

Drainage Design Report

Flow+

v10.5.1

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Network	Storm Network 1
Filename	18953_CALCULATIONS.PFD
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Rainfall Methodology	FSR
Return Period (years)	1
Additional Flow (%)	0
FSR Region	England and Wales
M5-60 (mm)	20.000
Ratio-R	0.400
CV	0.750
Time of Entry (mins)	5.00
Maximum Time of Concentration (mins)	30.00
Maximum Rainfall (mm/hr)	50.0
Minimum Velocity (m/s)	1.00
Connection Type	Level Soffits
Minimum Backdrop Height (m)	0.200
Preferred Cover Depth (m)	1.200
Include Intermediate Ground	Yes
Enforce best practice design rules	Yes

	Name	US Node	DS Node	Length (m)	ks (mm) / n	Velocity Equation	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	Link Type	T of C (mins)	Rain (mm/hr)	Con Offset (m)	Min DS IL (m)	Lateral Area (ha)	Lateral Ins Point (%)	Lateral T of E (mins)
?	1.000	1	2	37.351	0.600	Colebrook-White	211.075	210.700	0.375	99.6	225	Circular_Default Sewer Type	5.48	50.0					
?	1.001	2	3	6.293	0.600	Colebrook-White	210.700	210.650	0.050	125.9	225	Circular_Default Sewer Type	5.57	50.0					
?	1.002	3	4	53.458	0.600	Colebrook-White	210.650	209.825	0.825	64.8	225	Circular_Default Sewer Type	6.11	49.9					
?	1.003	4	5	31.995	0.600	Colebrook-White	209.750	209.200	0.550	58.2	300	Circular_Default Sewer Type	6.37	48.9					
?	1.004	5	7	65.119	0.600	Colebrook-White	209.050	208.650	0.400	162.8	450	Circular_Default Sewer Type	7.05	46.6					
?	2.000	6	7	36.538	0.600	Colebrook-White	209.500	208.650	0.850	43.0	450	Circular_Default Sewer Type	5.20	50.0					
?	1.005	7	15	29.231	0.600	Colebrook-White	208.650	208.525	0.125	233.8	450	Circular_Default Sewer Type	7.42	45.4					
?	3.000	8	4_1	10.531	0.600	Colebrook-White	211.544	211.150	0.394	26.7	300	Circular_Default Sewer Type	5.06	50.0					
?	3.001	4_1	10	29.822	0.035	Manning	210.625	209.975	0.650	45.9	739	Swale	5.26	50.0					
?	3.002	10	11	19.899	0.035	Manning	209.975	209.925	0.050	398.0	500	Swale	5.67	50.0					
?	3.003	11	13	16.242	0.035	Manning	209.925	209.325	0.600	27.1	500	Swale	5.75	50.0					
?	4.000	12	13	31.199	0.035	Manning	209.400	209.325	0.075	416.0	500	Swale	5.65	50.0					
?	3.004	13	14	11.900	0.035	Manning	209.325	209.275	0.050	238.0	750	Circular_Default Sewer Type	6.08	50.0					
?	3.005	14	15	25.761	0.035	Manning	209.275	208.225	1.050	24.5	750	Circular_Default Sewer Type	6.31	49.2					
?	1.006	15	16	40.524	0.600	Colebrook-White	208.225	208.075	0.150	270.2	750	Circular_Default Sewer Type	7.82	44.2					
?	1.007	16	17	20.736	0.600	Colebrook-White	208.075	208.000	0.075	276.5	300	Circular_Default Sewer Type	8.19	10.0					

	Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)	Notes
?	1.000	1	2	1.310	52.1	7.6	0.920	1.025	0.909	4.232	0.056	0.0	58	0.938	Upstream Depth is less than the specified minimum Downstream Depth is less than the specified minimum
?	1.001	2	3	1.164	46.3	15.2	1.025	1.075	1.025	4.209	0.112	0.0	88	1.044	Upstream Depth is less than the specified minimum Downstream Depth is less than the specified minimum
?	1.002	3	4	1.627	64.7	22.7	1.075	1.250	1.075	7.211	0.168	0.0	92	1.487	Upstream Depth is less than the specified minimum
	1.003	4	5	2.065	146.0	29.7	1.250	1.770	1.250	7.185	0.224	0.0	91	1.629	
?	1.004	5	7	1.590	252.9	35.3	1.770	3.000	1.770	5.643	0.280	0.0	113	1.135	Downstream Depth is more than twice the specified minimum
?	2.000	6	7	3.107	494.2	7.6	2.280	3.000	1.884	5.321	0.056	0.0	38	1.162	Velocity is more than 3 m/s Downstream Depth is more than twice the specified minimum
?	1.005	7	15	1.325	210.7	48.2	3.000	2.525	2.525	3.893	0.392	0.0	145	1.082	Upstream Depth is more than twice the specified minimum Downstream Depth is more than twice the specified minimum
?	3.000	8	4_1	3.053	215.8	113.4	1.275	0.000	0.000	1.639	0.837	0.0	154	3.088	Velocity is more than 3 m/s Downstream Depth is less than the specified minimum
?	3.001	4_1	10	2.459	6520.5	113.4	0.000	0.000	0.000	0.000	0.837	0.0	122	0.843	Upstream Depth is less than the specified minimum Downstream Depth is less than the specified minimum
?	3.002	10	11	0.815	2000.2	113.4	0.000	0.000	0.000	1.047	0.837	0.0	238	0.394	Velocity is less than the specified minimum Upstream Depth is less than the specified minimum Downstream Depth is less than the specified minimum
?	3.003	11	13	3.125	7669.5	113.4	0.000	0.550	0.000	0.920	0.837	0.0	124	1.053	Velocity is more than 3 m/s Upstream Depth is less than the specified minimum Downstream Depth is less than the specified minimum
?	4.000	12	13	0.797	1956.5	0.0	0.575	0.550	-0.286	0.918	0.000	0.0	0	0.000	Upstream Depth is less than the specified minimum Downstream Depth is less than the specified minimum
?	3.004	13	14	0.607	268.0	217.2	0.625	1.627	0.625	1.627	1.603	0.0	512	0.676	Velocity is less than the specified minimum Upstream Depth is less than the specified minimum
?	3.005	14	15	1.890	834.8	213.7	1.627	2.525	1.627	2.553	1.603	0.0	259	1.581	Downstream Depth is more than twice the specified minimum
?	1.006	15	16	1.697	749.9	238.9	2.525	1.551	1.551	3.769	1.995	0.0	290	1.516	Upstream Depth is more than twice the specified minimum
?	1.007	16	17	0.940	66.5	54.1	2.001	1.550	1.240	2.001	1.995	0.0	206	1.044	Velocity is less than the specified minimum

Link	Length (m)	Slope (1:XX)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)	US Node	Dia (mm)	Width (mm)	Sump (m)	Node Type	MH Type	DS Node	Dia (mm)	Width (mm)	Sump (m)	Node Type	MH Type
1.000	37.351	99.6	225	Circular_Default Sewer Type	212.220	211.075	0.920	211.950	210.700	1.025	1	450			Manhole	Adoptable	2	1200			Manhole	Adoptable
1.001	6.293	125.9	225	Circular_Default Sewer Type	211.950	210.700	1.025	211.950	210.650	1.075	2	1200			Manhole	Adoptable	3	1200			Manhole	Adoptable
1.002	53.458	64.8	225	Circular_Default Sewer Type	211.950	210.650	1.075	211.300	209.825	1.250	3	1200			Manhole	Adoptable	4	1200			Manhole	Adoptable
1.003	31.995	58.2	300	Circular_Default Sewer Type	211.300	209.750	1.250	211.270	209.200	1.770	4	1200			Manhole	Adoptable	5	1200			Manhole	Adoptable
1.004	65.119	162.8	450	Circular_Default Sewer Type	211.270	209.050	1.770	212.100	208.650	3.000	5	1200			Manhole	Adoptable	7	1500			Manhole	Adoptable
2.000	36.538	43.0	450	Circular_Default Sewer Type	212.230	209.500	2.280	212.100	208.650	3.000	6	1200			Manhole	Adoptable	7	1500			Manhole	Adoptable
1.005	29.231	233.8	450	Circular_Default Sewer Type	212.100	208.650	3.000	211.500	208.525	2.525	7	1500			Manhole	Adoptable	15	1500			Manhole	Adoptable
3.000	10.531	26.7	300	Circular_Default Sewer Type	213.119	211.544	1.275	211.450	211.150	0.000	8	1200			Manhole	Adoptable	4_1				Junction	
3.001	29.822	45.9	750	Swale	211.450	210.625	0.000	210.800	209.975	0.000	4_1				Junction		10				Junction	
3.002	19.899	398.0	500	Swale	210.800	209.975	0.000	210.750	209.925	0.000	10				Junction		11				Junction	
3.003	16.242	27.1	500	Swale	210.750	209.925	0.000	210.700	209.325	0.550	11				Junction		13				Junction	
4.000	31.199	416.0	500	Swale	210.800	209.400	0.575	210.700	209.325	0.550	12				Junction		13				Junction	
3.004	11.900	238.0	750	Circular_Default Sewer Type	210.700	209.325	0.625	211.652	209.275	1.627	13				Junction		14	1200			Manhole	Adoptable
3.005	25.761	24.5	750	Circular_Default Sewer Type	211.652	209.275	1.627	211.500	208.225	2.525	14	1200			Manhole	Adoptable	15	1500			Manhole	Adoptable
1.006	40.524	270.2	750	Circular_Default Sewer Type	211.500	208.225	2.525	210.376	208.075	1.551	15	1500			Manhole	Adoptable	16	1800			Manhole	Adoptable
1.007	20.736	276.5	300	Circular_Default Sewer Type	210.376	208.075	2.001	209.850	208.000	1.550	16	1800			Manhole	Adoptable	17	1200			Manhole	Adoptable

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Sump (m)	Node Type	MH Type		Link	IL (m)	Dia (mm)	Link Type
1	446944.955	311543.748	212.220	1.145	450			Manhole	Adoptable					
										0	1.000	211.075	225	Circular_Default Sewer Type
2	446928.821	311510.061	211.950	1.250	1200			Manhole	Adoptable	1	1.000	210.700	225	Circular_Default Sewer Type
										0	1.001	210.700	225	Circular_Default Sewer Type
3	446934.501	311507.352	211.950	1.300	1200			Manhole	Adoptable	1	1.001	210.650	225	Circular_Default Sewer Type
										0	1.002	210.650	225	Circular_Default Sewer Type
4	446911.764	311458.970	211.300	1.550	1200			Manhole	Adoptable	1	1.002	209.825	225	Circular_Default Sewer Type
										0	1.003	209.750	300	Circular_Default Sewer Type
5	446940.730	311445.382	211.270	2.220	1200			Manhole	Adoptable	1	1.003	209.200	300	Circular_Default Sewer Type
										0	1.004	209.050	450	Circular_Default Sewer Type
6	446984.705	311537.031	212.230	2.730	1200			Manhole	Adoptable					
										0	2.000	209.500	450	Circular_Default Sewer Type
7	446969.291	311503.903	212.100	3.450	1500			Manhole	Adoptable	1	2.000	208.650	450	Circular_Default Sewer Type
										2	1.004	208.650	450	Circular_Default Sewer Type
										0	1.005	208.650	450	Circular_Default Sewer Type
8	446961.053	311406.794	213.119	1.575	1200			Manhole	Adoptable					
										0	3.000	211.544	300	Circular_Default Sewer Type
4_1	446970.884	311403.019	211.450	0.825				Junction		1	3.000	211.150	300	Circular_Default Sewer Type
										0	3.001	210.625	739	Swale

10	446986.868	311428.196	210.800	0.825			Junction		1	3.001	209.975	739	Swale
									0	3.002	209.975	500	Swale
11	446997.468	311445.037	210.750	0.825			Junction		1	3.002	209.925	500	Swale
									0	3.003	209.925	500	Swale
12	447026.785	311482.330	210.800	1.400			Junction						
									0	4.000	209.400	500	Swale
13	447007.269	311457.989	210.700	1.375			Junction		1	4.000	209.325	500	Swale
									2	3.003	209.325	500	Swale
									0	3.004	209.325	750	Circular_Default Sewer Type
14	446997.400	311464.638	211.652	2.377	1200		Manhole	Adoptable	1	3.004	209.275	750	Circular_Default Sewer Type
									0	3.005	209.275	750	Circular_Default Sewer Type
15	446995.165	311490.302	211.500	3.275	1500		Manhole	Adoptable	1	3.005	208.225	750	Circular_Default Sewer Type
									2	1.005	208.525	450	Circular_Default Sewer Type
									0	1.006	208.225	750	Circular_Default Sewer Type
16	447024.919	311517.813	210.376	2.301	1800		Manhole	Adoptable	1	1.006	208.075	750	Circular_Default Sewer Type
									0	1.007	208.075	300	Circular_Default Sewer Type
17	447043.764	311509.162	209.850	1.850	1200		Manhole	Adoptable	1	1.007	208.000	300	Circular_Default Sewer Type

Results for 1 year Critical Storm Duration. Lowest mass balance: 97.74%																
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status	Link Event (Upstream Depth)	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	10	211.133	0.058	7.9	0.0662	0.0000	OK	15 minute winter	1.000	2	7.7	0.630	0.148	0.4634	
15 minute winter	2	11	210.799	0.099	15.6	0.2005	0.0000	OK	15 minute winter	1.001	3	15.2	0.947	0.329	0.1020	
15 minute winter	3	11	210.744	0.094	22.9	0.1866	0.0000	OK	15 minute winter	1.002	4	22.8	1.481	0.352	0.8230	
15 minute winter	4	11	209.845	0.095	30.2	0.1768	0.0000	OK	15 minute winter	1.003	5	30.2	1.612	0.207	1.1674	
30 minute winter	5	22	209.557	0.507	62.8	0.8283	0.0000	SURCHARGED	30 minute winter	1.004	7	47.9	0.875	0.189	10.3177	
15 minute winter	6	10	209.539	0.039	7.9	0.0602	0.0000	OK	15 minute winter	2.000	7	7.8	0.551	0.016	2.9671	
240 minute winter	7	232	209.534	0.884	18.2	1.8495	0.0000	SURCHARGED	240 minute winter	1.005	15	13.7	0.622	0.065	4.6315	
600 minute winter	8	465	211.713	0.169	12.3	120.0159	0.0000	OK	600 minute winter	Hydro-Brake®	4_1	3.0				
600 minute winter	4_1	465	210.640	0.015	3.0	0.0000	0.0000	OK	600 minute winter	3.001	10	3.0	0.117	0.000	0.7971	
600 minute winter	10	465	210.022	0.047	3.0	0.0000	0.0000	OK	600 minute winter	3.002	11	3.0	0.160	0.002	0.3900	
600 minute winter	11	465	209.942	0.017	3.0	0.0000	0.0000	OK	600 minute winter	3.003	13	3.0	0.125	0.000	1.7609	
15 minute winter	12	12	209.607	0.207	16.9	0.0000	0.0000	OK	15 minute winter	4.000	13	-16.9	-0.141	-0.009	9.5267	
15 minute winter	13	12	209.606	0.281	107.9	3.1332	0.0000	OK	15 minute winter	3.004	14	88.1	0.803	0.329	1.3231	
240 minute winter	14	232	209.534	0.259	24.5	0.2932	0.0000	OK	240 minute winter	3.005	15	23.7	0.448	0.028	7.4065	
240 minute winter	15	236	209.534	1.309	35.7	57.8351	0.0000	SURCHARGED	240 minute winter	1.006	16	14.8	0.347	0.020	17.8355	
240 minute winter	16	232	209.534	1.459	14.8	3.7136	0.0000	SURCHARGED	240 minute winter	Hydro-Brake®	17	7.6				187.8
15 minute summer	17	1	208.000	0.000	7.6	0.0000	0.0000	OK								

Results for 30 year Critical Storm Duration. Lowest mass balance: 97.74%																
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m²)	Status	Link Event (Upstream Depth)	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	10	211.169	0.094	19.4	0.1064	0.0000	OK	15 minute winter	1.000	2	19.1	0.759	0.367	0.9368	
15 minute winter	2	11	210.885	0.185	38.5	0.3750	0.0000	OK	15 minute winter	1.001	3	37.3	1.129	0.805	0.2098	
15 minute winter	3	11	210.818	0.168	56.4	0.3341	0.0000	OK	15 minute winter	1.002	4	56.0	1.809	0.866	1.6550	
15 minute winter	4	11	209.959	0.209	74.2	0.3873	0.0000	OK	15 minute winter	1.003	5	71.1	1.993	0.487	1.9646	
360 minute winter	5	352	209.836	0.786	17.7	1.2853	0.0000	SURCHARGED	360 minute winter	1.004	7	13.1	0.493	0.052	10.3177	
360 minute winter	6	352	209.836	0.336	2.7	0.5180	0.0000	OK	360 minute winter	2.000	7	2.3	0.194	0.005	5.2151	
360 minute winter	7	352	209.836	1.186	19.1	2.4814	0.0000	SURCHARGED	360 minute winter	1.005	15	17.6	0.550	0.084	4.6315	
600 minute winter	8	585	211.962	0.418	26.4	297.2323	0.0000	SURCHARGED	600 minute winter	Hydro-Brake®	4_1	3.3				
180 minute winter	4_1	164	210.641	0.016	3.3	0.0000	0.0000	OK	180 minute winter	3.001	10	3.3	0.121	0.001	0.8446	
180 minute winter	10	208	210.024	0.049	3.3	0.0000	0.0000	OK	180 minute winter	3.002	11	3.3	0.166	0.002	0.4143	
180 minute winter	11	208	209.943	0.017	3.3	0.0000	0.0000	OK	180 minute winter	3.003	13	3.3	0.025	0.000	7.8282	
360 minute winter	12	352	209.836	0.436	2.0	0.0000	0.0000	OK	360 minute winter	4.000	13	-2.0	-0.007	-0.001	28.5335	
360 minute winter	13	352	209.836	0.511	39.5	5.6965	0.0000	OK	360 minute winter	3.004	14	33.8	0.479	0.126	4.0057	
360 minute winter	14	352	209.836	0.561	33.8	0.6348	0.0000	OK	360 minute winter	3.005	15	32.9	0.440	0.039	10.2218	
360 minute winter	15	352	209.836	1.611	50.5	256.3187	0.0000	SURCHARGED	360 minute winter	1.006	16	12.5	0.350	0.017	17.8355	
360 minute winter	16	352	209.836	1.761	12.5	4.4822	0.0000	SURCHARGED	360 minute winter	Hydro-Brake®	17	7.7				257.7
15 minute summer	17	1	208.000	0.000	7.6	0.0000	0.0000	OK								

Results for 100 year Critical Storm Duration. Lowest mass balance: 97.74%																
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status	Link Event (Upstream Depth)	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	10	211.184	0.108	25.1	0.1233	0.0000	OK	15 minute winter	1.000	2	24.8	0.779	0.476	1.0962	
15 minute winter	2	11	211.030	0.330	49.9	0.6683	0.0000	SURCHARGED	15 minute winter	1.001	3	47.0	1.181	1.015	0.2503	
15 minute winter	3	11	210.950	0.300	72.0	0.5976	0.0000	SURCHARGED	15 minute winter	1.002	4	67.1	1.798	1.038	2.0829	
15 minute summer	4	11	209.998	0.248	89.4	0.4598	0.0000	OK	15 minute summer	1.003	5	94.3	1.994	0.646	2.1229	
480 minute winter	5	472	209.997	0.947	13.5	1.5488	0.0000	SURCHARGED	480 minute winter	1.004	7	16.3	0.457	0.065	10.3177	
480 minute winter	6	472	209.997	0.497	2.7	0.7663	0.0000	SURCHARGED	480 minute winter	2.000	7	2.1	0.175	0.004	5.7892	
480 minute winter	7	472	209.997	1.347	19.1	2.8186	0.0000	SURCHARGED	480 minute winter	1.005	15	18.8	0.507	0.089	4.6315	
720 minute winter	8	705	212.112	0.568	29.5	403.9400	0.0000	SURCHARGED	720 minute winter	Hydro-Brake®	4_1	3.3				
60 minute winter	4_1	132	210.641	0.016	3.3	0.0000	0.0000	OK	60 minute winter	3.001	10	3.3	0.141	0.001	0.8446	
60 minute winter	10	144	210.024	0.049	3.3	0.0000	0.0000	OK	60 minute winter	3.002	11	3.3	0.166	0.002	0.4143	
480 minute winter	11	472	209.997	0.072	9.0	0.0000	0.0000	OK	480 minute winter	3.003	13	12.0	0.041	0.002	14.1696	
480 minute winter	12	472	209.997	0.597	4.5	0.0000	0.0000	OK	480 minute winter	4.000	13	4.9	-0.011	0.002	47.7705	
480 minute winter	13	472	209.997	0.672	40.6	7.4922	0.0000	OK	480 minute winter	3.004	14	33.7	0.438	0.126	5.0652	
480 minute winter	14	472	209.997	0.722	33.7	0.8170	0.0000	OK	480 minute winter	3.005	15	32.8	0.458	0.039	11.2726	
480 minute winter	15	472	209.997	1.772	50.5	362.2292	0.0000	SURCHARGED	480 minute winter	1.006	16	11.6	0.307	0.015	17.8355	
480 minute winter	16	472	209.997	1.922	11.6	4.8922	0.0000	SURCHARGED	480 minute winter	Hydro-Brake®	17	8.0				318.6
15 minute summer	17	1	208.000	0.000	7.6	0.0000	0.0000	OK								

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 97.74%																
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status	Link Event (Upstream Depth)	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	12	212.009	0.934	35.2	1.0617	0.0000	FLOOD RISK	15 minute winter	1.000	2	28.8	0.808	0.553	1.4855	
15 minute winter	2	12	211.888	1.188	63.3	2.4085	0.0000	FLOOD RISK	15 minute winter	1.001	3	54.9	1.380	1.186	0.2503	
15 minute winter	3	12	211.766	1.116	86.3	2.2246	0.0000	FLOOD RISK	15 minute winter	1.002	4	82.1	2.065	1.269	2.1261	
600 minute winter	4	585	210.267	0.517	12.8	0.9584	0.0000	SURCHARGED	600 minute winter	1.003	5	12.2	0.869	0.084	2.2531	
600 minute winter	5	585	210.267	1.217	15.4	1.9896	0.0000	SURCHARGED	600 minute winter	1.004	7	15.1	0.456	0.060	10.3177	
720 minute winter	6	705	210.267	0.767	2.8	1.1817	0.0000	SURCHARGED	720 minute winter	2.000	7	2.5	0.141	0.005	5.7892	
720 minute winter	7	705	210.267	1.617	18.4	3.3824	0.0000	SURCHARGED	720 minute winter	1.005	15	18.2	0.507	0.087	4.6315	
960 minute winter	8	945	212.408	0.864	32.9	615.1868	0.0000	SURCHARGED	960 minute winter	Hydro-Brake®	4_1	3.3				
30 minute summer	4_1	121	210.641	0.016	3.3	0.0000	0.0000	OK	30 minute summer	3.001	10	3.3	0.197	0.001	0.8446	
720 minute winter	10	705	210.267	0.292	3.3	0.0000	0.0000	OK	720 minute winter	3.002	11	3.3	0.166	0.002	9.1885	
600 minute winter	11	585	210.267	0.342	3.8	0.0000	0.0000	OK	600 minute winter	3.003	13	3.9	0.043	0.001	29.6812	
600 minute winter	12	585	210.267	0.867	4.0	0.0000	0.0000	SURCHARGED	600 minute winter	4.000	13	-4.0	-0.005	-0.002	90.8128	
720 minute winter	13	705	210.267	0.942	41.1	10.4952	0.0000	SURCHARGED	720 minute winter	3.004	14	32.1	0.401	0.120	5.2374	
720 minute winter	14	705	210.267	0.992	32.1	1.1219	0.0000	SURCHARGED	720 minute winter	3.005	15	31.4	0.421	0.038	11.3379	
720 minute winter	15	705	210.267	2.042	49.5	539.3740	0.0000	SURCHARGED	720 minute winter	1.006	16	9.7	0.284	0.013	17.8355	
720 minute winter	16	705	210.267	2.192	9.7	5.5782	0.0000	FLOOD RISK	720 minute winter	Hydro-Brake®	17	8.5				441.4
15 minute summer	17	1	208.000	0.000	7.6	0.0000	0.0000	OK								