APPENDIX 13D

Wind Data

WIND DATA

Wind speed and direction data is required for assessment of flame drag and smoke plume tilt. Local wind speed and direction data between 2003 and 2007 is provided in **Table 13D-1** and **Figure 13.17**. For the smoke envelope produced by the tank head or bund fires to be of potential threat to the Hong Kong Link Road, it is necessary for the wind to be blowing in a direction within a SE to S sector (i.e. a N or NW wind from the tank farm towards the Hong Kong Link Road at smallest separation distances). The most common wind speed range is between 2ms^{-1} and 5ms^{-1} which accounts for just under 50% of the wind speeds. The most prevalent wind direction is from the E which accounts for approximately 30% of the data, with wind towards the S and SE directions (i.e. towards the highway) combined, accounting for approximately 21%.

Table 13D-1: Wind Rose Data Between 2003 and 2007 (Based on [24])

Wind rose data incorporating high wind speeds					
Wind Angle from Θ (°)	Percentage of Time Wind Blows with Given Speed				TOTAL
	0 -2ms^{-1}	2 -5ms^{-1}	5 -10ms^{-1}	>10ms^{-1}	
N (337.5°< θ ≤22.5°)	3.13	6.02	5.02	0.21	14.37%
NE (22.5°< θ ≤67.5°)	0.63	7.47	4.81	0.07	12.98%
E (67.5°< θ ≤112.5°)	0.50	11.72	16.97	1.67	30.86%
SE (112.5°< θ ≤157.5°)	0.59	5.89	3.97	0.18	10.62%
S (157.5°< θ ≤202.5°)	0.86	4.31	3.14	0.12	8.44%
SW (202.5°< θ ≤247.5°)	0.31	3.40	5.32	0.37	9.40%
W (247.5°< θ ≤292.5°)	0.53	5.28	0.98	0.02	6.81%
NW (292.5°< θ ≤337.5°)	0.53	3.95	1.95	0.09	6.51%
TOTAL	7.09%	48.04%	42.15%	2.72%	100%