Consequence Data

The effects zone for each hazardous outcome is presented in terms of the maximum downwind extent. The consequence modelling results are presented in Table 8.8.1 to Table 8.8.4.

Table 8.8.1 Sample Consequence Results for Biogas Facility

Scenario	Consequence Result (m)		
	Flame Length	LFL	Fireball Radius
25mm Compressor Leak Booster	4	1	-
25mm Compressor Leak Siloxane Removal	4	1	-
25mm Vessel Leak Dehumidifier	4	1	-
25mm Vessel Leak Digester	4	1	-
25mm Vessel Leak Digester(E)	4	1	-
25mm Vessel Leak Digester(W)	4	1	-
25mm Vessel Leak Gas Holder (E)	4	1	-
25mm Vessel Leak Biogas Holder	4	1	-
25mm Vessel Leak H2S Removal	4	1	-
500mm Vessel Leak Dehumidifier	50	28	-
500mm Vessel Leak Digester(E)	51	32	-
500mm Vessel Leak Digester(W)	50	29	-
500mm Vessel Leak Gas Holder (E)	50	29	-
500mm Vessel Leak Siloxane Removal	50	28	-
500mm Vessel Rupture Biogas Holder	50	29	-
500mm Vessel Rupture Booster	50	28	-
500mm Vessel Rupture Digester	51	32	-
500mm Vessel Rupture H2S Removal	50	28	-
Catastrophic Rupture Digester(E)	-	24	25
Catastrophic Rupture Digester(W)	-	24	29
Catastrophic Rupture Gas Holder (E)	-	26	29
Catastrophic Rupture Biogas Holder	-	31	38
Catastrophic Rupture Dehumidifier	-	16	12
Catastrophic Rupture Digester	-	30	35
Catastrophic Rupture H2S Removal	-	16	12
Catastrophic Rupture Siloxane Removal	-	14	10

Note:
W: West Biogas System
E: East Biogas System

Table 8.8.2 Sample Consequence Results for TPGPP

Scenario	Consequence Result (m)			
	Flame Length	Pool Radius	LFL	Fireball Radius
10mm Leakage of Naphtha Importing and Tank Farm	15.8	-	18.8	-
25mm Leakage of Naphtha Importing and Tank Farm	34.2	-	18.8	-
75mm Leakage of Naphtha Importing and Tank Farm	85.8	38.9	18.8	-
Full bore Rupture of Naphtha Importing and Tank Farm	62.1	38.9	18.8	-
10mm Leakage of Naphtha Pumping and Distribution Headers to PTs	12.9	4.5	18.8	-
25mm Leakage of Naphtha Pumping and Distribution Headers to PTs	27.7	14.4	18.8	-
75mm Leakage of Naphtha Pumping and Distribution Headers to PTs	61.1	38.9	18.8	-
Full bore Rupture of Naphtha Pumping and Distribution Headers to PTs	64.1	38.9	18.8	-
10mm Leakage of Natural Gas Receiving Station and Distribution Headers to PTs	13.4	-	18.8	-
25mm Leakage of Natural Gas Receiving Station and Distribution Headers to PTs	30.0	-	18.8	-
75mm Leakage of Natural Gas Receiving Station and Distribution Headers to PTs	72.1	-	18.8	-
Full bore Rupture of Natural Gas Receiving Station and Distribution Headers to PTs	160.4	-	18.8	-
10mm Leakage of Phase II Production Units - PT5	8.0	-	18.8	-
25mm Leakage of Phase II Production Units - PT5	18.2	-	18.8	-
75mm Leakage of Phase II Production Units - PT5	46.8	-	18.8	-
Full bore Rupture of Phase II Production Units - PT5	57.3	-	18.8	-
Catastrophic Rupture of Phase II Production Units - PT5	-	-	18.8	23.1
10mm Leakage of Phase I Production Units - PT2	8.0	-	18.8	-
25mm Leakage of Phase I Production Units - PT2	18.2	-	18.8	-

Scenario	Consequence Result (m)			
	Flame Length	Pool Radius	LFL	Fireball Radius
75mm Leakage of Phase I Production Units - PT2	46.8	-	18.8	-
Full bore Rupture of Phase I Production Units - PT2	57.3	-	18.8	-
Catastrophic Rupture of Phase I Production Units - PT2	-	-	18.8	23.1
10mm Leakage of Phase I Production Units - PT3	8.0	-	18.8	-
25mm Leakage of Phase I Production Units - PT3	18.2	-	18.8	-
75mm Leakage of Phase I Production Units - PT3	46.8	-	18.8	-
Full bore Rupture of Phase I Production Units - PT3	57.3	-	18.8	-
Catastrophic Rupture of Phase I Production Units - PT3	-	-	18.8	23.1
10mm Leakage of Phase I Production Units - PT4	8.0	-	18.8	-
25mm Leakage of Phase I Production Units - PT4	18.2	-	18.8	-
75mm Leakage of Phase I Production Units - PT4	46.8	-	18.8	-
Full bore Rupture of Phase I Production Units - PT4	57.3	-	18.8	-
Catastrophic Rupture of Phase I Production Units - PT4	-	-	18.8	23.1
10mm Leakage of Phase II Production Units - PT5	8.0	-	18.8	-
25mm Leakage of Phase II Production Units - PT5	18.2	-	18.8	-
75mm Leakage of Phase II Production Units - PT5	46.8	-	18.8	-
Full bore Rupture of Phase II Production Units - PT5	57.3	-	18.8	-
Catastrophic Rupture of Phase II Production Units - PT5	-	-	18.8	23.1
10mm Leakage of Phase II Production Units - PT6	8.0	-	18.8	-
25mm Leakage of Phase II Production Units - PT6	18.2	-	18.8	-
75mm Leakage of Phase II Production Units - PT6	46.8	-	18.8	-
Full bore Rupture of Phase II Production Units - PT6	57.3	-	18.8	-
Catastrophic Rupture of Phase II Production Units - PT6	-	-	18.8	23.1
10mm Leakage of Phase II Production Units - PT7	8.0	-	18.8	-
25mm Leakage of Phase II Production Units - PT7	18.2	-	18.8	-
75mm Leakage of Phase II Production Units - PT7	46.8	-	18.8	-

Scenario	Consequence Result (m)			
	Flame Length	Pool Radius	LFL	Fireball Radius
Full bore Rupture of Phase II Production Units - PT7	57.3	-	18.8	-
Catastrophic Rupture of Phase II Production Units - PT7	-	-	18.8	23.1
10mm Leakage of Phase II Production Units - PT8	8.0	-	18.8	-
25mm Leakage of Phase II Production Units - PT8	18.2	-	18.8	-
75mm Leakage of Phase II Production Units - PT8	46.8	-	18.8	-
Full bore Rupture of Phase II Production Units - PT8	57.3	-	18.8	-
Catastrophic Rupture of Phase II Production Units - PT8	-	-	18.8	23.1
10mm Leakage of Towngas Export and Others	8.1	-	18.8	-
25mm Leakage of Towngas Export and Others	17.9	-	18.8	-
75mm Leakage of Towngas Export and Others	45.6	-	18.8	-
Full bore Rupture of Towngas Export and Others	158.5	-	18.8	-

Table 8.8.3 Sample Consequence Results for LPG Storage Facility

Scenario	Consequence Result (m)			
	Flame Length	LFL	Fireball Radius	BLEVE (0.3 Bar)
25mm Liquid Leak Filling Storage Tanker	32	59	-	-
25mm Liquid Leak Flexible Hose	32	59	-	-
25mm Liquid Leak Line to Vaporiser	32	59	-	-
25mm Liquid Leak LPG Road Tanker	32	59	-	-
25mm Liquid Leak Storage Vessel	32	59	-	-
50mm Liquid Leak Road Tanker	58	136	-	-
50mm Vapour Leak Road Tanker	22	15	-	-
Fullbore Rupture Filling Storage Tanker	58	136	-	-
Fullbore Rupture Flexible Hose	58	136	-	-
Fullbore Rupture Line to Vaporiser	58	136	-	-
Catastrophic Rupture LPG Road Tanker	-	226	58	-
Catastrophic Rupture Storage Vessel	-	173	46	-
Catastrophic Rupture Vaporiser	-	327	81	-
BLEVE Road Tanker	-	-	-	62

Table 8.8.4 Sample Consequence Results for Linde HKO Limited

Scenario	Consequence Result (m)			
	Flame Length	LFL	Fireball Radius	BLEVE (0.3 Bar)
25mm gas leak of Acetylene Cylinder	21	17	-	-
25mm gas leak of Hydrogen Cylinder	40	35	-	-
Catastrophic Rupture of Acetylene Cylinder	-	4	6	-
Catastrophic Rupture of Hydrogen Cylinder	-	22	16	-
Multiple BLEVE of Acetylene Tank	-	-	-	13
Multiple BLEVE of Hydrogen Tank	-	-	-	26
BLEVE of Oxygen Tank	-	-	-	96
BLEVE of Nitrogen Tank	-	-	-	98
BLEVE of Argon Tank	-	-	-	56
BLEVE of Carbon Dioxide Tank	-	-	-	52