

Technical Note Title: Pilsworth South MRF

Subject: Foul and Surface Water Drainage relating to Planning Permission 71273

Reference: ECL.9595.R05.002 Rev 0

Date: 20.06.2025

Author: D Homan

Reviewer: D Shoesmith

1. Introduction

- 1.1 This Technical Note (TN) has been prepared in support of new Materials Recovery Facility (MRF) to serve Pilsworth South Landfill; this has planning permission reference 71273. The TN aims to address Condition 3 relating to United Utilities (UU) statutory consultee response during the planning application. The planning authority and Lead Local Flood Authority are Bury Council (BC).
- 1.2 This TN has also been prepared as supporting and supplementary information to the Flood Risk Assessment (ref. ECL.9595.R05.001) submitted in April 2025. The latest comments from UU are provided in Appendix 1 for reference.
- 1.3 The implementation of new MRF building and related drainage has been undertaken with due consideration of all constraints. If and where necessary existing drainage has been diverted to be positioned beyond the footprint of the building. These diversionary works are limited to the pumped rising main from the Settlement Lagoon to the north-west.
- 1.4 The existing services plan information for the landfill site indicates that the MRF development does not affect UU assets; UU assets are well beyond the development footprint.
- 1.5 The new MRF development is sited within land which is presently unmade but considered greenfield. The future use of this land is designated as landfill; it has therefore been incorporated within the landfill's Surface Water Management System (SWMS).

2. Surface water management principles

- 2.1 The design of the SWMS is in line with the strategy for the landfill site which has been provided with surplus sustainable drainage systems (SuDS) located to the south and northern areas of the landfill site. The surface water (SW) runoff from the new MRF development is directed into this existing system.
- 2.2 The location of the new MRF sited at a relatively high level is conducive to utilising the nearest existing Lagoon No. 2; this is located to the south of the office/weighbridge compound. The proposed connection of the MRF drainage is to an existing chamber on the northern edge of this compound. This existing SW network serves other hard surfaces within the compound including hardstandings and roofs.
- 2.3 The existing SW network is served by an existing interceptor located prior to the final outfall into the Lagoon No. 2. Downstream of the Lagoon No.2 the landfill's SW runoff for the northern catchment, wherein the new MRF lies, discharges at the Landfill Permit restricted discharge via a control. The SWMS serving the present incomplete landfill, is considered to be substantial and sufficiently sized to accommodate required flood mitigation.

- 2.4 The use of infiltration systems is not practical given the presence of the existing SuDS relatively close to the new MRF. Furthermore, the longer term use of land immediately adjacent the MRF is intended to be for further cell development. This cell expansion will likely be undertaken as part of the final landfill works at a later stage.
- 2.5 The updated MRF Building Drainage Plan is provided in Appendix 2.

3. Leachate management

- 3.1 The new MRF building drainage includes new leachate drainage, this drainage intercepts leachate, albeit low in volume, from within the building via channel drains. This is conveyed to a sump chamber on the southern end of the building. The leachate will drain to this sump chamber and be tankered off site. In the event of a fire where there will be a larger volume of leachate/firewater, this may be recirculated through the system to help suppress the fire but will still ultimately be tankered off site to a suitably licenced facility.
- 3.2 The leachate drainage system for the MRF building does not discharge to the SW network nor the existing leachate collection and treatment system for the landfill.

4. Modelling

Updated modelling

- 4.1 The key modelling parameters are set out below:

MRF Impermeable Area	4970m ²
Impact on rainfall due to climate change	1% Annual Exceedance Rainfall = 45% 3.3% Annual Exceedance Rainfall = 40%
Rainfall	FEH version 2022
Modelled scenarios	1% AEP+45%cc, 3.3% AEP+40%, 3.3% AEP, 50% AEP

- 4.2 The SW modelling has been updated to match the latest development information; it has been completed using the Innovyze Infodrainage software. The updated modelling outputs are provided in Appendix 3. Note the main network serving the MRF is referenced 20.000; this is reflected on the proposed MRF Building Drainage plan (Appendix 2).
- 4.3 The modelling demonstrates that the MRF drainage and downstream pipework can accommodate the 3.33% Annual Exceedance Probability (AEP) events. Lagoon No.2 provides surface water flood mitigation. The overland flow route for the MRF is south along the access road into the Lagoon No.2 nearby.

5. Supporting Information

- 5.1 The proposed SWMP is provided in Appendix 4; this plan also references the management of leachate for completeness.

6. Conclusion

- 6.1 It is considered that the information provided within this TN is appropriate to allow Condition 3 to be discharged.

Appendix 1: UU letter

Our Ref: 71844
Date: 03 June 2025
Please ask for: Claire Booth
Telephone: 0161 253 5432
Email: Development.Control@bury.gov.uk

Mr Richard Kevan
Egniol
Unit 7
Ffordd y Llyn
Bangor
Southport
LL57 4DF

Dear Mr Kevan

Proposal: Application for discharge of conditions on planning permission 71273:
Condition 3 (surface water drainage) and condition 6 (contaminated land
verification)
Location: Pilsworth Quarry, Pilsworth Road, Bury, BL9 8QZ

I write to advise that Condition 3 (Surface Water Drainage) and Condition 6 (Contaminated Land Verification) are not discharged for the following reasons:

Condition 3

United Utilities has reviewed the submitted information and recommends that condition 3 is not discharged. This is because there is no determining factor where foul or surface water drains from or to the drainage plan. Accordingly, the details submitted do not satisfactorily address the requirements of the condition and therefore the condition is not discharged.

Condition 6

Information has been submitted for condition 6 (Verification), however, no information has been submitted for the preceding contaminated land conditions 4 (Ground Gas Assessment) and 5 (Remediation Strategy). Condition 6 cannot be considered until condition 4 and 5 have been satisfactorily addressed. As such, the Local Planning Authority refuses to discharge this condition.

NOTE

The Council Contaminated Land Officer(s) note that pre discharge discussions were undertaken with the applicant's consultant in March regarding potential approaches to the ground gas risk assessment and the cover system, the latter of which was agreed in principle and this information has been submitted for condition 6, but it should form part of the details required by condition 5. It is understood by Officers that the consultant is still working on the ground gas risk assessment. Once this has been submitted by the applicant and agreed, then consideration can be made of condition 5. The development should not be occupied/brought into use until the subsequent condition, 6, has been satisfied, discharge recommended, and a decision issued.

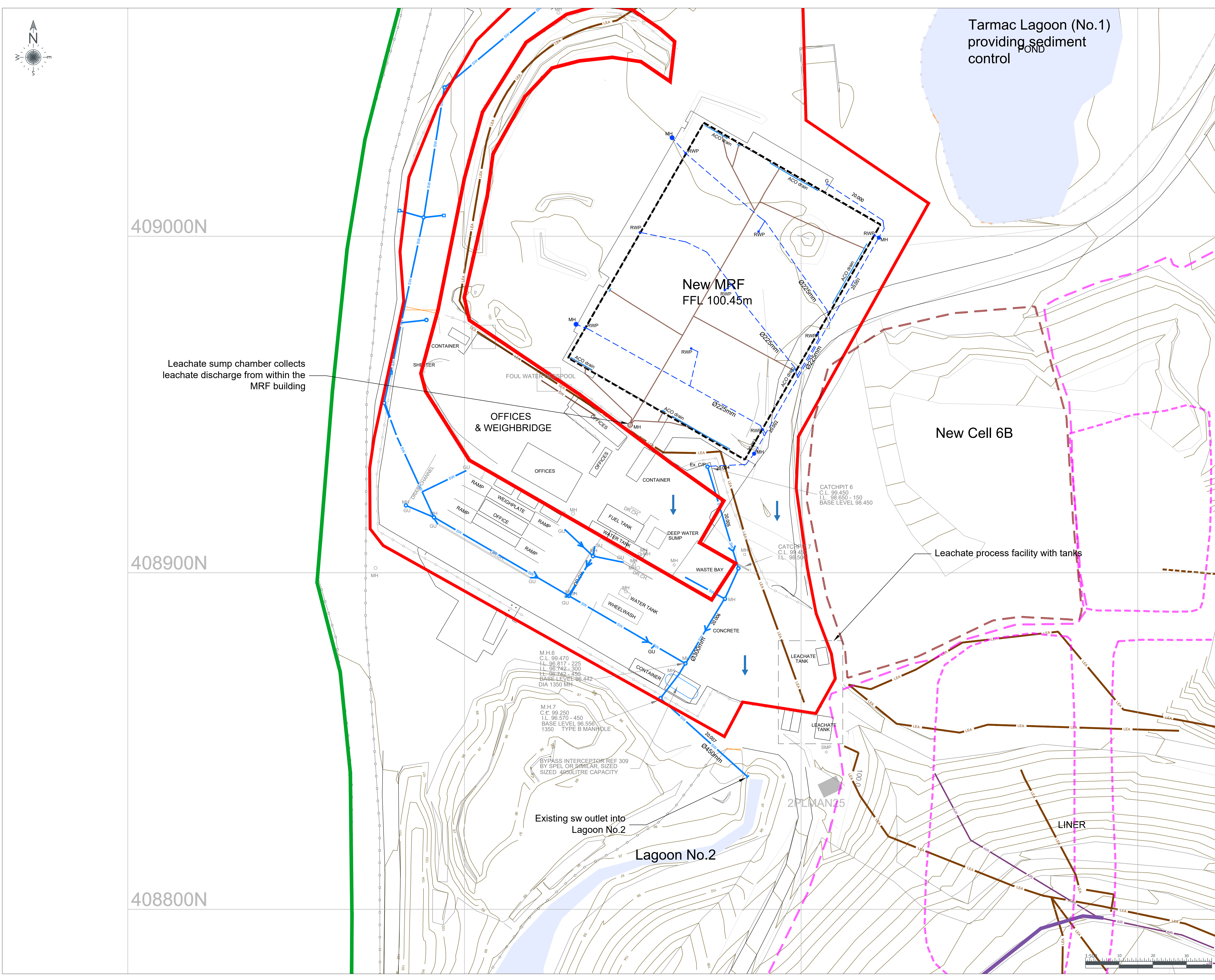
Once your client has addressed all matters, we advise they should re-apply to discharge the above-mentioned conditions. Please note that prior to any use occurring condition numbers 3, 4, 5 and 6 must be formally discharged by the Local Planning Authority prior to any use of the building occurring. We therefore look forward to receiving additional Discharge of Condition

applications from you before any use of the building occurs.

Yours sincerely

The Development Management Team

Appendix 2: MRF Building Drainage



409000N

408900N

408800N

Leachate sump chamber collects leachate discharge from within the MRF building

OFFICES & WEIGHBRIDGE

New MRF
FFL 100.45m

Tarmac Lagoon (No.1)
providing sediment
control

New Cell 6B

Leachate process facility with tanks

Lagoon No.2

Existing sw outlet into
Lagoon No.2

Notes

1. This drawing has been produced to support the review of the existing surface water management system.
2. This drawing is produced to National Grid coordinates with all levels in metres Above Ordnance Datum (m AOD) Newlyn.
3. The topographical survey information included is provided by Valencia; data included within the drawing includes the following:
MRF as built drainage survey (21/02/25)
2024 SEPT PILS DRONE SURVEY (for mrf area)
July 2024 annual topographical survey Rev A
PWS1500 - May 2024 - DU - SW and GW management
4. OS mapping is provided under licence 100035207.

Key:

- Land under the control of the Applicant
- Application Boundary
- MRF Building
- RWP Building Downpipe
- MRF SW Drain
- SW Manhole
- SW IC
- MRF Leachate Pipe
- Leachate sump chamber
- Existing SW drain
- Existing SW lagoon
- Overland flow route

Permit Notes:

Maximum rate of surface water discharge from landfill based on maximum daily volume 5000m³ or 57.9l/sec in accordance with Pilsworth South Environmental Permit EPR/BS79511B (application EPR/BS79511B/V012)

Rev	Modification	By	Chk	App	Date
P02	Existing drainage level info added	LE	DH	DES	20/06/2025



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Valencia Waste
Management Ltd.

Pilsworth South Surface
Water Management Review

MRF Building
Drainage

Drawn by LG	Checked by DJH	Approved by -
Date 19/03/25	Date 19/03/25	Date 19/03/25
Status PLANNING	Scale @ A1 1:500	Revision P02
Drawing Number ECL.9595.D01.014		

Appendix 3: Modelling Output

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



Pond 8

Type : Pond

Dimensions		
Exceedance Level (m)	101.500	
Depth (m)	1.500	
Base Level (m)	100.000	
Freeboard (mm)	250	
Initial Depth (m)	0.000	
Porosity (%)	100	
Average Slope (1:X)	4.633	
Total Volume (m³)	1781.257	
Depth (m)	Area (m²)	Volume (m³)
0.000	1050.00	0.000
0.750	1500.00	951.248
1.500	2000.00	2259.260
Inlets		
Inlet		
Inlet Type	Point Inflow	
Incoming Item(s)	Catchment Area (1)	
Bypass Destination	(None)	
Capacity Type	No Restriction	
Outlets		
Outlet		
Outgoing Connection	10.000	
Outlet Type	Free Discharge	
Advanced		
Perimeter	Circular	
Length (m)	102.846	
Friction Scheme	Manning's n	
n	0.04	

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
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Pond 7

Type : Pond

Dimensions

Exceedance Level (m)	96.000
Depth (m)	1.750
Base Level (m)	94.250
Freeboard (mm)	250
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	5.714
Total Volume (m³)	4954.239

Depth (m)	Area (m²)	Volume (m³)
0.000	2500.00	0.000
0.750	3250.00	2150.110
1.500	4250.00	4954.239

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	10.003
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	Catchment Area
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	10.004
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	140.509
Friction Scheme	Manning's n
n	0.04

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Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes			



Pond (2)

Type : Pond

Dimensions

Exceedance Level (m)	98.000
Depth (m)	1.750
Base Level (m)	96.250
Freeboard (mm)	250
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	2.525
Total Volume (m³)	1489.655

Depth (m)	Area (m²)	Volume (m³)
0.000	780.00	0.000
0.750	1000.00	665.794
1.500	1200.00	1489.655

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	1.004
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	Road
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	Landfill 2
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (3)

Inlet Type	Point Inflow
Incoming Item(s)	20.007
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	1.005
Outlet Type	Free Discharge

Advanced

Perimeter	Circular
Length (m)	124.930
Friction Scheme	Manning's n
n	0.04

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Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



Pond (3)

Type : Pond

Dimensions			
Exceedance Level (m)	95.500		
Depth (m)	1.750		
Base Level (m)	93.750		
Freeboard (mm)	250		
Initial Depth (m)	0.000		
Porosity (%)	100		
Average Slope (1:X)	1.146		
Total Volume (m³)	1619.420		
Depth (m)	Area (m²)	Volume (m³)	
0.000	980.00	0.000	
0.750	1080.00	772.196	
1.500	1180.00	1619.420	
Inlets			
Inlet			
Inlet Type	Point Inflow		
Incoming Item(s)	1.005		
Bypass Destination	(None)		
Capacity Type	No Restriction		
Outlets			
Outlet			
Outgoing Connection	1.006		
Outlet Type	Free Discharge		
Advanced			
Perimeter	Circular		
Length (m)	49.270		
Friction Scheme	Manning's n		
n	0.04		

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



 **Pond (4)**

Type : Pond

Dimensions			
Exceedance Level (m)		95.000	
Depth (m)		1.750	
Base Level (m)		93.250	
Freeboard (mm)		250	
Initial Depth (m)		0.000	
Porosity (%)		100	
Average Slope (1:X)		1.464	
Total Volume (m³)		2396.859	
Depth (m)		Area (m²)	Volume (m³)
0.000		1480.00	0.000
0.750		1588.00	1150.262
1.500		1737.38	2396.859
1.750		1850.00	2845.208

Inlets	
Inlet	
Inlet Type	Point Inflow
Incoming Item(s)	1.006
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets	
Outlet	
Outgoing Connection	1.007
Outlet Type	Free Discharge

Advanced	
Perimeter	Circular
Length (m)	61.795
Friction Scheme	Manning's n
n	0.04

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



Pond (5)

Type : Pond

Dimensions		
Exceedance Level (m)	93.500	
Depth (m)	1.500	
Base Level (m)	92.000	
Freeboard (mm)	250	
Initial Depth (m)	0.000	
Porosity (%)	100	
Average Slope (1:X)	0.826	
Total Volume (m³)	415.889	
Depth (m)	Area (m²)	Volume (m³)
0.000	300.00	0.000
1.000	350.00	324.679
1.500	410.99	514.722
2.000	410.00	719.968
Inlets		
Inlet		
Inlet Type	Point Inflow	
Incoming Item(s)	1.007	
Bypass Destination	(None)	
Capacity Type	No Restriction	
Outlets		
Outlet		
Outgoing Connection	1.008	
Outlet Type	Free Discharge	
Advanced		
Perimeter	Circular	
Length (m)	25.950	
Friction Scheme	Manning's n	
n	0.04	

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



Pond (6)

Type : Pond

Dimensions			
Exceedance Level (m)	89.250		
Depth (m)	1.600		
Base Level (m)	87.650		
Freeboard (mm)	100		
Initial Depth (m)	0.000		
Porosity (%)	100		
Average Slope (1:X)	4.26		
Total Volume (m³)	1951.603		
Depth (m)	Area (m²)	Volume (m³)	
0.000	950.00	0.000	
0.750	1250.00	822.431	
1.500	1776.51	1951.603	
Inlets			
Inlet			
Inlet Type	Point Inflow		
Incoming Item(s)	10.007		
Bypass Destination	(None)		
Capacity Type	No Restriction		
Outlets			
Outlet			
Outgoing Connection	10.008		
Outlet Type	V-Notch Weir		
Angle of V (°)	50.000		
Coefficient of Discharge	0.590		
Invert Level (m)	87.650		
Advanced			
Perimeter	Circular		
Length (m)	79.367		
Friction Scheme	Manning's n		
n	0.04		

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes			



Pond (1)

Type : Pond

Dimensions		
Exceedance Level (m)	102.150	
Depth (m)	1.500	
Base Level (m)	100.650	
Freeboard (mm)	0	
Initial Depth (m)	0.250	
Porosity (%)	100	
Average Slope (1:X)	3.577	
Total Volume (m³)	4932.340	
Depth (m)	Area (m²)	Volume (m³)
0.000	2750.00	0.000
0.750	3290.00	2261.977
1.500	3838.00	4932.340

Inlets	
Inlet	
Inlet Type	Point Inflow
Incoming Item(s)	Base Flow
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)	
Inlet Type	Point Inflow
Incoming Item(s)	Landfill 1
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)	
Inlet Type	Point Inflow
Incoming Item(s)	Landfill 3
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets	
Outlet	
Outgoing Connection	1.000
Outlet Type	Free Discharge

Advanced	
Perimeter	Circular
Length (m)	82.940
Friction Scheme	Manning's n
n	0.45

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025		
Report Details: Type: Connections Storm Phase: Phase		Designed by: DJH	Checked by:	
		Approved By:		
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		

Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Height (mm)	Side Slope (1:X)
1.001	26.437	Pipe	88.125		0.6	600		
1.002	67.051	Pipe	191.574		0.6	600		
1.003	21.501	Pipe	50.000		0.6	600		
1.004	5.260	Pipe	17.533		0.6	600		
1.005	16.252	Pipe	19.499		0.6	225		
1.006	4.632	Pipe	0.000		0.6	200		
1.007	22.036	Pipe	88.144		0.6	160		
1.009	10.809	Pipe	25.976		0.6	450		
1.008	37.069	Pipe	18.535		0.6	160		
10.001	136.136	Trapezoidal Channel	87.830		0.6	500	1311	1.00
10.002	183.032	Trapezoidal Channel	122.022		0.6	500	669	1.00
10.000	3.446	Trapezoidal Channel	5.744		0.6	500	1900	1.00
10.003	8.910	Trapezoidal Channel	7.128		0.6	500	1250	1.00
10.005	175.028	Trapezoidal Channel	36.464		0.6	500	1495	1.00
10.006	84.448	Trapezoidal Channel	93.831		0.6	500	1495	1.00
10.007	5.670	Trapezoidal Channel	0.000		0.6	500	1495	0.75
10.004	14.753	Trapezoidal Channel	18.442		0.6	500	2000	1.00
1.000	78.760	Pipe	105.014		0.6	185		
10.008	17.582	Pipe	29.144		0.6	225		
20.000	17.497	Pipe	87.484		0.6	225		
20.004	11.710	Pipe	118.256		0.6	225		
20.005	32.457	Pipe	282.232		0.6	225		
20.006	44.565	Pipe	35.000		0.6	300		
20.001	33.409	Pipe	100.000		0.6	225		
20.003	11.495	Pipe	175.000		0.6	225		
21.000	34.442	Pipe	74.021		0.6	150		
21.000 (1)	34.607	Pipe	35.276		0.6	150		
22.000	29.505	Pipe	176.376		0.6	150		
22.000 (1)	35.320	Pipe	176.376		0.6	150		
20.007	33.639	Pipe	112.129		0.6	450		
20.002	19.391	Pipe	150.000		0.6	225		
20.002 (1)	18.290	Pipe	150.000		0.6	225		

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		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		

Name	Upstream Cover Level (m)	Upstream Invert Level (m)	Downstream Cover Level (m)	Downstream Invert Level (m)	Part Family	Lock	Flow Restriction (L/s)	Culvert Type
1.001	101.000	99.900	100.500	99.600		None		(None)
1.002	100.500	99.600	100.000	99.250		None		(None)
1.003	100.000	99.250	99.400	98.820		All		(None)
1.004	99.400	98.800	99.000	98.500		All		(None)
1.005	97.000	96.250	95.500	95.417		All		(None)
1.006	95.500	93.750	95.500	93.750		All		(None)
1.007	95.000	93.250	94.000	93.000		All		(None)
1.009	90.500	89.766	90.000	89.350		All		(None)
1.008	93.000	92.000	90.500	90.000		All		(None)
10.001	101.300	99.989	99.750	98.439		All		
10.002	99.750	99.081	98.250	97.581		All		
10.000	101.900	100.000	101.300	99.400		All		
10.003	98.250	97.000	97.000	95.750		All		
10.005	95.700	94.205	90.900	89.405		All		
10.006	90.900	89.405	90.000	88.505		All		
10.007	90.000	88.505	90.000	88.505		All		
10.004	96.500	94.500	95.700	93.700		All		
1.000	102.000	100.650	101.000	99.900		None		(None)
10.008	89.250	87.650	90.000	87.047		None	1791.02	(None)
20.000	100.450	99.600	100.450	99.400		None		(None)
20.004	100.400	98.749	100.000	98.650		None		(None)
20.005	100.000	98.690	99.701	98.575		All		(None)
20.006	99.701	98.500	99.683	97.227		Levels		(None)
20.001	100.450	99.400	101.400	99.066		None		(None)
20.003	100.477	98.815	100.400	98.749		None		(None)
21.000	101.386	100.586	101.186	100.121		None		(None)
21.000 (1)	101.186	100.121	101.400	99.140		All		(None)
22.000	100.344	99.544	100.257	99.377		None		(None)
22.000 (1)	100.257	99.377	100.477	99.177		None		(None)
20.007	99.683	97.000	99.683	96.700		All		(None)
20.002	101.400	99.066	100.740	98.937		None		(None)
20.002 (1)	100.740	98.937	100.477	98.815		None		(None)

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Name	Culvert Entrance
1.001	(None)
1.002	(None)
1.003	(None)
1.004	(None)
1.005	(None)
1.006	(None)
1.007	(None)
1.009	(None)
1.008	(None)
10.001	
10.002	
10.000	
10.003	
10.005	
10.006	
10.007	
10.004	
1.000	(None)
10.008	(None)
20.000	(None)
20.004	(None)
20.005	(None)
20.006	(None)
20.001	(None)
20.003	(None)
21.000	(None)
21.000 (1)	(None)
22.000	(None)
22.000 (1)	(None)
20.007	(None)
20.002	(None)
20.002 (1)	(None)

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025			
Report Details: Type: Inflow Summary Storm Phase: Phase		Designed by: DJH	Checked by:		Approved By:
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Base Flow	Pond (1)	5.0						
Catchment Area	Pond 7		Time Area Diagram	1.500	100	0	100	1.500
Catchment Area (1)	Pond 8		Time Area Diagram	1.400	100	0	100	1.400
Landfill 1	Pond (1)		Time Area Diagram	2.800	100	0	100	2.800
Landfill 2	Pond (2)		Time Area Diagram	3.100	100	0	100	3.100
Landfill 3	Pond (1)		Time Area Diagram	2.800	100	0	100	2.800
MRF 1 - 1	S21		Time of Concentration	0.040	100	0	100	0.040
MRF 2 - 1	SJ2		Time of Concentration	0.133	100	0	100	0.133
MRF 2 - 2	S22		Time of Concentration	0.040	100	0	100	0.040
MRF 3 - 1	S24		Time of Concentration	0.090	100	0	100	0.090
MRF 3 - 2	SJ3		Time of Concentration	0.080	100	0	100	0.080
MRF 4	SJ4		Time Area Diagram	0.114	100	0	100	0.114
Road	Pond (2)		Time Area Diagram	0.710	100	0	100	0.710
Yard	S29		Time Area Diagram	0.970	100	0	100	0.970
TOTAL		5.0		13.777				13.777

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025			
Report Details: Type: Outfall Details Storm Phase: Phase	Designed by: DJH	Checked by:	Approved By:	
	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes			

Outfalls

Outfall	Outfall Type	Gated	Fixed Surcharged Level (m)	Level Curve
S16	Free Discharge			

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Title: Rainfall Analysis Criteria	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



Runoff Type	Dynamic
Output Interval (mins)	30
Time Step	Reduced
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Project: Pilsforth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025		
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: DJH	Checked by:	
		Approved By:		
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



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)
Landfill 3	FEH: 2 years: +0 %: 60 mins: Winter	2.80	157.8	328.658
Landfill 2	FEH: 2 years: +0 %: 60 mins: Winter	3.10	176.9	363.874
Road	FEH: 2 years: +0 %: 60 mins: Winter	0.71	47.2	83.334
Yard	FEH: 2 years: +0 %: 60 mins: Winter	0.97	64.2	113.848
Catchment Area	FEH: 2 years: +0 %: 60 mins: Winter	1.50	92.6	188.640
Base Flow	FEH: 2 years: +0 %: 30 mins: Summer	-	5.0	18.000
Landfill 1	FEH: 2 years: +0 %: 60 mins: Winter	2.80	157.8	328.658
Catchment Area (1)	FEH: 2 years: +0 %: 60 mins: Winter	1.40	84.6	176.068
MRF 2 - 2	FEH: 2 years: +0 %: 60 mins: Summer	0.04	3.3	4.188
MRF 3 - 1	FEH: 2 years: +0 %: 60 mins: Summer	0.09	7.5	9.425
MRF 2 - 1	FEH: 2 years: +0 %: 60 mins: Summer	0.13	11.1	13.937
MRF 4	FEH: 2 years: +0 %: 60 mins: Summer	0.11	8.7	11.945
MRF 3 - 2	FEH: 2 years: +0 %: 60 mins: Summer	0.08	6.7	8.387
MRF 1 -1	FEH: 2 years: +0 %: 60 mins: Summer	0.04	3.3	4.188

Project: Pilsforth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



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)
Landfill 3	FEH: 30 years: +0 %: 60 mins: Winter	2.80	355.0	739.136
Landfill 2	FEH: 30 years: +0 %: 60 mins: Winter	3.10	397.9	818.332
Road	FEH: 30 years: +0 %: 60 mins: Winter	0.71	106.1	187.425
Yard	FEH: 30 years: +0 %: 60 mins: Winter	0.97	144.4	256.059
Catchment Area	FEH: 30 years: +0 %: 60 mins: Winter	1.50	208.3	424.254
Base Flow	FEH: 30 years: +0 %: 30 mins: Summer	-	5.0	18.000
Landfill 1	FEH: 30 years: +0 %: 60 mins: Winter	2.80	355.0	739.136
Catchment Area (1)	FEH: 30 years: +0 %: 60 mins: Winter	1.40	190.2	395.962
MRF 2 - 2	FEH: 30 years: +0 %: 60 mins: Summer	0.04	7.5	9.419
MRF 3 - 1	FEH: 30 years: +0 %: 60 mins: Summer	0.09	16.9	21.215
MRF 2 - 1	FEH: 30 years: +0 %: 60 mins: Summer	0.13	25.0	31.348
MRF 4	FEH: 30 years: +0 %: 60 mins: Summer	0.11	19.6	26.866
MRF 3 - 2	FEH: 30 years: +0 %: 60 mins: Summer	0.08	15.1	18.857
MRF 1 -1	FEH: 30 years: +0 %: 60 mins: Summer	0.04	7.5	9.419

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Landfill 3	FEH: 30 years: +40 %: 60 mins: Winter	2.80	497.0	1034.780
Landfill 2	FEH: 30 years: +40 %: 60 mins: Winter	3.10	557.1	1145.647
Road	FEH: 30 years: +40 %: 60 mins: Winter	0.71	148.5	262.393
Yard	FEH: 30 years: +40 %: 60 mins: Winter	0.97	202.1	358.476
Catchment Area	FEH: 30 years: +40 %: 60 mins: Winter	1.50	291.7	593.942
Base Flow	FEH: 30 years: +40 %: 30 mins: Summer	-	5.0	18.000
Landfill 1	FEH: 30 years: +40 %: 60 mins: Winter	2.80	497.0	1034.780
Catchment Area (1)	FEH: 30 years: +40 %: 60 mins: Winter	1.40	266.2	554.345
MRF 2 - 2	FEH: 30 years: +40 %: 60 mins: Summer	0.04	10.5	13.193
MRF 3 - 1	FEH: 30 years: +40 %: 60 mins: Summer	0.09	23.7	29.704
MRF 2 - 1	FEH: 30 years: +40 %: 60 mins: Summer	0.13	35.0	43.880
MRF 4	FEH: 30 years: +40 %: 60 mins: Summer	0.11	27.4	37.614
MRF 3 - 2	FEH: 30 years: +40 %: 60 mins: Summer	0.08	21.1	26.392
MRF 1 -1	FEH: 30 years: +40 %: 60 mins: Summer	0.04	10.5	13.193

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Landfill 3	FEH: 100 years: +45 %: 60 mins: Winter	2.80	660.8	1375.94 3
Landfill 2	FEH: 100 years: +45 %: 60 mins: Winter	3.10	740.7	1523.36 1
Road	FEH: 100 years: +45 %: 60 mins: Winter	0.71	197.5	348.886
Yard	FEH: 100 years: +45 %: 60 mins: Winter	0.97	268.8	476.651
Catchment Area	FEH: 100 years: +45 %: 60 mins: Winter	1.50	387.9	789.753
Base Flow	FEH: 100 years: +45 %: 30 mins: Summer	-	5.0	18.000
Landfill 1	FEH: 100 years: +45 %: 60 mins: Winter	2.80	660.8	1375.94 3
Catchment Area (1)	FEH: 100 years: +45 %: 60 mins: Winter	1.40	354.0	737.105
MRF 2 - 2	FEH: 100 years: +45 %: 60 mins: Summer	0.04	14.0	17.548
MRF 3 - 1	FEH: 100 years: +45 %: 60 mins: Summer	0.09	31.5	39.488
MRF 2 - 1	FEH: 100 years: +45 %: 60 mins: Summer	0.13	46.6	58.355
MRF 4	FEH: 100 years: +45 %: 60 mins: Summer	0.11	36.4	50.017
MRF 3 - 2	FEH: 100 years: +45 %: 60 mins: Summer	0.08	28.0	35.102
MRF 1 -1	FEH: 100 years: +45 %: 60 mins: Summer	0.04	14.0	17.548

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes	



FEH: 2 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
S1	FEH: 2 years: +0 %: 240 mins: Winter	101.000	99.900	99.991	0.091	35.8	0.103	0.000	35.8	991.880	OK
S2	FEH: 2 years: +0 %: 240 mins: Winter	100.500	99.600	99.713	0.113	35.8	0.128	0.000	35.8	990.148	OK
S3	FEH: 2 years: +0 %: 240 mins: Winter	100.000	99.250	99.331	0.081	35.8	0.091	0.000	35.8	988.732	OK
S4	FEH: 2 years: +0 %: 240 mins: Winter	99.400	98.800	98.867	0.067	35.8	0.076	0.000	35.8	988.571	OK
S5	FEH: 2 years: +0 %: 1440 mins: Winter	90.500	89.766	89.851	0.085	43.2	0.096	0.000	43.2	5056.542	OK
S16	FEH: 2 years: +0 %: 2160 mins: Winter	90.000	87.047	87.058	0.012	54.1	0.000	0.000	54.1	6548.877	OK
S10	FEH: 2 years: +0 %: 30 mins: Winter	101.300	99.400	100.069	0.669	75.3	0.756	0.000	75.5	99.390	OK
S11	FEH: 2 years: +0 %: 120 mins: Winter	99.750	98.439	99.158	0.719	56.5	0.813	0.000	60.3	179.645	OK
S12	FEH: 2 years: +0 %: 120 mins: Winter	98.250	97.000	97.030	0.030	60.3	0.034	0.000	60.3	179.625	OK
S13	FEH: 2 years: +0 %: 1440 mins: Winter	95.700	93.700	94.234	0.534	20.0	0.604	0.000	20.0	392.187	OK
S14	FEH: 2 years: +0 %: 1440 mins: Winter	90.900	89.405	89.443	0.038	20.0	0.043	0.000	20.0	392.120	OK
S15	FEH: 2 years: +0 %: 1440 mins: Winter	90.000	88.505	88.578	0.073	20.0	0.082	0.000	20.0	391.993	OK
S20	FEH: 2 years: +0 %: 30 mins: Summer	100.450	99.600	99.600	0.000	0.0	0.000	0.000	0.0	0.000	OK
S21	FEH: 2 years: +0 %: 60 mins: Summer	100.450	99.400	99.436	0.036	3.3	0.041	0.000	3.1	4.189	OK
S26	FEH: 2 years: +0 %: 60 mins: Summer	100.400	98.749	98.948	0.199	36.1	0.225	0.000	33.9	52.059	OK
S27	FEH: 2 years: +0 %: 60 mins: Winter	100.000	98.650	98.891	0.241	33.3	0.273	0.000	31.9	58.263	OK
S28	FEH: 2 years: +0 %: 60 mins: Winter	99.701	98.500	98.584	0.084	31.9	0.095	0.000	31.3	58.263	OK
S29	FEH: 2 years: +0 %: 60 mins: Winter	99.683	97.000	97.183	0.183	95.5	0.207	0.000	93.5	171.775	OK
S22	FEH: 2 years: +0 %: 60 mins: Summer	101.400	99.066	99.167	0.101	17.1	0.114	0.000	16.3	22.300	OK
S24	FEH: 2 years: +0 %: 60 mins: Summer		98.815	99.020	0.206	37.5			36.1	52.053	OK
S25	FEH: 2 years: +0 %: 30 mins: Summer	100.344	99.544	99.544	0.000	0.0	0.000	0.000	0.0	0.000	OK
S23	FEH: 2 years: +0 %: 30 mins: Summer	101.386	100.586	100.586	0.000	0.0	0.000	0.000	0.0	0.000	OK
SJ2	FEH: 2 years: +0 %: 60 mins: Summer		100.121	100.184	0.063	11.1			10.6	13.914	OK
SJ3	FEH: 2 years: +0 %: 60 mins: Summer		99.377	99.450	0.073	6.7			6.0	8.386	OK
SJ4	FEH: 2 years: +0 %: 60 mins: Summer		98.937	99.068	0.131	25.0			23.9	34.247	OK

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: DJH	Checked by:	
		Approved By:		
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



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
S1	FEH: 30 years: +0 %: 360 mins: Winter	101.00	99.900	99.996	0.096	40.0	0.109	0.000	40.0	1605.317	OK
S2	FEH: 30 years: +0 %: 360 mins: Winter	100.50	99.600	99.720	0.120	40.0	0.135	0.000	40.0	1603.489	OK
S3	FEH: 30 years: +0 %: 360 mins: Winter	100.00	99.250	99.335	0.085	40.0	0.097	0.000	40.0	1601.995	OK
S4	FEH: 30 years: +0 %: 360 mins: Winter	99.400	98.800	98.871	0.071	40.0	0.081	0.000	40.0	1601.825	OK
S5	FEH: 30 years: +0 %: 2160 mins: Winter	90.500	89.766	89.859	0.093	50.7	0.105	0.000	50.7	9027.242	OK
S16	FEH: 30 years: +0 %: 960 mins: Winter	90.000	87.047	87.100	0.054	87.2	0.000	0.000	87.2	5467.793	OK
S10	FEH: 30 years: +0 %: 30 mins: Winter	101.300	99.400	100.131	0.731	190.2	0.826	0.000	200.8	259.071	OK
S11	FEH: 30 years: +0 %: 30 mins: Winter	99.750	98.439	99.218	0.779	200.8	0.881	0.000	150.8	201.474	OK
S12	FEH: 30 years: +0 %: 30 mins: Winter	98.250	97.000	97.059	0.059	150.8	0.067	0.000	150.0	201.358	OK
S13	FEH: 30 years: +0 %: 360 mins: Winter	95.700	93.700	94.274	0.574	85.4	0.649	0.000	85.1	578.128	OK
S14	FEH: 30 years: +0 %: 360 mins: Winter	90.900	89.405	89.496	0.091	85.1	0.103	0.000	84.4	577.835	OK
S15	FEH: 30 years: +0 %: 360 mins: Winter	90.000	88.505	88.672	0.167	84.4	0.189	0.000	83.9	577.419	OK
S20	FEH: 30 years: +0 %: 30 mins: Winter	100.450	99.600	99.828	0.228	0.0	0.257	0.000	6.5	3.344	Surcharged
S21	FEH: 30 years: +0 %: 30 mins: Winter	100.450	99.400	99.824	0.424	8.1	0.479	0.000	14.1	14.958	Surcharged
S26	FEH: 30 years: +0 %: 60 mins: Winter	100.400	98.749	99.452	0.703	61.5	0.795	0.000	59.7	131.216	Surcharged
S27	FEH: 30 years: +0 %: 30 mins: Winter	100.000	98.650	99.278	0.628	58.4	0.711	0.000	60.9	101.169	Surcharged
S28	FEH: 30 years: +0 %: 30 mins: Winter	99.701	98.500	98.623	0.123	60.9	0.139	0.000	62.5	101.146	OK
S29	FEH: 30 years: +0 %: 60 mins: Winter	99.683	97.000	97.432	0.432	201.7	0.488	0.000	198.2	384.548	OK
S22	FEH: 30 years: +0 %: 30 mins: Winter	101.400	99.066	99.789	0.723	22.1	0.818	0.000	26.5	46.855	Surcharged
S24	FEH: 30 years: +0 %: 60 mins: Winter		98.815	99.662	0.848	63.9			61.5	131.211	Surcharged
S25	FEH: 30 years: +0 %: 30 mins: Winter	100.344	99.544	99.779	0.235	0.0	0.221	0.000	3.5	2.553	Surcharged
S23	FEH: 30 years: +0 %: 30 mins: Winter	101.386	100.586	100.591	0.005	0.0	0.005	0.000	0.0	0.907	OK
SJ2	FEH: 30 years: +0 %: 60 mins: Summer		100.121	100.242	0.121	25.0			21.6	31.801	OK
SJ3	FEH: 30 years: +0 %: 30 mins: Winter		99.377	99.765	0.388	6.8			10.5	18.712	Surcharged
SJ4	FEH: 30 years: +0 %: 60 mins: Winter		98.937	99.796	0.859	43.3			40.8	86.364	Surcharged

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: DJH	Checked by:	
		Approved By:		
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



FEH: 30 years: Increase Rainfall (%): +40: 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
S1	FEH: 30 years: +40 %: 480 mins: Winter	101.000	99.900	100.001	0.101	44.0	0.115	0.000	44.0	2296.469	OK
S2	FEH: 30 years: +40 %: 480 mins: Winter	100.500	99.600	99.725	0.125	44.0	0.142	0.000	44.0	2294.546	OK
S3	FEH: 30 years: +40 %: 480 mins: Winter	100.000	99.250	99.340	0.090	44.0	0.101	0.000	44.0	2292.977	OK
S4	FEH: 30 years: +40 %: 480 mins: Winter	99.400	98.800	98.875	0.075	44.0	0.085	0.000	44.0	2292.799	OK
S5	FEH: 30 years: +40 %: 2160 mins: Winter	90.500	89.766	89.867	0.101	58.6	0.114	0.000	58.6	11562.875	OK
S16	FEH: 30 years: +40 %: 720 mins: Winter	90.000	87.047	87.164	0.117	129.1	0.000	0.000	129.1	4872.657	OK
S10	FEH: 30 years: +40 %: 30 mins: Winter	101.300	99.400	100.164	0.764	286.7	0.864	0.000	286.4	377.055	OK
S11	FEH: 30 years: +40 %: 30 mins: Winter	99.750	98.439	99.275	0.837	286.4	0.946	0.000	280.9	317.753	OK
S12	FEH: 30 years: +40 %: 30 mins: Winter	98.250	97.000	97.095	0.095	280.9	0.107	0.000	280.7	317.622	OK
S13	FEH: 30 years: +40 %: 180 mins: Winter	95.700	93.700	94.309	0.609	171.6	0.689	0.000	168.7	794.310	OK
S14	FEH: 30 years: +40 %: 180 mins: Winter	90.900	89.405	89.540	0.135	168.7	0.153	0.000	162.9	793.567	OK
S15	FEH: 30 years: +40 %: 240 mins: Winter	90.000	88.505	88.745	0.240	160.0	0.271	0.000	158.4	913.803	OK
S20	FEH: 30 years: +40 %: 60 mins: Winter	100.450	99.600	100.450	0.850	3.2	1.034	0.073	0.0	7.830	Flood
S21	FEH: 30 years: +40 %: 30 mins: Summer	100.450	99.400	100.454	1.054	2.1	5.279	4.091	32.3	30.025	Flood
S26	FEH: 30 years: +40 %: 60 mins: Winter	100.400	98.749	99.914	1.165	80.9	1.318	0.000	78.4	183.747	Surcharged
S27	FEH: 30 years: +40 %: 60 mins: Winter	100.000	98.650	99.579	0.929	78.4	1.051	0.000	76.4	183.670	Surcharged
S28	FEH: 30 years: +40 %: 60 mins: Winter	99.701	98.500	98.636	0.136	76.4	0.154	0.000	76.2	182.720	OK
S29	FEH: 30 years: +40 %: 60 mins: Winter	99.683	97.000	97.867	0.867	278.3	0.981	0.000	270.2	534.839	Surcharged
S22	FEH: 30 years: +40 %: 30 mins: Winter	101.400	99.066	100.373	1.307	42.1	1.478	0.000	42.7	75.837	Surcharged
S24	FEH: 30 years: +40 %: 60 mins: Winter		98.815	100.255	1.440	83.7			80.9	183.740	Surcharged
S25	FEH: 30 years: +40 %: 30 mins: Summer	100.344	99.544	100.346	0.802	0.0	2.799	2.046	10.7	6.031	Flood
S23	FEH: 30 years: +40 %: 30 mins: Winter	101.386	100.586	100.631	0.045	0.0	0.051	0.000	4.3	4.318	OK
SJ2	FEH: 30 years: +40 %: 60 mins: Winter		100.121	101.014	0.893	31.6			22.5	50.304	Surcharged
SJ3	FEH: 30 years: +40 %: 30 mins: Summer		99.377	100.237	0.860	14.8			15.1	26.231	Surcharged
SJ4	FEH: 30 years: +40 %: 30 mins: Winter		98.937	100.228	1.291	50.1			50.8	93.307	Surcharged

Project: Pilsforth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes			




FEH: 100 years: Increase Rainfall (%): +45: 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
S1	FEH: 100 years: +45 %: 720 mins: Winter	101.000	99.900	100.006	0.106	47.9	0.120	0.000	47.9	3653.966	OK
S2	FEH: 100 years: +45 %: 720 mins: Winter	100.500	99.600	99.731	0.131	47.9	0.148	0.000	47.9	3651.992	OK
S3	FEH: 100 years: +45 %: 720 mins: Winter	100.000	99.250	99.344	0.094	47.9	0.106	0.000	47.9	3650.383	OK
S4	FEH: 100 years: +45 %: 720 mins: Winter	99.400	98.800	98.879	0.079	47.9	0.089	0.000	47.9	3650.200	OK
S5	FEH: 100 years: +45 %: 2880 mins: Winter	90.500	89.766	89.872	0.106	64.3	0.120	0.000	64.3	16761.088	OK
S16	FEH: 100 years: +45 %: 720 mins: Winter	90.000	87.047	87.209	0.162	147.0	0.000	0.000	147.0	5699.658	OK
S10	FEH: 100 years: +45 %: 30 mins: Winter	101.300	99.400	100.197	0.797	368.6	0.902	0.000	386.9	511.929	OK
S11	FEH: 100 years: +45 %: 30 mins: Winter	99.750	98.439	99.318	0.880	386.9	0.995	0.000	397.8	451.322	OK
S12	FEH: 100 years: +45 %: 30 mins: Winter	98.250	97.000	97.123	0.123	397.8	0.139	0.000	397.9	451.178	OK
S13	FEH: 100 years: +45 %: 120 mins: Winter	95.700	93.700	94.362	0.662	339.4	0.748	0.000	339.7	1046.746	OK
S14	FEH: 100 years: +45 %: 120 mins: Winter	90.900	89.405	89.611	0.206	339.7	0.233	0.000	339.6	1045.362	OK
S15	FEH: 100 years: +45 %: 120 mins: Winter	90.000	88.505	88.872	0.367	339.6	0.415	0.000	339.0	1044.284	OK
S20	FEH: 100 years: +45 %: 60 mins: Summer	100.450	99.600	100.457	0.857	4.2	8.150	7.189	32.6	14.723	Flood
S21	FEH: 100 years: +45 %: 60 mins: Winter	100.450	99.400	100.456	1.056	43.5	6.916	5.728	37.0	62.235	Flood
S26	FEH: 100 years: +45 %: 60 mins: Summer	100.400	98.749	100.081	1.332	85.5	1.507	0.000	84.2	218.145	Surcharged
S27	FEH: 100 years: +45 %: 60 mins: Summer	100.000	98.650	99.703	1.053	84.2	1.190	0.000	83.3	218.067	Flood Risk
S28	FEH: 100 years: +45 %: 60 mins: Summer	99.701	98.500	98.639	0.139	83.3	0.157	0.000	83.3	217.104	OK
S29	FEH: 100 years: +45 %: 60 mins: Winter	99.683	97.000	98.359	1.359	351.6	1.537	0.000	347.1	711.470	Surcharged
S22	FEH: 100 years: +45 %: 60 mins: Winter	101.400	99.066	100.581	1.516	44.0	1.714	0.000	44.2	129.900	Surcharged

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1				Date: 20/06/2025									
Report Details: Type: Junctions Summary Storm Phase: Phase				Designed by: DJH		Checked by:						Approved By:	
				Company Address: Egniol Consulting Ltd Warren Park Milton Keynes									
S24	FEH: 100 years: +45 %: 60 mins: Summer		98.81 5	100.45 5	1.640	87.3			85.5	218.136	Surcharged		
S25	FEH: 100 years: +45 %: 60 mins: Winter	100.3 44	99.54 4	100.34 8	0.803	14.2	3.940	3.186	12.4	12.231	Flood		
S23	FEH: 100 years: +45 %: 30 mins: Summer	101.3 86	100.5 86	101.38 9	0.802	0.0	3.280	2.376	16.4	8.690	Flood		
SJ2	FEH: 100 years: +45 %: 60 mins: Summer		100.1 21	101.55 3	1.432	46.6			31.3	65.668	Surcharged		
SJ3	FEH: 100 years: +45 %: 60 mins: Winter		99.37 7	100.53 2	1.155	25.3			15.6	51.390	Surcharged		
SJ4	FEH: 100 years: +45 %: 30 mins: Winter		98.93 7	100.30 8	1.371	51.9			52.4	123.395	Surcharged		

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025			
		Designed by: DJH	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes			



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

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Pond 8	FEH: 2 years: +0 %: 30 mins: Winter	100.102	100.072	0.102	0.072	60.4	96.459	0.000	0.000	75.3	101.316	94.585	OK
Pond 7	FEH: 2 years: +0 %: 1440 mins: Winter	94.521	94.521	0.271	0.271	31.9	711.060	0.000	0.000	20.0	396.079	85.647	OK
Pond (2)	FEH: 2 years: +0 %: 120 mins: Winter	96.826	96.825	0.576	0.575	293.9	496.048	0.000	0.000	126.4	1242.327	66.700	OK
Pond (3)	FEH: 2 years: +0 %: 480 mins: Winter	94.434	94.434	0.684	0.684	113.3	701.321	0.000	0.000	93.5	2870.930	56.693	OK
Pond (4)	FEH: 2 years: +0 %: 1440 mins: Winter	94.138	94.138	0.888	0.888	77.1	1370.506	0.000	0.000	43.2	5068.743	42.821	OK
Pond (5)	FEH: 2 years: +0 %: 1440 mins: Winter	92.124	92.123	0.124	0.123	43.2	37.348	0.000	0.000	43.2	5056.631	91.020	OK
Pond (6)	FEH: 2 years: +0 %: 7200 mins: Summer	87.838	87.838	0.188	0.188	16.1	185.653	0.000	0.000	12.9	1063.255	90.487	OK
Pond (1)	FEH: 2 years: +0 %: 240 mins: Winter	101.138	101.137	0.488	0.487	196.1	1424.079	0.000	0.000	35.8	992.744	71.128	OK

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025		
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Designed by: DJH	Checked by:	
		Approved By:		
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



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

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Pond 8	FEH: 30 years: +0 %: 30 mins: Winter	100.160	100.134	0.160	0.134	134.8	162.562	0.000	0.000	190.2	260.134	90.874	OK
Pond 7	FEH: 30 years: +0 %: 360 mins: Winter	94.551	94.551	0.301	0.301	138.2	796.130	0.000	0.000	85.4	582.150	83.930	OK
Pond (2)	FEH: 30 years: +0 %: 60 mins: Winter	97.427	97.427	1.177	1.177	735.8	1116.347	0.000	0.000	158.2	889.087	25.060	OK
Pond (3)	FEH: 30 years: +0 %: 960 mins: Winter	94.791	94.791	1.041	1.041	127.0	1091.473	0.000	0.000	100.4	6149.503	32.601	OK
Pond (4)	FEH: 30 years: +0 %: 1440 mins: Winter	94.546	94.546	1.296	1.296	91.3	2045.863	0.000	0.000	52.4	6954.629	14.644	OK
Pond (5)	FEH: 30 years: +0 %: 2160 mins: Winter	92.395	92.395	0.395	0.395	52.2	122.297	0.000	0.000	50.7	9027.322	70.594	OK
Pond (6)	FEH: 30 years: +0 %: 960 mins: Winter	87.959	87.959	0.309	0.309	64.7	311.749	0.000	0.000	43.9	902.880	84.026	OK
Pond (1)	FEH: 30 years: +0 %: 360 mins: Winter	101.430	101.430	0.780	0.780	271.6	2361.751	0.000	0.000	40.0	1606.221	52.117	OK

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025		
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Designed by: DJH	Checked by:	
		Approved By:		
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max.
DS Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Pond 8	FEH: 30 years: +40 %: 30 mins: Winter	100.193	100.168	0.193	0.168	188.7	200.582	0.000	0.000	286.7	378.055	88.739	OK
Pond 7	FEH: 30 years: +40 %: 180 mins: Winter	94.580	94.579	0.330	0.329	288.7	876.248	0.000	0.000	171.6	798.587	82.313	OK
Pond (2)	FEH: 30 years: +40 %: 120 mins: Winter	97.900	97.900	1.650	1.650	762.5	1669.504	0.000	0.000	180.6	2064.625	-12.073	Flood Risk
Pond (3)	FEH: 30 years: +40 %: 1440 mins: Winter	95.250	95.250	1.500	1.500	137.6	1618.859	0.000	0.000	100.3	9782.835	0.035	OK
Pond (4)	FEH: 30 years: +40 %: 2160 mins: Winter	94.953	94.953	1.703	1.703	93.4	2758.779	0.000	0.000	60.6	11590.335	-15.100	Flood Risk
Pond (5)	FEH: 30 years: +40 %: 2160 mins: Winter	93.008	93.008	1.008	1.008	60.6	327.601	0.000	0.000	58.6	11563.111	21.229	OK
Pond (6)	FEH: 30 years: +40 %: 360 mins: Winter	88.079	88.079	0.429	0.429	154.0	442.398	0.000	0.000	92.1	979.629	77.332	OK
Pond (1)	FEH: 30 years: +40 %: 480 mins: Winter	101.695	101.694	1.045	1.044	308.8	3261.609	0.000	0.000	44.0	2297.412	33.873	OK

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025			
		Designed by: DJH	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes			



FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By:
 Max. DS Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Pond 8	FEH: 100 years: +45 %: 30 mins: Winter	100.225	100.201	0.225	0.201	248.7	238.521	0.000	0.000	368.6	511.127	86.609	OK
Pond 7	FEH: 100 years: +45 %: 120 mins: Winter	94.624	94.622	0.374	0.372	449.1	998.403	0.000	0.000	339.4	1051.260	79.848	OK
Pond (2)	FEH: 100 years: +45 %: 120 mins: Winter	98.412	98.412	2.162	2.162	975.9	2284.053	494.398	0.000	203.1	2317.193	-53.328	Flood
Pond (3)	FEH: 100 years: +45 %: 2160 mins: Winter	95.758	95.758	2.008	2.008	145.5	2219.382	304.962	0.000	108.8	14950.549	-37.048	Flood
Pond (4)	FEH: 100 years: +45 %: 2160 mins: Winter	95.430	95.430	2.180	2.180	108.8	3640.700	795.492	0.000	69.0	13435.200	-51.895	Flood
Pond (5)	FEH: 100 years: +45 %: 2880 mins: Winter	93.465	93.465	1.465	1.465	68.7	500.433	0.000	0.000	64.3	16761.293	-20.329	Flood Risk
Pond (6)	FEH: 100 years: +45 %: 360 mins: Winter	88.287	88.287	0.637	0.637	239.0	684.354	0.000	0.000	107.3	1489.449	64.934	OK
Pond (1)	FEH: 100 years: +45 %: 720 mins: Winter	101.970	101.970	1.320	1.320	298.3	4252.318	0.000	0.000	47.9	3654.930	13.787	OK

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025		
Report Details: Type: Connections Summary Storm Phase: Phase		Designed by: DJH	Checked by:	
		Approved By:		
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



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
1.001	FEH: 2 years: +0 %: 240 mins: Winter	Pipe	S1	S2	101.000	99.991	0.102	991.880	1.1	0.05	35.8	OK
1.002	FEH: 2 years: +0 %: 240 mins: Winter	Pipe	S2	S3	100.500	99.713	0.097	990.148	1.2	0.07	35.8	OK
1.003	FEH: 2 years: +0 %: 240 mins: Winter	Pipe	S3	S4	100.000	99.331	0.079	988.732	1.6	0.04	35.8	OK
1.004	FEH: 2 years: +0 %: 240 mins: Winter	Pipe	S4	Pond (2)	99.400	98.867	0.064	988.571	2.2	0.02	35.8	OK
1.005	FEH: 2 years: +0 %: 120 mins: Winter	Pipe	Pond (2)	Pond (3)	97.000	96.826	0.225	1242.327	3.2	1.07	126.4	Surcharged
1.006	FEH: 2 years: +0 %: 480 mins: Winter	Pipe	Pond (3)	Pond (4)	95.500	94.434	0.200	2870.930	3.0	3.97	93.5	Surcharged
1.007	FEH: 2 years: +0 %: 1440 mins: Winter	Pipe	Pond (4)	Pond (5)	95.000	94.138	0.160	5068.743	2.2	1.92	43.2	Surcharged
1.009	FEH: 2 years: +0 %: 1440 mins: Winter	Pipe	S5	S16	90.500	89.851	0.082	5056.542	2.2	0.07	43.2	OK
1.008	FEH: 2 years: +0 %: 1440 mins: Winter	Pipe	Pond (5)	S5	93.000	92.123	0.119	5056.631	2.7	0.88	43.2	OK
10.001	FEH: 2 years: +0 %: 30 mins: Winter	Trapezoidal Channel	S10	S11	101.300	100.069	0.358	99.390	0.5	0.01	75.5	OK
10.002	FEH: 2 years: +0 %: 120 mins: Winter	Trapezoidal Channel	S11	S12	99.750	99.158	0.092	179.645	1.1	0.02	60.3	OK
10.000	FEH: 2 years: +0 %: 30 mins: Winter	Trapezoidal Channel	Pond 8	S10	101.900	100.090	0.370	101.316	0.2	0	75.3	OK
10.003	FEH: 2 years: +0 %: 120 mins: Winter	Trapezoidal Channel	S12	Pond 7	98.250	97.030	0.064	179.625	1.7	0	60.3	OK
10.005	FEH: 2 years: +0 %: 1440 mins: Winter	Trapezoidal Channel	S13	S14	95.700	94.234	0.034	392.187	1.1	0	20.0	OK
10.006	FEH: 2 years: +0 %: 1440 mins: Winter	Trapezoidal Channel	S14	S15	90.900	89.443	0.056	392.120	0.6	0	20.0	OK
10.007	FEH: 2 years: +0 %: 1440 mins: Winter	Trapezoidal Channel	S15	Pond (6)	90.000	88.578	0.061	391.993	0.6	0.01	20.0	OK
10.004	FEH: 2 years: +0 %: 1440 mins: Winter	Trapezoidal Channel	Pond 7	S13	96.500	94.521	0.277	396.079	0.1	0	20.0	OK
1.000	FEH: 2 years: +0 %: 240 mins: Winter	Pipe	Pond (1)	S1	102.000	101.138	0.185	992.744	1.3	1.18	35.8	Surcharged
10.008	FEH: 2 years: +0 %: 7200 mins: Summer	Pipe	Pond (6)	S16	89.250	87.838	0.040	1063.250	2.7	0.13	12.9	OK

Project: Pilsforth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025			
Report Details: Type: Connections Summary Storm Phase: Phase		Designed by: DJH	Checked by:		Approved By:
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes			

20.000	FEH: 2 years: +0 %: 30 mins: Summer	Pipe	S20	S21	100.450	99.600	0.009	0.000	0.0	0	0.0	OK
20.004	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	S26	S27	100.400	98.948	0.219	52.059	0.9	0.71	33.9	OK
20.005	FEH: 2 years: +0 %: 60 mins: Winter	Pipe	S27	S28	100.000	98.891	0.175	58.263	1.0	1.04	31.9	OK
20.006	FEH: 2 years: +0 %: 60 mins: Winter	Pipe	S28	S29	99.701	98.584	0.083	58.263	1.9	0.17	31.3	OK
20.001	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	S21	S22	100.450	99.436	0.069	4.189	0.3	0.06	3.1	OK
20.003	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	S24	S26	100.477	99.020	0.202	52.053	1.0	0.92	36.1	OK
21.000	FEH: 2 years: +0 %: 30 mins: Summer	Pipe	S23	SJ2	101.386	100.586	0.014	0.000	0.0	0	0.0	OK
21.000 (1)	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	SJ2	S22	101.186	100.184	0.062	13.914	1.5	0.35	10.6	OK
22.000	FEH: 2 years: +0 %: 30 mins: Summer	Pipe	S25	SJ3	100.344	99.544	0.017	0.000	0.0	0	0.0	OK
22.000 (1)	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	SJ3	S24	100.257	99.450	0.072	8.386	0.7	0.45	6.0	OK
20.007	FEH: 2 years: +0 %: 60 mins: Winter	Pipe	S29	Pond (2)	99.683	97.183	0.176	171.775	1.6	0.31	93.5	OK
20.002	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	S22	SJ4	101.400	99.167	0.116	22.300	0.8	0.38	16.3	OK
20.002 (1)	FEH: 2 years: +0 %: 60 mins: Summer	Pipe	SJ4	S24	100.740	99.068	0.168	34.247	0.7	0.57	23.9	OK

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025		
Report Details: Type: Connections Summary Storm Phase: Phase		Designed by: DJH	Checked by:	
		Approved By:		
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



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
1.001	FEH: 30 years: +0 %: 360 mins: Winter	Pipe	S1	S2	101.000	99.996	0.108	1605.317	1.2	0.05	40.0	OK
1.002	FEH: 30 years: +0 %: 360 mins: Winter	Pipe	S2	S3	100.500	99.720	0.102	1603.489	1.2	0.08	40.0	OK
1.003	FEH: 30 years: +0 %: 360 mins: Winter	Pipe	S3	S4	100.000	99.335	0.084	1601.995	1.7	0.04	40.0	OK
1.004	FEH: 30 years: +0 %: 360 mins: Winter	Pipe	S4	Pond (2)	99.400	98.871	0.068	1601.825	2.3	0.02	40.0	OK
1.005	FEH: 30 years: +0 %: 60 mins: Winter	Pipe	Pond (2)	Pond (3)	97.000	97.427	0.225	889.087	4.0	1.34	158.2	Surcharged
1.006	FEH: 30 years: +0 %: 360 mins: Winter	Pipe	Pond (3)	Pond (4)	95.500	94.714	0.200	3032.455	3.7	4.92	115.8	Surcharged
1.007	FEH: 30 years: +0 %: 1440 mins: Winter	Pipe	Pond (4)	Pond (5)	95.000	94.546	0.160	6954.629	2.6	2.33	52.4	Surcharged
1.009	FEH: 30 years: +0 %: 2160 mins: Winter	Pipe	S5	S16	90.500	89.859	0.089	9027.242	2.3	0.08	50.7	OK
1.008	FEH: 30 years: +0 %: 2160 mins: Winter	Pipe	Pond (5)	S5	93.000	92.395	0.160	9027.322	2.7	1.03	50.7	Surcharged
10.001	FEH: 30 years: +0 %: 30 mins: Winter	Trapezoidal Channel	S10	S11	101.300	100.131	0.461	259.071	0.5	0.01	200.8	OK
10.002	FEH: 30 years: +0 %: 30 mins: Winter	Trapezoidal Channel	S11	S12	99.750	99.218	0.161	201.474	1.4	0.05	150.8	OK
10.000	FEH: 30 years: +0 %: 30 mins: Winter	Trapezoidal Channel	Pond 8	S10	101.900	100.149	0.432	260.134	0.5	0	190.2	OK
10.003	FEH: 30 years: +0 %: 30 mins: Winter	Trapezoidal Channel	S12	Pond 7	98.250	97.059	0.111	201.358	2.2	0	150.0	OK
10.005	FEH: 30 years: +0 %: 360 mins: Winter	Trapezoidal Channel	S13	S14	95.700	94.274	0.080	578.128	1.8	0	85.1	OK

Project: Pilsforth South MRF Project No 9595 Sw model existing - v4.1			Date: 20/06/2025			
Report Details: Type: Connections Summary Storm Phase: Phase			Designed by: DJH	Checked by:	Approved By:	
			Company Address: Egniol Consulting Ltd Warren Park Milton Keynes			

10.006	FEH: 30 years: +0 %: 360 mins: Winter	Trapezoidal Channel	S14	S15	90.900	89.496	0.129	577.835	1.0	0	84.4	OK
10.007	FEH: 30 years: +0 %: 360 mins: Winter	Trapezoidal Channel	S15	Pond (6)	90.000	88.672	0.149	577.419	0.9	0.05	83.9	OK
10.004	FEH: 30 years: +0 %: 360 mins: Winter	Trapezoidal Channel	Pond 7	S13	96.500	94.551	0.312	582.150	0.3	0	85.4	OK
1.000	FEH: 30 years: +0 %: 360 mins: Winter	Pipe	Pond (1)	S1	102.000	101.430	0.185	1606.221	1.5	1.32	40.0	Surcharged
10.008	FEH: 30 years: +0 %: 960 mins: Winter	Pipe	Pond (6)	S16	89.250	87.959	0.088	902.860	3.0	0.45	43.9	Surcharged
20.000	FEH: 30 years: +0 %: 30 mins: Winter	Pipe	S20	S21	100.450	99.828	0.225	0.000	0.2	0.12	6.5	Surcharged
20.004	FEH: 30 years: +0 %: 60 mins: Winter	Pipe	S26	S27	100.400	99.452	0.225	131.216	1.5	1.25	59.7	Surcharged
20.005	FEH: 30 years: +0 %: 30 mins: Winter	Pipe	S27	S28	100.000	99.278	0.225	101.169	1.5	1.98	60.9	Surcharged
20.006	FEH: 30 years: +0 %: 30 mins: Winter	Pipe	S28	S29	99.701	98.623	0.121	101.146	2.4	0.33	62.5	OK
20.001	FEH: 30 years: +0 %: 30 mins: Winter	Pipe	S21	S22	100.450	99.824	0.225	8.183	0.4	0.27	14.1	Surcharged
20.003	FEH: 30 years: +0 %: 60 mins: Winter	Pipe	S24	S26	100.477	99.662	0.225	131.211	1.5	1.57	61.5	Surcharged
21.000	FEH: 30 years: +0 %: 30 mins: Winter	Pipe	S23	SJ2	101.386	100.591	0.025	0.007	0.0	0	0.0	OK
21.000 (1)	FEH: 30 years: +0 %: 60 mins: Summer	Pipe	SJ2	S22	101.186	100.242	0.150	31.228	1.2	0.72	21.6	OK
22.000	FEH: 30 years: +0 %: 30 mins: Winter	Pipe	S25	SJ3	100.344	99.779	0.150	0.075	0.2	0.27	3.5	Surcharged
22.000 (1)	FEH: 30 years: +0 %: 30 mins: Winter	Pipe	SJ3	S24	100.257	99.765	0.150	16.233	0.6	0.79	10.5	Surcharged
20.007	FEH: 30 years: +0 %: 60 mins: Winter	Pipe	S29	Pond (2)	99.683	97.432	0.450	384.548	1.9	0.65	198.2	OK
20.002	FEH: 30 years: +0 %: 30 mins: Winter	Pipe	S22	SJ4	101.400	99.789	0.225	43.433	0.7	0.63	26.5	Surcharged

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1				Date: 20/06/2025									
Report Details: Type: Connections Summary Storm Phase: Phase				Designed by: DJH		Checked by:						Approved By:	
				Company Address: Egniol Consulting Ltd Warren Park Milton Keynes									
20.002 (1)	FEH: 30 years: +0 %: 60 mins: Winter	Pipe	SJ4	S24	100.740	99.796	0.225	86.364	1.0	0.96	40.8	Surcharged	

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025		
Report Details: Type: Connections Summary Storm Phase: Phase		Designed by: DJH	Checked by:	
		Approved By:		
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



FEH: 30 years: Increase Rainfall (%): +40: 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
1.001	FEH: 30 years: +40 %: 480 mins: Winter	Pipe	S1	S2	101.000	100.001	0.113	2296.469	1.2	0.06	44.0	OK
1.002	FEH: 30 years: +40 %: 480 mins: Winter	Pipe	S2	S3	100.500	99.725	0.107	2294.546	1.3	0.09	44.0	OK
1.003	FEH: 30 years: +40 %: 480 mins: Winter	Pipe	S3	S4	100.000	99.340	0.088	2292.977	1.7	0.05	44.0	OK
1.004	FEH: 30 years: +40 %: 480 mins: Winter	Pipe	S4	Pond (2)	99.400	98.875	0.071	2292.799	2.3	0.03	44.0	OK
1.005	FEH: 30 years: +40 %: 120 mins: Winter	Pipe	Pond (2)	Pond (3)	97.000	97.900	0.225	2064.625	4.5	1.53	180.6	Flood Risk
1.006	FEH: 30 years: +40 %: 240 mins: Winter	Pipe	Pond (3)	Pond (4)	95.500	94.918	0.200	2570.759	4.1	5.43	127.8	Surcharged
1.007	FEH: 30 years: +40 %: 2160 mins: Winter	Pipe	Pond (4)	Pond (5)	95.000	94.953	0.160	11590.335	3.0	2.7	60.6	Flood Risk
1.009	FEH: 30 years: +40 %: 2160 mins: Winter	Pipe	S5	S16	90.500	89.867	0.096	11562.875	2.3	0.09	58.6	OK
1.008	FEH: 30 years: +40 %: 2160 mins: Winter	Pipe	Pond (5)	S5	93.000	93.008	0.160	11563.111	2.9	1.19	58.6	Surcharged
10.001	FEH: 30 years: +40 %: 30 mins: Winter	Trapezoidal Channel	S10	S11	101.300	100.164	0.506	377.055	0.6	0.02	286.4	OK
10.002	FEH: 30 years: +40 %: 30 mins: Winter	Trapezoidal Channel	S11	S12	99.750	99.275	0.230	317.753	1.7	0.1	280.9	OK
10.000	FEH: 30 years: +40 %: 30 mins: Winter	Trapezoidal Channel	Pond 8	S10	101.900	100.182	0.466	378.055	0.6	0	286.7	OK
10.003	FEH: 30 years: +40 %: 30 mins: Winter	Trapezoidal Channel	S12	Pond 7	98.250	97.095	0.164	317.622	2.6	0.01	280.7	OK
10.005	FEH: 30 years: +40 %: 180 mins: Winter	Trapezoidal Channel	S13	S14	95.700	94.309	0.119	794.310	2.3	0.01	168.7	OK

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025			
Report Details: Type: Connections Summary Storm Phase: Phase		Designed by:	Checked by:		Approved By:
		DJH			
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes			

10.006	FEH: 30 years: +40 %: 180 mins: Winter	Trapezoidal Channel	S14	S15	90.900	89.540	0.188	793.567	1.3	0.01	162.9	OK
10.007	FEH: 30 years: +40 %: 240 mins: Winter	Trapezoidal Channel	S15	Pond (6)	90.000	88.745	0.217	913.803	1.1	0.09	158.4	OK
10.004	FEH: 30 years: +40 %: 180 mins: Winter	Trapezoidal Channel	Pond 7	S13	96.500	94.580	0.344	798.587	0.6	0	171.6	OK
1.000	FEH: 30 years: +40 %: 480 mins: Winter	Pipe	Pond (1)	S1	102.000	101.694	0.185	2297.412	1.6	1.46	44.0	Surcharged
10.008	FEH: 30 years: +40 %: 360 mins: Winter	Pipe	Pond (6)	S16	89.250	88.079	0.191	979.582	3.0	0.95	92.1	Surcharged
20.000	FEH: 30 years: +40 %: 60 mins: Winter	Pipe	S20	S21	100.450	100.450	0.225	0.005	0.0	0	0.0	Flood
20.004	FEH: 30 years: +40 %: 60 mins: Winter	Pipe	S26	S27	100.400	99.914	0.225	183.747	2.0	1.64	78.4	Surcharged
20.005	FEH: 30 years: +40 %: 60 mins: Winter	Pipe	S27	S28	100.000	99.579	0.225	183.670	1.9	2.49	76.4	Surcharged
20.006	FEH: 30 years: +40 %: 60 mins: Winter	Pipe	S28	S29	99.701	98.636	0.300	182.720	2.3	0.4	76.2	OK
20.001	FEH: 30 years: +40 %: 30 mins: Summer	Pipe	S21	S22	100.450	100.454	0.225	10.251	0.8	0.62	32.3	Flood
20.003	FEH: 30 years: +40 %: 60 mins: Winter	Pipe	S24	S26	100.477	100.255	0.225	183.740	2.0	2.06	80.9	Surcharged
21.000	FEH: 30 years: +40 %: 30 mins: Winter	Pipe	S23	SJ2	101.386	100.631	0.150	0.026	0.2	0.21	4.3	OK
21.000 (1)	FEH: 30 years: +40 %: 60 mins: Winter	Pipe	SJ2	S22	101.186	101.014	0.150	49.054	1.3	0.75	22.5	Surcharged
22.000	FEH: 30 years: +40 %: 30 mins: Summer	Pipe	S25	SJ3	100.344	100.346	0.150	0.075	0.6	0.8	10.7	Flood
22.000 (1)	FEH: 30 years: +40 %: 30 mins: Summer	Pipe	SJ3	S24	100.257	100.237	0.150	20.275	0.9	1.14	15.1	Surcharged
20.007	FEH: 30 years: +40 %: 60 mins: Winter	Pipe	S29	Pond (2)	99.683	97.867	0.450	534.839	2.0	0.89	270.2	Surcharged
20.002	FEH: 30 years: +40 %: 30 mins: Winter	Pipe	S22	SJ4	101.400	100.373	0.225	60.821	1.1	1.01	42.7	Surcharged

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1				Date: 20/06/2025									
Report Details: Type: Connections Summary Storm Phase: Phase				Designed by: DJH		Checked by:						Approved By:	
				Company Address: Egniol Consulting Ltd Warren Park Milton Keynes									
20.002 (1)	FEH: 30 years: +40 %: 30 mins: Winter	Pipe	SJ4	S24	100.740	100.228	0.225	93.307	1.3	1.2	50.8	Surcharged	

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1		Date: 20/06/2025		
Report Details: Type: Connections Summary Storm Phase: Phase		Designed by: DJH	Checked by:	
		Approved By:		
		Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



FEH: 100 years: Increase Rainfall (%): +45: 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
1.001	FEH: 100 years: +45 %: 720 mins: Winter	Pipe	S1	S2	101.000	100.006	0.118	3653.966	1.2	0.07	47.9	OK
1.002	FEH: 100 years: +45 %: 720 mins: Winter	Pipe	S2	S3	100.500	99.731	0.112	3651.992	1.3	0.1	47.9	OK
1.003	FEH: 100 years: +45 %: 720 mins: Winter	Pipe	S3	S4	100.000	99.344	0.092	3650.383	1.7	0.05	47.9	OK
1.004	FEH: 100 years: +45 %: 720 mins: Winter	Pipe	S4	Pond (2)	99.400	98.879	0.074	3650.200	2.4	0.03	47.9	OK
1.005	FEH: 100 years: +45 %: 120 mins: Winter	Pipe	Pond (2)	Pond (3)	97.000	98.412	0.225	2317.193	5.1	1.72	203.1	Flood
1.006	FEH: 100 years: +45 %: 240 mins: Winter	Pipe	Pond (3)	Pond (4)	95.500	95.186	0.200	2803.851	4.4	5.92	139.4	Surcharged
1.007	FEH: 100 years: +45 %: 2160 mins: Winter	Pipe	Pond (4)	Pond (5)	95.000	95.430	0.160	13435.200	3.4	3.07	69.0	Flood
1.009	FEH: 100 years: +45 %: 2880 mins: Winter	Pipe	S5	S16	90.500	89.872	0.101	16761.088	2.4	0.1	64.3	OK
1.008	FEH: 100 years: +45 %: 2880 mins: Winter	Pipe	Pond (5)	S5	93.000	93.465	0.160	16761.293	3.2	1.3	64.3	Flood Risk
10.001	FEH: 100 years: +45 %: 30 mins: Winter	Trapezoidal Channel	S10	S11	101.300	100.197	0.544	511.929	0.7	0.03	386.9	OK
10.002	FEH: 100 years: +45 %: 30 mins: Winter	Trapezoidal Channel	S11	S12	99.750	99.318	0.280	451.322	1.8	0.14	397.8	OK
10.000	FEH: 100 years: +45 %: 30 mins: Summer	Trapezoidal Channel	Pond 8	S10	101.900	100.201	0.486	450.018	0.8	0	397.6	OK
10.003	FEH: 100 years: +45 %: 30 mins: Winter	Trapezoidal Channel	S12	Pond 7	98.250	97.123	0.202	451.178	2.8	0.01	397.9	OK
10.005	FEH: 100 years: +45 %: 120 mins: Winter	Trapezoidal Channel	S13	S14	95.700	94.362	0.181	1046.746	2.7	0.01	339.7	OK

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1			Date: 20/06/2025			
Report Details: Type: Connections Summary Storm Phase: Phase			Designed by: DJH	Checked by:	Approved By:	
			Company Address: Egniol Consulting Ltd Warren Park Milton Keynes			

10.006	FEH: 100 years: +45 %: 120 mins: Winter	Trapezoidal Channel	S14	S15	90.900	89.611	0.287	1045.362	1.5	0.02	339.6	OK
10.007	FEH: 100 years: +45 %: 120 mins: Winter	Trapezoidal Channel	S15	Pond (6)	90.000	88.872	0.337	1044.284	1.3	0.19	339.0	OK
10.004	FEH: 100 years: +45 %: 120 mins: Winter	Trapezoidal Channel	Pond 7	S13	96.500	94.623	0.392	1051.260	1.0	0	339.4	OK
1.000	FEH: 100 years: +45 %: 720 mins: Winter	Pipe	Pond (1)	S1	102.000	101.970	0.185	3654.930	1.8	1.59	47.9	Surcharged
10.008	FEH: 100 years: +45 %: 240 mins: Winter	Pipe	Pond (6)	S16	89.250	88.279	0.225	1217.622	3.0	1.11	107.3	Surcharged
20.000	FEH: 100 years: +45 %: 60 mins: Summer	Pipe	S20	S21	100.450	100.457	0.225	0.000	0.8	0.59	32.6	Flood
20.004	FEH: 100 years: +45 %: 60 mins: Summer	Pipe	S26	S27	100.400	100.081	0.225	218.145	2.1	1.76	84.2	Surcharged
20.005	FEH: 100 years: +45 %: 60 mins: Summer	Pipe	S27	S28	100.000	99.703	0.225	218.067	2.1	2.71	83.3	Flood Risk
20.006	FEH: 100 years: +45 %: 60 mins: Summer	Pipe	S28	S29	99.701	98.639	0.300	217.104	1.3	0.44	83.3	OK
20.001	FEH: 100 years: +45 %: 60 mins: Winter	Pipe	S21	S22	100.450	100.456	0.225	19.748	0.9	0.71	37.0	Flood
20.003	FEH: 100 years: +45 %: 60 mins: Summer	Pipe	S24	S26	100.477	100.455	0.225	218.136	2.2	2.18	85.5	Surcharged
21.000	FEH: 100 years: +45 %: 30 mins: Summer	Pipe	S23	SJ2	101.386	101.389	0.150	0.035	0.9	0.79	16.4	Flood
21.000 (1)	FEH: 100 years: +45 %: 60 mins: Summer	Pipe	SJ2	S22	101.186	101.553	0.150	58.157	1.8	1.04	31.3	Surcharged
22.000	FEH: 100 years: +45 %: 60 mins: Winter	Pipe	S25	SJ3	100.344	100.348	0.150	0.031	0.7	0.93	12.4	Flood
22.000 (1)	FEH: 100 years: +45 %: 60 mins: Winter	Pipe	SJ3	S24	100.257	100.532	0.150	39.190	0.9	1.17	15.6	Surcharged
20.007	FEH: 100 years: +45 %: 60 mins: Winter	Pipe	S29	Pond (2)	99.683	98.359	0.450	711.470	2.2	1.14	347.1	Surcharged
20.002	FEH: 100 years: +45 %: 60 mins: Winter	Pipe	S22	SJ4	101.400	100.581	0.225	104.796	1.1	1.04	44.2	Surcharged

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1				Date: 20/06/2025									
Report Details: Type: Connections Summary Storm Phase: Phase				Designed by: DJH		Checked by:						Approved By:	
				Company Address: Egniol Consulting Ltd Warren Park Milton Keynes									
20.002 (1)	FEH: 100 years: +45 %: 30 mins: Winter	Pipe	SJ4	S24	100.740	100.308	0.225	122.963	1.3	1.24	52.4	Surcharged	

Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		

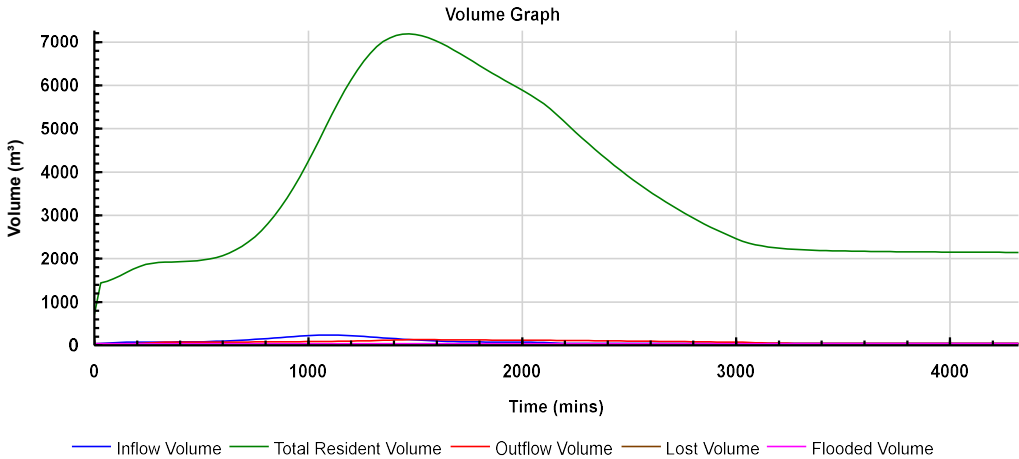
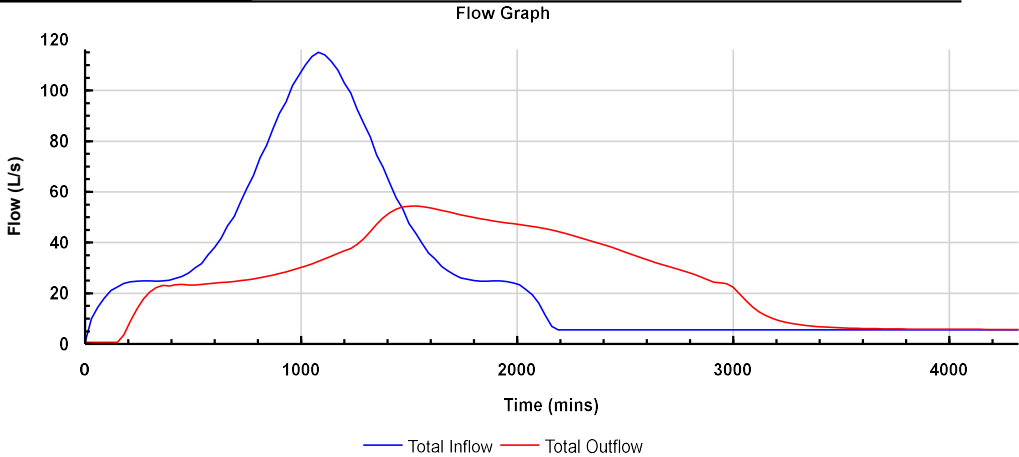


Phase
FEH: 2 years: Increase Rainfall (%): +0: 2160 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
S16			54.1	6548.877
TOTAL	115.1	6935.646	54.1	6548.877

Graphs



Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		

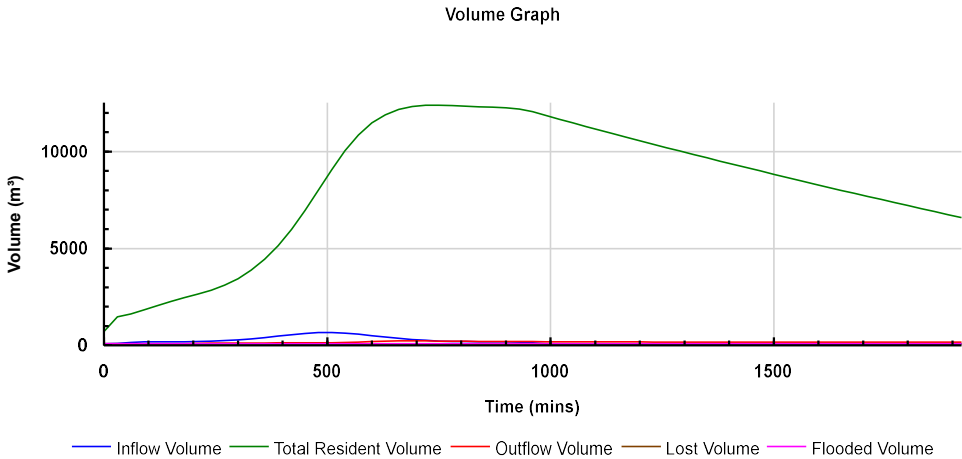
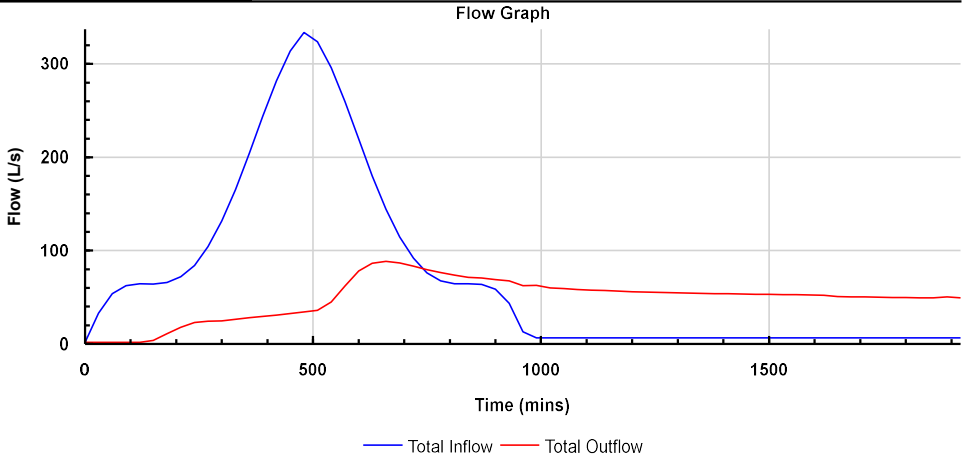


Phase
FEH: 30 years: Increase Rainfall (%): +0: 960 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
S16			87.2	5467.793
TOTAL	333.8	8082.836	87.2	5467.793

Graphs



Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		



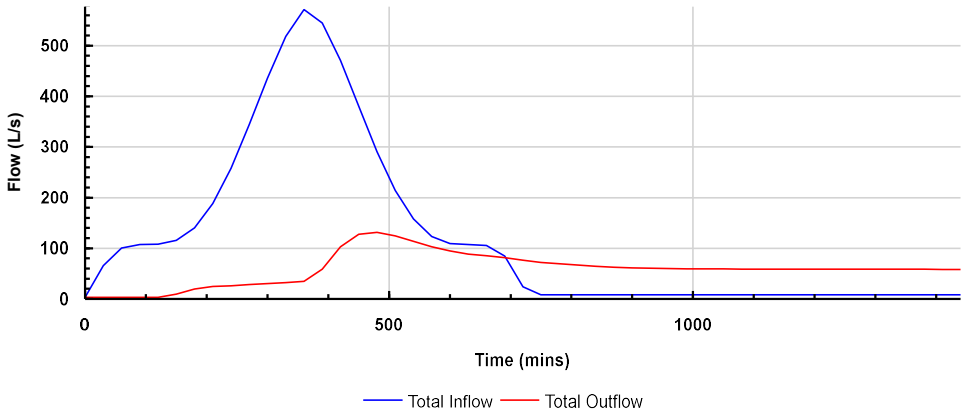
Phase
FEH: 30 years: Increase Rainfall (%): +40: 720 mins: Winter

Tables

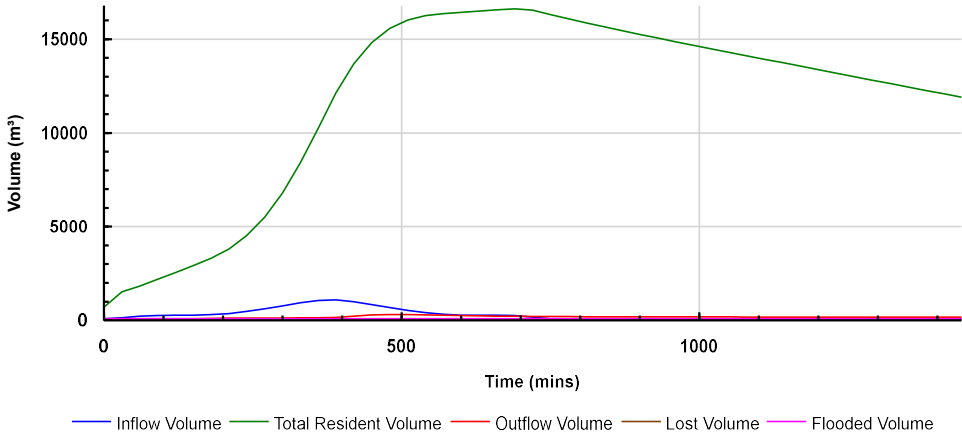
Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
S16			129.1	4872.657
TOTAL	571.3	10159.089	129.1	4872.657

Graphs

Flow Graph



Volume Graph



Project: Pilsworth South MRF Project No 9595 Sw model existing - v4.1	Date: 20/06/2025		
	Designed by: DJH	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Egniol Consulting Ltd Warren Park Milton Keynes		

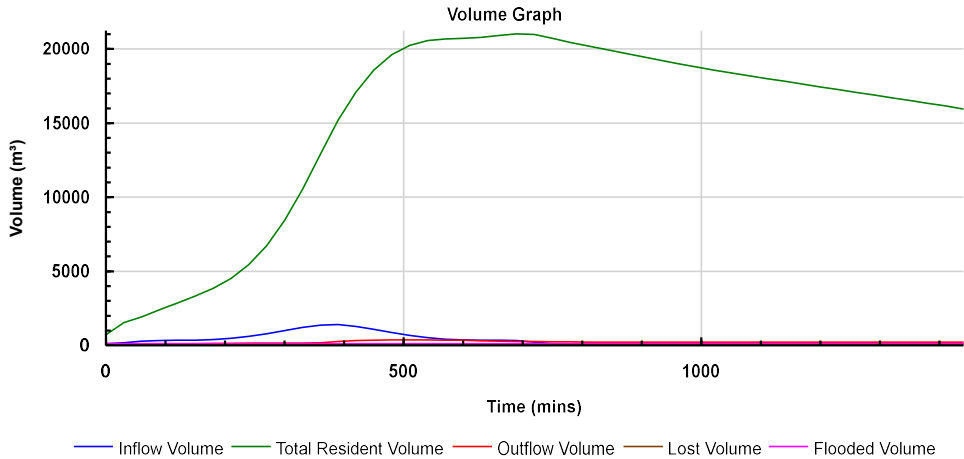
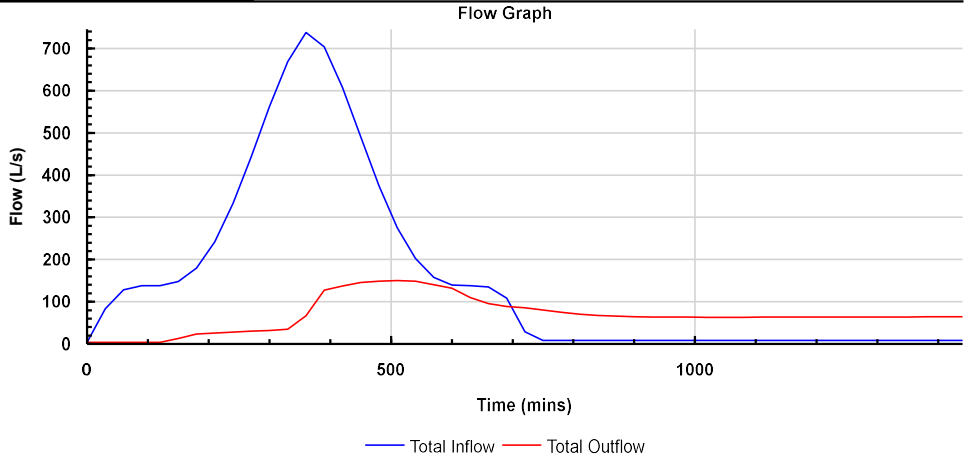


Phase
FEH: 100 years: Increase Rainfall (%): +45: 720 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
S16			147.0	5699.658
TOTAL	738.0	13022.396	147.0	5699.658

Graphs



Appendix 4: SWMP

Project: Pilsworth South MRF
Title: Surface Water Management Plan
Doc ref: ECL.9595.R05.003

1.1 General

Under the requirements of the NPPF and the Flood and Water management Act 2010, developments have to be designed to accommodate flood risk and be managed for the lifetime of the system.

This surface water management plan sets out the principles for the management of the surface water drainage network. The primary function of the plan is to ensure the drainage system operates effectively during the implementation phase and, following completion, over the lifetime of the development.

1.2 Construction

The development proposals will include both leachate and surface water drainage network.

The proposed drainage networks is formed of pipework and manholes/catchpits. This network will need to be managed by the appropriate site operator in accordance with the agreed surface water management plan (SWMP) or in the case of the adopting authority, their company requirements.

1.3 Surface Water Management

1.3.1 General

Sustainable drainage schemes require ongoing maintenance in order to ensure short-term operation and minimise risks to long-term performance. Operation and maintenance activities can be classed as follows:

1. Monitoring
2. Regular, planned maintenance
3. Unplanned maintenance/rehabilitation – responding to problems
4. Intermittent maintenance – major mid-life refurbishment

1.3.2 Monitoring

Monitoring of balancing ponds, outfalls, swales should be undertaken, particularly during the vegetation establishment period and after significant storm events to check for:

- Areas of erosion or scour
- Inlet, outlet and control structures for debris or erosion

- Locations of silt deposits
- Determine the health of vegetation and the soil
- Identify areas of waterlogging or other damage

1.3.3 Regular Planned Maintenance

Certain maintenance activities will be necessary periodically throughout the year. These are:

- Trimming of vegetation
- Litter removal
- Periodic removal of excess silt and leaves
- Inlet and outlet cleaning

1.3.4 Unplanned Maintenance

Depending on the frequency and severity of storm events and other unforeseeable factors, more specific occasional maintenance is required. Elements to be accounted for are:

- Repair of inlets, outlets, overflows and control structures
- Remove accumulated silt and dispose on site or to tip (subject to check for contaminants)
- Repair of damaged barriers
- Reinstatement of hard strips and edgings

1.3.5 Surface Water Maintenance Plan

The following section sets out a recommended maintenance plan for the development's surface water system. Note those items in bold are most likely to be adopted by the adopting authority in due course.

<u>Apparatus</u>	<u>Monitoring/ Maintenance</u>	<u>Required Action</u>	<u>Frequency of inspection/action</u>
Site wide	Monitoring	Inspect silt accumulation rates and establish appropriate removal Frequencies	Six Monthly
	Monitoring	Inspection of sediment for possible hazardous materials	Six Monthly
Interceptor	Monitoring	Inspect chamber via access turret	For existing system every six monthly

	Maintenance	And if alarmed Remove silt when sump is full	For existing system as and when alarm activates
Surface water drainage pipes	Monitoring Maintenance	Inspect surface water drains via manholes or catchpits to ascertain rate of siltation or other related matters Remove debris and silt when fouled	Six monthly, changing to yearly after 18-month period
Underground tanks	Monitoring Maintenance	Inspect upstream catchpits/manholes and access turrets located on tank to ascertain rate of siltation or other related matters Remove debris and silt when fouled using jetting or similar approved methods	Six monthly, changing to yearly after 18-month period
Road gullies & catchpits	Monitoring Maintenance	Inspect gullies and catchpits Remove silt when sump is full	Six monthly, changing to yearly after 18-month period
Temporary Grilles	Not applicable		
Internal gullies and linear channel drains (i.e. aco)	Monitoring Maintenance	Inspect gullies and channel drains Remove silt/debris when sump or similar feature is full	Six monthly, changing to yearly after 18-month period
Ditches/ponds	Monitoring /Maintenance	Grass cutting Trimming vegetation Litter removal	During the summer months, intervals may need to reduce to monthly but thereafter every three months
Outfalls	Monitoring	Inspect surface water outfalls for evidence of poor operation	Monthly or after significant rainfall event

Attenuation basins/settlement lagoons	Monitoring	Inspect permeable paving system and any associated outfall chamber	Inspect six monthly or after significant rainfall event
	Maintenance	Remove sediment	

1.3.6 Leachate Management

The new MRF building drainage includes new leachate drainage, this drainage intercepts leachate, from within the building via channel drains. This is conveyed to a sump chamber on the southern end of the MRF building. The leachate will drain to the sump chamber and is required to be tankered off site.

Periodic monitoring of the leachate is recommended; this is to be undertaken two weekly on commencement of processing. Thereafter the interval can be reduced to monthly on agreement with the site manager.

In the event of a fire where there will be a larger volume of leachate/firewater, this may be recirculated through the system to help suppress the fire. But leachate ultimately be tankered off site to a suitably licenced facility.