

Project: Penrhys Phase 1A	Date: 18/06/2025			
	Designed by: smparry	Checked by:	Approved By:	
Report Title: Rainfall Analysis Criteria	Company Address: Stantec			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall		
FEH		Type: FEH
Site Location	GB 300192 194699 ST 00192 94699	
Rainfall Version	2022	
Summer	☒	
Winter	☒	

Return Period

Return Period (years)	Increase Rainfall (%)
2.0	0.000
30.0	0.000
100.0	0.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60

Project: Penrhys Phase 1A	Date: 18/06/2025		
	Designed by: smparry	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Stantec		



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
RED3	FEH: 2 years: +0 %: 15 mins: Summer	0.05	6.2	2.705
RED6	FEH: 2 years: +0 %: 15 mins: Summer	0.05	6.2	2.705
RED4	FEH: 2 years: +0 %: 15 mins: Summer	0.05	6.2	2.705
RED5	FEH: 2 years: +0 %: 15 mins: Summer	0.04	5.4	2.378
RED7	FEH: 2 years: +0 %: 15 mins: Summer	0.04	5.5	2.381
RED2	FEH: 2 years: +0 %: 15 mins: Summer	0.05	6.2	2.705
RED1	FEH: 2 years: +0 %: 15 mins: Summer	0.05	6.2	2.705
RED14	FEH: 2 years: +0 %: 15 mins: Summer	0.05	6.2	2.705
RED8	FEH: 2 years: +0 %: 15 mins: Summer	0.04	5.5	2.399
RED9	FEH: 2 years: +0 %: 15 mins: Summer	0.04	5.5	2.381
RED11	FEH: 2 years: +0 %: 15 mins: Summer	0.04	5.5	2.381
RED10	FEH: 2 years: +0 %: 15 mins: Summer	0.04	5.5	2.381
IPM13	FEH: 2 years: +0 %: 15 mins: Winter	0.02	2.2	1.024
RED12	FEH: 2 years: +0 %: 15 mins: Winter	0.01	1.5	0.716
RED13	FEH: 2 years: +0 %: 15 mins: Summer	0.03	4.3	1.875
IPM8	FEH: 2 years: +0 %: 15 mins: Winter	0.04	5.6	2.588
IPM6	FEH: 2 years: +0 %: 15 mins: Summer	0.02	3.1	1.369
IPM4	FEH: 2 years: +0 %: 15 mins: Winter	0.04	5.8	2.702
IPM5	FEH: 2 years: +0 %: 15 mins: Winter	0.04	5.8	2.687
IPM2	FEH: 2 years: +0 %: 15 mins: Winter	0.04	5.7	2.672

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase		Company Address: Stantec			

IPM1	FEH: 2 years: +0 %: 15 mins: Winter	0.03	4.1	1.899
IPM3	FEH: 2 years: +0 %: 15 mins: Winter	0.04	5.7	2.669
IPM10	FEH: 2 years: +0 %: 15 mins: Winter	0.03	4.0	1.851
IPM7	FEH: 2 years: +0 %: 15 mins: Winter	0.01	1.5	0.719
IPM9	FEH: 2 years: +0 %: 15 mins: Winter	0.04	5.7	2.672
IPM12	FEH: 2 years: +0 %: 15 mins: Winter	0.01	1.1	0.512
ROAD4	FEH: 2 years: +0 %: 15 mins: Summer	0.03	4.3	1.878
ROAD3	FEH: 2 years: +0 %: 15 mins: Summer	0.04	6.7	2.917
ROAD11	FEH: 2 years: +0 %: 15 mins: Summer	0.01	1.0	0.449
ROAD6	FEH: 2 years: +0 %: 15 mins: Summer	0.05	8.6	3.774
ROAD5	FEH: 2 years: +0 %: 15 mins: Summer	0.02	3.2	1.381
ROAD1	FEH: 2 years: +0 %: 15 mins: Summer	0.31	50.6	22.119
ROAD9	FEH: 2 years: +0 %: 15 mins: Summer	0.02	2.8	1.231
ROAD8	FEH: 2 years: +0 %: 15 mins: Summer	0.01	1.5	0.668
ROAD7	FEH: 2 years: +0 %: 15 mins: Summer	0.02	3.0	1.321
IMP14	FEH: 2 years: +0 %: 15 mins: Summer	0.01	1.5	0.659
IMP11	FEH: 2 years: +0 %: 15 mins: Summer	0.01	1.3	0.569
IMP11OUT	FEH: 2 years: +0 %: 15 mins: Summer	0.03	4.2	1.818
IPM12OUT	FEH: 2 years: +0 %: 15 mins: Summer	0.03	4.4	1.932
IMP15OUT	FEH: 2 years: +0 %: 15 mins: Summer	0.04	5.5	2.390
IMPCHUR CH	FEH: 2 years: +0 %: 15 mins: Summer	0.04	4.9	2.138
IMP14OUT	FEH: 2 years: +0 %: 15 mins: Summer	0.03	4.1	1.773
IMP16OUT	FEH: 2 years: +0 %: 15 mins: Summer	0.04	5.6	2.450

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase		Company Address: Stantec			

IMP13OUT	FEH: 2 years: +0 %: 15 mins: Summer	0.03	3.5	1.542
IMPRD6	FEH: 2 years: +0 %: 15 mins: Summer	0.06	9.2	4.034
IMPRD7	FEH: 2 years: +0 %: 15 mins: Summer	0.04	6.2	2.714
IPM10OUT	FEH: 2 years: +0 %: 15 mins: Summer	0.01	1.6	0.716
ROAD22	FEH: 2 years: +0 %: 15 mins: Summer	0.05	6.2	2.723
ROAD23	FEH: 2 years: +0 %: 15 mins: Summer	0.06	7.7	3.348
ROAD21	FEH: 2 years: +0 %: 15 mins: Summer	0.06	8.6	3.738
IMPRD1	FEH: 2 years: +0 %: 15 mins: Summer	0.05	8.6	3.774
IMPRD2	FEH: 2 years: +0 %: 15 mins: Summer	0.03	4.2	1.818
IMPRD3	FEH: 2 years: +0 %: 15 mins: Summer	0.03	4.5	1.962
IMPRD4	FEH: 2 years: +0 %: 15 mins: Summer	0.03	5.3	2.324

Project: Penrhys Phase 1A	Date: 18/06/2025		
	Designed by: smparry	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Stantec		



FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
RED3	FEH: 30 years: +0 %: 15 mins: Summer	0.05	13.1	5.725
RED6	FEH: 30 years: +0 %: 15 mins: Summer	0.05	13.1	5.725
RED4	FEH: 30 years: +0 %: 15 mins: Summer	0.05	13.1	5.728
RED5	FEH: 30 years: +0 %: 15 mins: Summer	0.04	11.5	5.033
RED7	FEH: 30 years: +0 %: 15 mins: Summer	0.04	11.6	5.045
RED2	FEH: 30 years: +0 %: 15 mins: Summer	0.05	13.1	5.725
RED1	FEH: 30 years: +0 %: 15 mins: Summer	0.05	13.1	5.725
RED14	FEH: 30 years: +0 %: 15 mins: Summer	0.05	13.1	5.725
RED8	FEH: 30 years: +0 %: 15 mins: Summer	0.04	11.7	5.087
RED9	FEH: 30 years: +0 %: 15 mins: Summer	0.04	11.6	5.051
RED11	FEH: 30 years: +0 %: 15 mins: Summer	0.04	11.6	5.051
RED10	FEH: 30 years: +0 %: 15 mins: Summer	0.04	11.6	5.051
IPM13	FEH: 30 years: +0 %: 15 mins: Winter	0.02	4.7	2.169
RED12	FEH: 30 years: +0 %: 15 mins: Winter	0.01	3.3	1.519
RED13	FEH: 30 years: +0 %: 15 mins: Summer	0.03	9.1	3.978

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase		Company Address: Stantec			

IPM8	FEH: 30 years: +0 %: 15 mins: Winter	0.04	11.8	5.482
IPM6	FEH: 30 years: +0 %: 15 mins: Summer	0.02	6.7	2.906
IPM4	FEH: 30 years: +0 %: 15 mins: Winter	0.04	12.3	5.719
IPM5	FEH: 30 years: +0 %: 15 mins: Winter	0.04	12.3	5.698
IPM2	FEH: 30 years: +0 %: 15 mins: Winter	0.04	12.2	5.662
IPM1	FEH: 30 years: +0 %: 15 mins: Winter	0.03	8.7	4.026
IPM3	FEH: 30 years: +0 %: 15 mins: Winter	0.04	12.2	5.650
IPM10	FEH: 30 years: +0 %: 15 mins: Winter	0.03	8.5	3.921
IPM7	FEH: 30 years: +0 %: 15 mins: Winter	0.01	3.3	1.525
IPM9	FEH: 30 years: +0 %: 15 mins: Winter	0.04	12.2	5.668
IPM12	FEH: 30 years: +0 %: 15 mins: Winter	0.01	2.3	1.081
ROAD4	FEH: 30 years: +0 %: 15 mins: Summer	0.03	9.1	3.981
ROAD3	FEH: 30 years: +0 %: 15 mins: Summer	0.04	14.2	6.177
ROAD11	FEH: 30 years: +0 %: 15 mins: Summer	0.01	2.2	0.956
ROAD6	FEH: 30 years: +0 %: 15 mins: Summer	0.05	18.3	7.992
ROAD5	FEH: 30 years: +0 %: 15 mins: Summer	0.02	6.7	2.924
ROAD1	FEH: 30 years: +0 %: 15 mins: Summer	0.31	107.5	46.872

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase		Company Address: Stantec			

ROAD9	FEH: 30 years: +0 %: 15 mins: Summer	0.02	6.0	2.612
ROAD8	FEH: 30 years: +0 %: 15 mins: Summer	0.01	3.3	1.423
ROAD7	FEH: 30 years: +0 %: 15 mins: Summer	0.02	6.4	2.801
IMP14	FEH: 30 years: +0 %: 15 mins: Summer	0.01	3.2	1.390
IMP11	FEH: 30 years: +0 %: 15 mins: Summer	0.01	2.8	1.213
IMP11OUT	FEH: 30 years: +0 %: 15 mins: Summer	0.03	8.8	3.858
IPM12OUT	FEH: 30 years: +0 %: 15 mins: Summer	0.03	9.4	4.092
IMP15OUT	FEH: 30 years: +0 %: 15 mins: Summer	0.04	11.6	5.063
IMPCHUR CH	FEH: 30 years: +0 %: 15 mins: Summer	0.04	10.4	4.523
IMP14OUT	FEH: 30 years: +0 %: 15 mins: Summer	0.03	8.6	3.760
IMP16OUT	FEH: 30 years: +0 %: 15 mins: Summer	0.04	11.9	5.185
IMP13OUT	FEH: 30 years: +0 %: 15 mins: Summer	0.03	7.5	3.274
IMPRD6	FEH: 30 years: +0 %: 15 mins: Summer	0.06	19.6	8.552
IMPRD7	FEH: 30 years: +0 %: 15 mins: Summer	0.04	13.2	5.755
IPM10OUT	FEH: 30 years: +0 %: 15 mins: Summer	0.01	3.5	1.516
ROAD22	FEH: 30 years: +0 %: 15 mins: Summer	0.05	13.2	5.767
ROAD23	FEH: 30 years: +0 %: 15 mins: Summer	0.06	16.3	7.091

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase		Company Address: Stantec			

ROAD21	FEH: 30 years: +0 %: 15 mins: Summer	0.06	18.2	7.914
IMPRD1	FEH: 30 years: +0 %: 15 mins: Summer	0.05	18.3	7.992
IMPRD2	FEH: 30 years: +0 %: 15 mins: Summer	0.03	8.8	3.855
IMPRD3	FEH: 30 years: +0 %: 15 mins: Summer	0.03	9.5	4.152
IMPRD4	FEH: 30 years: +0 %: 15 mins: Summer	0.03	11.3	4.931

Project: Penrhys Phase 1A	Date: 18/06/2025		
	Designed by: smparry	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Stantec		



FEH: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
RED3	FEH: 100 years: +0 %: 15 mins: Summer	0.05	16.0	6.974
RED6	FEH: 100 years: +0 %: 15 mins: Summer	0.05	16.0	6.974
RED4	FEH: 100 years: +0 %: 15 mins: Summer	0.05	16.0	6.977
RED5	FEH: 100 years: +0 %: 15 mins: Summer	0.04	14.1	6.139
RED7	FEH: 100 years: +0 %: 15 mins: Summer	0.04	14.1	6.145
RED2	FEH: 100 years: +0 %: 15 mins: Summer	0.05	16.0	6.974
RED1	FEH: 100 years: +0 %: 15 mins: Summer	0.05	16.0	6.974
RED14	FEH: 100 years: +0 %: 15 mins: Summer	0.05	16.0	6.974
RED8	FEH: 100 years: +0 %: 15 mins: Summer	0.04	14.2	6.198
RED9	FEH: 100 years: +0 %: 15 mins: Summer	0.04	14.1	6.156
RED11	FEH: 100 years: +0 %: 15 mins: Summer	0.04	14.1	6.156
RED10	FEH: 100 years: +0 %: 15 mins: Summer	0.04	14.1	6.156
IPM13	FEH: 100 years: +0 %: 15 mins: Winter	0.02	5.7	2.640
RED12	FEH: 100 years: +0 %: 15 mins: Winter	0.01	4.0	1.849
RED13	FEH: 100 years: +0 %: 15 mins: Summer	0.03	11.1	4.850

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase		Company Address: Stantec			

IPM8	FEH: 100 years: +0 %: 15 mins: Winter	0.04	14.4	6.681
IPM6	FEH: 100 years: +0 %: 15 mins: Summer	0.02	8.1	3.541
IPM4	FEH: 100 years: +0 %: 15 mins: Winter	0.04	15.0	6.969
IPM5	FEH: 100 years: +0 %: 15 mins: Winter	0.04	14.9	6.939
IPM2	FEH: 100 years: +0 %: 15 mins: Winter	0.04	14.9	6.897
IPM1	FEH: 100 years: +0 %: 15 mins: Winter	0.03	10.6	4.908
IPM3	FEH: 100 years: +0 %: 15 mins: Winter	0.04	14.8	6.885
IPM10	FEH: 100 years: +0 %: 15 mins: Winter	0.03	10.3	4.779
IPM7	FEH: 100 years: +0 %: 15 mins: Winter	0.01	4.0	1.855
IPM9	FEH: 100 years: +0 %: 15 mins: Winter	0.04	14.9	6.903
IPM12	FEH: 100 years: +0 %: 15 mins: Winter	0.01	2.8	1.318
ROAD4	FEH: 100 years: +0 %: 15 mins: Summer	0.03	11.1	4.853
ROAD3	FEH: 100 years: +0 %: 15 mins: Summer	0.04	17.3	7.523
ROAD11	FEH: 100 years: +0 %: 15 mins: Summer	0.01	2.7	1.165
ROAD6	FEH: 100 years: +0 %: 15 mins: Summer	0.05	22.3	9.740
ROAD5	FEH: 100 years: +0 %: 15 mins: Summer	0.02	8.2	3.565
ROAD1	FEH: 100 years: +0 %: 15 mins: Summer	0.31	131.0	57.110

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase		Company Address: Stantec			

ROAD9	FEH: 100 years: +0 %: 15 mins: Summer	0.02	7.3	3.182
ROAD8	FEH: 100 years: +0 %: 15 mins: Summer	0.01	4.0	1.735
ROAD7	FEH: 100 years: +0 %: 15 mins: Summer	0.02	7.8	3.409
IMP14	FEH: 100 years: +0 %: 15 mins: Summer	0.01	3.9	1.696
IMP11	FEH: 100 years: +0 %: 15 mins: Summer	0.01	3.4	1.480
IMP11OUT	FEH: 100 years: +0 %: 15 mins: Summer	0.03	10.8	4.701
IPM12OUT	FEH: 100 years: +0 %: 15 mins: Summer	0.03	11.4	4.988
IMP15OUT	FEH: 100 years: +0 %: 15 mins: Summer	0.04	14.1	6.162
IMPCHUR CH	FEH: 100 years: +0 %: 15 mins: Summer	0.04	12.6	5.512
IMP14OUT	FEH: 100 years: +0 %: 15 mins: Summer	0.03	10.5	4.581
IMP16OUT	FEH: 100 years: +0 %: 15 mins: Summer	0.04	14.5	6.318
IMP13OUT	FEH: 100 years: +0 %: 15 mins: Summer	0.03	9.1	3.990
IMPRD6	FEH: 100 years: +0 %: 15 mins: Summer	0.06	23.9	10.423
IMPRD7	FEH: 100 years: +0 %: 15 mins: Summer	0.04	16.1	7.013
IPM10OUT	FEH: 100 years: +0 %: 15 mins: Summer	0.01	4.2	1.845
ROAD22	FEH: 100 years: +0 %: 15 mins: Summer	0.05	16.1	7.022
ROAD23	FEH: 100 years: +0 %: 15 mins: Summer	0.06	19.8	8.637

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase		Company Address: Stantec			

ROAD21	FEH: 100 years: +0 %: 15 mins: Summer	0.06	22.1	9.647
IMPRD1	FEH: 100 years: +0 %: 15 mins: Summer	0.05	22.3	9.740
IMPRD2	FEH: 100 years: +0 %: 15 mins: Summer	0.03	10.8	4.698
IMPRD3	FEH: 100 years: +0 %: 15 mins: Summer	0.03	11.6	5.063
IMPRD4	FEH: 100 years: +0 %: 15 mins: Summer	0.03	13.8	6.007

Project: Penrhys Phase 1A	Date: 18/06/2025			
	Designed by: smparry	Checked by:	Approved By:	
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Stantec			



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Outflow

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase		Company Address: Stantec			

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Inlet Headwall	FEH: 2 years: +0 %: 15 mins: Summer	341.7 59	340.0 34	340.06 8	0.033	17.2	0.059	0.000	17.0	7.539	OK
S1	FEH: 2 years: +0 %: 15 mins: Summer	337.2 27	333.5 27	333.58 0	0.052	33.7	0.093	0.000	32.9	14.821	OK
S2	FEH: 2 years: +0 %: 15 mins: Summer	333.4 21	331.1 71	331.23 1	0.060	39.0	0.105	0.000	37.5	17.507	OK
S3	FEH: 2 years: +0 %: 15 mins: Summer	328.3 49	325.0 89	325.15 3	0.064	58.7	0.113	0.000	56.5	26.785	OK
S4	FEH: 2 years: +0 %: 15 mins: Summer	322.2 62	319.1 12	319.24 5	0.133	137.7	0.235	0.000	133.0	70.725	OK
S5	FEH: 2 years: +0 %: 15 mins: Summer	321.0 25	317.8 45	317.94 9	0.103	138.5	0.183	0.000	135.2	73.067	OK
S38	FEH: 2 years: +0 %: 15 mins: Summer	334.5 53	332.0 53	332.07 7	0.024	3.1	0.027	0.000	3.1	1.368	OK
S37	FEH: 2 years: +0 %: 15 mins: Summer	331.2 04	329.7 14	329.75 4	0.040	8.6	0.045	0.000	8.3	3.765	OK
S22	FEH: 2 years: +0 %: 15 mins: Summer	327.5 85	326.3 85	326.65 8	0.273	27.4	0.309	0.000	21.7	12.316	Surcharged
S20	FEH: 2 years: +0 %: 15 mins: Summer	327.1 90	325.9 90	326.10 8	0.118	71.9	0.134	0.000	69.8	35.914	OK
S25	FEH: 2 years: +0 %: 15 mins: Summer	323.1 98	321.6 38	321.74 2	0.104	83.8	0.118	0.000	82.8	43.634	OK
S39	FEH: 2 years: +0 %: 15 mins: Summer	339.5 65	337.8 35	337.93 5	0.100	17.6	0.114	0.000	16.7	7.677	OK
EX2	FEH: 2 years: +0 %: 15 mins: Summer	334.8 00	333.6 00	333.67 6	0.076	31.4	0.086	0.000	30.8	14.617	OK
S6	FEH: 2 years: +0 %: 15 mins: Summer	313.2 92	311.1 52	311.29 0	0.138	203.5	0.156	0.000	196.5	107.603	OK
S7	FEH: 2 years: +0 %: 15 mins: Summer	310.8 94	308.4 94	308.62 5	0.130	196.5	0.000	0.000	197.2	107.603	OK
S29	FEH: 2 years: +0 %: 15 mins: Summer	313.6 14	311.8 64	312.02 1	0.158	73.5	0.178	0.000	71.4	34.688	OK
S27	FEH: 2 years: +0 %: 15 mins: Summer	314.7 43	313.5 73	313.67 3	0.100	44.5	0.113	0.000	42.9	21.024	OK
S34	FEH: 2 years: +0 %: 15 mins: Winter	322.0 59	319.4 79	319.54 9	0.070	29.6	0.079	0.000	28.8	14.580	OK
S31	FEH: 2 years: +0 %: 15 mins: Winter	325.1 07	322.7 47	322.85 8	0.111	20.0	0.126	0.000	19.4	9.322	OK
S40	FEH: 2 years: +0 %: 15 mins: Summer	338.1 61	336.9 61	337.02 2	0.061	22.2	0.069	0.000	21.6	10.051	OK
S41	FEH: 2 years: +0 %: 15 mins: Summer	335.6 71	334.4 71	334.55 8	0.087	21.6	0.098	0.000	20.9	10.038	OK
S21	FEH: 2 years: +0 %: 15 mins: Summer	331.2 39	330.0 39	330.10 7	0.068	40.4	0.077	0.000	39.2	18.883	OK
S36	FEH: 2 years: +0 %: 15 mins: Summer	329.9 73	327.9 83	328.04 3	0.060	13.8	0.068	0.000	13.3	6.146	OK
S23	FEH: 2 years: +0 %: 15 mins: Summer	325.9 71	324.2 71	324.41 5	0.145	69.8	0.163	0.000	67.7	35.895	OK
S24	FEH: 2 years: +0 %: 15 mins: Summer	324.4 71	323.1 31	323.25 8	0.127	67.7	0.144	0.000	66.0	35.856	OK
S44	FEH: 2 years: +0 %: 15 mins: Summer	334.2 87	331.3 57	331.35 7	0.000	0.0	0.000	0.000	0.0	0.000	OK
S26	FEH: 2 years: +0 %: 15 mins: Summer	322.0 68	319.8 36	319.99 2	0.157	82.8	0.177	0.000	80.2	43.585	OK
S45	FEH: 2 years: +0 %: 15 mins: Summer	337.8 80	336.2 70	336.30 9	0.039	9.8	0.044	0.000	9.6	4.291	OK
S32	FEH: 2 years: +0 %: 15 mins: Winter	324.4 42	322.5 62	322.62 6	0.064	19.4	0.072	0.000	18.8	9.307	OK
S33	FEH: 2 years: +0 %: 15 mins: Summer	322.8 56	321.2 64	321.33 0	0.066	24.8	0.074	0.000	24.2	11.400	OK
S35	FEH: 2 years: +0 %: 15 mins: Summer	320.2 13	317.3 43	317.41 5	0.072	33.7	0.082	0.000	32.6	15.881	OK
S28	FEH: 2 years: +0 %: 15 mins: Summer	314.6 35	313.0 25	313.11 3	0.088	53.9	0.100	0.000	53.1	25.785	OK
S30	FEH: 2 years: +0 %: 15 mins: Summer	313.9 67	311.5 07	311.68 6	0.179	71.4	0.203	0.000	68.4	34.660	OK

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase		Company Address: Stantec			



FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Outflow

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Inlet Headwall	FEH: 30 years: +0 %: 15 mins: Summer	341.759	340.034	340.082	0.048	36.6	0.085	0.000	36.2	15.972	OK
S1	FEH: 30 years: +0 %: 15 mins: Summer	337.227	333.527	333.604	0.077	71.6	0.136	0.000	70.2	31.398	OK
S2	FEH: 30 years: +0 %: 15 mins: Summer	333.421	331.171	331.258	0.087	83.4	0.154	0.000	80.6	37.088	OK
S3	FEH: 30 years: +0 %: 15 mins: Summer	328.349	325.089	325.182	0.093	125.6	0.164	0.000	122.0	56.762	OK
S4	FEH: 30 years: +0 %: 15 mins: Summer	322.262	319.112	319.307	0.196	270.9	0.346	0.000	265.3	150.263	OK
S5	FEH: 30 years: +0 %: 15 mins: Summer	321.025	317.845	317.993	0.148	276.9	0.261	0.000	272.7	155.262	OK
S38	FEH: 30 years: +0 %: 15 mins: Summer	334.553	332.053	332.088	0.035	6.7	0.039	0.000	6.5	2.905	OK
S37	FEH: 30 years: +0 %: 15 mins: Summer	331.204	329.714	329.774	0.060	18.2	0.068	0.000	17.9	7.983	OK
S22	FEH: 30 years: +0 %: 15 mins: Summer	327.585	326.385	327.588	1.203	53.1	4.620	3.263	36.6	26.123	Flood
S20	FEH: 30 years: +0 %: 15 mins: Summer	327.190	325.990	326.571	0.581	132.3	0.658	0.000	120.6	76.185	Surcharged
S25	FEH: 30 years: +0 %: 15 mins: Summer	323.198	321.638	321.785	0.147	150.1	0.166	0.000	149.1	92.731	OK
S39	FEH: 30 years: +0 %: 15 mins: Summer	339.565	337.835	338.448	0.613	37.3	0.693	0.000	29.3	16.293	Surcharged
EX2	FEH: 30 years: +0 %: 15 mins: Summer	334.800	333.600	333.720	0.120	57.9	0.136	0.000	57.2	31.024	OK
S6	FEH: 30 years: +0 %: 15 mins: Summer	313.292	311.152	311.357	0.205	405.4	0.232	0.000	395.3	228.708	OK
S7	FEH: 30 years: +0 %: 15 mins: Summer	310.894	308.494	308.681	0.187	395.3	0.000	0.000	396.2	228.708	OK
S29	FEH: 30 years: +0 %: 15 mins: Summer	313.614	311.864	312.393	0.529	158.3	0.598	0.000	142.6	73.560	Surcharged
S27	FEH: 30 years: +0 %: 15 mins: Summer	314.743	313.573	313.732	0.159	95.6	0.180	0.000	92.9	44.576	OK
S34	FEH: 30 years: +0 %: 15 mins: Winter	322.059	319.479	319.587	0.109	63.3	0.123	0.000	62.0	30.919	OK
S31	FEH: 30 years: +0 %: 15 mins: Winter	325.107	322.747	322.927	0.180	42.6	0.204	0.000	41.3	19.763	OK
S40	FEH: 30 years: +0 %: 15 mins: Summer	338.161	336.961	337.049	0.088	40.9	0.099	0.000	40.2	21.319	OK
S41	FEH: 30 years: +0 %: 15 mins: Winter	335.671	334.471	334.616	0.145	38.2	0.164	0.000	36.1	21.324	OK

Project: Penrhys Phase 1A		Date: 18/06/2025				
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: smparry	Checked by:	Approved By:		
		Company Address: Stantec				

S21	FEH: 30 years: +0 %: 15 mins: Summer	331.2 39	330.0 39	330.13 7	0.098	77.7	0.111	0.000	77.1	40.062	OK
S36	FEH: 30 years: +0 %: 15 mins: Summer	329.9 73	327.9 83	328.17 1	0.188	29.6	0.213	0.000	23.2	13.037	Surcharged
S23	FEH: 30 years: +0 %: 30 mins: Summer	325.9 71	324.2 71	325.02 2	0.751	116.6	0.849	0.000	116.6	110.690	Surcharged
S24	FEH: 30 years: +0 %: 15 mins: Summer	324.4 71	323.1 31	323.42 4	0.293	114.3	0.332	0.000	117.7	76.287	Surcharged
S44	FEH: 30 years: +0 %: 15 mins: Summer	334.2 87	331.3 57	331.35 7	0.000	0.0	0.000	0.000	0.0	0.000	OK
S26	FEH: 30 years: +0 %: 15 mins: Summer	322.0 68	319.8 36	320.07 8	0.242	149.1	0.274	0.000	146.8	92.685	OK
S45	FEH: 30 years: +0 %: 15 mins: Summer	337.8 80	336.2 70	336.32 7	0.058	20.8	0.065	0.000	20.5	9.091	OK
S32	FEH: 30 years: +0 %: 15 mins: Winter	324.4 42	322.5 62	322.65 9	0.097	41.3	0.109	0.000	40.3	19.743	OK
S33	FEH: 30 years: +0 %: 15 mins: Summer	322.8 56	321.2 64	321.36 5	0.100	53.0	0.114	0.000	51.8	24.152	OK
S35	FEH: 30 years: +0 %: 15 mins: Summer	320.2 13	317.3 43	317.45 3	0.111	72.3	0.125	0.000	70.5	33.663	OK
S28	FEH: 30 years: +0 %: 15 mins: Summer	314.6 35	313.0 25	313.15 9	0.133	116.2	0.151	0.000	115.0	54.681	OK
S30	FEH: 30 years: +0 %: 15 mins: Summer	313.9 67	311.5 07	311.99 3	0.486	142.6	0.550	0.000	132.7	73.602	Surcharged

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase		Company Address: Stantec			



FEH: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Outflow

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Inlet Headwall	FEH: 100 years: +0 %: 15 mins: Summer	341.759	340.034	340.087	0.053	44.6	0.093	0.000	44.1	19.467	OK
S1	FEH: 100 years: +0 %: 15 mins: Summer	337.227	333.527	333.613	0.085	87.3	0.151	0.000	85.7	38.272	OK
S2	FEH: 100 years: +0 %: 15 mins: Summer	333.421	331.171	331.267	0.096	101.7	0.170	0.000	98.5	45.205	OK
S3	FEH: 100 years: +0 %: 15 mins: Summer	328.349	325.089	325.192	0.103	153.4	0.182	0.000	149.2	69.187	OK
S4	FEH: 100 years: +0 %: 15 mins: Summer	322.262	319.112	319.324	0.213	311.3	0.376	0.000	305.7	183.174	OK
S5	FEH: 100 years: +0 %: 15 mins: Summer	321.025	317.845	318.004	0.159	319.9	0.282	0.000	315.8	189.258	OK
S38	FEH: 100 years: +0 %: 15 mins: Summer	334.553	332.053	332.091	0.038	8.1	0.044	0.000	8.0	3.541	OK
S37	FEH: 100 years: +0 %: 15 mins: Summer	331.204	329.714	329.781	0.066	22.2	0.075	0.000	21.8	9.726	OK
S22	FEH: 100 years: +0 %: 30 mins: Winter	327.585	326.385	327.595	1.210	53.2	11.089	9.732	36.7	49.196	Flood
S20	FEH: 100 years: +0 %: 15 mins: Summer	327.190	325.990	327.048	1.058	138.3	1.197	0.000	131.2	92.878	Flood Risk
S25	FEH: 100 years: +0 %: 15 mins: Summer	323.198	321.638	321.794	0.156	163.4	0.177	0.000	163.5	113.044	OK
S39	FEH: 100 years: +0 %: 15 mins: Summer	339.565	337.835	338.945	1.110	45.5	1.255	0.000	35.0	19.856	Surcharged
EX2	FEH: 100 years: +0 %: 15 mins: Winter	334.800	333.600	333.738	0.138	64.3	0.156	0.000	62.6	37.840	OK
S6	FEH: 100 years: +0 %: 15 mins: Summer	313.292	311.152	311.382	0.231	488.4	0.261	0.000	477.6	278.829	OK
S7	FEH: 100 years: +0 %: 15 mins: Summer	310.894	308.494	308.702	0.207	477.6	0.000	0.000	479.6	278.829	OK
S29	FEH: 100 years: +0 %: 15 mins: Summer	313.614	311.864	312.987	1.124	178.0	1.271	0.000	175.9	89.680	Surcharged
S27	FEH: 100 years: +0 %: 15 mins: Summer	314.743	313.573	313.754	0.181	116.5	0.205	0.000	113.9	54.277	OK
S34	FEH: 100 years: +0 %: 15 mins: Summer	322.059	319.479	319.601	0.123	76.8	0.139	0.000	75.3	35.521	OK
S31	FEH: 100 years: +0 %: 15 mins: Summer	325.107	322.747	322.965	0.218	51.4	0.247	0.000	48.7	22.426	OK
S40	FEH: 100 years: +0 %: 15 mins: Summer	338.161	336.961	337.062	0.101	49.2	0.114	0.000	48.4	25.978	OK

Project: Penrhys Phase 1A		Date: 18/06/2025				
		Designed by: smparry	Checked by:	Approved By:		
Report Details: Type: Junctions Summary Storm Phase: Phase		Company Address: Stantec				

S41	FEH: 100 years: +0 %: 30 mins: Summer	335.6 71	334.4 71	335.09 4	0.623	44.0	0.704	0.000	43.5	38.386	Surcharged
S21	FEH: 100 years: +0 %: 15 mins: Summer	331.2 39	330.0 39	330.14 3	0.105	86.4	0.118	0.000	86.1	48.852	OK
S36	FEH: 100 years: +0 %: 15 mins: Summer	329.9 73	327.9 83	328.49 7	0.515	36.0	0.582	0.000	29.3	15.876	Surcharged
S23	FEH: 100 years: +0 %: 15 mins: Summer	325.9 71	324.2 71	325.28 0	1.009	131.2	1.141	0.000	125.2	92.912	Surcharged
S24	FEH: 100 years: +0 %: 30 mins: Summer	324.4 71	323.1 31	323.76 5	0.635	123.4	0.718	0.000	122.6	137.271	Surcharged
S44	FEH: 100 years: +0 %: 15 mins: Summer	334.2 87	331.3 57	331.35 7	0.000	0.0	0.000	0.000	0.0	0.000	OK
S26	FEH: 100 years: +0 %: 15 mins: Summer	322.0 68	319.8 36	320.10 2	0.266	163.5	0.301	0.000	159.5	112.990	OK
S45	FEH: 100 years: +0 %: 15 mins: Summer	337.8 80	336.2 70	336.33 4	0.064	25.4	0.073	0.000	25.0	11.079	OK
S32	FEH: 100 years: +0 %: 15 mins: Winter	324.4 42	322.5 62	322.67 0	0.108	48.7	0.122	0.000	48.3	24.061	OK
S33	FEH: 100 years: +0 %: 15 mins: Summer	322.8 56	321.2 64	321.37 7	0.113	64.0	0.127	0.000	62.8	29.419	OK
S35	FEH: 100 years: +0 %: 15 mins: Summer	320.2 13	317.3 43	317.46 7	0.125	87.9	0.141	0.000	85.9	41.012	OK
S28	FEH: 100 years: +0 %: 15 mins: Winter	314.6 35	313.0 25	313.17 8	0.152	138.2	0.172	0.000	130.7	68.951	OK
S30	FEH: 100 years: +0 %: 15 mins: Summer	313.9 67	311.5 07	312.42 0	0.913	175.9	1.033	0.000	172.7	89.740	Surcharged

Project: Penrhys Phase 1A	Date: 18/06/2025		
	Designed by: smparry	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Stantec		





FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
CULV1	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	Inlet Headwall	S1	341.759	340.068	0.043	7.539	2.0	0.01	17.0	OK
CULV2	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S1	S2	337.227	333.580	0.056	14.821	2.6	0.02	32.9	OK
CULV3	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S2	S3	333.421	331.231	0.062	17.507	2.6	0.03	37.5	OK
CULV4	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S3	S4	328.349	325.153	0.099	26.785	2.0	0.03	56.5	OK
CULV5	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S4	S5	322.262	319.245	0.118	70.725	3.6	0.12	133.0	OK
SW21	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S38	S37	334.553	332.077	0.032	1.368	1.1	0.06	3.1	OK
SW24	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S22	S20	327.585	326.658	0.150	12.316	1.2	1.13	21.7	Surcharged
CULV6	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S5	S6	321.025	317.949	0.121	73.067	3.6	0.09	135.2	OK
CULV7	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S6	S7	313.292	311.290	0.134	107.603	4.5	0.14	196.5	OK
SW1	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S39	S40	339.565	337.935	0.081	7.677	1.7	0.68	16.7	OK
SW2	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S40	S41	338.161	337.022	0.074	10.051	2.5	0.35	21.6	OK
SW3	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S41	EX2	335.671	334.558	0.081	10.038	2.1	0.57	20.9	OK
SW4	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	EX2	S21	334.800	333.676	0.072	14.617	3.6	0.47	30.8	OK
SW5	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S21	S20	331.239	330.107	0.093	18.883	2.5	0.2	39.2	OK
SW22	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S37	S36	331.204	329.754	0.050	3.765	1.6	0.16	8.3	OK
SW23	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S36	S22	329.973	328.043	0.150	6.146	0.8	0.34	13.3	OK
SW7	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S20	S23	327.190	326.108	0.131	35.914	2.9	0.52	69.8	OK
SW8	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S23	S24	325.971	324.415	0.136	35.895	2.7	0.66	67.7	OK
SW9	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S24	S25	324.471	323.258	0.116	35.856	3.2	0.54	66.0	OK

Project: Penrhys Phase 1A				Date: 18/06/2025							
Designed by: smparry		Checked by:		Approved By:							
Report Details: Type: Connections Summary Storm Phase: Phase				Company Address: Stantec							

SW13	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S44	S21	334.287	331.357	0.034	0.000	0.0	0	0.0	OK
SW10	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S25	S26	323.198	321.742	0.131	43.634	2.8	0.26	82.8	OK
SW11	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S26	S4	322.068	319.992	0.145	43.585	2.4	0.47	80.2	OK
SW12	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S45	S21	337.880	336.309	0.054	4.291	1.7	0.15	9.6	OK
SW30	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	S31	S32	325.107	322.858	0.088	9.322	1.4	0.44	19.4	OK
SW31	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	S32	S33	324.442	322.626	0.065	9.307	2.0	0.17	18.8	OK
SW32	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S33	S34	322.856	321.330	0.068	11.400	2.4	0.18	24.2	OK
SW33	FEH: 2 years: +0 %: 15 mins: Winter	Pipe	S34	S35	322.059	319.549	0.071	14.580	2.7	0.2	28.8	OK
SW34	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S35	S27	320.213	317.415	0.086	15.881	2.3	0.22	32.6	OK
SW35	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S27	S28	314.743	313.673	0.094	21.024	2.3	0.21	42.9	OK
SW36	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S28	S29	314.635	313.113	0.123	25.785	1.9	0.19	53.1	OK
SW37	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S29	S30	313.614	312.021	0.168	34.688	1.7	0.45	71.4	OK
SW38	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S30	S6	313.967	311.686	0.159	34.660	1.8	0.58	68.4	OK

Project: Penrhys Phase 1A		Date: 18/06/2025			
		Designed by: smparry	Checked by:		Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase		Company Address: Stantec			



FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
CULV1	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	Inlet Headwall	S1	341.759	340.082	0.062	15.972	2.5	0.02	36.2	OK
CULV2	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S1	S2	337.227	333.604	0.082	31.398	3.3	0.05	70.2	OK
CULV3	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S2	S3	333.421	331.258	0.090	37.088	3.3	0.06	80.6	OK
CULV4	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S3	S4	328.349	325.182	0.144	56.762	2.5	0.07	122.0	OK
CULV5	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S4	S5	322.262	319.307	0.172	150.263	4.3	0.24	265.3	OK
SW21	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S38	S37	334.553	332.088	0.047	2.905	1.4	0.12	6.5	OK
SW24	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S22	S20	327.585	327.588	0.150	26.123	2.1	1.9	36.6	Flood
CULV6	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S5	S6	321.025	317.993	0.177	155.262	4.3	0.18	272.7	OK
CULV7	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S6	S7	313.292	311.357	0.196	228.708	5.4	0.27	395.3	OK
SW1	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S39	S40	339.565	338.448	0.150	16.293	1.7	1.19	29.3	Surcharged
SW2	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S40	S41	338.161	337.049	0.130	21.319	2.5	0.64	40.2	OK
SW3	FEH: 30 years: +0 %: 15 mins: Winter	Pipe	S41	EX2	335.671	334.616	0.132	21.324	2.2	0.98	36.1	OK
SW4	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	EX2	S21	334.800	333.720	0.109	31.024	4.2	0.88	57.2	OK
SW5	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S21	S20	331.239	330.137	0.225	40.062	2.1	0.4	77.1	OK

Project: Penrhys Phase 1A				Date: 18/06/2025							
Designed by: smparry		Checked by:		Approved By:							
Report Details: Type: Connections Summary Storm Phase: Phase				Company Address: Stantec							

SW22	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S37	S36	331.204	329.774	0.124	7.983	1.4	0.33	17.9	OK
SW23	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S36	S22	329.973	328.171	0.150	13.037	1.3	0.6	23.2	Surcharged
SW7	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S20	S23	327.190	326.571	0.225	76.185	3.0	0.9	120.6	Surcharged
SW8	FEH: 30 years: +0 %: 30 mins: Summer	Pipe	S23	S24	325.971	325.022	0.225	110.690	2.9	1.13	116.6	Surcharged
SW9	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S24	S25	324.471	323.424	0.211	76.287	3.4	0.96	117.7	Surcharged
SW13	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S44	S21	334.287	331.357	0.049	0.000	0.0	0	0.0	OK
SW10	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S25	S26	323.198	321.785	0.195	92.731	3.1	0.47	149.1	OK
SW11	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S26	S4	322.068	320.078	0.219	92.685	2.8	0.86	146.8	OK
SW12	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S45	S21	337.880	336.327	0.078	9.091	2.2	0.31	20.5	OK
SW30	FEH: 30 years: +0 %: 15 mins: Winter	Pipe	S31	S32	325.107	322.927	0.139	19.763	1.6	0.93	41.3	OK
SW31	FEH: 30 years: +0 %: 15 mins: Winter	Pipe	S32	S33	324.442	322.659	0.098	19.743	2.4	0.36	40.3	OK
SW32	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S33	S34	322.856	321.365	0.104	24.152	2.9	0.39	51.8	OK
SW33	FEH: 30 years: +0 %: 15 mins: Winter	Pipe	S34	S35	322.059	319.587	0.109	30.919	3.2	0.44	62.0	OK
SW34	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S35	S27	320.213	317.453	0.135	33.663	2.8	0.48	70.5	OK
SW35	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S27	S28	314.743	313.732	0.146	44.576	2.7	0.45	92.9	OK
SW36	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S28	S29	314.635	313.159	0.300	54.681	1.9	0.41	115.0	OK
SW37	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S29	S30	313.614	312.393	0.300	73.560	2.0	0.91	142.6	Surcharged

Project: Penrhys Phase 1A				Date: 18/06/2025											
Report Details:				Designed by:								Checked by:		Approved By:	
Type: Connections Summary Storm Phase: Phase				smparry											
				Company Address:											
				Stantec											

SW38	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S30	S6	313.967	311.993	0.300	73.602	1.9	1.13	132.7	Surcharged
------	---	------	-----	----	---------	---------	-------	--------	-----	------	-------	------------

Project: Penrhys Phase 1A	Date: 18/06/2025		
	Designed by: smparry	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Stantec		





FEH: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
CULV1	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	Inlet Headwall	S1	341.759	340.087	0.069	19.467	2.6	0.02	44.1	OK
CULV2	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S1	S2	337.227	333.613	0.091	38.272	3.4	0.06	85.7	OK
CULV3	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S2	S3	333.421	331.267	0.100	45.205	3.4	0.07	98.5	OK
CULV4	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S3	S4	328.349	325.192	0.158	69.187	2.7	0.09	149.2	OK
CULV5	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S4	S5	322.262	319.324	0.186	183.174	4.5	0.27	305.7	OK
SW21	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S38	S37	334.553	332.091	0.052	3.541	1.4	0.14	8.0	OK
SW24	FEH: 100 years: +0 %: 30 mins: Winter	Pipe	S22	S20	327.585	327.595	0.150	49.196	2.1	1.91	36.7	Flood
CULV6	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S5	S6	321.025	318.004	0.195	189.258	4.3	0.2	315.8	OK
CULV7	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S6	S7	313.292	311.382	0.219	278.829	5.6	0.33	477.6	OK
SW1	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S39	S40	339.565	338.945	0.150	19.856	2.0	1.42	35.0	Surcharged
SW2	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S40	S41	338.161	337.062	0.150	25.978	2.7	0.78	48.4	OK
SW3	FEH: 100 years: +0 %: 30 mins: Summer	Pipe	S41	EX2	335.671	335.094	0.150	38.386	2.5	1.18	43.5	Surcharged
SW4	FEH: 100 years: +0 %: 15 mins: Winter	Pipe	EX2	S21	334.800	333.738	0.121	37.840	4.1	0.96	62.6	OK
SW5	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S21	S20	331.239	330.143	0.225	48.852	2.2	0.44	86.1	OK

Project: Penrhys Phase 1A				Date: 18/06/2025									
				Designed by: smparry		Checked by:						Approved By:	
Report Details: Type: Connections Summary Storm Phase: Phase				Company Address: Stantec									

SW22	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S37	S36	331.204	329.781	0.150	9.726	1.4	0.41	21.8	OK
SW23	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S36	S22	329.973	328.497	0.150	15.876	1.7	0.76	29.3	Surcharged
SW7	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S20	S23	327.190	327.048	0.225	92.878	3.3	0.98	131.2	Flood Risk
SW8	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S23	S24	325.971	325.280	0.225	92.912	3.1	1.22	125.2	Surcharged
SW9	FEH: 100 years: +0 %: 30 mins: Summer	Pipe	S24	S25	324.471	323.765	0.225	137.271	3.5	1	122.6	Surcharged
SW13	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S44	S21	334.287	331.357	0.052	0.000	0.0	0	0.0	OK
SW10	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S25	S26	323.198	321.794	0.211	113.044	3.1	0.52	163.5	OK
SW11	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S26	S4	322.068	320.102	0.239	112.990	2.8	0.93	159.5	OK
SW12	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S45	S21	337.880	336.334	0.084	11.079	2.4	0.38	25.0	OK
SW30	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S31	S32	325.107	322.965	0.163	22.426	1.6	1.1	48.7	OK
SW31	FEH: 100 years: +0 %: 15 mins: Winter	Pipe	S32	S33	324.442	322.670	0.110	24.061	2.5	0.43	48.3	OK
SW32	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S33	S34	322.856	321.377	0.118	29.419	3.0	0.47	62.8	OK
SW33	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S34	S35	322.059	319.601	0.124	35.521	3.4	0.53	75.3	OK
SW34	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S35	S27	320.213	317.467	0.153	41.012	3.0	0.59	85.9	OK
SW35	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S27	S28	314.743	313.754	0.177	54.277	2.6	0.55	113.9	OK
SW36	FEH: 100 years: +0 %: 15 mins: Winter	Pipe	S28	S29	314.635	313.178	0.300	68.951	2.0	0.47	130.7	OK
SW37	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S29	S30	313.614	312.987	0.300	89.680	2.5	1.12	175.9	Surcharged

Project: Penrhys Phase 1A				Date: 18/06/2025								
Designed by: smparry				Checked by:		Approved By:						
Report Details: Type: Connections Summary Storm Phase: Phase				Company Address: Stantec								
SW38	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S30	S6	313.967	312.420	0.300	89.740	2.4	1.47	172.7	Surcharged