/s*in ^{0.€}	/lb	20.4	20.7	20.2	21.0	18.7	12.7	8.9	6.1	2.6	0.0	0.9	5.0	2.8	5.5	3.6
Up Track Vib. Level	dB re 10⁻	⁶ in/sec		55.1	59.4	57.9	56.7	53.4	51.4	50.6	48.8	45.3	38.7	38.6	41.7	36.5	40.2	35.3
Down Track Calculatio	n																	
FDL	dB re 1 lb	/in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10⁻	⁶ in/s*in ^{0.€}	/lb	9.1	4.8	7.0	9.1	9.2	2.5	4.2	2.5	-4.6	-11.6	-5.8	-6.4	-6.2	-9.3	-10.4
Down Track Vib. Level	dB re 10⁻	⁶ in/sec		43.8	43.5	44.7	44.8	43.9	41.2	45.9	45.2	38.1	27.1	31.9	30.3	27.5	25.4	21.3
Total of Up and Down	Fracks Ca	lculatior	1															
Total Vibration Level Out	tside Build	ing		55.4	59.5	58.1	56.9	53.9	51.8	51.8	50.4	46.1	39.0	39.5	42.0	37.0	40.3	35.5
BCF	dB	Y/N	0															
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dredicted Naise Laure		4/2 0		72.4	77 5	76.4	74.0	74 7	60.0	60.0	67.4	62.0	FF 0	E 4 E	56.0	50.0	52.0	40.0
Predicted Noise Level		1/3 00	CT, OB	73.4	//.5	76.1	74.9	/1./	69.Z	69.0	67.4	62.9	55.0	54.5	50.0	50.0	53.0	48.2
I I I I I I I I I I I I I I I I I I I		0		EG 0		01.1			/4.9			00.9			50.9			54.Z
⊑max				50.9														
L _{eq,30mins}			dB(A)	45.3														
Noise Criteria			dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Cer	ntral Link	Rail	Operat	Operational GBN Assessment									Train	əd:	65	s kph	
NSR Ref.:	MTW-7-1								[Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	nt Dist	i, m
Location:	Geranium	House					Į	Up T	rack	I	13			17			21	
Assessed Floor	1						Į	Down	Track	1	13			28			31	
Item:	64						-											
				Select	ted Bo	or <u>eho</u> l	le Det	ails:										
					[Bor	ehole	Ref.	Roc	khead	Depth	ı, m	Hole	Dept	h, m	Sla	nt Dist	ι, m
				Up T	rack		D018	,	i	2	8			15			21[1]	
				Down	Track		D002	. 1	1	2	4			20			31[1]	
			_	_											_			
										Freq	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb/	in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	N															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0	1														
LSR	dB re 10 ⁻⁶ i	<u>n/s*in^{0.5}/</u>	lb	20.0	20.3	19.8	20.6	17.6	10.7	4.1	0.6	-2.9	-3.2	-3.2	2.2	-0.2	2.0	-2.0
Up Track Vib. Level	dB re 10 ⁻⁶ i	n/sec		54.7	59.0	57.5	56.3	52.3	49.4	45.8	43.3	39.8	35.5	34.5	38.9	33.5	36.7	29.7
Down Track Calculation	n																	
FDL	dB re 1 lb/	in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ i	<u>n/s*in^{0.5}/</u>	lb	8.8	4.0	6.3	8.9	9.0	1.8	3.8	1.9	-5.2	-12.6	-6.5	-6.7	-6.4	-9.5	-10.6
Down Track Vib. Level	dB re 10 ⁻⁶ i	n/sec		43.5	42.7	44.0	44.5	43.7	40.5	45.5	44.6	37.5	26.1	31.2	30.0	27.3	25.2	21.1

56.6

52.9

-2

2

49.9

-2

5.4

2

10

65.3

71.2

48.7

-2

5.2

2

10

41.8 36.0 36.2 39.4

-2

4.8 4.0 3.0 2.0 1.0

2 2 2 2 2

63.3

-2

10 10 10 10

63.9 62.0 56.6 50.0 49.2 51.4 45.4

-2

-2

54.1

47.0

-2

5.0

2

10 10

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

1/3 Oct, dB

Oct, dB

dB(A)

dB(A)

dB(A)

Y/N

Floor

0

1

Total of Up and Down Tracks Calculation Total Vibration Level Outside Building

dB

dB

dB

dB

dB

BCF

CTN

SAF

-max

L_{eq,30mins} Noise Criteria

Compliance

BVR-up

BVR - Resonance

Predicted Noise Level

Predicted Noise Level

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

59.1

-2 -2 -2

6.0 6.0 6.0 5.8

2 2 2

10 10 10 10

57.7

55.0

-2

6.0

2

10

71.0

51.8

40.3

45

Yes

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

75.1 73.7 72.6 68.7

78.7

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

34.4

-2

37.0

-2

0.7

2

10

47.7

30.3

-2

0.7

2

10

41.0

48.5

Project:	Shatin Central Link Rail	Operational GBN Assess	ment		Train Spee	ed: 65 kph
NSR Ref.:	MTW-8-1			Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Horae Palace		Up Track	15	17	23
Assessed Floor	3	Ī	Down Track	15	28	32
Item:	65	_				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	15	23[1]
Down Track	D002	24	20	32[1]

										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1	lb/in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 1	0 ⁻⁶ in/s*in ^{0.€}	/lb	19.8	19.9	19.0	19.7	15.6	7.4	1.6	-1.8	-5.2	-4.3	-4.9	0.4	-1.6	0.0	-4.0
Up Track Vib. Level	dB re 1	0 ⁻⁶ in/sec		54.5	58.6	56.7	55.4	50.3	46.1	43.3	40.9	37.5	34.4	32.8	37.0	32.1	34.7	27.7
Down Track Calculation	n																	
FDL	dB re 1	lb/in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 1	0 ⁻⁶ in/s*in ^{0.€}	[;] /lb	8.5	3.1	5.5	8.6	8.8	1.1	3.5	1.3	-5.9	-13.6	-7.3	-7.0	-6.6	-9.8	-10.8
Down Track Vib. Level	dB re 1	0 ⁻⁶ in/sec		43.2	41.8	43.2	44.3	43.5	39.8	45.2	44.0	36.8	25.1	30.4	29.7	27.1	24.9	20.9
Total of Up and Down 1	Fracks C	Calculation	ו															
Total Vibration Level Out	tside Bui	ilding		54.8	58.7	56.9	55.7	51.1	47.0	47.4	45.7	40.2	34.9	34.8	37.8	33.3	35.2	28.5
BCF	dB	Y/N	0															
BVR-up	dB	Floor	3	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradiated Nation Laws	r	4/2 0		66.9	70 7	69.0	67.7	62.0	E9 4	E9 C	56 7	E4 C	44.0	42.0	45.0	40.2	44.0	25.0
Predicted Noise Level		1/3 0	CT, OB	66.8	/0./	58.9	67.7	62.9	58.4	58.6	56.7	51.0	44.9	43.8	45.8	40.3	41.9	35.2
		0		40.0		74.0			00.3			50.0			40.0			42.1
∟max			ив(А)	46.3														
L _{eq,30mins}			dB(A)	34.8														
Noise Criteria			dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rai	I Operational GBN Assess	sment		Train Spee	d: 65 kph
NSR Ref.:	MTW-9-1			Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Majestic Park		Up Track	35	18	39
Assessed Floor	3		Down Track	35	30	46
Item:	66					

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D012	34	18	39[1]
Down Track	D002	24	20	46[1]

										Freq	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb	o/in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10	⁶ in/s*in ^{0.5}	/lb	19.8	20.7	18.7	15.2	6.4	-3.6	-7.7	-10.7	-15.0	-12.7	-13.4	-6.1	-11.4	-14.5	-15.6
Up Track Vib. Level	dB re 10	⁶ in/sec		54.5	59.4	56.4	50.9	41.1	35.1	34.0	32.0	27.7	26.0	24.3	30.6	22.3	20.2	16.1
Down Track Calculation	n																	
FDL	dB re 1 lb	o/in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10	^{.6} in/s*in ^{0.5}	/lb	5.4	0.1	-1.6	3.5	4.7	-4.5	-7.0	-5.0	-19.4	-20.2	-13.1	-10.3	-10.7	-11.8	-14.2
Down Track Vib. Level	dB re 10	⁶ in/sec		40.1	38.8	36.1	39.2	39.4	34.2	34.7	37.7	23.3	18.5	24.6	26.4	23.0	22.9	17.5
Total of Up and Down	Fracks Ca	lculatior	1															
Total Vibration Level Out	tside Build	ling		54.6	59.4	56.5	51.2	43.3	37.6	37.4	38.7	29.0	26.7	27.5	32.0	25.6	24.8	19.9
BCF	dB	Y/N	0															
BVR-up	dB	Floor	3	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Lovel	1	1/3 0	t dB	66.6	71 /	68 5	63.2	55 1	19.0	18.6	19.7	30.8	36.7	36.5	40.0	32.6	31.5	26.6
Predicted Noise Level		1/3 0	ct dR	00.0	/ 1.4	73.6	00.2	55.1	56.8	40.0		50.3	50.7	50.5	42 1	52.0	51.5	32 7
		0	dB(A)	39.2		, 0.0			00.0			50.5			- T2 .			02.7
-max				27.7														
Leq,30mins				21.1														
Noise Criteria			dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operati	onal GBN Assessment		Train Spee	ed: 65 kph
NSR Ref.:	MTW-10-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	18 Farm Road	Up Track	15	18	23
Assessed Floor	3	Down Track	15	30	34
Item:	67				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D012	34	18	23[1]
Down Track	D002	24	20	34[1]

										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb/ii	n ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ ir	1/s*in ^{0.5}	/lb	25.3	27.0	26.3	26.0	20.1	11.0	3.0	-2.5	-7.6	-9.7	-10.1	-4.3	-9.1	-11.1	-13.0
Up Track Vib. Level	dB re 10 ⁻⁶ ir	n/sec		60.0	65.7	64.0	61.7	54.8	49.7	44.7	40.2	35.1	29.0	27.6	32.4	24.6	23.6	18.7
Down Track Calculation	n																	
FDL	dB re 1 lb/i	n ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ ir	1/s*in ^{0.5} /	/lb	8.0	2.6	4.2	8.2	8.4	0.3	2.1	-0.1	-9.1	-15.1	-8.7	-7.8	-7.2	-10.2	-11.4
Down Track Vib. Level	dB re 10 ⁻⁶ ir	n/sec		42.7	41.3	41.9	43.9	43.1	39.0	43.8	42.6	33.6	23.6	29.0	28.9	26.5	24.5	20.3
Total of Up and Down 1	Fracks Calc	ulation																
Total Vibration Level Out	tside Buildin	g		60.1	65.7	64.0	61.8	55.1	50.1	47.3	44.6	37.4	30.1	31.3	34.0	28.7	27.1	22.6
BCF	dB	Y/N	0															
BVR-up	dB	Floor	3	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
.	1																	
Predicted Noise Level		1/3 00	t, dB	72.1	77.7	76.0	73.8	66.9	61.5	58.5	55.6	48.2	40.1	40.3	42.0	35.7	33.8	29.3
Predicted NOISE LEVEL		00	τ, αΒ			80.9			68.4			56.4			44.8			35.1
L _{max}		C	1B(A)	46.4														
L _{eq,30mins}		c	dB(A)	34.8														
Noise Criteria		c	dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail	Operati	onal (GBN A	ssess	sment						Train	I Spee	əd:	65	i kph
NSR Ref.:	MTW-11-1							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	int Dist	, m
Location:	Farm Road Government	Primar	y Sch	ool		Up 1	Frack		65			18			67	
Assessed Floor	0					Down	Track		65			30			72	
Item:	68				-											
		Select	ed Bo	rehol	e Det	ails:					-					
				Bor	ehole	Ref.	Rock	khead	Depth	i, m	Hole	: Dept	h, m	Sla	int Dist	, m
		Up T	rack		D012			34	4			18			67[1]	
		Down	Track		D002			24	4			20			72[1]	
								Freq	lency	(Hz)				. 		_
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	15.8	13.4	8.6	2.7	-4.2	-7.6	-11.7	-13.6	-17.4	-16.1	-16.7	-8.1	-14.3	-17.6	-18.1
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	50.5	52.1	46.3	38.4	30.5	31.1	30.0	29.1	25.3	22.6	21.0	28.6	19.4	17.1	13.6
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-3.2	-6.3	-11.3	-14.6	-7.5	-19.8	-18.4	-10.7	-24.8	-26.1	-16.7	-13.6	-16.2	-14.7	-17.7
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	31.5	32.4	26.4	21.1	27.2	18.9	23.3	32.0	17.9	12.6	21.0	23.1	17.5	20.0	14.0
Total of Up and Down	Fracks Calculation															
Total Vibration Level Out	tside Building	50.5	52.2	46.3	38.5	32.2	31.3	30.8	33.8	26.0	23.1	24.0	29.7	21.6	21.8	16.8
BCF	dB Y/N 0															
BVR-up	dB Floor 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Lovel	1/3 Oct. dB	68 5	70.2	64.3	56 5	50.0	48.7	48.0	50.8	12.8	30.1	39.0	43.7	34.6	34.5	29.5
Predicted Noise Level	Oct dB	00.5	10.2	71.3	50.5	50.0	53.8	40.0	50.0	51 7	55.1	55.0	45.3	54.0	54.5	35.7
	dB(A)	40 4		1			00.0			•			-10.0			
		20101														
lune – eq,30mins	dB(A)	52[0]														
Noise Criteria	dB(A)	55[9]														
Compliance		Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d

(3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.
[8] A 3dB(A) upward adjustment is made to account for the daytime headway of 22 EMU trains within a 30 minutes period.

[9] Daytime criteria are used for educational buildings, church and temple.

Project:	Shatin Central Link Rail Operational GBN As	sessment		Train Spee	ed: 65 kph
NSR Ref.:	MTW-12-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Yuet Fai Mansion	Up Track	18	18	25
Assessed Floor	1	Down Track	18	30	35
Item:	69				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D012	34	18	25[1]
Down Track	D002	24	20	35[1]

								Frequ	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation	·	·														
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N	1														
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	24.6	26.4	25.7	25.4	18.8	8.8	1.4	-3.8	-8.8	-10.1	-10.6	-4.5	-9.4	-11.6	-13.3
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	59.3	65.1	63.4	61.1	53.5	47.5	43.1	38.9	33.9	28.6	27.1	32.2	24.3	23.1	18.4
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N]														
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0	1														I
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	7.8	2.3	3.5	8.0	8.2	-0.1	1.4	-0.8	-10.7	-15.8	-9.4	-8.2	-7.5	-10.4	-11.7
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	42.5	41.0	41.2	43.7	42.9	38.6	43.1	41.9	32.0	22.9	28.3	28.5	26.2	24.3	20.0
Total of Up and Down T	Fracks Calculation															
Total Vibration Level Out	tside Building	59.4	65.1	63.4	61.2	53.9	48.0	46.1	43.7	36.1	29.6	30.7	33.7	28.4	26.7	22.3
BCF	dB Y/N 0															
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Level	1/3 Oct. dB	75.4	81 1	79.4	77 2	69.7	63.4	61 3	58 7	50.9	43.6	437	45 7	39.4	37.4	33.0
Predicted Noise Level	Oct. dB	10	0	84.3		00.1	71.1	01.0		59.5	40.0	40.1	48.4	00.4	V 7.4	38.8
	dB(A)	49 5		04.0						00.0			-10.1			00.0
	dB(A)	38.0														
►eq,30mins		30.0														
Noise Criteria	UD(A)	40														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operational GBN		Train Spee	ed: 65 kph	
NSR Ref.:	MTW-12-2		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Delight Court	Up Track	18	20	27
Assessed Floor	3	Down Track	18	30	35
Item:	70				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	27[1]
Down Trac	k D002	24	20	35[1]

									Freq	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ⁰).5	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N N															
TIL	dB T	уре 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB T	уре 0															
LSR	dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	10.0	7.4	9.3	9.9	9.8	4.5	5.2	4.2	-2.5	-8.7	-3.4	-5.4	-5.6	-8.5	-9.8
Up Track Vib. Level	dB re 10 ⁻⁶ in/s	sec	44.7	46.1	47.0	45.5	44.5	43.2	46.9	46.9	40.2	30.0	34.3	31.3	28.1	26.2	21.9
Down Track Calculation	n																
FDL	dB re 1 lb/in ⁰	0.5	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N N															
TIL	dB T	уре 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB T	уре 0															
LSR	dB re 10 ⁻⁶ in/s	s*in ^{0.5} /lb	7.8	2.3	3.5	8.0	8.2	-0.1	1.4	-0.8	-10.7	-15.8	-9.4	-8.2	-7.5	-10.4	-11.7
Down Track Vib. Level	dB re 10 ⁻⁶ in/s	sec	42.5	41.0	41.2	43.7	42.9	38.6	43.1	41.9	32.0	22.9	28.3	28.5	26.2	24.3	20.0
Total of Up and Down 1	Fracks Calcu	lation															
Total Vibration Level Out	tside Building		46.7	47.3	48.0	47.7	46.8	44.5	48.4	48.1	40.8	30.8	35.2	33.2	30.3	28.4	24.1
BCF	dB	Y/N 0															
BVR-up	dB Fl	loor 3	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dВ		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level		1/3 Oct. dB	58 7	59.3	60.0	59 7	58.6	55.9	59.6	59 1	51.6	40.8	44 2	41 2	37 3	35.1	30.8
Predicted Noise Level		Oct. dB	00.1	00.0	64.5	00.1	00.0	63.1	00.0	00.1	59.9	40.0		46.5	01.0	00.1	36.4
		dB(A)	45 0														
			22 5														
lueiaa Oritaria			33.5														
Noise Criteria	1	dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operatio	nal GBN Assessment		Train Spee	d: 55 kph
NSR Ref.:	MTW-12-3		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Lucky Mansion	Up Track	15	20	25
Assessed Floor	3	Down Track	15	30	34
Item:	71				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	25[1]
Down Trac	k D002	24	20	34[1]

										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb/i	n ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ i	n/s*in ^{0.5}	/lb	10.6	9.1	10.8	10.4	10.2	5.9	5.9	5.4	-1.2	-6.7	-1.9	-4.7	-5.2	-8.0	-9.4
Up Track Vib. Level	dB re 10 ⁻⁶ i	n/sec		38.8	41.4	42.1	39.6	38.4	38.2	41.1	41.7	35.1	25.6	29.4	25.5	22.0	20.3	15.8
Down Track Calculation	n																	
FDL	dB re 1 lb/i	n ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ i	n/s*in ^{0.5}	/lb	8.0	2.6	4.2	8.2	8.4	0.3	2.1	-0.1	-9.1	-15.1	-8.7	-7.8	-7.2	-10.2	-11.4
Down Track Vib. Level	dB re 10 ⁻⁶ i	n/sec		36.3	34.8	35.4	37.4	36.6	32.6	37.3	36.2	27.2	17.2	22.5	22.5	20.1	18.0	13.8
Total of Up and Down	Fracks Calo	culation	1															
Total Vibration Level Out	tside Buildir	ng		40.8	42.2	42.9	41.7	40.6	39.2	42.6	42.7	35.7	26.1	30.2	27.3	24.2	22.3	18.0
BCF	dB	Y/N	0															
BVR-up	dB	Floor	3	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dВ			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Lovel		1/3 0/	t dP	52.8	54.2	54 9	53 7	52 A	50 E	53.8	53 7	<i>16</i> 5	36.1	30.2	35.2	31.2	29.0	24.7
Predicted Noise Level		1/3 00	r, ub rt dR	52.0	J4.2	59.1	55.7	52.4	57.3	55.0	55.7	54.6	55.1	55.2	41 1	51.2	23.0	30.4
			dR(A)	39 5		55.1			07.0			04.0			71.1			00.4
-max				20.0														
Leq,30mins			uB(A)	28.7														
Noise Criteria			dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail	Operati	ional (GBN A	Assess	sment						Train	Spee	ed:) kph	
NSR Ref.:	MTW-12-4							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	ant Dist	, m
Location:	352-354 Ma Tau Wai R	oad				Up 1	Track		15			20			25	
Assessed Floor	2					Down	Track		15			30			34	
Item:	72															
		Select	ed Bo	rehol	le Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	n, m	Hole	Dept	h, m	Sla	ant Dist	, m
		Up T	rack		D002		24					20			25[1]	
		Down	Down Track D002					24	4			20	_			
				-	-	-		Frequ	uency	(Hz)			-	-		
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation				_								_	_			
FDL	dB re 1 lb/in ^{0.5}	30.5	34.5	33.5	31.5	30.5	34.5	37.5	38.5	38.5	34.5	33.5	32.5	29.5	30.5	27.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	10.6	9.1	10.8	10.4	10.2	5.9	5.9	5.4	-1.2	-6.7	-1.9	-4.7	-5.2	-8.0	-9.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	36.1	38.6	39.3	36.8	35.7	35.4	38.3	38.9	32.3	22.8	26.6	22.8	19.3	17.5	13.1
Down Track Calculation	n	<u>, 4</u>														
FDL	dB re 1 lb/in ^{0.5}	30.5	34.5	33.5	31.5	30.5	34.5	37.5	38.5	38.5	34.5	33.5	32.5	29.5	30.5	27.5
CCF	dB Y/N N	1														
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0	1														
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	8.0	2.6	4.2	8.2	8.4	0.3	2.1	-0.1	-9.1	-15.1	-8.7	-7.8	-7.2	-10.2	-11.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	33.5	32.1	32.7	34.6	33.8	29.8	34.6	33.4	24.4	14.4	19.7	19.7	17.3	15.3	11.1
Total of Up and Down T	Fracks Calculation															
Total Vibration Level Out	tside Building	38.0	39.5	40.2	38.9	37.9	36.5	39.9	40.0	33.0	23.4	27.4	24.5	21.4	19.5	15.2
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	1/2 0.1			74.0		-4 -	40.0	FO 4		45.0	25.4	20.4	24.5	20.4		
Predicted Noise Level	1/3 Oct, dB	52.0	53.5	54.2	52.9	51.7	49.9	53.1	53.0	45.8	35.4	38.4	34.5	30.4	28.2	23.9
Predicted Noise Level	Uct, al	⁶		58.3			56.5			53.8			40.4			29.6
L _{max}	dB(A)) 38.8														
1		1 20 2														

dB(A)

45

Yes

Noise Criteria

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3$ (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.
Project: NSR Ref.: Location:	Shatin Centr MTW-12-5 Seng Cheon	al Link Ra	ail Op J	eratio	onal G	BN A	ssess	sment	rack	Horizo	ntal D	ist, m	Verti	Train cal Dis 17	Spee st, m	e d: Sla	50 nt Dist, 24	kph m
Assessed Floor	1						l	Down	Ггаск		18			27			32	
item.	15		Se	lecte	d Bo	rehol	e Det	ails:										
					T	Bore	ehole	Ref.	Roc	khead	Depth	, m	Hole	Dept	h, m	Sla	nt Dist,	m
			U	Jp Tra	ack		D018			28	3	,		15	,		24[1]	
			Do	own T	rack		D002			24	1			20			32[1]	
	•																	
										Frequ	lency	(Hz)						
Description	Unit		2	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb/in	0.5	32	2.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB	Y/N N																
TIL	dB 1	Гуре О		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	-	11.5	-															
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ⁰	^{.5} /lb	19.7	19.7	18.6	19.2	14.6	5.8	0.4	-2.9	-6.4	-4.9	-5.8	-0.6	-2.3	-1.0	-5.0
Up Track Vib. Level	dB re	10 ⁻⁶ in/sec		47.1	51.1	49.1	47.6	42.0	37.2	34.8	32.5	29.1	26.6	24.6	28.8	24.2	26.5	19.5
Down Track Calculatio	n																	
FDL	dB re	1 lb/in ^{0.5}		32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ⁰	^{.5} /lb	8.5	3.1	5.5	8.6	8.8	1.1	3.5	1.3	-5.9	-13.6	-7.3	-7.0	-6.6	-9.8	-10.8
Down Track Vib. Level	dB re	10 ⁻⁶ in/sec		35.9	34.5	35.9	37.0	36.2	32.5	37.9	36.7	29.5	17.8	23.1	22.4	19.8	17.6	13.6
Total of Up and Down	Tracks	Calculatio	n															
Total Vibration Level Out	tside B	uilding		47.4	51.2	49.3	48.0	43.0	38.5	39.6	38.1	32.3	27.1	26.9	29.7	25.5	27.0	20.5
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level		1/3 0	oct dB	63.4	67.2	65.3	64 0	58.8	53.9	54.8	53 1	47 1	41 1	39.9	417	36.5	377	31.2

Predicted Noise Level	1/3 Uct, ab	03.4	67.2	00.0	04.0	30.0	53.9	54.0	53.1	47.1	41.1	39.9	41.7	30.5	31.1	31.2
Predicted Noise Level	Oct, dB			70.5			61.2			54.3			44.7			38.6
L _{max}	dB(A)	42.4														
L _{eq,30mins}	dB(A)	32.0														
Noise Criteria	dB(A)	45														
Compliance		Yes														
Compliance		Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.
[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] $L_{eq,30mins} = L_{eq}$ (double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

TCF

TOC

LSR

BCF

Down Track Vib. Level

dB

dB

dB

Total of Up and Down Tracks Calculation

Total Vibration Level Outside Building

Project:	Shatin Central Link Rail	Operat	ional (GBN A	sses	sment						Train	Spee	∋d:	65	kph
NSR Ref.:	MTW-12-6							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	int Dist	, m
Location:	Great Wall Building					Up 1	rack		30			18			35	
Assessed Floor	3					Down	Track		30			30			42	
Item:	74															
		Select	ted Bo	rehol	e Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	ı, m	Hole	Dept	h, m	Sla	int Dist	, m
		Up T	rack		D012			34	4			18			35[1]	
		Down	Track		D002			24	4			20			42[1]	
								Frequ	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	20.9	23.5	22.5	22.4	12.5	-2.3	-6.5	-10.0	-14.6	-12.3	-13.1	-5.7	-11.0	-14.1	-14.9
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	55.6	62.2	60.2	58.1	47.2	36.4	35.2	32.7	28.1	26.4	24.6	31.0	22.7	20.6	16.8
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

BVR-up	dB	Floor	3	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level		1/3 Oct	, dB	67.7	74.2	72.2	70.2	59.9	50.5	51.0	50.5	40.5	37.2	36.8	40.4	33.5	31.8	27.3
Predicted Noise Level		Oct	t, dB			77.3			60.9			51.1			42.6			33.1
L _{max}		d	B(A)	41.8														
L _{eq,30mins}		d	B(A)	30.3														
Noise Criteria		d	B(A)	45														
Compliance				Yes														

62

-29

35.8

39.1

37.9

38.5 24.7

-38 -42 -180 -194 -126 -99 -95

39.8 39.5 29.7 27.2 27.8 32.4 26.5

19.3 25.1 26.8 24.2

-114

23.3

25.1

-134

18.3

20.6

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

0

0

62

40.9

55.7

Туре

Y/N

dB re 10⁻⁶in/s*in^{0.5}/lb

dB re 10⁻⁶in/sec

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

08 -02 56

39.5 37.5 41.3 40.9

62.2 60.2 58.2 48.1

Project:	Shatin Central Link Rail	Operati	ional (GBN A	sses	sment						Train	Spee	ed:	65	i kph
NSR Ref.:	MTW-12-7	-						Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	int Dist	, m
Location:	197-199 Ma Tau Wai Ro	ad				Up 7	rack		15			18			23	
Assessed Floor	2					Down	Track		15			30			34	
Item:	75															
		Select	ed Bo	reho	e Det	ails:										
				Bor	ehole	Ref.	Rock	khead	Depth	n, m	Hole	2 Dept	h, m	Sla	int Dist	, m
		Up Ti	rack		D012			3	4			18			23[1]	
		Down [·]	Track		D002			2	4			20			34[1]	
								Freq	uency	(Hz)						-
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ^{-₀} in/s*in ^{0.5} /lb	25.3	27.0	26.3	26.0	20.1	11.0	3.0	-2.5	-7.6	-9.7	-10.1	-4.3	-9.1	-11.1	-13.0
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	60.0	65.7	64.0	61.7	54.8	49.7	44.7	40.2	35.1	29.0	27.6	32.4	24.6	23.6	18.7
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	8.0	2.6	4.2	8.2	8.4	0.3	2.1	-0.1	-9.1	-15.1	-8.7	-7.8	-7.2	-10.2	-11.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	42.7	41.3	41.9	43.9	43.1	39.0	43.8	42.6	33.6	23.6	29.0	28.9	26.5	24.5	20.3
Total of Up and Down 1	racks Calculation															
Total Vibration Level Out	side Building	60.1	65.7	64.0	61.8	55.1	50.1	47.3	44.6	37.4	30.1	31.3	34.0	28.7	27.1	22.6
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/3 Uct, dB	74.1	79.7	78.0	75.8	68.9	63.5	60.5	57.6	50.2	42.1	42.3	44.0	37.7	35.8	31.3
Predicted NOISE Level	Uct, dB			82.9			/0.4			58.4			46.8			37.1
L _{max}	dB(A)	48.4														
L _{eq,30mins}	dB(A)	36.8														
Noise Criteria	dB(A)	45														
Compliance		Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operation	onal GBN Assessment		Train Spee	d: 65 kph
NSR Ref.:	MTW-12-8		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Pak Tai Mansion	Up Track	12	18	22
Assessed Floor	1	Down Track	12	30	32
Item:	76				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D012	34	18	22[1]
Down Track	D002	24	20	32[1]

										Freq	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb	/in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ^{-€}	^₅ in/s*in ^{0.5}	/lb	26.0	27.4	26.6	26.2	20.7	12.3	5.7	0.5	-4.6	-8.1	-8.3	-3.5	-8.2	-9.6	-11.2
Up Track Vib. Level	dB re 10 ^{-€}	³in/sec		60.6	66.1	64.3	61.9	55.4	50.9	47.4	43.2	38.1	30.6	29.4	33.2	25.5	25.1	20.5
Down Track Calculation	n																	
FDL	dB re 1 lb	/in ^{0.5}		34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ^{-€}	³ in/s*in ^{0.5}	/lb	8.5	3.1	5.5	8.6	8.8	1.1	3.5	1.3	-5.9	-13.6	-7.3	-7.0	-6.6	-9.8	-10.8
Down Track Vib. Level	dB re 10 ^{-€}	ີ in/sec		43.2	41.8	43.2	44.3	43.5	39.8	45.2	44.0	36.8	25.1	30.4	29.7	27.1	24.9	20.9
Total of Up and Down 1	Fracks Ca	lculatior	1															
Total Vibration Level Out	tside Build	ing		60.7	66.1	64.4	62.0	55.7	51.3	49.4	46.6	40.5	31.7	32.9	34.8	29.4	28.0	23.7
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	αB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Lovel	1	1/3 04	t dP	76 7	82.4	80.4	78.0	71 5	66 7	64 6	61 E	55 2	45.7	15 0	46.8	40.4	38.7	34.4
Predicted Noise Level		1/3 00	rt dR	/0./	02.1	85.2	10.0	71.5	73.3	04.0	01.0	62.6	-5.7	40.0	49.9	-0	50.7	40 1
			dB(A)	51.5		50.2			10.0			52.5			40.0			
-max				20.0														
Leq,30mins				39.9														
Noise Criteria			dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Proiect:	Shatin Central Link Rail	Operati	ional (GBN A	ssess	sment						Train	Spee	ed:	65	i kph
NSR Ref.:	MTW-12-9	•						Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	nt Dist	, m
Location:	Residential premises ale	ong Hur	ng Kwo	ong S	treet	Up 1	Frack		12			19			22	-
Assessed Floor	2	5	C	Ŭ		Down	Track		12			32			34	
Item:	77															
		Select	ed Bo	rehol	e Det	ails:										
				Bor	ehole	Ref.	Rocl	khead	Depth	n, m	Hole	Dept	:h, m	Sla	nt Dist	, m
		Up Ti	rack		D012			34	4			18			22[1]	
		Down	Track		D002			24	4			20			34[1]	
	i															
								Frequ	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation	-	_														
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	26.0	27.4	26.6	26.2	20.7	12.3	5.7	0.5	-4.6	-8.1	-8.3	-3.5	-8.2	-9.6	-11.2
Up Track Vib. Level	dB <u>re</u> 10 ⁻⁶ in/sec	60.6	66.1	64.3	61.9	55.4	50.9	47.4	43.2	38.1	30.6	29.4	33.2	25.5	25.1	20.5
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N	1														
TIL	dB <u>Type</u> 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	8.0	2.6	4.2	8.2	8.4	0.3	2.1	-0.1	-9.1	-15.1	-8.7	-7.8	-7.2	-10.2	-11.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	42.7	41.3	41.9	43.9	43.1	39.0	43.8	42.6	33.6	23.6	29.0	28.9	26.5	24.5	20.3
Total of Up and Down T	Fracks Calculation	·	_			_		_	_							
Total Vibration Level Out	tside Building	60.7	66.1	64.3	62.0	55.6	51.2	49.0	45.9	39.4	31.4	32.2	34.6	29.1	27.8	23.4
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		T = . =														
Predicted Noise Level	1/3 Oct, dB	74.7	80.1	78.3	76.0	69.4	64.6	62.2	58.9	52.2	43.4	43.2	44.6	38.1	36.5	32.1
Predicted Noise Level	Oct, dB			83.2			71.2			59.9			47.5			37.9
L _{max}	dB(A)	49.2														
L _{eq,30mins}	dB(A)	37.6														
Noise Criteria	dB(A)	45														

Compliance

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operational GBN As	sessment		Train Spee	d: 55 kph
NSR Ref.:	MTW-12-10		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Lucky Building	Up Track	15	18	23
Assessed Floor	2	Down Track	15	28	32
Item:	78				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D012	34	18	23[1]
Down Track	D002	24	20	32[1]

		Frequency (Hz)														
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N N															1
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0	_														1
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	25.3	27.0	26.3	26.0	20.1	11.0	3.0	-2.5	-7.6	-9.7	-10.1	-4.3	-9.1	-11.1	-13.0
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	53.5	59.2	57.5	55.2	48.3	43.2	38.2	33.7	28.6	22.5	21.1	25.9	18.1	17.1	12.2
Down Track Calculation	'n															
FDL	dB re 1 lb/in ^{0.5}	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N N]														1
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0	_														1
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	8.5	3.1	5.5	8.6	8.8	1.1	3.5	1.3	-5.9	-13.6	-7.3	-7.0	-6.6	-9.8	-10.8
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	36.7	35.3	36.7	37.8	37.0	33.3	38.7	37.5	30.3	18.6	23.9	23.2	20.6	18.4	14.4
Total of Up and Down 7	Fracks Calculation															
Total Vibration Level Out	tside Building	53.6	59.3	57.6	55.3	48.7	43.7	41.5	39.1	32.6	24.0	25.8	27.8	22.6	20.9	16.5
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Bradiated Noise Level	1/3 Oct. d'	67.6	73 3	71.6	60.3	62.5	57 1	54.7	52 1	45 A	26.0	26.8	27.8	21.6	29.6	25.2
Predicted Noise Level	Oct d	A 07.0	10.0	76.4	05.5	02.5	64.1	54.7	52.1	53.0	30.0	30.0	40.9	51.0	23.0	30.9
	dB(/	42 2	ł	70.4			04.1			00.0			40.0			50.5
⊑max		34														
Leq,30mins		.) 31.4	1													
Noise Criteria	dB(P	J 45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Ope	rational GBN Assessment		Train Spee	ed: 50 kph
NSR Ref.:	MTW-12-11		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Jing Ming Building	Up Track	19	20	28
Assessed Floor	2	Down Track	19	30	36
Item:	79				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	28[1]
Down Track	D002	24	20	36[1]

		Frequency (Hz)														
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	9.7	6.6	8.6	9.6	9.6	3.9	4.9	3.7	-3.2	-9.7	-4.2	-5.7	-5.8	-8.8	-10.0
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	37.1	38.0	39.0	38.0	37.0	35.3	39.3	39.1	32.2	21.8	26.2	23.7	20.6	18.7	14.4
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	7.6	2.1	2.9	7.7	7.9	-0.4	0.7	-1.4	-12.2	-16.6	-10.2	-8.5	-7.7	-10.6	-12.0
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	35.0	33.5	33.3	36.2	35.4	31.0	35.1	34.0	23.2	14.8	20.3	20.9	18.7	16.8	12.4
Total of Up and Down 1	Fracks Calculation															
Total Vibration Level Out	tside Building	39.2	39.3	40.0	40.2	39.3	36.6	40.7	40.2	32.7	22.6	27.2	25.5	22.8	20.8	16.5
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/3 Oct, dB	53.2	53.3	54.0	54.2	53.1	50.0	53.9	53.2	45.5	34.6	38.2	35.5	31.8	29.5	25.2
Predicted NOISE LEVEL	Oct, de			58.6			57.4			54.0			40.7			30.9
L _{max}	dB(A)	39.2														
L _{eq,30mins}	dB(A)	28.8														
Noise Criteria	dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operationa	al GBN Assessment		Train Spee	d: 65 kph
NSR Ref.:	MTW-12-12		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	One Elegance	Up Track	12	18	22
Assessed Floor	3	Down Track	12	30	32
Item:	80				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D012	34	18	22[1]
Down Trac	k D002	24	20	32[1]

		Frequency (Hz)														
Description	Unit	2	0 25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	34	.7 38.	7 37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N M	1														
TIL	dB Type () () 0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	(0 0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type ()														
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	26	.0 27.4	\$ 26.6	26.2	20.7	12.3	5.7	0.5	-4.6	-8.1	-8.3	-3.5	-8.2	-9.6	-11.2
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	60	.6 66.	64.3	61.9	55.4	50.9	47.4	43.2	38.1	30.6	29.4	33.2	25.5	25.1	20.5
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	34	.7 38.	7 37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N M	١														
TIL	dB Type () () 0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	() 0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type ()														
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	8	5 3.1	5.5	8.6	8.8	1.1	3.5	1.3	-5.9	-13.6	-7.3	-7.0	-6.6	-9.8	-10.8
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	43	.2 41.8	3 43.2	44.3	43.5	39.8	45.2	44.0	36.8	25.1	30.4	29.7	27.1	24.9	20.9
Total of Up and Down	Fracks Calculation															
Total Vibration Level Out	tside Building	60	.7 66.1	64.4	62.0	55.7	51.3	49.4	46.6	40.5	31.7	32.9	34.8	29.4	28.0	23.7
BCF	dB Y/N ()														
BVR-up	dB Floor 3	3 -	6-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
BVR - Resonance	dB	6	0 6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB	2	2 2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	1	0 10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Level	1/2 Oct /		7 79	76 4	74.0	67 F	62.7	60 E	57 E	51 2	41 7	41.0	12 0	36 /	34 7	20 /
Predicted Noise Level	1/3 Oct, 0		./ /0.	Q1 2	74.0	07.5	60.2	00.0	57.0	51.5	41.7	41.9	42.0	30.4	34.7	30.4
	dB		75	01.2			03.5			55.0			-3.5			55.1
-max			7.5 F 0													
Leq,30mins	dB	A) 3	5.9 -													
Noise Criteria	dB	(A) 4	5													

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail	Operat	ional (GBN A	sses	sment						Train	I Spee	əd:	65	i kph
NSR Ref.:	MTW-13-1	•						Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	nt Dist	, m
Location:	Cheung Chuk Shan Mer	norial S	School			Up 1	rack		10			20			22	
Assessed Floor	0					Down	Track		10			30			32	
Item:	81															
		Select	ed Bo	rehol	e Det	ails:										
				Bor	ehole	Ref.	Rock	khead	Depth	n, m	Hole	: Dept	h, m	Sla	nt Dist	, m
		Up T	rack		D002			2	4			20			22[1]	
		Down	Track		D002			2	4			20			32[1]	
								Freq	uency	(Hz)						_
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation		-														
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	12.8	11.5	12.9	12.4	12.5	10.9	11.4	10.9	6.9	1.3	3.8	0.2	-1.4	-1.4	-2.1
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	42.4	45.1	45.6	43.0	42.2	44.5	48.0	48.6	44.5	35.0	36.5	31.8	27.3	28.3	24.6
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	34.7	38.7	37.7	35.7	34.7	38.7	41.7	42.7	42.7	38.7	37.7	36.7	33.7	34.7	31.7
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	8.5	3.1	5.5	8.6	8.8	1.1	3.5	1.3	-5.9	-13.6	-7.3	-7.0	-6.6	-9.8	-10.8
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	38.2	36.8	38.2	39.3	38.5	34.8	40.2	39.0	31.8	20.1	25.4	24.7	22.1	19.9	15.9
Total of Up and Down	Fracks Calculation															
Total Vibration Level Out	tside Building	43.8	45.7	46.3	44.6	43.7	45.0	48.7	49.0	44.8	35.1	36.8	32.6	28.5	28.9	25.2
BCF	dB Y/N 0															
BVR-up	dB Floor 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradiated Naisa Laval	1/2 Oct. dB	61.9	62.7	64.2	62.6	61 E	62.4	65.0	66.0	61.6	51 4	E1 0	46.6	44 5	44.6	27.0
Predicted Noise Level	Oct dB	01.0	03.7	68 /	02.0	01.5	68.5	05.5	00.0	67.5	51.1	51.0	53.3	41.5	41.0	13 2
I redicted Noise Level		52.2		00.4			00.5			07.5			55.5			75.2
⊢max	UB(A)	32.2														
Leq,30mins	dB(A)	44[8]														
Noise Criteria	dB(A)	55[9]														
Compliance		Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN Asses	ssment		Train Spee	ed: 55 kph
NSR Ref.:	MTW-14-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	PLK Lam Man Chan English Primary School	Up Track	35	20	40
Assessed Floor	1	Down Track	35	30	46
Item:	82				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	40[1]
Down Track	D002	24	20	46[1]

				Frequency (Hz)														
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lt	o/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re 10	^{−6} in/s*in ^{0.5}	/lb	6.7	1.1	0.6	6.6	6.9	-2.0	-2.2	-3.7	-17.3	-19.0	-12.4	-9.8	-8.9	-11.3	-13.1
Up Track Vib. Level	dB re 10	⁻⁶ in/sec		34.9	33.4	31.8	35.8	35.2	30.2	33.0	32.5	18.9	13.2	18.8	20.5	18.3	17.0	12.2
Down Track Calculatio	n																	
FDL	dB re 1 lb	o/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re 10	^{−6} in/s*in ^{0.5}	/lb	5.4	0.1	-1.6	3.5	4.7	-4.5	-7.0	-5.0	-19.4	-20.2	-13.1	-10.3	-10.7	-11.8	-14.2
Down Track Vib. Level	dB re 10	⁻⁶ in/sec		33.6	32.4	29.7	32.8	33.0	27.7	28.2	31.2	16.9	12.0	18.2	20.0	16.5	16.5	11.1
Total of Up and Down	Fracks Ca	alculatior	1															
Total Vibration Level Out	tside Build	ding		37.3	35.9	33.9	37.6	37.2	32.2	34.3	34.9	21.0	15.7	21.5	23.2	20.5	19.7	14.7
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dredicted Naise Laure		4/2 0		E2 2	E4 0	40.0	E2 C	E2 0	47.0	40.5	40.0	25.0	20.7	24 5	25.0	24 5	20.4	25.4
Predicted Noise Level		1/3 00	λ, αΒ	53.3	51.9	49.9	53.6	53.0	47.6	49.5	49.9	35.8	29.7	54.5	ა ე .2	31.5	30.4	25.4
Fredicted Noise Level		0	JI, UB			50.8			55.4			5 0.1			38.8			31.6
L _{max}			dB(A)	36.4														
L _{eg,30mins}			dB(A)	29[8]														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A)

55[9]

Yes

Noise Criteria

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d

(3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN A	ssessment		Train Spee	ed: 50 kph
NSR Ref.:	MTW-15-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Hung Hom Lutheran Primary School	Up Track	10	20	22
Assessed Floor	0	Down Track	10	30	32
Item:	83				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	22[1]
Down Track	D002	24	20	32[1]

										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb	o/in ^{0.5}		32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re 10	^{.6} in/s*in ^{0.€}	/lb	12.8	11.5	12.9	12.4	12.5	10.9	11.4	10.9	6.9	1.3	3.8	0.2	-1.4	-1.4	-2.1
Up Track Vib. Level	dB re 10	⁶ in/sec		40.2	42.9	43.3	40.8	39.9	42.3	45.8	46.3	42.3	32.7	34.2	29.6	25.1	26.1	22.4
Down Track Calculatio	n																	
FDL	dB re 1 lb	o/in ^{0.5}		32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re 10	⁶ in/s*in ^{0.5}	[;] /lb	8.5	3.1	5.5	8.6	8.8	1.1	3.5	1.3	-5.9	-13.6	-7.3	-7.0	-6.6	-9.8	-10.8
Down Track Vib. Level	dB re 10	⁶ in/sec		35.9	34.5	35.9	37.0	36.2	32.5	37.9	36.7	29.5	17.8	23.1	22.4	19.8	17.6	13.6
Total of Up and Down	Fracks Ca	lculatior	ו															
Total Vibration Level Out	tside Build	ling		41.6	43.5	44.0	42.3	41.5	42.7	46.4	46.8	42.5	32.9	34.5	30.3	26.2	26.6	22.9
BCF	dB	Y/N	0															
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	1	4/2 0		50.0	04.5			50.0	00.4				40.0	40.5	44.0			05.0
Predicted Noise Level		1/3 0	cτ, αΒ	59.6	61.5	62.0	60.3	59.3	60.1	63.6	63.8	59.3	48.9	49.5	44.3	39.2	39.3	35.6
Predicted NOISE Level		0	ατ, αΒ			66.1			66.2			65.2			51.0			40.9
L _{max}			dB(A)	50.0														
L _{eg.30mins}			dB(A)	43[8]														

Compliance Yes Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A)

55[9]

Noise Criteria

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d

(3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN As	ssessment		Train Spee	ed: 45 kph
NSR Ref.:	MTW-16-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	SKH Good Shepherd Primary School	Up Track	10	20	22
Assessed Floor	0	Down Track	10	30	32
Item:	84				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	22[1]
Down Track	D002	24	20	32[1]

								Freq	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	12.8	11.5	12.9	12.4	12.5	10.9	11.4	10.9	6.9	1.3	3.8	0.2	-1.4	-1.4	-2.1
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	39.3	42.0	42.4	39.9	39.0	41.4	44.9	45.4	41.4	31.8	33.3	28.7	24.2	25.2	21.5
Down Track Calculatio	n															
FDL	dB re 1 lb/in ^{0.5}	31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	8.5	3.1	5.5	8.6	8.8	1.1	3.5	1.3	-5.9	-13.6	-7.3	-7.0	-6.6	-9.8	-10.8
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	35.0	33.6	35.0	36.1	35.3	31.6	37.0	35.8	28.6	16.9	22.2	21.5	18.9	16.7	12.7
Total of Up and Down	Tracks Calculation															
Total Vibration Level Out	tside Building	40.6	42.5	43.1	41.4	40.5	41.8	45.5	45.9	41.6	31.9	33.6	29.4	25.3	25.7	22.0
BCF	dB Y/N 0															
BVR-up	dB Floor 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Loval	1/3 Oct dE	58.6	60 5	61 1	59 /	58 3	59.2	62 7	62 9	58 /	47 9	48.6	43 /	38.3	38 /	34 7
Predicted Noise Level	Oct dE		00.0	65.2	55.4	00.0	65.3	02.7	02.0	64.3	-1.5	40.0	50 1	50.0	50.4	40.0
		49.0		50.2			00.0			54.5			00.1			40.0
⊢max	UD(A	49.0														
Leg 30mins	dB(A)142[8]														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Noise Criteria

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d

(3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

dB(A) 55[9]

Yes

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN Asses	sment		Train Spee	ed: 55 kph
NSR Ref.:	MTW-17-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Loyal Mansion	Up Track	20	17	26
Assessed Floor	3	Down Track	20	28	34
Item:	85				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	15	26[1]
Down Track	D002	24	20	34[1]

			Frequency (Hz)															
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re	1 lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re	<u>10⁻⁰in/s*in⁰</u>	⁵ /lb	19.4	19.3	17.9	18.3	12.5	2.5	-2.1	-5.3	-8.7	-6.0	-7.5	-2.4	-3.6	-2.9	-6.9
Up Track Vib. Level	dB re	10 ⁻⁶ in/sec		52.7	56.5	54.1	52.5	45.8	39.8	38.2	36.0	32.6	31.3	28.7	32.8	28.6	30.3	23.3
Down Track Calculation	n																	
FDL	dB re	1 lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re	<u>10⁻⁰in/s*in⁰</u>	⁵ /lb	8.0	2.6	4.2	8.2	8.4	0.3	2.1	-0.1	-9.1	-15.1	-8.7	-7.8	-7.2	-10.2	-11.4
Down Track Vib. Level	dB re	10 ⁻⁶ in/sec		41.3	39.8	40.4	42.4	41.6	37.6	42.3	41.2	32.2	22.2	27.5	27.5	25.1	23.0	18.8
Total of Up and Down 1	Fracks	Calculatio	n															
Total Vibration Level Out	tside Bi	uilding		53.0	56.6	54.3	52.9	47.2	41.8	43.7	42.3	35.4	31.8	31.2	33.9	30.2	31.1	24.6
BCF	dB	Y/N	0															
BVR-up	dB	Floor	3	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dradiated Naisa Laval	1	1/2 0	ot dP	65.0	60.6	66.2	64.0	EQ 0	E2 2	E 4 0	52.2	46.2	44 0	40.2	41.0	27.2	27.0	24.2
Predicted Noise Level		1/3 0	ot dB	65.0	00.0	74 7	04.9	59.0	55.Z	34.9	55.5	40.2	41.0	40.2	41.9	31.2	37.0	31.3
				12 6		11.1			01.2			54.5			40.0			50.0
⊫max				42.0														
Leq,30mins			dB(A)	31.8														
Noise Criteria	1		dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Shatin Central Link Rail Operational GBN Assessment

Project:

NSR Ref.:	MTW-18-1							Horizo	ontal D	Dist, m	Verti	cal Di	st, m	Sla	ant Dist	, m
Location:	Residential premises alc	ong Chi	Kiang	l St		Up 7	Frack		45			17			48	
Assessed Floor	2	0				Down	Track		45			27			52	
Item:	86															
		Select	ed Bo	reho	le Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	ι, m	Hole	: Dept	h, m	Sla	ant Dist	, m
		Up T	rack		D018	1		2	8			15			48[1]	
		Down	Track		D002			2	4			20			52[1]	
		-														
								Freq	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	18.4	16.4	11.1	4.9	-1.7	-5.3	-9.1	-11.7	-15.2	-13.7	-14.1	-11.9	-11.9	-15.2	-16.1
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	45.9	47.8	41.5	33.3	25.7	26.1	25.3	23.7	20.2	17.8	16.3	17.5	14.5	12.2	8.3
Down Track Calculatio	n															
FDL	dB re 1 lb/in ^{0.5}	32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	3.1	-1.4	-4.3	-2.7	0.7	-8.5	-11.1	-6.3	-20.9	-21.6	-13.7	-10.7	-12.1	-12.1	-14.9
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	30.5	30.0	26.1	25.7	28.1	22.9	23.3	29.1	14.5	9.8	16.7	18.7	14.3	15.3	9.5
Total of Up and Down	Fracks Calculation															
Total Vibration Level Out	tside Building	46.0	47.9	41.6	34.0	30.1	27.8	27.4	30.2	21.2	18.4	19.5	21.2	17.4	17.0	11.9
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Builder Burten Land	4/2 0 1 10				40.0	40.0	44.0	40.0	40.0		00.4		04.0			
Predicted Noise Level	1/3 Oct, dB	60.0	61.9	55.6	48.0	43.9	41.2	40.6	43.2	34.0	30.4	30.5	31.2	26.4	25.7	20.6
Predicted Noise Level	Oct, dB			63.0			46.9			43.9			34.6			26.9
L-max	dB(A)	31.2														
L _{eq,30mins}	dB(A)	20.8														
Noise Criteria	dB(A)	45														
Compliance		Yes														

Train Speed:

50 kph

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rai	Operat	tional (GBN A	sses	sment						Train	Spee	∍d:	50) kph
NSR Ref.:	MTW-18-2							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	int Dist	, m
Location:	No. 2 Kowloon City Roa	ad				Up 1	Frack		28			17			33	
Assessed Floor	2					Down	Track		28			27			39	
Item:	87															
		Selec	ted Bo	rehol	e Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	i, m	Hole	e Dept	:h, m	Sla	int Dist	, m
		Up T	rack		D018			2	8			15			33[1]	
		Down	Track		D002			2	4			20			39[1]	
								Freq	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0	_														
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	19.0	17.8	14.1	9.6	2.6	-3.9	-7.5	-10.2	-13.3	-9.1	-11.3	-6.7	-7.2	-7.6	-11.5
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	46.4	49.2	44.5	38.0	30.0	27.5	26.9	25.2	22.1	22.3	19.1	22.7	19.2	19.8	12.9
Down Track Calculati	on															
FDL	dB re 1 lb/in ^{0.5}	32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0	1														

Predicted Noise Level Predicted Noise Level		1/3	Oct, dB Oct, dB	60.6	63.3	58.7 64.9	54.0	49.8	45.2 52.6	47.2	45.8	36.5 46.5	34.8	32.7	34.5 37.6	30.6	30.1	24.0 31.1
	1																	
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
BVR-up	dB	Floor	2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BCF	dB	Y/N	0															
Total Vibration Level Out	tside E	Building		46.6	49.3	44.7	40.0	36.0	31.8	34.0	32.8	23.7	22.8	21.7	24.5	21.6	21.4	15.3
Total of Up and Down	Frack	s Calculati	on															
Down Track Vib. Level	dB re	e 10 ⁻⁶ in/sec		34.3	32.7	31.3	35.5	34.7	29.8	33.0	31.9	18.4	12.6	18.1	19.7	17.8	16.2	11.5
LSR	dB re	e 10 ⁻⁶ in/s*in	^{0.5} /lb	6.9	1.3	0.9	7.1	7.3	-1.6	-1.4	-3.5	-17.0	-18.8	-12.3	-9.7	-8.6	-11.2	-12.9
100	uБ	туре	, 0															

Predicted Noise Level	Oct, dB	64.9	52.6	46.5	37.6	31.1
L _{max}	dB(A)	34.9				
L _{eq,30mins}	dB(A)	24.4				
Noise Criteria	dB(A)	45				
Compliance		Yes				

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 3dB$

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail (Operational GBN Assess	sment		Train Spee	ed: 55 kph
NSR Ref.:	MTW-19-1			Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Holy Trinity Church		Up Track	55	18	58
Assessed Floor	0		Down Track	65	25	70
Item:	88					
		Selected Borehole Det	ails:			

Selected Bo	orehole Details:	
	Borehole Ref	Pock

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D012	34	18	58[1]
Down Track	D002	24	20	70[1]

										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 2	1 lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0	1														
LSR	dB re 2	10 ⁻⁶ in/s*in [∪]	^{.5} /lb	17.2	15.0	9.9	4.0	-2.9	-6.3	-10.1	-12.3	-15.9	-14.6	-15.2	-7.2	-12.8	-16.1	-16.8
Up Track Vib. Level	dB re 2	10 ⁻⁶ in/sec		50.4	52.2	46.1	38.3	30.4	30.9	30.1	29.0	25.3	22.6	21.1	28.1	19.4	17.1	13.5
Down Track Calculation	n																	
FDL	dB re 1	1 lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 2	10 ⁻⁶ in/s*in ⁰	^{.5} /lb	-2.7	-5.9	-10.8	-14.2	-7.1	-19.0	-17.8	-10.3	-24.4	-25.6	-16.4	-13.2	-15.7	-14.4	-17.4
Down Track Vib. Level	dB re '	10 ⁻⁶ in/sec		30.5	31.3	25.4	20.0	26.1	18.2	22.4	31.0	16.8	11.6	19.8	22.0	16.5	18.8	12.8
Total of Up and Down T	Fracks	Calculatio	n															
Total Vibration Level Out	tside Bu	uilding		50.5	52.3	46.2	38.3	31.8	31.1	30.8	33.1	25.9	22.9	23.5	29.0	21.2	21.1	16.2
BCF	dB	Y/N	0	1														I
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		'	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		4/0.0		E	70.0	21.0	50.0	10.0	10.5	10.0	50.4	10.7	~~ ~	00 F	10.0			
Predicted Noise Level		1/3 0	Ct, ab	68.5	70.3	64.∠ ≂1.4	56.3	49.0	48.5	48.U	50.1	42.7	38.9	38.5	43.0	34.2	33.8	28.9
Predicted Noise Level		L L	ст, аы			71.4			53.5			51.1			44./			35.0
L _{max}			dB(A)	39.9														ļ
L _{eq,30mins}			dB(A)	29.1														ļ
Noise Criteria			dB(A)	45														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operational GBN As	sessment		Train Spee	ed: 55 kph
NSR Ref.:	HOM-1-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Ko Shan Theartre	Up Track	50	35	61
Assessed Floor	0	Down Track	50	40	64
Item:	89				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	34	61[1]
Down Track	D018	28	40	64[1]

										Freq	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb	/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ^{-€}	^₅ in/s*in ^{0.5}	/lb	-7.8	-8.3	-11.1	-10.1	-5.6	-13.8	-15.1	-9.9	-20.5	-20.5	-19.7	-11.9	-14.1	-13.8	-15.4
Up Track Vib. Level	dB re 10 ^{-€}	³in/sec		25.5	29.0	25.1	24.2	27.6	23.5	25.1	31.4	20.7	16.8	16.6	23.4	18.1	19.4	14.9
Down Track Calculation	n																	
FDL	dB re 1 lb	/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 10 ^{-€}	³ in/s*in ^{0.5}	/lb	2.8	-2.6	-3.2	-4.8	-2.1	-5.0	-1.6	-13.3	-12.4	-13.3	-16.6	-10.5	-11.5	-16.1	-15.3
Down Track Vib. Level	dB re 10 ^{-€}	ີ in/sec		36.0	34.6	33.1	29.4	31.1	32.3	38.6	28.0	28.9	24.0	19.6	24.8	20.8	17.1	15.0
Total of Up and Down T	Fracks Ca	lculatior	1															
Total Vibration Level Out	tside Build	ing		36.4	35.7	33.7	30.5	32.7	32.8	38.8	33.0	29.5	24.7	21.4	27.1	22.7	21.4	17.9
BCF	dB	Y/N	0															
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Lovel	1	1/3 04	t dP	5A A	53 7	51 7	18 5	50 5	50.2	56.0	50.0	46.2	40.7	36 /	<i>A</i> 1 1	35.7	3/1 1	30 E
Predicted Noise Level		1/3 00	st dB	54.4	55.7	56.6	40.5	50.5	57.9	50.0	50.0	40.3 51 Q	40.7	30.4	41.1	55.7	54.1	35.7
				40 5		50.0			51.3			51.5			-75.2			55.7
-max				-0.5														
Leq,30mins			uB(A)	29.7														
Noise Criteria			dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operationa	I GBN Assessment		Train Spee	ed: 55 kph
NSR Ref.:	HOM-2-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Faerie Court	Up Track	20	18	27
Assessed Floor	2	Down Track	20	29	35
Item:	90				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D012	34	18	27[1]
Down Track	D002	24	20	35[1]

									Frequ	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.}	⁵ /lb	23.8	25.8	25.0	24.8	17.6	6.6	-0.2	-5.0	-9.9	-10.6	-11.1	-4.8	-9.7	-12.1	-13.6
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec		57.1	63.1	61.3	59.0	50.8	43.8	40.1	36.2	31.3	26.7	25.1	30.5	22.5	21.1	16.6
Down Track Calculation	n																
FDL	dB re 1 lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N	Ν															
TIL	dB Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type	0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.}	⁵ /lb	7.8	2.3	3.5	8.0	8.2	-0.1	1.4	-0.8	-10.7	-15.8	-9.4	-8.2	-7.5	-10.4	-11.7
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec		41.1	39.6	39.8	42.2	41.4	37.2	41.6	40.5	30.6	21.4	26.8	27.1	24.8	22.8	18.5
Total of Up and Down 1	Fracks Calculatio	n															
Total Vibration Level Out	tside Building		57.2	63.1	61.3	59.1	51.3	44.7	43.9	41.9	34.0	27.8	29.1	32.1	26.8	25.1	20.7
BCF	dB Y/N	0															
BVR-up	dB Floor	2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/3 0	ct, dB	71.2	77.1	75.3	/3.1	65.1	58.1	57.1	54.9	46.8	39.8	40.1	42.1	35.8	33.8	29.4
Predicted Noise Level	0	ct, dB			80.2			66.4			55.6			44.8			35.1
L _{max}		dB(A)	45.4														
L _{eq,30mins}		dB(A)	34.6														
Noise Criteria		dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Ra	ail Operational (GBN Assess	ment			Train Spee	d: 55 kph
NSR Ref.:	HOM-2-2				H	orizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Lee Wing Building			Up Trac	:k	0	19	19
Assessed Floor	2			Down Tra	ack	0	30	30
Item:	91		_					
		Selected Bo	rehole Deta	ails:				
			Borehole	Ref. F	Rockh	ead Depth, m	Hole Depth, m	Slant Dist, m
		Up Track	D012			34	18	19[1]
		Down Track	D002			24	20	30[1]

								Freq	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	27.9	28.5	27.6	26.9	22.5	16.0	13.7	9.4	4.3	-3.1	-2.8	-1.1	-5.4	-5.1	-5.8
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	61.1	65.7	63.8	61.1	55.7	53.2	53.9	50.6	45.5	34.1	33.4	34.1	26.8	28.1	24.4
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	9.1	4.8	7.0	9.1	9.2	2.5	4.2	2.5	-4.6	-11.6	-5.8	-6.4	-6.2	-9.3	-10.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	42.3	42.1	43.3	43.3	42.4	39.7	44.4	43.7	36.7	25.6	30.5	28.9	26.0	24.0	19.8
Total of Up and Down 1	Fracks Calculation															
Total Vibration Level Out	tside Building	61.2	65.8	63.9	61.2	55.9	53.4	54.4	51.4	46.1	34.7	35.2	35.3	29.5	29.6	25.7
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/3 Oct. dF	75.2	79.8	77.9	75.2	69.7	66.8	67.6	64.4	58.9	46.7	46.2	45.3	38.5	38.3	34.4
Predicted Noise Level	Oct dF			82.8			73.0		•	65.6			49.2		20.0	39.8
L _{max}	dB(A	52.1		0210												2310
L	dB(A	41 3														

dB(A)

45

Yes

Noise Criteria

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3$ (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operation	onal GBN Assessment		Train Snee	d 55 knh
NSR Ref.:	HOM-2-3		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Wing Lam Mansion	Up Track	15	20	25
Assessed Floor	2	Down Track	15	30	34
Item:	92				
	Salact	d Barahala Dataila			

Selected	Bo	reho	le	De	tail	s:	

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	25[1]
Down Track	D002	24	20	34[1]

										Freq	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1	lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re 1	∣0 ⁻⁶ in/s*in ⁰	^{.5} /lb	10.6	9.1	10.8	10.4	10.2	5.9	5.9	5.4	-1.2	-6.7	-1.9	-4.7	-5.2	-8.0	-9.4
Up Track Vib. Level	dB re 1	0 ⁻⁶ in/sec		43.8	46.4	47.1	44.6	43.4	43.2	46.1	46.7	40.1	30.6	34.4	30.5	27.0	25.3	20.8
Down Track Calculation	n																	
FDL	dB re 1	lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ТОС	dB	Туре	0															
LSR	dB re 1	0 ⁻⁶ in/s*in ⁰	^{.5} /lb	8.0	2.6	4.2	8.2	8.4	0.3	2.1	-0.1	-9.1	-15.1	-8.7	-7.8	-7.2	-10.2	-11.4
Down Track Vib. Level	dB re 1	0 ⁻⁶ in/sec		41.3	39.8	40.4	42.4	41.6	37.6	42.3	41.2	32.2	22.2	27.5	27.5	25.1	23.0	18.8
Total of Up and Down	Fracks	Calculatio	n															
Total Vibration Level Out	tside Βι	iilding		45.8	47.2	47.9	46.7	45.6	44.2	47.6	47.7	40.7	31.1	35.2	32.3	29.2	27.3	23.0
BCF	dB	Y/N	0															
BVR-up	dB	Floor	2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	1	4/0.0		50.0			~~ 7	50.4			~~ 7		40.4	40.0	40.0			04 7
Predicted Noise Level		1/3 C	ct, aB	59.8	61.2	61.9	60.7	59.4	57.6	60.8	60.7	53.5	43.1	46.2	42.3	38.2	36.0	31.7
Predicted Noise Level		C	ct, aB			66.1			64.3			61.6			48.1			37.4
L _{max}			dB(A)	46.5														
L _{eq,30mins}			dB(A)	35.7														
Noise Criteria			dB(A)	45														
Compliance			-	Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operation	al GBN Assessment		Train Spee	d: 60 kph
NSR Ref.:	HOM-2-4		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Tak Lee Court	Up Track	50	35	61
Assessed Floor	1	Down Track	55	45	71
Item:	93				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	34	61[1]
Down Track	D028	22	44	71[1]

									Frequ	uency	(Hz)						
Description	Unit		20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																	
FDL	dB re 1 lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y/N	I N															
TIL	dB Type	e 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type	e 0															
LSR	dB re 10 ⁻⁶ in/s*in	^{0.5} /lb	-7.8	-8.3	-11.1	-10.1	-5.6	-13.8	-15.1	-9.9	-20.5	-20.5	-19.7	-11.9	-14.1	-13.8	-15.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec		26.2	29.7	25.9	24.9	28.4	24.2	25.9	32.1	21.5	17.5	17.3	24.1	18.9	20.2	15.6
Down Track Calculatio	n																
FDL	dB re 1 lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB Y/N	I N	1														
TIL	dB Type	e 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type	e 0															
LSR	dB re 10 ⁻⁶ in/s*in	^{0.5} /lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec		33.8	39.3	37.4	32.7	26.1	27.2	20.4	22.8	19.3	17.9	25.9	30.3	30.9	37.4	25.6
Total of Up and Down	Fracks Calculati	on															
Total Vibration Level Out	tside Building		34.5	39.8	37.7	33.4	30.4	29.0	27.0	32.6	23.5	20.7	26.5	31.2	31.2	37.5	26.0
BCF	dB Y/N	0															
BVR-up	dB Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB		6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Lovel	4/2	Oct dP	50 5	55.9	53 7	19 1	46.2	11 A	12.2	47 E	38.2	34.7	30 5	13 2	12.2	48.2	36.7
Predicted Noise Level	1/5	Oct dB	55.5	55.0	58.4	-3.4	7 0.2	49 3	74.4	÷1.0	48.3	J4./	55.5	46 7	74.4	7 0.2	48 5
			46 0		00.4			4J . J			40.0			40.7			- J.J
i max																	
Leq,30mins		ав(A)	34.8														
Noise Criteria		dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rai	I Operat	ional (GBN A	Assess	sment						Train	Spee	ed:	55	kph
NSR Ref.:	HOM-2-5	•						Horizo	ontal D	Dist, m	Verti	cal Di	st, m	Sla	nt Dist	, m
Location:	Chat Ma Mansion					Up 1	Frack		45			20			49	
Assessed Floor	1					Down	Track		45			30			54	
Item:	94															
		Select	ed Bo	rehol	le Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	ո, m	Hole	Dept	h, m	Sla	nt Dist	, m
		Up T	rack		D002			24	4			20			49[1]	
		Down	Track		D002			24	4			20			54[1]	
			r					Frequ	lency	(Hz)						-
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	4.7	-0.4	-2.6	2.0	3.6	-5.8	-9.4	-5.7	-20.4	-20.8	-13.4	-10.5	-11.6	-12.0	-14.7
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	37.9	36.8	33.6	36.2	36.8	31.4	30.8	35.5	20.8	16.4	22.8	24.7	20.6	21.2	15.5
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	2.0	-2.0	-5.5	-5.8	-1.3	-10.4	-12.2	-6.6	-21.3	-22.1	-14.0	-10.8	-12.5	-12.2	-15.1
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	35.2	35.2	30.8	28.5	32.0	26.9	28.0	34.6	20.0	15.2	22.3	24.4	19.8	21.0	15.2
Total of Up and Down 1	Fracks Calculation															
Total Vibration Level Out	side Building	39.8	39.1	35.4	36.9	38.1	32.7	32.7	38.1	23.4	18.9	25.6	27.6	23.2	24.1	18.4
BCF	dB Y/N 0	_														
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	(10.0.4.)		/													
Predicted Noise Level	1/3 Oct, de	55.8	55.1	51.4	52.9	53.9	48.1	47.9	53.1	38.2	32.9	38.6	39.6	34.2	34.8	29.1
Predicted Noise Level	Uct, di	5		58.2			55.7			53.3			42.8			35.9
L _{max}	dB(A) 39.3														
Las 20mina	dB(A	28 5														

dB(A)

45

Yes

Noise Criteria

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3$ (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

TOC

dB

Туре

0

Project:	Shatin Central Link Rai	l Operat	ional (GBN A	Asses	sment						Train	Spee	ed:	55	kph
NSR Ref.:	HOM-2-6							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	nt Dist	, m
Location:	Chatham Mansion					Up T	rack		0			19			19	
Assessed Floor	1					Down	Track		0			30			30	
Item:	95															
		Select	ted Bo	rehol	le Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	ı, m	Hole	Dept	h, m	Sla	nt Dist	, m
		Up T	rack		D012			34	4			18			19[1]	
		Down	Track		D002	2		24	4			20			30[1]	
								Frequ	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	27.9	28.5	27.6	26.9	22.5	16.0	13.7	9.4	4.3	-3.1	-2.8	-1.1	-5.4	-5.1	-5.8
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	61.1	65.7	63.8	61.1	55.7	53.2	53.9	50.6	45.5	34.1	33.4	34.1	26.8	28.1	24.4
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Predicted Noise Level		C	Oct, dB	<u> </u>		84.8			75.0			67.6			51.2			41.8
Predicted Noise Level		1/3 C	Oct, dB	77.2	81.8	79.9	77.2	71.7	68.8	69.6	66.4	60.9	48.7	48.2	47.3	40.5	40.3	36.4
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BCF	dB	Y/N	0															
Total Vibration Level Out	tside E	Building		61.2	65.8	63.9	61.2	55.9	53.4	54.4	51.4	46.1	34.7	35.2	35.3	29.5	29.6	25.7
Total of Up and Down	Fracks	s Calculatio	n															
Down Track Vib. Level	dB re	e 10⁻ ⁶ in/sec		42.3	42.1	43.3	43.3	42.4	39.7	44.4	43.7	36.7	25.6	30.5	28.9	26.0	24.0	19.8
LSR	dB re	e 10⁻ ⁶ in/s*in ⁰	^{.5} /lb	9.1	4.8	7.0	9.1	9.2	2.5	4.2	2.5	-4.6	-11.6	-5.8	-6.4	-6.2	-9.3	-10.4

Predicted Noise Level	Οςτ, αΒ	84.8	75.0	67.6	51.2	41.8
L _{max}	dB(A)	54.1				
L _{eq,30mins}	dB(A)	43.3				
Noise Criteria	dB(A)	45				
Compliance		Yes				

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3$ (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operationa	I GBN Assessment		Train Spee	ed: 55 kph
NSR Ref.:	HOM-3-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Fook Sing Mansion	Up Track	85	35	92
Assessed Floor	1	Down Track	100	40	108
Item:	96				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	34	92[1]
Down Track	D018	28	40	108[1]

				Frequency (Hz)														
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re	1 lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ^{0.}	⁵/lb	-11.2	-12.7	-16.2	-17.9	-10.9	-21.6	-22.8	-13.7	-27.0	-26.9	-24.0	-15.1	-17.7	-17.3	-19.1
Up Track Vib. Level	dB re	10 ⁻⁶ in/sec		22.0	24.5	20.0	16.3	22.3	15.6	17.4	27.5	14.2	10.3	12.2	20.1	14.5	15.9	11.1
Down Track Calculation	n																	
FDL	dB re	1 lb/in ^{0.5}		33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ^{0.}	⁵/lb	1.3	-4.7	-5.1	-7.1	-4.2	-7.0	-2.5	-16.1	-14.8	-15.6	-19.2	-13.0	-13.8	-18.8	-17.8
Down Track Vib. Level	dB re	10 ⁻⁶ in/sec		34.5	32.5	31.1	27.1	29.0	30.2	37.7	25.1	26.4	21.6	17.0	22.2	18.4	14.4	12.4
Total of Up and Down 1	Fracks	Calculatio	n															
Total Vibration Level Out	tside B	uilding		34.8	33.2	31.5	27.5	29.9	30.4	37.8	29.5	26.7	22.0	18.3	24.3	19.9	18.3	14.9
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	1	416.0		50 C	40.0	47 5	40.5	45 5	45.0	50.0	44.5	44 5		04.6	00.0	<u> </u>		05.0
Predicted Noise Level		1/3 0	ct, dB	50.8	49.2	47.5	43.5	45.7	45.8	53.0	44.5	41.5	36.0	31.3	36.3	30.9	29.0	25.6
Predicted Noise Level		0	ct, dB			52.1			54.4			46.7			38.4			30.6
L _{max}			dB(A)	36.0														
L _{eq,30mins}			dB(A)	25.2														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

Noise Criteria

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

dB(A) 45

Yes

Project:	Shatin Central Link Rail	Operati	ional (3BN A	Asses	sment		,	<u> </u>		1	Train	1 Sper	ed:	55	5 kph
NSR Ref.:	HOM-3-2							Horizo	Untal D	vist, m	Verti	cal Di	st, m	Sla	int Dist	., m
Location:	Marigold Mansion, Block	٢A			ļ	Upi	rack	──	85	!		45	'	—	96	
Assessed Floor	1				ļ	Down	Гаск	<u> </u>	110	!	L	45	'	<u> </u>	119	
Item:	97	2-1-01		- 60	· · Dof											
		Select	ed Po	renor	e Det	alls:			Deptk			Dan				
				BOIR	3001E	Rei.	Ruur	Kneau 2	Depui	., m	Huie	2 Depu	<u>.h, m</u>	Sia		., m
			Track	──	D020	,	──		<u></u>		──	44	'	—	110[1]	,
		DOWN	Haun	L	Duzo		L		<u> </u>		L	44	/	L	ມາສ[າ]	
r	1							Fred		(H7)		—	—		—	
Description	Linit	20	25	32	10	50	63	L SU	100	(nz) 125	160	200	250	215	400	500
Up Track Calculation	Unit	20	20	52	40	50	00	00	100	120	100	200	200	315	400	500
	1D 4 lb/i=0.5	33.2	37.2	36.2	34.2	33.2	27.2	40.2	11 2	41.2	37.2	36.2	35.2	22.2	33.3	30.2
		აა.∠	31.2	30.∠	34.z	JJ.∠	31.2	40.∠	41.2	41.2	31.2	30.∠	30.∠	32.2	აა.∠	J0.∠
		0	Λ	Ω	Ω	Λ	Λ	Λ	Λ	0	Λ	Λ	Ο	0	٥	0
	ar i the r	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC	dB Type 0	Ŭ	U	U	U	U	U	U	U	U	U	U	U	U	U	Ŭ
	$dD = 10^{-6} in/e^{in/0.5}/lb$	-0.2	13	04	-23	-79	-10.8	-20.6	-19.2	-22 7	-20 1	_11 1	-57	-21	34	-5.4
		22.0	1.0 20 5	0. 1 26.6	-2.0 21 0	-1.5 DE 2	-10.0 06 A	10.6	-13. <u>-</u>	-22.1 40 E	47.1	25.1	-0.7 20 E	-2. i 20. 1	26 6	-U.T 04 Q
	dB re 10 ĭn/sec	33.0	38.5	30.0	31.9	25.5	20.4	19.0	22.0	18.5	17.1	25.1	29.5	30.1	30.0	24.0
Down Track Calculation	<u>n</u>															
FDL	dB re 1 lb/in ^{0.5}	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N N		2	~	2	~	2	2	2	~	2	2	2	~	2	
	dB Type u	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		U	U	0	U	0	0	U	0	U	U	U	U	U	0	U
	dB iype u		4.0	~ 4	~ ~	7.0	10.0	~~ ~		20.7	20.4			~ 4	~ 4	- 4
LSR	dB re 10 rin/s*in rin/ib	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re 10 ^{-₀} in/sec	33.0	38.5	36.6	31.9	25.3	26.4	19.6	22.0	18.5	17.1	25.1	29.5	30.1	36.6	24.8
Total of Up and Down T	iracks Calculation															
Total Vibration Level Out	side Building	36.1	41.6	39.7	35.0	28.4	29.5	22.7	25.1	21.6	20.2	28.2	32.6	33.2	39.7	27.9
BCF	dB Y/N U	1	-	-		-	-		-	-	-	-	-	-	-	
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB	10	2	10	10	2	2	2 40	2	10	2	2	2	2 40	2	2
SAF	<u>a</u> B	10	10	10	10	10	10	10	10	10	10	10	ΊU	10	10	10
Predicted Noise Lovel	1/3 Oct. dB	52.1	57.6	55.7	51.0	44.2	44.9	37 0	40.1	26 /	34.2	41.2	44.6	44.2	50 /	29.6
Predicted Noise Level		52.1	57.0	55.1 60 3	51.0	44.2	44.5	31.3	40.1	30. 4 42.3	34.∠	41.4	44.0	44.2	50.4	50.0 50.6
Predicted Noise Level		1 40 0		60.5			40.0			42.5			40.J			50.0
L-max	UD(A)	40.0														
L _{eq,30mins}	dB(A)	37.2														
Noise Criteria	dB(A)	45														
Compliance	1	Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN	Assessment		Train Spee	ed: 55 kph
NSR Ref.:	HOM-4-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Yee Fu Building	Up Track	40	45	60
Assessed Floor	1	Down Track	70	45	83
Item:	98				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D028	22	44	60[1]
Down Track	D028	22	44	83[1]

		Frequency (Hz)														
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	0.1	1.4	0.6	-2.0	-7.7	-9.9	-18.7	-18.3	-20.5	-18.6	-10.0	-4.8	-1.1	4.3	-2.7
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	28.4	33.7	31.8	27.2	20.6	22.3	16.5	17.9	15.7	13.6	21.2	25.4	26.2	32.6	22.6
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	33.2	37.2	36.2	34.2	33.2	37.2	40.2	41.2	41.2	37.2	36.2	35.2	32.2	33.2	30.2
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	28.0	33.5	31.6	26.9	20.3	21.4	14.6	17.0	13.5	12.1	20.1	24.5	25.1	31.6	19.8
Total of Up and Down T	Fracks Calculation															
Total Vibration Level Out	side Building	31.2	36.6	34.8	30.1	23.5	24.9	18.7	20.5	17.8	16.0	23.7	28.0	28.7	35.1	24.4
BCF	dB Y/N 0															
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/3 Oct, dB	47.2	52.6	50.8	46.1	39.3	40.3	33.9	35.5	32.6	30.0	36.7	40.0	39.7	45.8	35.1
Predicted Noise Level	Oct, dB			55.3			43.4			38.0			43.8			46.2
L _{max}	dB(A)	43.6														
L _{eq,30mins}	dB(A)	32.7														
Noise Criteria	dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail	Operat	ional C	GBN A	Assess	sment		Train Speed: 35 kph						5 kph		
NSR Ref.:	HOM-5-1							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	nt Dist	, m
Location:	271 Chatham Road North	h				Up 7	Frack		75			45			87	
Assessed Floor	2					Down	Track		75			45			87	
Item:	99															
		Select	ed Bo	reho	le Det	ails:										
				Bor	ehole	Ref.	Roc	khead	Depth	i, m	Hole	: Dept	h, m	Sla	nt Dist	, m
		Up T	rack		D028			2	2			44			87[1]	
		Down	Track		D028	6		2	2			44			87[1]	
								Frequ	uency	(Hz)						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	29.3	33.3	32.3	30.3	29.3	33.3	36.3	37.3	37.3	33.3	32.3	31.3	28.3	29.3	26.3
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	24.1	29.6	27.7	23.0	16.4	17.5	10.7	13.1	9.6	8.2	16.2	20.6	21.2	27.7	15.9
Down Track Calculation	า															
FDL	dB re 1 lb/in ^{0.5}	29.3	33.3	32.3	30.3	29.3	33.3	36.3	37.3	37.3	33.3	32.3	31.3	28.3	29.3	26.3
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	24.1	29.6	27.7	23.0	16.4	17.5	10.7	13.1	9.6	8.2	16.2	20.6	21.2	27.7	15.9
Total of Up and Down T	racks Calculation	-														
Total Vibration Level Out	side Building	27.1	32.6	30.7	26.0	19.4	20.5	13.7	16.1	12.6	11.2	19.2	23.6	24.2	30.7	18.9
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dВ	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Lovel	1/2 Oct. dB	41.1	16.6	44.7	40.0	22.2	22.0	26.0	20.1	25.4	22.2	20.2	22.6	22.2	20 /	27.6
Predicted Noise Level	0ct dB	41.1	40.0	44.1 10 3	40.0	33.2	37.0	20.9	25.1	23.4	23.2	30.2	37.4	33.2	33.4	21.0
	dB(Δ)	37.1		45.5			01.0			U			J 4			55.1
		28.2														
⊢eq,30mins Noice Critoria		20.2														
Noise Criteria	ав (А)	45 Var														
Compliance		Yes														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] $L_{eq,30mins} = L_{eq}$ (double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in 30*log(no.

(3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational GBN Asses	sment		Train Spee	d: 50 kph
NSR Ref.:	HOM-P2		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	HKPU Phase 3	Up Track	35	45	57
Assessed Floor	1	Down Track	65	45	79
Item:	100				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D028	22	44	57[1]
Down Track	D028	22	44	79[1]

				Frequency (Hz)														
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re	1 lb/in ^{0.5}		32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ⁰	^{.5} /lb	0.5	1.6	0.8	-1.7	-7.4	-9.0	-16.8	-17.5	-18.3	-17.1	-9.0	-3.9	0.0	5.3	0.1
Up Track Vib. Level	dB re	10 ⁻⁶ in/sec		27.9	33.0	31.2	26.7	20.0	22.4	17.6	17.9	17.1	14.3	21.4	25.5	26.4	32.7	24.5
Down Track Calculation	n																	
FDL	dB re	1 lb/in ^{0.5}		32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ⁰	^{.5} /lb	-0.2	1.3	0.4	-2.3	-7.9	-10.8	-20.6	-19.2	-22.7	-20.1	-11.1	-5.7	-2.1	3.4	-5.4
Down Track Vib. Level	dB re	10 ⁻⁶ in/sec		27.2	32.7	30.8	26.1	19.5	20.6	13.8	16.2	12.7	11.3	19.3	23.7	24.3	30.8	19.0
Total of Up and Down 1	racks	Calculatio	on															
Total Vibration Level Out	tside Bi	uilding		30.6	35.9	34.0	29.4	22.8	24.6	19.1	20.2	18.5	16.1	23.5	27.7	28.5	34.9	25.6
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level		1/3 (Oct, dB	46.6	51.9	50.0	45.4	38.6	40.0	34.3	35.2	33.3	30.1	36.5	39.7	39.5	45.6	36.3
Predicted Noise Level		C	Oct, dB			54.6			43.0			38.1			43.6			46.0
L _{max}			dB(A)	43.4														
L _{eq,30mins}			dB(A)	36[8]														
Noise Criteria			dB(A)	55[9]														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail	Operati	ional (GBN A	ssess	sment						Train	Spee	ed: 50 kph		
NSR Ref.:	HOM-P3-1							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	nt Dist	, m
Location:	Residential Building, HC	M Stati	on De	velop	ment	Up 7	Frack		0			45			45	
Assessed Floor	1					Down	Track		0			45			45	
Item:	101															
		Select	ed Bo	rehol	e Det	ails:										
				Bor	ehole	Ref.	Rock	khead	Depth	i, m	Hole	e Dept	h, m	Sla	nt Dist	, m
		Up Ti	rack		D028			22	2			44			45[1]	
		Down	Track		D028			22	2			44			45[1]	
	n															
								Frequ	uency	(Hz)		1	1	<u>г г</u>		
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
100	dB Type 0															
LSR	dB re 10 ^{-o} in/s*in ^{0.5} /lb	2.7	3.8	3.8	3.8	2.5	7.4	2.4	-1.5	4.4	3.3	5.0	6.6	7.1	8.9	7.6
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	30.1	35.2	34.2	32.2	29.9	38.8	36.8	33.9	39.8	34.7	35.4	36.0	33.5	36.3	32.0
Down Track Calculation	า															
FDL	dB re 1 lb/in ^{0.5}	32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	2.7	3.8	3.8	3.8	2.5	7.4	2.4	-1.5	4.4	3.3	5.0	6.6	7.1	8.9	7.6
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	30.1	35.2	34.2	32.2	29.9	38.8	36.8	33.9	39.8	34.7	35.4	36.0	33.5	36.3	32.0
Total of Up and Down T	racks Calculation															
Total Vibration Level Out	side Building	33.1	38.2	37.2	35.2	32.9	41.8	39.8	36.9	42.8	37.7	38.4	39.0	36.5	39.3	35.0
BCF	dB Y/N 0															
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/3 Oct, dB	49.1	54.2	53.2	51.2	48.7	57.2	55.0	51.9	57.6	51.7	51.4	51.0	47.5	50.0	45.7
Predicted Noise Level	Oct, dB			57.8			59.6			59.5			55.1			51.4
L _{max}	dB(A)	51.4														
L _{eq,30mins}	dB(A)	41.0														
Noise Criteria	dB(A)	45														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operational GBN	Assessment		Train Spee	ed: 45 kph
NSR Ref.:	HUH-1-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Cartas Branchi College of Careers	Up Track	95	30	100
Assessed Floor	0	Down Track	125	30	129
Item:	102				

Selected Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D002	24	20	100[1]
Down Track	D002	24	20	129[1]

										Frequ	lency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re	1 lb/in ^{0.5}		31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ⁰	^{.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Up Track Vib. Level	dB re	10 ⁻⁶ in/sec		22.5	23.3	17.2	12.2	18.4	9.0	14.0	22.8	8.9	3.6	12.1	14.2	8.5	11.1	5.1
Down Track Calculation	n																	
FDL	dB re	1 lb/in ^{0.5}		31.5	35.5	34.5	32.5	31.5	35.5	38.5	39.5	39.5	35.5	34.5	33.5	30.5	31.5	28.5
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB	Туре	0	j														
LSR	dB re	10⁻⁰in/s*in⁰	^{.5} /lb	-4.0	-7.2	-12.3	-15.3	-8.1	-21.5	-19.5	-11.7	-25.6	-26.9	-17.4	-14.3	-17.0	-15.4	-18.4
Down Track Vib. Level	dB re	10 ⁻⁶ in/sec		22.5	23.3	17.2	12.2	18.4	9.0	14.0	22.8	8.9	3.6	12.1	14.2	8.5	11.1	5.1
Total of Up and Down 1	Fracks	Calculatio	n															
Total Vibration Level Out	tside B	uilding		25.5	26.3	20.2	15.2	21.4	12.0	17.0	25.8	11.9	6.6	15.1	17.2	11.5	14.1	8.1
BCF	dB	Y/N	0															
BVR-up	dB	Floor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	1																	
Predicted Noise Level		1/3 0	oct, dB	43.5	44.3	38.2	33.2	39.2	29.4	34.2	42.8	28.7	22.6	30.1	31.2	24.5	26.8	20.8
Predicted Noise Level		C	και, αΒ			45.5			40.7			43.0			34.2			27.8
L _{max}			dB(A)	29.8														
L _{eq,30mins}			dB(A)	<20[8]														
Noise Criteria			dB(A)	55[9]														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operational GBN Asses	sment		Train Spee	d: 50 kph
NSR Ref.:	HUH-1-2		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Lok Ka House	Up Track	55	18	58
Assessed Floor	1	Down Track	80	18	82
Item:	103				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D012	34	18	58[1]
Down Track	D012	34	18	82[1]

										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb/ii	n ^{0.5}		32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ ir	1/s*in ^{0.5}	/lb	17.2	15.0	9.9	4.0	-2.9	-6.3	-10.1	-12.3	-15.9	-14.6	-15.2	-7.2	-12.8	-16.1	-16.8
Up Track Vib. Level	dB re 10 ⁻⁶ ir	n/sec		46.6	48.4	42.3	34.4	26.5	27.1	26.3	25.1	21.5	18.8	17.3	24.2	15.6	13.3	9.6
Down Track Calculation	n																	
FDL	dB re 1 lb/i	n ^{0.5}		32.4	36.4	35.4	33.4	32.4	36.4	39.4	40.4	40.4	36.4	35.4	34.4	31.4	32.4	29.4
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ ir	1/s*in ^{0.5}	/lb	14.4	12.1	7.5	1.4	-5.6	-9.1	-13.5	-15.0	-19.0	-17.5	-18.2	-9.1	-15.9	-19.3	-19.6
Down Track Vib. Level	dB re 10 ⁻⁶ ir	n/sec		43.8	45.5	39.9	31.8	23.8	24.3	22.9	22.4	18.4	15.9	14.2	22.3	12.5	10.1	6.8
Total of Up and Down T	Fracks Calc	ulation																
Total Vibration Level Out	tside Buildin	g		48.4	50.2	44.3	36.3	28.4	28.9	27.9	27.0	23.2	20.6	19.0	26.4	17.3	15.0	11.5
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	αB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Loval		1/2 0/	+ dB	64.4	66.2	60.3	52.3	44.2	44.3	43.1	42.0	28.0	34.6	32.0	28 /	28.3	25.7	<u>,,,</u> ,
Predicted Noise Level		1/3 00	t, uD	04.4	00.2	67.3	52.5	77.2	48.7	40.1	42.0	44 0	34.0	52.0	39.6	20.5	23.7	27.3
			HR(A)	34 5		57.5			40.7						55.0			27.5
-max				24.0														
⊢eq,30mins				24.0														
Noise Criteria			βB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail Operational GBN Asse	ssment		Train Spee	d: 60 kph
NSR Ref.:	HUH-1-3		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Wing Fung Building	Up Track	10	18	21
Assessed Floor	1	Down Track	25	18	31
Item:	104				

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D012	34	18	21[1]
Down Track	D012	34	18	31[1]

										Frequ	Jency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re '	1 lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re	10 ⁻⁶ in/s*in ⁰	^{.5} /lb	26.6	27.8	27.0	26.5	21.3	13.5	8.4	3.5	-1.7	-6.4	-6.5	-2.7	-7.3	-8.1	-9.4
Up Track Vib. Level	dB re	10 ⁻⁶ in/sec		57.6	62.8	61.0	58.5	52.3	48.5	46.4	42.5	37.4	28.6	27.6	30.3	22.8	22.9	18.6
Down Track Calculation	n																	
FDL	dB re '	1 lb/in ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re ?	10 ⁻⁶ in/s*in ⁰	^{.5} /lb	22.4	24.7	23.8	23.6	15.0	2.1	-3.3	-7.5	-12.3	-11.4	-12.1	-5.2	-10.4	-13.1	-14.3
Down Track Vib. Level	dB re	10 ⁻⁶ in/sec		53.4	59.7	57.8	55.6	46.0	37.1	34.7	31.5	26.7	23.6	21.9	27.8	19.6	17.9	13.7
Total of Up and Down	Fracks	Calculatio	n															
Total Vibration Level Out	tside Βι	uilding		59.0	64.5	62.7	60.3	53.2	48.8	46.6	42.8	37.7	29.8	28.6	32.2	24.5	24.1	19.8
BCF	dB	Y/N	0															
BVR-up	dB	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Due dista d Mais a Laval	-	4/2.0	at all	75.0	00 F	70.7	70.0	<u> </u>	64.0	64.0	57 0	50 F	40.0	44.0	44.0	25.5	24.0	20.5
Predicted Noise Level		1/3 0		75.0	00.5	10.1	10.5	69.0	04.Z	01.0	5/.0	52.5	43.0	41.0	44.2	35.5	34.0	30.5
rieulcieu Noise Level		Ľ		40.0		03.0			10.0			39.0			40.5			JO.2
∟ _{max}			αв(А)	48.9														
L _{eq,30mins}			dB(A)	37.7														
Noise Criteria			dB(A)	45														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 32.6d (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Yes

Project:	Shatin Central Link Rail	Operati	ional (GBN A	Assess	sment						Train	Spee	əd:	70	kph
NSR Ref.:	HUH-2-1							Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	Int Dist	, m
Location:	Cheung On Tak Lecture	Theatr	е			Up 1	Frack		115			0			115	
Assessed Floor	2					Down	Track		110			0			110	
Item:	105															
		Select	ed Bo	rehol	le Det	ails:	_									
				Bore	ehole	Ref.	Roc	khead	Depth	i, m	Hole	Dept	h, m	Sla	int Dist	, m
			rack		D018	}		2	8			15		 	115[1]	
		Down	Irack	L	D018	5		2	8		l	15		<u> </u>	110[1]	
								F		(11-)						
Description	11.9		05		40	50	00	Frequ	uency	(HZ)	400	000	050	045	400	500
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation	0.5															
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
	dB Y/N N	-	~	~	-	~	~	~	~	~	~	~	~	~	-	_
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB dD Turne 0	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
	dB Type U															
LSR	dB re 10 ^{-o} in/s*in ^{0.5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	48.1	50.1	43.9	35.2	27.0	27.9	26.1	25.3	21.9	19.0	17.2	18.1	15.0	12.9	9.7
Down Track Calculation	ก – – – – – – – – – – – – – – – – – – –															
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	48.1	50.1	43.9	35.2	27.0	27.9	26.1	25.3	21.9	19.0	17.2	18.1	15.0	12.9	9.7
Total of Up and Down T	racks Calculation															
Total Vibration Level Out	side Building	51.1	53.1	46.9	38.2	30.0	30.9	29.1	28.3	24.9	22.0	20.2	21.1	18.0	15.9	12.7
BCF	dB Y/N 0															
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Predicted Noise Level	1/3 Oct, dB	65.1	67.1	60.9	52.2	43.8	44.3	42.3	41.3	37.7	34.0	31.2	31.1	27.0	24.6	21.4
Predicted Noise Level	Oct, dB			68.2			48.4			43.5			35.0			26.4
L _{max}	dB(A)	32.5														
L _{eq,30mins}	dB(A)	<20														
Noise Criteria	dB(A)	26														
Compliance		55														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3dB(A) +$

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Cen	tral Link	Rail	Operat	ional (GBN A	Assess	sment						Train	Spee	ed:	60	kph
NSR Ref.:	HUH-3-1									Horizo	ontal D)ist, m	Verti	cal Di	st, m	Sla	int Dist	, m
Location:	Royal Penis	sula Blo	ck 2					Up 1	Frack		145			0			145	
Assessed Floor	1							Down	Track		155			0			155	
Item:	106																	
				Select	ted Bo	rehol	le Det	ails:										
						Bor	ehole	Ref.	Roc	khead	Depth	i, m	Hole	Dept	h, m	Sla	int Dist	, m
				Up T	rack		D018			28	3			15		L	145[1]	
				Down	Track		D018			28	3			15			155[1]	
				-														
										Frequ	uency	(Hz)						
Description	Unit			20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																		
FDL	dB re 1 lb/ir	1 ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB	Y/N	Ν															
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ ir	1/s*in ^{0.5} /	lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10 ⁻⁶ ir	/sec		46.8	48.8	42.6	33.9	25.7	26.6	24.8	24.0	20.6	17.7	15.9	16.8	13.7	11.6	8.4
Down Track Calculation	n																	
FDL	dB re 1 lb/ir	1 ^{0.5}		34.0	38.0	37.0	35.0	34.0	38.0	41.0	42.0	42.0	38.0	37.0	36.0	33.0	34.0	31.0
CCF	dB	Y/N	Ν	1														
TIL	dB	Туре	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB			-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB	Туре	0															
LSR	dB re 10 ⁻⁶ ir	n/s*in ^{0.5} /	lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Down Track Vib. Level	dB re 10 ⁻⁶ ir	/sec		46.8	48.8	42.6	33.9	25.7	26.6	24.8	24.0	20.6	17.7	15.9	16.8	13.7	11.6	8.4
Total of Up and Down	Fracks Calc	ulation																
Total Vibration Level Out	tside Buildin	g		49.8	51.8	45.6	36.9	28.7	29.6	27.8	27.0	23.6	20.7	18.9	19.8	16.7	14.6	11.4
BCF	dB	Y/N	0			_			_		_	_	_	_		_	_	
BVR-up	dB I	Floor	1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
BVR - Resonance	dB			6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB			10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

Predicted Noise Level	1/3 Oct, dB	65.8	67.8	61.6	52.9	44.5	45.0	43.0	42.0	38.4	34.7	31.9	31.8	27.7	25.3	22.1
Predicted Noise Level	Oct, dB			68.9			49.0			44.1			35.6			27.0
L _{max}	dB(A)	33.2														
L _{eq,30mins}	dB(A)	<20														
Noise Criteria	dB(A)	#####														
Compliance		45														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.
[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] $L_{eq,30mins} = L_{eq}$ (double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30mins per direction) - 32.6dB(A) + 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in 30*log(no. of events in (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail	Operati	ional (GBN A	۱sses	sment			1.1.5		<u></u>	Trair	1 Sper	<u>əd:</u>	10) kph
NSR Ref.:	HUH-4-1	_	_				<u> </u>	Horizo	Untal L	vist, m	Verti	cal Dr	st, m	SIa	int Dist	., m
Location:	The Metropolis Residen	ce Towe	er 2		ļ	Upi	Track	──	110	!		<u> </u>	!	—	110	
Assessed Floor	2				ļ	Down	Гаск	<u> </u>	125		<u> </u>	0	!	<u> </u>	125	l
Item:	107	Calact	·		'- Dof											
		Seleco	60 DU	Por	e Deu	alls:	Por	hoad	Dontk	- m		- Don'	<u>+h m</u>		ant Dief	- m -
			rack	DUIC		Rei.		2 Kileau		i, III		15	<u>.n, m</u>		110[1]	<u>, III</u>
		Down	Track	├───	D010		├───	2	2		┝───	15		<u> </u>	125[1]	I
		D0	Traon	L	0010	I	L		<u> </u>		L			L	120[1]	
r	<u> </u>	<u> </u>						Freg	vencv	(Hz)						<u> </u>
Description	l Init	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Un Track Calculation	Olin			0.2				00	100		100	200	200	0.0		000
FDL	dB re 1 lb/in ^{0.5}	18.4	22.4	21.4	19.4	18.4	22.4	25.4	26.4	26.4	22.4	21.4	20.4	17.4	18.4	15.4
CCF	dB Y/N N	1														
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0	1														
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	29.2	31.2	25.0	16.3	8.1	9.0	7.2	6.4	3.0	0.1	-1.7	-0.8	-3.9	-6.0	-9.2
Down Track Calculation	n															
FDL	dB re 1 lb/in ^{0.5}	18.4	22.4	21.4	19.4	18.4	22.4	25.4	26.4	26.4	22.4	21.4	20.4	17.4	18.4	15.4
CCF	dB Y/N N	1														ļ
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0	1														ļ
LSR	dB re 10 ⁻⁶ in/s*in ^{∪.5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	29.2	31.2	25.0	16.3	8.1	9.0	7.2	6.4	3.0	0.1	-1.7	-0.8	-3.9	-6.0	-9.2
Total of Up and Down T	racks Calculation															
Total Vibration Level Out	side Building	32.2	34.2	28.0	19.3	11.1	12.0	10.2	9.4	6.0	3.1	1.3	2.2	-0.9	-3.0	-6.2
BCF	dB Y/N 0	1														
BVR-up	dB Floor 2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	IdB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Prodicted Noise Level	1/3 Oct. dB	46.2	48.2	42.0	33.3	24.9	25.4	23.4	22 4	18.8	15.1	12.3	12.2	81	57	2.5
Predicted Noise Level	Oct. dB		-0.2	49.3	00.0	24.4	29.5	20.4	44 ,	24.5	10	12.0	16,1	0.1	0.7	8.2
	dB(A)	13.6		70.0			20.0			24.4			10.1			0.2
	dB(A)	-20														1
Leq,30mins		~20														
Noise Criteria	UB(A)	#####														
Compliance	1	45														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

Project:	Shatin Central Link Rail Operational	GBN Assessment		Train Spee	ed: 40 kph
NSR Ref.:	HUH-5-1		Horizontal Dist, m	Vertical Dist, m	Slant Dist, m
Location:	Harbour Plaza Metropolis	Up Track	100	0	100
Assessed Floor	3	Down Track	115	0	115
Item:	108				
	Selected P	arahala Datailar			

Selected	Borehole Details:

	Borehole Ref.	Rockhead Depth, m	Hole Depth, m	Slant Dist, m
Up Track	D018	28	15	100[1]
Down Track	D018	28	15	115[1]

			Frequency (Hz)													
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	30.5	34.5	33.5	31.5	30.5	34.5	37.5	38.5	38.5	34.5	33.5	32.5	29.5	30.5	27.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
TOC	dB Type 0	_														
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	41.3	43.3	37.1	28.4	20.2	21.1	19.3	18.5	15.1	12.2	10.4	11.3	8.2	6.1	2.9
Down Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	30.5	34.5	33.5	31.5	30.5	34.5	37.5	38.5	38.5	34.5	33.5	32.5	29.5	30.5	27.5
CCF	dB Y/N N															
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
ТОС	dB Type 0															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	41.3	43.3	37.1	28.4	20.2	21.1	19.3	18.5	15.1	12.2	10.4	11.3	8.2	6.1	2.9
Total of Up and Down	Total of Up and Down Tracks Calculation															
Total Vibration Level Out	tside Building	44.3	46.3	40.1	31.4	23.2	24.1	22.3	21.5	18.1	15.2	13.4	14.3	11.2	9.1	5.9
BCF	dB Y/N 0															
BVR-up	dB Floor 3	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
										10.0						
Predicted Noise Level	1/3 Oct, dl	B 56.3	58.3	52.1	43.4	35.0	35.5	33.5	32.5	28.9	25.2	22.4	22.3	18.2	15.8	12.6
Predicted Noise Level	Oct, di	В		59.3			39.5			34.6			26.1			17.6
L _{max}	dB(A	() 23.7														
L _{eq,30mins}	dB(A	() <20														
Noise Criteria	dB(A	() #####														
Compliance		45														

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.
Project:	Shatin Central Link Rail	Operati	ional (3BN A	\sses:	sment		Loriz	- stel [<u></u>	Vorti	Train	I Spec	ed:	70) kph	
NSR Ref.:	HUH-6-1							Horizontal Dist, m			veru	vertical Dist, m			Slant Dist, m		
Location:	HK Fire Services Heado	juarters Building			l		Track	<u>k 90</u>		0			90				
Assessed Floor	1				l	Down	Гаск	85			0			85			
Item:	NUS Soloctod Borobolo Dotails:																
		Select	еа во	Pero	e Det	alls:			Denth			Dani				+ ma	
			rack	BOIR							15			310		., 111	
		Down	Track	D010 D018			28			15			├───	85[1]			
		Down	Haun	<u>ــــــــــــــــــــــــــــــــــــ</u>	DUID	<u> </u>	L		<u> </u>		L	10		<u> </u>	00[1]		
	T	Frequency (Hz)															
Description	Linit	20	25	32	40	50	63	Elequ I gn	100	(FIZ) 125	160	200	250	315	400	500	
Up Track Calculation	Unit	20	20	52	40	50	03	00	100	125	100	200	200	515	400	500	
	10 A III / . 0.5	25.2	20.2	20.2	26.2	25.2	20.2	40.0	42.2	42.2	20.2	20.2	27.2	24.2	25.2	22.2	
FDL	dB re 1 lb/in ^{~~}	35.5	39.5	38.5	30.5	35.3	39.5	42.s	43.3	43.3	39.5	38.3	31.3	34.5	35.3	32.5	
CC⊦ 	dB Y/N N		0	0	0	0	~	0	0	0	0	0	0	^	0	2	
	dB iype u	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	
	dB iype u	1	10.0	~ ~		- 0	~ 4	10.0				10.4		10.0	10.4	10.0	
LSR	dB re 10 ⁻ in/s*in ^{···} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6	
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	48.1	50.1	43.9	35.2	27.0	27.9	26.1	25.3	21.9	19.0	17.2	18.1	15.0	12.9	9.7	
Down Track Calculation	n																
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3	
CCF	dB Y/N N																
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TCF	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	
TOC	dB Type 0	1															
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	15.8	13.8	8.6	1.9	-5.3	-8.4	-13.2	-15.0	-18.4	-17.3	-18.1	-16.2	-16.3	-19.4	-19.6	
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	48.1	50.1	43.9	35.2	27.0	27.9	26.1	25.3	21.9	19.0	17.2	18.1	15.0	12.9	9.7	
Total of Up and Down 7	Tracks Calculation																
Total Vibration Level Out	tside Building	51.1	53.1	46.9	38.2	30.0	30.9	29.1	28.3	24.9	22.0	20.2	21.1	18.0	15.9	12.7	
BCF	dB Y/N 0	1														I	
BVR-up	dB Floor 1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7	
CTN	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
Predicted Noise Level	1/3 Oct, dB	67.1	69.1	62.9	54.2	45.8	46.3	44.3	43.3	39.7	36.0	33.2	33.1	29.0	26.6	23.4	
Predicted Noise Level	Oct, dB	1		70.2			50.4			45.5			37.0			28.4	
L _{max}	dB(A)	34.5															
L _{ea.30mins}	dB(A)	<20															
Noise Criteria	dB(A)	<20															
Compliance		45															

Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dBi (3dB(A) correction is added to L_{eq,30mins} for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

Project:	Shatin Central Link Rai	ional (GBN A	Assess	sment					Train	I Spee	ed:	d: 70 kph			
NSR Ref.:	HUH-7-1	•					1	Horizontal Dist, m			Vertical Dist, m			Sla	, m	
Location:	Hotel Nikko Hong Kong	J				Up T	Frack 50			0			50			
Assessed Floor				ļ	Down	Down Track		45			0					
Item:	110															
Selected Borehole Details:																
		. <u> </u>		Bor	ehole	Ref.	Roc	khead Depth, m			Hole	Dept	h, m	Sla	int Dist	, m
		Up T	rack	<u> </u>	D018	3 28					15			50[1]		
		Down Track D018			D018	<u> </u>	28					15			45[1]]
					<u> </u>					0						
Description	Unit	20	25	32	40	50	63	80	100	125	160	200	250	315	400	500
Up Track Calculation																
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N N]														ļ
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB Type 0	1														ŀ
LSR	dB re 10 ^{-⁵} in/s*in ^{∪.ゥ} /lb	18.3	16.2	10.8	4.8	-1.8	-5.5	-9.3	-11.8	-15.3	-13.8	-14.4	-12.0	-12.0	-15.3	-16.2
Up Track Vib. Level	dB re 10 ⁻⁶ in/sec	50.7	52.6	46.2	38.1	30.5	30.9	30.1	28.5	25.1	22.6	21.0	22.3	19.3	17.0	13.2
Down Track Calculatio	n	<u> </u>														
FDL	dB re 1 lb/in ^{0.5}	35.3	39.3	38.3	36.3	35.3	39.3	42.3	43.3	43.3	39.3	38.3	37.3	34.3	35.3	32.3
CCF	dB Y/N N	1														ŀ
TIL	dB Type 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TCF	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
TOC	dB Type 0]]
LSR	dB re 10 ⁻⁶ in/s*in ^{0.5} /lb	18.6	16.6	11.5	5.2	-1.6	-5.1	-8.9	-11.5	-15.0	-13.0	-13.7	-11.1	-11.2	-14.0	-15.5
Down Track Vib. Level	dB re 10 ⁻⁶ in/sec	50.9	53.0	46.8	38.5	30.8	31.2	30.5	28.9	25.4	23.4	21.7	23.3	20.2	18.4	13.9
Total of Up and Down	Fracks Calculation															
Total Vibration Level Out	tside Building	53.8	55.8	49.5	41.3	33.7	34.1	33.3	31.7	28.2	26.0	24.4	25.8	22.8	20.7	16.5
BCF	dB Y/N 0]														
BVR-up	dB Floor 4	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8
BVR - Resonance	dB	6.0	6.0	6.0	6.0	5.8	5.4	5.2	5.0	4.8	4.0	3.0	2.0	1.0	0.7	0.7
	dB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SAF	dB	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Dur distant Nation Lowel	1/2 Oct. dl		65.9	50 F	54.2	42 E	42 E	40 E	40.7	27.0	24.0	24.4	24.0	27.0	25.4	24.2
Predicted Noise Level		63.8	65.8	59.5	51.3	43.5	43.5	42.5	40.7	37.0	34.0	31.4	31.8	27.8	25.4	21.2
Predicted Noise Level		1		66.9			47.9			42.9			35.4			20.9
L _{max}	0D(A) 32.3														
Leg 30mins	dB(A) 22.9														

Compliance Notes: [1] Linear interpolation has been applied to slant distance where appropriate.

dB(A)

23

45

-ea.30mins Noise Criteria

[2] FDL based on 60kph data and adjusted by the correction factor of 20xlog(V/Vref), in line with FTA manual.

[3] LSR based on the same or the next available smaller borehole depth. LSR data are interpolated against slant distance.

[4] Lmax has incorporated a +0.5dB(A) correction to passby Leq as per measurement at Pat Heung Depot.

 $[5] L_{eq,30mins} = L_{eq}(double passbys) + 10*log(Passby duration in sec) + 3dB(A) + 10*log(no. of events in 30mins per direction) - 32.6dB(A) + 3$ (3dB(A) correction is added to L $_{\rm eq,30mins}$ for leading and trailing effect for conservative approaches.)

[6] $L_{eq,30mins}$ is based on train frequency of 6 trains per 30mins in each direction.

[7] Track Type 0 = Direct Fixation, 1 = Atl 1 Baseplate; Type 2 = Egg type baseplate; Type 3 = 12.5Hz FST.

Appendix 9.3: Detailed Operational Groundborne Noise Calculations