

WWHM2012
PROJECT REPORT

General Model Information

Project Name: 7'SidewalkGravelTrench
Site Name:
Site Address:
City:
Report Date: 1/23/2018
Gage:
Data Start: 10/01/1901
Data End: 09/30/2059
Timestep: 15 Minute
Precip Scale: 1.000
Version Date: 2017/10/31
Version: 4.2.13

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year

Landuse Basin Data

Predeveloped Land Use

Basin 1

Bypass: No

GroundWater: No

Pervious Land Use acre
C, Forest, Flat 0.0721

Pervious Total 0.0721

Impervious Land Use acre

Impervious Total 0

Basin Total 0.0721

Element Flows To:		
Surface	Interflow	Groundwater

Mitigated Land Use

Lateral Basin 1

Bypass:	No	
GroundWater:	No	
Pervious Land Use	acre	
C, Lawn, Mod	.0161	
Element Flows To:		
Surface	Interflow	Groundwater
Gravel Trench Bed 1	Gravel Trench Bed 1	

Lateral I Basin 1

Bypass:	No
Impervious Land Use	acre
SIDEWALKS MOD LAT	0.056
Element Flows To:	
Outlet 1	Outlet 2
Gravel Trench Bed 1	

Routing Elements

Predeveloped Routing

Mitigated Routing

Gravel Trench Bed 1

Bottom Length: 350.00 ft.
 Bottom Width: 7.00 ft.
 Trench bottom slope 1: 0 To 1
 Trench Left side slope 0: 1 To 1
 Trench right side slope 2: 1 To 1
 Material thickness of first layer: 0.5
 Pour Space of material for first layer: 0.2
 Material thickness of second layer: 0
 Pour Space of material for second layer: 0
 Material thickness of third layer: 0
 Pour Space of material for third layer: 0
 Infiltration On
 Infiltration rate: 0.2
 Infiltration safety factor: 1
 Total Volume Infiltrated (ac-ft.): 25.599
 Total Volume Through Riser (ac-ft.): 0
 Total Volume Through Facility (ac-ft.): 25.599
 Percent Infiltrated: 100
 Total Precip Applied to Facility: 0
 Total Evap From Facility: 0
 Discharge Structure
 Riser Height: 0.5 ft.
 Riser Diameter: 24 in.
 Element Flows To:
 Outlet 1 Outlet 2

Gravel Trench Bed Hydraulic Table

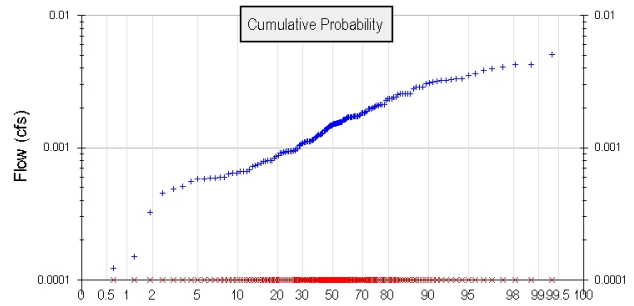
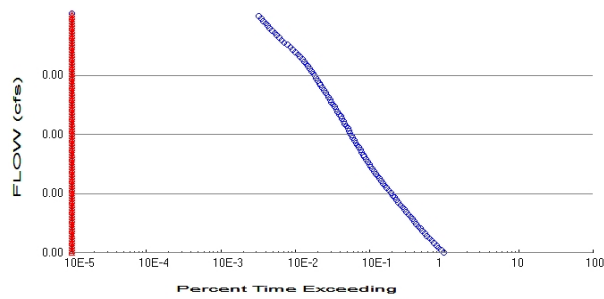
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.056	0.000	0.000	0.000
0.0167	0.056	0.000	0.000	0.011
0.0333	0.056	0.000	0.000	0.011
0.0500	0.057	0.000	0.000	0.011
0.0667	0.057	0.000	0.000	0.011
0.0833	0.057	0.000	0.000	0.011
0.1000	0.057	0.001	0.000	0.011
0.1167	0.058	0.001	0.000	0.011
0.1333	0.058	0.001	0.000	0.011
0.1500	0.058	0.001	0.000	0.011
0.1667	0.058	0.001	0.000	0.011
0.1833	0.059	0.002	0.000	0.011
0.2000	0.059	0.002	0.000	0.011
0.2167	0.059	0.002	0.000	0.011
0.2333	0.060	0.002	0.000	0.011
0.2500	0.060	0.002	0.000	0.011
0.2667	0.060	0.003	0.000	0.011
0.2833	0.060	0.003	0.000	0.011
0.3000	0.061	0.003	0.000	0.011
0.3167	0.061	0.003	0.000	0.011
0.3333	0.061	0.003	0.000	0.011
0.3500	0.061	0.004	0.000	0.011
0.3667	0.062	0.004	0.000	0.011
0.3833	0.062	0.004	0.000	0.011

0.4000	0.062	0.004	0.000	0.011
0.4167	0.062	0.005	0.000	0.011
0.4333	0.063	0.005	0.000	0.011
0.4500	0.063	0.005	0.000	0.011
0.4667	0.063	0.005	0.000	0.011
0.4833	0.064	0.005	0.000	0.011
0.5000	0.064	0.006	0.000	0.011
0.5167	0.064	0.007	0.045	0.011
0.5333	0.064	0.008	0.129	0.011
0.5500	0.065	0.009	0.237	0.011
0.5667	0.065	0.010	0.365	0.011
0.5833	0.065	0.011	0.510	0.011
0.6000	0.065	0.012	0.670	0.011
0.6167	0.066	0.013	0.844	0.011
0.6333	0.066	0.014	1.030	0.011
0.6500	0.066	0.015	1.229	0.011
0.6667	0.067	0.017	1.438	0.011
0.6833	0.067	0.018	1.657	0.011
0.7000	0.067	0.019	1.886	0.011
0.7167	0.067	0.020	2.124	0.011
0.7333	0.068	0.021	2.369	0.011
0.7500	0.068	0.022	2.623	0.011
0.7667	0.068	0.023	2.883	0.011
0.7833	0.068	0.024	3.149	0.011
0.8000	0.069	0.026	3.421	0.011
0.8167	0.069	0.027	3.698	0.011
0.8333	0.069	0.028	3.979	0.011
0.8500	0.069	0.029	4.264	0.011
0.8667	0.070	0.030	4.552	0.011
0.8833	0.070	0.031	4.842	0.011
0.9000	0.070	0.033	5.134	0.011
0.9167	0.071	0.034	5.427	0.011
0.9333	0.071	0.035	5.721	0.011
0.9500	0.071	0.036	6.015	0.011
0.9667	0.071	0.037	6.307	0.011
0.9833	0.072	0.039	6.598	0.011
1.0000	0.072	0.040	6.887	0.011
1.0167	0.072	0.041	7.173	0.011
1.0333	0.072	0.042	7.456	0.011
1.0500	0.073	0.043	7.734	0.011
1.0667	0.073	0.045	8.008	0.011
1.0833	0.073	0.046	8.277	0.011
1.1000	0.073	0.047	8.540	0.011
1.1167	0.074	0.048	8.796	0.011
1.1333	0.074	0.050	9.046	0.011
1.1500	0.074	0.051	9.288	0.011
1.1667	0.075	0.052	9.523	0.011
1.1833	0.075	0.053	9.749	0.011
1.2000	0.075	0.055	9.967	0.011
1.2167	0.075	0.056	10.17	0.011
1.2333	0.076	0.057	10.37	0.011
1.2500	0.076	0.058	10.56	0.011
1.2667	0.076	0.060	10.75	0.011
1.2833	0.076	0.061	10.92	0.011
1.3000	0.077	0.062	11.08	0.011
1.3167	0.077	0.063	11.24	0.011
1.3333	0.077	0.065	11.38	0.011
1.3500	0.077	0.066	11.52	0.011

1.3667	0.078	0.067	11.65	0.011
1.3833	0.078	0.069	11.77	0.011
1.4000	0.078	0.070	11.88	0.011
1.4167	0.079	0.071	11.99	0.011
1.4333	0.079	0.073	12.09	0.011
1.4500	0.079	0.074	12.19	0.011
1.4667	0.079	0.075	12.28	0.011
1.4833	0.080	0.077	12.37	0.011
1.5000	0.080	0.078	12.46	0.011

Analysis Results

POC 1



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1

Total Pervious Area: 0.0721
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1

Total Pervious Area: 0.0161
Total Impervious Area: 0.056

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.001519
5 year	0.002364
10 year	0.002822
25 year	0.003289
50 year	0.003567
100 year	0.003795

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0
5 year	0
10 year	0
25 year	0
50 year	0
100 year	0

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1902	0.001	0.000
1903	0.001	0.000
1904	0.002	0.000
1905	0.001	0.000
1906	0.000	0.000
1907	0.002	0.000
1908	0.002	0.000
1909	0.002	0.000
1910	0.002	0.000
1911	0.002	0.000

1912	0.005	0.000
1913	0.002	0.000
1914	0.001	0.000
1915	0.001	0.000
1916	0.002	0.000
1917	0.001	0.000
1918	0.002	0.000
1919	0.001	0.000
1920	0.002	0.000
1921	0.002	0.000
1922	0.002	0.000
1923	0.001	0.000
1924	0.001	0.000
1925	0.001	0.000
1926	0.001	0.000
1927	0.001	0.000
1928	0.001	0.000
1929	0.002	0.000
1930	0.002	0.000
1931	0.001	0.000
1932	0.001	0.000
1933	0.001	0.000
1934	0.003	0.000
1935	0.001	0.000
1936	0.001	0.000
1937	0.002	0.000
1938	0.001	0.000
1939	0.000	0.000
1940	0.001	0.000
1941	0.001	0.000
1942	0.002	0.000
1943	0.001	0.000
1944	0.002	0.000
1945	0.002	0.000
1946	0.001	0.000
1947	0.001	0.000
1948	0.003	0.000
1949	0.003	0.000
1950	0.001	0.000
1951	0.001	0.000
1952	0.004	0.000
1953	0.004	0.000
1954	0.001	0.000
1955	0.001	0.000
1956	0.001	0.000
1957	0.002	0.000
1958	0.004	0.000
1959	0.003	0.000
1960	0.001	0.000
1961	0.003	0.000
1962	0.001	0.000
1963	0.001	0.000
1964	0.001	0.000
1965	0.003	0.000
1966	0.001	0.000
1967	0.001	0.000
1968	0.001	0.000
1969	0.001	0.000

1970	0.002	0.000
1971	0.003	0.000
1972	0.002	0.000
1973	0.003	0.000
1974	0.001	0.000
1975	0.003	0.000
1976	0.002	0.000
1977	0.001	0.000
1978	0.003	0.000
1979	0.001	0.000
1980	0.002	0.000
1981	0.002	0.000
1982	0.001	0.000
1983	0.003	0.000
1984	0.001	0.000
1985	0.002	0.000
1986	0.002	0.000
1987	0.003	0.000
1988	0.002	0.000
1989	0.002	0.000
1990	0.002	0.000
1991	0.001	0.000
1992	0.002	0.000
1993	0.002	0.000
1994	0.003	0.000
1995	0.001	0.000
1996	0.003	0.000
1997	0.001	0.000
1998	0.002	0.000
1999	0.000	0.000
2000	0.001	0.000
2001	0.001	0.000
2002	0.002	0.000
2003	0.002	0.000
2004	0.002	0.000
2005	0.003	0.000
2006	0.001	0.000
2007	0.001	0.000
2008	0.002	0.000
2009	0.001	0.000
2010	0.001	0.000
2011	0.001	0.000
2012	0.001	0.000
2013	0.001	0.000
2014	0.001	0.000
2015	0.001	0.000
2016	0.000	0.000
2017	0.002	0.000
2018	0.004	0.000
2019	0.004	0.000
2020	0.001	0.000
2021	0.002	0.000
2022	0.001	0.000
2023	0.002	0.000
2024	0.003	0.000
2025	0.002	0.000
2026	0.003	0.000
2027	0.001	0.000

2028	0.001	0.000
2029	0.002	0.000
2030	0.003	0.000
2031	0.001	0.000
2032	0.001	0.000
2033	0.001	0.000
2034	0.001	0.000
2035	0.004	0.000
2036	0.002	0.000
2037	0.000	0.000
2038	0.002	0.000
2039	0.000	0.000
2040	0.001	0.000
2041	0.001	0.000
2042	0.004	0.000
2043	0.002	0.000
2044	0.002	0.000
2045	0.002	0.000
2046	0.002	0.000
2047	0.001	0.000
2048	0.002	0.000
2049	0.002	0.000
2050	0.001	0.000
2051	0.002	0.000
2052	0.001	0.000
2053	0.002	0.000
2054	0.002	0.000
2055	0.001	0.000
2056	0.001	0.000
2057	0.001	0.000
2058	0.001	0.000
2059	0.003	0.000

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	0.0051	0.0000
2	0.0043	0.0000
3	0.0043	0.0000
4	0.0041	0.0000
5	0.0040	0.0000
6	0.0038	0.0000
7	0.0036	0.0000
8	0.0035	0.0000
9	0.0033	0.0000
10	0.0033	0.0000
11	0.0033	0.0000
12	0.0032	0.0000
13	0.0032	0.0000
14	0.0032	0.0000
15	0.0031	0.0000
16	0.0031	0.0000
17	0.0030	0.0000
18	0.0029	0.0000
19	0.0029	0.0000
20	0.0029	0.0000
21	0.0028	0.0000
22	0.0026	0.0000

23	0.0026	0.0000
24	0.0026	0.0000
25	0.0026	0.0000
26	0.0025	0.0000
27	0.0025	0.0000
28	0.0024	0.0000
29	0.0024	0.0000
30	0.0024	0.0000
31	0.0023	0.0000
32	0.0023	0.0000
33	0.0023	0.0000
34	0.0021	0.0000
35	0.0021	0.0000
36	0.0021	0.0000
37	0.0021	0.0000
38	0.0021	0.0000
39	0.0020	0.0000
40	0.0020	0.0000
41	0.0020	0.0000
42	0.0020	0.0000
43	0.0020	0.0000
44	0.0020	0.0000
45	0.0019	0.0000
46	0.0019	0.0000
47	0.0018	0.0000
48	0.0018	0.0000
49	0.0018	0.0000
50	0.0018	0.0000
51	0.0017	0.0000
52	0.0017	0.0000
53	0.0017	0.0000
54	0.0017	0.0000
55	0.0017	0.0000
56	0.0017	0.0000
57	0.0017	0.0000
58	0.0017	0.0000
59	0.0017	0.0000
60	0.0017	0.0000
61	0.0017	0.0000
62	0.0017	0.0000
63	0.0017	0.0000
64	0.0016	0.0000
65	0.0016	0.0000
66	0.0016	0.0000
67	0.0016	0.0000
68	0.0016	0.0000
69	0.0016	0.0000
70	0.0016	0.0000
71	0.0016	0.0000
72	0.0016	0.0000
73	0.0015	0.0000
74	0.0015	0.0000
75	0.0015	0.0000
76	0.0015	0.0000
77	0.0015	0.0000
78	0.0015	0.0000
79	0.0015	0.0000
80	0.0015	0.0000

81	0.0015	0.0000
82	0.0015	0.0000
83	0.0015	0.0000
84	0.0014	0.0000
85	0.0014	0.0000
86	0.0014	0.0000
87	0.0014	0.0000
88	0.0014	0.0000
89	0.0014	0.0000
90	0.0013	0.0000
91	0.0013	0.0000
92	0.0013	0.0000
93	0.0013	0.0000
94	0.0013	0.0000
95	0.0013	0.0000
96	0.0012	0.0000
97	0.0012	0.0000
98	0.0012	0.0000
99	0.0012	0.0000
100	0.0012	0.0000
101	0.0012	0.0000
102	0.0011	0.0000
103	0.0011	0.0000
104	0.0011	0.0000
105	0.0011	0.0000
106	0.0011	0.0000
107	0.0011	0.0000
108	0.0011	0.0000
109	0.0011	0.0000
110	0.0011	0.0000
111	0.0011	0.0000
112	0.0011	0.0000
113	0.0010	0.0000
114	0.0010	0.0000
115	0.0010	0.0000
116	0.0010	0.0000
117	0.0009	0.0000
118	0.0009	0.0000
119	0.0009	0.0000
120	0.0009	0.0000
121	0.0009	0.0000
122	0.0009	0.0000
123	0.0009	0.0000
124	0.0009	0.0000
125	0.0009	0.0000
126	0.0009	0.0000
127	0.0009	0.0000
128	0.0008	0.0000
129	0.0008	0.0000
130	0.0008	0.0000
131	0.0008	0.0000
132	0.0008	0.0000
133	0.0008	0.0000
134	0.0008	0.0000
135	0.0007	0.0000
136	0.0007	0.0000
137	0.0007	0.0000
138	0.0007	0.0000

139	0.0007	0.0000
140	0.0007	0.0000
141	0.0007	0.0000
142	0.0006	0.0000
143	0.0006	0.0000
144	0.0006	0.0000
145	0.0006	0.0000
146	0.0006	0.0000
147	0.0006	0.0000
148	0.0006	0.0000
149	0.0006	0.0000
150	0.0006	0.0000
151	0.0006	0.0000
152	0.0005	0.0000
153	0.0005	0.0000
154	0.0004	0.0000
155	0.0003	0.0000
156	0.0002	0.0000
157	0.0001	0.0000
158	0.0001	0.0000

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0008	54387	0	0	Pass
0.0008	50309	0	0	Pass
0.0008	46609	0	0	Pass
0.0008	43384	0	0	Pass
0.0009	40359	0	0	Pass
0.0009	37501	0	0	Pass
0.0009	34974	0	0	Pass
0.0010	32576	0	0	Pass
0.0010	30354	0	0	Pass
0.0010	28326	0	0	Pass
0.0010	26432	0	0	Pass
0.0011	24808	0	0	Pass
0.0011	23335	0	0	Pass
0.0011	21933	0	0	Pass
0.0012	20659	0	0	Pass
0.0012	19457	0	0	Pass
0.0012	18293	0	0	Pass
0.0012	17241	0	0	Pass
0.0013	16194	0	0	Pass
0.0013	15152	0	0	Pass
0.0013	14293	0	0	Pass
0.0014	13451	0	0	Pass
0.0014	12676	0	0	Pass
0.0014	11955	0	0	Pass
0.0014	11246	0	0	Pass
0.0015	10576	0	0	Pass
0.0015	9989	0	0	Pass
0.0015	9379	0	0	Pass
0.0016	8859	0	0	Pass
0.0016	8343	0	0	Pass
0.0016	7861	0	0	Pass
0.0016	7468	0	0	Pass
0.0017	7041	0	0	Pass
0.0017	6620	0	0	Pass
0.0017	6277	0	0	Pass
0.0018	5978	0	0	Pass
0.0018	5706	0	0	Pass
0.0018	5446	0	0	Pass
0.0018	5197	0	0	Pass
0.0019	4945	0	0	Pass
0.0019	4707	0	0	Pass
0.0019	4513	0	0	Pass
0.0020	4339	0	0	Pass
0.0020	4160	0	0	Pass
0.0020	3958	0	0	Pass
0.0020	3770	0	0	Pass
0.0021	3586	0	0	Pass
0.0021	3414	0	0	Pass
0.0021	3267	0	0	Pass
0.0021	3134	0	0	Pass
0.0022	3027	0	0	Pass
0.0022	2932	0	0	Pass
0.0022	2813	0	0	Pass

0.0023	2683	0	0	Pass
0.0023	2559	0	0	Pass
0.0023	2451	0	0	Pass
0.0023	2361	0	0	Pass
0.0024	2257	0	0	Pass
0.0024	2141	0	0	Pass
0.0024	2040	0	0	Pass
0.0025	1952	0	0	Pass
0.0025	1860	0	0	Pass
0.0025	1779	0	0	Pass
0.0025	1688	0	0	Pass
0.0026	1619	0	0	Pass
0.0026	1561	0	0	Pass
0.0026	1482	0	0	Pass
0.0027	1407	0	0	Pass
0.0027	1340	0	0	Pass
0.0027	1270	0	0	Pass
0.0027	1218	0	0	Pass
0.0028	1164	0	0	Pass
0.0028	1103	0	0	Pass
0.0028	1055	0	0	Pass
0.0029	1005	0	0	Pass
0.0029	964	0	0	Pass
0.0029	920	0	0	Pass
0.0029	872	0	0	Pass
0.0030	815	0	0	Pass
0.0030	775	0	0	Pass
0.0030	737	0	0	Pass
0.0031	694	0	0	Pass
0.0031	637	0	0	Pass
0.0031	601	0	0	Pass
0.0031	555	0	0	Pass
0.0032	517	0	0	Pass
0.0032	478	0	0	Pass
0.0032	434	0	0	Pass
0.0033	394	0	0	Pass
0.0033	363	0	0	Pass
0.0033	339	0	0	Pass
0.0033	310	0	0	Pass
0.0034	296	0	0	Pass
0.0034	273	0	0	Pass
0.0034	252	0	0	Pass
0.0035	237	0	0	Pass
0.0035	223	0	0	Pass
0.0035	206	0	0	Pass
0.0035	195	0	0	Pass
0.0036	179	0	0	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #1

On-line facility volume: 0 acre-feet

On-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

Off-line facility target flow: 0 cfs.

Adjusted for 15 min: 0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Gravel Trench Bed 1 POC	<input type="checkbox"/>	23.30			<input type="checkbox"/>	100.00			
Total Volume Infiltrated		23.30	0.00	0.00		100.00	0.00	0%	No Treat. Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Passed

Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

IMPLND Changes

No IMPLND changes have been made.

Appendix

Predeveloped Schematic



Basin 1
10.07ac

Mitigated Schematic



Predeveloped UCI File

RUN

GLOBAL

```
WWM4 model simulation
START      1901 10 01      END      2059 09 30
RUN INTERP OUTPUT LEVEL    3      0
RESUME     0 RUN          1
UNIT SYSTEM      1
END GLOBAL
```

FILES

```
<File>  <Un#>  <-----File Name----->***
<-ID->                                     ***
WDM      26      7'SidewalkGravelTrench.wdm
MESSU    25      Pre7'SidewalkGravelTrench.MES
          27      Pre7'SidewalkGravelTrench.L61
          28      Pre7'SidewalkGravelTrench.L62
          30      POC7'SidewalkGravelTrench1.dat
```

END FILES

OPN SEQUENCE

INGRP INDELT 00:15

```
PERLND    10
COPY       501
DISPLY     1
```

END INGRP

END OPN SEQUENCE

DISPLY

DISPLY-INFO1

```
# - #<-----Title----->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
1      Basin 1      MAX      1      2      30      9
```

END DISPLY-INFO1

END DISPLY

COPY

TIMESERIES

```
# - # NPT NMN ***
1      1      1
501    1      1
```

END TIMESERIES

END COPY

GENER

OPCODE

```
#      # OPCD ***
```

END OPCODE

PARM

```
#      #      K ***
```

END PARM

END GENER

PERLND

GEN-INFO

```
<PLS ><-----Name----->NBLKS      Unit-systems      Printer ***
# - #      User      t-series      Engl Metr ***
                        in out      ***
10      C, Forest, Flat      1      1      1      1      27      0
```

END GEN-INFO

*** Section PWATER***

ACTIVITY

```
<PLS > ***** Active Sections *****
# - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC ***
10      0      0      1      0      0      0      0      0      0      0      0      0
```

END ACTIVITY

PRINT-INFO

```
<PLS > ***** Print-flags ***** PIVL PYR
# - # ATMP SNOW PWAT SED PST PWG PQAL MSTL PEST NITR PHOS TRAC *****
10      0      0      4      0      0      0      0      0      0      0      0      0      1      9
```

END PRINT-INFO


```

PWAT-PARM1
<PLS > PWATER variable monthly parameter value flags ***
# - # CSNO RTOP UZFG VCS VUZ VNN VIFW VIRC VLE INFC HWT ***
10      0      0      0      0      0      0      0      0      0      0      0
END PWAT-PARM1

PWAT-PARM2
<PLS > PWATER input info: Part 2 ***
# - # ***FOREST LZSN INFILT LSUR SLSUR KVARY AGWRC
10      0      4.5      0.08      400      0.05      0.5      0.996
END PWAT-PARM2

PWAT-PARM3
<PLS > PWATER input info: Part 3 ***
# - # ***PETMAX PETMIN INFEXP INFILD DEEPFR BASETP AGWETP
10      0      0      2      2      0      0      0
END PWAT-PARM3

PWAT-PARM4
<PLS > PWATER input info: Part 4 ***
# - # CEPSC UZSN NSUR INTFW IRC LZETP ***
10      0.2      0.5      0.35      6      0.5      0.7
END PWAT-PARM4

PWAT-STATE1
<PLS > *** Initial conditions at start of simulation
ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
# - # *** CEPS SURS UZS IFWS LZS AGWS GWVS
10      0      0      0      0      2.5      1      0
END PWAT-STATE1

END PERLND

IMPLND
GEN-INFO
<PLS ><-----Name-----> Unit-systems Printer ***
# - # User t-series Engl Metr ***
in out ***
END GEN-INFO
*** Section IWATER***

ACTIVITY
<PLS > ***** Active Sections *****
# - # ATMP SNOW IWAT SLD IWG IQAL ***
END ACTIVITY

PRINT-INFO
<ILS > ***** Print-flags ***** PIVL PYR
# - # ATMP SNOW IWAT SLD IWG IQAL *****
END PRINT-INFO

IWAT-PARM1
<PLS > IWATER variable monthly parameter value flags ***
# - # CSNO RTOP VRS VNN RTLI ***
END IWAT-PARM1

IWAT-PARM2
<PLS > IWATER input info: Part 2 ***
# - # *** LSUR SLSUR NSUR RETSC
END IWAT-PARM2

IWAT-PARM3
<PLS > IWATER input info: Part 3 ***
# - # ***PETMAX PETMIN
END IWAT-PARM3

IWAT-STATE1
<PLS > *** Initial conditions at start of simulation
# - # *** RETS SURS
END IWAT-STATE1

```

END IMPLND

SCHEMATIC

<-Source->		<--Area-->		<-Target->	MBLK	***
<Name>	#	<-factor->		<Name>	#	Tbl#
Basin	1***					
PERLND	10	0.0721		COPY	501	12
PERLND	10	0.0721		COPY	501	13

*****Routing*****

END SCHEMATIC

NETWORK

<-Volume->	<-Grp>	<-Member->	<--Mult-->	Tran	<-Target vols>	<-Grp>	<-Member->	***
<Name>	#	<Name>	#	#<-factor->strg	<Name>	#	#	<Name>
COPY	501	OUTPUT	MEAN	1 1 48.4	DISPLY	1	INPUT	TIMSER 1

<-Volume->	<-Grp>	<-Member->	<--Mult-->	Tran	<-Target vols>	<-Grp>	<-Member->	***
<Name>	#	<Name>	#	#<-factor->strg	<Name>	#	#	<Name>

END NETWORK

RCHRES

GEN-INFO

RCHRES	Name	Nexits	Unit Systems	Printer	***
# - #	<----->	<---->	User T-series	Engl Metr LKFG	***
			in out		***

END GEN-INFO

*** Section RCHRES***

ACTIVITY

<PLS > ***** Active Sections *****

#	-	#	HYFG	ADFG	CNFG	HTFG	SDFG	GQFG	OXFG	NUFG	PKFG	PHFG	***
---	---	---	------	------	------	------	------	------	------	------	------	------	-----

END ACTIVITY

PRINT-INFO

<PLS > ***** Print-flags ***** PIVL PYR

#	-	#	HYDR	ADCA	CONS	HEAT	SED	GQL	OXRX	NUTR	PLNK	PHCB	PIVL	PYR	*****
---	---	---	------	------	------	------	-----	-----	------	------	------	------	------	-----	-------

END PRINT-INFO

HYDR-PARM1

RCHRES	Flags for each HYDR Section	***	ODGTFG for each	FUNCT for each	***
# - #	VC A1 A2 A3	ODFVFG for each	***	ODGTFG for each	FUNCT for each
	FG FG FG FG	possible exit	***	possible exit	possible exit
	* * * *	* * * *		* * * *	***

END HYDR-PARM1

HYDR-PARM2

#	-	#	FTABNO	LEN	DELTH	STCOR	KS	DB50	***
<----->	<----->	<----->	<----->	<----->	<----->	<----->	<----->	<----->	***

END HYDR-PARM2

HYDR-INIT

RCHRES	Initial conditions for each HYDR section	***
# - #	*** VOL Initial value of COLIND Initial value of OUTDGT	
	*** ac-ft for each possible exit for each possible exit	
<----->	<----->	<---><---><---><---><---> *** <---><---><---><---><--->

END HYDR-INIT

END RCHRES

SPEC-ACTIONS

END SPEC-ACTIONS

FTABLES

END FTABLES

EXT SOURCES

<-Volume->	<Member>	SsysSgap	<--Mult-->	Tran	<-Target vols>	<-Grp>	<-Member->	***
<Name>	#	<Name>	#	tem strg	<-factor->strg	<Name>	#	<Name>
WDM	2	PREC	ENGL	1	PERLND	1 999	EXTNL	PREC
WDM	2	PREC	ENGL	1	IMPLND	1 999	EXTNL	PREC

```

WDM      1 EVAP      ENGL      1          PERLND    1 999 EXTNL  PETINP
WDM      1 EVAP      ENGL      1          IMPLND    1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>      #      <Name> # #<-factor->strg <Name>      # <Name>      tem strg strg***
COPY    501 OUTPUT MEAN    1 1      48.4      WDM      501 FLOW      ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>    <-Grp> <-Member-><--Mult-->      <Target>      <-Grp> <-Member->***
<Name>      <Name> # #<-factor->      <Name>      <Name> # #***
MASS-LINK      12
PERLND      PWATER SURO      0.083333      COPY      INPUT  MEAN
END MASS-LINK      12

MASS-LINK      13
PERLND      PWATER IFWO      0.083333      COPY      INPUT  MEAN
END MASS-LINK      13

END MASS-LINK

END RUN

```

Mitigated UCI File

RUN

GLOBAL

```
WWMH4 model simulation
START      1901 10 01      END      2059 09 30
RUN INTERP OUTPUT LEVEL    3      0
RESUME     0 RUN          1          UNIT SYSTEM      1
END GLOBAL
```

FILES

```
<File>  <Un#>  <-----File Name----->***
<-ID->                                     ***
WDM      26      7'SidewalkGravelTrench.wdm
MESSU    25      Mit7'SidewalkGravelTrench.MES
          27      Mit7'SidewalkGravelTrench.L61
          28      Mit7'SidewalkGravelTrench.L62
          30      POC7'SidewalkGravelTrench1.dat
```

END FILES

OPN SEQUENCE

INGRP INDELT 00:15

```
PERLND    38
IMPLND    16
RCHRES     1
COPY       1
COPY      501
DISPLY     1
```

END INGRP

END OPN SEQUENCE

DISPLY

DISPLY-INFO1

```
# - #<-----Title----->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
1      Gravel Trench Bed 1      MAX      1      2      30      9
```

END DISPLY-INFO1

END DISPLY

COPY

TIMESERIES

```
# - # NPT NMN ***
1      1      1
501     1      1
```

END TIMESERIES

END COPY

GENER

OPCODE

```
#      # OPCODE ***
```

END OPCODE

PARM

```
#      #      K ***
```

END PARM

END GENER

PERLND

GEN-INFO

```
<PLS ><-----Name----->NBLKS  Unit-systems  Printer ***
# - #      User  t-series  Engl Metr ***
          in  out      ***
```

```
38      C, Lawn, Mod      1      1      1      1      27      0
```

END GEN-INFO

*** Section PWATER***

ACTIVITY

```
<PLS > ***** Active Sections *****
# - # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
38      0      0      1      0      0      0      0      0      0      0      0
```

END ACTIVITY

PRINT-INFO

```
<PLS > ***** Print-flags ***** PIVL  PYR
# - # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *****
```

```

38      0      0      4      0      0      0      0      0      0      0      0      0      1      9
END PRINT-INFO

PWAT-PARM1
<PLS >  PWATER variable monthly parameter value flags ***
# - # CSNO RTOP UZFG VCS VUZ VNN VIFW VIRC VLE INFC HWT ***
38      0      0      0      0      0      0      0      0      0      0      0
END PWAT-PARM1

PWAT-PARM2
<PLS >  PWATER input info: Part 2 ***
# - # ***FOREST LZSN INFILT LSUR SLSUR KVARV AGWRC
38      0      4.5      0.03      400      0.1      0.5      0.996
END PWAT-PARM2

PWAT-PARM3
<PLS >  PWATER input info: Part 3 ***
# - # ***PETMAX PETMIN INFEXP INFILD DEEPFR BASETP AGWETP
38      0      0      2      2      0      0      0
END PWAT-PARM3
PWAT-PARM4
<PLS >  PWATER input info: Part 4 ***
# - # CEPSC UZSN NSUR INTFW IRC LZETP ***
38      0.1      0.25      0.25      6      0.5      0.25
END PWAT-PARM4

PWAT-STATE1
<PLS > *** Initial conditions at start of simulation
ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
# - # *** CEPS SURS UZS IFWS LZS AGWS GWVS
38      0      0      0      0      2.5      1      0
END PWAT-STATE1

END PERLND

IMPLND
GEN-INFO
<PLS ><-----Name-----> Unit-systems Printer ***
# - # User t-series Engr Metr ***
in out ***
16 SIDEWALKS/MOD LAT 1 1 1 27 0
END GEN-INFO
*** Section IWATER***

ACTIVITY
<PLS > ***** Active Sections *****
# - # ATMP SNOW IWAT SLD IWG IQAL ***
16      0      0      1      0      0      0
END ACTIVITY

PRINT-INFO
<ILS > ***** Print-flags ***** PIVL PYR
# - # ATMP SNOW IWAT SLD IWG IQAL *****
16      0      0      4      0      0      0      1      9
END PRINT-INFO

IWAT-PARM1
<PLS >  IWATER variable monthly parameter value flags ***
# - # CSNO RTOP VRS VNN RTLI ***
16      0      0      0      0      0
END IWAT-PARM1

IWAT-PARM2
<PLS >  IWATER input info: Part 2 ***
# - # *** LSUR SLSUR NSUR RETSC
16      400      0.05      0.1      0.08
END IWAT-PARM2

IWAT-PARM3
<PLS >  IWATER input info: Part 3 ***

```

```

# - # ***PETMAX      PETMIN
16      0      0
END IWAT-PARM3

IWAT-STATE1
<PLS > *** Initial conditions at start of simulation
# - # *** RETS      SURS
16      0      0
END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->          <--Area-->      <-Target->      MBLK      ***
<Name> #          <-factor->      <Name> #      Tbl#      ***
Lateral Basin 1***
PERLND 38          0.0161      RCHRES 1      2
PERLND 38          0.0161      RCHRES 1      3
Lateral I Basin 1***
IMPLND 16          0.056      RCHRES 1      5

*****Routing*****
PERLND 38          0.0161      COPY 1      12
PERLND 38          0.0161      COPY 1      13
IMPLND 16          0.056      COPY 1      15
RCHRES 1          1      COPY 501      17
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> #      <Name> # #<-factor->strg <Name> # #      <Name> # #      ***
COPY 501 OUTPUT MEAN 1 1 48.4      DISPLY 1      INPUT TIMSER 1

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> #      <Name> # #<-factor->strg <Name> # #      <Name> # #      ***
END NETWORK

RCHRES
GEN-INFO
RCHRES      Name      Nexits      Unit Systems      Printer      ***
# - #<-----><----> User T-series Engl Metr LKFG      ***
1      Gravel Trench Be-004      2      1      1      1      28      0      1      ***
END GEN-INFO
*** Section RCHRES***

ACTIVITY
<PLS > ***** Active Sections *****
# - # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
1      1      0      0      0      0      0      0      0      0
END ACTIVITY

PRINT-INFO
<PLS > ***** Print-flags ***** PIVL PYR *****
# - # HYDR ADCA CONS HEAT SED GQL OXRX NUTR PLNK PHCB PIVL PYR *****
1      4      0      0      0      0      0      0      0      0      1      9
END PRINT-INFO

HYDR-PARM1
RCHRES      Flags for each HYDR Section      ***
# - # VC A1 A2 A3 ODFVFG for each *** ODGTFG for each      FUNCT for each
FG FG FG FG possible exit *** possible exit      possible exit
* * * * * * * * * *
1      0 1 0 0      4 5 0 0 0      0 0 0 0 0      2 2 2 2 2
END HYDR-PARM1

HYDR-PARM2
# - # FTABNO      LEN      DELTH      STCOR      KS      DB50      ***

```

```

<-----><-----><-----><-----><-----><-----><----->      ***
1          1          0.07          0.0          0.0          0.5          0.0
END HYDR-PARM2
HYDR-INIT
  RCHRES Initial conditions for each HYDR section      ***
  # - # *** VOL Initial value of COLIND Initial value of OUTDGT
  *** ac-ft for each possible exit for each possible exit
<-----><-----><-----><-----><-----><-----><-----><-----><----->
1          0          4.0  5.0  0.0  0.0  0.0          0.0  0.0  0.0  0.0  0.0
END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE 1
  92 5
    Depth Area Volume Outflow1 Outflow2 Velocity Travel Time***
    (ft) (acres) (acre-ft) (cfs) (cfs) (ft/sec) (Minutes)***
0.000000 0.056244 0.000000 0.000000 0.000000 0.000000
0.016667 0.056512 0.000188 0.000000 0.011343
0.033333 0.056780 0.000377 0.000000 0.011343
0.050000 0.057048 0.000566 0.000000 0.011343
0.066667 0.057316 0.000757 0.000000 0.011343
0.083333 0.057583 0.000949 0.000000 0.011343
0.100000 0.057851 0.001141 0.000000 0.011343
0.116667 0.058119 0.001334 0.000000 0.011343
0.133333 0.058387 0.001528 0.000000 0.011343
0.150000 0.058655 0.001723 0.000000 0.011343
0.166667 0.058923 0.001919 0.000000 0.011343
0.183333 0.059190 0.002116 0.000000 0.011343
0.200000 0.059458 0.002314 0.000000 0.011343
0.216667 0.059726 0.002513 0.000000 0.011343
0.233333 0.059994 0.002712 0.000000 0.011343
0.250000 0.060262 0.002913 0.000000 0.011343
0.266667 0.060530 0.003114 0.000000 0.011343
0.283333 0.060797 0.003316 0.000000 0.011343
0.300000 0.061065 0.003519 0.000000 0.011343
0.316667 0.061333 0.003723 0.000000 0.011343
0.333333 0.061601 0.003928 0.000000 0.011343
0.350000 0.061869 0.004134 0.000000 0.011343
0.366667 0.062137 0.004341 0.000000 0.011343
0.383333 0.062404 0.004548 0.000000 0.011343
0.400000 0.062672 0.004757 0.000000 0.011343
0.416667 0.062940 0.004966 0.000000 0.011343
0.433333 0.063208 0.005176 0.000000 0.011343
0.450000 0.063476 0.005387 0.000000 0.011343
0.466667 0.063743 0.005599 0.000000 0.011343
0.483333 0.064011 0.005812 0.000000 0.011343
0.500000 0.064279 0.006026 0.000000 0.011343
0.516667 0.064547 0.007100 0.045687 0.011343
0.533333 0.064815 0.008178 0.129168 0.011343
0.550000 0.065083 0.009260 0.237213 0.011343
0.566667 0.065350 0.010347 0.365093 0.011343
0.583333 0.065618 0.011439 0.510062 0.011343
0.600000 0.065886 0.012534 0.670242 0.011343
0.616667 0.066154 0.013635 0.844221 0.011343
0.633333 0.066422 0.014740 1.030872 0.011343
0.650000 0.066690 0.015849 1.229240 0.011343
0.666667 0.066957 0.016963 1.438492 0.011343
0.683333 0.067225 0.018081 1.657872 0.011343
0.700000 0.067493 0.019203 1.886677 0.011343
0.716667 0.067761 0.020331 2.124240 0.011343
0.733333 0.068029 0.021462 2.369915 0.011343
0.750000 0.068297 0.022598 2.623072 0.011343
0.766667 0.068564 0.023739 2.883085 0.011343
0.783333 0.068832 0.024884 3.149332 0.011343
0.800000 0.069100 0.026033 3.421187 0.011343
0.816667 0.069368 0.027187 3.698025 0.011343
0.833333 0.069636 0.028345 3.979211 0.011343

```

0.850000	0.069904	0.029508	4.264108	0.011343
0.866667	0.070171	0.030675	4.552071	0.011343
0.883333	0.070439	0.031847	4.842450	0.011343
0.900000	0.070707	0.033023	5.134592	0.011343
0.916667	0.070975	0.034204	5.427837	0.011343
0.933333	0.071243	0.035389	5.721526	0.011343
0.950000	0.071511	0.036579	6.014997	0.011343
0.966667	0.071778	0.037773	6.307592	0.011343
0.983333	0.072046	0.038971	6.598653	0.011343
1.000000	0.072314	0.040174	6.887532	0.011343
1.016667	0.072582	0.041382	7.173586	0.011343
1.033333	0.072850	0.042594	7.456186	0.011343
1.050000	0.073118	0.043810	7.734715	0.011343
1.066667	0.073385	0.045031	8.008574	0.011343
1.083333	0.073653	0.046256	8.277186	0.011343
1.100000	0.073921	0.047486	8.539994	0.011343
1.116667	0.074189	0.048720	8.796472	0.011343
1.133333	0.074457	0.049959	9.046123	0.011343
1.150000	0.074725	0.051202	9.288484	0.011343
1.166667	0.074992	0.052450	9.523132	0.011343
1.183333	0.075260	0.053702	9.749685	0.011343
1.200000	0.075528	0.054959	9.967808	0.011343
1.216667	0.075796	0.056220	10.17721	0.011343
1.233333	0.076064	0.057485	10.37768	0.011343
1.250000	0.076331	0.058755	10.56902	0.011343
1.266667	0.076599	0.060030	10.75114	0.011343
1.283333	0.076867	0.061308	10.92400	0.011343
1.300000	0.077135	0.062592	11.08763	0.011343
1.316667	0.077403	0.063880	11.24214	0.011343
1.333333	0.077671	0.065172	11.38772	0.011343
1.350000	0.077938	0.066469	11.52466	0.011343
1.366667	0.078206	0.067770	11.65332	0.011343
1.383333	0.078474	0.069076	11.77418	0.011343
1.400000	0.078742	0.070386	11.88781	0.011343
1.416667	0.079010	0.071700	11.99489	0.011343
1.433333	0.079278	0.073019	12.09620	0.011343
1.450000	0.079545	0.074343	12.19266	0.011343
1.466667	0.079813	0.075671	12.28531	0.011343
1.483333	0.080081	0.077003	12.37530	0.011343
1.500000	0.080349	0.078340	12.46394	0.011343
1.516667	0.080617	0.079682	12.70307	0.011343

END FTABLE 1
END FTABLES

EXT SOURCES

<-Volume->	<Member>	SsysSgap<--Mult-->	Tran	<-Target vols>	<-Grp>	<-Member->	***
<Name>	#	<Name>	#	tem strg<-factor->	strg	<Name>	#
WDM	2	PREC	ENGL	1		PERLND	1 999
WDM	2	PREC	ENGL	1		IMPLND	1 999
WDM	1	EVAP	ENGL	1		PERLND	1 999
WDM	1	EVAP	ENGL	1		IMPLND	1 999

END EXT SOURCES

EXT TARGETS

<-Volume->	<-Grp>	<-Member->	<--Mult-->	Tran	<-Volume->	<Member>	Tsys	Tgap	Amd	***
<Name>	#	<Name>	#	#<-factor->	strg	<Name>	#	<Name>	tem strg	strg***
RCHRES	1	HYDR	RO	1 1	1	WDM	1000	FLOW	ENGL	REPL
RCHRES	1	HYDR	O	1 1	1	WDM	1001	FLOW	ENGL	REPL
RCHRES	1	HYDR	O	2 1	1	WDM	1002	FLOW	ENGL	REPL
RCHRES	1	HYDR	STAGE	1 1	1	WDM	1003	STAG	ENGL	REPL
COPY	1	OUTPUT	MEAN	1 1	48.4	WDM	701	FLOW	ENGL	REPL
COPY	501	OUTPUT	MEAN	1 1	48.4	WDM	801	FLOW	ENGL	REPL

END EXT TARGETS

MASS-LINK

<Volume>	<-Grp>	<-Member->	<--Mult-->	<Target>	<-Grp>	<-Member->	***
<Name>		<Name>	#	#<-factor->	<Name>	<Name>	#
MASS-LINK		2					
PERLND	PWATER	SURO		0.083333	RCHRES	INFLOW	IVOL


```

END MASS-LINK      2

MASS-LINK          3
PERLND      PWATER IFWO      0.083333      RCHRES      INFLOW IVOL
END MASS-LINK      3

MASS-LINK          5
IMPLND      IWATER SURO      0.083333      RCHRES      INFLOW IVOL
END MASS-LINK      5

MASS-LINK          12
PERLND      PWATER SURO      0.083333      COPY      INPUT  MEAN
END MASS-LINK      12

MASS-LINK          13
PERLND      PWATER IFWO      0.083333      COPY      INPUT  MEAN
END MASS-LINK      13

MASS-LINK          15
IMPLND      IWATER SURO      0.083333      COPY      INPUT  MEAN
END MASS-LINK      15

MASS-LINK          17
RCHRES      OFLOW  OVOL      1      COPY      INPUT  MEAN
END MASS-LINK      17

END MASS-LINK

END RUN

```


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