1 CFD MODELLING RESULTS

Table 1.1, Table 1.2, Table 1.3 and Table 1.4 present the detail results of 1.4 kg/s continuous release, 1 tonne instantaneous release, 57 kg instantaneous release and 4.2 tonnes instantaneous release by the CFD modelling using ANSYS CFX, which originates from AEA Technology *CFX-4* adopted in the previous 8 WTWs Reassessment Study.

Figure 1.1 to Figure 1.44 show the CFD modelling results for the proposed Desalination Plant at Tseung Kwan O – Lethal Dose contours LD03, LD50 and LD90 for all release cases.

Table 1.1 CFD Results of 1.4 kg/s Continuous Release

Weather Class	Wind Directions	Maximum Extent of LD Contour (m)			Maximum Cloud Height (m)		
		LD03	LD50	LD90	LD03	LD50	LD90
D2	N	288	148	109	24	14	14
	NE	193	154	105	21	14	12
	E	157	136	103	39	18	13
	SE	163	135	134	25	18	18
	S	252	163	119	18	13	11
	SW	241	180	135	19	16	14
	W	307	254	177	27	20	15
	NW	283	169	116	16	14	14
D4.5	E	168	121	86	50	17	10
	SE	124	99	98	26	22	18
B2	SE	191	110	93	23	20	17
F2	SE	112	87	86	20	17	13

Table 1.2 CFD Results of 1 tonne Instantaneous Release

Weather Class	Wind Directions	Maximum Extent of LD Contour (m)			Maximum Cloud Height (m)		
		LD03	LD50	LD90	LD03	LD50	LD90
D2	N	497	321	252	28	25	20
	NE	398	325	262	38	33	27
	E	302	238	182	61	52	40
	SE	272	193	140	33	28	23
	S	356	255	191	28	20	17
	SW	259	209	155	24	20	18
	W	368	326	303	33	24	20
	NW	549	412	317	27	22	17
D4.5	E	347	236	194	67	57	48
	SE	299	192	132	36	30	21
B2	SE	241	145	115	25	21	18
F2	SE	284	220	154	29	25	19

Table 1.3 CFD Results of 57 kg Instantaneous Release

Weather Class	Wind Directions	Maximum Extent of LD Contour (m)			Maximum Cloud Height (m)		
		LD03	LD50	LD90	LD03	LD50	LD90
D2	N	112	67	32	21	18	16
	NE	120	68	48	24	22	13
	E	74	33	13	22	19	18
	SE	82	49	30	22	19	13
	S	59	32	16	20	19	17
	SW	64	50	22	21	18	17
	W	59	33	15	24	20	13
	NW	122	83	48	23	20	18
D4.5	E	60	29	22	22	19	18
	SE	70	34	27	21	16	16

Table 1.4 CFD Results of 4.2 tonnes Instantaneous Release

Weather Class	Wind Directions	Maximum Extent of LD Contour (m)			Maximum Cloud Height (m)		
		LD03	LD50	LD90	LD03	LD50	LD90
D2	N	918	513	348	33	29	25
	NE	528	420	382	38	34	30
	E	502	384	309	78	68	50
	SE	631	317	255	37	30	30
	S	710	381	290	76	26	23
	SW	571	329	275	89	51	41
	W	782	476	373	38	33	27
	NW	964	563	447	35	29	25
D4.5	E	374	292	254	78	67	61
	SE	526	276	221	41	37	31

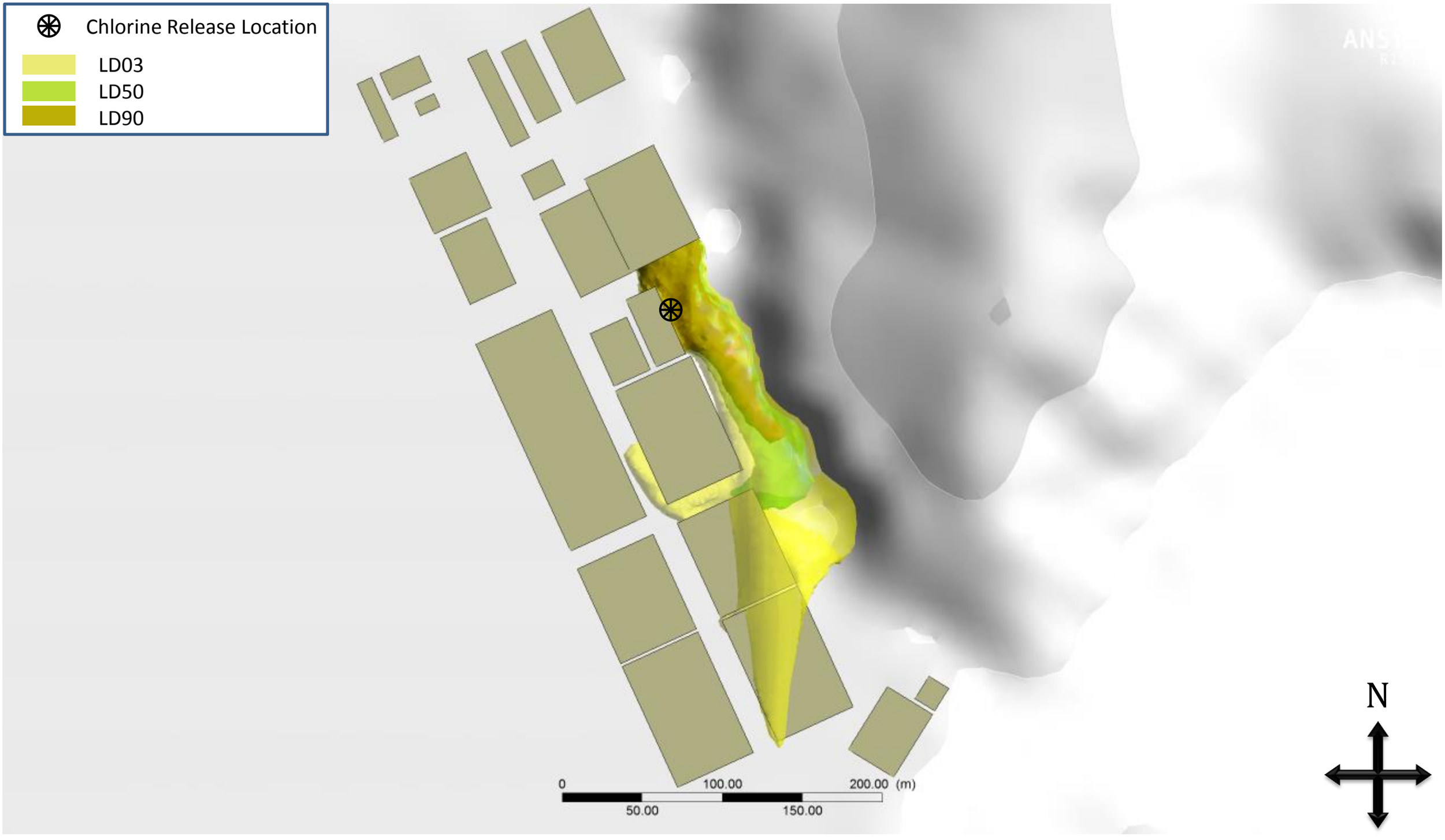

Figure 1 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: N
Weather Class: D2

ERM

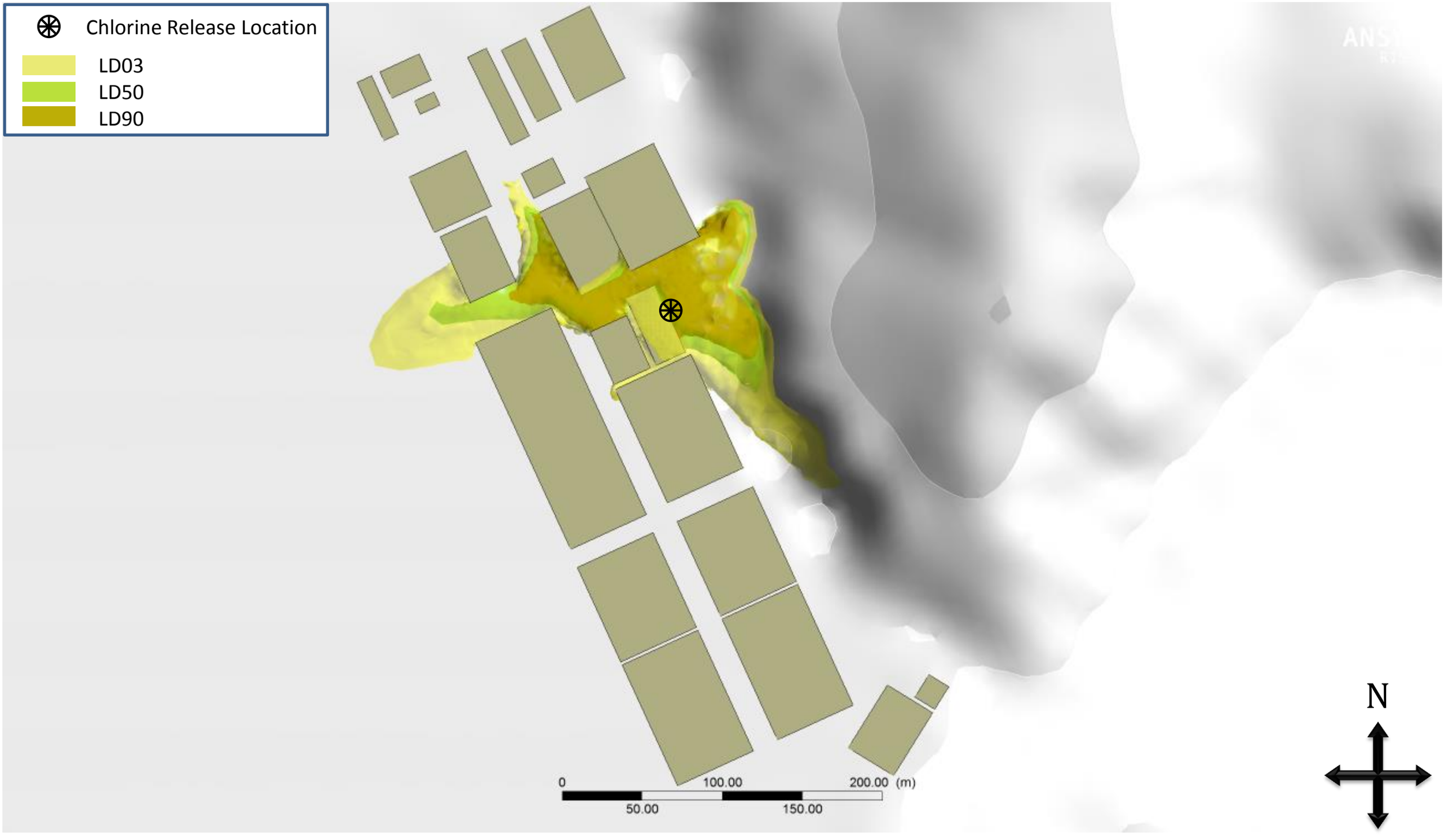

Figure 2 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: NE
Weather Class: D2

ERM

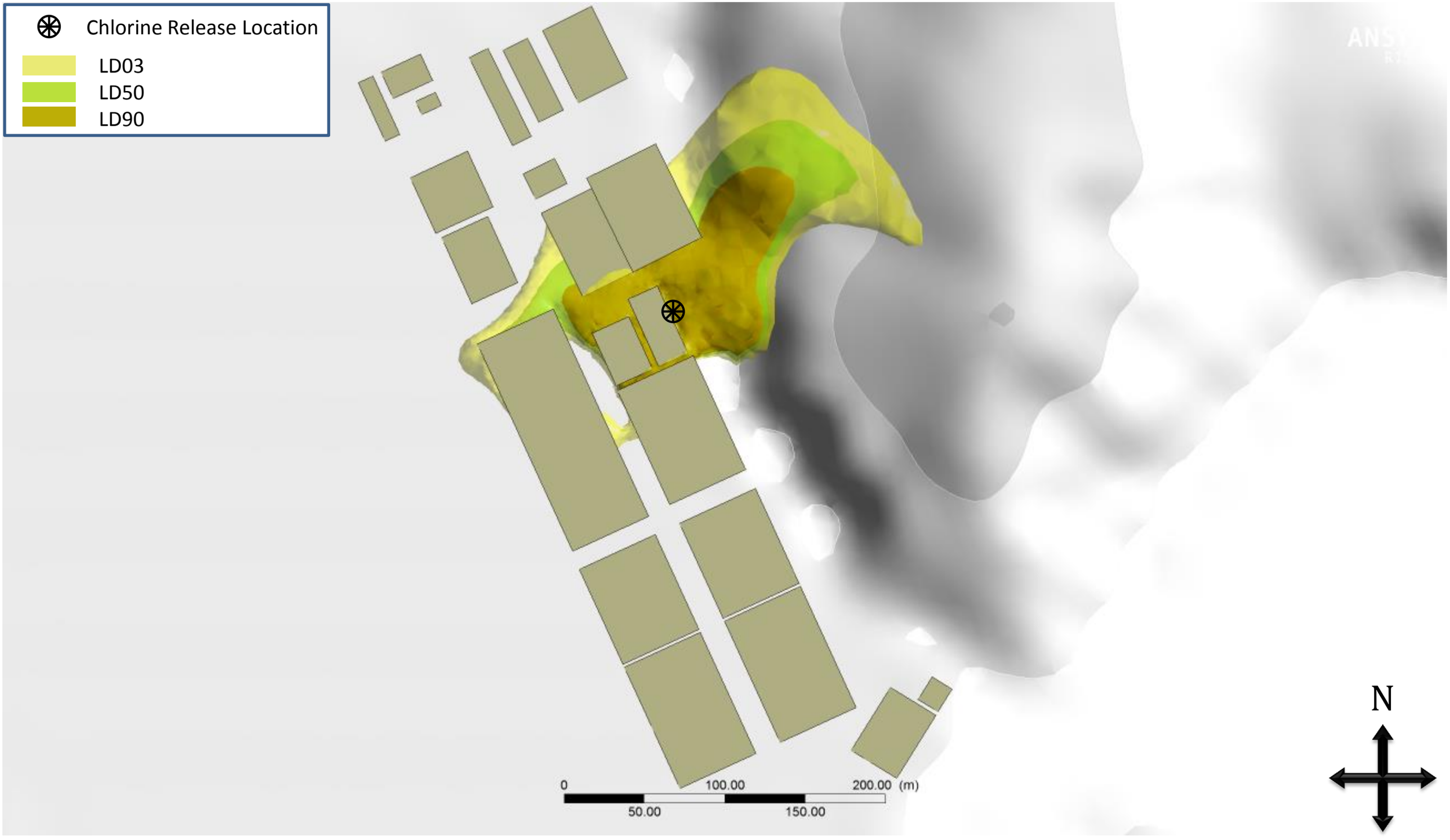

Figure 3 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: E
Weather Class: D2

ERM

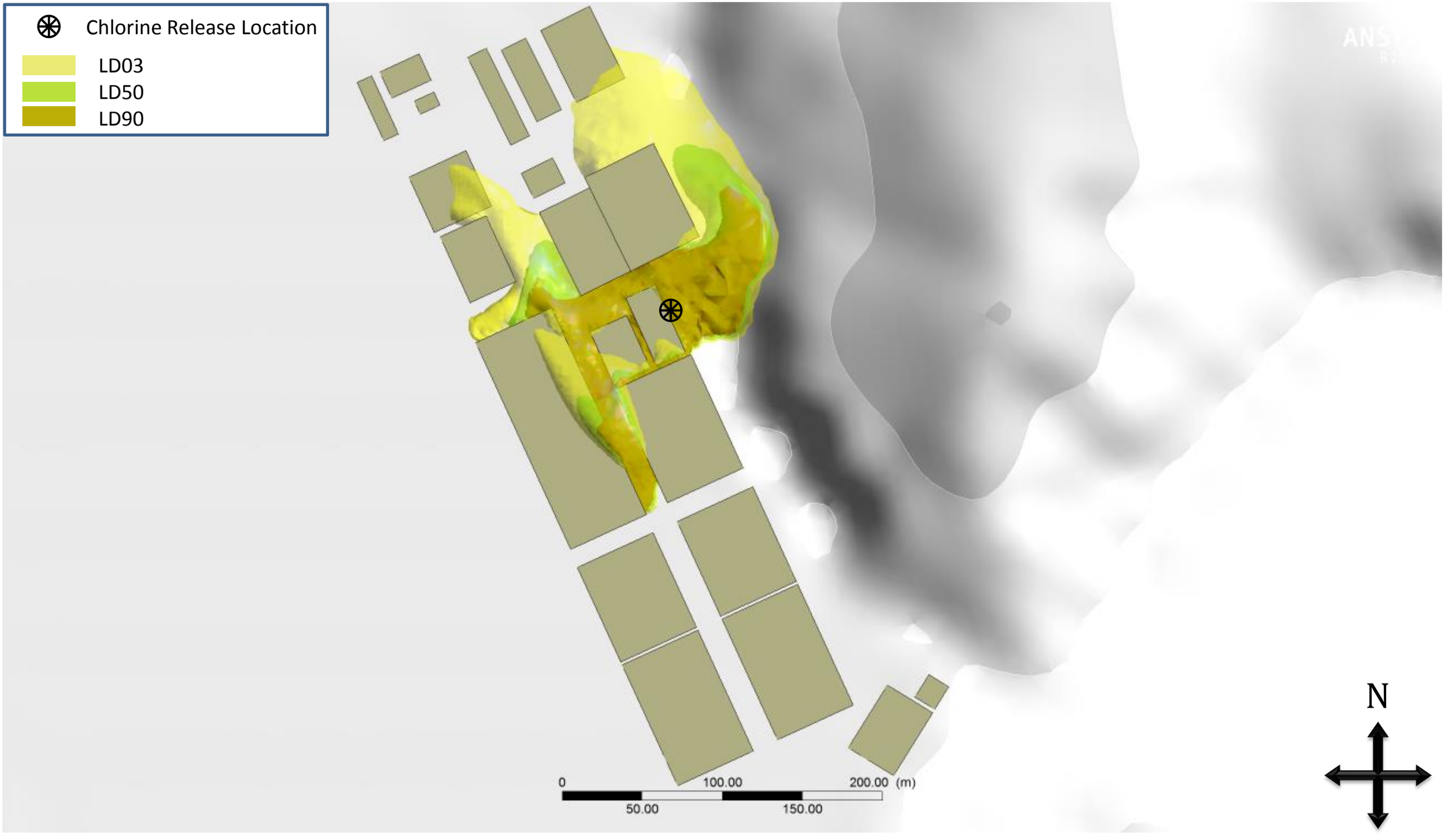

Figure 4 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: SE
Weather Class: D2

ERM

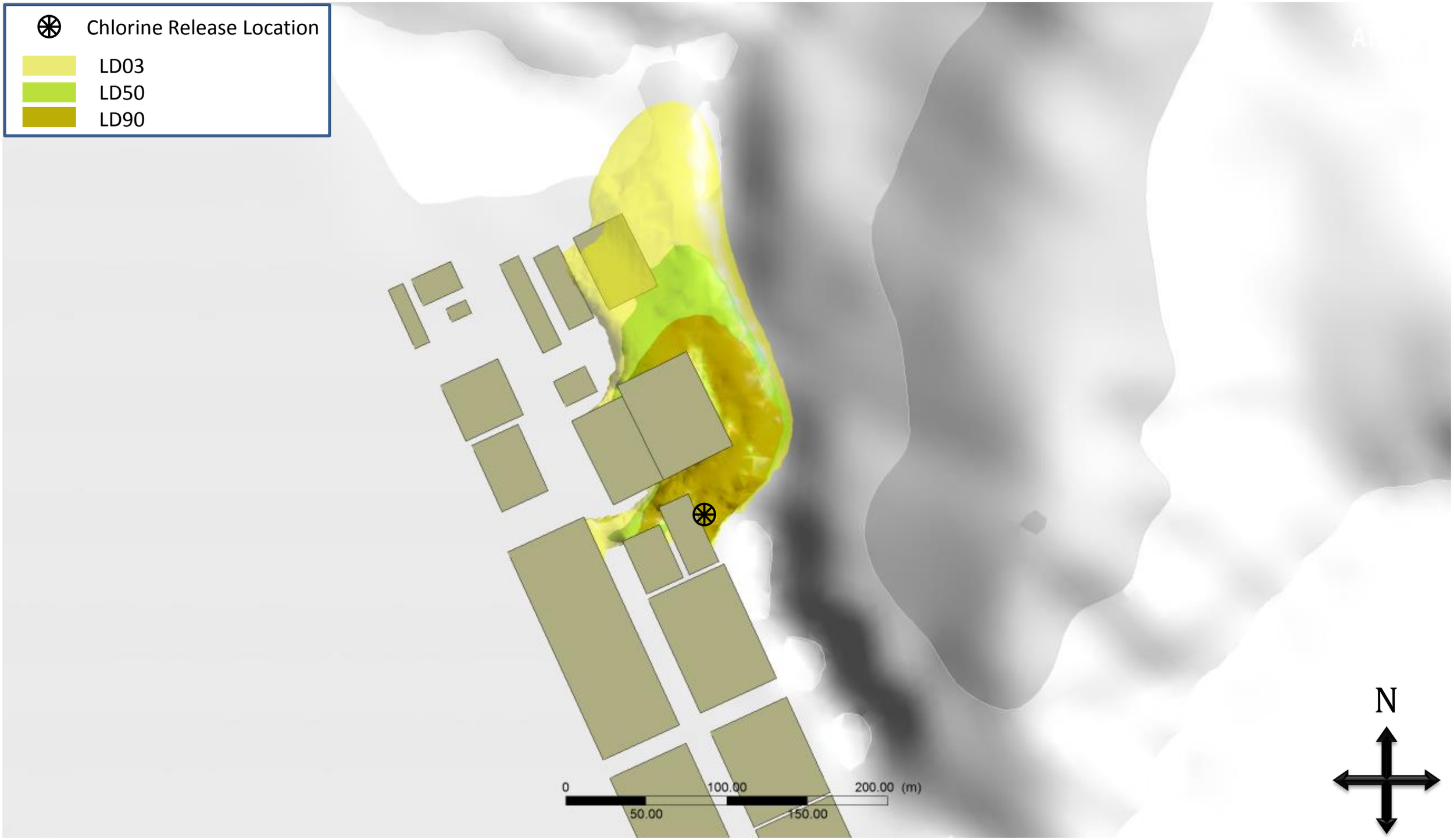

Figure 5 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: S
Weather Class: D2

ERM

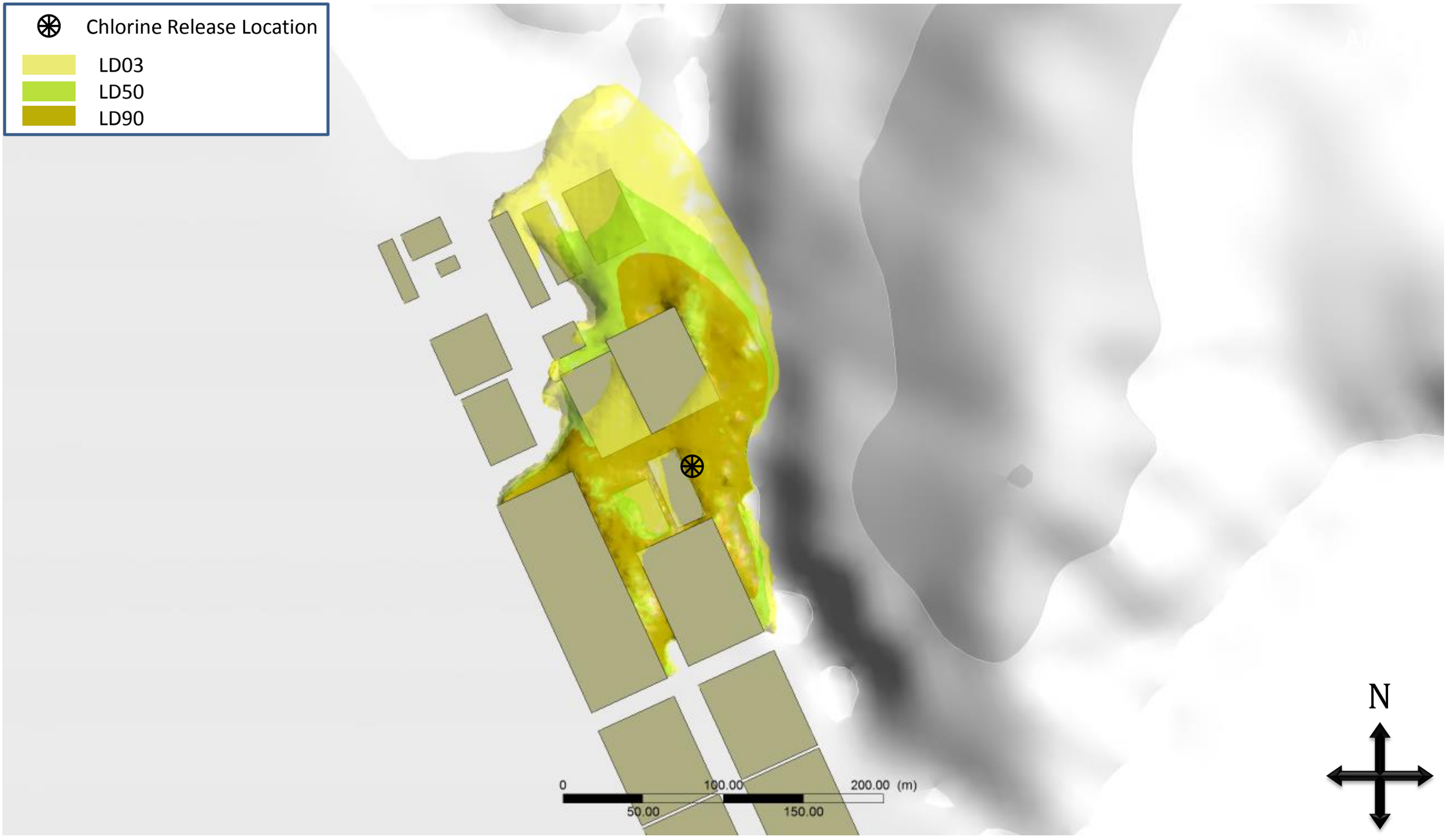

Figure 6 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: SW
Weather Class: D2

ERM

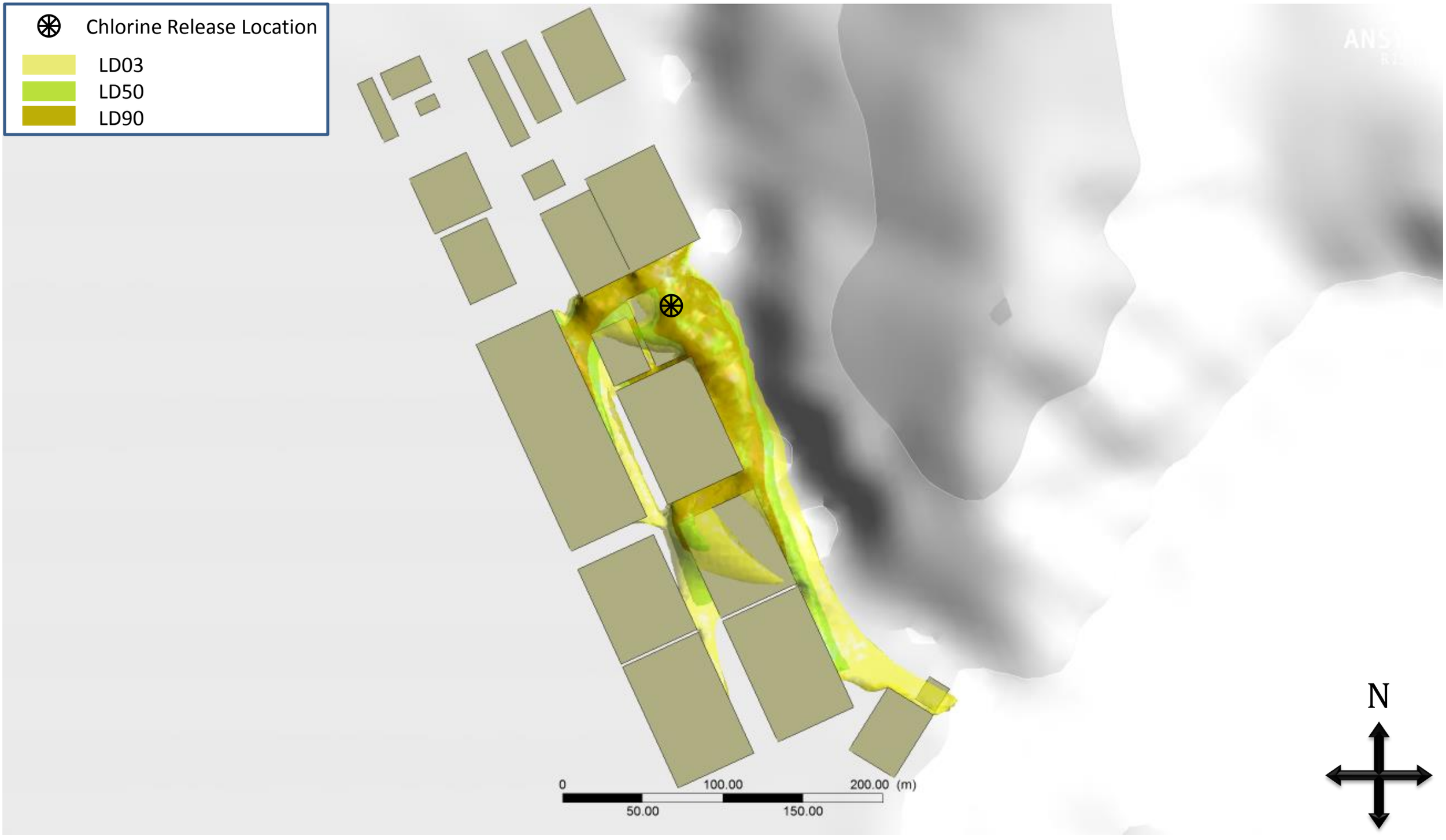

Figure 7 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: W
Weather Class: D2

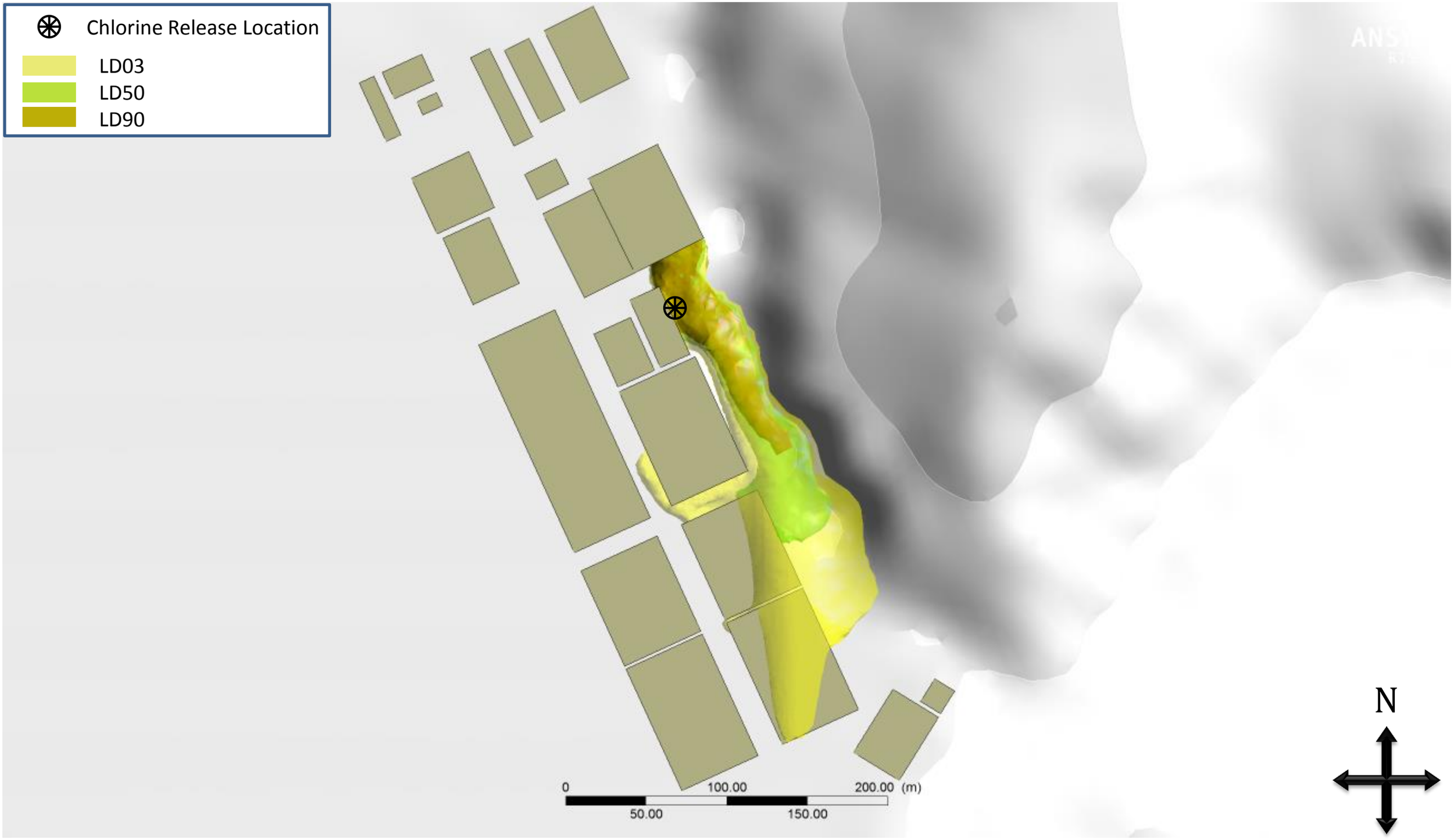

Figure 8 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: NW
Weather Class: D2

ERM

Figure 9 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: E
Weather Class: D4.5

ERM

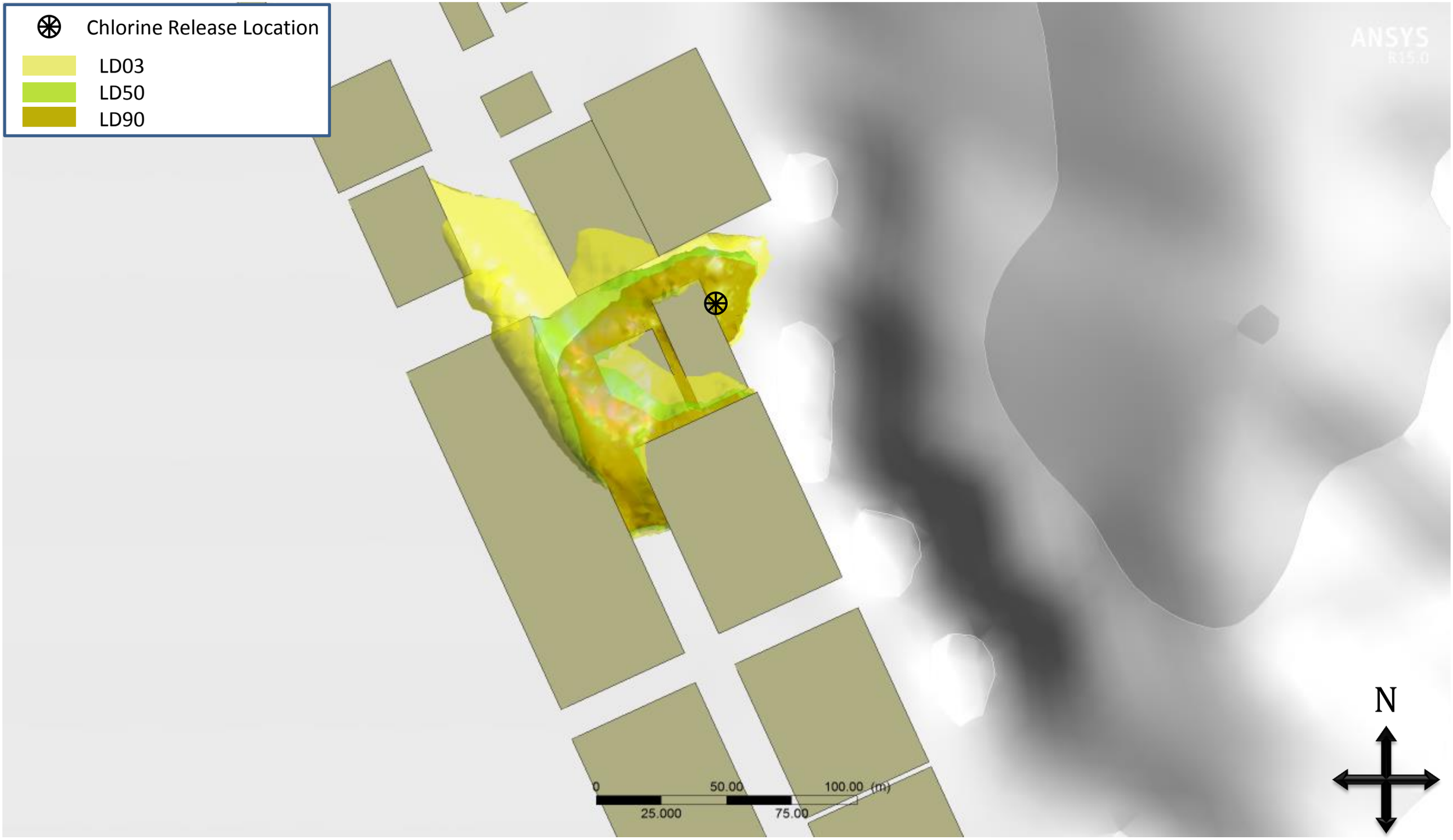

Figure 10 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: SE
Weather Class: D4.5

ERM

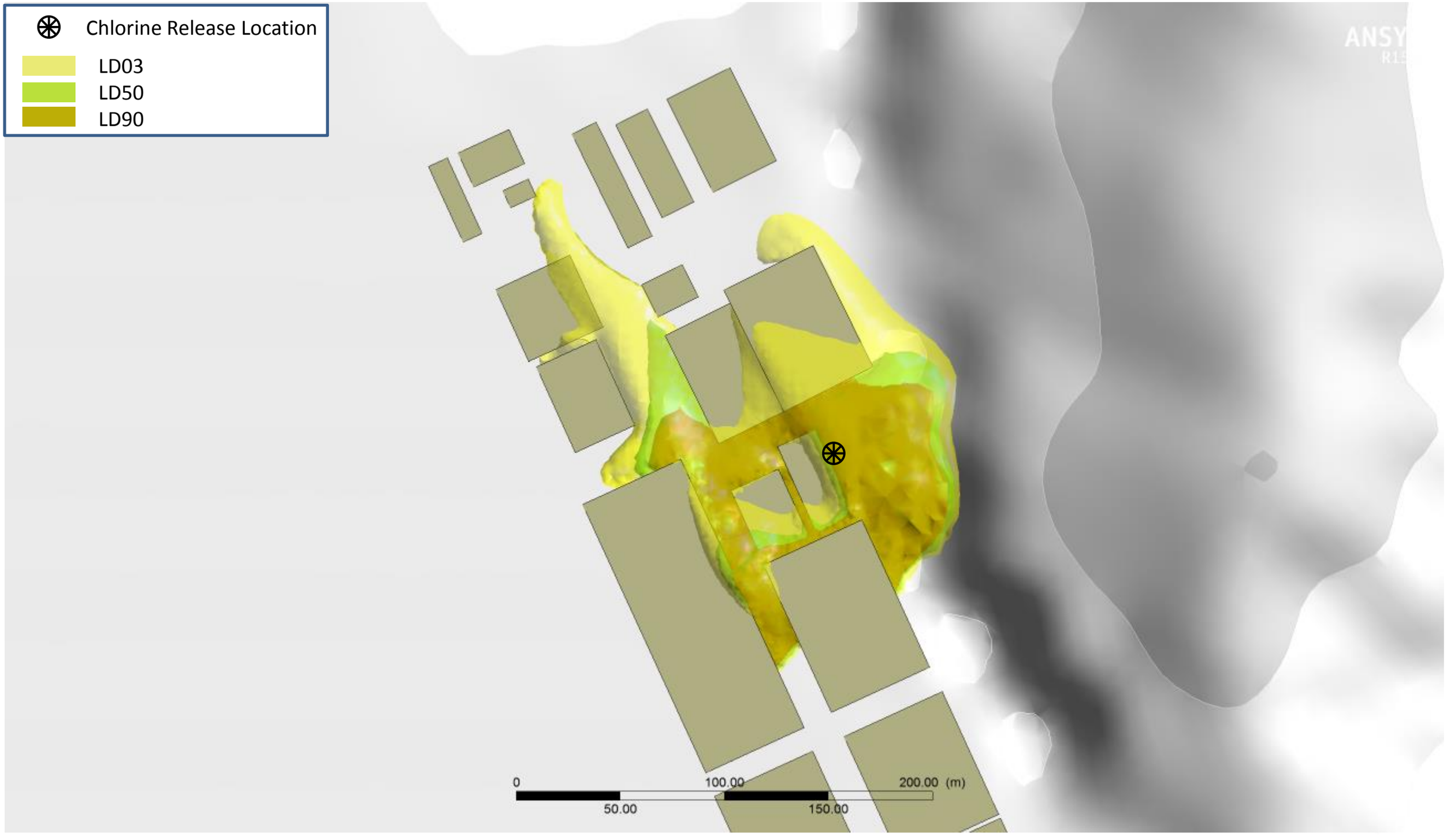

Figure 11 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: SE
Weather Class: B2

ERM

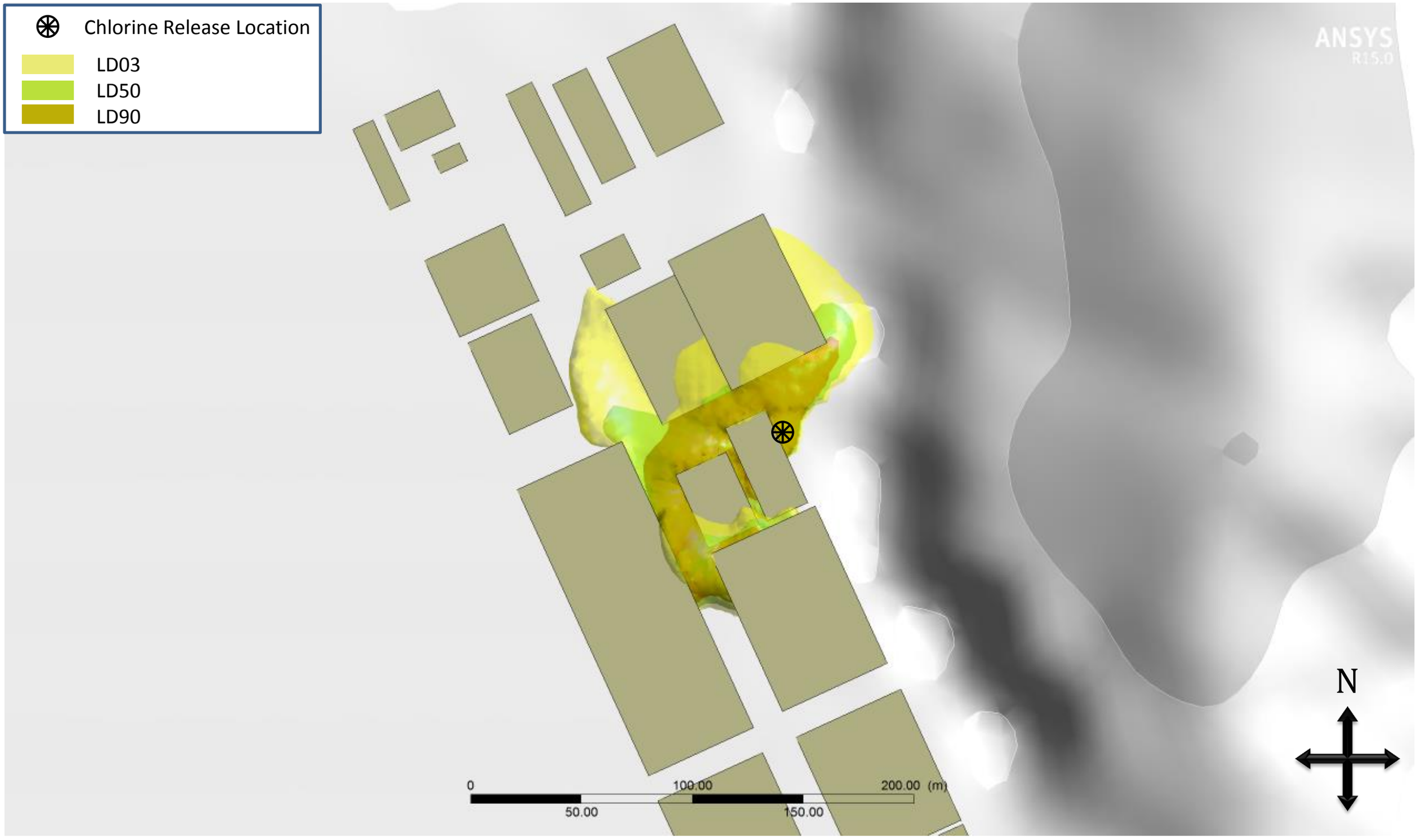

Figure 12 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1.4kg/s (Continuous)
Release Location: Access Road
Wind Direction: SE
Weather Class: F2

ERM

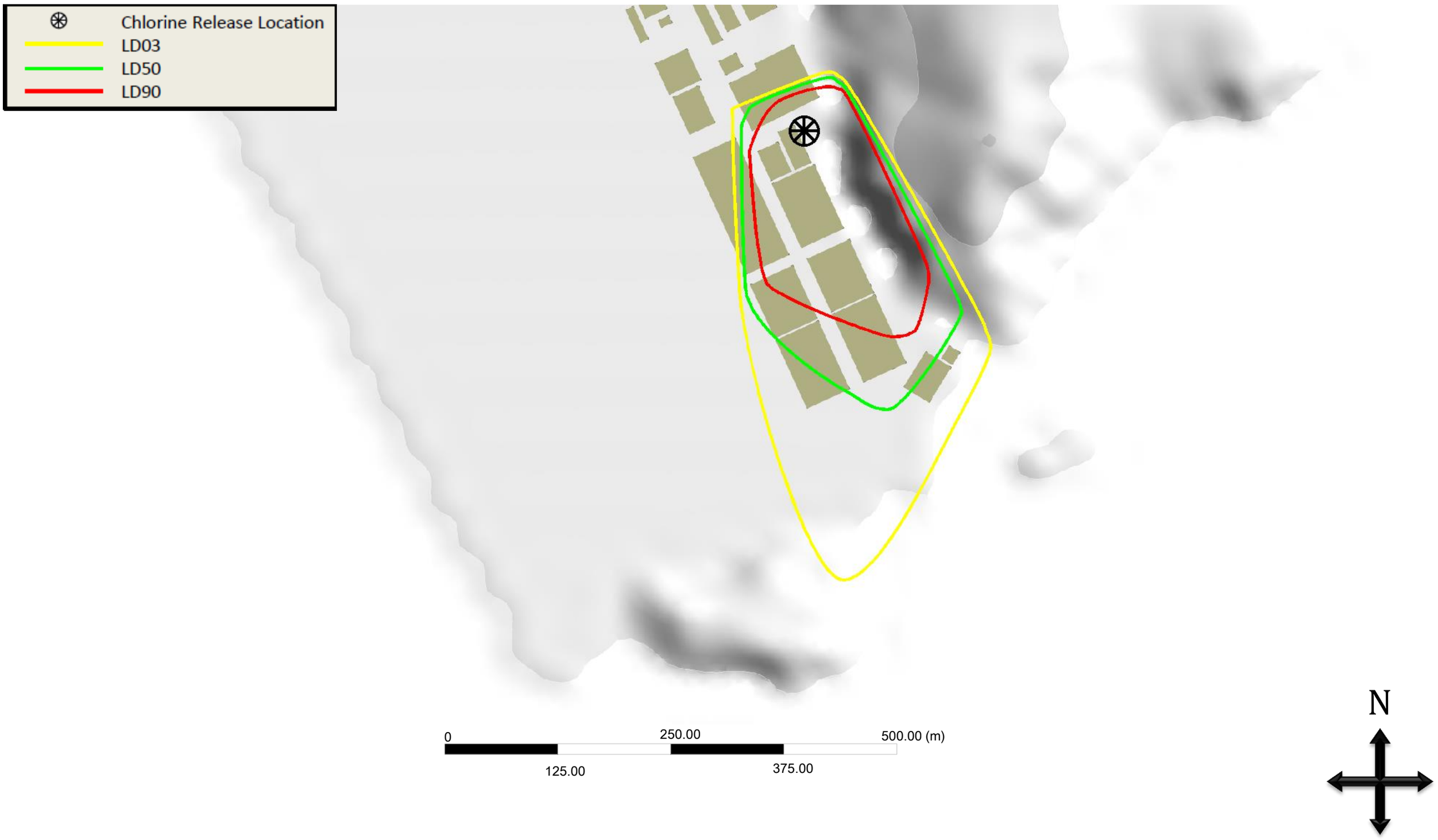

Figure 13 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: N
Weather Class: D2

ERM

Figure 14 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: NE
Weather Class: D2

ERM

Figure 15 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: E
Weather Class: D2

ERM

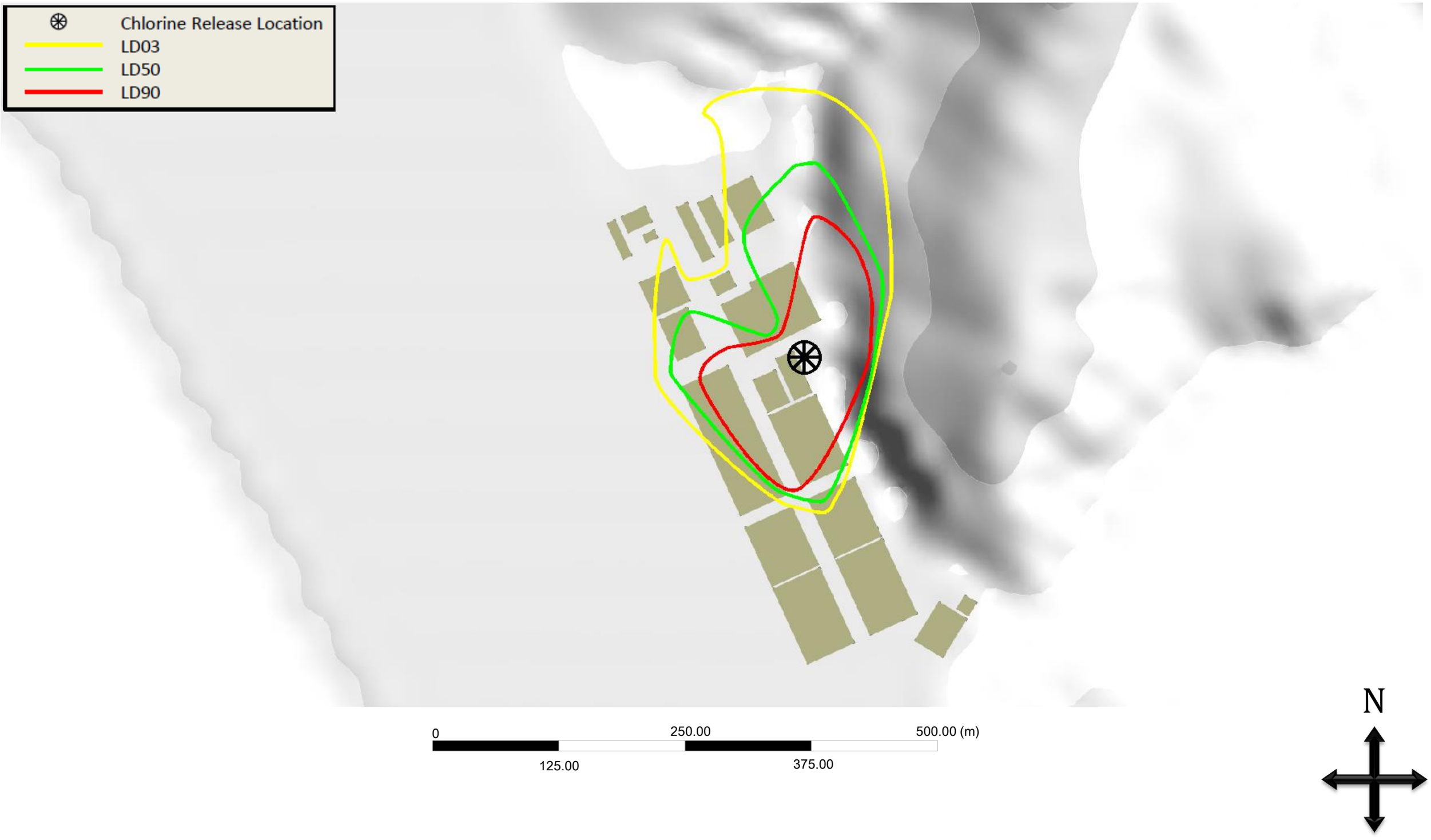

Figure 16 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: SE
Weather Class: D2

ERM

Figure 17 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: S
Weather Class: D2

ERM

Figure 18 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: SW
Weather Class: D2

ERM

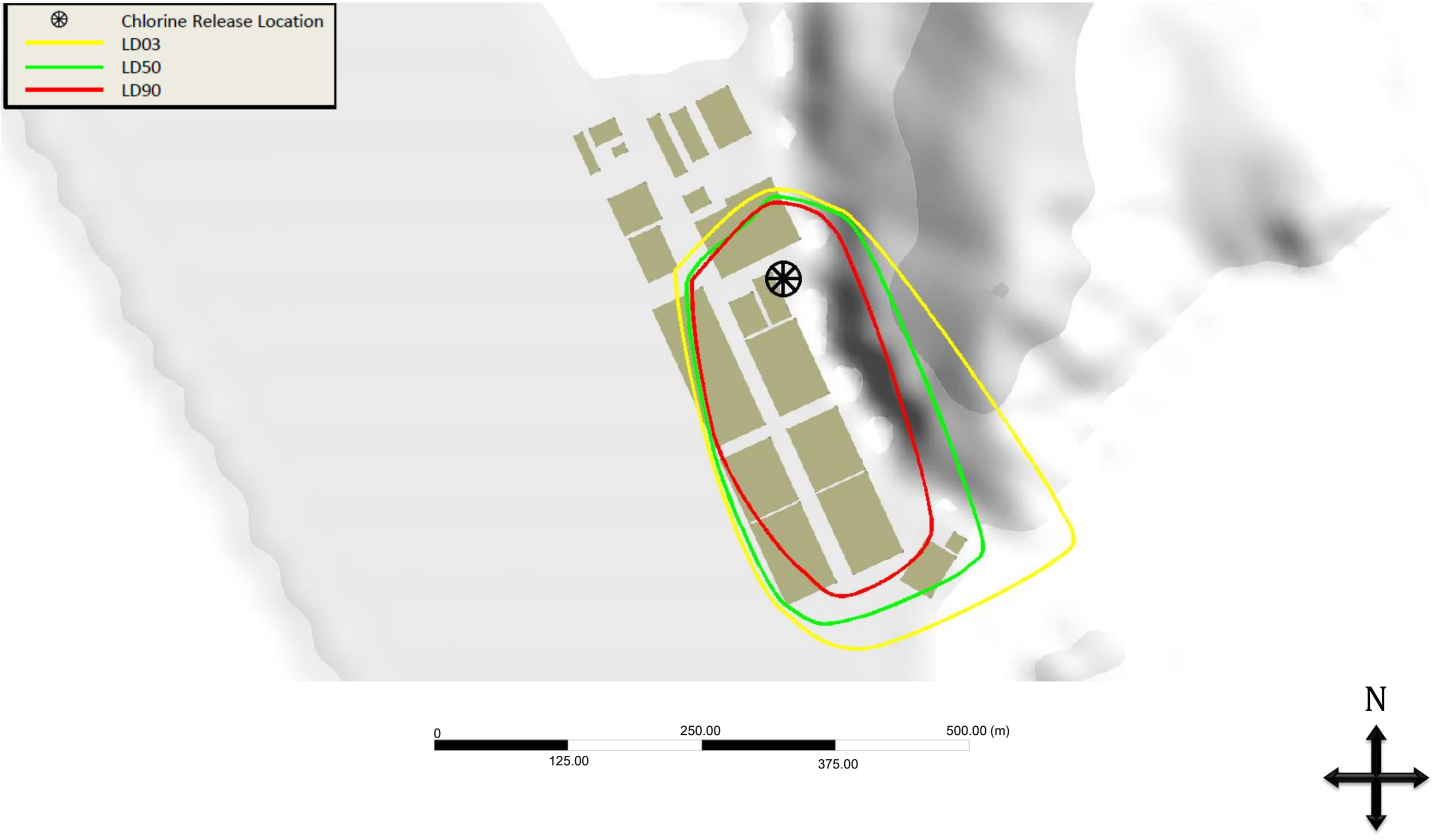

Figure 19 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: W
Weather Class: D2

ERM

Figure 20 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: NW
Weather Class: D2

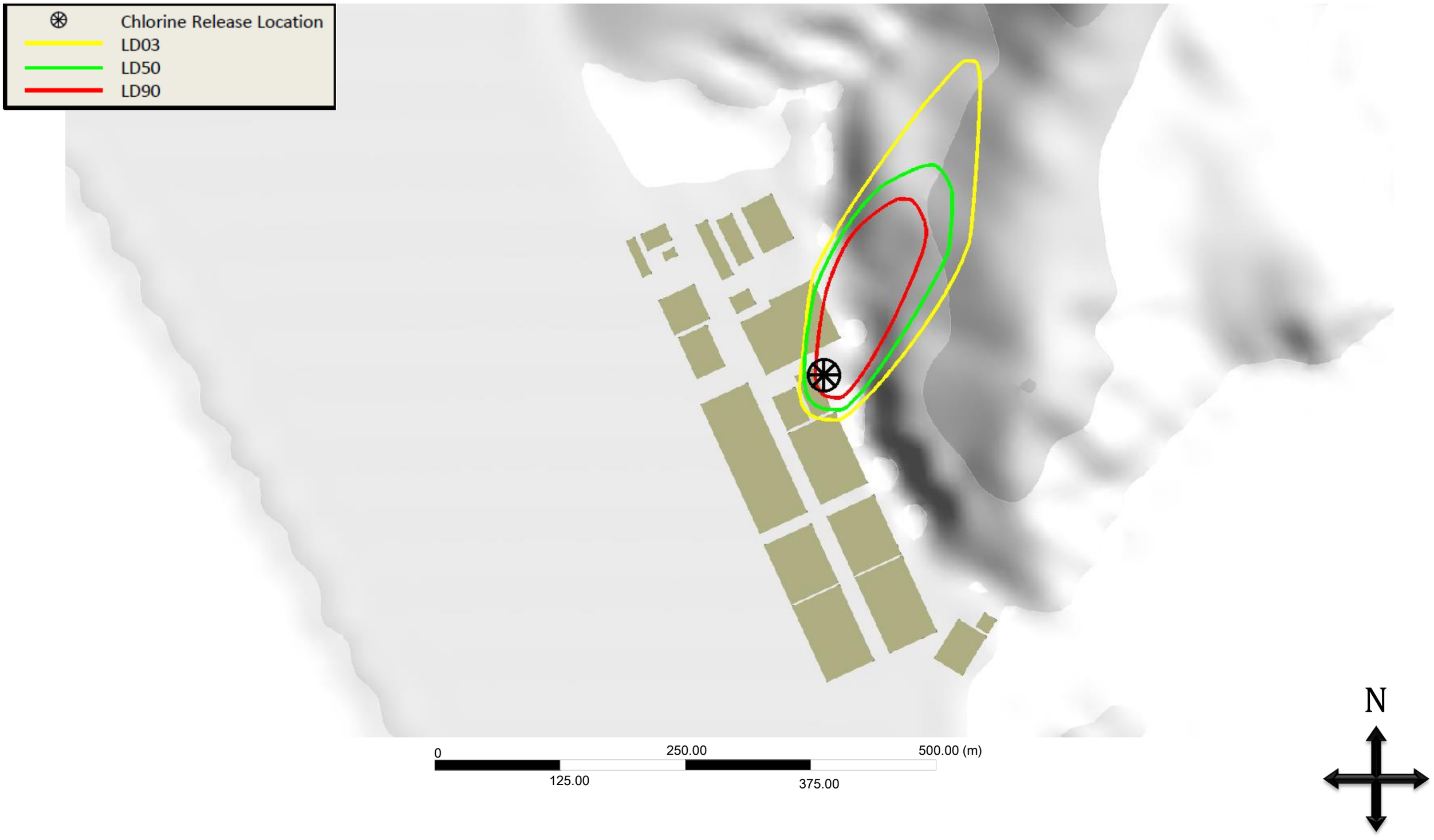

Figure 21 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: E
Weather Class: D4.5

ERM

Figure 22 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: SE
Weather Class: D4.5

ERM

Figure 23 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: SE
Weather Class: B2

ERM

Figure 24 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 1 Tonne (Instantaneous)
Release Location: Access Road
Wind Direction: SE
Weather Class: F2

ERM

Figure 25 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 57 kg (Instantaneous)
Release Location: Chlorination Store (Internal)
Wind Direction: N
Weather Class: D2

Figure 26 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 57 kg (Instantaneous)
Release Location: Chlorination Store (Internal)
Wind Direction: NE
Weather Class: D2

ERM

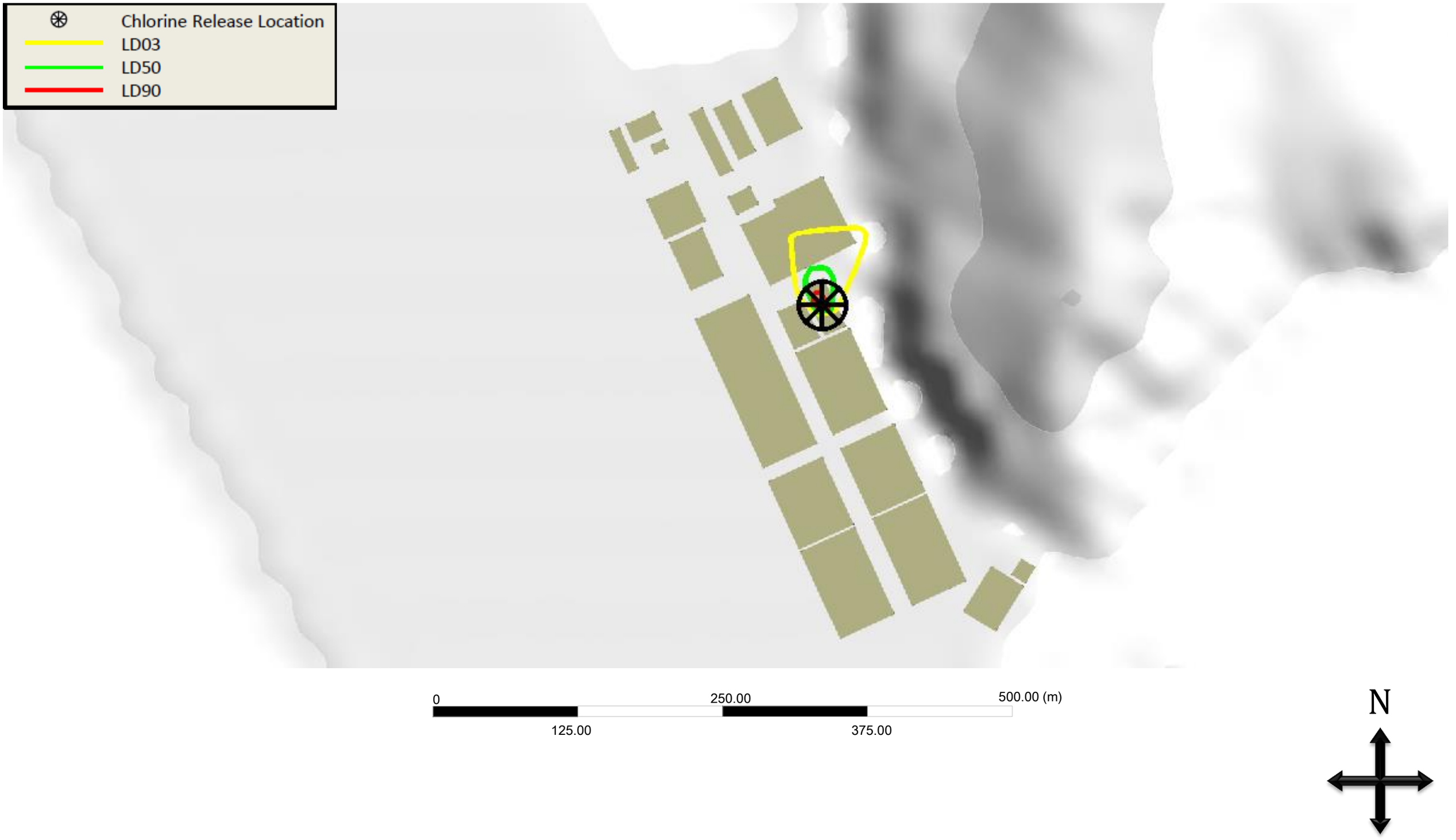

Figure 27 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 57 kg (Instantaneous)
Release Location: Chlorination Store (Internal)
Wind Direction: E
Weather Class: D2

ERM

Figure 28 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 57 kg (Instantaneous)
Release Location: Chlorination Store (Internal)
Wind Direction: SE
Weather Class: D2

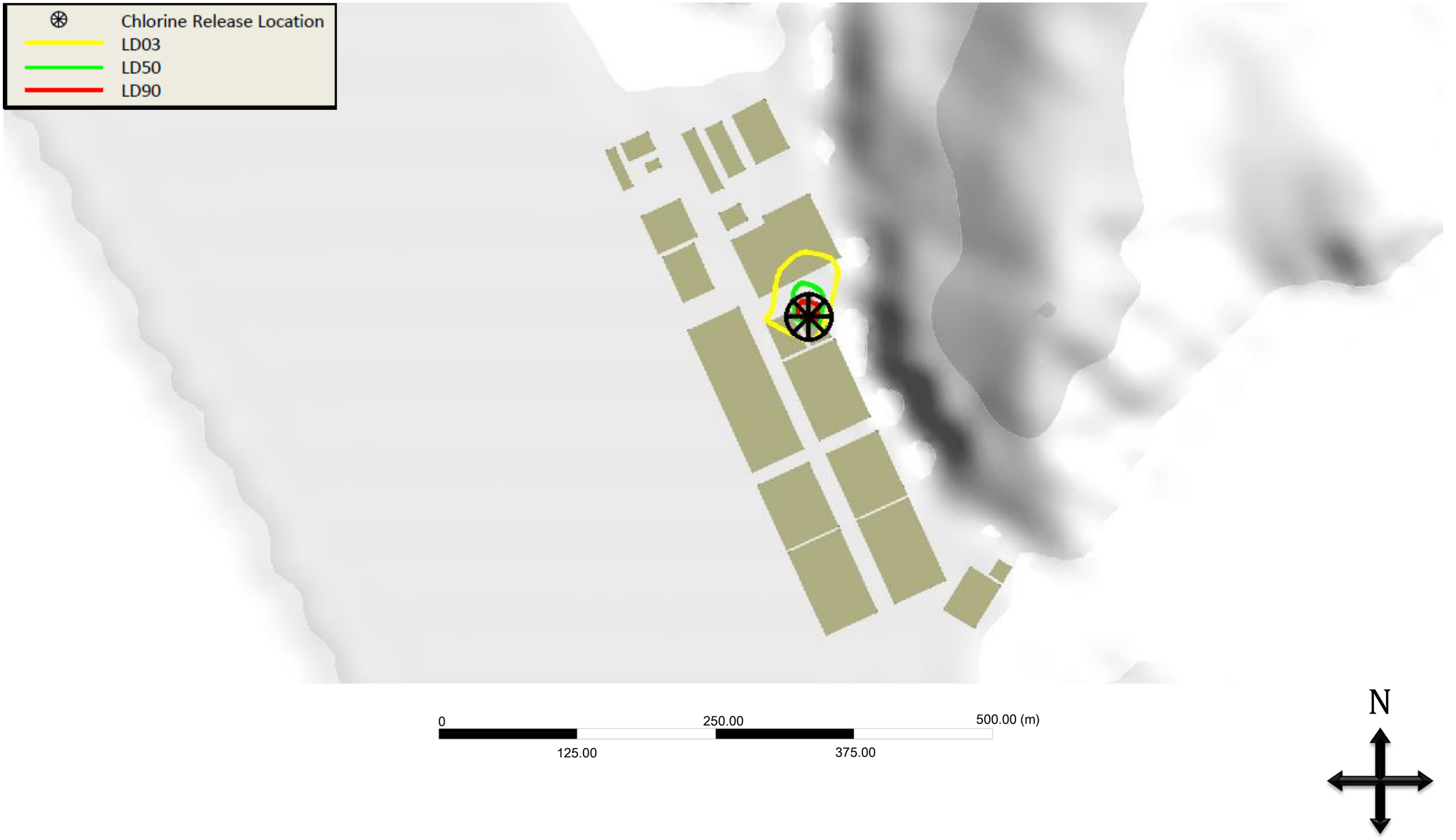

Figure 29 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 57 kg (Instantaneous)
Release Location: Chlorination Store (Internal)
Wind Direction: S
Weather Class: D2

ERM

Figure 30 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 57 kg (Instantaneous)
Release Location: Chlorination Store (Internal)
Wind Direction: SW
Weather Class: D2

ERM

Figure 31 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 57 kg (Instantaneous)
Release Location: Chlorination Store (Internal)
Wind Direction: W
Weather Class: D2

ERM

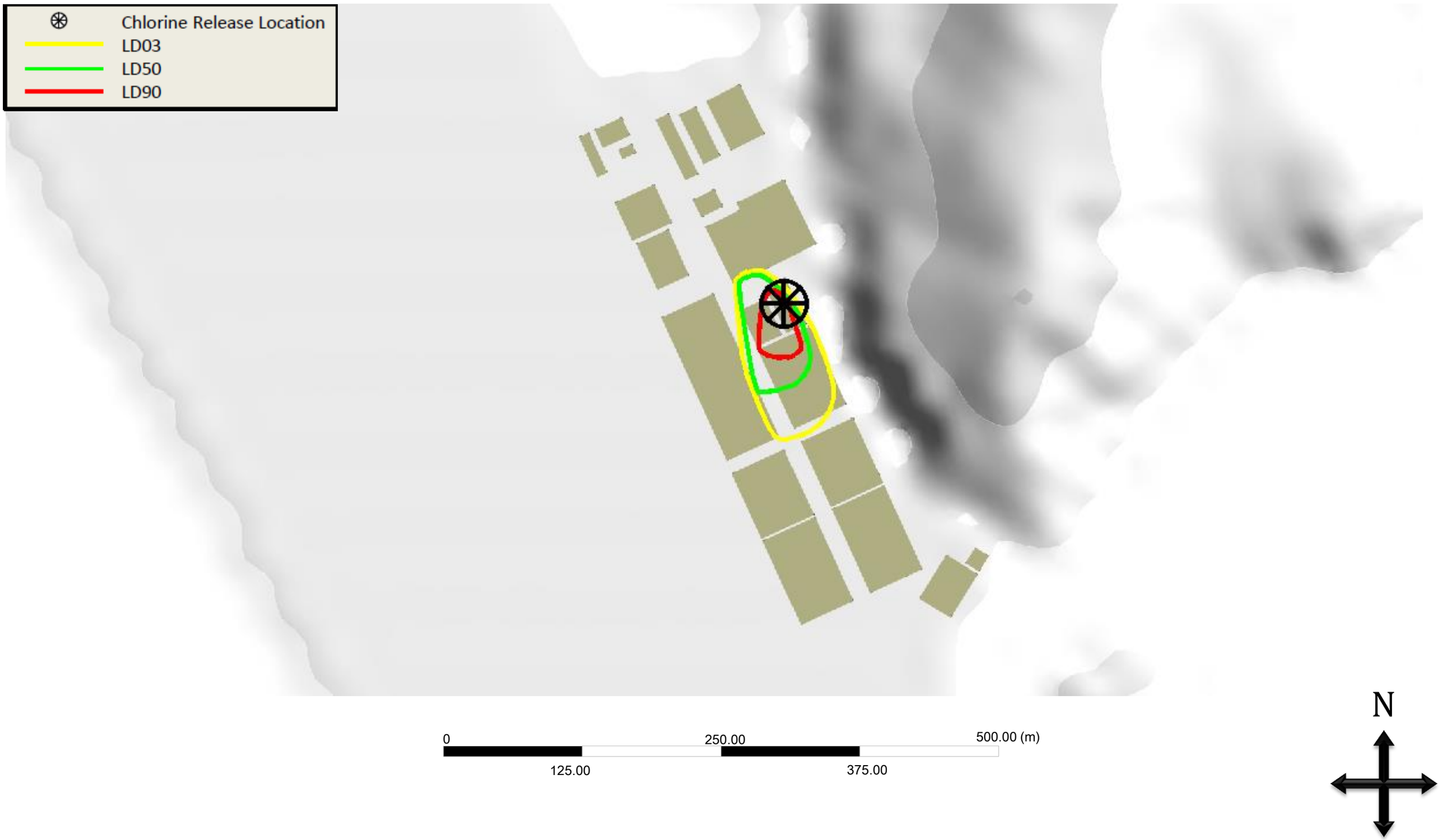

Figure 32 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 57 kg (Instantaneous)
Release Location: Chlorination Store (Internal)
Wind Direction: NW
Weather Class: D2

ERM

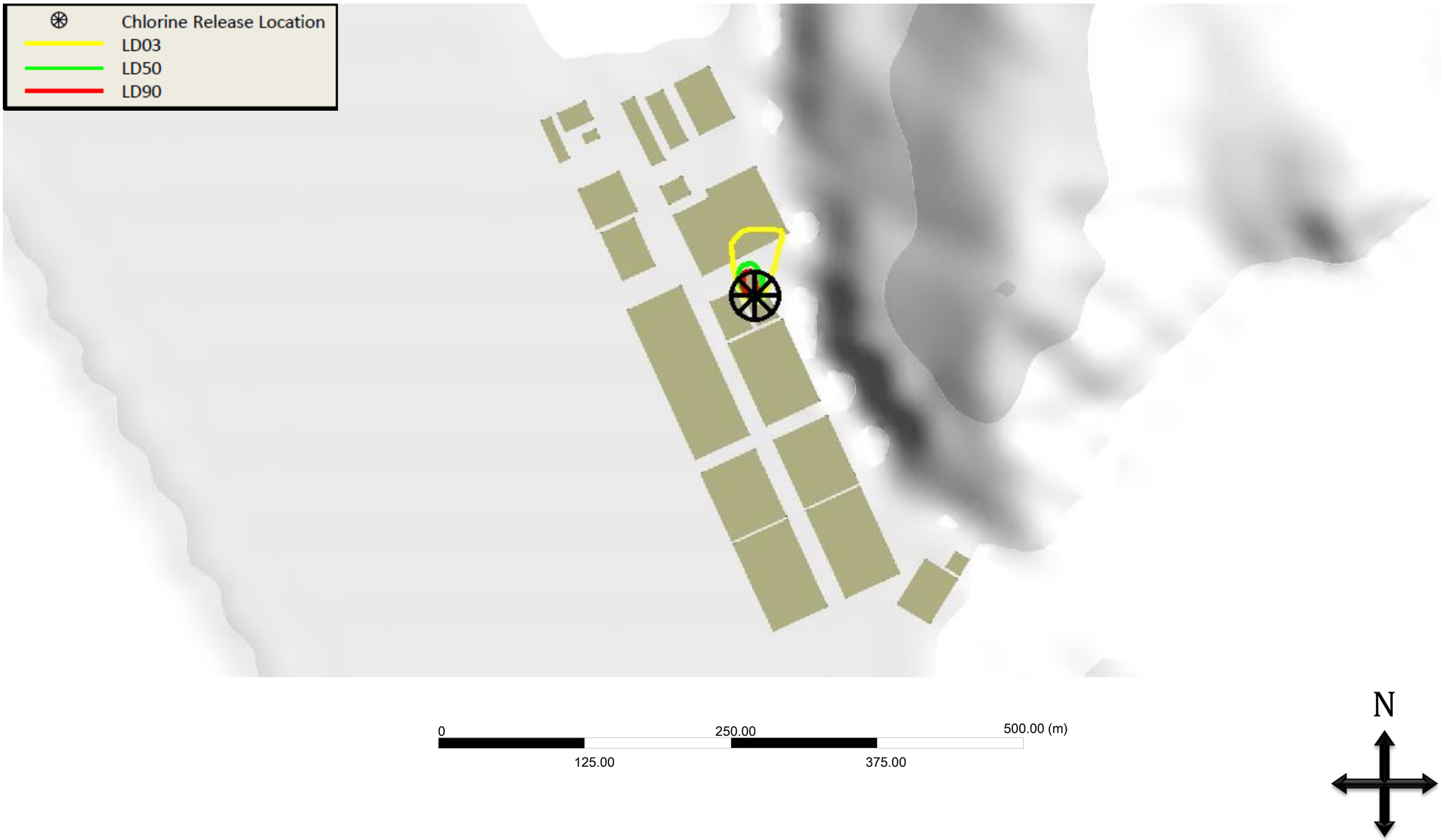

Figure 33 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 57 kg (Instantaneous)
Release Location: Chlorination Store (Internal)
Wind Direction: E
Weather Class: D4.5

ERM

Figure 34 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 57 kg (Instantaneous)
Release Location: Chlorination Store (Internal)
Wind Direction: SE
Weather Class: D4.5

ERM

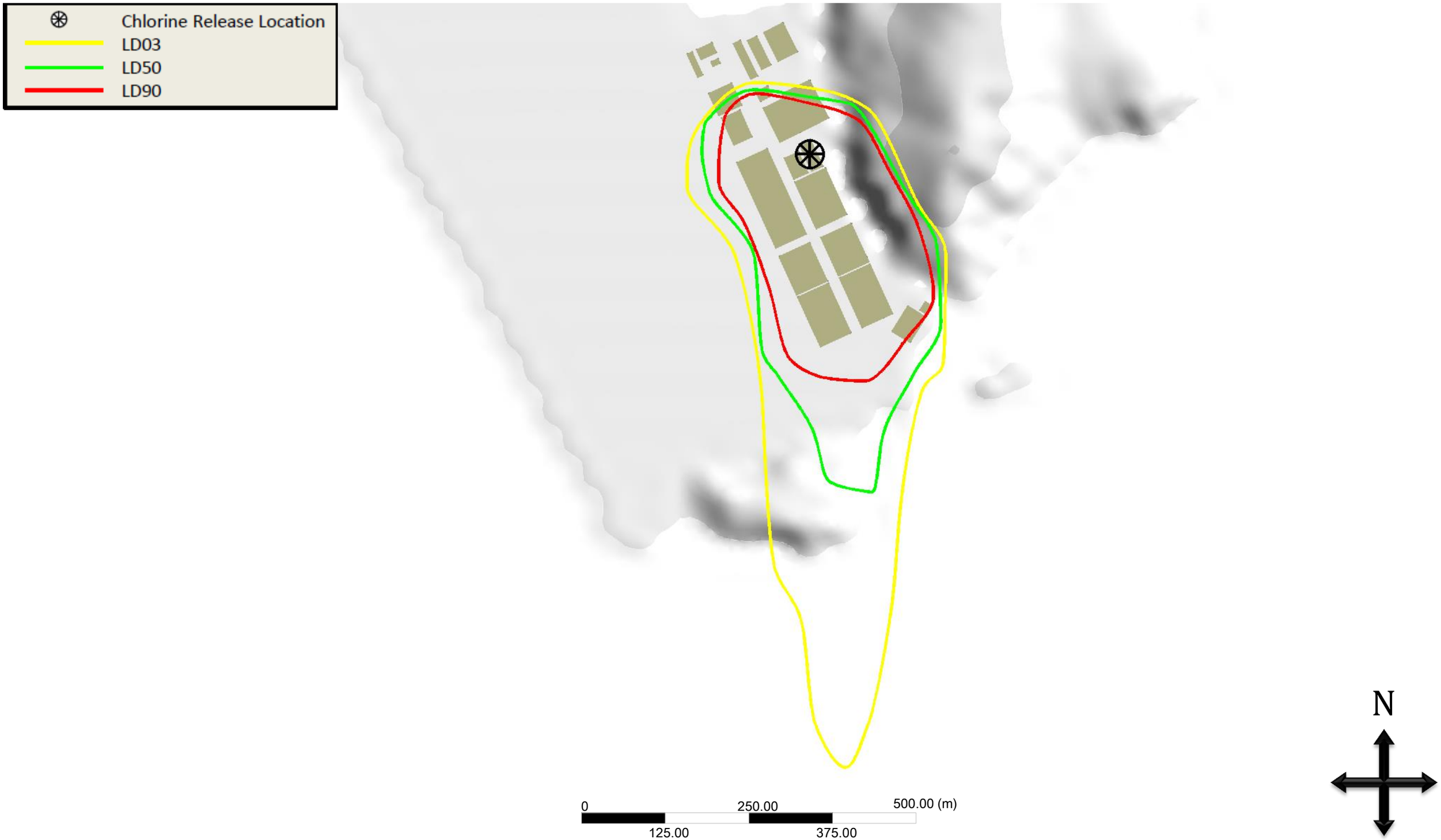

Figure 35 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 4.2 Tonnes (Instantaneous)
Release Location: Chlorination Store (External)
Wind Direction: N
Weather Class: D2

ERM

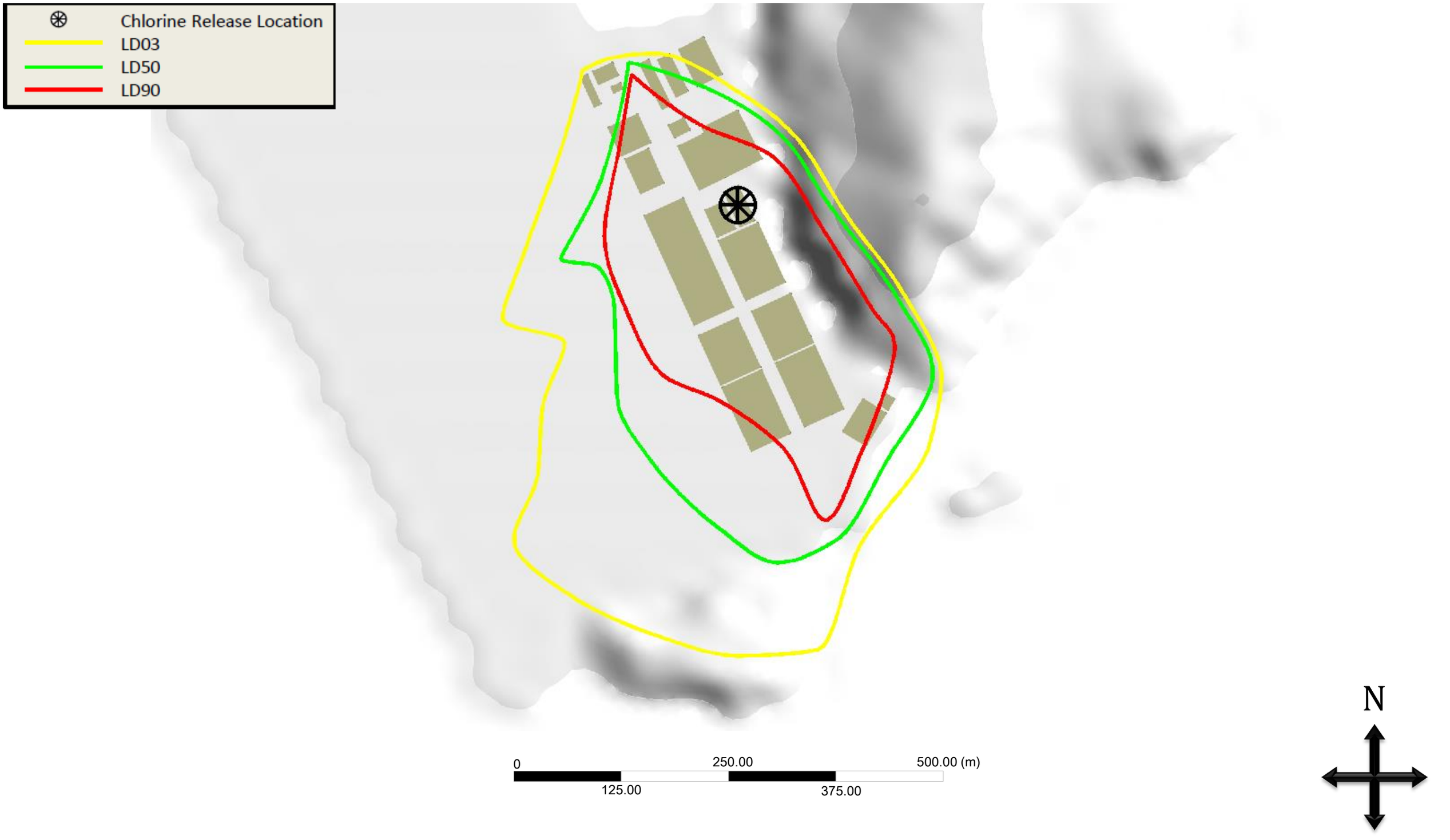

Figure 36 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 4.2 Tonnes (Instantaneous)
Release Location: Chlorination Store (External)
Wind Direction: NE
Weather Class: D2

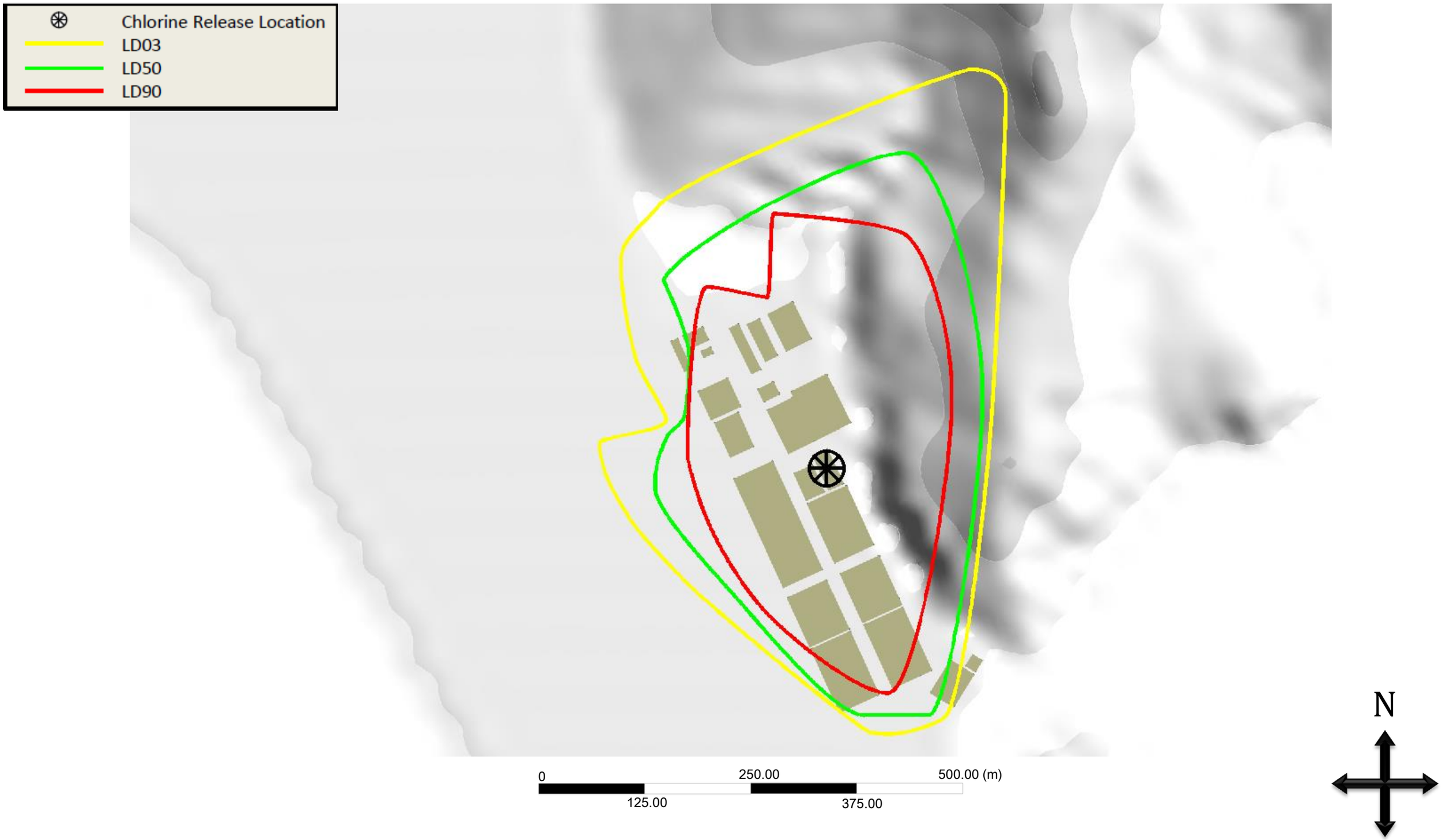

Figure 37 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 4.2 Tonnes (Instantaneous)
Release Location: Chlorination Store (External)
Wind Direction: E
Weather Class: D2

ERM

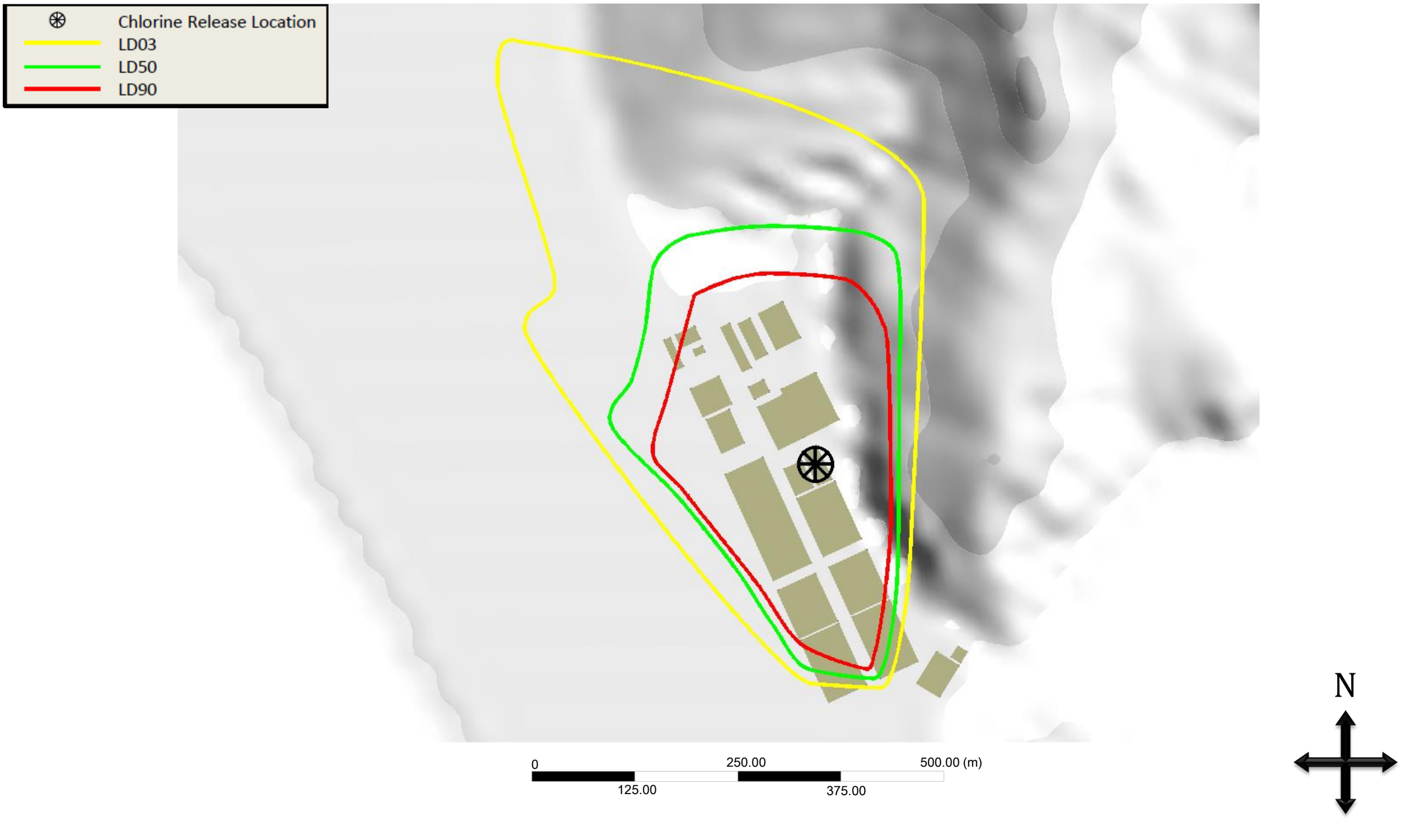

Figure 38 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 4.2 Tonnes (Instantaneous)
Release Location: Chlorination Store (External)
Wind Direction: SE
Weather Class: D2

ERM

Figure 39 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 4.2 Tonnes (Instantaneous)
Release Location: Chlorination Store (External)
Wind Direction: S
Weather Class: D2

ERM

Figure 40 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 4.2 Tonnes (Instantaneous)
Release Location: Chlorination Store (External)
Wind Direction: SW
Weather Class: D2

ERM

Figure 41 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 4.2 Tonnes (Instantaneous)
Release Location: Chlorination Store (External)
Wind Direction: W
Weather Class: D2

Figure 42 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 4.2 Tonnes (Instantaneous)
Release Location: Chlorination Store (External)
Wind Direction: NW
Weather Class: D2

ERM

Figure 43 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 4.2 Tonnes (Instantaneous)
Release Location: Chlorination Store (External)
Wind Direction: E
Weather Class: D4.5

ERM

Figure 44 CFD Modelling Results for the Proposed Desalination Plant at Tseung Kwan O – Lethal Dose Contours LD03, LD50 and LD90

Release Case: 4.2 Tonnes (Instantaneous)
Release Location: Chlorination Store (External)
Wind Direction: SE
Weather Class: D4.5