

## Calculations of Composite Idling Emission Factors

### Estimated Engine Type Distribution

Assessment Year : 2022

FirstRegYear	Age	Estimated engine type distribution											
		HGV(7) 5.5-15t		HGV(8) >15t		NFB(6) <=6.4t		NFB(7) 6.4-15t		NFB(8) >15t		LGV (4) diesel	
		Euro Standard	% of vehicle of same Euro type	Euro Standard	% of vehicle of same Euro type	Euro Standard	% of vehicle of same Euro type	Euro Standard	% of vehicle of same Euro type	Euro Standard	% of vehicle of same Euro type	Euro Standard	% of vehicle of same Euro type
2036	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2035	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2034	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2033	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2032	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2031	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2030	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2029	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2028	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2027	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2026	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2025	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2024	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2023	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-	Euro VI	-
2022	1	Euro VI	6.85%	Euro VI	7.10%	Euro VI	5.26%	Euro VI	6.81%	Euro VI	11.13%	Euro VI	6.67%
2021	2	Euro VI	3.34%	Euro VI	2.31%	Euro VI	5.01%	Euro VI	4.95%	Euro VI	9.68%	Euro VI	4.07%
2020	3	Euro VI	6.79%	Euro VI	6.02%	Euro VI	7.03%	Euro VI	10.33%	Euro VI	10.20%	Euro VI	9.18%
2019	4	Euro VI	5.29%	Euro VI	5.02%	Euro VI	5.91%	Euro VI	6.68%	Euro VI	8.49%	Euro VI	7.71%
2018	5	Euro VI	5.14%	Euro VI	5.21%	Euro VI	5.51%	Euro VI	7.38%	Euro VI	8.15%	Euro VI	7.52%
2017	6	Euro VI	5.43%	Euro VI	5.31%	Euro VI	4.63%	Euro VI	6.68%	Euro VI	9.81%	Euro VI	7.14%
2016	7	Euro V	5.08%	Euro V	6.30%	Euro V	6.22%	Euro V	5.12%	Euro V	7.04%	Euro V	5.18%
2015	8	Euro V	3.28%	Euro V	4.48%	Euro V	9.46%	Euro V	5.60%	Euro V	6.95%	Euro V	3.67%
2014	9	Euro V	5.08%	Euro V	5.09%	Euro V	11.73%	Euro V	6.03%	Euro V	7.17%	Euro V	4.07%
2013	10	Euro V	3.95%	Euro V	4.93%	Euro V	12.53%	Euro V	10.07%	Euro V	5.76%	Euro V	4.74%
2012	11	Euro IV	4.62%	Euro IV	7.07%	Euro IV	8.93%	Euro IV	6.42%	Euro IV	3.24%	Euro IV	5.28%
2011	12	Euro IV	4.23%	Euro IV	4.23%	Euro IV	6.50%	Euro IV	7.20%	Euro IV	3.11%	Euro IV	5.31%
2010	13	Euro IV	3.80%	Euro IV	4.09%	Euro IV	4.17%	Euro IV	5.42%	Euro IV	2.56%	Euro IV	5.93%
2009	14	Euro IV	5.53%	Euro IV	6.10%	Euro IV	3.58%	Euro IV	3.99%	Euro IV	0.90%	Euro IV	6.38%
2008	15	Euro IV	3.20%	Euro IV	3.98%	Euro IV	1.65%	Euro IV	2.52%	Euro IV	0.90%	Euro IV	3.53%
2007	16	Euro IV	3.72%	Euro IV	3.40%	Euro IV	0.87%	Euro IV	1.82%	Euro IV	0.81%	Euro IV	3.04%
2006	17	Euro IV	1.13%	Euro IV	0.97%	Euro IV	0.04%	Euro IV	0.18%	Euro IV	0.03%	-	-
2006	17	Euro III	3.85%	Euro III	3.06%	Euro III	0.27%	Euro III	0.82%	Euro III	0.06%	Euro III	3.50%
2005	18	Euro III	6.10%	Euro III	3.93%	Euro III	0.53%	Euro III	0.30%	Euro III	0.43%	Euro III	3.46%
2004	19	Euro III	6.44%	Euro III	4.47%	Euro III	0.09%	Euro III	0.26%	Euro III	1.75%	Euro III	2.33%
2003	20	Euro III	3.60%	Euro III	2.59%	Euro III	0.00%	Euro III	0.26%	Euro III	1.28%	Euro III	0.74%
2002	21	Euro III	1.25%	Euro III	1.57%	Euro III	0.00%	Euro III	0.74%	Euro III	0.00%	Euro III	0.37%
2001	22	Euro III	0.23%	Euro III	0.19%	Euro III	0.00%	Euro III	0.10%	Euro III	0.00%	-	-
2001	22	Euro II	0.69%	Euro II	1.05%	Euro II	0.00%	Euro II	0.21%	Euro II	0.00%	Euro II	0.09%
2000	23	Euro II	0.83%	Euro II	0.72%	Euro II	0.00%	Euro II	0.09%	Euro II	0.00%	Euro II	0.05%
1999	24	Euro II	0.36%	Euro II	0.52%	Euro II	0.00%	Euro II	0.04%	Euro II	0.13%	Euro II	0.01%
1998	25	Euro II	0.09%	Euro II	0.14%	Euro II	0.00%	Euro II	0.00%	Euro II	0.04%	Euro II	0.00%
1998	25	-	-	-	-	-	-	-	-	-	-	Euro I	0.00%
1997	26	Euro II	0.04%	Euro II	0.12%	Euro II	0.00%	Euro II	0.00%	Euro II	0.00%	Euro I	0.00%
1997	26	Euro I	0.01%	Euro I	0.03%	Euro I	0.00%	Euro I	0.00%	Euro I	0.00%	-	-
1996	27	Euro I	0.04%	Euro I	0.01%	Euro I	0.00%	Euro I	0.00%	Euro I	0.21%	Euro I	0.00%
1995	28	Euro I	0.00%	Euro I	0.00%	Euro I	0.00%	Euro I	0.00%	Euro I	0.07%	Euro I	0.00%
1995	28	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.02%	pre-Euro	0.00%
1994	29	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1993	30	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.03%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.01%
1992	31	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1991	32	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1990	33	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.04%	pre-Euro	0.00%
1989	34	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1988	35	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1987	36	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1986	37	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%

FirstRegYear	Age	Estimated engine type distribution													
		HGV(7) 5.5-15t		HGV(8) >15t		NFB(6) <=6.4t		NFB(7) 6.4-15t		NFB(8) >15t		LGV (4) diesel		LGV (6) diesel	
		Euro Standard	% of vehicle of same Euro type	Euro Standard	% of vehicle of same Euro type	Euro Standard	% of vehicle of same Euro type	Euro Standard	% of vehicle of same Euro type	Euro Standard	% of vehicle of same Euro type	Euro Standard	% of vehicle of same Euro type	Euro Standard	% of vehicle of same Euro type
1985	38	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1984	39	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.04%	pre-Euro	0.00%	pre-Euro	0.00%
1983	40	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.03%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1982	41	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1981	42	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1980	43	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1979	44	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%	pre-Euro	0.00%
1978	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-
1977	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-
1976	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-
1975	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-
1974	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-
1973	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-	pre-Euro	-
	Total		100.00%		100.00%		100.00%		100.00%		100.00%		100.00%		100.00%

#### Basic Idling Emission Factors

Euro Standard	LDV		Truck/bus	
	Nox (g/h)	PM (g/h)	Nox (g/h)	PM (g/h)
pre-Euro	13.63	2.58	119.6	14.7
Euro I	13.42	3	99.41	11.05
Euro II	14.03	2.85	97.84	1.81
Euro III	8.81	1.35	98.52	1.72
Euro IV	8.33	1.07	52.42	0.86
Euro V	6.27	0.11	36.37	0.86
Euro VI	2.77	0.09	36.37	0.86

Source : Road tunnels: Vehicle emission and air demand for ventilation, PIARC, 2012

A conversion factor between PM in g and turbidity 1g = 6.25m<sup>2</sup> is assumed

#### Mass Factors for HGV

Pollutant	Mass Factor		
	15t	23t	32t
Nox	0.7	1	1.9
PM	0.7	1	1.9

Source : Road tunnels: Vehicle emission and air demand for ventilation, PIARC, 2012

#### Composite Idling Emission Factors

Euro Standard	Idling Emission Factor (g/h)							
	PC	HGV(7) 5.5-15t	HGV(8) >15t	NFB(6) <=6.4t	NFB(7) 6.4-15t	NFB(8) >15t	LGV (4) diesel	LGV (6) diesel
<i>PM</i>								
pre-Euro	-	0.000	0.001	0.014	0.000	0.015	0.000	0.000
Euro I	-	0.004	0.005	0.000	0.000	0.031	0.000	0.000
Euro II	-	0.026	0.046	0.000	0.006	0.003	0.004	0.034
Euro III	-	0.259	0.272	0.015	0.043	0.060	0.141	0.234
Euro IV	-	0.158	0.256	0.221	0.237	0.099	0.315	0.392
Euro V	-	0.105	0.179	0.343	0.231	0.232	0.019	0.023
Euro VI	-	0.198	0.266	0.287	0.368	0.494	0.038	0.022
<i>Composite Emission Factors</i>	<i>negligible</i>	<b>0.973</b>	<b>1.333</b>	<b>1.145</b>	<b>1.150</b>	<b>1.215</b>	<b>0.673</b>	<b>0.916</b>

Based on 2003 X' boundary vehicle population, about 99.7% of private car is powered by petrol. It is reasonable to assume in future assessment years that all PC is petrc

For conservative analysis, a emission factor of 0.2g/NOx/min as extracted from the Consultation Paper - A Proposal to Ban Idling Vehicles with Running Engines is assumed for all PC

Mass influence factor for 23t is assumed for HGV (8) and NFB (8) for conservative assessment

Mass influence factor for 15t is assumed for HGV(7), NFB(6) and NFB(7) for conservative assessment.

An A/C loading factor of 1.3 has been included.

**Example Calculations of Idling Emission at Kiosks / Loading Bays / Unloading Bays (during Peak Hour) - for Construction Dust Assessment**

RSP / FSP

Bound	Vehicle Type	Total Peak Traffic Flow (veh/hr)	Veh Type (EmFAC)	% Vehicle	Kiosk		Unloading Bay		Loading Bay	
					Traffic Flow (veh/hr)	Idling Emission Factor (g/veh/hr)	Processing Time (min/veh)	Emission Rate (g/hr)	Processing Time (min/veh)	Emission Rate (g/hr)
In	Car	295	PC	100%	295	0.000	1.7	0.0	-	-
	LGV	162	LGV (4)	10.4%	17	0.673	0.9	0.2	-	-
			LGV (6)	89.6%	145	0.916	0.7	1.6	-	-
			<b>sub-total</b>		<b>162</b>	-	-	<b>1.7</b>	-	-
	MHGV	294	HGV (7)	11.3%	33	0.973	0.9	0.5	-	-
			HGV (8)	88.7%	261	1.333	0.7	4.1	-	-
				<b>sub-total</b>	<b>294</b>			<b>4.5</b>	-	-
	Coach	58	NFB (6)	5.4%	3	1.145	0.8	0.0	0.3	0.0
			NFB (7)	21.3%	12	1.150	0.8	0.2	0.3	0.1
			NFB (8)	73.3%	43	1.215	0.8	0.7	0.3	1.9
				<b>sub-total</b>	<b>58</b>	-	-	<b>0.9</b>	-	<b>0.3</b>
										<b>2.2</b>
Out	Car	618	PC	100%	618	0.000	2.4	0.0	-	-
	LGV	223	LGV (4)	10.4%	23	0.673	1.2	0.3	-	-
			LGV (6)	89.6%	200	0.916	1.2	3.7	-	-
				<b>sub-total</b>	<b>223</b>	-	-	<b>4.0</b>	-	-
	MHGV	404	HGV (7)	11.3%	46	0.973	1.2	0.9	-	-
			HGV (8)	88.7%	358	1.333	1.2	9.6	-	-
				<b>sub-total</b>	<b>404</b>			<b>10.4</b>	-	-
	Coach	120	NFB (6)	5.4%	6	1.145	0.8	0.1	0.6	0.1
			NFB (7)	21.3%	26	1.150	0.8	0.4	0.6	0.3
			NFB (8)	73.3%	88	1.215	0.8	1.4	0.6	1.1
				<b>sub-total</b>	<b>120</b>	-	-	<b>1.8</b>	-	<b>1.4</b>
										<b>11.7</b>

**Note:**

1. All private cars are assumed to be powered by petrol
2. Information on the vehicle breakdown of LGV / MHGV / Coach are referenced from the approved EIA Study "Expansion of Hong Kong Airport into aThree-Runway System" (AEIAR-185/2014).
3. Information on the processing time at kiosks / loading bay / unloading bay are provided by the Traffic Engineer.

### **Hourly Idling Vehicular Emission Factor (for Construction Dust Assessment)**

RSP / FSP

1. The 24-hour traffic profile is provided by Traffic Engineer.

1. The 24-hour traffic profile is provided by Traffic Engineer.

Sample Calculation of Portal Emission and Emission from Ventilation Buildings at Hour 07 - for Construction Dust Assessment

**RSP Emission**

Tunnel Section	Tunnel / Road	Portal / Vent Bld	Tunnel Length	Tunnel Length	Traffic Flow	Emission Factor	Total Emission	Total Emission	Emission Split		Portal Emission		Remark
			(m)	(mile)	(veh/hr)	(g/mile-veh)	(g/hr)	(g/s)	(g/s)	(g/s)	(g/s)	(g/s)	
HAT	HKBCF to Airport Tunnel	SB	882	0.548	1135	0.049	30	0.008	-	0.008	0.006	0.003	
SHT	Scenic Hill Tunnel	EB	1110	0.690	892	0.078	48	0.013	-	0.004	0.003	0.001	According to the approved EIA Study for HKLR (AEIAR-144/2009), 30%/70% portal/VB split is adopted.
		WB	1110	0.690	1504	0.073	76	0.021	-	0.006	0.004	0.002	
		VB	-	-	-	-	-	-	0.024	-	-	-	
HZMB	Hong Kong-Zhuhai-Macau Bridge Tunnel	EB	7000	4.351	892	0.082	318	0.088	-	0.027	0.018	0.009	According to the approved EIA Study for HKLR (AEIAR-144/2009), 30%/70% portal/VB split is adopted. And the total emission ventilated to VB will be equally emitted by VB (HK) and VB (PRC).
		WB	7000	4.351	1504	0.076	497	0.138	-	0.041	0.028	0.014	
		VB (HK)	-	-	-	-	-	-	0.079	-	-	-	
		VB (PRC)	-	-	-	-	-	-	0.079	-	-	-	
TMCLKL	Tuen Mun - Chek Lap Kok Link	SB	5400	3.356	2350	0.064	505	0.140	-	0.014	0.009	0.005	According to the approved EIA Study for TMCLKL (AEIAR-146/2009), 10%/90% portal/VB split is adopted.
		SBVB	-	-	-	-	-	-	0.126	-	-	-	

**FSP Emission**

Tunnel Section	Tunnel / Road	Portal / Vent Bld	Tunnel Length	Tunnel Length	Traffic Flow	Emission Factor	Total Emission	Total Emission	Emission Split		Portal Emission		Remark
			(m)	(mile)	(veh/hr)	(g/mile-veh)	(g/hr)	(g/s)	(g/s)	(g/s)	(g/s)	(g/s)	
HAT	HKBCF to Airport Tunnel	SB	882	0.548	1135	0.046	29	0.008	-	0.008	0.005	0.003	
SHT	Scenic Hill Tunnel	EB	1110	0.690	892	0.072	44	0.012	-	0.004	0.002	0.001	According to the approved EIA Study for HKLR (AEIAR-144/2009), 30%/70% portal/VB split is adopted.
		WB	1110	0.690	1504	0.067	70	0.019	-	0.006	0.004	0.002	
		VB	-	-	-	-	-	-	0.022	-	-	-	
HZMB	Hong Kong-Zhuhai-Macau Bridge Tunnel	EB	7000	4.351	892	0.075	291	0.081	-	0.024	0.016	0.008	According to the approved EIA Study for HKLR (AEIAR-144/2009), 30%/70% portal/VB split is adopted. And the total emission ventilated to VB will be equally emitted by VB (HK) and VB (PRC).
		WB	7000	4.351	1504	0.070	458	0.127	-	0.038	0.025	0.013	
		VB (HK)	-	-	-	-	-	-	0.073	-	-	-	
		VB (PRC)	-	-	-	-	-	-	0.073	-	-	-	
TMCLKL	Tuen Mun - Chek Lap Kok Link	SB	5400	3.356	2350	0.059	465	0.129	-	0.013	0.009	0.004	According to the approved EIA Study for TMCLKL (AEIAR-146/2009), 10%/90% portal/VB split is adopted.
		SBVB	-	-	-	-	-	-	0.116	-	-	-	

## **Emission Inventory for Tunnel Portal and Ventilation Building (RSP) - for Construction Dust Assessment**

**Emission Inventory for Tunnel Portal and Ventilation Building (FSP) - for Construction Dust Assessment**

Tunnel Section	Source	Source ID	Type	Location		Point Source		Volume Source	Hourly FSP Emission Rate (g/s)																												
				X (m)	Y (m)	Release Height (m)	Exit Temperature (K)		Exit velocity (m/s)	Internal diameter (m)	Lateral Dim. (Sy) (m)	Vertical Dim. (Sz) (m)	Hourly FSP Emission Rate (g/s)																								
SHT	Scenic Hill Tunnel Portal (WB)	SHTW01	VOLUME	811107	817114	2.925	-	-	-	5.58	2.72	2.32E-04	1.43E-04	1.02E-04	8.58E-05	1.43E-04	3.34E-04	6.39E-04	7.72E-04	7.01E-04	7.44E-04	7.58E-04	7.87E-04	8.44E-04	8.30E-04	8.16E-04	8.44E-04	8.30E-04	7.87E-04	6.72E-04	7.15E-04	7.15E-04	6.39E-04	3.92E-04			
		SHTW02	VOLUME	811092	817107	2.925	-	-	-	5.58	2.72	2.32E-04	1.43E-04	1.02E-04	8.58E-05	1.43E-04	3.34E-04	6.39E-04	7.72E-04	7.01E-04	7.44E-04	7.58E-04	7.87E-04	8.44E-04	8.30E-04	8.16E-04	8.44E-04	8.30E-04	7.87E-04	6.72E-04	7.15E-04	7.15E-04	6.39E-04	3.92E-04			
		SHTW03	VOLUME	811079	817100	2.925	-	-	-	5.58	2.72	2.32E-04	1.43E-04	1.02E-04	8.58E-05	1.43E-04	3.34E-04	6.39E-04	7.72E-04	7.01E-04	7.44E-04	7.58E-04	7.87E-04	8.44E-04	8.30E-04	8.16E-04	8.44E-04	8.30E-04	7.87E-04	6.72E-04	7.15E-04	7.15E-04	6.39E-04	3.92E-04			
		SHTW04	VOLUME	811065	817093	2.925	-	-	-	5.58	2.72	2.32E-04	1.43E-04	1.02E-04	8.58E-05	1.43E-04	3.34E-04	6.39E-04	7.72E-04	7.01E-04	7.44E-04	7.58E-04	7.87E-04	8.44E-04	8.30E-04	8.16E-04	8.44E-04	8.30E-04	7.87E-04	6.72E-04	7.15E-04	7.15E-04	6.39E-04	3.92E-04			
		SHTW05	VOLUME	811051	817087	2.925	-	-	-	5.58	2.72	2.32E-04	1.43E-04	1.02E-04	8.58E-05	1.43E-04	3.34E-04	6.39E-04	7.72E-04	7.01E-04	7.44E-04	7.58E-04	7.87E-04	8.44E-04	8.30E-04	8.16E-04	8.44E-04	8.30E-04	7.87E-04	6.72E-04	7.15E-04	7.15E-04	6.39E-04	3.92E-04			
		SHTW06	VOLUME	811037	817080	2.925	-	-	-	5.58	2.72	1.16E-04	7.16E-05	5.08E-05	4.28E-05	7.16E-05	1.67E-04	3.20E-04	3.86E-04	3.51E-04	3.72E-04	3.79E-04	3.93E-04	4.22E-04	4.15E-04	4.08E-04	4.22E-04	4.15E-04	4.08E-04	4.22E-04	4.15E-04	4.08E-04	3.93E-04	3.36E-04	3.58E-04	3.20E-04	1.96E-04
		SHTW07	VOLUME	811023	817073	2.925	-	-	-	5.58	2.72	1.16E-04	7.16E-05	5.08E-05	4.28E-05	7.16E-05	1.67E-04	3.20E-04	3.86E-04	3.51E-04	3.72E-04	3.79E-04	3.93E-04	4.22E-04	4.15E-04	4.08E-04	4.22E-04	4.15E-04	4.08E-04	4.22E-04	4.15E-04	4.08E-04	3.93E-04	3.36E-04	3.58E-04	3.20E-04	1.96E-04
		SHTW08	VOLUME	811009	817066	2.925	-	-	-	5.58	2.72	1.16E-04	7.16E-05	5.08E-05	4.28E-05	7.16E-05	1.67E-04	3.20E-04	3.86E-04	3.51E-04	3.72E-04	3.79E-04	3.93E-04	4.22E-04	4.15E-04	4.08E-04	4.22E-04	4.15E-04	4.08E-04	4.22E-04	4.15E-04	4.08E-04	3.93E-04	3.36E-04	3.58E-04	3.20E-04	1.96E-04
		SHTW09	VOLUME	810995	817059	2.925	-	-	-	5.58	2.72	1.16E-04	7.16E-05	5.08E-05	4.28E-05	7.16E-05	1.67E-04	3.20E-04	3.86E-04	3.51E-04	3.72E-04	3.79E-04	3.93E-04	4.22E-04	4.15E-04	4.08E-04	4.22E-04	4.15E-04	4.08E-04	4.22E-04	4.15E-04	4.08E-04	3.93E-04	3.36E-04	3.58E-04	3.20E-04	1.96E-04
		SHTW10	VOLUME	810981	817052	2.925	-	-	-	5.58	2.72	1.16E-04	7.16E-05	5.08E-05	4.28E-05	7.16E-05	1.67E-04	3.20E-04	3.86E-04	3.51E-04	3.72E-04	3.79E-04	3.93E-04	4.22E-04	4.15E-04	4.08E-04	4.22E-04	4.15E-04	4.08E-04	4.22E-04	4.15E-04	4.08E-04	3.93E-04	3.36E-04	3.58E-04	3.20E-04	1.96E-04
HAT	Scenic Hill Tunnel Portal (EB)	SHTE01	VOLUME	811705	817969	2.925	-	-	-	7.26	2.72	1.50E-04	9.36E-05	6.32E-05	5.54E-05	9.36E-05	2.13E-04	4.01E-04	4.46E-04	4.74E-04	4.83E-04	5.01E-04	5.38E-04	5.29E-04	5.19E-04	5.38E-04	5.19E-04	5.38E-04	5.29E-04	5.01E-04	4.28E-04	4.56E-04	4.01E-04	2.50E-04	2.50E-04		
		SHTE02	VOLUME	811711	817979	2.925	-	-	-	7.26	2.72	1.50E-04	9.36E-05	6.32E-05	5.54E-05	9.36E-05	2.13E-04	4.01E-04	4.46E-04	4.74E-04	4.83E-04	5.01E-04	5.38E-04	5.29E-04	5.19E-04	5.38E-04	5.19E-04	5.38E-04	5.29E-04	5.01E-04	4.28E-04	4.56E-04	4.01E-04	2.50E-04	2.50E-04		
		SHTE03	VOLUME	811718	817988	2.925	-	-	-	7.26	2.72	1.50E-04	9.36E-05	6.32E-05	5.54E-05	9.36E-05	2.13E-04	4.01E-04	4.46E-04	4.74E-04	4.83E-04	5.01E-04	5.38E-04	5.29E-04	5.19E-04	5.38E-04	5.19E-04	5.38E-04	5.29E-04	5.01E-04	4.28E-04	4.56E-04	4.01E-04	2.50E-04	2.50E-04		
		SHTE04	VOLUME	811725	817998	2.925	-	-	-	7.26	2.72	1.50E-04	9.36E-05	6.32E-05	5.54E-05	9.36E-05	2.13E-04	4.01E-04	4.46E-04	4.74E-04	4.83E-04	5.01E-04	5.38E-04	5.29E-04	5.19E-04	5.38E-04	5.19E-04	5.38E-04	5.29E-04	5.01E-04	4.28E-04	4.56E-04	4.01E-04	2.50E-04	2.50E-04		
		SHTE05	VOLUME	811732	818008	2.925	-	-	-	7.26	2.72	1.50E-04	9.36E-05	6.32E-05	5.54E-05	9.36E-05	2.13E-04	4.01E-04	4.46E-04	4.74E-04	4.83E-04	5.01E-04	5.38E-04	5.29E-04	5.19E-04	5.38E-04	5.19E-04	5.38E-04	5.29E-04	5.01E-04	4.28E-04	4.56E-04	4.01E-04	2.50E-04	2.50E-04		
		SHTE06	VOLUME	811739	818018	2.925	-	-	-	7.26	2.72	7.48E-05	4.																								