

The Piggeries: Surface water model 100+40%	Date: 22/05/2024			
	Designed by:	Checked by:	Approved By:	
Report Details: Type: Connections Storm Phase: Phase	BD			
	Company Address: Benjamin Allen Consulting Engineers -BACE info@benjaminallen-ce.co.uk			

Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Level (m)	Upstream Invert Level (m)
1.000	8.785	Pipe	87.848		0.6	150	320.000	319.500
1.001	20.980	Pipe	104.902		0.6	150	320.000	319.400
1.002	4.920	Pipe	8.200		0.6	150	320.000	319.200
1.003	9.194	Pipe	91.941		0.6	150	319.700	318.600
1.004	9.578	Pipe	6.385		0.6	150	319.700	318.500
2.000	8.643	Pipe	28.811		0.6	150	320.000	319.500
Pipe	5.057	Pipe	50.569		0.6	100	319.500	318.600

Name	Downstream Cover Level (m)	Downstream Invert Level (m)	Lock	Flow Restriction (L/s)
1.000	320.000	319.400	All	
1.001	320.000	319.200	All	
1.002	319.700	318.600	All	
1.003	319.700	318.500	All	
1.004	318.000	317.000	All	1.0
2.000	320.000	319.200	All	
Pipe	319.700	318.500	None	

The Piggeries: Surface water model 100+40%	Date: 22/05/2024		
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Report Details: Type: Rainfall Analysis Criteria	Company Address: Benjamin Allen Consulting Engineers -BACE info@benjaminallen-ce.co.uk		



Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	10
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR - Piggeries

Type: FSR

Region	England And Wales
M5-60 (mm)	19.0
Ratio R	0.350
Summer	☒
Winter	☒

Return Period

Return Period (years)	Increase Rainfall (%)
1.0	0.000
30.0	0.000
100.0	40.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

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Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Benjamin Allen Consulting Engineers -BACE info@benjaminallen-ce.co.uk		



Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	0.01	4.7	2.215
Catchment Area (1)	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	0.01	3.6	1.680
Catchment Area (2)	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	0.01	4.2	1.944
Catchment Area (3)	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	0.00	2.8	1.310

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Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Benjamin Allen Consulting Engineers -BACE info@benjaminallen-ce.co.uk		





Critical Storm Per Item: Rank By: Max. Depth

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
Manhole	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	320.000	319.500	319.552	0.052	4.7	0.059	0.000	4.6	2.212	OK
Manhole (1)	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	320.000	319.400	319.476	0.076	8.2	0.086	0.000	7.8	3.887	OK
Manhole (2)	FSR - Piggeries: 100 years: +40 %: 120 mins: Winter	320.000	319.200	319.432	0.232	5.2	0.262	0.000	5.2	15.292	Surcharged
Manhole (3)	FSR - Piggeries: 100 years: +40 %: 120 mins: Winter	319.700	318.600	319.432	0.832	5.2	0.941	0.000	5.0	14.962	Flood Risk
Manhole (4)	FSR - Piggeries: 100 years: +40 %: 120 mins: Winter	319.700	318.500	319.431	0.931	5.0	1.053	0.000	1.0	17.954	Flood Risk
Manhole (5)	FSR - Piggeries: 100 years: +40 %: 120 mins: Winter	318.000	317.000	317.012	0.012	1.0	0.000	0.000	1.0	11.077	OK
Manhole (6)	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	320.000	319.500	319.536	0.036	4.2	0.040	0.000	4.1	1.942	OK

The Piggeries: Surface water model 100+40%	Date: 22/05/2024		
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Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Benjamin Allen Consulting Engineers -BACE info@benjaminallen-ce.co.uk		





Critical Storm Per Item: Rank By: Max. Avg. 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. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Tank	FSR - Piggeries: 100 years: +40 %: 120 mins: Winter	319.431	319.431	0.831	0.831	4.0	6.865	0.000	0.000	0.8	3.446	1.234	OK

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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
1.000	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	Pipe	Manhole	Manhole (1)	320.000	319.552	0.064	2.212	0.6	0.24	4.6	OK
1.001	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	Pipe	Manhole (1)	Manhole (2)	320.000	319.476	0.062	3.887	1.1	0.45	7.8	OK
1.002	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	Pipe	Manhole (2)	Manhole (3)	320.000	319.248	0.150	7.130	1.2	0.23	14.5	OK
1.003	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	Pipe	Manhole (3)	Manhole (4)	319.700	318.998	0.150	6.696	0.7	0.7	12.9	Surcharged
1.004	FSR - Piggeries: 100 years: +40 %: 120 mins: Winter	Pipe	Manhole (4)	Manhole (5)	319.700	319.431	0.012	11.077	1.4	0.01	1.0	Flood Risk
2.000	FSR - Piggeries: 100 years: +40 %: 15 mins: Winter	Pipe	Manhole (6)	Manhole (2)	320.000	319.536	0.042	1.942	1.0	0.12	4.1	OK
Pipe	FSR - Piggeries: 100 years: +40 %: 180 mins: Winter	Pipe	Tank	Manhole (4)	319.500	319.380	0.100	0.000	0.1	0.09	0.8	Surcharged

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Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Benjamin Allen Consulting Engineers -BACE info@benjaminallen-ce.co.uk			



Phase
FSR - Piggeries: 100 years: Increase Rainfall (%): +40: 120 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
Manhole (5)			1.0	11.077
TOTAL	5.2	15.297	1.0	11.077

Graphs

