

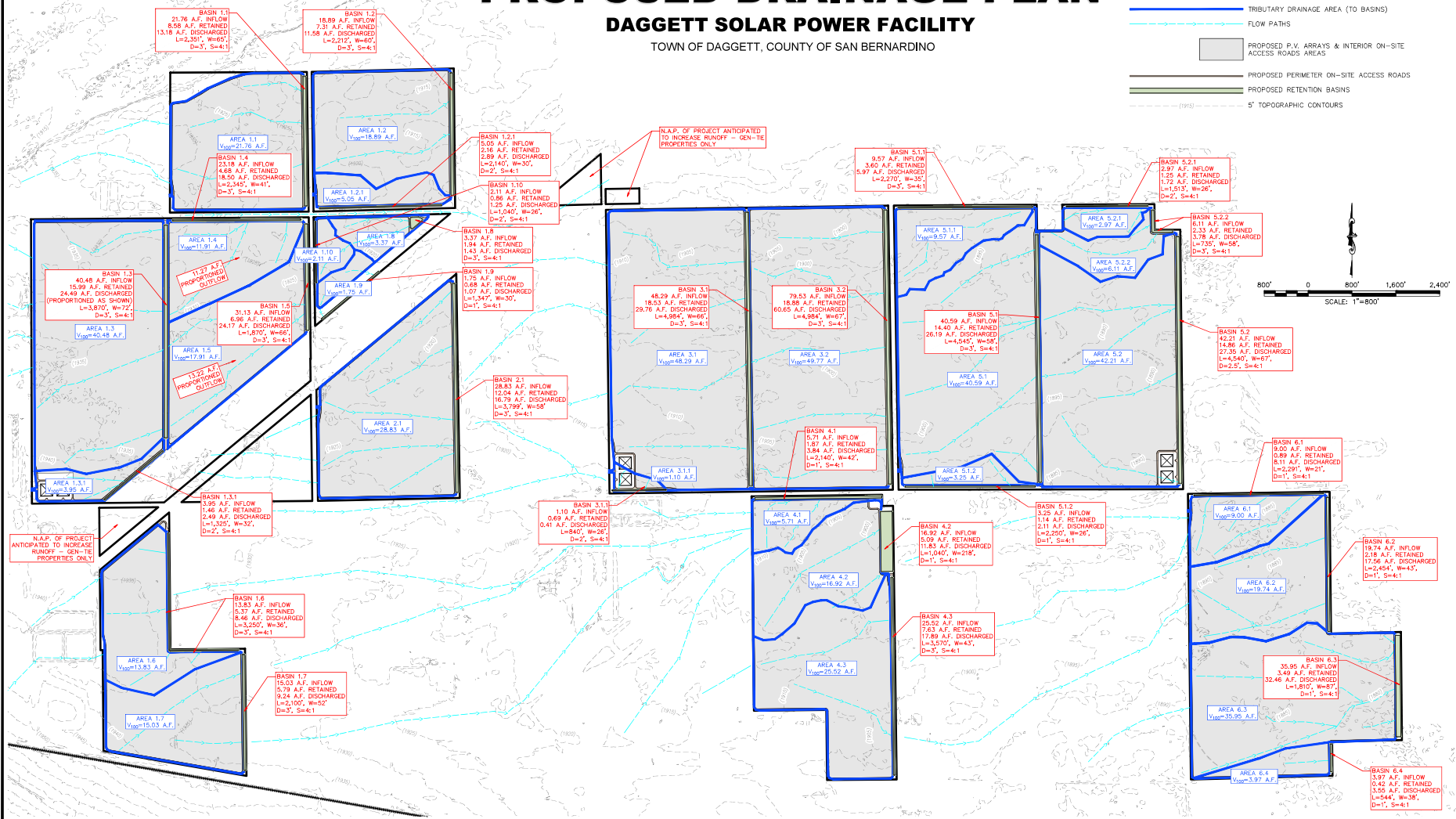
PROPOSED DRAINAGE PLAN

DAGGETT SOLAR POWER FACILITY

TOWN OF DAGGETT, COUNTY OF SAN BERNARDINO

MAP LEGEND:

- C.U.P. PROJECT BOUNDARIES
- TRIBUTARY DRAINAGE AREA (TO BASINS)
- FLOW PATHS
- PROPOSED P.V. ARRAYS & INTERIOR ON-SITE ACCESS ROADS AREAS
- PROPOSED PERIMETER ON-SITE ACCESS ROADS
- PROPOSED RETENTION BASINS
- (10') 5' TOPOGRAPHIC CONTOURS



PROPOSED DRAINAGE PLAN
DAGGETT SOLAR POWER FACILITY
IN THE TOWN OF DAGGETT, SAN BERNARDINO COUNTY, CA

PREPARED BY
BONADIMAN
CIVIL ENGINEERING & ARCHITECTURE

PREPARED FOR
nrg

DATE: 06-07-18
REVISION: 01

PROPOSED DRAINAGE PLAN
DAGGETT SOLAR POWER FACILITY
IN THE TOWN OF DAGGETT, SAN BERNARDINO COUNTY, CA
DISCARD PRINTS BEARING
EARLIER REVISION DATES

06-07-18

D
SHEET 1 OF 1

EXHIBIT “E”

Calculated 100-Year Flow Depths

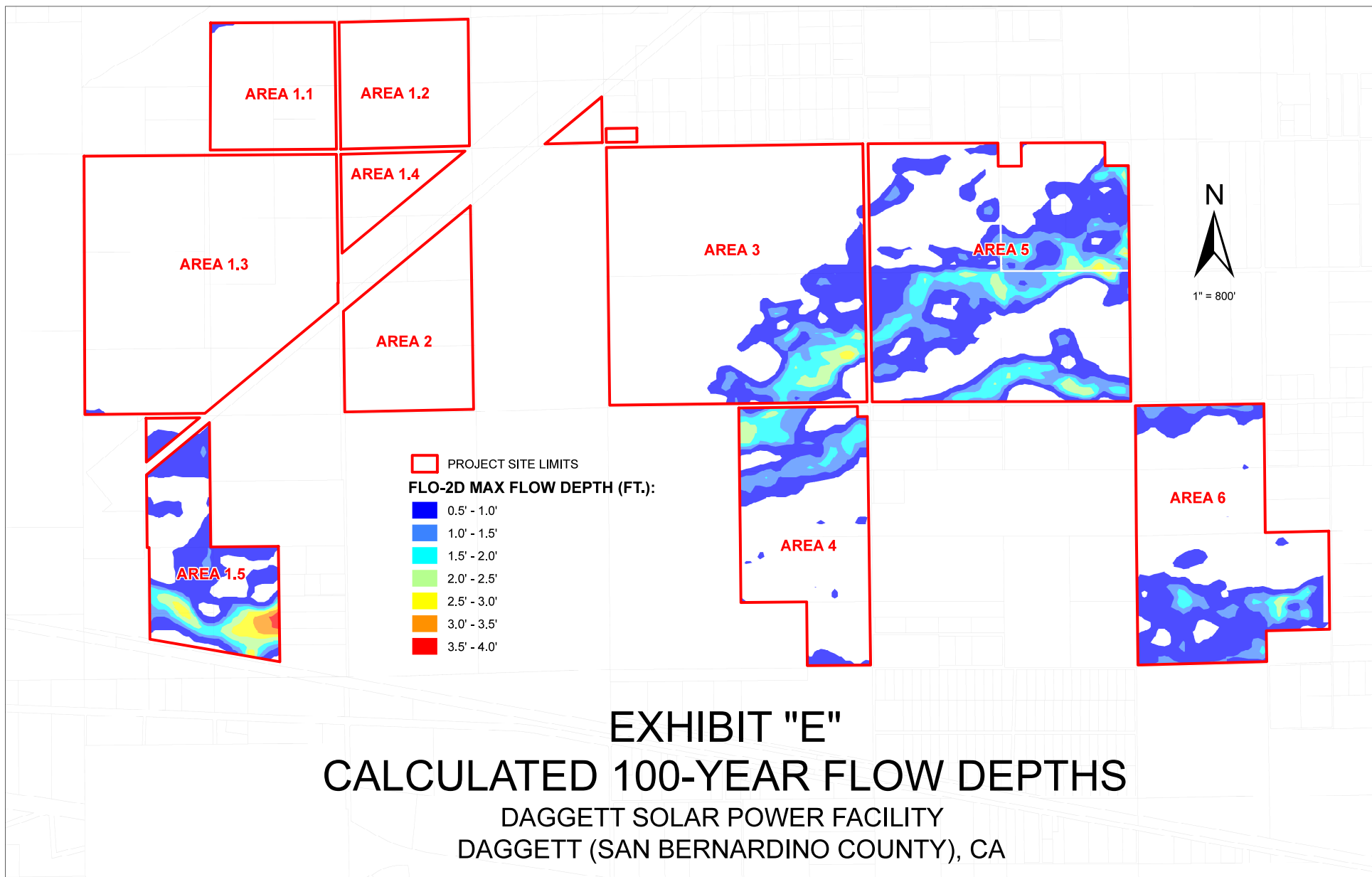
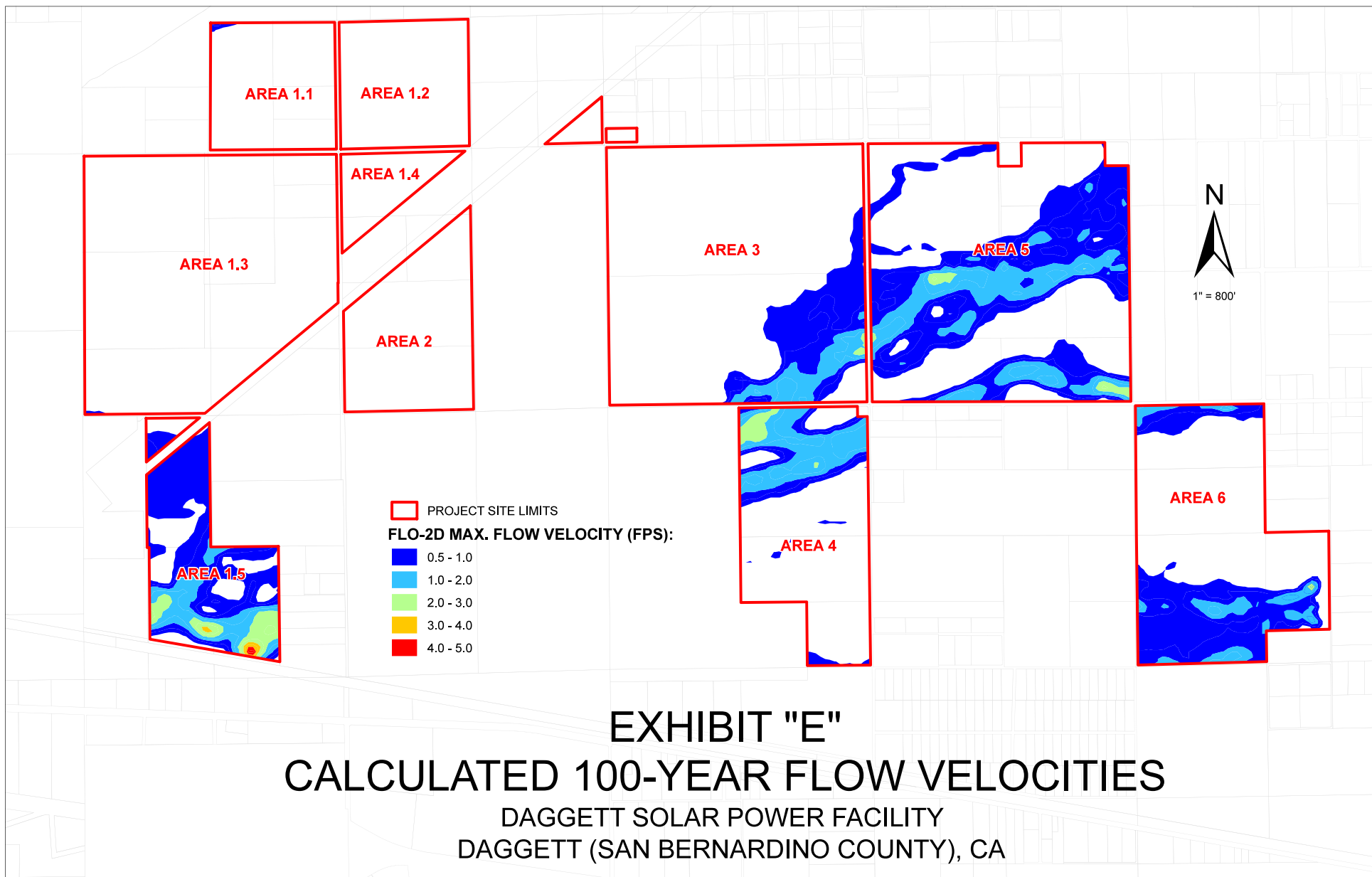


EXHIBIT “F”

Calculated 100-Year Flow Velocities



ATTACHMENT 1

Existing Conditions
100-Year, 24-Hour Hydrograph
Calculations

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
EXISTING CONDITIONS AREA 1.1
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
127.89	1	1.36

Rainfall data for year 100		
127.89	6	1.84

Rainfall data for year 100		
127.89	24	2.46

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve No.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
60.3	79.2	127.89	1.000	0.383	1.000	0.383

Area-averaged adjusted loss rate Fm (In/Hr) = 0.383

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
127.89	1.000	60.3	79.2	2.62	0.334

Area-averaged catchment yield fraction, Y = 0.334

Area-averaged low loss fraction, Yb = 0.666

+++++

Watercourse length = 2390.00(Ft.)
 Length from concentration point to centroid = 1195.00(Ft.)
 Elevation difference along watercourse = 7.00(Ft.)
 Mannings friction factor along watercourse = 0.035
 Watershed area = 127.89(Ac.)
 Catchment Lag time = 0.210 hours
 Unit interval = 5.000 minutes
 Unit interval percentage of lag time = 39.6756
 Hydrograph baseflow = 0.00(CFS)

EX11.out
Average maximum watershed loss rate(Fm) = 0.383(In/Hr)
Average low loss rate fraction (Yb) = 0.666 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.645(In)
Computed peak 30-minute rainfall = 1.105(In)
Specified peak 1-hour rainfall = 1.360(In)
Computed peak 3-hour rainfall = 1.637(In)
Specified peak 6-hour rainfall = 1.840(In)
Specified peak 24-hour rainfall = 2.460(In)

Rainfall depth area reduction factors:
Using a total area of 127.89(Ac.) (Ref: fig. E-4)

5-minute factor = 0.994	Adjusted rainfall = 0.641(In)
30-minute factor = 0.994	Adjusted rainfall = 1.098(In)
1-hour factor = 0.994	Adjusted rainfall = 1.352(In)
3-hour factor = 0.999	Adjusted rainfall = 1.636(In)
6-hour factor = 1.000	Adjusted rainfall = 1.839(In)
24-hour factor = 1.000	Adjusted rainfall = 2.460(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 1546.67 (CFS))	
1	2.713	41.956
2	18.331	241.565
3	48.680	469.394
4	65.299	257.038
5	74.524	142.680
6	80.652	94.783
7	85.035	67.786
8	88.429	52.502
9	90.878	37.872
10	92.868	30.788
11	94.463	24.664
12	95.744	19.822
13	96.769	15.854
14	97.538	11.889
15	98.053	7.962
16	98.480	6.609
17	98.956	7.355
18	99.417	7.139
19	99.712	4.565
20	100.000	4.447

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6415	0.6415
2	0.7897	0.1483
3	0.8919	0.1021
4	0.9723	0.0804
5	1.0396	0.0673
6	1.0980	0.0584
7	1.1500	0.0520
8	1.1970	0.0470
9	1.2401	0.0431
10	1.2799	0.0398
11	1.3170	0.0371
12	1.3518	0.0348
13	1.3708	0.0189
14	1.3885	0.0177
15	1.4052	0.0167
16	1.4210	0.0158
17	1.4361	0.0150
18	1.4504	0.0143
19	1.4640	0.0137
20	1.4771	0.0131
21	1.4897	0.0126
22	1.5017	0.0121
23	1.5134	0.0116
24	1.5246	0.0112
25	1.5354	0.0108
26	1.5459	0.0105

		EX11.out
27	1.5561	0.0102
28	1.5659	0.0098
29	1.5755	0.0096
30	1.5848	0.0093
31	1.5938	0.0090
32	1.6026	0.0088
33	1.6112	0.0086
34	1.6196	0.0084
35	1.6277	0.0082
36	1.6357	0.0080
37	1.6433	0.0076
38	1.6507	0.0074
39	1.6580	0.0073
40	1.6651	0.0071
41	1.6721	0.0070
42	1.6789	0.0068
43	1.6856	0.0067
44	1.6922	0.0066
45	1.6986	0.0064
46	1.7050	0.0063
47	1.7112	0.0062
48	1.7173	0.0061
49	1.7233	0.0060
50	1.7292	0.0059
51	1.7350	0.0058
52	1.7407	0.0057
53	1.7463	0.0056
54	1.7519	0.0055
55	1.7573	0.0054
56	1.7627	0.0054
57	1.7680	0.0053
58	1.7732	0.0052
59	1.7783	0.0051
60	1.7834	0.0051
61	1.7884	0.0050
62	1.7933	0.0049
63	1.7982	0.0049
64	1.8030	0.0048
65	1.8077	0.0047
66	1.8124	0.0047
67	1.8170	0.0046
68	1.8216	0.0046
69	1.8261	0.0045
70	1.8305	0.0045
71	1.8349	0.0044
72	1.8393	0.0043
73	1.8446	0.0053
74	1.8499	0.0053
75	1.8551	0.0052
76	1.8602	0.0052
77	1.8653	0.0051
78	1.8704	0.0051
79	1.8754	0.0050
80	1.8803	0.0050
81	1.8852	0.0049
82	1.8901	0.0049
83	1.8949	0.0048
84	1.8997	0.0048
85	1.9044	0.0047
86	1.9091	0.0047
87	1.9137	0.0046
88	1.9183	0.0046
89	1.9228	0.0045
90	1.9274	0.0045
91	1.9318	0.0045
92	1.9363	0.0044
93	1.9406	0.0044
94	1.9450	0.0044
95	1.9493	0.0043
96	1.9536	0.0043
97	1.9579	0.0042
98	1.9621	0.0042
99	1.9663	0.0042
100	1.9704	0.0041
101	1.9745	0.0041
102	1.9786	0.0041
103	1.9826	0.0041
104	1.9867	0.0040

		EX11.out
105	1.9907	0.0040
106	1.9946	0.0040
107	1.9985	0.0039
108	2.0024	0.0039
109	2.0063	0.0039
110	2.0102	0.0038
111	2.0140	0.0038
112	2.0178	0.0038
113	2.0215	0.0038
114	2.0253	0.0037
115	2.0290	0.0037
116	2.0327	0.0037
117	2.0363	0.0037
118	2.0400	0.0036
119	2.0436	0.0036
120	2.0472	0.0036
121	2.0507	0.0036
122	2.0543	0.0035
123	2.0578	0.0035
124	2.0613	0.0035
125	2.0648	0.0035
126	2.0682	0.0035
127	2.0717	0.0034
128	2.0751	0.0034
129	2.0784	0.0034
130	2.0818	0.0034
131	2.0852	0.0033
132	2.0885	0.0033
133	2.0918	0.0033
134	2.0951	0.0033
135	2.0984	0.0033
136	2.1016	0.0032
137	2.1048	0.0032
138	2.1080	0.0032
139	2.1112	0.0032
140	2.1144	0.0032
141	2.1176	0.0032
142	2.1207	0.0031
143	2.1238	0.0031
144	2.1269	0.0031
145	2.1300	0.0031
146	2.1331	0.0031
147	2.1362	0.0031
148	2.1392	0.0030
149	2.1422	0.0030
150	2.1452	0.0030
151	2.1482	0.0030
152	2.1512	0.0030
153	2.1541	0.0030
154	2.1571	0.0029
155	2.1600	0.0029
156	2.1629	0.0029
157	2.1658	0.0029
158	2.1687	0.0029
159	2.1716	0.0029
160	2.1744	0.0029
161	2.1773	0.0028
162	2.1801	0.0028
163	2.1829	0.0028
164	2.1857	0.0028
165	2.1885	0.0028
166	2.1913	0.0028
167	2.1941	0.0028
168	2.1968	0.0027
169	2.1995	0.0027
170	2.2023	0.0027
171	2.2050	0.0027
172	2.2077	0.0027
173	2.2103	0.0027
174	2.2130	0.0027
175	2.2157	0.0027
176	2.2183	0.0026
177	2.2210	0.0026
178	2.2236	0.0026
179	2.2262	0.0026
180	2.2288	0.0026
181	2.2314	0.0026
182	2.2340	0.0026

		EX11.out
183	2.2365	0.0026
184	2.2391	0.0026
185	2.2416	0.0025
186	2.2442	0.0025
187	2.2467	0.0025
188	2.2492	0.0025
189	2.2517	0.0025
190	2.2542	0.0025
191	2.2567	0.0025
192	2.2592	0.0025
193	2.2616	0.0025
194	2.2641	0.0025
195	2.2665	0.0024
196	2.2690	0.0024
197	2.2714	0.0024
198	2.2738	0.0024
199	2.2762	0.0024
200	2.2786	0.0024
201	2.2810	0.0024
202	2.2833	0.0024
203	2.2857	0.0024
204	2.2881	0.0024
205	2.2904	0.0023
206	2.2927	0.0023
207	2.2951	0.0023
208	2.2974	0.0023
209	2.2997	0.0023
210	2.3020	0.0023
211	2.3043	0.0023
212	2.3066	0.0023
213	2.3089	0.0023
214	2.3111	0.0023
215	2.3134	0.0023
216	2.3156	0.0023
217	2.3179	0.0022
218	2.3201	0.0022
219	2.3224	0.0022
220	2.3246	0.0022
221	2.3268	0.0022
222	2.3290	0.0022
223	2.3312	0.0022
224	2.3334	0.0022
225	2.3356	0.0022
226	2.3377	0.0022
227	2.3399	0.0022
228	2.3420	0.0022
229	2.3442	0.0021
230	2.3463	0.0021
231	2.3485	0.0021
232	2.3506	0.0021
233	2.3527	0.0021
234	2.3548	0.0021
235	2.3569	0.0021
236	2.3590	0.0021
237	2.3611	0.0021
238	2.3632	0.0021
239	2.3653	0.0021
240	2.3674	0.0021
241	2.3694	0.0021
242	2.3715	0.0021
243	2.3735	0.0021
244	2.3756	0.0020
245	2.3776	0.0020
246	2.3797	0.0020
247	2.3817	0.0020
248	2.3837	0.0020
249	2.3857	0.0020
250	2.3877	0.0020
251	2.3897	0.0020
252	2.3917	0.0020
253	2.3937	0.0020
254	2.3957	0.0020
255	2.3976	0.0020
256	2.3996	0.0020
257	2.4016	0.0020
258	2.4035	0.0020
259	2.4055	0.0020
260	2.4074	0.0019

		EX11.out
261	2.4094	0.0019
262	2.4113	0.0019
263	2.4132	0.0019
264	2.4151	0.0019
265	2.4171	0.0019
266	2.4190	0.0019
267	2.4209	0.0019
268	2.4228	0.0019
269	2.4247	0.0019
270	2.4266	0.0019
271	2.4284	0.0019
272	2.4303	0.0019
273	2.4322	0.0019
274	2.4340	0.0019
275	2.4359	0.0019
276	2.4378	0.0019
277	2.4396	0.0018
278	2.4415	0.0018
279	2.4433	0.0018
280	2.4451	0.0018
281	2.4470	0.0018
282	2.4488	0.0018
283	2.4506	0.0018
284	2.4524	0.0018
285	2.4542	0.0018
286	2.4560	0.0018
287	2.4578	0.0018
288	2.4596	0.0018

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0018	0.0012	0.0006
2	0.0018	0.0012	0.0006
3	0.0018	0.0012	0.0006
4	0.0018	0.0012	0.0006
5	0.0018	0.0012	0.0006
6	0.0018	0.0012	0.0006
7	0.0018	0.0012	0.0006
8	0.0018	0.0012	0.0006
9	0.0019	0.0012	0.0006
10	0.0019	0.0012	0.0006
11	0.0019	0.0012	0.0006
12	0.0019	0.0012	0.0006
13	0.0019	0.0013	0.0006
14	0.0019	0.0013	0.0006
15	0.0019	0.0013	0.0006
16	0.0019	0.0013	0.0006
17	0.0019	0.0013	0.0006
18	0.0019	0.0013	0.0006
19	0.0019	0.0013	0.0006
20	0.0019	0.0013	0.0007
21	0.0020	0.0013	0.0007
22	0.0020	0.0013	0.0007
23	0.0020	0.0013	0.0007
24	0.0020	0.0013	0.0007
25	0.0020	0.0013	0.0007
26	0.0020	0.0013	0.0007
27	0.0020	0.0013	0.0007
28	0.0020	0.0013	0.0007
29	0.0020	0.0014	0.0007
30	0.0020	0.0014	0.0007
31	0.0021	0.0014	0.0007
32	0.0021	0.0014	0.0007
33	0.0021	0.0014	0.0007
34	0.0021	0.0014	0.0007
35	0.0021	0.0014	0.0007
36	0.0021	0.0014	0.0007
37	0.0021	0.0014	0.0007
38	0.0021	0.0014	0.0007
39	0.0021	0.0014	0.0007
40	0.0021	0.0014	0.0007
41	0.0022	0.0014	0.0007
42	0.0022	0.0014	0.0007
43	0.0022	0.0015	0.0007
44	0.0022	0.0015	0.0007
45	0.0022	0.0015	0.0007

		EX11.out	
46	0.0022	0.0015	0.0007
47	0.0022	0.0015	0.0007
48	0.0022	0.0015	0.0007
49	0.0023	0.0015	0.0008
50	0.0023	0.0015	0.0008
51	0.0023	0.0015	0.0008
52	0.0023	0.0015	0.0008
53	0.0023	0.0015	0.0008
54	0.0023	0.0015	0.0008
55	0.0023	0.0016	0.0008
56	0.0023	0.0016	0.0008
57	0.0024	0.0016	0.0008
58	0.0024	0.0016	0.0008
59	0.0024	0.0016	0.0008
60	0.0024	0.0016	0.0008
61	0.0024	0.0016	0.0008
62	0.0024	0.0016	0.0008
63	0.0024	0.0016	0.0008
64	0.0025	0.0016	0.0008
65	0.0025	0.0016	0.0008
66	0.0025	0.0017	0.0008
67	0.0025	0.0017	0.0008
68	0.0025	0.0017	0.0008
69	0.0025	0.0017	0.0008
70	0.0025	0.0017	0.0009
71	0.0026	0.0017	0.0009
72	0.0026	0.0017	0.0009
73	0.0026	0.0017	0.0009
74	0.0026	0.0017	0.0009
75	0.0026	0.0018	0.0009
76	0.0026	0.0018	0.0009
77	0.0027	0.0018	0.0009
78	0.0027	0.0018	0.0009
79	0.0027	0.0018	0.0009
80	0.0027	0.0018	0.0009
81	0.0027	0.0018	0.0009
82	0.0028	0.0018	0.0009
83	0.0028	0.0019	0.0009
84	0.0028	0.0019	0.0009
85	0.0028	0.0019	0.0009
86	0.0028	0.0019	0.0010
87	0.0029	0.0019	0.0010
88	0.0029	0.0019	0.0010
89	0.0029	0.0019	0.0010
90	0.0029	0.0019	0.0010
91	0.0030	0.0020	0.0010
92	0.0030	0.0020	0.0010
93	0.0030	0.0020	0.0010
94	0.0030	0.0020	0.0010
95	0.0031	0.0020	0.0010
96	0.0031	0.0020	0.0010
97	0.0031	0.0021	0.0010
98	0.0031	0.0021	0.0010
99	0.0032	0.0021	0.0011
100	0.0032	0.0021	0.0011
101	0.0032	0.0021	0.0011
102	0.0032	0.0021	0.0011
103	0.0033	0.0022	0.0011
104	0.0033	0.0022	0.0011
105	0.0033	0.0022	0.0011
106	0.0033	0.0022	0.0011
107	0.0034	0.0023	0.0011
108	0.0034	0.0023	0.0011
109	0.0035	0.0023	0.0012
110	0.0035	0.0023	0.0012
111	0.0035	0.0023	0.0012
112	0.0035	0.0024	0.0012
113	0.0036	0.0024	0.0012
114	0.0036	0.0024	0.0012
115	0.0037	0.0024	0.0012
116	0.0037	0.0025	0.0012
117	0.0037	0.0025	0.0012
118	0.0038	0.0025	0.0013
119	0.0038	0.0025	0.0013
120	0.0038	0.0026	0.0013
121	0.0039	0.0026	0.0013
122	0.0039	0.0026	0.0013
123	0.0040	0.0027	0.0013

		EX11.out	
124	0.0040	0.0027	0.0013
125	0.0041	0.0027	0.0014
126	0.0041	0.0027	0.0014
127	0.0042	0.0028	0.0014
128	0.0042	0.0028	0.0014
129	0.0043	0.0029	0.0014
130	0.0043	0.0029	0.0014
131	0.0044	0.0029	0.0015
132	0.0044	0.0029	0.0015
133	0.0045	0.0030	0.0015
134	0.0045	0.0030	0.0015
135	0.0046	0.0031	0.0015
136	0.0047	0.0031	0.0016
137	0.0048	0.0032	0.0016
138	0.0048	0.0032	0.0016
139	0.0049	0.0033	0.0016
140	0.0050	0.0033	0.0017
141	0.0051	0.0034	0.0017
142	0.0051	0.0034	0.0017
143	0.0052	0.0035	0.0017
144	0.0053	0.0035	0.0018
145	0.0043	0.0029	0.0015
146	0.0044	0.0029	0.0015
147	0.0045	0.0030	0.0015
148	0.0046	0.0030	0.0015
149	0.0047	0.0031	0.0016
150	0.0047	0.0032	0.0016
151	0.0049	0.0032	0.0016
152	0.0049	0.0033	0.0016
153	0.0051	0.0034	0.0017
154	0.0051	0.0034	0.0017
155	0.0053	0.0035	0.0018
156	0.0054	0.0036	0.0018
157	0.0055	0.0037	0.0019
158	0.0056	0.0037	0.0019
159	0.0058	0.0039	0.0019
160	0.0059	0.0039	0.0020
161	0.0061	0.0041	0.0020
162	0.0062	0.0041	0.0021
163	0.0064	0.0043	0.0022
164	0.0066	0.0044	0.0022
165	0.0068	0.0045	0.0023
166	0.0070	0.0046	0.0023
167	0.0073	0.0048	0.0024
168	0.0074	0.0049	0.0025
169	0.0080	0.0053	0.0027
170	0.0082	0.0054	0.0027
171	0.0086	0.0057	0.0029
172	0.0088	0.0059	0.0029
173	0.0093	0.0062	0.0031
174	0.0096	0.0064	0.0032
175	0.0102	0.0068	0.0034
176	0.0105	0.0070	0.0035
177	0.0112	0.0075	0.0038
178	0.0116	0.0077	0.0039
179	0.0126	0.0084	0.0042
180	0.0131	0.0087	0.0044
181	0.0143	0.0095	0.0048
182	0.0150	0.0100	0.0050
183	0.0167	0.0111	0.0056
184	0.0177	0.0118	0.0059
185	0.0348	0.0232	0.0116
186	0.0371	0.0247	0.0124
187	0.0431	0.0287	0.0144
188	0.0470	0.0313	0.0157
189	0.0584	0.0319	0.0266
190	0.0673	0.0319	0.0354
191	0.1021	0.0319	0.0703
192	0.1483	0.0319	0.1164
193	0.6415	0.0319	0.6096
194	0.0804	0.0319	0.0485
195	0.0520	0.0319	0.0201
196	0.0398	0.0265	0.0133
197	0.0189	0.0126	0.0063
198	0.0158	0.0105	0.0053
199	0.0137	0.0091	0.0046
200	0.0121	0.0080	0.0040
201	0.0108	0.0072	0.0036

		EX11.out	
202	0.0098	0.0066	0.0033
203	0.0090	0.0060	0.0030
204	0.0084	0.0056	0.0028
205	0.0076	0.0051	0.0025
206	0.0071	0.0047	0.0024
207	0.0067	0.0045	0.0022
208	0.0063	0.0042	0.0021
209	0.0060	0.0040	0.0020
210	0.0057	0.0038	0.0019
211	0.0054	0.0036	0.0018
212	0.0052	0.0035	0.0017
213	0.0050	0.0033	0.0017
214	0.0048	0.0032	0.0016
215	0.0046	0.0031	0.0015
216	0.0045	0.0030	0.0015
217	0.0053	0.0035	0.0018
218	0.0052	0.0034	0.0017
219	0.0050	0.0033	0.0017
220	0.0049	0.0032	0.0016
221	0.0047	0.0031	0.0016
222	0.0046	0.0031	0.0015
223	0.0045	0.0030	0.0015
224	0.0044	0.0029	0.0015
225	0.0042	0.0028	0.0014
226	0.0041	0.0028	0.0014
227	0.0041	0.0027	0.0014
228	0.0040	0.0026	0.0013
229	0.0039	0.0026	0.0013
230	0.0038	0.0025	0.0013
231	0.0037	0.0025	0.0012
232	0.0036	0.0024	0.0012
233	0.0036	0.0024	0.0012
234	0.0035	0.0023	0.0012
235	0.0034	0.0023	0.0011
236	0.0034	0.0022	0.0011
237	0.0033	0.0022	0.0011
238	0.0032	0.0022	0.0011
239	0.0032	0.0021	0.0011
240	0.0031	0.0021	0.0011
241	0.0031	0.0021	0.0010
242	0.0030	0.0020	0.0010
243	0.0030	0.0020	0.0010
244	0.0029	0.0020	0.0010
245	0.0029	0.0019	0.0010
246	0.0029	0.0019	0.0010
247	0.0028	0.0019	0.0009
248	0.0028	0.0018	0.0009
249	0.0027	0.0018	0.0009
250	0.0027	0.0018	0.0009
251	0.0027	0.0018	0.0009
252	0.0026	0.0017	0.0009
253	0.0026	0.0017	0.0009
254	0.0026	0.0017	0.0009
255	0.0025	0.0017	0.0008
256	0.0025	0.0017	0.0008
257	0.0025	0.0016	0.0008
258	0.0024	0.0016	0.0008
259	0.0024	0.0016	0.0008
260	0.0024	0.0016	0.0008
261	0.0023	0.0016	0.0008
262	0.0023	0.0015	0.0008
263	0.0023	0.0015	0.0008
264	0.0023	0.0015	0.0008
265	0.0022	0.0015	0.0008
266	0.0022	0.0015	0.0007
267	0.0022	0.0015	0.0007
268	0.0022	0.0014	0.0007
269	0.0021	0.0014	0.0007
270	0.0021	0.0014	0.0007
271	0.0021	0.0014	0.0007
272	0.0021	0.0014	0.0007
273	0.0021	0.0014	0.0007
274	0.0020	0.0014	0.0007
275	0.0020	0.0013	0.0007
276	0.0020	0.0013	0.0007
277	0.0020	0.0013	0.0007
278	0.0020	0.0013	0.0007
279	0.0020	0.0013	0.0007

EX11.out

280	0.0019	0.0013	0.0006
281	0.0019	0.0013	0.0006
282	0.0019	0.0013	0.0006
283	0.0019	0.0013	0.0006
284	0.0019	0.0012	0.0006
285	0.0018	0.0012	0.0006
286	0.0018	0.0012	0.0006
287	0.0018	0.0012	0.0006
288	0.0018	0.0012	0.0006

Total soil rain loss = 1.09(In)
Total effective rainfall = 1.36(In)
Peak flow rate in flood hydrograph = 346.25(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	100.0	200.0	300.0	400.0
0+ 5	0.0002	0.03	Q					
0+10	0.0013	0.17	Q					
0+15	0.0045	0.45	Q					
0+20	0.0086	0.61	Q					
0+25	0.0134	0.70	Q					
0+30	0.0186	0.76	Q					
0+35	0.0241	0.80	Q					
0+40	0.0299	0.83	Q					
0+45	0.0358	0.86	Q					
0+50	0.0419	0.88	Q					
0+55	0.0481	0.90	Q					
1+ 0	0.0544	0.92	Q					
1+ 5	0.0608	0.93	Q					
1+10	0.0673	0.94	Q					
1+15	0.0739	0.95	Q					
1+20	0.0805	0.96	Q					
1+25	0.0871	0.97	Q					
1+30	0.0938	0.98	Q					
1+35	0.1006	0.98	Q					
1+40	0.1074	0.99	Q					
1+45	0.1143	0.99	Q					
1+50	0.1211	1.00	Q					
1+55	0.1281	1.00	Q					
2+ 0	0.1350	1.01	Q					
2+ 5	0.1420	1.01	Q					
2+10	0.1490	1.02	Q					
2+15	0.1560	1.02	Q					
2+20	0.1631	1.03	Q					
2+25	0.1702	1.03	Q					
2+30	0.1773	1.04	Q					
2+35	0.1845	1.04	Q					
2+40	0.1917	1.05	Q					
2+45	0.1989	1.05	Q					
2+50	0.2062	1.06	Q					
2+55	0.2135	1.06	Q					
3+ 0	0.2209	1.07	Q					
3+ 5	0.2283	1.07	Q					
3+10	0.2357	1.08	Q					
3+15	0.2431	1.08	Q					
3+20	0.2506	1.09	Q					
3+25	0.2582	1.09	Q					
3+30	0.2658	1.10	Q					
3+35	0.2734	1.11	Q					
3+40	0.2810	1.11	Q					
3+45	0.2887	1.12	Q					
3+50	0.2964	1.12	Q					
3+55	0.3042	1.13	Q					
4+ 0	0.3120	1.13	Q					
4+ 5	0.3199	1.14	Q					
4+10	0.3278	1.15	Q					
4+15	0.3357	1.15	Q					
4+20	0.3437	1.16	Q					
4+25	0.3517	1.17	Q					
4+30	0.3598	1.17	Q					

4+35	0.3679	1.18	QV
4+40	0.3761	1.19	QV
4+45	0.3843	1.19	QV
4+50	0.3926	1.20	QV
4+55	0.4009	1.21	QV
5+ 0	0.4092	1.21	QV
5+ 5	0.4176	1.22	QV
5+10	0.4261	1.23	QV
5+15	0.4346	1.23	QV
5+20	0.4431	1.24	QV
5+25	0.4517	1.25	QV
5+30	0.4604	1.26	QV
5+35	0.4691	1.26	QV
5+40	0.4778	1.27	QV
5+45	0.4867	1.28	QV
5+50	0.4955	1.29	QV
5+55	0.5045	1.30	QV
6+ 0	0.5134	1.30	QV
6+ 5	0.5225	1.31	QV
6+10	0.5316	1.32	QV
6+15	0.5407	1.33	QV
6+20	0.5500	1.34	QV
6+25	0.5592	1.35	QV
6+30	0.5686	1.36	QV
6+35	0.5780	1.37	QV
6+40	0.5874	1.37	QV
6+45	0.5970	1.38	QV
6+50	0.6066	1.39	QV
6+55	0.6162	1.40	QV
7+ 0	0.6260	1.41	QV
7+ 5	0.6358	1.42	QV
7+10	0.6456	1.43	QV
7+15	0.6556	1.44	QV
7+20	0.6656	1.45	QV
7+25	0.6757	1.47	QV
7+30	0.6859	1.48	QV
7+35	0.6961	1.49	QV
7+40	0.7064	1.50	QV
7+45	0.7168	1.51	QV
7+50	0.7273	1.52	Q V
7+55	0.7378	1.53	Q V
8+ 0	0.7485	1.54	Q V
8+ 5	0.7592	1.56	Q V
8+10	0.7700	1.57	Q V
8+15	0.7809	1.58	Q V
8+20	0.7919	1.60	Q V
8+25	0.8030	1.61	Q V
8+30	0.8142	1.62	Q V
8+35	0.8254	1.64	Q V
8+40	0.8368	1.65	Q V
8+45	0.8483	1.66	Q V
8+50	0.8598	1.68	Q V
8+55	0.8715	1.69	Q V
9+ 0	0.8832	1.71	Q V
9+ 5	0.8951	1.72	Q V
9+10	0.9071	1.74	Q V
9+15	0.9192	1.76	Q V
9+20	0.9314	1.77	Q V
9+25	0.9437	1.79	Q V
9+30	0.9562	1.81	Q V
9+35	0.9687	1.82	Q V
9+40	0.9814	1.84	Q V
9+45	0.9942	1.86	Q V
9+50	1.0072	1.88	Q V
9+55	1.0202	1.90	Q V
10+ 0	1.0334	1.92	Q V
10+ 5	1.0468	1.94	Q V
10+10	1.0603	1.96	Q V
10+15	1.0739	1.98	Q V
10+20	1.0877	2.00	Q V
10+25	1.1016	2.02	Q V
10+30	1.1157	2.05	Q V
10+35	1.1300	2.07	Q V
10+40	1.1444	2.09	Q V
10+45	1.1589	2.12	Q V
10+50	1.1737	2.14	Q V
10+55	1.1886	2.17	Q V
11+ 0	1.2038	2.19	Q V

[illegible]

[illegible]

EX11.out

24+ 5	14.5192	0.93	Q				V
24+10	14.5246	0.78	Q				V
24+15	14.5280	0.49	Q				V
24+20	14.5302	0.33	Q				V
24+25	14.5319	0.24	Q				V
24+30	14.5332	0.19	Q				V
24+35	14.5342	0.14	Q				V
24+40	14.5350	0.11	Q				V
24+45	14.5356	0.09	Q				V
24+50	14.5360	0.07	Q				V
24+55	14.5364	0.05	Q				V
25+ 0	14.5367	0.04	Q				V
25+ 5	14.5369	0.03	Q				V
25+10	14.5370	0.02	Q				V
25+15	14.5372	0.02	Q				V
25+20	14.5373	0.01	Q				V
25+25	14.5373	0.01	Q				V
25+30	14.5374	0.01	Q				V
25+35	14.5374	0.00	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method

Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA

EXISTING CONDITIONS AREA 1.2

100-YEAR, 24-HOUR STORM EVENT

BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
140.22	1	1.37

Rainfall data for year 100		
140.22	6	1.84

Rainfall data for year 100		
140.22	24	2.46

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***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
58.6	77.9	140.22	1.000	0.406	1.000	0.406

Area-averaged adjusted loss rate Fm (In/Hr) = 0.406

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
140.22	1.000	58.6	77.9	2.84	0.307

Area-averaged catchment yield fraction, Y = 0.307

Area-averaged low loss fraction, Yb = 0.693

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Watercourse length = 2624.00(Ft.)

Length from concentration point to centroid = 1312.00(Ft.)

Elevation difference along watercourse = 10.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 140.22(Ac.)

Catchment Lag time = 0.214 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 38.8524

Hydrograph baseflow = 0.00(CFS)

EX12.out
Average maximum watershed loss rate(Fm) = 0.406(In/Hr)
Average low loss rate fraction (Yb) = 0.693 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.650(In)
Computed peak 30-minute rainfall = 1.113(In)
Specified peak 1-hour rainfall = 1.370(In)
Computed peak 3-hour rainfall = 1.642(In)
Specified peak 6-hour rainfall = 1.840(In)
Specified peak 24-hour rainfall = 2.460(In)

Rainfall depth area reduction factors:
Using a total area of 140.22(Ac.) (Ref: fig. E-4)

5-minute factor = 0.993	Adjusted rainfall = 0.646(In)
30-minute factor = 0.993	Adjusted rainfall = 1.105(In)
1-hour factor = 0.993	Adjusted rainfall = 1.361(In)
3-hour factor = 0.999	Adjusted rainfall = 1.640(In)
6-hour factor = 1.000	Adjusted rainfall = 1.839(In)
24-hour factor = 1.000	Adjusted rainfall = 2.460(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 1695.79 (CFS))	
1	2.624	44.499
2	17.411	250.756
3	47.445	509.309
4	64.454	288.430
5	73.822	158.868
6	80.071	105.974
7	84.500	75.100
8	87.979	59.006
9	90.483	42.462
10	92.507	34.321
11	94.153	27.914
12	95.464	22.229
13	96.524	17.979
14	97.341	13.851
15	97.930	9.983
16	98.334	6.857
17	98.793	7.777
18	99.259	7.906
19	99.617	6.076
20	99.860	4.118
21	100.000	2.372

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6458	0.6458
2	0.7951	0.1493
3	0.8979	0.1028
4	0.9789	0.0809
5	1.0466	0.0678
6	1.1055	0.0588
7	1.1578	0.0523
8	1.2051	0.0473
9	1.2485	0.0433
10	1.2886	0.0401
11	1.3259	0.0374
12	1.3610	0.0351
13	1.3796	0.0186
14	1.3971	0.0175
15	1.4136	0.0165
16	1.4292	0.0156
17	1.4439	0.0148
18	1.4580	0.0141
19	1.4715	0.0135
20	1.4844	0.0129
21	1.4967	0.0124
22	1.5086	0.0119
23	1.5200	0.0114
24	1.5311	0.0110
25	1.5417	0.0107

		EX12.out
26	1.5520	0.0103
27	1.5620	0.0100
28	1.5717	0.0097
29	1.5811	0.0094
30	1.5902	0.0091
31	1.5991	0.0089
32	1.6077	0.0086
33	1.6162	0.0084
34	1.6244	0.0082
35	1.6324	0.0080
36	1.6402	0.0078
37	1.6477	0.0074
38	1.6549	0.0073
39	1.6620	0.0071
40	1.6690	0.0070
41	1.6758	0.0068
42	1.6825	0.0067
43	1.6891	0.0066
44	1.6955	0.0064
45	1.7018	0.0063
46	1.7080	0.0062
47	1.7141	0.0061
48	1.7200	0.0060
49	1.7259	0.0059
50	1.7317	0.0058
51	1.7374	0.0057
52	1.7429	0.0056
53	1.7484	0.0055
54	1.7538	0.0054
55	1.7592	0.0053
56	1.7644	0.0052
57	1.7696	0.0052
58	1.7747	0.0051
59	1.7797	0.0050
60	1.7846	0.0049
61	1.7895	0.0049
62	1.7943	0.0048
63	1.7991	0.0047
64	1.8038	0.0047
65	1.8084	0.0046
66	1.8129	0.0046
67	1.8175	0.0045
68	1.8219	0.0045
69	1.8263	0.0044
70	1.8307	0.0043
71	1.8349	0.0043
72	1.8392	0.0042
73	1.8445	0.0053
74	1.8498	0.0053
75	1.8550	0.0052
76	1.8602	0.0052
77	1.8653	0.0051
78	1.8703	0.0051
79	1.8753	0.0050
80	1.8803	0.0050
81	1.8852	0.0049
82	1.8900	0.0049
83	1.8948	0.0048
84	1.8996	0.0048
85	1.9043	0.0047
86	1.9090	0.0047
87	1.9136	0.0046
88	1.9182	0.0046
89	1.9228	0.0045
90	1.9273	0.0045
91	1.9318	0.0045
92	1.9362	0.0044
93	1.9406	0.0044
94	1.9449	0.0044
95	1.9493	0.0043
96	1.9535	0.0043
97	1.9578	0.0042
98	1.9620	0.0042
99	1.9662	0.0042
100	1.9703	0.0041
101	1.9744	0.0041
102	1.9785	0.0041
103	1.9826	0.0041

		EX12.out
104	1.9866	0.0040
105	1.9906	0.0040
106	1.9946	0.0040
107	1.9985	0.0039
108	2.0024	0.0039
109	2.0063	0.0039
110	2.0101	0.0038
111	2.0139	0.0038
112	2.0177	0.0038
113	2.0215	0.0038
114	2.0252	0.0037
115	2.0289	0.0037
116	2.0326	0.0037
117	2.0363	0.0037
118	2.0399	0.0036
119	2.0435	0.0036
120	2.0471	0.0036
121	2.0507	0.0036
122	2.0542	0.0035
123	2.0577	0.0035
124	2.0612	0.0035
125	2.0647	0.0035
126	2.0682	0.0035
127	2.0716	0.0034
128	2.0750	0.0034
129	2.0784	0.0034
130	2.0818	0.0034
131	2.0851	0.0033
132	2.0884	0.0033
133	2.0917	0.0033
134	2.0950	0.0033
135	2.0983	0.0033
136	2.1015	0.0032
137	2.1048	0.0032
138	2.1080	0.0032
139	2.1112	0.0032
140	2.1144	0.0032
141	2.1175	0.0032
142	2.1207	0.0031
143	2.1238	0.0031
144	2.1269	0.0031
145	2.1300	0.0031
146	2.1330	0.0031
147	2.1361	0.0031
148	2.1391	0.0030
149	2.1422	0.0030
150	2.1452	0.0030
151	2.1482	0.0030
152	2.1511	0.0030
153	2.1541	0.0030
154	2.1570	0.0029
155	2.1600	0.0029
156	2.1629	0.0029
157	2.1658	0.0029
158	2.1687	0.0029
159	2.1715	0.0029
160	2.1744	0.0029
161	2.1772	0.0028
162	2.1801	0.0028
163	2.1829	0.0028
164	2.1857	0.0028
165	2.1885	0.0028
166	2.1912	0.0028
167	2.1940	0.0028
168	2.1967	0.0027
169	2.1995	0.0027
170	2.2022	0.0027
171	2.2049	0.0027
172	2.2076	0.0027
173	2.2103	0.0027
174	2.2130	0.0027
175	2.2156	0.0027
176	2.2183	0.0026
177	2.2209	0.0026
178	2.2235	0.0026
179	2.2262	0.0026
180	2.2288	0.0026
181	2.2313	0.0026

		EX12.out
182	2.2339	0.0026
183	2.2365	0.0026
184	2.2390	0.0026
185	2.2416	0.0025
186	2.2441	0.0025
187	2.2467	0.0025
188	2.2492	0.0025
189	2.2517	0.0025
190	2.2542	0.0025
191	2.2566	0.0025
192	2.2591	0.0025
193	2.2616	0.0025
194	2.2640	0.0025
195	2.2665	0.0024
196	2.2689	0.0024
197	2.2713	0.0024
198	2.2737	0.0024
199	2.2761	0.0024
200	2.2785	0.0024
201	2.2809	0.0024
202	2.2833	0.0024
203	2.2857	0.0024
204	2.2880	0.0024
205	2.2904	0.0023
206	2.2927	0.0023
207	2.2950	0.0023
208	2.2973	0.0023
209	2.2997	0.0023
210	2.3020	0.0023
211	2.3043	0.0023
212	2.3065	0.0023
213	2.3088	0.0023
214	2.3111	0.0023
215	2.3133	0.0023
216	2.3156	0.0023
217	2.3178	0.0022
218	2.3201	0.0022
219	2.3223	0.0022
220	2.3245	0.0022
221	2.3267	0.0022
222	2.3289	0.0022
223	2.3311	0.0022
224	2.3333	0.0022
225	2.3355	0.0022
226	2.3377	0.0022
227	2.3398	0.0022
228	2.3420	0.0022
229	2.3441	0.0021
230	2.3463	0.0021
231	2.3484	0.0021
232	2.3506	0.0021
233	2.3527	0.0021
234	2.3548	0.0021
235	2.3569	0.0021
236	2.3590	0.0021
237	2.3611	0.0021
238	2.3632	0.0021
239	2.3653	0.0021
240	2.3673	0.0021
241	2.3694	0.0021
242	2.3714	0.0021
243	2.3735	0.0021
244	2.3755	0.0020
245	2.3776	0.0020
246	2.3796	0.0020
247	2.3816	0.0020
248	2.3837	0.0020
249	2.3857	0.0020
250	2.3877	0.0020
251	2.3897	0.0020
252	2.3917	0.0020
253	2.3937	0.0020
254	2.3956	0.0020
255	2.3976	0.0020
256	2.3996	0.0020
257	2.4015	0.0020
258	2.4035	0.0020
259	2.4054	0.0020

		EX12.out
260	2.4074	0.0019
261	2.4093	0.0019
262	2.4113	0.0019
263	2.4132	0.0019
264	2.4151	0.0019
265	2.4170	0.0019
266	2.4189	0.0019
267	2.4208	0.0019
268	2.4227	0.0019
269	2.4246	0.0019
270	2.4265	0.0019
271	2.4284	0.0019
272	2.4303	0.0019
273	2.4321	0.0019
274	2.4340	0.0019
275	2.4359	0.0019
276	2.4377	0.0019
277	2.4396	0.0018
278	2.4414	0.0018
279	2.4433	0.0018
280	2.4451	0.0018
281	2.4469	0.0018
282	2.4487	0.0018
283	2.4506	0.0018
284	2.4524	0.0018
285	2.4542	0.0018
286	2.4560	0.0018
287	2.4578	0.0018
288	2.4596	0.0018

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0018	0.0012	0.0006
2	0.0018	0.0012	0.0006
3	0.0018	0.0013	0.0006
4	0.0018	0.0013	0.0006
5	0.0018	0.0013	0.0006
6	0.0018	0.0013	0.0006
7	0.0018	0.0013	0.0006
8	0.0018	0.0013	0.0006
9	0.0019	0.0013	0.0006
10	0.0019	0.0013	0.0006
11	0.0019	0.0013	0.0006
12	0.0019	0.0013	0.0006
13	0.0019	0.0013	0.0006
14	0.0019	0.0013	0.0006
15	0.0019	0.0013	0.0006
16	0.0019	0.0013	0.0006
17	0.0019	0.0013	0.0006
18	0.0019	0.0013	0.0006
19	0.0019	0.0013	0.0006
20	0.0019	0.0013	0.0006
21	0.0020	0.0014	0.0006
22	0.0020	0.0014	0.0006
23	0.0020	0.0014	0.0006
24	0.0020	0.0014	0.0006
25	0.0020	0.0014	0.0006
26	0.0020	0.0014	0.0006
27	0.0020	0.0014	0.0006
28	0.0020	0.0014	0.0006
29	0.0020	0.0014	0.0006
30	0.0020	0.0014	0.0006
31	0.0021	0.0014	0.0006
32	0.0021	0.0014	0.0006
33	0.0021	0.0014	0.0006
34	0.0021	0.0014	0.0006
35	0.0021	0.0014	0.0006
36	0.0021	0.0015	0.0006
37	0.0021	0.0015	0.0006
38	0.0021	0.0015	0.0007
39	0.0021	0.0015	0.0007
40	0.0021	0.0015	0.0007
41	0.0022	0.0015	0.0007
42	0.0022	0.0015	0.0007
43	0.0022	0.0015	0.0007
44	0.0022	0.0015	0.0007

		EX12.out	
45	0.0022	0.0015	0.0007
46	0.0022	0.0015	0.0007
47	0.0022	0.0015	0.0007
48	0.0022	0.0015	0.0007
49	0.0023	0.0016	0.0007
50	0.0023	0.0016	0.0007
51	0.0023	0.0016	0.0007
52	0.0023	0.0016	0.0007
53	0.0023	0.0016	0.0007
54	0.0023	0.0016	0.0007
55	0.0023	0.0016	0.0007
56	0.0023	0.0016	0.0007
57	0.0024	0.0016	0.0007
58	0.0024	0.0016	0.0007
59	0.0024	0.0017	0.0007
60	0.0024	0.0017	0.0007
61	0.0024	0.0017	0.0007
62	0.0024	0.0017	0.0007
63	0.0024	0.0017	0.0008
64	0.0025	0.0017	0.0008
65	0.0025	0.0017	0.0008
66	0.0025	0.0017	0.0008
67	0.0025	0.0017	0.0008
68	0.0025	0.0017	0.0008
69	0.0025	0.0018	0.0008
70	0.0025	0.0018	0.0008
71	0.0026	0.0018	0.0008
72	0.0026	0.0018	0.0008
73	0.0026	0.0018	0.0008
74	0.0026	0.0018	0.0008
75	0.0026	0.0018	0.0008
76	0.0026	0.0018	0.0008
77	0.0027	0.0019	0.0008
78	0.0027	0.0019	0.0008
79	0.0027	0.0019	0.0008
80	0.0027	0.0019	0.0008
81	0.0027	0.0019	0.0008
82	0.0028	0.0019	0.0008
83	0.0028	0.0019	0.0009
84	0.0028	0.0019	0.0009
85	0.0028	0.0020	0.0009
86	0.0028	0.0020	0.0009
87	0.0029	0.0020	0.0009
88	0.0029	0.0020	0.0009
89	0.0029	0.0020	0.0009
90	0.0029	0.0020	0.0009
91	0.0030	0.0020	0.0009
92	0.0030	0.0021	0.0009
93	0.0030	0.0021	0.0009
94	0.0030	0.0021	0.0009
95	0.0031	0.0021	0.0009
96	0.0031	0.0021	0.0009
97	0.0031	0.0022	0.0010
98	0.0031	0.0022	0.0010
99	0.0032	0.0022	0.0010
100	0.0032	0.0022	0.0010
101	0.0032	0.0022	0.0010
102	0.0032	0.0022	0.0010
103	0.0033	0.0023	0.0010
104	0.0033	0.0023	0.0010
105	0.0033	0.0023	0.0010
106	0.0033	0.0023	0.0010
107	0.0034	0.0023	0.0010
108	0.0034	0.0024	0.0010
109	0.0035	0.0024	0.0011
110	0.0035	0.0024	0.0011
111	0.0035	0.0024	0.0011
112	0.0035	0.0025	0.0011
113	0.0036	0.0025	0.0011
114	0.0036	0.0025	0.0011
115	0.0037	0.0025	0.0011
116	0.0037	0.0026	0.0011
117	0.0037	0.0026	0.0011
118	0.0038	0.0026	0.0012
119	0.0038	0.0026	0.0012
120	0.0038	0.0027	0.0012
121	0.0039	0.0027	0.0012
122	0.0039	0.0027	0.0012

		EX12.out	
123	0.0040	0.0028	0.0012
124	0.0040	0.0028	0.0012
125	0.0041	0.0028	0.0013
126	0.0041	0.0028	0.0013
127	0.0042	0.0029	0.0013
128	0.0042	0.0029	0.0013
129	0.0043	0.0030	0.0013
130	0.0043	0.0030	0.0013
131	0.0044	0.0030	0.0014
132	0.0044	0.0031	0.0014
133	0.0045	0.0031	0.0014
134	0.0045	0.0032	0.0014
135	0.0046	0.0032	0.0014
136	0.0047	0.0032	0.0014
137	0.0048	0.0033	0.0015
138	0.0048	0.0033	0.0015
139	0.0049	0.0034	0.0015
140	0.0050	0.0034	0.0015
141	0.0051	0.0035	0.0016
142	0.0051	0.0035	0.0016
143	0.0052	0.0036	0.0016
144	0.0053	0.0036	0.0016
145	0.0042	0.0029	0.0013
146	0.0043	0.0030	0.0013
147	0.0044	0.0030	0.0014
148	0.0045	0.0031	0.0014
149	0.0046	0.0032	0.0014
150	0.0046	0.0032	0.0014
151	0.0047	0.0033	0.0015
152	0.0048	0.0033	0.0015
153	0.0049	0.0034	0.0015
154	0.0050	0.0035	0.0015
155	0.0052	0.0036	0.0016
156	0.0052	0.0036	0.0016
157	0.0054	0.0037	0.0017
158	0.0055	0.0038	0.0017
159	0.0057	0.0039	0.0017
160	0.0058	0.0040	0.0018
161	0.0060	0.0041	0.0018
162	0.0061	0.0042	0.0019
163	0.0063	0.0044	0.0019
164	0.0064	0.0045	0.0020
165	0.0067	0.0046	0.0021
166	0.0068	0.0047	0.0021
167	0.0071	0.0049	0.0022
168	0.0073	0.0050	0.0022
169	0.0078	0.0054	0.0024
170	0.0080	0.0056	0.0025
171	0.0084	0.0058	0.0026
172	0.0086	0.0060	0.0027
173	0.0091	0.0063	0.0028
174	0.0094	0.0065	0.0029
175	0.0100	0.0069	0.0031
176	0.0103	0.0071	0.0032
177	0.0110	0.0076	0.0034
178	0.0114	0.0079	0.0035
179	0.0124	0.0086	0.0038
180	0.0129	0.0089	0.0040
181	0.0141	0.0098	0.0043
182	0.0148	0.0102	0.0045
183	0.0165	0.0114	0.0051
184	0.0175	0.0121	0.0054
185	0.0351	0.0243	0.0108
186	0.0374	0.0259	0.0115
187	0.0433	0.0300	0.0133
188	0.0473	0.0328	0.0146
189	0.0588	0.0338	0.0250
190	0.0678	0.0338	0.0340
191	0.1028	0.0338	0.0690
192	0.1493	0.0338	0.1155
193	0.6458	0.0338	0.6120
194	0.0809	0.0338	0.0471
195	0.0523	0.0338	0.0185
196	0.0401	0.0278	0.0123
197	0.0186	0.0129	0.0057
198	0.0156	0.0108	0.0048
199	0.0135	0.0093	0.0041
200	0.0119	0.0082	0.0037

		EX12.out	
201	0.0107	0.0074	0.0033
202	0.0097	0.0067	0.0030
203	0.0089	0.0062	0.0027
204	0.0082	0.0057	0.0025
205	0.0074	0.0052	0.0023
206	0.0070	0.0048	0.0021
207	0.0066	0.0045	0.0020
208	0.0062	0.0043	0.0019
209	0.0059	0.0041	0.0018
210	0.0056	0.0039	0.0017
211	0.0053	0.0037	0.0016
212	0.0051	0.0035	0.0016
213	0.0049	0.0034	0.0015
214	0.0047	0.0032	0.0014
215	0.0045	0.0031	0.0014
216	0.0043	0.0030	0.0013
217	0.0053	0.0037	0.0016
218	0.0052	0.0036	0.0016
219	0.0050	0.0035	0.0015
220	0.0049	0.0034	0.0015
221	0.0047	0.0033	0.0015
222	0.0046	0.0032	0.0014
223	0.0045	0.0031	0.0014
224	0.0044	0.0030	0.0013
225	0.0042	0.0029	0.0013
226	0.0041	0.0029	0.0013
227	0.0041	0.0028	0.0012
228	0.0040	0.0027	0.0012
229	0.0039	0.0027	0.0012
230	0.0038	0.0026	0.0012
231	0.0037	0.0026	0.0011
232	0.0036	0.0025	0.0011
233	0.0036	0.0025	0.0011
234	0.0035	0.0024	0.0011
235	0.0034	0.0024	0.0011
236	0.0034	0.0023	0.0010
237	0.0033	0.0023	0.0010
238	0.0032	0.0023	0.0010
239	0.0032	0.0022	0.0010
240	0.0031	0.0022	0.0010
241	0.0031	0.0021	0.0009
242	0.0030	0.0021	0.0009
243	0.0030	0.0021	0.0009
244	0.0029	0.0020	0.0009
245	0.0029	0.0020	0.0009
246	0.0029	0.0020	0.0009
247	0.0028	0.0019	0.0009
248	0.0028	0.0019	0.0009
249	0.0027	0.0019	0.0008
250	0.0027	0.0019	0.0008
251	0.0027	0.0018	0.0008
252	0.0026	0.0018	0.0008
253	0.0026	0.0018	0.0008
254	0.0026	0.0018	0.0008
255	0.0025	0.0017	0.0008
256	0.0025	0.0017	0.0008
257	0.0025	0.0017	0.0008
258	0.0024	0.0017	0.0007
259	0.0024	0.0017	0.0007
260	0.0024	0.0016	0.0007
261	0.0023	0.0016	0.0007
262	0.0023	0.0016	0.0007
263	0.0023	0.0016	0.0007
264	0.0023	0.0016	0.0007
265	0.0022	0.0016	0.0007
266	0.0022	0.0015	0.0007
267	0.0022	0.0015	0.0007
268	0.0022	0.0015	0.0007
269	0.0021	0.0015	0.0007
270	0.0021	0.0015	0.0007
271	0.0021	0.0015	0.0006
272	0.0021	0.0014	0.0006
273	0.0021	0.0014	0.0006
274	0.0020	0.0014	0.0006
275	0.0020	0.0014	0.0006
276	0.0020	0.0014	0.0006
277	0.0020	0.0014	0.0006
278	0.0020	0.0014	0.0006

EX12.out

279	0.0020	0.0014	0.0006
280	0.0019	0.0013	0.0006
281	0.0019	0.0013	0.0006
282	0.0019	0.0013	0.0006
283	0.0019	0.0013	0.0006
284	0.0019	0.0013	0.0006
285	0.0018	0.0013	0.0006
286	0.0018	0.0013	0.0006
287	0.0018	0.0013	0.0006
288	0.0018	0.0012	0.0006

Total soil rain loss = 1.14(In)
Total effective rainfall = 1.32(In)
Peak flow rate in flood hydrograph = 376.67(CFS)

+++++
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	100.0	200.0	300.0	400.0
0+ 5	0.0002	0.02	Q					
0+10	0.0013	0.16	Q					
0+15	0.0043	0.44	Q					
0+20	0.0085	0.60	Q					
0+25	0.0133	0.69	Q					
0+30	0.0185	0.76	Q					
0+35	0.0240	0.80	Q					
0+40	0.0298	0.84	Q					
0+45	0.0357	0.86	Q					
0+50	0.0418	0.89	Q					
0+55	0.0481	0.91	Q					
1+ 0	0.0544	0.92	Q					
1+ 5	0.0609	0.94	Q					
1+10	0.0674	0.95	Q					
1+15	0.0740	0.96	Q					
1+20	0.0806	0.96	Q					
1+25	0.0873	0.97	Q					
1+30	0.0941	0.98	Q					
1+35	0.1009	0.99	Q					
1+40	0.1077	1.00	Q					
1+45	0.1146	1.00	Q					
1+50	0.1216	1.01	Q					
1+55	0.1285	1.01	Q					
2+ 0	0.1355	1.02	Q					
2+ 5	0.1426	1.02	Q					
2+10	0.1496	1.03	Q					
2+15	0.1567	1.03	Q					
2+20	0.1638	1.03	Q					
2+25	0.1710	1.04	Q					
2+30	0.1782	1.04	Q					
2+35	0.1854	1.05	Q					
2+40	0.1927	1.05	Q					
2+45	0.2000	1.06	Q					
2+50	0.2073	1.06	Q					
2+55	0.2147	1.07	Q					
3+ 0	0.2221	1.08	Q					
3+ 5	0.2295	1.08	Q					
3+10	0.2370	1.09	Q					
3+15	0.2445	1.09	Q					
3+20	0.2521	1.10	Q					
3+25	0.2597	1.10	Q					
3+30	0.2673	1.11	Q					
3+35	0.2750	1.11	Q					
3+40	0.2827	1.12	Q					
3+45	0.2904	1.13	Q					
3+50	0.2982	1.13	Q					
3+55	0.3061	1.14	Q					
4+ 0	0.3139	1.14	Q					
4+ 5	0.3219	1.15	Q					
4+10	0.3298	1.16	Q					
4+15	0.3378	1.16	Q					
4+20	0.3459	1.17	Q					
4+25	0.3540	1.17	Q					

4+30	0.3621	1.18	Q
4+35	0.3703	1.19	Q
4+40	0.3785	1.19	Q
4+45	0.3868	1.20	QV
4+50	0.3951	1.21	QV
4+55	0.4035	1.22	QV
5+ 0	0.4119	1.22	QV
5+ 5	0.4203	1.23	QV
5+10	0.4289	1.24	QV
5+15	0.4374	1.24	QV
5+20	0.4460	1.25	QV
5+25	0.4547	1.26	QV
5+30	0.4634	1.27	QV
5+35	0.4722	1.27	QV
5+40	0.4810	1.28	QV
5+45	0.4899	1.29	QV
5+50	0.4988	1.30	QV
5+55	0.5078	1.31	QV
6+ 0	0.5169	1.31	QV
6+ 5	0.5260	1.32	QV
6+10	0.5352	1.33	QV
6+15	0.5444	1.34	QV
6+20	0.5537	1.35	QV
6+25	0.5630	1.36	QV
6+30	0.5724	1.37	QV
6+35	0.5819	1.38	QV
6+40	0.5915	1.38	QV
6+45	0.6011	1.39	QV
6+50	0.6107	1.40	QV
6+55	0.6205	1.41	QV
7+ 0	0.6303	1.42	QV
7+ 5	0.6402	1.43	QV
7+10	0.6501	1.44	QV
7+15	0.6601	1.45	QV
7+20	0.6702	1.47	QV
7+25	0.6804	1.48	QV
7+30	0.6906	1.49	QV
7+35	0.7009	1.50	QV
7+40	0.7113	1.51	QV
7+45	0.7218	1.52	QV
7+50	0.7324	1.53	QV
7+55	0.7430	1.54	QV
8+ 0	0.7537	1.56	QV
8+ 5	0.7645	1.57	QV
8+10	0.7754	1.58	Q V
8+15	0.7864	1.59	Q V
8+20	0.7975	1.61	Q V
8+25	0.8086	1.62	Q V
8+30	0.8199	1.63	Q V
8+35	0.8312	1.65	Q V
8+40	0.8427	1.66	Q V
8+45	0.8542	1.68	Q V
8+50	0.8659	1.69	Q V
8+55	0.8776	1.71	Q V
9+ 0	0.8895	1.72	Q V
9+ 5	0.9014	1.74	Q V
9+10	0.9135	1.75	Q V
9+15	0.9257	1.77	Q V
9+20	0.9380	1.79	Q V
9+25	0.9504	1.80	Q V
9+30	0.9629	1.82	Q V
9+35	0.9756	1.84	Q V
9+40	0.9884	1.86	Q V
9+45	1.0013	1.87	Q V
9+50	1.0143	1.89	Q V
9+55	1.0275	1.91	Q V
10+ 0	1.0408	1.93	Q V
10+ 5	1.0542	1.95	Q V
10+10	1.0678	1.97	Q V
10+15	1.0815	1.99	Q V
10+20	1.0954	2.02	Q V
10+25	1.1094	2.04	Q V
10+30	1.1236	2.06	Q V
10+35	1.1380	2.08	Q V
10+40	1.1525	2.11	Q V
10+45	1.1672	2.13	Q V
10+50	1.1821	2.16	Q V
10+55	1.1971	2.18	Q V

11+ 0	1.2123	2.21	Q	V				
11+ 5	1.2277	2.24	Q	V				
11+10	1.2434	2.27	Q	V				
11+15	1.2592	2.30	Q	V				
11+20	1.2752	2.33	Q	V				
11+25	1.2914	2.36	Q	V				
11+30	1.3079	2.39	Q	V				
11+35	1.3246	2.42	Q	V				
11+40	1.3415	2.46	Q	V				
11+45	1.3586	2.49	Q	V				
11+50	1.3760	2.53	Q	V				
11+55	1.3937	2.56	Q	V				
12+ 0	1.4116	2.60	Q	V				
12+ 5	1.4297	2.63	Q	V				
12+10	1.4475	2.58	Q	V				
12+15	1.4643	2.44	Q	V				
12+20	1.4807	2.38	Q	V				
12+25	1.4970	2.37	Q	V				
12+30	1.5134	2.37	Q	V				
12+35	1.5298	2.39	Q	V				
12+40	1.5465	2.41	Q	V				
12+45	1.5633	2.45	Q	V				
12+50	1.5804	2.48	Q	V				
12+55	1.5977	2.52	Q	V				
13+ 0	1.6154	2.56	Q	V				
13+ 5	1.6334	2.61	Q	V				
13+10	1.6518	2.66	Q	V				
13+15	1.6705	2.72	Q	V				
13+20	1.6897	2.78	Q	V				
13+25	1.7092	2.84	Q	V				
13+30	1.7293	2.91	Q	V				
13+35	1.7498	2.98	Q	V				
13+40	1.7709	3.06	Q	V				
13+45	1.7925	3.14	Q	V				
13+50	1.8147	3.22	Q	V				
13+55	1.8376	3.32	Q	V				
14+ 0	1.8611	3.41	Q	V				
14+ 5	1.8853	3.52	Q	V				
14+10	1.9105	3.65	Q	V				
14+15	1.9367	3.81	Q	V				
14+20	1.9640	3.96	Q	V				
14+25	1.9923	4.11	Q	V				
14+30	2.0217	4.27	Q	V				
14+35	2.0523	4.45	Q	V				
14+40	2.0842	4.63	Q	V				
14+45	2.1176	4.84	Q	V				
14+50	2.1525	5.06	Q	V				
14+55	2.1891	5.32	Q	V				
15+ 0	2.2276	5.59	Q	V				
15+ 5	2.2683	5.91	Q	V				
15+10	2.3114	6.26	Q	V				
15+15	2.3574	6.68	Q	V				
15+20	2.4066	7.14	Q	V				
15+25	2.4611	7.91	Q	V				
15+30	2.5282	9.74	Q	V				
15+35	2.6179	13.02	Q	V				
15+40	2.7255	15.63	Q	V				
15+45	2.8531	18.53	Q	V				
15+50	3.0149	23.50	Q	V				
15+55	3.2480	33.84	Q	V				
16+ 0	3.6137	53.10	Q	V				
16+ 5	4.3680	109.53	Q	V				
16+10	6.0598	245.65	Q	V				
16+15	8.6540	376.67	Q	V				
16+20	10.2890	237.40	Q	V				
16+25	11.2923	145.69	Q	V				
16+30	11.9944	101.93	Q	V				
16+35	12.5065	74.37	Q	V				
16+40	12.9089	58.42	Q	V				
16+45	13.2162	44.62	Q	V				
16+50	13.4682	36.59	Q	V				
16+55	13.6770	30.32	Q	V				
17+ 0	13.8488	24.94	Q	V				
17+ 5	13.9914	20.71	Q	V				
17+10	14.1073	16.82	Q	V				
17+15	14.1998	13.44	Q	V				
17+20	14.2752	10.94	Q	V				
17+25	14.3494	10.77	Q	V				

EX12.out

24+ 0	15.4086	0.97	Q				V
24+ 5	15.4150	0.94	Q				V
24+10	15.4205	0.79	Q				V
24+15	15.4240	0.51	Q				V
24+20	15.4264	0.34	Q				V
24+25	15.4281	0.25	Q				V
24+30	15.4294	0.19	Q				V
24+35	15.4305	0.15	Q				V
24+40	15.4313	0.12	Q				V
24+45	15.4319	0.09	Q				V
24+50	15.4324	0.07	Q				V
24+55	15.4328	0.06	Q				V
25+ 0	15.4331	0.04	Q				V
25+ 5	15.4333	0.03	Q				V
25+10	15.4335	0.03	Q				V
25+15	15.4336	0.02	Q				V
25+20	15.4337	0.02	Q				V
25+25	15.4338	0.01	Q				V
25+30	15.4339	0.01	Q				V
25+35	15.4339	0.00	Q				V
25+40	15.4339	0.00	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
EXISTING CONDITIONS AREA 1.3
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
443.93	1	1.35

Rainfall data for year 100		
443.93	6	1.84

Rainfall data for year 100		
443.93	24	2.48

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
60.1	79.1	443.93	1.000	0.385	1.000	0.385

Area-averaged adjusted loss rate Fm (In/Hr) = 0.385

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
443.93	1.000	60.1	79.1	2.65	0.334

Area-averaged catchment yield fraction, Y = 0.334

Area-averaged low loss fraction, Yb = 0.666

+++++

Watercourse length = 5386.00(Ft.)
 Length from concentration point to centroid = 2693.00(Ft.)
 Elevation difference along watercourse = 12.00(Ft.)
 Mannings friction factor along watercourse = 0.035
 Watershed area = 443.93(Ac.)
 Catchment Lag time = 0.410 hours
 Unit interval = 5.000 minutes
 Unit interval percentage of lag time = 20.3130
 Hydrograph baseflow = 0.00(CFS)

EX13.out
Average maximum watershed loss rate(Fm) = 0.385(In/Hr)
Average low loss rate fraction (Yb) = 0.666 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.641(In)
Computed peak 30-minute rainfall = 1.097(In)
Specified peak 1-hour rainfall = 1.350(In)
Computed peak 3-hour rainfall = 1.632(In)
Specified peak 6-hour rainfall = 1.840(In)
Specified peak 24-hour rainfall = 2.480(In)

Rainfall depth area reduction factors:
Using a total area of 443.93(Ac.) (Ref: fig. E-4)

5-minute factor = 0.979	Adjusted rainfall = 0.627(In)
30-minute factor = 0.979	Adjusted rainfall = 1.074(In)
1-hour factor = 0.979	Adjusted rainfall = 1.322(In)
3-hour factor = 0.997	Adjusted rainfall = 1.628(In)
6-hour factor = 0.999	Adjusted rainfall = 1.837(In)
24-hour factor = 0.999	Adjusted rainfall = 2.479(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 5368.78 (CFS))	
1	1.014	54.438
2	4.621	193.646
3	11.658	377.827
4	27.163	832.423
5	44.287	919.321
6	55.801	618.167
7	63.452	410.750
8	69.027	299.357
9	73.496	239.910
10	77.107	193.842
11	80.054	158.232
12	82.527	132.796
13	84.664	114.718
14	86.591	103.451
15	88.252	89.189
16	89.591	71.880
17	90.769	63.251
18	91.859	58.487
19	92.826	51.945
20	93.719	47.930
21	94.458	39.689
22	95.149	37.079
23	95.781	33.952
24	96.311	28.457
25	96.827	27.707
26	97.224	21.279
27	97.589	19.630
28	97.886	15.908
29	98.089	10.931
30	98.297	11.139
31	98.535	12.771
32	98.778	13.087
33	99.022	13.087
34	99.266	13.087
35	99.493	12.175
36	99.632	7.481
37	99.759	6.816
38	99.886	6.816
39	100.000	6.128

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6273	0.6273
2	0.7722	0.1450
3	0.8721	0.0999
4	0.9507	0.0786
5	1.0166	0.0658
6	1.0737	0.0572
7	1.1245	0.0508

		EX13.out
8	1.1705	0.0460
9	1.2126	0.0421
10	1.2515	0.0389
11	1.2878	0.0363
12	1.3219	0.0341
13	1.3421	0.0202
14	1.3611	0.0190
15	1.3790	0.0179
16	1.3960	0.0170
17	1.4121	0.0161
18	1.4275	0.0154
19	1.4422	0.0147
20	1.4563	0.0141
21	1.4698	0.0135
22	1.4829	0.0130
23	1.4954	0.0125
24	1.5075	0.0121
25	1.5192	0.0117
26	1.5306	0.0113
27	1.5416	0.0110
28	1.5522	0.0107
29	1.5626	0.0104
30	1.5727	0.0101
31	1.5825	0.0098
32	1.5920	0.0096
33	1.6013	0.0093
34	1.6104	0.0091
35	1.6193	0.0089
36	1.6280	0.0087
37	1.6358	0.0078
38	1.6434	0.0076
39	1.6509	0.0075
40	1.6582	0.0073
41	1.6654	0.0072
42	1.6724	0.0070
43	1.6793	0.0069
44	1.6860	0.0068
45	1.6927	0.0066
46	1.6992	0.0065
47	1.7056	0.0064
48	1.7118	0.0063
49	1.7180	0.0062
50	1.7241	0.0061
51	1.7301	0.0060
52	1.7359	0.0059
53	1.7417	0.0058
54	1.7474	0.0057
55	1.7530	0.0056
56	1.7586	0.0055
57	1.7640	0.0054
58	1.7694	0.0054
59	1.7747	0.0053
60	1.7799	0.0052
61	1.7850	0.0051
62	1.7901	0.0051
63	1.7951	0.0050
64	1.8000	0.0049
65	1.8049	0.0049
66	1.8097	0.0048
67	1.8145	0.0048
68	1.8192	0.0047
69	1.8238	0.0046
70	1.8284	0.0046
71	1.8330	0.0045
72	1.8374	0.0045
73	1.8429	0.0055
74	1.8483	0.0054
75	1.8537	0.0054
76	1.8590	0.0053
77	1.8643	0.0053
78	1.8695	0.0052
79	1.8746	0.0051
80	1.8797	0.0051
81	1.8848	0.0050
82	1.8898	0.0050
83	1.8947	0.0050
84	1.8996	0.0049
85	1.9045	0.0049

		EX13.out
86	1.9093	0.0048
87	1.9141	0.0048
88	1.9188	0.0047
89	1.9235	0.0047
90	1.9281	0.0046
91	1.9328	0.0046
92	1.9373	0.0046
93	1.9418	0.0045
94	1.9463	0.0045
95	1.9508	0.0045
96	1.9552	0.0044
97	1.9596	0.0044
98	1.9639	0.0043
99	1.9682	0.0043
100	1.9725	0.0043
101	1.9768	0.0042
102	1.9810	0.0042
103	1.9851	0.0042
104	1.9893	0.0041
105	1.9934	0.0041
106	1.9975	0.0041
107	2.0015	0.0041
108	2.0056	0.0040
109	2.0096	0.0040
110	2.0135	0.0040
111	2.0175	0.0039
112	2.0214	0.0039
113	2.0253	0.0039
114	2.0291	0.0039
115	2.0329	0.0038
116	2.0367	0.0038
117	2.0405	0.0038
118	2.0443	0.0038
119	2.0480	0.0037
120	2.0517	0.0037
121	2.0554	0.0037
122	2.0590	0.0037
123	2.0627	0.0036
124	2.0663	0.0036
125	2.0699	0.0036
126	2.0734	0.0036
127	2.0770	0.0035
128	2.0805	0.0035
129	2.0840	0.0035
130	2.0875	0.0035
131	2.0909	0.0035
132	2.0944	0.0034
133	2.0978	0.0034
134	2.1012	0.0034
135	2.1046	0.0034
136	2.1079	0.0034
137	2.1113	0.0033
138	2.1146	0.0033
139	2.1179	0.0033
140	2.1211	0.0033
141	2.1244	0.0033
142	2.1277	0.0032
143	2.1309	0.0032
144	2.1341	0.0032
145	2.1373	0.0032
146	2.1405	0.0032
147	2.1436	0.0032
148	2.1468	0.0031
149	2.1499	0.0031
150	2.1530	0.0031
151	2.1561	0.0031
152	2.1591	0.0031
153	2.1622	0.0031
154	2.1653	0.0030
155	2.1683	0.0030
156	2.1713	0.0030
157	2.1743	0.0030
158	2.1773	0.0030
159	2.1802	0.0030
160	2.1832	0.0030
161	2.1861	0.0029
162	2.1891	0.0029
163	2.1920	0.0029

		EX13.out
164	2.1949	0.0029
165	2.1977	0.0029
166	2.2006	0.0029
167	2.2035	0.0029
168	2.2063	0.0028
169	2.2091	0.0028
170	2.2120	0.0028
171	2.2148	0.0028
172	2.2176	0.0028
173	2.2203	0.0028
174	2.2231	0.0028
175	2.2258	0.0028
176	2.2286	0.0027
177	2.2313	0.0027
178	2.2340	0.0027
179	2.2367	0.0027
180	2.2394	0.0027
181	2.2421	0.0027
182	2.2448	0.0027
183	2.2474	0.0027
184	2.2501	0.0026
185	2.2527	0.0026
186	2.2553	0.0026
187	2.2580	0.0026
188	2.2606	0.0026
189	2.2631	0.0026
190	2.2657	0.0026
191	2.2683	0.0026
192	2.2709	0.0026
193	2.2734	0.0025
194	2.2759	0.0025
195	2.2785	0.0025
196	2.2810	0.0025
197	2.2835	0.0025
198	2.2860	0.0025
199	2.2885	0.0025
200	2.2910	0.0025
201	2.2934	0.0025
202	2.2959	0.0025
203	2.2983	0.0024
204	2.3008	0.0024
205	2.3032	0.0024
206	2.3056	0.0024
207	2.3080	0.0024
208	2.3104	0.0024
209	2.3128	0.0024
210	2.3152	0.0024
211	2.3176	0.0024
212	2.3200	0.0024
213	2.3223	0.0024
214	2.3247	0.0023
215	2.3270	0.0023
216	2.3293	0.0023
217	2.3317	0.0023
218	2.3340	0.0023
219	2.3363	0.0023
220	2.3386	0.0023
221	2.3409	0.0023
222	2.3432	0.0023
223	2.3454	0.0023
224	2.3477	0.0023
225	2.3500	0.0023
226	2.3522	0.0023
227	2.3545	0.0022
228	2.3567	0.0022
229	2.3589	0.0022
230	2.3611	0.0022
231	2.3634	0.0022
232	2.3656	0.0022
233	2.3678	0.0022
234	2.3700	0.0022
235	2.3721	0.0022
236	2.3743	0.0022
237	2.3765	0.0022
238	2.3786	0.0022
239	2.3808	0.0022
240	2.3829	0.0021
241	2.3851	0.0021

		EX13.out
242	2.3872	0.0021
243	2.3893	0.0021
244	2.3915	0.0021
245	2.3936	0.0021
246	2.3957	0.0021
247	2.3978	0.0021
248	2.3999	0.0021
249	2.4020	0.0021
250	2.4040	0.0021
251	2.4061	0.0021
252	2.4082	0.0021
253	2.4102	0.0021
254	2.4123	0.0021
255	2.4143	0.0020
256	2.4164	0.0020
257	2.4184	0.0020
258	2.4204	0.0020
259	2.4225	0.0020
260	2.4245	0.0020
261	2.4265	0.0020
262	2.4285	0.0020
263	2.4305	0.0020
264	2.4325	0.0020
265	2.4345	0.0020
266	2.4365	0.0020
267	2.4384	0.0020
268	2.4404	0.0020
269	2.4424	0.0020
270	2.4443	0.0020
271	2.4463	0.0020
272	2.4482	0.0019
273	2.4502	0.0019
274	2.4521	0.0019
275	2.4540	0.0019
276	2.4560	0.0019
277	2.4579	0.0019
278	2.4598	0.0019
279	2.4617	0.0019
280	2.4636	0.0019
281	2.4655	0.0019
282	2.4674	0.0019
283	2.4693	0.0019
284	2.4711	0.0019
285	2.4730	0.0019
286	2.4749	0.0019
287	2.4768	0.0019
288	2.4786	0.0019

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0019	0.0012	0.0006
2	0.0019	0.0012	0.0006
3	0.0019	0.0012	0.0006
4	0.0019	0.0013	0.0006
5	0.0019	0.0013	0.0006
6	0.0019	0.0013	0.0006
7	0.0019	0.0013	0.0006
8	0.0019	0.0013	0.0006
9	0.0019	0.0013	0.0006
10	0.0019	0.0013	0.0006
11	0.0019	0.0013	0.0006
12	0.0019	0.0013	0.0006
13	0.0020	0.0013	0.0007
14	0.0020	0.0013	0.0007
15	0.0020	0.0013	0.0007
16	0.0020	0.0013	0.0007
17	0.0020	0.0013	0.0007
18	0.0020	0.0013	0.0007
19	0.0020	0.0013	0.0007
20	0.0020	0.0013	0.0007
21	0.0020	0.0014	0.0007
22	0.0020	0.0014	0.0007
23	0.0020	0.0014	0.0007
24	0.0021	0.0014	0.0007
25	0.0021	0.0014	0.0007
26	0.0021	0.0014	0.0007

		EX13.out	
27	0.0021	0.0014	0.0007
28	0.0021	0.0014	0.0007
29	0.0021	0.0014	0.0007
30	0.0021	0.0014	0.0007
31	0.0021	0.0014	0.0007
32	0.0021	0.0014	0.0007
33	0.0021	0.0014	0.0007
34	0.0022	0.0014	0.0007
35	0.0022	0.0014	0.0007
36	0.0022	0.0014	0.0007
37	0.0022	0.0015	0.0007
38	0.0022	0.0015	0.0007
39	0.0022	0.0015	0.0007
40	0.0022	0.0015	0.0007
41	0.0022	0.0015	0.0007
42	0.0022	0.0015	0.0007
43	0.0023	0.0015	0.0008
44	0.0023	0.0015	0.0008
45	0.0023	0.0015	0.0008
46	0.0023	0.0015	0.0008
47	0.0023	0.0015	0.0008
48	0.0023	0.0015	0.0008
49	0.0023	0.0016	0.0008
50	0.0023	0.0016	0.0008
51	0.0024	0.0016	0.0008
52	0.0024	0.0016	0.0008
53	0.0024	0.0016	0.0008
54	0.0024	0.0016	0.0008
55	0.0024	0.0016	0.0008
56	0.0024	0.0016	0.0008
57	0.0024	0.0016	0.0008
58	0.0024	0.0016	0.0008
59	0.0025	0.0016	0.0008
60	0.0025	0.0017	0.0008
61	0.0025	0.0017	0.0008
62	0.0025	0.0017	0.0008
63	0.0025	0.0017	0.0008
64	0.0025	0.0017	0.0008
65	0.0026	0.0017	0.0009
66	0.0026	0.0017	0.0009
67	0.0026	0.0017	0.0009
68	0.0026	0.0017	0.0009
69	0.0026	0.0017	0.0009
70	0.0026	0.0018	0.0009
71	0.0027	0.0018	0.0009
72	0.0027	0.0018	0.0009
73	0.0027	0.0018	0.0009
74	0.0027	0.0018	0.0009
75	0.0027	0.0018	0.0009
76	0.0027	0.0018	0.0009
77	0.0028	0.0018	0.0009
78	0.0028	0.0019	0.0009
79	0.0028	0.0019	0.0009
80	0.0028	0.0019	0.0009
81	0.0028	0.0019	0.0009
82	0.0029	0.0019	0.0010
83	0.0029	0.0019	0.0010
84	0.0029	0.0019	0.0010
85	0.0029	0.0019	0.0010
86	0.0029	0.0020	0.0010
87	0.0030	0.0020	0.0010
88	0.0030	0.0020	0.0010
89	0.0030	0.0020	0.0010
90	0.0030	0.0020	0.0010
91	0.0031	0.0020	0.0010
92	0.0031	0.0020	0.0010
93	0.0031	0.0021	0.0010
94	0.0031	0.0021	0.0010
95	0.0032	0.0021	0.0011
96	0.0032	0.0021	0.0011
97	0.0032	0.0021	0.0011
98	0.0032	0.0021	0.0011
99	0.0033	0.0022	0.0011
100	0.0033	0.0022	0.0011
101	0.0033	0.0022	0.0011
102	0.0033	0.0022	0.0011
103	0.0034	0.0022	0.0011
104	0.0034	0.0023	0.0011

		EX13.out	
105	0.0034	0.0023	0.0011
106	0.0035	0.0023	0.0012
107	0.0035	0.0023	0.0012
108	0.0035	0.0023	0.0012
109	0.0036	0.0024	0.0012
110	0.0036	0.0024	0.0012
111	0.0036	0.0024	0.0012
112	0.0037	0.0024	0.0012
113	0.0037	0.0025	0.0012
114	0.0037	0.0025	0.0012
115	0.0038	0.0025	0.0013
116	0.0038	0.0025	0.0013
117	0.0039	0.0026	0.0013
118	0.0039	0.0026	0.0013
119	0.0039	0.0026	0.0013
120	0.0040	0.0026	0.0013
121	0.0040	0.0027	0.0013
122	0.0041	0.0027	0.0014
123	0.0041	0.0027	0.0014
124	0.0041	0.0028	0.0014
125	0.0042	0.0028	0.0014
126	0.0042	0.0028	0.0014
127	0.0043	0.0029	0.0014
128	0.0043	0.0029	0.0015
129	0.0044	0.0029	0.0015
130	0.0045	0.0030	0.0015
131	0.0045	0.0030	0.0015
132	0.0046	0.0030	0.0015
133	0.0046	0.0031	0.0016
134	0.0047	0.0031	0.0016
135	0.0048	0.0032	0.0016
136	0.0048	0.0032	0.0016
137	0.0049	0.0033	0.0016
138	0.0050	0.0033	0.0017
139	0.0050	0.0034	0.0017
140	0.0051	0.0034	0.0017
141	0.0052	0.0035	0.0017
142	0.0053	0.0035	0.0018
143	0.0054	0.0036	0.0018
144	0.0054	0.0036	0.0018
145	0.0045	0.0030	0.0015
146	0.0045	0.0030	0.0015
147	0.0046	0.0031	0.0016
148	0.0047	0.0031	0.0016
149	0.0048	0.0032	0.0016
150	0.0049	0.0033	0.0016
151	0.0050	0.0033	0.0017
152	0.0051	0.0034	0.0017
153	0.0052	0.0035	0.0017
154	0.0053	0.0035	0.0018
155	0.0054	0.0036	0.0018
156	0.0055	0.0037	0.0018
157	0.0057	0.0038	0.0019
158	0.0058	0.0039	0.0019
159	0.0060	0.0040	0.0020
160	0.0061	0.0040	0.0020
161	0.0063	0.0042	0.0021
162	0.0064	0.0043	0.0021
163	0.0066	0.0044	0.0022
164	0.0068	0.0045	0.0023
165	0.0070	0.0047	0.0023
166	0.0072	0.0048	0.0024
167	0.0075	0.0050	0.0025
168	0.0076	0.0051	0.0025
169	0.0087	0.0058	0.0029
170	0.0089	0.0059	0.0030
171	0.0093	0.0062	0.0031
172	0.0096	0.0064	0.0032
173	0.0101	0.0067	0.0034
174	0.0104	0.0069	0.0035
175	0.0110	0.0073	0.0037
176	0.0113	0.0076	0.0038
177	0.0121	0.0081	0.0040
178	0.0125	0.0084	0.0042
179	0.0135	0.0090	0.0045
180	0.0141	0.0094	0.0047
181	0.0154	0.0102	0.0051
182	0.0161	0.0107	0.0054

		EX13.out	
183	0.0179	0.0119	0.0060
184	0.0190	0.0126	0.0063
185	0.0341	0.0227	0.0114
186	0.0363	0.0242	0.0121
187	0.0421	0.0280	0.0141
188	0.0460	0.0306	0.0153
189	0.0572	0.0321	0.0250
190	0.0658	0.0321	0.0337
191	0.0999	0.0321	0.0678
192	0.1450	0.0321	0.1129
193	0.6273	0.0321	0.5951
194	0.0786	0.0321	0.0465
195	0.0508	0.0321	0.0187
196	0.0389	0.0259	0.0130
197	0.0202	0.0135	0.0067
198	0.0170	0.0113	0.0057
199	0.0147	0.0098	0.0049
200	0.0130	0.0087	0.0043
201	0.0117	0.0078	0.0039
202	0.0107	0.0071	0.0036
203	0.0098	0.0065	0.0033
204	0.0091	0.0061	0.0030
205	0.0078	0.0052	0.0026
206	0.0073	0.0049	0.0024
207	0.0069	0.0046	0.0023
208	0.0065	0.0043	0.0022
209	0.0062	0.0041	0.0021
210	0.0059	0.0039	0.0020
211	0.0056	0.0037	0.0019
212	0.0054	0.0036	0.0018
213	0.0051	0.0034	0.0017
214	0.0049	0.0033	0.0017
215	0.0048	0.0032	0.0016
216	0.0046	0.0031	0.0015
217	0.0055	0.0037	0.0018
218	0.0053	0.0035	0.0018
219	0.0051	0.0034	0.0017
220	0.0050	0.0033	0.0017
221	0.0049	0.0032	0.0016
222	0.0047	0.0032	0.0016
223	0.0046	0.0031	0.0015
224	0.0045	0.0030	0.0015
225	0.0044	0.0029	0.0015
226	0.0043	0.0028	0.0014
227	0.0042	0.0028	0.0014
228	0.0041	0.0027	0.0014
229	0.0040	0.0027	0.0013
230	0.0039	0.0026	0.0013
231	0.0038	0.0026	0.0013
232	0.0038	0.0025	0.0013
233	0.0037	0.0025	0.0012
234	0.0036	0.0024	0.0012
235	0.0035	0.0024	0.0012
236	0.0035	0.0023	0.0012
237	0.0034	0.0023	0.0011
238	0.0034	0.0022	0.0011
239	0.0033	0.0022	0.0011
240	0.0032	0.0022	0.0011
241	0.0032	0.0021	0.0011
242	0.0031	0.0021	0.0010
243	0.0031	0.0021	0.0010
244	0.0030	0.0020	0.0010
245	0.0030	0.0020	0.0010
246	0.0030	0.0020	0.0010
247	0.0029	0.0019	0.0010
248	0.0029	0.0019	0.0010
249	0.0028	0.0019	0.0009
250	0.0028	0.0019	0.0009
251	0.0028	0.0018	0.0009
252	0.0027	0.0018	0.0009
253	0.0027	0.0018	0.0009
254	0.0026	0.0018	0.0009
255	0.0026	0.0017	0.0009
256	0.0026	0.0017	0.0009
257	0.0025	0.0017	0.0009
258	0.0025	0.0017	0.0008
259	0.0025	0.0017	0.0008
260	0.0025	0.0016	0.0008

EX13.out

261	0.0024	0.0016	0.0008
262	0.0024	0.0016	0.0008
263	0.0024	0.0016	0.0008
264	0.0023	0.0016	0.0008
265	0.0023	0.0015	0.0008
266	0.0023	0.0015	0.0008
267	0.0023	0.0015	0.0008
268	0.0023	0.0015	0.0008
269	0.0022	0.0015	0.0007
270	0.0022	0.0015	0.0007
271	0.0022	0.0015	0.0007
272	0.0022	0.0014	0.0007
273	0.0021	0.0014	0.0007
274	0.0021	0.0014	0.0007
275	0.0021	0.0014	0.0007
276	0.0021	0.0014	0.0007
277	0.0021	0.0014	0.0007
278	0.0020	0.0014	0.0007
279	0.0020	0.0013	0.0007
280	0.0020	0.0013	0.0007
281	0.0020	0.0013	0.0007
282	0.0020	0.0013	0.0007
283	0.0020	0.0013	0.0007
284	0.0019	0.0013	0.0006
285	0.0019	0.0013	0.0006
286	0.0019	0.0013	0.0006
287	0.0019	0.0013	0.0006
288	0.0019	0.0012	0.0006

Total soil rain loss = 1.13(In)
Total effective rainfall = 1.35(In)
Peak flow rate in flood hydrograph = 721.28(CFS)

+++++

24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	200.0	400.0	600.0	800.0
0+ 5	0.0002	0.03	Q				
0+10	0.0013	0.15	Q				
0+15	0.0040	0.39	Q				
0+20	0.0102	0.91	Q				
0+25	0.0204	1.48	Q				
0+30	0.0333	1.87	Q				
0+35	0.0480	2.14	Q				
0+40	0.0641	2.33	Q				
0+45	0.0812	2.49	Q				
0+50	0.0993	2.62	Q				
0+55	0.1181	2.73	Q				
1+ 0	0.1375	2.82	Q				
1+ 5	0.1575	2.91	Q				
1+10	0.1781	2.98	Q				
1+15	0.1991	3.05	Q				
1+20	0.2205	3.11	Q				
1+25	0.2422	3.16	Q				
1+30	0.2644	3.21	Q				
1+35	0.2868	3.26	Q				
1+40	0.3095	3.30	Q				
1+45	0.3325	3.34	Q				
1+50	0.3558	3.38	Q				
1+55	0.3793	3.41	Q				
2+ 0	0.4031	3.45	Q				
2+ 5	0.4270	3.48	Q				
2+10	0.4512	3.51	Q				
2+15	0.4756	3.54	Q				
2+20	0.5001	3.56	Q				
2+25	0.5248	3.59	Q				
2+30	0.5497	3.61	Q				
2+35	0.5747	3.63	Q				
2+40	0.5999	3.66	Q				
2+45	0.6253	3.69	Q				
2+50	0.6508	3.71	Q				
2+55	0.6766	3.74	Q				

3+ 0	0.7025	3.76	Q
3+ 5	0.7285	3.78	Q
3+10	0.7547	3.80	Q
3+15	0.7810	3.83	Q
3+20	0.8075	3.84	Q
3+25	0.8341	3.86	Q
3+30	0.8609	3.88	Q
3+35	0.8877	3.90	Q
3+40	0.9148	3.92	Q
3+45	0.9419	3.94	Q
3+50	0.9692	3.96	Q
3+55	0.9966	3.98	Q
4+ 0	1.0242	4.00	Q
4+ 5	1.0519	4.02	Q
4+10	1.0797	4.04	Q
4+15	1.1077	4.07	Q
4+20	1.1359	4.09	Q
4+25	1.1642	4.11	Q
4+30	1.1926	4.13	Q
4+35	1.2213	4.15	Q
4+40	1.2500	4.18	QV
4+45	1.2789	4.20	QV
4+50	1.3080	4.22	QV
4+55	1.3373	4.25	QV
5+ 0	1.3667	4.27	QV
5+ 5	1.3962	4.29	QV
5+10	1.4260	4.32	QV
5+15	1.4559	4.34	QV
5+20	1.4860	4.37	QV
5+25	1.5162	4.39	QV
5+30	1.5467	4.42	QV
5+35	1.5773	4.45	QV
5+40	1.6081	4.47	QV
5+45	1.6391	4.50	QV
5+50	1.6703	4.53	QV
5+55	1.7016	4.55	QV
6+ 0	1.7332	4.58	QV
6+ 5	1.7649	4.61	QV
6+10	1.7969	4.64	QV
6+15	1.8290	4.67	QV
6+20	1.8614	4.70	QV
6+25	1.8939	4.73	QV
6+30	1.9267	4.76	QV
6+35	1.9597	4.79	QV
6+40	1.9929	4.82	QV
6+45	2.0263	4.85	QV
6+50	2.0599	4.88	QV
6+55	2.0938	4.92	QV
7+ 0	2.1279	4.95	QV
7+ 5	2.1622	4.98	QV
7+10	2.1968	5.02	QV
7+15	2.2316	5.05	QV
7+20	2.2666	5.09	QV
7+25	2.3019	5.13	QV
7+30	2.3375	5.16	QV
7+35	2.3733	5.20	QV
7+40	2.4093	5.24	QV
7+45	2.4457	5.28	QV
7+50	2.4823	5.31	QV
7+55	2.5192	5.35	Q V
8+ 0	2.5563	5.39	Q V
8+ 5	2.5938	5.44	Q V
8+10	2.6315	5.48	Q V
8+15	2.6695	5.52	Q V
8+20	2.7078	5.56	Q V
8+25	2.7464	5.61	Q V
8+30	2.7854	5.65	Q V
8+35	2.8246	5.70	Q V
8+40	2.8642	5.75	Q V
8+45	2.9041	5.79	Q V
8+50	2.9443	5.84	Q V
8+55	2.9849	5.89	Q V
9+ 0	3.0258	5.94	Q V
9+ 5	3.0671	5.99	Q V
9+10	3.1088	6.05	Q V
9+15	3.1508	6.10	Q V
9+20	3.1932	6.15	Q V
9+25	3.2359	6.21	Q V

9+30	3.2791	6.27	Q	V
9+35	3.3227	6.33	Q	V
9+40	3.3666	6.38	Q	V
9+45	3.4110	6.45	Q	V
9+50	3.4558	6.51	Q	V
9+55	3.5011	6.57	Q	V
10+ 0	3.5468	6.64	Q	V
10+ 5	3.5929	6.70	Q	V
10+10	3.6396	6.77	Q	V
10+15	3.6867	6.84	Q	V
10+20	3.7342	6.91	Q	V
10+25	3.7823	6.98	Q	V
10+30	3.8309	7.06	Q	V
10+35	3.8801	7.13	Q	V
10+40	3.9297	7.21	Q	V
10+45	3.9800	7.29	Q	V
10+50	4.0307	7.37	Q	V
10+55	4.0821	7.46	Q	V
11+ 0	4.1341	7.55	Q	V
11+ 5	4.1867	7.63	Q	V
11+10	4.2399	7.73	Q	V
11+15	4.2937	7.82	Q	V
11+20	4.3483	7.92	Q	V
11+25	4.4035	8.02	Q	V
11+30	4.4594	8.12	Q	V
11+35	4.5161	8.23	Q	V
11+40	4.5735	8.33	Q	V
11+45	4.6316	8.45	Q	V
11+50	4.6906	8.56	Q	V
11+55	4.7504	8.68	Q	V
12+ 0	4.8110	8.80	Q	V
12+ 5	4.8724	8.91	Q	V
12+10	4.9342	8.98	Q	V
12+15	4.9960	8.98	Q	V
12+20	5.0568	8.82	Q	V
12+25	5.1163	8.64	Q	V
12+30	5.1752	8.56	Q	V
12+35	5.2342	8.56	Q	V
12+40	5.2934	8.60	Q	V
12+45	5.3530	8.66	Q	V
12+50	5.4133	8.75	Q	V
12+55	5.4743	8.86	Q	V
13+ 0	5.5361	8.98	Q	V
13+ 5	5.5989	9.11	Q	V
13+10	5.6626	9.26	Q	V
13+15	5.7274	9.41	Q	V
13+20	5.7934	9.59	Q	V
13+25	5.8607	9.77	Q	V
13+30	5.9294	9.97	Q	V
13+35	5.9994	10.18	Q	V
13+40	6.0711	10.40	Q	V
13+45	6.1443	10.64	Q	V
13+50	6.2193	10.89	Q	V
13+55	6.2962	11.16	Q	V
14+ 0	6.3751	11.45	Q	V
14+ 5	6.4561	11.77	Q	V
14+10	6.5398	12.15	Q	V
14+15	6.6265	12.59	Q	V
14+20	6.7171	13.16	Q	V
14+25	6.8121	13.79	Q	V
14+30	6.9112	14.39	Q	V
14+35	7.0143	14.98	Q	V
14+40	7.1217	15.59	Q	V
14+45	7.2335	16.23	Q	V
14+50	7.3501	16.93	Q	V
14+55	7.4719	17.68	Q	V
15+ 0	7.5993	18.51	Q	V
15+ 5	7.7330	19.41	Q	V
15+10	7.8736	20.42	Q	V
15+15	8.0221	21.55	Q	V
15+20	8.1794	22.85	Q	V
15+25	8.3484	24.54	Q	V
15+30	8.5350	27.09	Q	V
15+35	8.7467	30.74	Q	V
15+40	9.0006	36.86	Q	V
15+45	9.3070	44.50	Q	V
15+50	9.6749	53.41	Q	V
15+55	10.1331	66.53	Q	V

16+ 0	10.7637	91.57	Q	V					
16+ 5	11.8585	158.96	Q	V	V				
16+10	13.8174	284.43			V	Q			
16+15	16.8420	439.16			V		Q		
16+20	21.6514	698.33				V			Q
16+25	26.6189	721.28					V		Q
16+30	30.2167	522.40						V	
16+35	32.7952	374.40						V	
16+40	34.7663	286.21						V	
16+45	36.3701	232.86			Q			V	
16+50	37.6967	192.62			Q			V	
16+55	38.8113	161.84			Q			V	
17+ 0	39.7699	139.18			Q			V	
17+ 5	40.6116	122.23			Q			V	
17+10	41.3670	109.68			Q			V	
17+15	42.0295	96.19			Q			V	
17+20	42.5948	82.09			Q			V	
17+25	43.1006	73.44			Q			V	
17+30	43.5651	67.46			Q			V	
17+35	43.9850	60.97			Q			V	
17+40	44.3704	55.96			Q			V	
17+45	44.7094	49.22			Q			V	
17+50	45.0234	45.59			Q			V	
17+55	45.3120	41.90			Q			V	
18+ 0	45.5680	37.17			Q			V	
18+ 5	45.8084	34.90			Q			V	
18+10	46.0148	29.97			Q			V	
18+15	46.2051	27.63			Q			V	
18+20	46.3744	24.58			Q			V	
18+25	46.5217	21.39			Q			V	
18+30	46.6674	21.16			Q			V	
18+35	46.8170	21.73			Q			V	
18+40	46.9651	21.50			Q			V	
18+45	47.1098	21.00			Q			V	
18+50	47.2494	20.28			Q			V	
18+55	47.3794	18.87			Q			V	
19+ 0	47.4868	15.60			Q			V	
19+ 5	47.5871	14.55			Q			V	
19+10	47.6819	13.77			Q			V	
19+15	47.7676	12.44			Q			V	
19+20	47.8266	8.57			Q			V	
19+25	47.8824	8.10			Q			V	
19+30	47.9363	7.82			Q			V	
19+35	47.9885	7.58			Q			V	
19+40	48.0394	7.39			Q			V	
19+45	48.0891	7.22			Q			V	
19+50	48.1377	7.06			Q			V	
19+55	48.1853	6.90			Q			V	
20+ 0	48.2318	6.76			Q			V	
20+ 5	48.2775	6.62			Q			V	
20+10	48.3222	6.49			Q			V	
20+15	48.3661	6.37			Q			V	
20+20	48.4091	6.25			Q			V	
20+25	48.4514	6.14			Q			V	
20+30	48.4929	6.03			Q			V	
20+35	48.5338	5.93			Q			V	
20+40	48.5739	5.83			Q			V	
20+45	48.6134	5.73			Q			V	
20+50	48.6523	5.64			Q			V	
20+55	48.6905	5.56			Q			V	
21+ 0	48.7282	5.47			Q			V	
21+ 5	48.7653	5.39			Q			V	
21+10	48.8019	5.31			Q			V	
21+15	48.8379	5.23			Q			V	
21+20	48.8734	5.16			Q			V	
21+25	48.9084	5.08			Q			V	
21+30	48.9430	5.01			Q			V	
21+35	48.9770	4.94			Q			V	
21+40	49.0106	4.87			Q			V	
21+45	49.0437	4.81			Q			V	
21+50	49.0764	4.75			Q			V	
21+55	49.1086	4.69			Q			V	
22+ 0	49.1405	4.63			Q			V	
22+ 5	49.1720	4.57			Q			V	
22+10	49.2031	4.51			Q			V	
22+15	49.2338	4.46			Q			V	
22+20	49.2641	4.41			Q			V	
22+25	49.2941	4.35			Q			V	

22+30	49.3237	4.30	Q				V
22+35	49.3531	4.26	Q				V
22+40	49.3820	4.21	Q				V
22+45	49.4107	4.16	Q				V
22+50	49.4391	4.12	Q				V
22+55	49.4671	4.07	Q				V
23+ 0	49.4949	4.03	Q				V
23+ 5	49.5223	3.99	Q				V
23+10	49.5495	3.95	Q				V
23+15	49.5764	3.91	Q				V
23+20	49.6031	3.87	Q				V
23+25	49.6295	3.83	Q				V
23+30	49.6556	3.79	Q				V
23+35	49.6815	3.76	Q				V
23+40	49.7071	3.72	Q				V
23+45	49.7325	3.69	Q				V
23+50	49.7576	3.65	Q				V
23+55	49.7826	3.62	Q				V
24+ 0	49.8073	3.59	Q				V
24+ 5	49.8315	3.52	Q				V
24+10	49.8547	3.37	Q				V
24+15	49.8761	3.11	Q				V
24+20	49.8937	2.56	Q				V
24+25	49.9073	1.97	Q				V
24+30	49.9181	1.57	Q				V
24+35	49.9271	1.30	Q				V
24+40	49.9347	1.10	Q				V
24+45	49.9412	0.95	Q				V
24+50	49.9469	0.82	Q				V
24+55	49.9518	0.71	Q				V
25+ 0	49.9561	0.62	Q				V
25+ 5	49.9598	0.55	Q				V
25+10	49.9631	0.48	Q				V
25+15	49.9660	0.42	Q				V
25+20	49.9686	0.37	Q				V
25+25	49.9708	0.33	Q				V
25+30	49.9728	0.29	Q				V
25+35	49.9746	0.25	Q				V
25+40	49.9761	0.22	Q				V
25+45	49.9774	0.20	Q				V
25+50	49.9786	0.17	Q				V
25+55	49.9797	0.15	Q				V
26+ 0	49.9805	0.13	Q				V
26+ 5	49.9813	0.11	Q				V
26+10	49.9820	0.10	Q				V
26+15	49.9826	0.08	Q				V
26+20	49.9831	0.07	Q				V
26+25	49.9835	0.07	Q				V
26+30	49.9839	0.06	Q				V
26+35	49.9843	0.05	Q				V
26+40	49.9846	0.04	Q				V
26+45	49.9848	0.03	Q				V
26+50	49.9850	0.02	Q				V
26+55	49.9851	0.02	Q				V
27+ 0	49.9852	0.01	Q				V
27+ 5	49.9852	0.01	Q				V
27+10	49.9853	0.00	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
EXISTING CONDITIONS AREA 1.4
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
41.87	1	1.36

Rainfall data for year 100		
41.87	6	1.84

Rainfall data for year 100		
41.87	24	2.48

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
62.0	80.6	41.87	1.000	0.360	1.000	0.360

Area-averaged adjusted loss rate Fm (In/Hr) = 0.360

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
41.87	1.000	62.0	80.6	2.41	0.366

Area-averaged catchment yield fraction, Y = 0.366

Area-averaged low loss fraction, Yb = 0.634

+++++

Watercourse length = 1993.00(Ft.)
 Length from concentration point to centroid = 997.00(Ft.)
 Elevation difference along watercourse = 12.00(Ft.)
 Mannings friction factor along watercourse = 0.035
 Watershed area = 41.87(Ac.)
 Catchment Lag time = 0.160 hours
 Unit interval = 5.000 minutes
 Unit interval percentage of lag time = 52.2231
 Hydrograph baseflow = 0.00(CFS)

EX14.out
Average maximum watershed loss rate(Fm) = 0.360(In/Hr)
Average low loss rate fraction (Yb) = 0.634 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.645(In)
Computed peak 30-minute rainfall = 1.105(In)
Specified peak 1-hour rainfall = 1.360(In)
Computed peak 3-hour rainfall = 1.637(In)
Specified peak 6-hour rainfall = 1.840(In)
Specified peak 24-hour rainfall = 2.480(In)

Rainfall depth area reduction factors:
Using a total area of 41.87(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998	Adjusted rainfall = 0.644(In)
30-minute factor = 0.998	Adjusted rainfall = 1.102(In)
1-hour factor = 0.998	Adjusted rainfall = 1.357(In)
3-hour factor = 1.000	Adjusted rainfall = 1.637(In)
6-hour factor = 1.000	Adjusted rainfall = 1.840(In)
24-hour factor = 1.000	Adjusted rainfall = 2.480(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 506.37 (CFS))	
1	4.271	21.627
2	33.092	145.938
3	62.479	148.808
4	75.217	64.499
5	82.607	37.419
6	87.615	25.359
7	90.985	17.069
8	93.500	12.732
9	95.362	9.428
10	96.761	7.086
11	97.724	4.877
12	98.319	3.012
13	98.933	3.110
14	99.507	2.903
15	100.000	2.497

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6441	0.6441
2	0.7929	0.1489
3	0.8955	0.1026
4	0.9762	0.0807
5	1.0438	0.0676
6	1.1025	0.0587
7	1.1547	0.0522
8	1.2019	0.0472
9	1.2451	0.0432
10	1.2851	0.0400
11	1.3224	0.0373
12	1.3573	0.0350
13	1.3760	0.0186
14	1.3934	0.0175
15	1.4099	0.0165
16	1.4255	0.0156
17	1.4403	0.0148
18	1.4543	0.0141
19	1.4678	0.0135
20	1.4807	0.0129
21	1.4930	0.0124
22	1.5049	0.0119
23	1.5163	0.0114
24	1.5274	0.0110
25	1.5380	0.0107
26	1.5483	0.0103
27	1.5583	0.0100
28	1.5680	0.0097
29	1.5774	0.0094
30	1.5865	0.0091
31	1.5954	0.0089

		EX14.out
32	1.6040	0.0086
33	1.6125	0.0084
34	1.6207	0.0082
35	1.6287	0.0080
36	1.6365	0.0078
37	1.6441	0.0076
38	1.6515	0.0074
39	1.6588	0.0073
40	1.6659	0.0071
41	1.6729	0.0070
42	1.6797	0.0068
43	1.6864	0.0067
44	1.6929	0.0066
45	1.6994	0.0064
46	1.7057	0.0063
47	1.7119	0.0062
48	1.7180	0.0061
49	1.7240	0.0060
50	1.7299	0.0059
51	1.7357	0.0058
52	1.7414	0.0057
53	1.7470	0.0056
54	1.7525	0.0055
55	1.7580	0.0054
56	1.7633	0.0054
57	1.7686	0.0053
58	1.7738	0.0052
59	1.7789	0.0051
60	1.7840	0.0051
61	1.7890	0.0050
62	1.7939	0.0049
63	1.7987	0.0049
64	1.8035	0.0048
65	1.8083	0.0047
66	1.8129	0.0047
67	1.8175	0.0046
68	1.8221	0.0046
69	1.8266	0.0045
70	1.8310	0.0044
71	1.8354	0.0044
72	1.8398	0.0043
73	1.8452	0.0055
74	1.8506	0.0054
75	1.8560	0.0054
76	1.8613	0.0053
77	1.8666	0.0052
78	1.8718	0.0052
79	1.8769	0.0051
80	1.8820	0.0051
81	1.8870	0.0050
82	1.8920	0.0050
83	1.8970	0.0049
84	1.9019	0.0049
85	1.9067	0.0049
86	1.9115	0.0048
87	1.9163	0.0048
88	1.9210	0.0047
89	1.9257	0.0047
90	1.9303	0.0046
91	1.9349	0.0046
92	1.9395	0.0046
93	1.9440	0.0045
94	1.9485	0.0045
95	1.9529	0.0044
96	1.9574	0.0044
97	1.9617	0.0044
98	1.9661	0.0043
99	1.9704	0.0043
100	1.9746	0.0043
101	1.9789	0.0042
102	1.9831	0.0042
103	1.9873	0.0042
104	1.9914	0.0041
105	1.9955	0.0041
106	1.9996	0.0041
107	2.0036	0.0040
108	2.0076	0.0040
109	2.0116	0.0040

		EX14.out
110	2.0156	0.0040
111	2.0195	0.0039
112	2.0234	0.0039
113	2.0273	0.0039
114	2.0312	0.0039
115	2.0350	0.0038
116	2.0388	0.0038
117	2.0426	0.0038
118	2.0463	0.0037
119	2.0500	0.0037
120	2.0537	0.0037
121	2.0574	0.0037
122	2.0610	0.0037
123	2.0647	0.0036
124	2.0683	0.0036
125	2.0719	0.0036
126	2.0754	0.0036
127	2.0790	0.0035
128	2.0825	0.0035
129	2.0860	0.0035
130	2.0894	0.0035
131	2.0929	0.0035
132	2.0963	0.0034
133	2.0997	0.0034
134	2.1031	0.0034
135	2.1065	0.0034
136	2.1098	0.0034
137	2.1132	0.0033
138	2.1165	0.0033
139	2.1198	0.0033
140	2.1230	0.0033
141	2.1263	0.0033
142	2.1295	0.0032
143	2.1328	0.0032
144	2.1360	0.0032
145	2.1392	0.0032
146	2.1423	0.0032
147	2.1455	0.0032
148	2.1486	0.0031
149	2.1517	0.0031
150	2.1548	0.0031
151	2.1579	0.0031
152	2.1610	0.0031
153	2.1640	0.0031
154	2.1671	0.0030
155	2.1701	0.0030
156	2.1731	0.0030
157	2.1761	0.0030
158	2.1791	0.0030
159	2.1820	0.0030
160	2.1850	0.0029
161	2.1879	0.0029
162	2.1908	0.0029
163	2.1938	0.0029
164	2.1966	0.0029
165	2.1995	0.0029
166	2.2024	0.0029
167	2.2052	0.0029
168	2.2081	0.0028
169	2.2109	0.0028
170	2.2137	0.0028
171	2.2165	0.0028
172	2.2193	0.0028
173	2.2221	0.0028
174	2.2248	0.0028
175	2.2276	0.0027
176	2.2303	0.0027
177	2.2330	0.0027
178	2.2357	0.0027
179	2.2384	0.0027
180	2.2411	0.0027
181	2.2438	0.0027
182	2.2465	0.0027
183	2.2491	0.0027
184	2.2518	0.0026
185	2.2544	0.0026
186	2.2570	0.0026
187	2.2596	0.0026

		EX14.out
188	2.2622	0.0026
189	2.2648	0.0026
190	2.2674	0.0026
191	2.2699	0.0026
192	2.2725	0.0026
193	2.2750	0.0025
194	2.2776	0.0025
195	2.2801	0.0025
196	2.2826	0.0025
197	2.2851	0.0025
198	2.2876	0.0025
199	2.2901	0.0025
200	2.2926	0.0025
201	2.2950	0.0025
202	2.2975	0.0025
203	2.2999	0.0024
204	2.3024	0.0024
205	2.3048	0.0024
206	2.3072	0.0024
207	2.3096	0.0024
208	2.3120	0.0024
209	2.3144	0.0024
210	2.3168	0.0024
211	2.3192	0.0024
212	2.3215	0.0024
213	2.3239	0.0024
214	2.3262	0.0023
215	2.3286	0.0023
216	2.3309	0.0023
217	2.3332	0.0023
218	2.3355	0.0023
219	2.3378	0.0023
220	2.3401	0.0023
221	2.3424	0.0023
222	2.3447	0.0023
223	2.3469	0.0023
224	2.3492	0.0023
225	2.3515	0.0023
226	2.3537	0.0022
227	2.3560	0.0022
228	2.3582	0.0022
229	2.3604	0.0022
230	2.3626	0.0022
231	2.3648	0.0022
232	2.3670	0.0022
233	2.3692	0.0022
234	2.3714	0.0022
235	2.3736	0.0022
236	2.3758	0.0022
237	2.3779	0.0022
238	2.3801	0.0022
239	2.3822	0.0022
240	2.3844	0.0021
241	2.3865	0.0021
242	2.3886	0.0021
243	2.3908	0.0021
244	2.3929	0.0021
245	2.3950	0.0021
246	2.3971	0.0021
247	2.3992	0.0021
248	2.4013	0.0021
249	2.4034	0.0021
250	2.4054	0.0021
251	2.4075	0.0021
252	2.4096	0.0021
253	2.4116	0.0021
254	2.4137	0.0020
255	2.4157	0.0020
256	2.4178	0.0020
257	2.4198	0.0020
258	2.4218	0.0020
259	2.4238	0.0020
260	2.4258	0.0020
261	2.4278	0.0020
262	2.4298	0.0020
263	2.4318	0.0020
264	2.4338	0.0020
265	2.4358	0.0020

		EX14.out
266	2.4378	0.0020
267	2.4398	0.0020
268	2.4417	0.0020
269	2.4437	0.0020
270	2.4456	0.0020
271	2.4476	0.0019
272	2.4495	0.0019
273	2.4515	0.0019
274	2.4534	0.0019
275	2.4553	0.0019
276	2.4572	0.0019
277	2.4592	0.0019
278	2.4611	0.0019
279	2.4630	0.0019
280	2.4649	0.0019
281	2.4668	0.0019
282	2.4687	0.0019
283	2.4705	0.0019
284	2.4724	0.0019
285	2.4743	0.0019
286	2.4762	0.0019
287	2.4780	0.0019
288	2.4799	0.0019

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0019	0.0012	0.0007
2	0.0019	0.0012	0.0007
3	0.0019	0.0012	0.0007
4	0.0019	0.0012	0.0007
5	0.0019	0.0012	0.0007
6	0.0019	0.0012	0.0007
7	0.0019	0.0012	0.0007
8	0.0019	0.0012	0.0007
9	0.0019	0.0012	0.0007
10	0.0019	0.0012	0.0007
11	0.0019	0.0012	0.0007
12	0.0019	0.0012	0.0007
13	0.0020	0.0012	0.0007
14	0.0020	0.0012	0.0007
15	0.0020	0.0013	0.0007
16	0.0020	0.0013	0.0007
17	0.0020	0.0013	0.0007
18	0.0020	0.0013	0.0007
19	0.0020	0.0013	0.0007
20	0.0020	0.0013	0.0007
21	0.0020	0.0013	0.0007
22	0.0020	0.0013	0.0007
23	0.0020	0.0013	0.0007
24	0.0020	0.0013	0.0007
25	0.0021	0.0013	0.0008
26	0.0021	0.0013	0.0008
27	0.0021	0.0013	0.0008
28	0.0021	0.0013	0.0008
29	0.0021	0.0013	0.0008
30	0.0021	0.0013	0.0008
31	0.0021	0.0013	0.0008
32	0.0021	0.0014	0.0008
33	0.0021	0.0014	0.0008
34	0.0022	0.0014	0.0008
35	0.0022	0.0014	0.0008
36	0.0022	0.0014	0.0008
37	0.0022	0.0014	0.0008
38	0.0022	0.0014	0.0008
39	0.0022	0.0014	0.0008
40	0.0022	0.0014	0.0008
41	0.0022	0.0014	0.0008
42	0.0022	0.0014	0.0008
43	0.0023	0.0014	0.0008
44	0.0023	0.0014	0.0008
45	0.0023	0.0014	0.0008
46	0.0023	0.0015	0.0008
47	0.0023	0.0015	0.0008
48	0.0023	0.0015	0.0008
49	0.0023	0.0015	0.0009
50	0.0023	0.0015	0.0009

		EX14.out	
51	0.0024	0.0015	0.0009
52	0.0024	0.0015	0.0009
53	0.0024	0.0015	0.0009
54	0.0024	0.0015	0.0009
55	0.0024	0.0015	0.0009
56	0.0024	0.0015	0.0009
57	0.0024	0.0015	0.0009
58	0.0024	0.0016	0.0009
59	0.0025	0.0016	0.0009
60	0.0025	0.0016	0.0009
61	0.0025	0.0016	0.0009
62	0.0025	0.0016	0.0009
63	0.0025	0.0016	0.0009
64	0.0025	0.0016	0.0009
65	0.0026	0.0016	0.0009
66	0.0026	0.0016	0.0009
67	0.0026	0.0016	0.0009
68	0.0026	0.0016	0.0009
69	0.0026	0.0017	0.0010
70	0.0026	0.0017	0.0010
71	0.0027	0.0017	0.0010
72	0.0027	0.0017	0.0010
73	0.0027	0.0017	0.0010
74	0.0027	0.0017	0.0010
75	0.0027	0.0017	0.0010
76	0.0027	0.0017	0.0010
77	0.0028	0.0018	0.0010
78	0.0028	0.0018	0.0010
79	0.0028	0.0018	0.0010
80	0.0028	0.0018	0.0010
81	0.0028	0.0018	0.0010
82	0.0029	0.0018	0.0010
83	0.0029	0.0018	0.0011
84	0.0029	0.0018	0.0011
85	0.0029	0.0019	0.0011
86	0.0029	0.0019	0.0011
87	0.0030	0.0019	0.0011
88	0.0030	0.0019	0.0011
89	0.0030	0.0019	0.0011
90	0.0030	0.0019	0.0011
91	0.0031	0.0019	0.0011
92	0.0031	0.0019	0.0011
93	0.0031	0.0020	0.0011
94	0.0031	0.0020	0.0011
95	0.0032	0.0020	0.0012
96	0.0032	0.0020	0.0012
97	0.0032	0.0020	0.0012
98	0.0032	0.0020	0.0012
99	0.0033	0.0021	0.0012
100	0.0033	0.0021	0.0012
101	0.0033	0.0021	0.0012
102	0.0033	0.0021	0.0012
103	0.0034	0.0021	0.0012
104	0.0034	0.0022	0.0012
105	0.0034	0.0022	0.0013
106	0.0035	0.0022	0.0013
107	0.0035	0.0022	0.0013
108	0.0035	0.0022	0.0013
109	0.0036	0.0023	0.0013
110	0.0036	0.0023	0.0013
111	0.0036	0.0023	0.0013
112	0.0037	0.0023	0.0013
113	0.0037	0.0023	0.0014
114	0.0037	0.0024	0.0014
115	0.0038	0.0024	0.0014
116	0.0038	0.0024	0.0014
117	0.0039	0.0024	0.0014
118	0.0039	0.0025	0.0014
119	0.0039	0.0025	0.0014
120	0.0040	0.0025	0.0014
121	0.0040	0.0025	0.0015
122	0.0040	0.0026	0.0015
123	0.0041	0.0026	0.0015
124	0.0041	0.0026	0.0015
125	0.0042	0.0027	0.0015
126	0.0042	0.0027	0.0015
127	0.0043	0.0027	0.0016
128	0.0043	0.0028	0.0016

		EX14.out	
129	0.0044	0.0028	0.0016
130	0.0044	0.0028	0.0016
131	0.0045	0.0029	0.0017
132	0.0046	0.0029	0.0017
133	0.0046	0.0029	0.0017
134	0.0047	0.0030	0.0017
135	0.0048	0.0030	0.0017
136	0.0048	0.0031	0.0018
137	0.0049	0.0031	0.0018
138	0.0049	0.0031	0.0018
139	0.0050	0.0032	0.0018
140	0.0051	0.0032	0.0019
141	0.0052	0.0033	0.0019
142	0.0052	0.0033	0.0019
143	0.0054	0.0034	0.0020
144	0.0054	0.0034	0.0020
145	0.0043	0.0028	0.0016
146	0.0044	0.0028	0.0016
147	0.0045	0.0029	0.0016
148	0.0046	0.0029	0.0017
149	0.0047	0.0030	0.0017
150	0.0047	0.0030	0.0017
151	0.0049	0.0031	0.0018
152	0.0049	0.0031	0.0018
153	0.0051	0.0032	0.0018
154	0.0051	0.0033	0.0019
155	0.0053	0.0033	0.0019
156	0.0054	0.0034	0.0020
157	0.0055	0.0035	0.0020
158	0.0056	0.0036	0.0021
159	0.0058	0.0037	0.0021
160	0.0059	0.0037	0.0022
161	0.0061	0.0039	0.0022
162	0.0062	0.0039	0.0023
163	0.0064	0.0041	0.0024
164	0.0066	0.0042	0.0024
165	0.0068	0.0043	0.0025
166	0.0070	0.0044	0.0025
167	0.0073	0.0046	0.0027
168	0.0074	0.0047	0.0027
169	0.0078	0.0050	0.0029
170	0.0080	0.0051	0.0029
171	0.0084	0.0053	0.0031
172	0.0086	0.0055	0.0032
173	0.0091	0.0058	0.0033
174	0.0094	0.0060	0.0034
175	0.0100	0.0063	0.0036
176	0.0103	0.0065	0.0038
177	0.0110	0.0070	0.0040
178	0.0114	0.0073	0.0042
179	0.0124	0.0078	0.0045
180	0.0129	0.0082	0.0047
181	0.0141	0.0089	0.0051
182	0.0148	0.0094	0.0054
183	0.0165	0.0104	0.0060
184	0.0175	0.0111	0.0064
185	0.0350	0.0222	0.0128
186	0.0373	0.0236	0.0136
187	0.0432	0.0274	0.0158
188	0.0472	0.0299	0.0173
189	0.0587	0.0300	0.0287
190	0.0676	0.0300	0.0376
191	0.1026	0.0300	0.0726
192	0.1489	0.0300	0.1189
193	0.6441	0.0300	0.6141
194	0.0807	0.0300	0.0508
195	0.0522	0.0300	0.0222
196	0.0400	0.0254	0.0146
197	0.0186	0.0118	0.0068
198	0.0156	0.0099	0.0057
199	0.0135	0.0085	0.0049
200	0.0119	0.0075	0.0043
201	0.0107	0.0068	0.0039
202	0.0097	0.0061	0.0035
203	0.0089	0.0056	0.0032
204	0.0082	0.0052	0.0030
205	0.0076	0.0048	0.0028
206	0.0071	0.0045	0.0026

		EX14.out	
207	0.0067	0.0042	0.0024
208	0.0063	0.0040	0.0023
209	0.0060	0.0038	0.0022
210	0.0057	0.0036	0.0021
211	0.0054	0.0035	0.0020
212	0.0052	0.0033	0.0019
213	0.0050	0.0032	0.0018
214	0.0048	0.0030	0.0018
215	0.0046	0.0029	0.0017
216	0.0044	0.0028	0.0016
217	0.0055	0.0035	0.0020
218	0.0053	0.0034	0.0019
219	0.0051	0.0033	0.0019
220	0.0050	0.0032	0.0018
221	0.0049	0.0031	0.0018
222	0.0047	0.0030	0.0017
223	0.0046	0.0029	0.0017
224	0.0045	0.0028	0.0016
225	0.0044	0.0028	0.0016
226	0.0043	0.0027	0.0016
227	0.0042	0.0026	0.0015
228	0.0041	0.0026	0.0015
229	0.0040	0.0025	0.0015
230	0.0039	0.0025	0.0014
231	0.0038	0.0024	0.0014
232	0.0037	0.0024	0.0014
233	0.0037	0.0023	0.0013
234	0.0036	0.0023	0.0013
235	0.0035	0.0022	0.0013
236	0.0035	0.0022	0.0013
237	0.0034	0.0022	0.0012
238	0.0034	0.0021	0.0012
239	0.0033	0.0021	0.0012
240	0.0032	0.0021	0.0012
241	0.0032	0.0020	0.0012
242	0.0031	0.0020	0.0011
243	0.0031	0.0020	0.0011
244	0.0030	0.0019	0.0011
245	0.0030	0.0019	0.0011
246	0.0029	0.0019	0.0011
247	0.0029	0.0018	0.0011
248	0.0029	0.0018	0.0010
249	0.0028	0.0018	0.0010
250	0.0028	0.0018	0.0010
251	0.0027	0.0017	0.0010
252	0.0027	0.0017	0.0010
253	0.0027	0.0017	0.0010
254	0.0026	0.0017	0.0010
255	0.0026	0.0017	0.0010
256	0.0026	0.0016	0.0009
257	0.0025	0.0016	0.0009
258	0.0025	0.0016	0.0009
259	0.0025	0.0016	0.0009
260	0.0025	0.0016	0.0009
261	0.0024	0.0015	0.0009
262	0.0024	0.0015	0.0009
263	0.0024	0.0015	0.0009
264	0.0023	0.0015	0.0009
265	0.0023	0.0015	0.0008
266	0.0023	0.0015	0.0008
267	0.0023	0.0014	0.0008
268	0.0022	0.0014	0.0008
269	0.0022	0.0014	0.0008
270	0.0022	0.0014	0.0008
271	0.0022	0.0014	0.0008
272	0.0022	0.0014	0.0008
273	0.0021	0.0014	0.0008
274	0.0021	0.0013	0.0008
275	0.0021	0.0013	0.0008
276	0.0021	0.0013	0.0008
277	0.0021	0.0013	0.0008
278	0.0020	0.0013	0.0007
279	0.0020	0.0013	0.0007
280	0.0020	0.0013	0.0007
281	0.0020	0.0013	0.0007
282	0.0020	0.0012	0.0007
283	0.0019	0.0012	0.0007
284	0.0019	0.0012	0.0007

EX14.out

285	0.0019	0.0012	0.0007
286	0.0019	0.0012	0.0007
287	0.0019	0.0012	0.0007
288	0.0019	0.0012	0.0007

Total soil rain loss = 1.05(In)
Total effective rainfall = 1.43(In)
Peak flow rate in flood hydrograph = 116.04(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	50.0	100.0	150.0	200.0
0+ 5	0.0001	0.01	Q					
0+10	0.0009	0.11	Q					
0+15	0.0024	0.22	Q					
0+20	0.0042	0.26	Q					
0+25	0.0061	0.29	Q					
0+30	0.0082	0.30	Q					
0+35	0.0104	0.32	Q					
0+40	0.0127	0.33	Q					
0+45	0.0150	0.34	Q					
0+50	0.0173	0.34	Q					
0+55	0.0197	0.35	Q					
1+ 0	0.0221	0.35	Q					
1+ 5	0.0246	0.35	Q					
1+10	0.0270	0.36	Q					
1+15	0.0295	0.36	Q					
1+20	0.0320	0.36	Q					
1+25	0.0345	0.36	Q					
1+30	0.0370	0.36	Q					
1+35	0.0395	0.37	Q					
1+40	0.0421	0.37	Q					
1+45	0.0446	0.37	Q					
1+50	0.0472	0.37	Q					
1+55	0.0497	0.37	Q					
2+ 0	0.0523	0.37	Q					
2+ 5	0.0549	0.38	Q					
2+10	0.0575	0.38	Q					
2+15	0.0601	0.38	Q					
2+20	0.0628	0.38	Q					
2+25	0.0654	0.38	Q					
2+30	0.0681	0.39	Q					
2+35	0.0707	0.39	Q					
2+40	0.0734	0.39	Q					
2+45	0.0761	0.39	Q					
2+50	0.0788	0.39	Q					
2+55	0.0815	0.39	Q					
3+ 0	0.0843	0.40	Q					
3+ 5	0.0870	0.40	Q					
3+10	0.0898	0.40	Q					
3+15	0.0925	0.40	Q					
3+20	0.0953	0.40	Q					
3+25	0.0981	0.41	Q					
3+30	0.1010	0.41	Q					
3+35	0.1038	0.41	Q					
3+40	0.1066	0.41	Q					
3+45	0.1095	0.42	Q					
3+50	0.1124	0.42	Q					
3+55	0.1153	0.42	Q					
4+ 0	0.1182	0.42	Q					
4+ 5	0.1211	0.42	Q					
4+10	0.1240	0.43	Q					
4+15	0.1270	0.43	QV					
4+20	0.1299	0.43	QV					
4+25	0.1329	0.43	QV					
4+30	0.1359	0.44	QV					
4+35	0.1389	0.44	QV					
4+40	0.1420	0.44	QV					
4+45	0.1450	0.44	QV					
4+50	0.1481	0.45	QV					
4+55	0.1512	0.45	QV					

5+ 0	0.1543	0.45	QV
5+ 5	0.1574	0.45	QV
5+10	0.1606	0.46	QV
5+15	0.1637	0.46	QV
5+20	0.1669	0.46	QV
5+25	0.1701	0.46	QV
5+30	0.1733	0.47	QV
5+35	0.1766	0.47	QV
5+40	0.1798	0.47	QV
5+45	0.1831	0.48	QV
5+50	0.1864	0.48	QV
5+55	0.1897	0.48	QV
6+ 0	0.1931	0.48	QV
6+ 5	0.1964	0.49	QV
6+10	0.1998	0.49	QV
6+15	0.2032	0.49	QV
6+20	0.2066	0.50	QV
6+25	0.2101	0.50	QV
6+30	0.2136	0.50	QV
6+35	0.2170	0.51	QV
6+40	0.2206	0.51	QV
6+45	0.2241	0.51	QV
6+50	0.2277	0.52	QV
6+55	0.2313	0.52	QV
7+ 0	0.2349	0.53	QV
7+ 5	0.2385	0.53	QV
7+10	0.2422	0.53	QV
7+15	0.2459	0.54	QV
7+20	0.2496	0.54	Q V
7+25	0.2534	0.54	Q V
7+30	0.2572	0.55	Q V
7+35	0.2610	0.55	Q V
7+40	0.2648	0.56	Q V
7+45	0.2687	0.56	Q V
7+50	0.2726	0.57	Q V
7+55	0.2765	0.57	Q V
8+ 0	0.2804	0.57	Q V
8+ 5	0.2844	0.58	Q V
8+10	0.2885	0.58	Q V
8+15	0.2925	0.59	Q V
8+20	0.2966	0.59	Q V
8+25	0.3007	0.60	Q V
8+30	0.3049	0.60	Q V
8+35	0.3091	0.61	Q V
8+40	0.3133	0.61	Q V
8+45	0.3175	0.62	Q V
8+50	0.3218	0.62	Q V
8+55	0.3262	0.63	Q V
9+ 0	0.3306	0.64	Q V
9+ 5	0.3350	0.64	Q V
9+10	0.3394	0.65	Q V
9+15	0.3439	0.65	Q V
9+20	0.3485	0.66	Q V
9+25	0.3531	0.67	Q V
9+30	0.3577	0.67	Q V
9+35	0.3624	0.68	Q V
9+40	0.3671	0.69	Q V
9+45	0.3718	0.69	Q V
9+50	0.3766	0.70	Q V
9+55	0.3815	0.71	Q V
10+ 0	0.3864	0.71	Q V
10+ 5	0.3914	0.72	Q V
10+10	0.3964	0.73	Q V
10+15	0.4015	0.74	Q V
10+20	0.4066	0.74	Q V
10+25	0.4118	0.75	Q V
10+30	0.4170	0.76	Q V
10+35	0.4223	0.77	Q V
10+40	0.4277	0.78	Q V
10+45	0.4331	0.79	Q V
10+50	0.4386	0.80	Q V
10+55	0.4442	0.81	Q V
11+ 0	0.4498	0.82	Q V
11+ 5	0.4555	0.83	Q V
11+10	0.4613	0.84	Q V
11+15	0.4671	0.85	Q V
11+20	0.4730	0.86	Q V
11+25	0.4790	0.87	Q V

EX14.out

24+30	4.9842	0.04	Q				V
24+35	4.9844	0.03	Q				V
24+40	4.9846	0.02	Q				V
24+45	4.9847	0.02	Q				V
24+50	4.9848	0.01	Q				V
24+55	4.9848	0.01	Q				V
25+ 0	4.9849	0.01	Q				V
25+ 5	4.9849	0.00	Q				V
25+10	4.9849	0.00	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
EXISTING CONDITIONS AREA 1.5
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
165.80	1	1.36

Rainfall data for year 100		
165.80	6	1.83

Rainfall data for year 100		
165.80	24	2.53

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve No.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
60.2	79.2	165.80	1.000	0.384	1.000	0.384

Area-averaged adjusted loss rate Fm (In/Hr) = 0.384

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
165.80	1.000	60.2	79.2	2.63	0.342

Area-averaged catchment yield fraction, Y = 0.342

Area-averaged low loss fraction, Yb = 0.658

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Watercourse length = 2634.00(Ft.)
 Length from concentration point to centroid = 1317.00(Ft.)
 Elevation difference along watercourse = 11.00(Ft.)
 Mannings friction factor along watercourse = 0.035
 Watershed area = 165.80(Ac.)
 Catchment Lag time = 0.211 hours
 Unit interval = 5.000 minutes
 Unit interval percentage of lag time = 39.4196
 Hydrograph baseflow = 0.00(CFS)

EX15.out
Average maximum watershed loss rate(Fm) = 0.384(In/Hr)
Average low loss rate fraction (Yb) = 0.658 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.645(In)
Computed peak 30-minute rainfall = 1.105(In)
Specified peak 1-hour rainfall = 1.360(In)
Computed peak 3-hour rainfall = 1.631(In)
Specified peak 6-hour rainfall = 1.830(In)
Specified peak 24-hour rainfall = 2.530(In)

Rainfall depth area reduction factors:
Using a total area of 165.80(Ac.) (Ref: fig. E-4)

5-minute factor = 0.992	Adjusted rainfall = 0.640(In)
30-minute factor = 0.992	Adjusted rainfall = 1.096(In)
1-hour factor = 0.992	Adjusted rainfall = 1.349(In)
3-hour factor = 0.999	Adjusted rainfall = 1.630(In)
6-hour factor = 0.999	Adjusted rainfall = 1.829(In)
24-hour factor = 1.000	Adjusted rainfall = 2.529(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 2005.14 (CFS))	
1	2.685	53.836
2	18.043	307.961
3	48.301	606.713
4	65.039	335.614
5	74.308	185.856
6	80.474	123.648
7	84.870	88.138
8	88.292	68.615
9	90.757	49.422
10	92.757	40.102
11	94.369	32.320
12	95.659	25.880
13	96.696	20.781
14	97.479	15.700
15	98.016	10.772
16	98.434	8.384
17	98.905	9.446
18	99.371	9.352
19	99.683	6.245
20	100.000	3.122

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6403	0.6403
2	0.7883	0.1480
3	0.8903	0.1020
4	0.9705	0.0802
5	1.0377	0.0672
6	1.0961	0.0583
7	1.1480	0.0519
8	1.1949	0.0469
9	1.2379	0.0430
10	1.2776	0.0398
11	1.3147	0.0371
12	1.3494	0.0348
13	1.3681	0.0187
14	1.3857	0.0175
15	1.4022	0.0165
16	1.4178	0.0156
17	1.4327	0.0149
18	1.4468	0.0141
19	1.4603	0.0135
20	1.4733	0.0129
21	1.4857	0.0124
22	1.4976	0.0119
23	1.5091	0.0115
24	1.5202	0.0111
25	1.5309	0.0107
26	1.5412	0.0104

		EX15.out
27	1.5512	0.0100
28	1.5610	0.0097
29	1.5704	0.0094
30	1.5796	0.0092
31	1.5885	0.0089
32	1.5972	0.0087
33	1.6057	0.0085
34	1.6139	0.0083
35	1.6220	0.0081
36	1.6299	0.0079
37	1.6373	0.0074
38	1.6446	0.0073
39	1.6517	0.0071
40	1.6587	0.0070
41	1.6655	0.0068
42	1.6722	0.0067
43	1.6788	0.0066
44	1.6852	0.0064
45	1.6915	0.0063
46	1.6977	0.0062
47	1.7038	0.0061
48	1.7098	0.0060
49	1.7156	0.0059
50	1.7214	0.0058
51	1.7271	0.0057
52	1.7327	0.0056
53	1.7382	0.0055
54	1.7436	0.0054
55	1.7489	0.0053
56	1.7542	0.0052
57	1.7593	0.0052
58	1.7644	0.0051
59	1.7695	0.0050
60	1.7744	0.0050
61	1.7793	0.0049
62	1.7841	0.0048
63	1.7889	0.0048
64	1.7936	0.0047
65	1.7982	0.0046
66	1.8028	0.0046
67	1.8073	0.0045
68	1.8117	0.0045
69	1.8161	0.0044
70	1.8205	0.0044
71	1.8248	0.0043
72	1.8291	0.0043
73	1.8350	0.0059
74	1.8408	0.0058
75	1.8466	0.0058
76	1.8523	0.0057
77	1.8580	0.0057
78	1.8636	0.0056
79	1.8692	0.0056
80	1.8747	0.0055
81	1.8801	0.0055
82	1.8855	0.0054
83	1.8909	0.0054
84	1.8962	0.0053
85	1.9015	0.0053
86	1.9067	0.0052
87	1.9118	0.0052
88	1.9169	0.0051
89	1.9220	0.0051
90	1.9270	0.0050
91	1.9320	0.0050
92	1.9370	0.0049
93	1.9419	0.0049
94	1.9467	0.0049
95	1.9516	0.0048
96	1.9563	0.0048
97	1.9611	0.0047
98	1.9658	0.0047
99	1.9705	0.0047
100	1.9751	0.0046
101	1.9797	0.0046
102	1.9843	0.0046
103	1.9888	0.0045
104	1.9933	0.0045

		EX15.out
105	1.9978	0.0045
106	2.0022	0.0044
107	2.0066	0.0044
108	2.0110	0.0044
109	2.0153	0.0043
110	2.0196	0.0043
111	2.0239	0.0043
112	2.0282	0.0042
113	2.0324	0.0042
114	2.0366	0.0042
115	2.0407	0.0042
116	2.0449	0.0041
117	2.0490	0.0041
118	2.0531	0.0041
119	2.0571	0.0041
120	2.0612	0.0040
121	2.0652	0.0040
122	2.0691	0.0040
123	2.0731	0.0040
124	2.0770	0.0039
125	2.0809	0.0039
126	2.0848	0.0039
127	2.0887	0.0039
128	2.0925	0.0038
129	2.0963	0.0038
130	2.1001	0.0038
131	2.1039	0.0038
132	2.1076	0.0037
133	2.1113	0.0037
134	2.1150	0.0037
135	2.1187	0.0037
136	2.1224	0.0037
137	2.1260	0.0036
138	2.1296	0.0036
139	2.1332	0.0036
140	2.1368	0.0036
141	2.1404	0.0036
142	2.1439	0.0035
143	2.1474	0.0035
144	2.1509	0.0035
145	2.1544	0.0035
146	2.1579	0.0035
147	2.1613	0.0034
148	2.1648	0.0034
149	2.1682	0.0034
150	2.1716	0.0034
151	2.1750	0.0034
152	2.1783	0.0034
153	2.1817	0.0033
154	2.1850	0.0033
155	2.1883	0.0033
156	2.1916	0.0033
157	2.1949	0.0033
158	2.1981	0.0033
159	2.2014	0.0032
160	2.2046	0.0032
161	2.2078	0.0032
162	2.2110	0.0032
163	2.2142	0.0032
164	2.2174	0.0032
165	2.2205	0.0032
166	2.2237	0.0031
167	2.2268	0.0031
168	2.2299	0.0031
169	2.2330	0.0031
170	2.2361	0.0031
171	2.2391	0.0031
172	2.2422	0.0031
173	2.2452	0.0030
174	2.2483	0.0030
175	2.2513	0.0030
176	2.2543	0.0030
177	2.2573	0.0030
178	2.2603	0.0030
179	2.2632	0.0030
180	2.2662	0.0030
181	2.2691	0.0029
182	2.2720	0.0029

		EX15.out
183	2.2749	0.0029
184	2.2778	0.0029
185	2.2807	0.0029
186	2.2836	0.0029
187	2.2865	0.0029
188	2.2893	0.0029
189	2.2922	0.0028
190	2.2950	0.0028
191	2.2978	0.0028
192	2.3006	0.0028
193	2.3034	0.0028
194	2.3062	0.0028
195	2.3090	0.0028
196	2.3118	0.0028
197	2.3145	0.0028
198	2.3173	0.0027
199	2.3200	0.0027
200	2.3227	0.0027
201	2.3254	0.0027
202	2.3281	0.0027
203	2.3308	0.0027
204	2.3335	0.0027
205	2.3362	0.0027
206	2.3388	0.0027
207	2.3415	0.0027
208	2.3441	0.0026
209	2.3467	0.0026
210	2.3494	0.0026
211	2.3520	0.0026
212	2.3546	0.0026
213	2.3572	0.0026
214	2.3598	0.0026
215	2.3623	0.0026
216	2.3649	0.0026
217	2.3674	0.0026
218	2.3700	0.0025
219	2.3725	0.0025
220	2.3751	0.0025
221	2.3776	0.0025
222	2.3801	0.0025
223	2.3826	0.0025
224	2.3851	0.0025
225	2.3876	0.0025
226	2.3901	0.0025
227	2.3925	0.0025
228	2.3950	0.0025
229	2.3974	0.0025
230	2.3999	0.0024
231	2.4023	0.0024
232	2.4047	0.0024
233	2.4072	0.0024
234	2.4096	0.0024
235	2.4120	0.0024
236	2.4144	0.0024
237	2.4168	0.0024
238	2.4191	0.0024
239	2.4215	0.0024
240	2.4239	0.0024
241	2.4262	0.0024
242	2.4286	0.0024
243	2.4309	0.0023
244	2.4333	0.0023
245	2.4356	0.0023
246	2.4379	0.0023
247	2.4402	0.0023
248	2.4425	0.0023
249	2.4448	0.0023
250	2.4471	0.0023
251	2.4494	0.0023
252	2.4517	0.0023
253	2.4540	0.0023
254	2.4562	0.0023
255	2.4585	0.0023
256	2.4607	0.0023
257	2.4630	0.0022
258	2.4652	0.0022
259	2.4675	0.0022
260	2.4697	0.0022

		EX15.out
261	2.4719	0.0022
262	2.4741	0.0022
263	2.4763	0.0022
264	2.4785	0.0022
265	2.4807	0.0022
266	2.4829	0.0022
267	2.4851	0.0022
268	2.4873	0.0022
269	2.4894	0.0022
270	2.4916	0.0022
271	2.4937	0.0022
272	2.4959	0.0021
273	2.4980	0.0021
274	2.5002	0.0021
275	2.5023	0.0021
276	2.5044	0.0021
277	2.5065	0.0021
278	2.5087	0.0021
279	2.5108	0.0021
280	2.5129	0.0021
281	2.5150	0.0021
282	2.5171	0.0021
283	2.5191	0.0021
284	2.5212	0.0021
285	2.5233	0.0021
286	2.5254	0.0021
287	2.5274	0.0021
288	2.5295	0.0021

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0021	0.0014	0.0007
2	0.0021	0.0014	0.0007
3	0.0021	0.0014	0.0007
4	0.0021	0.0014	0.0007
5	0.0021	0.0014	0.0007
6	0.0021	0.0014	0.0007
7	0.0021	0.0014	0.0007
8	0.0021	0.0014	0.0007
9	0.0021	0.0014	0.0007
10	0.0021	0.0014	0.0007
11	0.0021	0.0014	0.0007
12	0.0021	0.0014	0.0007
13	0.0022	0.0014	0.0007
14	0.0022	0.0014	0.0007
15	0.0022	0.0014	0.0007
16	0.0022	0.0014	0.0007
17	0.0022	0.0014	0.0008
18	0.0022	0.0015	0.0008
19	0.0022	0.0015	0.0008
20	0.0022	0.0015	0.0008
21	0.0022	0.0015	0.0008
22	0.0022	0.0015	0.0008
23	0.0023	0.0015	0.0008
24	0.0023	0.0015	0.0008
25	0.0023	0.0015	0.0008
26	0.0023	0.0015	0.0008
27	0.0023	0.0015	0.0008
28	0.0023	0.0015	0.0008
29	0.0023	0.0015	0.0008
30	0.0023	0.0015	0.0008
31	0.0023	0.0015	0.0008
32	0.0024	0.0015	0.0008
33	0.0024	0.0016	0.0008
34	0.0024	0.0016	0.0008
35	0.0024	0.0016	0.0008
36	0.0024	0.0016	0.0008
37	0.0024	0.0016	0.0008
38	0.0024	0.0016	0.0008
39	0.0024	0.0016	0.0008
40	0.0024	0.0016	0.0008
41	0.0025	0.0016	0.0008
42	0.0025	0.0016	0.0008
43	0.0025	0.0016	0.0009
44	0.0025	0.0016	0.0009
45	0.0025	0.0017	0.0009

		EX15.out	
46	0.0025	0.0017	0.0009
47	0.0025	0.0017	0.0009
48	0.0025	0.0017	0.0009
49	0.0026	0.0017	0.0009
50	0.0026	0.0017	0.0009
51	0.0026	0.0017	0.0009
52	0.0026	0.0017	0.0009
53	0.0026	0.0017	0.0009
54	0.0026	0.0017	0.0009
55	0.0027	0.0017	0.0009
56	0.0027	0.0017	0.0009
57	0.0027	0.0018	0.0009
58	0.0027	0.0018	0.0009
59	0.0027	0.0018	0.0009
60	0.0027	0.0018	0.0009
61	0.0027	0.0018	0.0009
62	0.0028	0.0018	0.0009
63	0.0028	0.0018	0.0009
64	0.0028	0.0018	0.0010
65	0.0028	0.0018	0.0010
66	0.0028	0.0019	0.0010
67	0.0028	0.0019	0.0010
68	0.0029	0.0019	0.0010
69	0.0029	0.0019	0.0010
70	0.0029	0.0019	0.0010
71	0.0029	0.0019	0.0010
72	0.0029	0.0019	0.0010
73	0.0030	0.0019	0.0010
74	0.0030	0.0019	0.0010
75	0.0030	0.0020	0.0010
76	0.0030	0.0020	0.0010
77	0.0030	0.0020	0.0010
78	0.0030	0.0020	0.0010
79	0.0031	0.0020	0.0011
80	0.0031	0.0020	0.0011
81	0.0031	0.0020	0.0011
82	0.0031	0.0021	0.0011
83	0.0032	0.0021	0.0011
84	0.0032	0.0021	0.0011
85	0.0032	0.0021	0.0011
86	0.0032	0.0021	0.0011
87	0.0032	0.0021	0.0011
88	0.0033	0.0021	0.0011
89	0.0033	0.0022	0.0011
90	0.0033	0.0022	0.0011
91	0.0033	0.0022	0.0011
92	0.0034	0.0022	0.0011
93	0.0034	0.0022	0.0012
94	0.0034	0.0022	0.0012
95	0.0034	0.0023	0.0012
96	0.0035	0.0023	0.0012
97	0.0035	0.0023	0.0012
98	0.0035	0.0023	0.0012
99	0.0036	0.0023	0.0012
100	0.0036	0.0024	0.0012
101	0.0036	0.0024	0.0012
102	0.0036	0.0024	0.0012
103	0.0037	0.0024	0.0013
104	0.0037	0.0024	0.0013
105	0.0037	0.0025	0.0013
106	0.0038	0.0025	0.0013
107	0.0038	0.0025	0.0013
108	0.0038	0.0025	0.0013
109	0.0039	0.0026	0.0013
110	0.0039	0.0026	0.0013
111	0.0040	0.0026	0.0014
112	0.0040	0.0026	0.0014
113	0.0040	0.0027	0.0014
114	0.0041	0.0027	0.0014
115	0.0041	0.0027	0.0014
116	0.0041	0.0027	0.0014
117	0.0042	0.0028	0.0014
118	0.0042	0.0028	0.0014
119	0.0043	0.0028	0.0015
120	0.0043	0.0028	0.0015
121	0.0044	0.0029	0.0015
122	0.0044	0.0029	0.0015
123	0.0045	0.0029	0.0015

		EX15.out	
124	0.0045	0.0030	0.0015
125	0.0046	0.0030	0.0016
126	0.0046	0.0030	0.0016
127	0.0047	0.0031	0.0016
128	0.0047	0.0031	0.0016
129	0.0048	0.0031	0.0016
130	0.0048	0.0032	0.0017
131	0.0049	0.0032	0.0017
132	0.0049	0.0033	0.0017
133	0.0050	0.0033	0.0017
134	0.0051	0.0033	0.0017
135	0.0052	0.0034	0.0018
136	0.0052	0.0034	0.0018
137	0.0053	0.0035	0.0018
138	0.0054	0.0035	0.0018
139	0.0055	0.0036	0.0019
140	0.0055	0.0036	0.0019
141	0.0056	0.0037	0.0019
142	0.0057	0.0037	0.0019
143	0.0058	0.0038	0.0020
144	0.0058	0.0038	0.0020
145	0.0043	0.0028	0.0015
146	0.0043	0.0028	0.0015
147	0.0044	0.0029	0.0015
148	0.0045	0.0029	0.0015
149	0.0046	0.0030	0.0016
150	0.0046	0.0030	0.0016
151	0.0048	0.0031	0.0016
152	0.0048	0.0032	0.0016
153	0.0050	0.0033	0.0017
154	0.0050	0.0033	0.0017
155	0.0052	0.0034	0.0018
156	0.0052	0.0035	0.0018
157	0.0054	0.0036	0.0019
158	0.0055	0.0036	0.0019
159	0.0057	0.0037	0.0019
160	0.0058	0.0038	0.0020
161	0.0060	0.0039	0.0020
162	0.0061	0.0040	0.0021
163	0.0063	0.0042	0.0022
164	0.0064	0.0042	0.0022
165	0.0067	0.0044	0.0023
166	0.0068	0.0045	0.0023
167	0.0071	0.0047	0.0024
168	0.0073	0.0048	0.0025
169	0.0079	0.0052	0.0027
170	0.0081	0.0053	0.0028
171	0.0085	0.0056	0.0029
172	0.0087	0.0057	0.0030
173	0.0092	0.0060	0.0031
174	0.0094	0.0062	0.0032
175	0.0100	0.0066	0.0034
176	0.0104	0.0068	0.0035
177	0.0111	0.0073	0.0038
178	0.0115	0.0076	0.0039
179	0.0124	0.0082	0.0042
180	0.0129	0.0085	0.0044
181	0.0141	0.0093	0.0048
182	0.0149	0.0098	0.0051
183	0.0165	0.0109	0.0057
184	0.0175	0.0115	0.0060
185	0.0348	0.0229	0.0119
186	0.0371	0.0244	0.0127
187	0.0430	0.0283	0.0147
188	0.0469	0.0309	0.0161
189	0.0583	0.0320	0.0263
190	0.0672	0.0320	0.0352
191	0.1020	0.0320	0.0700
192	0.1480	0.0320	0.1160
193	0.6403	0.0320	0.6083
194	0.0802	0.0320	0.0482
195	0.0519	0.0320	0.0199
196	0.0398	0.0261	0.0136
197	0.0187	0.0123	0.0064
198	0.0156	0.0103	0.0054
199	0.0135	0.0089	0.0046
200	0.0119	0.0078	0.0041
201	0.0107	0.0070	0.0037

		EX15.out	
202	0.0097	0.0064	0.0033
203	0.0089	0.0059	0.0031
204	0.0083	0.0054	0.0028
205	0.0074	0.0049	0.0025
206	0.0070	0.0046	0.0024
207	0.0066	0.0043	0.0022
208	0.0062	0.0041	0.0021
209	0.0059	0.0039	0.0020
210	0.0056	0.0037	0.0019
211	0.0053	0.0035	0.0018
212	0.0051	0.0034	0.0017
213	0.0049	0.0032	0.0017
214	0.0047	0.0031	0.0016
215	0.0045	0.0030	0.0015
216	0.0044	0.0029	0.0015
217	0.0059	0.0039	0.0020
218	0.0057	0.0038	0.0020
219	0.0056	0.0037	0.0019
220	0.0054	0.0036	0.0018
221	0.0053	0.0035	0.0018
222	0.0051	0.0034	0.0018
223	0.0050	0.0033	0.0017
224	0.0049	0.0032	0.0017
225	0.0047	0.0031	0.0016
226	0.0046	0.0031	0.0016
227	0.0045	0.0030	0.0016
228	0.0044	0.0029	0.0015
229	0.0043	0.0029	0.0015
230	0.0042	0.0028	0.0015
231	0.0042	0.0027	0.0014
232	0.0041	0.0027	0.0014
233	0.0040	0.0026	0.0014
234	0.0039	0.0026	0.0013
235	0.0039	0.0025	0.0013
236	0.0038	0.0025	0.0013
237	0.0037	0.0024	0.0013
238	0.0037	0.0024	0.0013
239	0.0036	0.0024	0.0012
240	0.0035	0.0023	0.0012
241	0.0035	0.0023	0.0012
242	0.0034	0.0023	0.0012
243	0.0034	0.0022	0.0012
244	0.0033	0.0022	0.0011
245	0.0033	0.0022	0.0011
246	0.0032	0.0021	0.0011
247	0.0032	0.0021	0.0011
248	0.0031	0.0021	0.0011
249	0.0031	0.0020	0.0011
250	0.0031	0.0020	0.0010
251	0.0030	0.0020	0.0010
252	0.0030	0.0020	0.0010
253	0.0029	0.0019	0.0010
254	0.0029	0.0019	0.0010
255	0.0029	0.0019	0.0010
256	0.0028	0.0019	0.0010
257	0.0028	0.0018	0.0010
258	0.0028	0.0018	0.0009
259	0.0027	0.0018	0.0009
260	0.0027	0.0018	0.0009
261	0.0027	0.0018	0.0009
262	0.0026	0.0017	0.0009
263	0.0026	0.0017	0.0009
264	0.0026	0.0017	0.0009
265	0.0026	0.0017	0.0009
266	0.0025	0.0017	0.0009
267	0.0025	0.0016	0.0009
268	0.0025	0.0016	0.0008
269	0.0025	0.0016	0.0008
270	0.0024	0.0016	0.0008
271	0.0024	0.0016	0.0008
272	0.0024	0.0016	0.0008
273	0.0024	0.0016	0.0008
274	0.0023	0.0015	0.0008
275	0.0023	0.0015	0.0008
276	0.0023	0.0015	0.0008
277	0.0023	0.0015	0.0008
278	0.0023	0.0015	0.0008
279	0.0022	0.0015	0.0008

280	0.0022	0.0015	0.0008
281	0.0022	0.0014	0.0008
282	0.0022	0.0014	0.0007
283	0.0022	0.0014	0.0007
284	0.0021	0.0014	0.0007
285	0.0021	0.0014	0.0007
286	0.0021	0.0014	0.0007
287	0.0021	0.0014	0.0007
288	0.0021	0.0014	0.0007

Total soil rain loss = 1.13(In)
Total effective rainfall = 1.40(In)
Peak flow rate in flood hydrograph = 446.89(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	125.0	250.0	375.0	500.0
0+ 5	0.0003	0.04	Q					
0+10	0.0020	0.25	Q					
0+15	0.0067	0.68	Q					
0+20	0.0131	0.92	Q					
0+25	0.0203	1.06	Q					
0+30	0.0282	1.15	Q					
0+35	0.0366	1.21	Q					
0+40	0.0453	1.27	Q					
0+45	0.0543	1.31	Q					
0+50	0.0635	1.34	Q					
0+55	0.0730	1.37	Q					
1+ 0	0.0826	1.39	Q					
1+ 5	0.0923	1.41	Q					
1+10	0.1021	1.43	Q					
1+15	0.1121	1.44	Q					
1+20	0.1221	1.46	Q					
1+25	0.1322	1.47	Q					
1+30	0.1424	1.48	Q					
1+35	0.1527	1.49	Q					
1+40	0.1630	1.50	Q					
1+45	0.1734	1.51	Q					
1+50	0.1838	1.51	Q					
1+55	0.1943	1.52	Q					
2+ 0	0.2048	1.53	Q					
2+ 5	0.2154	1.53	Q					
2+10	0.2260	1.54	Q					
2+15	0.2367	1.55	Q					
2+20	0.2474	1.56	Q					
2+25	0.2581	1.56	Q					
2+30	0.2690	1.57	Q					
2+35	0.2798	1.58	Q					
2+40	0.2907	1.58	Q					
2+45	0.3017	1.59	Q					
2+50	0.3127	1.60	Q					
2+55	0.3238	1.61	Q					
3+ 0	0.3349	1.61	Q					
3+ 5	0.3460	1.62	Q					
3+10	0.3573	1.63	Q					
3+15	0.3686	1.64	Q					
3+20	0.3799	1.65	Q					
3+25	0.3913	1.65	Q					
3+30	0.4027	1.66	Q					
3+35	0.4142	1.67	Q					
3+40	0.4258	1.68	Q					
3+45	0.4374	1.69	Q					
3+50	0.4491	1.70	Q					
3+55	0.4608	1.70	Q					
4+ 0	0.4726	1.71	Q					
4+ 5	0.4845	1.72	QV					
4+10	0.4964	1.73	QV					
4+15	0.5084	1.74	QV					
4+20	0.5204	1.75	QV					
4+25	0.5326	1.76	QV					
4+30	0.5447	1.77	QV					

4+35	0.5570	1.78	QV
4+40	0.5693	1.79	QV
4+45	0.5817	1.80	QV
4+50	0.5941	1.81	QV
4+55	0.6066	1.82	QV
5+ 0	0.6192	1.83	QV
5+ 5	0.6319	1.84	QV
5+10	0.6446	1.85	QV
5+15	0.6574	1.86	QV
5+20	0.6703	1.87	QV
5+25	0.6832	1.88	QV
5+30	0.6963	1.89	QV
5+35	0.7094	1.90	QV
5+40	0.7225	1.91	QV
5+45	0.7358	1.93	QV
5+50	0.7491	1.94	QV
5+55	0.7626	1.95	QV
6+ 0	0.7761	1.96	QV
6+ 5	0.7897	1.97	QV
6+10	0.8033	1.99	QV
6+15	0.8171	2.00	QV
6+20	0.8310	2.01	QV
6+25	0.8449	2.02	QV
6+30	0.8589	2.04	QV
6+35	0.8730	2.05	QV
6+40	0.8872	2.06	QV
6+45	0.9016	2.08	QV
6+50	0.9160	2.09	QV
6+55	0.9305	2.11	QV
7+ 0	0.9450	2.12	QV
7+ 5	0.9597	2.13	QV
7+10	0.9745	2.15	Q V
7+15	0.9895	2.16	Q V
7+20	1.0045	2.18	Q V
7+25	1.0196	2.19	Q V
7+30	1.0348	2.21	Q V
7+35	1.0501	2.23	Q V
7+40	1.0656	2.24	Q V
7+45	1.0811	2.26	Q V
7+50	1.0968	2.28	Q V
7+55	1.1126	2.29	Q V
8+ 0	1.1285	2.31	Q V
8+ 5	1.1446	2.33	Q V
8+10	1.1607	2.35	Q V
8+15	1.1770	2.37	Q V
8+20	1.1934	2.38	Q V
8+25	1.2100	2.40	Q V
8+30	1.2267	2.42	Q V
8+35	1.2435	2.44	Q V
8+40	1.2605	2.46	Q V
8+45	1.2776	2.48	Q V
8+50	1.2948	2.50	Q V
8+55	1.3122	2.53	Q V
9+ 0	1.3298	2.55	Q V
9+ 5	1.3475	2.57	Q V
9+10	1.3653	2.59	Q V
9+15	1.3833	2.62	Q V
9+20	1.4015	2.64	Q V
9+25	1.4199	2.66	Q V
9+30	1.4384	2.69	Q V
9+35	1.4571	2.71	Q V
9+40	1.4759	2.74	Q V
9+45	1.4950	2.77	Q V
9+50	1.5142	2.79	Q V
9+55	1.5337	2.82	Q V
10+ 0	1.5533	2.85	Q V
10+ 5	1.5731	2.88	Q V
10+10	1.5931	2.91	Q V
10+15	1.6134	2.94	Q V
10+20	1.6338	2.97	Q V
10+25	1.6545	3.00	Q V
10+30	1.6754	3.03	Q V
10+35	1.6965	3.07	Q V
10+40	1.7179	3.10	Q V
10+45	1.7395	3.14	Q V
10+50	1.7613	3.17	Q V
10+55	1.7834	3.21	Q V
11+ 0	1.8058	3.25	Q V

11+ 5	1.8284	3.29	Q	V					
11+10	1.8513	3.33	Q	V					
11+15	1.8746	3.37	Q	V					
11+20	1.8981	3.41	Q	V					
11+25	1.9219	3.46	Q	V					
11+30	1.9460	3.50	Q	V					
11+35	1.9704	3.55	Q	V					
11+40	1.9952	3.60	Q	V					
11+45	2.0203	3.65	Q	V					
11+50	2.0457	3.70	Q	V					
11+55	2.0716	3.75	Q	V					
12+ 0	2.0978	3.80	Q	V					
12+ 5	2.1242	3.83	Q	V					
12+10	2.1497	3.71	Q	V					
12+15	2.1732	3.41	Q	V					
12+20	2.1957	3.27	Q	V					
12+25	2.2178	3.21	Q	V					
12+30	2.2398	3.20	Q	V					
12+35	2.2619	3.20	Q	V					
12+40	2.2840	3.22	Q	V					
12+45	2.3064	3.25	Q	V					
12+50	2.3291	3.29	Q	V					
12+55	2.3521	3.34	Q	V					
13+ 0	2.3755	3.39	Q	V					
13+ 5	2.3993	3.45	Q	V					
13+10	2.4235	3.52	Q	V					
13+15	2.4482	3.59	Q	V					
13+20	2.4734	3.67	Q	V					
13+25	2.4993	3.75	Q	V					
13+30	2.5257	3.83	Q	V					
13+35	2.5527	3.93	Q	V					
13+40	2.5804	4.03	Q	V					
13+45	2.6089	4.14	Q	V					
13+50	2.6382	4.25	Q	V					
13+55	2.6683	4.37	Q	V					
14+ 0	2.6993	4.50	Q	V					
14+ 5	2.7312	4.64	Q	V					
14+10	2.7644	4.82	Q	V					
14+15	2.7991	5.03	Q	V					
14+20	2.8351	5.23	Q	V					
14+25	2.8725	5.44	Q	V					
14+30	2.9115	5.65	Q	V					
14+35	2.9520	5.89	Q	V					
14+40	2.9942	6.13	Q	V					
14+45	3.0384	6.41	Q	V					
14+50	3.0845	6.70	Q	V					
14+55	3.1330	7.04	Q	V					
15+ 0	3.1840	7.40	Q	V					
15+ 5	3.2379	7.83	Q	V					
15+10	3.2950	8.29	Q	V					
15+15	3.3559	8.84	Q	V					
15+20	3.4210	9.45	Q	V					
15+25	3.4931	10.48	Q	V					
15+30	3.5820	12.91	Q	V					
15+35	3.7004	17.18	Q	V					
15+40	3.8419	20.56	Q	V					
15+45	4.0092	24.28	Q	V					
15+50	4.2187	30.42	Q	V					
15+55	4.5135	42.80	Q	V					
16+ 0	4.9671	65.86	Q	V					
16+ 5	5.8849	133.27		Q	V				
16+10	7.9361	297.83			V				
16+15	11.0138	446.89				V			Q
16+20	12.9280	277.93				Q	V		
16+25	14.1132	172.09			Q			V	
16+30	14.9450	120.78			Q				V
16+35	15.5548	88.54			Q			V	V
16+40	16.0323	69.33			Q			V	V
16+45	16.3984	53.16			Q			V	V
16+50	16.6997	43.75			Q			V	V
16+55	16.9487	36.16			Q			V	V
17+ 0	17.1544	29.87			Q			V	V
17+ 5	17.3248	24.73			Q			V	V
17+10	17.4624	19.99			Q			V	V
17+15	17.5715	15.83			Q			V	V
17+20	17.6648	13.55			Q			V	V
17+25	17.7558	13.22			Q			V	V
17+30	17.8395	12.15	Q						V

17+35	17.9044	9.42	Q		V
17+40	17.9512	6.80	Q		V
17+45	17.9822	4.49	Q		V
17+50	18.0102	4.07	Q		V
17+55	18.0364	3.80	Q		V
18+ 0	18.0612	3.59	Q		V
18+ 5	18.0850	3.46	Q		V
18+10	18.1090	3.49	Q		V
18+15	18.1345	3.70	Q		V
18+20	18.1604	3.76	Q		V
18+25	18.1862	3.75	Q		V
18+30	18.2117	3.70	Q		V
18+35	18.2367	3.63	Q		V
18+40	18.2613	3.57	Q		V
18+45	18.2854	3.50	Q		V
18+50	18.3090	3.43	Q		V
18+55	18.3321	3.36	Q		V
19+ 0	18.3547	3.29	Q		V
19+ 5	18.3769	3.22	Q		V
19+10	18.3986	3.15	Q		V
19+15	18.4199	3.09	Q		V
19+20	18.4407	3.02	Q		V
19+25	18.4611	2.96	Q		V
19+30	18.4811	2.91	Q		V
19+35	18.5008	2.85	Q		V
19+40	18.5201	2.80	Q		V
19+45	18.5390	2.74	Q		V
19+50	18.5575	2.69	Q		V
19+55	18.5757	2.64	Q		V
20+ 0	18.5936	2.60	Q		V
20+ 5	18.6111	2.55	Q		V
20+10	18.6284	2.51	Q		V
20+15	18.6454	2.46	Q		V
20+20	18.6621	2.42	Q		V
20+25	18.6785	2.39	Q		V
20+30	18.6946	2.35	Q		V
20+35	18.7106	2.31	Q		V
20+40	18.7263	2.28	Q		V
20+45	18.7417	2.24	Q		V
20+50	18.7569	2.21	Q		V
20+55	18.7719	2.18	Q		V
21+ 0	18.7867	2.15	Q		V
21+ 5	18.8013	2.12	Q		V
21+10	18.8157	2.09	Q		V
21+15	18.8299	2.06	Q		V
21+20	18.8440	2.04	Q		V
21+25	18.8578	2.01	Q		V
21+30	18.8715	1.99	Q		V
21+35	18.8850	1.96	Q		V
21+40	18.8983	1.94	Q		V
21+45	18.9115	1.91	Q		V
21+50	18.9245	1.89	Q		V
21+55	18.9374	1.87	Q		V
22+ 0	18.9501	1.85	Q		V
22+ 5	18.9627	1.83	Q		V
22+10	18.9752	1.81	Q		V
22+15	18.9875	1.79	Q		V
22+20	18.9996	1.77	Q		V
22+25	19.0117	1.75	Q		V
22+30	19.0236	1.73	Q		V
22+35	19.0354	1.71	Q		V
22+40	19.0471	1.69	Q		V
22+45	19.0586	1.68	Q		V
22+50	19.0701	1.66	Q		V
22+55	19.0814	1.64	Q		V
23+ 0	19.0926	1.63	Q		V
23+ 5	19.1037	1.61	Q		V
23+10	19.1147	1.60	Q		V
23+15	19.1256	1.58	Q		V
23+20	19.1364	1.57	Q		V
23+25	19.1471	1.55	Q		V
23+30	19.1577	1.54	Q		V
23+35	19.1683	1.53	Q		V
23+40	19.1787	1.51	Q		V
23+45	19.1890	1.50	Q		V
23+50	19.1992	1.49	Q		V
23+55	19.2094	1.47	Q		V
24+ 0	19.2195	1.46	Q		V

EX15.out

24+ 5	19.2292	1.41	Q			V
24+10	19.2374	1.18	Q			V
24+15	19.2425	0.75	Q			V
24+20	19.2460	0.51	Q			V
24+25	19.2486	0.37	Q			V
24+30	19.2505	0.28	Q			V
24+35	19.2520	0.22	Q			V
24+40	19.2532	0.17	Q			V
24+45	19.2541	0.13	Q			V
24+50	19.2548	0.10	Q			V
24+55	19.2553	0.08	Q			V
25+ 0	19.2558	0.06	Q			V
25+ 5	19.2561	0.05	Q			V
25+10	19.2563	0.03	Q			V
25+15	19.2565	0.03	Q			V
25+20	19.2566	0.02	Q			V
25+25	19.2567	0.01	Q			V
25+30	19.2568	0.01	Q			V
25+35	19.2568	0.00	Q			V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
EXISTING CONDITIONS AREA 2
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
169.66	1	1.37

Rainfall data for year 100		
169.66	6	1.83

Rainfall data for year 100		
169.66	24	2.50

+++++

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
59.2	78.4	169.66	1.000	0.397	1.000	0.397

Area-averaged adjusted loss rate Fm (In/Hr) = 0.397

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
169.66	1.000	59.2	78.4	2.76	0.322

Area-averaged catchment yield fraction, Y = 0.322

Area-averaged low loss fraction, Yb = 0.678

+++++

Watercourse length = 2379.00(Ft.)
Length from concentration point to centroid = 1190.00(Ft.)
Elevation difference along watercourse = 4.00(Ft.)
Mannings friction factor along watercourse = 0.035
Watershed area = 169.66(Ac.)
Catchment Lag time = 0.233 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 35.8245
Hydrograph baseflow = 0.00(CFS)

EX2.out
Average maximum watershed loss rate(Fm) = 0.397(In/Hr)
Average low loss rate fraction (Yb) = 0.678 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.650(In)
Computed peak 30-minute rainfall = 1.113(In)
Specified peak 1-hour rainfall = 1.370(In)
Computed peak 3-hour rainfall = 1.636(In)
Specified peak 6-hour rainfall = 1.830(In)
Specified peak 24-hour rainfall = 2.500(In)

Rainfall depth area reduction factors:

Using a total area of 169.66(Ac.) (Ref: fig. E-4)

5-minute factor = 0.992	Adjusted rainfall = 0.645(In)
30-minute factor = 0.992	Adjusted rainfall = 1.104(In)
1-hour factor = 0.992	Adjusted rainfall = 1.359(In)
3-hour factor = 0.999	Adjusted rainfall = 1.634(In)
6-hour factor = 0.999	Adjusted rainfall = 1.829(In)
24-hour factor = 1.000	Adjusted rainfall = 2.499(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 2051.83 (CFS))	
1	2.315	47.490
2	14.196	243.791
3	42.442	579.553
4	61.041	381.625
5	71.015	204.655
6	77.682	136.780
7	82.415	97.115
8	86.064	74.866
9	88.920	58.615
10	91.051	43.711
11	92.835	36.616
12	94.302	30.105
13	95.498	24.527
14	96.474	20.032
15	97.250	15.923
16	97.835	11.999
17	98.213	7.763
18	98.623	8.409
19	99.053	8.821
20	99.461	8.373
21	99.715	5.210
22	100.000	2.605

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6449	0.6449
2	0.7940	0.1491
3	0.8967	0.1027
4	0.9775	0.0808
5	1.0452	0.0677
6	1.1039	0.0588
7	1.1562	0.0523
8	1.2034	0.0473
9	1.2467	0.0433
10	1.2868	0.0400
11	1.3241	0.0373
12	1.3591	0.0350
13	1.3775	0.0184
14	1.3947	0.0172
15	1.4110	0.0163
16	1.4264	0.0154
17	1.4410	0.0146
18	1.4549	0.0139
19	1.4681	0.0133
20	1.4808	0.0127
21	1.4930	0.0122
22	1.5047	0.0117
23	1.5160	0.0113
24	1.5269	0.0109

		EX2.out
25	1.5374	0.0105
26	1.5475	0.0102
27	1.5574	0.0098
28	1.5669	0.0095
29	1.5762	0.0093
30	1.5852	0.0090
31	1.5939	0.0088
32	1.6024	0.0085
33	1.6108	0.0083
34	1.6188	0.0081
35	1.6267	0.0079
36	1.6345	0.0077
37	1.6417	0.0073
38	1.6489	0.0071
39	1.6558	0.0070
40	1.6626	0.0068
41	1.6693	0.0067
42	1.6759	0.0065
43	1.6823	0.0064
44	1.6886	0.0063
45	1.6947	0.0062
46	1.7008	0.0061
47	1.7067	0.0059
48	1.7126	0.0058
49	1.7183	0.0057
50	1.7239	0.0056
51	1.7295	0.0055
52	1.7350	0.0055
53	1.7403	0.0054
54	1.7456	0.0053
55	1.7508	0.0052
56	1.7559	0.0051
57	1.7610	0.0051
58	1.7660	0.0050
59	1.7709	0.0049
60	1.7757	0.0048
61	1.7805	0.0048
62	1.7852	0.0047
63	1.7898	0.0046
64	1.7944	0.0046
65	1.7989	0.0045
66	1.8034	0.0045
67	1.8078	0.0044
68	1.8121	0.0044
69	1.8164	0.0043
70	1.8207	0.0042
71	1.8249	0.0042
72	1.8290	0.0041
73	1.8347	0.0057
74	1.8404	0.0056
75	1.8459	0.0056
76	1.8514	0.0055
77	1.8569	0.0055
78	1.8623	0.0054
79	1.8677	0.0054
80	1.8730	0.0053
81	1.8782	0.0052
82	1.8834	0.0052
83	1.8886	0.0051
84	1.8937	0.0051
85	1.8987	0.0051
86	1.9037	0.0050
87	1.9087	0.0050
88	1.9136	0.0049
89	1.9185	0.0049
90	1.9233	0.0048
91	1.9281	0.0048
92	1.9329	0.0048
93	1.9376	0.0047
94	1.9423	0.0047
95	1.9469	0.0046
96	1.9515	0.0046
97	1.9560	0.0046
98	1.9606	0.0045
99	1.9651	0.0045
100	1.9695	0.0045
101	1.9739	0.0044
102	1.9783	0.0044

		EX2.out
103	1.9827	0.0044
104	1.9870	0.0043
105	1.9913	0.0043
106	1.9955	0.0043
107	1.9998	0.0042
108	2.0040	0.0042
109	2.0081	0.0042
110	2.0123	0.0041
111	2.0164	0.0041
112	2.0204	0.0041
113	2.0245	0.0040
114	2.0285	0.0040
115	2.0325	0.0040
116	2.0365	0.0040
117	2.0404	0.0039
118	2.0443	0.0039
119	2.0482	0.0039
120	2.0521	0.0039
121	2.0559	0.0038
122	2.0597	0.0038
123	2.0635	0.0038
124	2.0673	0.0038
125	2.0711	0.0037
126	2.0748	0.0037
127	2.0785	0.0037
128	2.0821	0.0037
129	2.0858	0.0037
130	2.0894	0.0036
131	2.0930	0.0036
132	2.0966	0.0036
133	2.1002	0.0036
134	2.1037	0.0035
135	2.1073	0.0035
136	2.1108	0.0035
137	2.1143	0.0035
138	2.1177	0.0035
139	2.1212	0.0034
140	2.1246	0.0034
141	2.1280	0.0034
142	2.1314	0.0034
143	2.1348	0.0034
144	2.1381	0.0034
145	2.1415	0.0033
146	2.1448	0.0033
147	2.1481	0.0033
148	2.1514	0.0033
149	2.1546	0.0033
150	2.1579	0.0032
151	2.1611	0.0032
152	2.1643	0.0032
153	2.1675	0.0032
154	2.1707	0.0032
155	2.1739	0.0032
156	2.1770	0.0032
157	2.1802	0.0031
158	2.1833	0.0031
159	2.1864	0.0031
160	2.1895	0.0031
161	2.1926	0.0031
162	2.1956	0.0031
163	2.1987	0.0030
164	2.2017	0.0030
165	2.2047	0.0030
166	2.2077	0.0030
167	2.2107	0.0030
168	2.2137	0.0030
169	2.2166	0.0030
170	2.2196	0.0029
171	2.2225	0.0029
172	2.2254	0.0029
173	2.2284	0.0029
174	2.2313	0.0029
175	2.2341	0.0029
176	2.2370	0.0029
177	2.2399	0.0029
178	2.2427	0.0028
179	2.2455	0.0028
180	2.2484	0.0028

		EX2.out
181	2.2512	0.0028
182	2.2540	0.0028
183	2.2567	0.0028
184	2.2595	0.0028
185	2.2623	0.0028
186	2.2650	0.0027
187	2.2678	0.0027
188	2.2705	0.0027
189	2.2732	0.0027
190	2.2759	0.0027
191	2.2786	0.0027
192	2.2813	0.0027
193	2.2840	0.0027
194	2.2866	0.0027
195	2.2893	0.0026
196	2.2919	0.0026
197	2.2945	0.0026
198	2.2972	0.0026
199	2.2998	0.0026
200	2.3024	0.0026
201	2.3049	0.0026
202	2.3075	0.0026
203	2.3101	0.0026
204	2.3127	0.0026
205	2.3152	0.0025
206	2.3177	0.0025
207	2.3203	0.0025
208	2.3228	0.0025
209	2.3253	0.0025
210	2.3278	0.0025
211	2.3303	0.0025
212	2.3328	0.0025
213	2.3353	0.0025
214	2.3377	0.0025
215	2.3402	0.0025
216	2.3426	0.0024
217	2.3451	0.0024
218	2.3475	0.0024
219	2.3499	0.0024
220	2.3523	0.0024
221	2.3547	0.0024
222	2.3571	0.0024
223	2.3595	0.0024
224	2.3619	0.0024
225	2.3643	0.0024
226	2.3666	0.0024
227	2.3690	0.0024
228	2.3713	0.0023
229	2.3737	0.0023
230	2.3760	0.0023
231	2.3783	0.0023
232	2.3806	0.0023
233	2.3829	0.0023
234	2.3852	0.0023
235	2.3875	0.0023
236	2.3898	0.0023
237	2.3921	0.0023
238	2.3944	0.0023
239	2.3966	0.0023
240	2.3989	0.0023
241	2.4011	0.0022
242	2.4034	0.0022
243	2.4056	0.0022
244	2.4078	0.0022
245	2.4101	0.0022
246	2.4123	0.0022
247	2.4145	0.0022
248	2.4167	0.0022
249	2.4189	0.0022
250	2.4211	0.0022
251	2.4232	0.0022
252	2.4254	0.0022
253	2.4276	0.0022
254	2.4297	0.0022
255	2.4319	0.0022
256	2.4340	0.0021
257	2.4362	0.0021
258	2.4383	0.0021

		EX2.out
259	2.4404	0.0021
260	2.4425	0.0021
261	2.4447	0.0021
262	2.4468	0.0021
263	2.4489	0.0021
264	2.4510	0.0021
265	2.4530	0.0021
266	2.4551	0.0021
267	2.4572	0.0021
268	2.4593	0.0021
269	2.4613	0.0021
270	2.4634	0.0021
271	2.4654	0.0021
272	2.4675	0.0020
273	2.4695	0.0020
274	2.4716	0.0020
275	2.4736	0.0020
276	2.4756	0.0020
277	2.4776	0.0020
278	2.4797	0.0020
279	2.4817	0.0020
280	2.4837	0.0020
281	2.4857	0.0020
282	2.4876	0.0020
283	2.4896	0.0020
284	2.4916	0.0020
285	2.4936	0.0020
286	2.4955	0.0020
287	2.4975	0.0020
288	2.4995	0.0020

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0020	0.0013	0.0006
2	0.0020	0.0013	0.0006
3	0.0020	0.0013	0.0006
4	0.0020	0.0013	0.0006
5	0.0020	0.0013	0.0006
6	0.0020	0.0014	0.0006
7	0.0020	0.0014	0.0006
8	0.0020	0.0014	0.0006
9	0.0020	0.0014	0.0007
10	0.0020	0.0014	0.0007
11	0.0020	0.0014	0.0007
12	0.0020	0.0014	0.0007
13	0.0021	0.0014	0.0007
14	0.0021	0.0014	0.0007
15	0.0021	0.0014	0.0007
16	0.0021	0.0014	0.0007
17	0.0021	0.0014	0.0007
18	0.0021	0.0014	0.0007
19	0.0021	0.0014	0.0007
20	0.0021	0.0014	0.0007
21	0.0021	0.0014	0.0007
22	0.0021	0.0014	0.0007
23	0.0022	0.0015	0.0007
24	0.0022	0.0015	0.0007
25	0.0022	0.0015	0.0007
26	0.0022	0.0015	0.0007
27	0.0022	0.0015	0.0007
28	0.0022	0.0015	0.0007
29	0.0022	0.0015	0.0007
30	0.0022	0.0015	0.0007
31	0.0022	0.0015	0.0007
32	0.0022	0.0015	0.0007
33	0.0023	0.0015	0.0007
34	0.0023	0.0015	0.0007
35	0.0023	0.0015	0.0007
36	0.0023	0.0015	0.0007
37	0.0023	0.0016	0.0007
38	0.0023	0.0016	0.0007
39	0.0023	0.0016	0.0007
40	0.0023	0.0016	0.0008
41	0.0023	0.0016	0.0008
42	0.0024	0.0016	0.0008
43	0.0024	0.0016	0.0008

		EX2.out	
44	0.0024	0.0016	0.0008
45	0.0024	0.0016	0.0008
46	0.0024	0.0016	0.0008
47	0.0024	0.0016	0.0008
48	0.0024	0.0016	0.0008
49	0.0024	0.0017	0.0008
50	0.0025	0.0017	0.0008
51	0.0025	0.0017	0.0008
52	0.0025	0.0017	0.0008
53	0.0025	0.0017	0.0008
54	0.0025	0.0017	0.0008
55	0.0025	0.0017	0.0008
56	0.0025	0.0017	0.0008
57	0.0026	0.0017	0.0008
58	0.0026	0.0017	0.0008
59	0.0026	0.0018	0.0008
60	0.0026	0.0018	0.0008
61	0.0026	0.0018	0.0008
62	0.0026	0.0018	0.0008
63	0.0026	0.0018	0.0009
64	0.0027	0.0018	0.0009
65	0.0027	0.0018	0.0009
66	0.0027	0.0018	0.0009
67	0.0027	0.0018	0.0009
68	0.0027	0.0018	0.0009
69	0.0027	0.0019	0.0009
70	0.0028	0.0019	0.0009
71	0.0028	0.0019	0.0009
72	0.0028	0.0019	0.0009
73	0.0028	0.0019	0.0009
74	0.0028	0.0019	0.0009
75	0.0029	0.0019	0.0009
76	0.0029	0.0019	0.0009
77	0.0029	0.0020	0.0009
78	0.0029	0.0020	0.0009
79	0.0029	0.0020	0.0009
80	0.0029	0.0020	0.0009
81	0.0030	0.0020	0.0010
82	0.0030	0.0020	0.0010
83	0.0030	0.0020	0.0010
84	0.0030	0.0021	0.0010
85	0.0031	0.0021	0.0010
86	0.0031	0.0021	0.0010
87	0.0031	0.0021	0.0010
88	0.0031	0.0021	0.0010
89	0.0032	0.0021	0.0010
90	0.0032	0.0021	0.0010
91	0.0032	0.0022	0.0010
92	0.0032	0.0022	0.0010
93	0.0032	0.0022	0.0010
94	0.0033	0.0022	0.0011
95	0.0033	0.0022	0.0011
96	0.0033	0.0022	0.0011
97	0.0034	0.0023	0.0011
98	0.0034	0.0023	0.0011
99	0.0034	0.0023	0.0011
100	0.0034	0.0023	0.0011
101	0.0035	0.0023	0.0011
102	0.0035	0.0024	0.0011
103	0.0035	0.0024	0.0011
104	0.0035	0.0024	0.0011
105	0.0036	0.0024	0.0012
106	0.0036	0.0024	0.0012
107	0.0037	0.0025	0.0012
108	0.0037	0.0025	0.0012
109	0.0037	0.0025	0.0012
110	0.0037	0.0025	0.0012
111	0.0038	0.0026	0.0012
112	0.0038	0.0026	0.0012
113	0.0039	0.0026	0.0012
114	0.0039	0.0026	0.0013
115	0.0039	0.0027	0.0013
116	0.0040	0.0027	0.0013
117	0.0040	0.0027	0.0013
118	0.0040	0.0027	0.0013
119	0.0041	0.0028	0.0013
120	0.0041	0.0028	0.0013
121	0.0042	0.0028	0.0014

		EX2.out	
122	0.0042	0.0029	0.0014
123	0.0043	0.0029	0.0014
124	0.0043	0.0029	0.0014
125	0.0044	0.0030	0.0014
126	0.0044	0.0030	0.0014
127	0.0045	0.0030	0.0014
128	0.0045	0.0031	0.0015
129	0.0046	0.0031	0.0015
130	0.0046	0.0031	0.0015
131	0.0047	0.0032	0.0015
132	0.0048	0.0032	0.0015
133	0.0048	0.0033	0.0016
134	0.0049	0.0033	0.0016
135	0.0050	0.0034	0.0016
136	0.0050	0.0034	0.0016
137	0.0051	0.0035	0.0016
138	0.0051	0.0035	0.0017
139	0.0052	0.0036	0.0017
140	0.0053	0.0036	0.0017
141	0.0054	0.0037	0.0017
142	0.0055	0.0037	0.0018
143	0.0056	0.0038	0.0018
144	0.0056	0.0038	0.0018
145	0.0041	0.0028	0.0013
146	0.0042	0.0028	0.0014
147	0.0043	0.0029	0.0014
148	0.0044	0.0029	0.0014
149	0.0045	0.0030	0.0014
150	0.0045	0.0031	0.0015
151	0.0046	0.0031	0.0015
152	0.0047	0.0032	0.0015
153	0.0048	0.0033	0.0016
154	0.0049	0.0033	0.0016
155	0.0051	0.0034	0.0016
156	0.0051	0.0035	0.0017
157	0.0053	0.0036	0.0017
158	0.0054	0.0036	0.0017
159	0.0055	0.0038	0.0018
160	0.0056	0.0038	0.0018
161	0.0058	0.0040	0.0019
162	0.0059	0.0040	0.0019
163	0.0062	0.0042	0.0020
164	0.0063	0.0043	0.0020
165	0.0065	0.0044	0.0021
166	0.0067	0.0045	0.0022
167	0.0070	0.0047	0.0022
168	0.0071	0.0048	0.0023
169	0.0077	0.0052	0.0025
170	0.0079	0.0054	0.0025
171	0.0083	0.0056	0.0027
172	0.0085	0.0058	0.0027
173	0.0090	0.0061	0.0029
174	0.0093	0.0063	0.0030
175	0.0098	0.0067	0.0032
176	0.0102	0.0069	0.0033
177	0.0109	0.0074	0.0035
178	0.0113	0.0076	0.0036
179	0.0122	0.0083	0.0039
180	0.0127	0.0086	0.0041
181	0.0139	0.0094	0.0045
182	0.0146	0.0099	0.0047
183	0.0163	0.0110	0.0052
184	0.0172	0.0117	0.0056
185	0.0350	0.0237	0.0113
186	0.0373	0.0253	0.0120
187	0.0433	0.0293	0.0139
188	0.0473	0.0320	0.0152
189	0.0588	0.0331	0.0256
190	0.0677	0.0331	0.0346
191	0.1027	0.0331	0.0696
192	0.1491	0.0331	0.1159
193	0.6449	0.0331	0.6118
194	0.0808	0.0331	0.0477
195	0.0523	0.0331	0.0191
196	0.0400	0.0271	0.0129
197	0.0184	0.0125	0.0059
198	0.0154	0.0104	0.0050
199	0.0133	0.0090	0.0043

		EX2.out	
200	0.0117	0.0079	0.0038
201	0.0105	0.0071	0.0034
202	0.0095	0.0065	0.0031
203	0.0088	0.0059	0.0028
204	0.0081	0.0055	0.0026
205	0.0073	0.0049	0.0023
206	0.0068	0.0046	0.0022
207	0.0064	0.0043	0.0021
208	0.0061	0.0041	0.0020
209	0.0057	0.0039	0.0018
210	0.0055	0.0037	0.0018
211	0.0052	0.0035	0.0017
212	0.0050	0.0034	0.0016
213	0.0048	0.0032	0.0015
214	0.0046	0.0031	0.0015
215	0.0044	0.0030	0.0014
216	0.0042	0.0029	0.0014
217	0.0057	0.0039	0.0018
218	0.0055	0.0037	0.0018
219	0.0054	0.0036	0.0017
220	0.0052	0.0035	0.0017
221	0.0051	0.0034	0.0016
222	0.0049	0.0033	0.0016
223	0.0048	0.0032	0.0015
224	0.0047	0.0032	0.0015
225	0.0046	0.0031	0.0015
226	0.0045	0.0030	0.0014
227	0.0044	0.0030	0.0014
228	0.0043	0.0029	0.0014
229	0.0042	0.0028	0.0013
230	0.0041	0.0028	0.0013
231	0.0040	0.0027	0.0013
232	0.0039	0.0027	0.0013
233	0.0038	0.0026	0.0012
234	0.0038	0.0026	0.0012
235	0.0037	0.0025	0.0012
236	0.0036	0.0025	0.0012
237	0.0036	0.0024	0.0011
238	0.0035	0.0024	0.0011
239	0.0034	0.0023	0.0011
240	0.0034	0.0023	0.0011
241	0.0033	0.0023	0.0011
242	0.0033	0.0022	0.0011
243	0.0032	0.0022	0.0010
244	0.0032	0.0022	0.0010
245	0.0031	0.0021	0.0010
246	0.0031	0.0021	0.0010
247	0.0030	0.0021	0.0010
248	0.0030	0.0020	0.0010
249	0.0030	0.0020	0.0010
250	0.0029	0.0020	0.0009
251	0.0029	0.0020	0.0009
252	0.0028	0.0019	0.0009
253	0.0028	0.0019	0.0009
254	0.0028	0.0019	0.0009
255	0.0027	0.0019	0.0009
256	0.0027	0.0018	0.0009
257	0.0027	0.0018	0.0009
258	0.0026	0.0018	0.0009
259	0.0026	0.0018	0.0008
260	0.0026	0.0017	0.0008
261	0.0025	0.0017	0.0008
262	0.0025	0.0017	0.0008
263	0.0025	0.0017	0.0008
264	0.0025	0.0017	0.0008
265	0.0024	0.0017	0.0008
266	0.0024	0.0016	0.0008
267	0.0024	0.0016	0.0008
268	0.0024	0.0016	0.0008
269	0.0023	0.0016	0.0008
270	0.0023	0.0016	0.0007
271	0.0023	0.0016	0.0007
272	0.0023	0.0015	0.0007
273	0.0022	0.0015	0.0007
274	0.0022	0.0015	0.0007
275	0.0022	0.0015	0.0007
276	0.0022	0.0015	0.0007
277	0.0022	0.0015	0.0007

EX2.out

278	0.0021	0.0015	0.0007
279	0.0021	0.0014	0.0007
280	0.0021	0.0014	0.0007
281	0.0021	0.0014	0.0007
282	0.0021	0.0014	0.0007
283	0.0021	0.0014	0.0007
284	0.0020	0.0014	0.0007
285	0.0020	0.0014	0.0007
286	0.0020	0.0014	0.0006
287	0.0020	0.0013	0.0006
288	0.0020	0.0013	0.0006

Total soil rain loss = 1.14(In)
 Total effective rainfall = 1.36(In)
 Peak flow rate in flood hydrograph = 436.35(CFS)

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24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	125.0	250.0	375.0	500.0
0+ 5	0.0002	0.03	Q					
0+10	0.0015	0.18	Q					
0+15	0.0053	0.55	Q					
0+20	0.0107	0.79	Q					
0+25	0.0171	0.92	Q					
0+30	0.0241	1.01	Q					
0+35	0.0315	1.08	Q					
0+40	0.0393	1.13	Q					
0+45	0.0474	1.17	Q					
0+50	0.0557	1.21	Q					
0+55	0.0642	1.23	Q					
1+ 0	0.0729	1.26	Q					
1+ 5	0.0817	1.28	Q					
1+10	0.0906	1.30	Q					
1+15	0.0997	1.31	Q					
1+20	0.1088	1.33	Q					
1+25	0.1180	1.34	Q					
1+30	0.1273	1.35	Q					
1+35	0.1366	1.36	Q					
1+40	0.1461	1.37	Q					
1+45	0.1556	1.38	Q					
1+50	0.1651	1.39	Q					
1+55	0.1747	1.39	Q					
2+ 0	0.1844	1.40	Q					
2+ 5	0.1940	1.41	Q					
2+10	0.2038	1.41	Q					
2+15	0.2135	1.42	Q					
2+20	0.2234	1.43	Q					
2+25	0.2332	1.43	Q					
2+30	0.2431	1.44	Q					
2+35	0.2531	1.45	Q					
2+40	0.2631	1.45	Q					
2+45	0.2731	1.46	Q					
2+50	0.2832	1.47	Q					
2+55	0.2934	1.47	Q					
3+ 0	0.3036	1.48	Q					
3+ 5	0.3138	1.49	Q					
3+10	0.3241	1.49	Q					
3+15	0.3344	1.50	Q					
3+20	0.3448	1.51	Q					
3+25	0.3553	1.52	Q					
3+30	0.3658	1.52	Q					
3+35	0.3763	1.53	Q					
3+40	0.3869	1.54	Q					
3+45	0.3976	1.55	Q					
3+50	0.4083	1.56	Q					
3+55	0.4191	1.56	Q					
4+ 0	0.4299	1.57	Q					
4+ 5	0.4408	1.58	Q					
4+10	0.4517	1.59	Q					
4+15	0.4627	1.60	Q					
4+20	0.4738	1.61	Q					

4+25	0.4849	1.61	QV
4+30	0.4961	1.62	QV
4+35	0.5073	1.63	QV
4+40	0.5186	1.64	QV
4+45	0.5299	1.65	QV
4+50	0.5414	1.66	QV
4+55	0.5529	1.67	QV
5+ 0	0.5644	1.68	QV
5+ 5	0.5760	1.69	QV
5+10	0.5877	1.70	QV
5+15	0.5995	1.71	QV
5+20	0.6113	1.72	QV
5+25	0.6232	1.73	QV
5+30	0.6351	1.74	QV
5+35	0.6472	1.75	QV
5+40	0.6593	1.76	QV
5+45	0.6715	1.77	QV
5+50	0.6837	1.78	QV
5+55	0.6960	1.79	QV
6+ 0	0.7084	1.80	QV
6+ 5	0.7209	1.81	QV
6+10	0.7335	1.82	QV
6+15	0.7461	1.84	QV
6+20	0.7588	1.85	QV
6+25	0.7716	1.86	QV
6+30	0.7845	1.87	QV
6+35	0.7975	1.88	QV
6+40	0.8106	1.90	QV
6+45	0.8237	1.91	QV
6+50	0.8369	1.92	QV
6+55	0.8503	1.93	QV
7+ 0	0.8637	1.95	QV
7+ 5	0.8772	1.96	QV
7+10	0.8908	1.97	QV
7+15	0.9045	1.99	QV
7+20	0.9183	2.00	QV
7+25	0.9322	2.02	QV
7+30	0.9462	2.03	QV
7+35	0.9603	2.05	Q V
7+40	0.9745	2.06	Q V
7+45	0.9888	2.08	Q V
7+50	1.0032	2.09	Q V
7+55	1.0177	2.11	Q V
8+ 0	1.0324	2.13	Q V
8+ 5	1.0471	2.14	Q V
8+10	1.0620	2.16	Q V
8+15	1.0770	2.18	Q V
8+20	1.0921	2.19	Q V
8+25	1.1073	2.21	Q V
8+30	1.1227	2.23	Q V
8+35	1.1381	2.25	Q V
8+40	1.1537	2.27	Q V
8+45	1.1695	2.29	Q V
8+50	1.1853	2.30	Q V
8+55	1.2014	2.32	Q V
9+ 0	1.2175	2.34	Q V
9+ 5	1.2338	2.37	Q V
9+10	1.2502	2.39	Q V
9+15	1.2668	2.41	Q V
9+20	1.2836	2.43	Q V
9+25	1.3005	2.45	Q V
9+30	1.3175	2.48	Q V
9+35	1.3347	2.50	Q V
9+40	1.3521	2.52	Q V
9+45	1.3696	2.55	Q V
9+50	1.3873	2.57	Q V
9+55	1.4052	2.60	Q V
10+ 0	1.4233	2.62	Q V
10+ 5	1.4416	2.65	Q V
10+10	1.4600	2.68	Q V
10+15	1.4787	2.71	Q V
10+20	1.4975	2.74	Q V
10+25	1.5165	2.77	Q V
10+30	1.5358	2.80	Q V
10+35	1.5553	2.83	Q V
10+40	1.5749	2.86	Q V
10+45	1.5949	2.89	Q V
10+50	1.6150	2.92	Q V

10+55	1.6354	2.96	Q	V					
11+ 0	1.6560	2.99	Q	V					
11+ 5	1.6769	3.03	Q	V					
11+10	1.6980	3.07	Q	V					
11+15	1.7194	3.11	Q	V					
11+20	1.7411	3.15	Q	V					
11+25	1.7630	3.19	Q	V					
11+30	1.7853	3.23	Q	V					
11+35	1.8078	3.27	Q	V					
11+40	1.8306	3.32	Q	V					
11+45	1.8538	3.36	Q	V					
11+50	1.8773	3.41	Q	V					
11+55	1.9011	3.46	Q	V					
12+ 0	1.9253	3.51	Q	V					
12+ 5	1.9497	3.54	Q	V					
12+10	1.9736	3.47	Q	V					
12+15	1.9958	3.22	Q	V					
12+20	2.0169	3.08	Q	V					
12+25	2.0378	3.02	Q	V					
12+30	2.0585	3.01	Q	V					
12+35	2.0792	3.01	Q	V					
12+40	2.1000	3.03	Q	V					
12+45	2.1211	3.05	Q	V					
12+50	2.1423	3.09	Q	V					
12+55	2.1639	3.13	Q	V					
13+ 0	2.1858	3.18	Q	V					
13+ 5	2.2081	3.24	Q	V					
13+10	2.2308	3.29	Q	V					
13+15	2.2539	3.36	Q	V					
13+20	2.2775	3.43	Q	V					
13+25	2.3017	3.51	Q	V					
13+30	2.3264	3.59	Q	V					
13+35	2.3517	3.67	Q	V					
13+40	2.3776	3.76	Q	V					
13+45	2.4042	3.86	Q	V					
13+50	2.4315	3.96	Q	V					
13+55	2.4596	4.08	Q	V					
14+ 0	2.4885	4.20	Q	V					
14+ 5	2.5183	4.33	Q	V					
14+10	2.5492	4.49	Q	V					
14+15	2.5815	4.69	Q	V					
14+20	2.6151	4.88	Q	V					
14+25	2.6500	5.07	Q	V					
14+30	2.6863	5.27	Q	V					
14+35	2.7241	5.49	Q	V					
14+40	2.7634	5.71	Q	V					
14+45	2.8045	5.97	Q	V					
14+50	2.8475	6.24	Q	V					
14+55	2.8927	6.56	Q	V					
15+ 0	2.9402	6.89	Q	V					
15+ 5	2.9903	7.28	Q	V					
15+10	3.0434	7.70	Q	V					
15+15	3.0999	8.21	Q	V					
15+20	3.1603	8.77	Q	V					
15+25	3.2271	9.70	Q	V					
15+30	3.3076	11.69	Q	V					
15+35	3.4154	15.64	Q	V					
15+40	3.5464	19.03	Q	V					
15+45	3.7019	22.57	Q	V					
15+50	3.8952	28.08	Q	V					
15+55	4.1679	39.59	Q	V					
16+ 0	4.5851	60.58	Q	V					
16+ 5	5.4259	122.08		Q	V				
16+10	7.2184	260.27			V		Q	V	
16+15	10.2235	436.35							Q
16+20	12.3428	307.72						QV	
16+25	13.6297	186.85				Q			V
16+30	14.5342	131.33				Q			V
16+35	15.1974	96.30					Q		V
16+40	15.7146	75.10						Q	V
16+45	16.1273	59.92					Q		V
16+50	16.4528	47.26					Q		V
16+55	16.7273	39.86					Q		V
17+ 0	16.9580	33.50					Q		V
17+ 5	17.1513	28.07					Q		V
17+10	17.3137	23.57					Q		V
17+15	17.4481	19.52					Q		V
17+20	17.5577	15.92					Q		V

EX2.out

23+55	19.1004	1.36	Q				V
24+ 0	19.1097	1.35	Q				V
24+ 5	19.1187	1.30	Q				V
24+10	19.1265	1.14	Q				V
24+15	19.1318	0.77	Q				V
24+20	19.1354	0.52	Q				V
24+25	19.1380	0.39	Q				V
24+30	19.1401	0.30	Q				V
24+35	19.1417	0.23	Q				V
24+40	19.1430	0.18	Q				V
24+45	19.1440	0.15	Q				V
24+50	19.1448	0.12	Q				V
24+55	19.1454	0.09	Q				V
25+ 0	19.1459	0.07	Q				V
25+ 5	19.1463	0.06	Q				V
25+10	19.1467	0.04	Q				V
25+15	19.1469	0.03	Q				V
25+20	19.1471	0.03	Q				V
25+25	19.1472	0.02	Q				V
25+30	19.1473	0.02	Q				V
25+35	19.1474	0.01	Q				V
25+40	19.1474	0.00	Q				V
25+45	19.1474	0.00	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method

Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA

EXISTING CONDITIONS AREA 3

100-YEAR, 24-HOUR STORM EVENT

BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
588.34	1	1.39

Rainfall data for year 100		
588.34	6	1.83

Rainfall data for year 100		
588.34	24	2.50

+++++

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
61.3	80.0	588.34	1.000	0.369	1.000	0.369

Area-averaged adjusted loss rate Fm (In/Hr) = 0.369

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
588.34	1.000	61.3	80.0	2.49	0.356

Area-averaged catchment yield fraction, Y = 0.356

Area-averaged low loss fraction, Yb = 0.644

+++++

Watercourse length = 5144.00(Ft.)

Length from concentration point to centroid = 2572.00(Ft.)

Elevation difference along watercourse = 13.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 588.34(Ac.)

Catchment Lag time = 0.387 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 21.5450

Hydrograph baseflow = 0.00(CFS)

EX3.out
Average maximum watershed loss rate(Fm) = 0.369(In/Hr)
Average low loss rate fraction (Yb) = 0.644 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.660(In)
Computed peak 30-minute rainfall = 1.129(In)
Specified peak 1-hour rainfall = 1.390(In)
Computed peak 3-hour rainfall = 1.645(In)
Specified peak 6-hour rainfall = 1.830(In)
Specified peak 24-hour rainfall = 2.500(In)

Rainfall depth area reduction factors:
Using a total area of 588.34(Ac.) (Ref: fig. E-4)

5-minute factor = 0.972	Adjusted rainfall = 0.641(In)
30-minute factor = 0.972	Adjusted rainfall = 1.098(In)
1-hour factor = 0.972	Adjusted rainfall = 1.352(In)
3-hour factor = 0.997	Adjusted rainfall = 1.640(In)
6-hour factor = 0.998	Adjusted rainfall = 1.827(In)
24-hour factor = 0.999	Adjusted rainfall = 2.498(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 7115.24 (CFS))	
1	1.100	78.258
2	5.101	284.670
3	13.349	586.919
4	31.230	1272.238
5	47.875	1184.311
6	58.701	770.291
7	65.795	504.811
8	71.191	383.892
9	75.420	300.908
10	78.886	246.655
11	81.681	198.859
12	84.039	167.731
13	86.144	149.834
14	87.967	129.709
15	89.444	105.077
16	90.701	89.410
17	91.858	82.374
18	92.883	72.867
19	93.817	66.510
20	94.584	54.575
21	95.316	52.042
22	95.944	44.677
23	96.504	39.857
24	97.010	36.004
25	97.401	27.857
26	97.770	26.227
27	98.009	17.039
28	98.225	15.365
29	98.468	17.292
30	98.727	18.396
31	98.985	18.396
32	99.244	18.396
33	99.486	17.250
34	99.636	10.640
35	99.771	9.581
36	99.905	9.581
37	100.000	6.738

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6414	0.6414
2	0.7896	0.1483
3	0.8918	0.1021
4	0.9721	0.0804
5	1.0395	0.0673
6	1.0979	0.0584
7	1.1499	0.0520
8	1.1969	0.0470
9	1.2399	0.0430

		EX3.out
10	1.2797	0.0398
11	1.3168	0.0371
12	1.3517	0.0348
13	1.3708	0.0191
14	1.3888	0.0180
15	1.4057	0.0169
16	1.4218	0.0160
17	1.4370	0.0152
18	1.4515	0.0145
19	1.4654	0.0139
20	1.4786	0.0133
21	1.4914	0.0127
22	1.5036	0.0122
23	1.5154	0.0118
24	1.5268	0.0114
25	1.5378	0.0110
26	1.5484	0.0106
27	1.5587	0.0103
28	1.5687	0.0100
29	1.5784	0.0097
30	1.5879	0.0094
31	1.5970	0.0092
32	1.6060	0.0089
33	1.6147	0.0087
34	1.6232	0.0085
35	1.6315	0.0083
36	1.6396	0.0081
37	1.6466	0.0070
38	1.6534	0.0069
39	1.6601	0.0067
40	1.6667	0.0066
41	1.6731	0.0064
42	1.6794	0.0063
43	1.6856	0.0062
44	1.6917	0.0061
45	1.6976	0.0059
46	1.7034	0.0058
47	1.7091	0.0057
48	1.7148	0.0056
49	1.7203	0.0055
50	1.7257	0.0054
51	1.7310	0.0053
52	1.7363	0.0052
53	1.7414	0.0052
54	1.7465	0.0051
55	1.7515	0.0050
56	1.7565	0.0049
57	1.7613	0.0049
58	1.7661	0.0048
59	1.7708	0.0047
60	1.7755	0.0046
61	1.7800	0.0046
62	1.7846	0.0045
63	1.7890	0.0045
64	1.7934	0.0044
65	1.7977	0.0043
66	1.8020	0.0043
67	1.8063	0.0042
68	1.8104	0.0042
69	1.8146	0.0041
70	1.8186	0.0041
71	1.8227	0.0040
72	1.8266	0.0040
73	1.8323	0.0057
74	1.8380	0.0056
75	1.8436	0.0056
76	1.8491	0.0055
77	1.8545	0.0055
78	1.8600	0.0054
79	1.8653	0.0054
80	1.8706	0.0053
81	1.8759	0.0053
82	1.8811	0.0052
83	1.8862	0.0052
84	1.8913	0.0051
85	1.8964	0.0051
86	1.9014	0.0050
87	1.9064	0.0050

		EX3.out
88	1.9113	0.0049
89	1.9162	0.0049
90	1.9210	0.0048
91	1.9258	0.0048
92	1.9306	0.0048
93	1.9353	0.0047
94	1.9400	0.0047
95	1.9446	0.0046
96	1.9493	0.0046
97	1.9538	0.0046
98	1.9583	0.0045
99	1.9628	0.0045
100	1.9673	0.0045
101	1.9717	0.0044
102	1.9761	0.0044
103	1.9805	0.0044
104	1.9848	0.0043
105	1.9891	0.0043
106	1.9934	0.0043
107	1.9976	0.0042
108	2.0018	0.0042
109	2.0060	0.0042
110	2.0101	0.0041
111	2.0142	0.0041
112	2.0183	0.0041
113	2.0224	0.0041
114	2.0264	0.0040
115	2.0304	0.0040
116	2.0344	0.0040
117	2.0383	0.0039
118	2.0422	0.0039
119	2.0461	0.0039
120	2.0500	0.0039
121	2.0538	0.0038
122	2.0577	0.0038
123	2.0615	0.0038
124	2.0652	0.0038
125	2.0690	0.0037
126	2.0727	0.0037
127	2.0764	0.0037
128	2.0801	0.0037
129	2.0838	0.0037
130	2.0874	0.0036
131	2.0910	0.0036
132	2.0946	0.0036
133	2.0982	0.0036
134	2.1017	0.0036
135	2.1053	0.0035
136	2.1088	0.0035
137	2.1123	0.0035
138	2.1157	0.0035
139	2.1192	0.0035
140	2.1226	0.0034
141	2.1260	0.0034
142	2.1294	0.0034
143	2.1328	0.0034
144	2.1362	0.0034
145	2.1395	0.0033
146	2.1428	0.0033
147	2.1461	0.0033
148	2.1494	0.0033
149	2.1527	0.0033
150	2.1560	0.0033
151	2.1592	0.0032
152	2.1624	0.0032
153	2.1656	0.0032
154	2.1688	0.0032
155	2.1720	0.0032
156	2.1751	0.0032
157	2.1783	0.0031
158	2.1814	0.0031
159	2.1845	0.0031
160	2.1876	0.0031
161	2.1907	0.0031
162	2.1938	0.0031
163	2.1968	0.0031
164	2.1998	0.0030
165	2.2029	0.0030

		EX3.out
166	2.2059	0.0030
167	2.2089	0.0030
168	2.2118	0.0030
169	2.2148	0.0030
170	2.2178	0.0030
171	2.2207	0.0029
172	2.2236	0.0029
173	2.2265	0.0029
174	2.2294	0.0029
175	2.2323	0.0029
176	2.2352	0.0029
177	2.2381	0.0029
178	2.2409	0.0028
179	2.2438	0.0028
180	2.2466	0.0028
181	2.2494	0.0028
182	2.2522	0.0028
183	2.2550	0.0028
184	2.2578	0.0028
185	2.2605	0.0028
186	2.2633	0.0028
187	2.2660	0.0027
188	2.2688	0.0027
189	2.2715	0.0027
190	2.2742	0.0027
191	2.2769	0.0027
192	2.2796	0.0027
193	2.2822	0.0027
194	2.2849	0.0027
195	2.2876	0.0027
196	2.2902	0.0026
197	2.2928	0.0026
198	2.2955	0.0026
199	2.2981	0.0026
200	2.3007	0.0026
201	2.3033	0.0026
202	2.3059	0.0026
203	2.3084	0.0026
204	2.3110	0.0026
205	2.3135	0.0026
206	2.3161	0.0025
207	2.3186	0.0025
208	2.3211	0.0025
209	2.3237	0.0025
210	2.3262	0.0025
211	2.3287	0.0025
212	2.3312	0.0025
213	2.3336	0.0025
214	2.3361	0.0025
215	2.3386	0.0025
216	2.3410	0.0025
217	2.3435	0.0024
218	2.3459	0.0024
219	2.3483	0.0024
220	2.3507	0.0024
221	2.3531	0.0024
222	2.3555	0.0024
223	2.3579	0.0024
224	2.3603	0.0024
225	2.3627	0.0024
226	2.3651	0.0024
227	2.3674	0.0024
228	2.3698	0.0024
229	2.3721	0.0023
230	2.3745	0.0023
231	2.3768	0.0023
232	2.3791	0.0023
233	2.3814	0.0023
234	2.3837	0.0023
235	2.3860	0.0023
236	2.3883	0.0023
237	2.3906	0.0023
238	2.3929	0.0023
239	2.3951	0.0023
240	2.3974	0.0023
241	2.3996	0.0023
242	2.4019	0.0022
243	2.4041	0.0022

		EX3.out
244	2.4064	0.0022
245	2.4086	0.0022
246	2.4108	0.0022
247	2.4130	0.0022
248	2.4152	0.0022
249	2.4174	0.0022
250	2.4196	0.0022
251	2.4218	0.0022
252	2.4239	0.0022
253	2.4261	0.0022
254	2.4283	0.0022
255	2.4304	0.0022
256	2.4326	0.0021
257	2.4347	0.0021
258	2.4369	0.0021
259	2.4390	0.0021
260	2.4411	0.0021
261	2.4432	0.0021
262	2.4453	0.0021
263	2.4475	0.0021
264	2.4496	0.0021
265	2.4516	0.0021
266	2.4537	0.0021
267	2.4558	0.0021
268	2.4579	0.0021
269	2.4600	0.0021
270	2.4620	0.0021
271	2.4641	0.0021
272	2.4661	0.0021
273	2.4682	0.0020
274	2.4702	0.0020
275	2.4722	0.0020
276	2.4743	0.0020
277	2.4763	0.0020
278	2.4783	0.0020
279	2.4803	0.0020
280	2.4823	0.0020
281	2.4843	0.0020
282	2.4863	0.0020
283	2.4883	0.0020
284	2.4903	0.0020
285	2.4923	0.0020
286	2.4942	0.0020
287	2.4962	0.0020
288	2.4982	0.0020

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0020	0.0013	0.0007
2	0.0020	0.0013	0.0007
3	0.0020	0.0013	0.0007
4	0.0020	0.0013	0.0007
5	0.0020	0.0013	0.0007
6	0.0020	0.0013	0.0007
7	0.0020	0.0013	0.0007
8	0.0020	0.0013	0.0007
9	0.0020	0.0013	0.0007
10	0.0020	0.0013	0.0007
11	0.0020	0.0013	0.0007
12	0.0021	0.0013	0.0007
13	0.0021	0.0013	0.0007
14	0.0021	0.0013	0.0007
15	0.0021	0.0013	0.0007
16	0.0021	0.0013	0.0007
17	0.0021	0.0014	0.0007
18	0.0021	0.0014	0.0008
19	0.0021	0.0014	0.0008
20	0.0021	0.0014	0.0008
21	0.0021	0.0014	0.0008
22	0.0021	0.0014	0.0008
23	0.0022	0.0014	0.0008
24	0.0022	0.0014	0.0008
25	0.0022	0.0014	0.0008
26	0.0022	0.0014	0.0008
27	0.0022	0.0014	0.0008
28	0.0022	0.0014	0.0008

		EX3.out	
29	0.0022	0.0014	0.0008
30	0.0022	0.0014	0.0008
31	0.0022	0.0014	0.0008
32	0.0022	0.0014	0.0008
33	0.0023	0.0015	0.0008
34	0.0023	0.0015	0.0008
35	0.0023	0.0015	0.0008
36	0.0023	0.0015	0.0008
37	0.0023	0.0015	0.0008
38	0.0023	0.0015	0.0008
39	0.0023	0.0015	0.0008
40	0.0023	0.0015	0.0008
41	0.0024	0.0015	0.0008
42	0.0024	0.0015	0.0008
43	0.0024	0.0015	0.0008
44	0.0024	0.0015	0.0008
45	0.0024	0.0015	0.0009
46	0.0024	0.0016	0.0009
47	0.0024	0.0016	0.0009
48	0.0024	0.0016	0.0009
49	0.0025	0.0016	0.0009
50	0.0025	0.0016	0.0009
51	0.0025	0.0016	0.0009
52	0.0025	0.0016	0.0009
53	0.0025	0.0016	0.0009
54	0.0025	0.0016	0.0009
55	0.0025	0.0016	0.0009
56	0.0025	0.0016	0.0009
57	0.0026	0.0016	0.0009
58	0.0026	0.0017	0.0009
59	0.0026	0.0017	0.0009
60	0.0026	0.0017	0.0009
61	0.0026	0.0017	0.0009
62	0.0026	0.0017	0.0009
63	0.0027	0.0017	0.0009
64	0.0027	0.0017	0.0009
65	0.0027	0.0017	0.0010
66	0.0027	0.0017	0.0010
67	0.0027	0.0018	0.0010
68	0.0027	0.0018	0.0010
69	0.0028	0.0018	0.0010
70	0.0028	0.0018	0.0010
71	0.0028	0.0018	0.0010
72	0.0028	0.0018	0.0010
73	0.0028	0.0018	0.0010
74	0.0028	0.0018	0.0010
75	0.0029	0.0018	0.0010
76	0.0029	0.0019	0.0010
77	0.0029	0.0019	0.0010
78	0.0029	0.0019	0.0010
79	0.0029	0.0019	0.0010
80	0.0030	0.0019	0.0011
81	0.0030	0.0019	0.0011
82	0.0030	0.0019	0.0011
83	0.0030	0.0019	0.0011
84	0.0030	0.0020	0.0011
85	0.0031	0.0020	0.0011
86	0.0031	0.0020	0.0011
87	0.0031	0.0020	0.0011
88	0.0031	0.0020	0.0011
89	0.0032	0.0020	0.0011
90	0.0032	0.0020	0.0011
91	0.0032	0.0021	0.0011
92	0.0032	0.0021	0.0011
93	0.0033	0.0021	0.0012
94	0.0033	0.0021	0.0012
95	0.0033	0.0021	0.0012
96	0.0033	0.0021	0.0012
97	0.0034	0.0022	0.0012
98	0.0034	0.0022	0.0012
99	0.0034	0.0022	0.0012
100	0.0034	0.0022	0.0012
101	0.0035	0.0022	0.0012
102	0.0035	0.0022	0.0012
103	0.0035	0.0023	0.0013
104	0.0036	0.0023	0.0013
105	0.0036	0.0023	0.0013
106	0.0036	0.0023	0.0013

		EX3.out	
107	0.0037	0.0024	0.0013
108	0.0037	0.0024	0.0013
109	0.0037	0.0024	0.0013
110	0.0037	0.0024	0.0013
111	0.0038	0.0024	0.0014
112	0.0038	0.0025	0.0014
113	0.0039	0.0025	0.0014
114	0.0039	0.0025	0.0014
115	0.0039	0.0025	0.0014
116	0.0040	0.0026	0.0014
117	0.0040	0.0026	0.0014
118	0.0041	0.0026	0.0014
119	0.0041	0.0026	0.0015
120	0.0041	0.0027	0.0015
121	0.0042	0.0027	0.0015
122	0.0042	0.0027	0.0015
123	0.0043	0.0028	0.0015
124	0.0043	0.0028	0.0015
125	0.0044	0.0028	0.0016
126	0.0044	0.0028	0.0016
127	0.0045	0.0029	0.0016
128	0.0045	0.0029	0.0016
129	0.0046	0.0030	0.0016
130	0.0046	0.0030	0.0017
131	0.0047	0.0030	0.0017
132	0.0048	0.0031	0.0017
133	0.0048	0.0031	0.0017
134	0.0049	0.0031	0.0017
135	0.0050	0.0032	0.0018
136	0.0050	0.0032	0.0018
137	0.0051	0.0033	0.0018
138	0.0052	0.0033	0.0018
139	0.0053	0.0034	0.0019
140	0.0053	0.0034	0.0019
141	0.0054	0.0035	0.0019
142	0.0055	0.0035	0.0019
143	0.0056	0.0036	0.0020
144	0.0056	0.0036	0.0020
145	0.0040	0.0026	0.0014
146	0.0040	0.0026	0.0014
147	0.0041	0.0027	0.0015
148	0.0042	0.0027	0.0015
149	0.0043	0.0028	0.0015
150	0.0043	0.0028	0.0015
151	0.0045	0.0029	0.0016
152	0.0045	0.0029	0.0016
153	0.0046	0.0030	0.0017
154	0.0047	0.0030	0.0017
155	0.0049	0.0031	0.0017
156	0.0049	0.0032	0.0018
157	0.0051	0.0033	0.0018
158	0.0052	0.0033	0.0018
159	0.0053	0.0034	0.0019
160	0.0054	0.0035	0.0019
161	0.0056	0.0036	0.0020
162	0.0057	0.0037	0.0020
163	0.0059	0.0038	0.0021
164	0.0061	0.0039	0.0022
165	0.0063	0.0041	0.0022
166	0.0064	0.0041	0.0023
167	0.0067	0.0043	0.0024
168	0.0069	0.0044	0.0024
169	0.0081	0.0052	0.0029
170	0.0083	0.0053	0.0030
171	0.0087	0.0056	0.0031
172	0.0089	0.0058	0.0032
173	0.0094	0.0061	0.0034
174	0.0097	0.0062	0.0035
175	0.0103	0.0066	0.0037
176	0.0106	0.0068	0.0038
177	0.0114	0.0073	0.0041
178	0.0118	0.0076	0.0042
179	0.0127	0.0082	0.0045
180	0.0133	0.0085	0.0047
181	0.0145	0.0093	0.0052
182	0.0152	0.0098	0.0054
183	0.0169	0.0109	0.0060
184	0.0180	0.0116	0.0064

		EX3.out	
185	0.0348	0.0224	0.0124
186	0.0371	0.0239	0.0132
187	0.0430	0.0277	0.0153
188	0.0470	0.0302	0.0167
189	0.0584	0.0308	0.0277
190	0.0673	0.0308	0.0365
191	0.1021	0.0308	0.0714
192	0.1483	0.0308	0.1175
193	0.6414	0.0308	0.6106
194	0.0804	0.0308	0.0496
195	0.0520	0.0308	0.0212
196	0.0398	0.0256	0.0142
197	0.0191	0.0123	0.0068
198	0.0160	0.0103	0.0057
199	0.0139	0.0089	0.0049
200	0.0122	0.0079	0.0044
201	0.0110	0.0071	0.0039
202	0.0100	0.0064	0.0036
203	0.0092	0.0059	0.0033
204	0.0085	0.0055	0.0030
205	0.0070	0.0045	0.0025
206	0.0066	0.0042	0.0023
207	0.0062	0.0040	0.0022
208	0.0058	0.0037	0.0021
209	0.0055	0.0036	0.0020
210	0.0052	0.0034	0.0019
211	0.0050	0.0032	0.0018
212	0.0048	0.0031	0.0017
213	0.0046	0.0029	0.0016
214	0.0044	0.0028	0.0016
215	0.0042	0.0027	0.0015
216	0.0041	0.0026	0.0015
217	0.0057	0.0037	0.0020
218	0.0055	0.0036	0.0020
219	0.0054	0.0034	0.0019
220	0.0052	0.0034	0.0019
221	0.0051	0.0033	0.0018
222	0.0049	0.0032	0.0018
223	0.0048	0.0031	0.0017
224	0.0047	0.0030	0.0017
225	0.0046	0.0029	0.0016
226	0.0045	0.0029	0.0016
227	0.0044	0.0028	0.0016
228	0.0043	0.0027	0.0015
229	0.0042	0.0027	0.0015
230	0.0041	0.0026	0.0015
231	0.0040	0.0026	0.0014
232	0.0039	0.0025	0.0014
233	0.0038	0.0025	0.0014
234	0.0038	0.0024	0.0013
235	0.0037	0.0024	0.0013
236	0.0036	0.0023	0.0013
237	0.0036	0.0023	0.0013
238	0.0035	0.0023	0.0013
239	0.0035	0.0022	0.0012
240	0.0034	0.0022	0.0012
241	0.0033	0.0022	0.0012
242	0.0033	0.0021	0.0012
243	0.0032	0.0021	0.0012
244	0.0032	0.0021	0.0011
245	0.0031	0.0020	0.0011
246	0.0031	0.0020	0.0011
247	0.0031	0.0020	0.0011
248	0.0030	0.0019	0.0011
249	0.0030	0.0019	0.0011
250	0.0029	0.0019	0.0010
251	0.0029	0.0019	0.0010
252	0.0028	0.0018	0.0010
253	0.0028	0.0018	0.0010
254	0.0028	0.0018	0.0010
255	0.0027	0.0018	0.0010
256	0.0027	0.0017	0.0010
257	0.0027	0.0017	0.0010
258	0.0026	0.0017	0.0009
259	0.0026	0.0017	0.0009
260	0.0026	0.0017	0.0009
261	0.0026	0.0016	0.0009
262	0.0025	0.0016	0.0009

EX3.out

263	0.0025	0.0016	0.0009
264	0.0025	0.0016	0.0009
265	0.0024	0.0016	0.0009
266	0.0024	0.0016	0.0009
267	0.0024	0.0015	0.0009
268	0.0024	0.0015	0.0008
269	0.0023	0.0015	0.0008
270	0.0023	0.0015	0.0008
271	0.0023	0.0015	0.0008
272	0.0023	0.0015	0.0008
273	0.0023	0.0014	0.0008
274	0.0022	0.0014	0.0008
275	0.0022	0.0014	0.0008
276	0.0022	0.0014	0.0008
277	0.0022	0.0014	0.0008
278	0.0021	0.0014	0.0008
279	0.0021	0.0014	0.0008
280	0.0021	0.0014	0.0008
281	0.0021	0.0013	0.0007
282	0.0021	0.0013	0.0007
283	0.0021	0.0013	0.0007
284	0.0020	0.0013	0.0007
285	0.0020	0.0013	0.0007
286	0.0020	0.0013	0.0007
287	0.0020	0.0013	0.0007
288	0.0020	0.0013	0.0007

Total soil rain loss = 1.08(In)
Total effective rainfall = 1.42(In)
Peak flow rate in flood hydrograph = 1055.03(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	275.0	550.0	825.0	1100.0
0+ 5	0.0004	0.05	Q				
0+10	0.0021	0.25	Q				
0+15	0.0067	0.67	Q				
0+20	0.0174	1.56	Q				
0+25	0.0339	2.39	Q				
0+30	0.0541	2.94	Q				
0+35	0.0769	3.30	Q				
0+40	0.1016	3.58	Q				
0+45	0.1278	3.81	Q				
0+50	0.1553	4.00	Q				
0+55	0.1839	4.15	Q				
1+ 0	0.2135	4.29	Q				
1+ 5	0.2438	4.41	Q				
1+10	0.2750	4.52	Q				
1+15	0.3067	4.61	Q				
1+20	0.3391	4.69	Q				
1+25	0.3719	4.77	Q				
1+30	0.4053	4.84	Q				
1+35	0.4391	4.91	Q				
1+40	0.4733	4.97	Q				
1+45	0.5079	5.03	Q				
1+50	0.5429	5.08	Q				
1+55	0.5783	5.13	Q				
2+ 0	0.6140	5.18	Q				
2+ 5	0.6499	5.22	Q				
2+10	0.6862	5.26	Q				
2+15	0.7227	5.30	Q				
2+20	0.7594	5.33	Q				
2+25	0.7964	5.37	Q				
2+30	0.8336	5.41	Q				
2+35	0.8711	5.45	Q				
2+40	0.9089	5.48	Q				
2+45	0.9469	5.52	Q				
2+50	0.9852	5.55	Q				
2+55	1.0236	5.59	Q				
3+ 0	1.0623	5.62	Q				
3+ 5	1.1013	5.65	Q				

3+10	1.1404	5.68	Q
3+15	1.1797	5.71	Q
3+20	1.2192	5.73	Q
3+25	1.2589	5.76	Q
3+30	1.2987	5.79	Q
3+35	1.3388	5.82	Q
3+40	1.3791	5.85	Q
3+45	1.4196	5.88	Q
3+50	1.4602	5.91	Q
3+55	1.5011	5.94	Q
4+ 0	1.5422	5.97	Q
4+ 5	1.5835	6.00	Q
4+10	1.6251	6.03	Q
4+15	1.6668	6.06	Q
4+20	1.7087	6.09	Q
4+25	1.7509	6.12	QV
4+30	1.7933	6.16	QV
4+35	1.8360	6.19	QV
4+40	1.8788	6.22	QV
4+45	1.9219	6.26	QV
4+50	1.9652	6.29	QV
4+55	2.0088	6.33	QV
5+ 0	2.0526	6.36	QV
5+ 5	2.0967	6.40	QV
5+10	2.1410	6.43	QV
5+15	2.1855	6.47	QV
5+20	2.2304	6.51	QV
5+25	2.2754	6.54	QV
5+30	2.3208	6.58	QV
5+35	2.3663	6.62	QV
5+40	2.4122	6.66	QV
5+45	2.4583	6.70	QV
5+50	2.5048	6.74	QV
5+55	2.5515	6.78	QV
6+ 0	2.5984	6.82	QV
6+ 5	2.6457	6.86	QV
6+10	2.6933	6.91	QV
6+15	2.7411	6.95	QV
6+20	2.7893	6.99	QV
6+25	2.8377	7.04	QV
6+30	2.8865	7.08	QV
6+35	2.9356	7.13	QV
6+40	2.9850	7.17	QV
6+45	3.0347	7.22	QV
6+50	3.0847	7.27	QV
6+55	3.1351	7.32	QV
7+ 0	3.1858	7.36	QV
7+ 5	3.2369	7.41	QV
7+10	3.2883	7.47	QV
7+15	3.3401	7.52	QV
7+20	3.3922	7.57	QV
7+25	3.4447	7.62	QV
7+30	3.4976	7.68	Q V
7+35	3.5508	7.73	Q V
7+40	3.6044	7.79	Q V
7+45	3.6584	7.84	Q V
7+50	3.7128	7.90	Q V
7+55	3.7677	7.96	Q V
8+ 0	3.8229	8.02	Q V
8+ 5	3.8785	8.08	Q V
8+10	3.9346	8.14	Q V
8+15	3.9911	8.20	Q V
8+20	4.0481	8.27	Q V
8+25	4.1055	8.33	Q V
8+30	4.1633	8.40	Q V
8+35	4.2216	8.47	Q V
8+40	4.2804	8.54	Q V
8+45	4.3397	8.61	Q V
8+50	4.3995	8.68	Q V
8+55	4.4597	8.75	Q V
9+ 0	4.5205	8.83	Q V
9+ 5	4.5818	8.90	Q V
9+10	4.6436	8.98	Q V
9+15	4.7060	9.06	Q V
9+20	4.7689	9.14	Q V
9+25	4.8324	9.22	Q V
9+30	4.8965	9.30	Q V
9+35	4.9612	9.39	Q V

9+40	5.0264	9.48	Q	V
9+45	5.0923	9.56	Q	V
9+50	5.1588	9.66	Q	V
9+55	5.2259	9.75	Q	V
10+ 0	5.2937	9.85	Q	V
10+ 5	5.3622	9.94	Q	V
10+10	5.4314	10.04	Q	V
10+15	5.5012	10.14	Q	V
10+20	5.5718	10.25	Q	V
10+25	5.6432	10.36	Q	V
10+30	5.7152	10.47	Q	V
10+35	5.7881	10.58	Q	V
10+40	5.8617	10.69	Q	V
10+45	5.9362	10.81	Q	V
10+50	6.0115	10.93	Q	V
10+55	6.0876	11.06	Q	V
11+ 0	6.1647	11.19	Q	V
11+ 5	6.2426	11.31	Q	V
11+10	6.3214	11.45	Q	V
11+15	6.4013	11.59	Q	V
11+20	6.4821	11.73	Q	V
11+25	6.5639	11.88	Q	V
11+30	6.6467	12.03	Q	V
11+35	6.7306	12.18	Q	V
11+40	6.8156	12.34	Q	V
11+45	6.9018	12.51	Q	V
11+50	6.9891	12.68	Q	V
11+55	7.0776	12.85	Q	V
12+ 0	7.1674	13.04	Q	V
12+ 5	7.2581	13.17	Q	V
12+10	7.3489	13.19	Q	V
12+15	7.4385	13.01	Q	V
12+20	7.5239	12.40	Q	V
12+25	7.6055	11.85	Q	V
12+30	7.6851	11.55	Q	V
12+35	7.7637	11.43	Q	V
12+40	7.8421	11.38	Q	V
12+45	7.9206	11.39	Q	V
12+50	7.9994	11.44	Q	V
12+55	8.0788	11.53	Q	V
13+ 0	8.1590	11.65	Q	V
13+ 5	8.2401	11.78	Q	V
13+10	8.3224	11.94	Q	V
13+15	8.4059	12.12	Q	V
13+20	8.4908	12.33	Q	V
13+25	8.5772	12.55	Q	V
13+30	8.6652	12.79	Q	V
13+35	8.7551	13.04	Q	V
13+40	8.8469	13.33	Q	V
13+45	8.9407	13.62	Q	V
13+50	9.0368	13.95	Q	V
13+55	9.1352	14.29	Q	V
14+ 0	9.2363	14.67	Q	V
14+ 5	9.3402	15.09	Q	V
14+10	9.4478	15.62	Q	V
14+15	9.5599	16.28	Q	V
14+20	9.6785	17.21	Q	V
14+25	9.8034	18.15	Q	V
14+30	9.9344	19.02	Q	V
14+35	10.0712	19.85	Q	V
14+40	10.2139	20.72	Q	V
14+45	10.3628	21.62	Q	V
14+50	10.5184	22.60	Q	V
14+55	10.6812	23.64	Q	V
15+ 0	10.8520	24.80	Q	V
15+ 5	11.0315	26.06	Q	V
15+10	11.2208	27.49	Q	V
15+15	11.4209	29.06	Q	V
15+20	11.6337	30.89	Q	V
15+25	11.8633	33.34	Q	V
15+30	12.1200	37.27	Q	V
15+35	12.4177	43.23	Q	V
15+40	12.7870	53.62	Q	V
15+45	13.2373	65.39	Q	V
15+50	13.7826	79.17	Q	V
15+55	14.4677	99.49	Q	V
16+ 0	15.4231	138.72	Q	V
16+ 5	17.0750	239.86	Q	V

			EX3.out			
16+10	20.0386	430.30		V	Q	
16+15	24.6736	673.01		V		
16+20	31.9396	1055.03			V	
16+25	38.6059	967.95				Q
16+30	43.3217	684.73			Q	
16+35	46.6847	488.31				
16+40	49.3107	381.29			Q	
16+45	51.4204	306.34		Q		
16+50	53.1766	254.99				
16+55	54.6432	212.96				
17+ 0	55.9074	183.55				
17+ 5	57.0317	163.25				
17+10	58.0159	142.91				
17+15	58.8541	121.71				
17+20	59.5884	106.62				
17+25	60.2576	97.17				
17+30	60.8581	87.18				
17+35	61.4040	79.28				
17+40	61.8803	69.16				
17+45	62.3230	64.28				
17+50	62.7176	57.29				
17+55	63.0743	51.79				
18+ 0	63.3976	46.95				
18+ 5	63.6744	40.19				
18+10	63.9298	37.09				
18+15	64.1426	30.90				
18+20	64.3476	29.75				
18+25	64.5597	30.81				
18+30	64.7739	31.10				
18+35	64.9842	30.54				
18+40	65.1881	29.60				
18+45	65.3786	27.67				
18+50	65.5368	22.97				
18+55	65.6836	21.31				
19+ 0	65.8220	20.09				
19+ 5	65.9407	17.25				
19+10	66.0285	12.74				
19+15	66.1118	12.11				
19+20	66.1924	11.70				
19+25	66.2707	11.37				
19+30	66.3472	11.10				
19+35	66.4220	10.86				
19+40	66.4951	10.62				
19+45	66.5668	10.40				
19+50	66.6370	10.20				
19+55	66.7059	10.00				
20+ 0	66.7734	9.81				
20+ 5	66.8397	9.63				
20+10	66.9049	9.46				
20+15	66.9688	9.29				
20+20	67.0317	9.12				
20+25	67.0934	8.97				
20+30	67.1542	8.82				
20+35	67.2140	8.68				
20+40	67.2729	8.55				
20+45	67.3309	8.42				
20+50	67.3880	8.29				
20+55	67.4442	8.17				
21+ 0	67.4996	8.05				
21+ 5	67.5542	7.93				
21+10	67.6080	7.81				
21+15	67.6610	7.70				
21+20	67.7133	7.59				
21+25	67.7648	7.48				
21+30	67.8156	7.38				
21+35	67.8658	7.28				
21+40	67.9152	7.18				
21+45	67.9641	7.09				
21+50	68.0123	7.00				
21+55	68.0599	6.91				
22+ 0	68.1069	6.83				
22+ 5	68.1534	6.74				
22+10	68.1993	6.66				
22+15	68.2446	6.59				
22+20	68.2895	6.51				
22+25	68.3338	6.44				
22+30	68.3776	6.36				
22+35	68.4209	6.29				

22+40	68.4638	6.22	Q			V
22+45	68.5062	6.16	Q			V
22+50	68.5481	6.09	Q			V
22+55	68.5897	6.03	Q			V
23+ 0	68.6307	5.97	Q			V
23+ 5	68.6714	5.90	Q			V
23+10	68.7117	5.85	Q			V
23+15	68.7515	5.79	Q			V
23+20	68.7910	5.73	Q			V
23+25	68.8301	5.68	Q			V
23+30	68.8688	5.62	Q			V
23+35	68.9072	5.57	Q			V
23+40	68.9452	5.52	Q			V
23+45	68.9828	5.47	Q			V
23+50	69.0201	5.42	Q			V
23+55	69.0571	5.37	Q			V
24+ 0	69.0937	5.32	Q			V
24+ 5	69.1297	5.22	Q			V
24+10	69.1639	4.98	Q			V
24+15	69.1951	4.52	Q			V
24+20	69.2198	3.60	Q			V
24+25	69.2387	2.74	Q			V
24+30	69.2537	2.18	Q			V
24+35	69.2662	1.81	Q			V
24+40	69.2767	1.53	Q			V
24+45	69.2857	1.30	Q			V
24+50	69.2934	1.12	Q			V
24+55	69.3001	0.97	Q			V
25+ 0	69.3059	0.85	Q			V
25+ 5	69.3109	0.73	Q			V
25+10	69.3153	0.64	Q			V
25+15	69.3192	0.56	Q			V
25+20	69.3225	0.49	Q			V
25+25	69.3255	0.43	Q			V
25+30	69.3281	0.37	Q			V
25+35	69.3303	0.32	Q			V
25+40	69.3323	0.28	Q			V
25+45	69.3340	0.25	Q			V
25+50	69.3354	0.21	Q			V
25+55	69.3367	0.18	Q			V
26+ 0	69.3378	0.16	Q			V
26+ 5	69.3387	0.14	Q			V
26+10	69.3395	0.12	Q			V
26+15	69.3402	0.10	Q			V
26+20	69.3408	0.09	Q			V
26+25	69.3414	0.08	Q			V
26+30	69.3418	0.06	Q			V
26+35	69.3422	0.05	Q			V
26+40	69.3424	0.04	Q			V
26+45	69.3426	0.03	Q			V
26+50	69.3427	0.02	Q			V
26+55	69.3428	0.01	Q			V
27+ 0	69.3428	0.00	Q			V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
EXISTING CONDITIONS AREA 4
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
252.12	1	1.40

Rainfall data for year 100		
252.12	6	1.84

Rainfall data for year 100		
252.12	24	2.56

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
68.2	85.6	252.12	1.000	0.273	1.000	0.273

Area-averaged adjusted loss rate Fm (In/Hr) = 0.273

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
252.12	1.000	68.2	85.6	1.69	0.493

Area-averaged catchment yield fraction, Y = 0.493

Area-averaged low loss fraction, Yb = 0.507

+++++

Watercourse length = 2544.00(Ft.)

Length from concentration point to centroid = 1272.00(Ft.)

Elevation difference along watercourse = 7.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 252.12(Ac.)

Catchment Lag time = 0.223 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 37.3904

Hydrograph baseflow = 0.00(CFS)

Average maximum watershed loss rate(Fm) = 0.273(In/Hr)
 Average low loss rate fraction (Yb) = 0.507 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.664(In)
 Computed peak 30-minute rainfall = 1.137(In)
 Specified peak 1-hour rainfall = 1.400(In)
 Computed peak 3-hour rainfall = 1.655(In)
 Specified peak 6-hour rainfall = 1.840(In)
 Specified peak 24-hour rainfall = 2.560(In)

Rainfall depth area reduction factors:

Using a total area of 252.12(Ac.) (Ref: fig. E-4)

5-minute factor = 0.988	Adjusted rainfall = 0.656(In)
30-minute factor = 0.988	Adjusted rainfall = 1.124(In)
1-hour factor = 0.988	Adjusted rainfall = 1.383(In)
3-hour factor = 0.999	Adjusted rainfall = 1.653(In)
6-hour factor = 0.999	Adjusted rainfall = 1.839(In)
24-hour factor = 1.000	Adjusted rainfall = 2.559(In)

U n i t H y d r o g r a p h

Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))

(K = 3049.08 (CFS))

1	2.472	75.379
2	15.816	406.853
3	45.120	893.499
4	62.878	541.477
5	72.516	293.858
6	78.963	196.590
7	83.526	139.111
8	87.097	108.875
9	89.762	81.265
10	91.831	63.078
11	93.557	52.648
12	94.920	41.541
13	96.052	34.517
14	96.965	27.851
15	97.646	20.769
16	98.096	13.697
17	98.503	12.436
18	98.952	13.678
19	99.392	13.426
20	99.682	8.831
21	100.000	4.416

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)

1	0.6565	0.6565
2	0.8082	0.1517
3	0.9127	0.1045
4	0.9950	0.0823
5	1.0639	0.0689
6	1.1237	0.0598
7	1.1769	0.0532
8	1.2250	0.0481
9	1.2691	0.0441
10	1.3098	0.0408
11	1.3478	0.0380
12	1.3835	0.0356
13	1.4015	0.0181
14	1.4184	0.0169
15	1.4344	0.0159
16	1.4494	0.0151
17	1.4638	0.0143
18	1.4774	0.0136
19	1.4904	0.0130
20	1.5028	0.0124
21	1.5147	0.0119
22	1.5262	0.0115
23	1.5372	0.0110
24	1.5478	0.0106
25	1.5581	0.0103

		EX4.out
26	1.5680	0.0099
27	1.5777	0.0096
28	1.5870	0.0093
29	1.5960	0.0090
30	1.6048	0.0088
31	1.6134	0.0085
32	1.6217	0.0083
33	1.6298	0.0081
34	1.6377	0.0079
35	1.6454	0.0077
36	1.6529	0.0075
37	1.6599	0.0070
38	1.6667	0.0068
39	1.6734	0.0067
40	1.6799	0.0065
41	1.6863	0.0064
42	1.6925	0.0063
43	1.6986	0.0061
44	1.7046	0.0060
45	1.7105	0.0059
46	1.7163	0.0058
47	1.7220	0.0057
48	1.7276	0.0056
49	1.7331	0.0055
50	1.7384	0.0054
51	1.7437	0.0053
52	1.7489	0.0052
53	1.7541	0.0051
54	1.7591	0.0050
55	1.7641	0.0050
56	1.7690	0.0049
57	1.7738	0.0048
58	1.7785	0.0047
59	1.7832	0.0047
60	1.7878	0.0046
61	1.7923	0.0045
62	1.7968	0.0045
63	1.8012	0.0044
64	1.8056	0.0044
65	1.8099	0.0043
66	1.8141	0.0042
67	1.8183	0.0042
68	1.8225	0.0041
69	1.8266	0.0041
70	1.8306	0.0040
71	1.8346	0.0040
72	1.8386	0.0039
73	1.8446	0.0061
74	1.8506	0.0060
75	1.8565	0.0059
76	1.8624	0.0059
77	1.8682	0.0058
78	1.8740	0.0058
79	1.8797	0.0057
80	1.8853	0.0056
81	1.8909	0.0056
82	1.8965	0.0055
83	1.9020	0.0055
84	1.9074	0.0054
85	1.9128	0.0054
86	1.9182	0.0053
87	1.9235	0.0053
88	1.9287	0.0053
89	1.9339	0.0052
90	1.9391	0.0052
91	1.9442	0.0051
92	1.9493	0.0051
93	1.9543	0.0050
94	1.9593	0.0050
95	1.9642	0.0050
96	1.9692	0.0049
97	1.9740	0.0049
98	1.9789	0.0048
99	1.9837	0.0048
100	1.9884	0.0048
101	1.9932	0.0047
102	1.9978	0.0047
103	2.0025	0.0047

		EX4.out
104	2.0071	0.0046
105	2.0117	0.0046
106	2.0163	0.0046
107	2.0208	0.0045
108	2.0253	0.0045
109	2.0297	0.0045
110	2.0342	0.0044
111	2.0386	0.0044
112	2.0429	0.0044
113	2.0473	0.0043
114	2.0516	0.0043
115	2.0558	0.0043
116	2.0601	0.0043
117	2.0643	0.0042
118	2.0685	0.0042
119	2.0727	0.0042
120	2.0768	0.0041
121	2.0809	0.0041
122	2.0850	0.0041
123	2.0891	0.0041
124	2.0931	0.0040
125	2.0971	0.0040
126	2.1011	0.0040
127	2.1051	0.0040
128	2.1090	0.0039
129	2.1130	0.0039
130	2.1169	0.0039
131	2.1207	0.0039
132	2.1246	0.0039
133	2.1284	0.0038
134	2.1322	0.0038
135	2.1360	0.0038
136	2.1398	0.0038
137	2.1435	0.0037
138	2.1472	0.0037
139	2.1509	0.0037
140	2.1546	0.0037
141	2.1583	0.0037
142	2.1619	0.0036
143	2.1655	0.0036
144	2.1691	0.0036
145	2.1727	0.0036
146	2.1763	0.0036
147	2.1798	0.0035
148	2.1834	0.0035
149	2.1869	0.0035
150	2.1904	0.0035
151	2.1939	0.0035
152	2.1973	0.0035
153	2.2007	0.0034
154	2.2042	0.0034
155	2.2076	0.0034
156	2.2110	0.0034
157	2.2143	0.0034
158	2.2177	0.0034
159	2.2210	0.0033
160	2.2244	0.0033
161	2.2277	0.0033
162	2.2310	0.0033
163	2.2342	0.0033
164	2.2375	0.0033
165	2.2407	0.0032
166	2.2440	0.0032
167	2.2472	0.0032
168	2.2504	0.0032
169	2.2536	0.0032
170	2.2568	0.0032
171	2.2599	0.0032
172	2.2631	0.0031
173	2.2662	0.0031
174	2.2693	0.0031
175	2.2724	0.0031
176	2.2755	0.0031
177	2.2786	0.0031
178	2.2817	0.0031
179	2.2847	0.0031
180	2.2877	0.0030
181	2.2908	0.0030

		EX4.out
182	2.2938	0.0030
183	2.2968	0.0030
184	2.2998	0.0030
185	2.3028	0.0030
186	2.3057	0.0030
187	2.3087	0.0030
188	2.3116	0.0029
189	2.3145	0.0029
190	2.3174	0.0029
191	2.3204	0.0029
192	2.3232	0.0029
193	2.3261	0.0029
194	2.3290	0.0029
195	2.3319	0.0029
196	2.3347	0.0028
197	2.3375	0.0028
198	2.3404	0.0028
199	2.3432	0.0028
200	2.3460	0.0028
201	2.3488	0.0028
202	2.3516	0.0028
203	2.3543	0.0028
204	2.3571	0.0028
205	2.3598	0.0028
206	2.3626	0.0027
207	2.3653	0.0027
208	2.3680	0.0027
209	2.3707	0.0027
210	2.3734	0.0027
211	2.3761	0.0027
212	2.3788	0.0027
213	2.3815	0.0027
214	2.3842	0.0027
215	2.3868	0.0027
216	2.3894	0.0026
217	2.3921	0.0026
218	2.3947	0.0026
219	2.3973	0.0026
220	2.3999	0.0026
221	2.4025	0.0026
222	2.4051	0.0026
223	2.4077	0.0026
224	2.4103	0.0026
225	2.4128	0.0026
226	2.4154	0.0026
227	2.4179	0.0025
228	2.4205	0.0025
229	2.4230	0.0025
230	2.4255	0.0025
231	2.4280	0.0025
232	2.4305	0.0025
233	2.4330	0.0025
234	2.4355	0.0025
235	2.4380	0.0025
236	2.4405	0.0025
237	2.4429	0.0025
238	2.4454	0.0025
239	2.4478	0.0024
240	2.4503	0.0024
241	2.4527	0.0024
242	2.4551	0.0024
243	2.4575	0.0024
244	2.4599	0.0024
245	2.4624	0.0024
246	2.4647	0.0024
247	2.4671	0.0024
248	2.4695	0.0024
249	2.4719	0.0024
250	2.4742	0.0024
251	2.4766	0.0024
252	2.4790	0.0024
253	2.4813	0.0023
254	2.4836	0.0023
255	2.4860	0.0023
256	2.4883	0.0023
257	2.4906	0.0023
258	2.4929	0.0023
259	2.4952	0.0023

		EX4.out
260	2.4975	0.0023
261	2.4998	0.0023
262	2.5021	0.0023
263	2.5044	0.0023
264	2.5066	0.0023
265	2.5089	0.0023
266	2.5111	0.0023
267	2.5134	0.0022
268	2.5156	0.0022
269	2.5179	0.0022
270	2.5201	0.0022
271	2.5223	0.0022
272	2.5245	0.0022
273	2.5267	0.0022
274	2.5289	0.0022
275	2.5311	0.0022
276	2.5333	0.0022
277	2.5355	0.0022
278	2.5377	0.0022
279	2.5399	0.0022
280	2.5421	0.0022
281	2.5442	0.0022
282	2.5464	0.0022
283	2.5485	0.0022
284	2.5507	0.0021
285	2.5528	0.0021
286	2.5549	0.0021
287	2.5571	0.0021
288	2.5592	0.0021

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0021	0.0011	0.0010
2	0.0021	0.0011	0.0011
3	0.0021	0.0011	0.0011
4	0.0021	0.0011	0.0011
5	0.0022	0.0011	0.0011
6	0.0022	0.0011	0.0011
7	0.0022	0.0011	0.0011
8	0.0022	0.0011	0.0011
9	0.0022	0.0011	0.0011
10	0.0022	0.0011	0.0011
11	0.0022	0.0011	0.0011
12	0.0022	0.0011	0.0011
13	0.0022	0.0011	0.0011
14	0.0022	0.0011	0.0011
15	0.0022	0.0011	0.0011
16	0.0023	0.0011	0.0011
17	0.0023	0.0011	0.0011
18	0.0023	0.0012	0.0011
19	0.0023	0.0012	0.0011
20	0.0023	0.0012	0.0011
21	0.0023	0.0012	0.0011
22	0.0023	0.0012	0.0011
23	0.0023	0.0012	0.0011
24	0.0023	0.0012	0.0012
25	0.0024	0.0012	0.0012
26	0.0024	0.0012	0.0012
27	0.0024	0.0012	0.0012
28	0.0024	0.0012	0.0012
29	0.0024	0.0012	0.0012
30	0.0024	0.0012	0.0012
31	0.0024	0.0012	0.0012
32	0.0024	0.0012	0.0012
33	0.0024	0.0012	0.0012
34	0.0024	0.0012	0.0012
35	0.0025	0.0012	0.0012
36	0.0025	0.0013	0.0012
37	0.0025	0.0013	0.0012
38	0.0025	0.0013	0.0012
39	0.0025	0.0013	0.0012
40	0.0025	0.0013	0.0012
41	0.0025	0.0013	0.0013
42	0.0025	0.0013	0.0013
43	0.0026	0.0013	0.0013
44	0.0026	0.0013	0.0013

		EX4.out	
45	0.0026	0.0013	0.0013
46	0.0026	0.0013	0.0013
47	0.0026	0.0013	0.0013
48	0.0026	0.0013	0.0013
49	0.0026	0.0013	0.0013
50	0.0027	0.0013	0.0013
51	0.0027	0.0014	0.0013
52	0.0027	0.0014	0.0013
53	0.0027	0.0014	0.0013
54	0.0027	0.0014	0.0013
55	0.0027	0.0014	0.0013
56	0.0027	0.0014	0.0014
57	0.0028	0.0014	0.0014
58	0.0028	0.0014	0.0014
59	0.0028	0.0014	0.0014
60	0.0028	0.0014	0.0014
61	0.0028	0.0014	0.0014
62	0.0028	0.0014	0.0014
63	0.0029	0.0014	0.0014
64	0.0029	0.0015	0.0014
65	0.0029	0.0015	0.0014
66	0.0029	0.0015	0.0014
67	0.0029	0.0015	0.0014
68	0.0029	0.0015	0.0015
69	0.0030	0.0015	0.0015
70	0.0030	0.0015	0.0015
71	0.0030	0.0015	0.0015
72	0.0030	0.0015	0.0015
73	0.0030	0.0015	0.0015
74	0.0031	0.0015	0.0015
75	0.0031	0.0016	0.0015
76	0.0031	0.0016	0.0015
77	0.0031	0.0016	0.0015
78	0.0031	0.0016	0.0015
79	0.0032	0.0016	0.0016
80	0.0032	0.0016	0.0016
81	0.0032	0.0016	0.0016
82	0.0032	0.0016	0.0016
83	0.0032	0.0016	0.0016
84	0.0033	0.0017	0.0016
85	0.0033	0.0017	0.0016
86	0.0033	0.0017	0.0016
87	0.0033	0.0017	0.0016
88	0.0034	0.0017	0.0017
89	0.0034	0.0017	0.0017
90	0.0034	0.0017	0.0017
91	0.0034	0.0017	0.0017
92	0.0035	0.0018	0.0017
93	0.0035	0.0018	0.0017
94	0.0035	0.0018	0.0017
95	0.0035	0.0018	0.0018
96	0.0036	0.0018	0.0018
97	0.0036	0.0018	0.0018
98	0.0036	0.0018	0.0018
99	0.0037	0.0019	0.0018
100	0.0037	0.0019	0.0018
101	0.0037	0.0019	0.0018
102	0.0037	0.0019	0.0018
103	0.0038	0.0019	0.0019
104	0.0038	0.0019	0.0019
105	0.0039	0.0020	0.0019
106	0.0039	0.0020	0.0019
107	0.0039	0.0020	0.0019
108	0.0039	0.0020	0.0019
109	0.0040	0.0020	0.0020
110	0.0040	0.0020	0.0020
111	0.0041	0.0021	0.0020
112	0.0041	0.0021	0.0020
113	0.0041	0.0021	0.0020
114	0.0042	0.0021	0.0021
115	0.0042	0.0021	0.0021
116	0.0043	0.0022	0.0021
117	0.0043	0.0022	0.0021
118	0.0043	0.0022	0.0021
119	0.0044	0.0022	0.0022
120	0.0044	0.0022	0.0022
121	0.0045	0.0023	0.0022
122	0.0045	0.0023	0.0022

EX4.out

123	0.0046	0.0023	0.0023
124	0.0046	0.0023	0.0023
125	0.0047	0.0024	0.0023
126	0.0047	0.0024	0.0023
127	0.0048	0.0024	0.0024
128	0.0048	0.0024	0.0024
129	0.0049	0.0025	0.0024
130	0.0050	0.0025	0.0024
131	0.0050	0.0025	0.0025
132	0.0051	0.0026	0.0025
133	0.0052	0.0026	0.0025
134	0.0052	0.0026	0.0026
135	0.0053	0.0027	0.0026
136	0.0053	0.0027	0.0026
137	0.0054	0.0028	0.0027
138	0.0055	0.0028	0.0027
139	0.0056	0.0028	0.0028
140	0.0056	0.0029	0.0028
141	0.0058	0.0029	0.0028
142	0.0058	0.0029	0.0029
143	0.0059	0.0030	0.0029
144	0.0060	0.0030	0.0030
145	0.0039	0.0020	0.0019
146	0.0040	0.0020	0.0020
147	0.0041	0.0021	0.0020
148	0.0041	0.0021	0.0020
149	0.0042	0.0022	0.0021
150	0.0043	0.0022	0.0021
151	0.0044	0.0022	0.0022
152	0.0045	0.0023	0.0022
153	0.0046	0.0023	0.0023
154	0.0047	0.0024	0.0023
155	0.0048	0.0024	0.0024
156	0.0049	0.0025	0.0024
157	0.0050	0.0026	0.0025
158	0.0051	0.0026	0.0025
159	0.0053	0.0027	0.0026
160	0.0054	0.0027	0.0027
161	0.0056	0.0028	0.0028
162	0.0057	0.0029	0.0028
163	0.0059	0.0030	0.0029
164	0.0060	0.0030	0.0030
165	0.0063	0.0032	0.0031
166	0.0064	0.0032	0.0031
167	0.0067	0.0034	0.0033
168	0.0068	0.0035	0.0034
169	0.0075	0.0038	0.0037
170	0.0077	0.0039	0.0038
171	0.0081	0.0041	0.0040
172	0.0083	0.0042	0.0041
173	0.0088	0.0045	0.0043
174	0.0090	0.0046	0.0045
175	0.0096	0.0049	0.0047
176	0.0099	0.0050	0.0049
177	0.0106	0.0054	0.0052
178	0.0110	0.0056	0.0054
179	0.0119	0.0060	0.0059
180	0.0124	0.0063	0.0061
181	0.0136	0.0069	0.0067
182	0.0143	0.0072	0.0071
183	0.0159	0.0081	0.0079
184	0.0169	0.0086	0.0084
185	0.0356	0.0181	0.0176
186	0.0380	0.0192	0.0187
187	0.0441	0.0223	0.0217
188	0.0481	0.0227	0.0254
189	0.0598	0.0227	0.0371
190	0.0689	0.0227	0.0461
191	0.1045	0.0227	0.0818
192	0.1517	0.0227	0.1290
193	0.6565	0.0227	0.6337
194	0.0823	0.0227	0.0595
195	0.0532	0.0227	0.0304
196	0.0408	0.0206	0.0201
197	0.0181	0.0091	0.0089
198	0.0151	0.0076	0.0074
199	0.0130	0.0066	0.0064
200	0.0115	0.0058	0.0057

EX4.out

201	0.0103	0.0052	0.0051
202	0.0093	0.0047	0.0046
203	0.0085	0.0043	0.0042
204	0.0079	0.0040	0.0039
205	0.0070	0.0035	0.0034
206	0.0065	0.0033	0.0032
207	0.0061	0.0031	0.0030
208	0.0058	0.0029	0.0029
209	0.0055	0.0028	0.0027
210	0.0052	0.0026	0.0026
211	0.0050	0.0025	0.0024
212	0.0047	0.0024	0.0023
213	0.0045	0.0023	0.0022
214	0.0044	0.0022	0.0022
215	0.0042	0.0021	0.0021
216	0.0040	0.0020	0.0020
217	0.0061	0.0031	0.0030
218	0.0059	0.0030	0.0029
219	0.0057	0.0029	0.0028
220	0.0055	0.0028	0.0027
221	0.0054	0.0027	0.0027
222	0.0053	0.0027	0.0026
223	0.0051	0.0026	0.0025
224	0.0050	0.0025	0.0025
225	0.0049	0.0025	0.0024
226	0.0048	0.0024	0.0023
227	0.0047	0.0024	0.0023
228	0.0046	0.0023	0.0022
229	0.0045	0.0023	0.0022
230	0.0044	0.0022	0.0022
231	0.0043	0.0022	0.0021
232	0.0042	0.0021	0.0021
233	0.0041	0.0021	0.0020
234	0.0040	0.0020	0.0020
235	0.0040	0.0020	0.0020
236	0.0039	0.0020	0.0019
237	0.0038	0.0019	0.0019
238	0.0038	0.0019	0.0019
239	0.0037	0.0019	0.0018
240	0.0036	0.0018	0.0018
241	0.0036	0.0018	0.0018
242	0.0035	0.0018	0.0017
243	0.0035	0.0018	0.0017
244	0.0034	0.0017	0.0017
245	0.0034	0.0017	0.0017
246	0.0033	0.0017	0.0016
247	0.0033	0.0017	0.0016
248	0.0032	0.0016	0.0016
249	0.0032	0.0016	0.0016
250	0.0031	0.0016	0.0016
251	0.0031	0.0016	0.0015
252	0.0031	0.0016	0.0015
253	0.0030	0.0015	0.0015
254	0.0030	0.0015	0.0015
255	0.0030	0.0015	0.0015
256	0.0029	0.0015	0.0014
257	0.0029	0.0015	0.0014
258	0.0028	0.0014	0.0014
259	0.0028	0.0014	0.0014
260	0.0028	0.0014	0.0014
261	0.0028	0.0014	0.0014
262	0.0027	0.0014	0.0013
263	0.0027	0.0014	0.0013
264	0.0027	0.0013	0.0013
265	0.0026	0.0013	0.0013
266	0.0026	0.0013	0.0013
267	0.0026	0.0013	0.0013
268	0.0026	0.0013	0.0013
269	0.0025	0.0013	0.0012
270	0.0025	0.0013	0.0012
271	0.0025	0.0013	0.0012
272	0.0025	0.0012	0.0012
273	0.0024	0.0012	0.0012
274	0.0024	0.0012	0.0012
275	0.0024	0.0012	0.0012
276	0.0024	0.0012	0.0012
277	0.0023	0.0012	0.0012
278	0.0023	0.0012	0.0011

279	0.0023	0.0012	0.0011
280	0.0023	0.0012	0.0011
281	0.0023	0.0011	0.0011
282	0.0022	0.0011	0.0011
283	0.0022	0.0011	0.0011
284	0.0022	0.0011	0.0011
285	0.0022	0.0011	0.0011
286	0.0022	0.0011	0.0011
287	0.0022	0.0011	0.0011
288	0.0021	0.0011	0.0011

Total soil rain loss = 0.86(In)
Total effective rainfall = 1.70(In)
Peak flow rate in flood hydrograph = 708.80(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	200.0	400.0	600.0	800.0
0+ 5	0.0005	0.08	Q				
0+10	0.0040	0.51	Q				
0+15	0.0140	1.44	Q				
0+20	0.0278	2.01	Q				
0+25	0.0439	2.33	Q				
0+30	0.0614	2.55	Q				
0+35	0.0800	2.70	Q				
0+40	0.0995	2.83	Q				
0+45	0.1196	2.92	Q				
0+50	0.1403	3.00	Q				
0+55	0.1614	3.07	Q				
1+ 0	0.1829	3.12	Q				
1+ 5	0.2048	3.17	Q				
1+10	0.2270	3.22	Q				
1+15	0.2493	3.25	Q				
1+20	0.2719	3.28	Q				
1+25	0.2947	3.31	Q				
1+30	0.3177	3.33	Q				
1+35	0.3408	3.36	Q				
1+40	0.3642	3.39	Q				
1+45	0.3876	3.41	Q				
1+50	0.4112	3.42	Q				
1+55	0.4348	3.44	Q				
2+ 0	0.4586	3.45	Q				
2+ 5	0.4825	3.47	Q				
2+10	0.5065	3.48	Q				
2+15	0.5306	3.50	Q				
2+20	0.5548	3.51	Q				
2+25	0.5791	3.53	Q				
2+30	0.6035	3.55	Q				
2+35	0.6280	3.56	Q				
2+40	0.6526	3.58	Q				
2+45	0.6774	3.59	Q				
2+50	0.7023	3.61	Q				
2+55	0.7273	3.63	Q				
3+ 0	0.7524	3.65	Q				
3+ 5	0.7776	3.66	Q				
3+10	0.8030	3.68	Q				
3+15	0.8284	3.70	Q				
3+20	0.8540	3.72	Q				
3+25	0.8797	3.73	Q				
3+30	0.9056	3.75	QV				
3+35	0.9316	3.77	QV				
3+40	0.9577	3.79	QV				
3+45	0.9839	3.81	QV				
3+50	1.0103	3.83	QV				
3+55	1.0368	3.85	QV				
4+ 0	1.0634	3.87	QV				
4+ 5	1.0902	3.89	QV				
4+10	1.1171	3.91	QV				
4+15	1.1442	3.93	QV				
4+20	1.1714	3.95	QV				
4+25	1.1987	3.97	QV				

4+30	1.2262	3.99	QV
4+35	1.2538	4.01	QV
4+40	1.2816	4.03	QV
4+45	1.3095	4.06	QV
4+50	1.3376	4.08	QV
4+55	1.3659	4.10	QV
5+ 0	1.3943	4.12	QV
5+ 5	1.4228	4.15	QV
5+10	1.4516	4.17	QV
5+15	1.4804	4.19	QV
5+20	1.5095	4.22	QV
5+25	1.5387	4.24	QV
5+30	1.5681	4.27	QV
5+35	1.5977	4.29	QV
5+40	1.6274	4.32	QV
5+45	1.6573	4.34	QV
5+50	1.6874	4.37	QV
5+55	1.7177	4.40	QV
6+ 0	1.7481	4.42	QV
6+ 5	1.7788	4.45	QV
6+10	1.8096	4.48	Q V
6+15	1.8407	4.51	Q V
6+20	1.8719	4.53	Q V
6+25	1.9033	4.56	Q V
6+30	1.9349	4.59	Q V
6+35	1.9668	4.62	Q V
6+40	1.9988	4.65	Q V
6+45	2.0311	4.68	Q V
6+50	2.0635	4.71	Q V
6+55	2.0962	4.75	Q V
7+ 0	2.1291	4.78	Q V
7+ 5	2.1622	4.81	Q V
7+10	2.1956	4.84	Q V
7+15	2.2292	4.88	Q V
7+20	2.2630	4.91	Q V
7+25	2.2971	4.95	Q V
7+30	2.3314	4.98	Q V
7+35	2.3659	5.02	Q V
7+40	2.4007	5.05	Q V
7+45	2.4358	5.09	Q V
7+50	2.4711	5.13	Q V
7+55	2.5067	5.17	Q V
8+ 0	2.5425	5.21	Q V
8+ 5	2.5786	5.25	Q V
8+10	2.6150	5.29	Q V
8+15	2.6517	5.33	Q V
8+20	2.6887	5.37	Q V
8+25	2.7260	5.41	Q V
8+30	2.7635	5.45	Q V
8+35	2.8014	5.50	Q V
8+40	2.8396	5.54	Q V
8+45	2.8781	5.59	Q V
8+50	2.9169	5.64	Q V
8+55	2.9561	5.69	Q V
9+ 0	2.9956	5.73	Q V
9+ 5	3.0354	5.78	Q V
9+10	3.0756	5.83	Q V
9+15	3.1162	5.89	Q V
9+20	3.1571	5.94	Q V
9+25	3.1983	5.99	Q V
9+30	3.2400	6.05	Q V
9+35	3.2820	6.11	Q V
9+40	3.3245	6.16	Q V
9+45	3.3673	6.22	Q V
9+50	3.4106	6.28	Q V
9+55	3.4543	6.34	Q V
10+ 0	3.4984	6.41	Q V
10+ 5	3.5430	6.47	Q V
10+10	3.5880	6.54	Q V
10+15	3.6335	6.61	Q V
10+20	3.6795	6.67	Q V
10+25	3.7259	6.75	Q V
10+30	3.7729	6.82	Q V
10+35	3.8203	6.89	Q V
10+40	3.8683	6.97	Q V
10+45	3.9169	7.05	Q V
10+50	3.9660	7.13	Q V
10+55	4.0156	7.21	Q V

[illegible]

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EX4.out

24+ 0	35.5765	3.31	Q				V
24+ 5	35.5986	3.21	Q				V
24+10	35.6175	2.76	Q				V
24+15	35.6299	1.80	Q				V
24+20	35.6383	1.22	Q				V
24+25	35.6445	0.90	Q				V
24+30	35.6493	0.69	Q				V
24+35	35.6530	0.54	Q				V
24+40	35.6559	0.42	Q				V
24+45	35.6582	0.33	Q				V
24+50	35.6600	0.26	Q				V
24+55	35.6614	0.21	Q				V
25+ 0	35.6625	0.16	Q				V
25+ 5	35.6634	0.12	Q				V
25+10	35.6640	0.09	Q				V
25+15	35.6645	0.07	Q				V
25+20	35.6649	0.06	Q				V
25+25	35.6652	0.04	Q				V
25+30	35.6654	0.03	Q				V
25+35	35.6655	0.01	Q				V
25+40	35.6655	0.00	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
EXISTING CONDITIONS AREA 5
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
587.02	1	1.39

Rainfall data for year 100		
587.02	6	1.83

Rainfall data for year 100		
587.02	24	2.51

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
63.4	81.7	587.02	1.000	0.340	1.000	0.340

Area-averaged adjusted loss rate Fm (In/Hr) = 0.340

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
587.02	1.000	63.4	81.7	2.24	0.394

Area-averaged catchment yield fraction, Y = 0.394

Area-averaged low loss fraction, Yb = 0.606

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Watercourse length = 5748.00(Ft.)
 Length from concentration point to centroid = 2874.00(Ft.)
 Elevation difference along watercourse = 12.00(Ft.)
 Mannings friction factor along watercourse = 0.035
 Watershed area = 587.02(Ac.)
 Catchment Lag time = 0.436 hours
 Unit interval = 5.000 minutes
 Unit interval percentage of lag time = 19.0957
 Hydrograph baseflow = 0.00(CFS)

EX5.out

Average maximum watershed loss rate(Fm) = 0.340(In/Hr)
 Average low loss rate fraction (Yb) = 0.606 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.660(In)
 Computed peak 30-minute rainfall = 1.129(In)
 Specified peak 1-hour rainfall = 1.390(In)
 Computed peak 3-hour rainfall = 1.645(In)
 Specified peak 6-hour rainfall = 1.830(In)
 Specified peak 24-hour rainfall = 2.510(In)

Rainfall depth area reduction factors:
 Using a total area of 587.02(Ac.) (Ref: fig. E-4)

5-minute factor = 0.972	Adjusted rainfall = 0.641(In)
30-minute factor = 0.972	Adjusted rainfall = 1.098(In)
1-hour factor = 0.972	Adjusted rainfall = 1.352(In)
3-hour factor = 0.997	Adjusted rainfall = 1.640(In)
6-hour factor = 0.998	Adjusted rainfall = 1.827(In)
24-hour factor = 0.999	Adjusted rainfall = 2.508(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 7099.27 (CFS))	
1	0.931	66.118
2	4.178	230.471
3	10.163	424.919
4	23.204	925.804
5	40.297	1213.466
6	52.534	868.774
7	60.821	588.316
8	66.686	416.377
9	71.364	332.047
10	75.119	266.639
11	78.290	225.064
12	80.877	183.651
13	83.079	156.378
14	85.047	139.704
15	86.826	126.322
16	88.363	109.060
17	89.605	88.179
18	90.714	78.733
19	91.749	73.474
20	92.669	65.302
21	93.524	60.733
22	94.259	52.172
23	94.908	46.092
24	95.543	45.068
25	96.064	36.981
26	96.560	35.247
27	97.006	31.635
28	97.352	24.585
29	97.693	24.190
30	97.933	17.046
31	98.124	13.557
32	98.322	14.012
33	98.547	16.028
34	98.776	16.268
35	99.006	16.268
36	99.235	16.268
37	99.457	15.810
38	99.601	10.157
39	99.720	8.473
40	99.839	8.473
41	100.000	4.236

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6414	0.6414
2	0.7897	0.1483
3	0.8918	0.1021
4	0.9722	0.0804
5	1.0395	0.0673

		EX5.out
6	1.0980	0.0584
7	1.1499	0.0520
8	1.1969	0.0470
9	1.2400	0.0430
10	1.2798	0.0398
11	1.3169	0.0371
12	1.3518	0.0348
13	1.3709	0.0191
14	1.3889	0.0180
15	1.4058	0.0169
16	1.4218	0.0160
17	1.4371	0.0152
18	1.4516	0.0145
19	1.4654	0.0139
20	1.4787	0.0133
21	1.4914	0.0127
22	1.5037	0.0122
23	1.5155	0.0118
24	1.5268	0.0114
25	1.5378	0.0110
26	1.5485	0.0106
27	1.5588	0.0103
28	1.5687	0.0100
29	1.5784	0.0097
30	1.5879	0.0094
31	1.5971	0.0092
32	1.6060	0.0089
33	1.6147	0.0087
34	1.6232	0.0085
35	1.6315	0.0083
36	1.6396	0.0081
37	1.6466	0.0070
38	1.6534	0.0069
39	1.6602	0.0067
40	1.6667	0.0066
41	1.6731	0.0064
42	1.6794	0.0063
43	1.6856	0.0062
44	1.6917	0.0061
45	1.6976	0.0059
46	1.7034	0.0058
47	1.7091	0.0057
48	1.7148	0.0056
49	1.7203	0.0055
50	1.7257	0.0054
51	1.7310	0.0053
52	1.7363	0.0052
53	1.7415	0.0052
54	1.7465	0.0051
55	1.7515	0.0050
56	1.7565	0.0049
57	1.7613	0.0049
58	1.7661	0.0048
59	1.7708	0.0047
60	1.7755	0.0046
61	1.7800	0.0046
62	1.7846	0.0045
63	1.7890	0.0045
64	1.7934	0.0044
65	1.7978	0.0043
66	1.8020	0.0043
67	1.8063	0.0042
68	1.8104	0.0042
69	1.8146	0.0041
70	1.8186	0.0041
71	1.8227	0.0040
72	1.8266	0.0040
73	1.8324	0.0058
74	1.8381	0.0057
75	1.8438	0.0057
76	1.8494	0.0056
77	1.8549	0.0055
78	1.8604	0.0055
79	1.8658	0.0054
80	1.8712	0.0054
81	1.8765	0.0053
82	1.8818	0.0053
83	1.8870	0.0052

		EX5.out
84	1.8922	0.0052
85	1.8973	0.0051
86	1.9024	0.0051
87	1.9074	0.0050
88	1.9124	0.0050
89	1.9174	0.0049
90	1.9223	0.0049
91	1.9272	0.0049
92	1.9320	0.0048
93	1.9368	0.0048
94	1.9415	0.0047
95	1.9462	0.0047
96	1.9509	0.0047
97	1.9555	0.0046
98	1.9601	0.0046
99	1.9647	0.0046
100	1.9692	0.0045
101	1.9737	0.0045
102	1.9781	0.0045
103	1.9825	0.0044
104	1.9869	0.0044
105	1.9913	0.0044
106	1.9956	0.0043
107	1.9999	0.0043
108	2.0041	0.0043
109	2.0084	0.0042
110	2.0126	0.0042
111	2.0167	0.0042
112	2.0209	0.0041
113	2.0250	0.0041
114	2.0291	0.0041
115	2.0331	0.0041
116	2.0372	0.0040
117	2.0412	0.0040
118	2.0451	0.0040
119	2.0491	0.0040
120	2.0530	0.0039
121	2.0569	0.0039
122	2.0608	0.0039
123	2.0647	0.0039
124	2.0685	0.0038
125	2.0723	0.0038
126	2.0761	0.0038
127	2.0798	0.0038
128	2.0836	0.0037
129	2.0873	0.0037
130	2.0910	0.0037
131	2.0946	0.0037
132	2.0983	0.0036
133	2.1019	0.0036
134	2.1055	0.0036
135	2.1091	0.0036
136	2.1126	0.0036
137	2.1162	0.0035
138	2.1197	0.0035
139	2.1232	0.0035
140	2.1267	0.0035
141	2.1302	0.0035
142	2.1336	0.0034
143	2.1370	0.0034
144	2.1404	0.0034
145	2.1438	0.0034
146	2.1472	0.0034
147	2.1506	0.0034
148	2.1539	0.0033
149	2.1572	0.0033
150	2.1605	0.0033
151	2.1638	0.0033
152	2.1671	0.0033
153	2.1703	0.0033
154	2.1736	0.0032
155	2.1768	0.0032
156	2.1800	0.0032
157	2.1832	0.0032
158	2.1864	0.0032
159	2.1895	0.0032
160	2.1927	0.0031
161	2.1958	0.0031

		EX5.out
162	2.1989	0.0031
163	2.2020	0.0031
164	2.2051	0.0031
165	2.2081	0.0031
166	2.2112	0.0031
167	2.2142	0.0030
168	2.2173	0.0030
169	2.2203	0.0030
170	2.2233	0.0030
171	2.2263	0.0030
172	2.2292	0.0030
173	2.2322	0.0030
174	2.2351	0.0029
175	2.2381	0.0029
176	2.2410	0.0029
177	2.2439	0.0029
178	2.2468	0.0029
179	2.2497	0.0029
180	2.2525	0.0029
181	2.2554	0.0029
182	2.2582	0.0028
183	2.2611	0.0028
184	2.2639	0.0028
185	2.2667	0.0028
186	2.2695	0.0028
187	2.2723	0.0028
188	2.2750	0.0028
189	2.2778	0.0028
190	2.2806	0.0028
191	2.2833	0.0027
192	2.2860	0.0027
193	2.2887	0.0027
194	2.2914	0.0027
195	2.2941	0.0027
196	2.2968	0.0027
197	2.2995	0.0027
198	2.3022	0.0027
199	2.3048	0.0027
200	2.3075	0.0026
201	2.3101	0.0026
202	2.3127	0.0026
203	2.3153	0.0026
204	2.3179	0.0026
205	2.3205	0.0026
206	2.3231	0.0026
207	2.3257	0.0026
208	2.3283	0.0026
209	2.3308	0.0026
210	2.3334	0.0025
211	2.3359	0.0025
212	2.3384	0.0025
213	2.3409	0.0025
214	2.3434	0.0025
215	2.3459	0.0025
216	2.3484	0.0025
217	2.3509	0.0025
218	2.3534	0.0025
219	2.3559	0.0025
220	2.3583	0.0025
221	2.3608	0.0024
222	2.3632	0.0024
223	2.3656	0.0024
224	2.3681	0.0024
225	2.3705	0.0024
226	2.3729	0.0024
227	2.3753	0.0024
228	2.3777	0.0024
229	2.3800	0.0024
230	2.3824	0.0024
231	2.3848	0.0024
232	2.3871	0.0024
233	2.3895	0.0023
234	2.3918	0.0023
235	2.3942	0.0023
236	2.3965	0.0023
237	2.3988	0.0023
238	2.4011	0.0023
239	2.4034	0.0023

		EX5.out
240	2.4057	0.0023
241	2.4080	0.0023
242	2.4103	0.0023
243	2.4126	0.0023
244	2.4148	0.0023
245	2.4171	0.0023
246	2.4193	0.0023
247	2.4216	0.0022
248	2.4238	0.0022
249	2.4261	0.0022
250	2.4283	0.0022
251	2.4305	0.0022
252	2.4327	0.0022
253	2.4349	0.0022
254	2.4371	0.0022
255	2.4393	0.0022
256	2.4415	0.0022
257	2.4437	0.0022
258	2.4458	0.0022
259	2.4480	0.0022
260	2.4502	0.0022
261	2.4523	0.0022
262	2.4545	0.0021
263	2.4566	0.0021
264	2.4587	0.0021
265	2.4609	0.0021
266	2.4630	0.0021
267	2.4651	0.0021
268	2.4672	0.0021
269	2.4693	0.0021
270	2.4714	0.0021
271	2.4735	0.0021
272	2.4756	0.0021
273	2.4777	0.0021
274	2.4797	0.0021
275	2.4818	0.0021
276	2.4839	0.0021
277	2.4859	0.0021
278	2.4880	0.0020
279	2.4900	0.0020
280	2.4920	0.0020
281	2.4941	0.0020
282	2.4961	0.0020
283	2.4981	0.0020
284	2.5001	0.0020
285	2.5022	0.0020
286	2.5042	0.0020
287	2.5062	0.0020
288	2.5082	0.0020

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0020	0.0012	0.0008
2	0.0020	0.0012	0.0008
3	0.0020	0.0012	0.0008
4	0.0020	0.0012	0.0008
5	0.0020	0.0012	0.0008
6	0.0020	0.0012	0.0008
7	0.0020	0.0012	0.0008
8	0.0020	0.0012	0.0008
9	0.0021	0.0012	0.0008
10	0.0021	0.0013	0.0008
11	0.0021	0.0013	0.0008
12	0.0021	0.0013	0.0008
13	0.0021	0.0013	0.0008
14	0.0021	0.0013	0.0008
15	0.0021	0.0013	0.0008
16	0.0021	0.0013	0.0008
17	0.0021	0.0013	0.0008
18	0.0021	0.0013	0.0008
19	0.0022	0.0013	0.0008
20	0.0022	0.0013	0.0009
21	0.0022	0.0013	0.0009
22	0.0022	0.0013	0.0009
23	0.0022	0.0013	0.0009
24	0.0022	0.0013	0.0009

		EX5.out	
25	0.0022	0.0013	0.0009
26	0.0022	0.0013	0.0009
27	0.0022	0.0014	0.0009
28	0.0022	0.0014	0.0009
29	0.0023	0.0014	0.0009
30	0.0023	0.0014	0.0009
31	0.0023	0.0014	0.0009
32	0.0023	0.0014	0.0009
33	0.0023	0.0014	0.0009
34	0.0023	0.0014	0.0009
35	0.0023	0.0014	0.0009
36	0.0023	0.0014	0.0009
37	0.0023	0.0014	0.0009
38	0.0023	0.0014	0.0009
39	0.0024	0.0014	0.0009
40	0.0024	0.0014	0.0009
41	0.0024	0.0014	0.0009
42	0.0024	0.0015	0.0009
43	0.0024	0.0015	0.0010
44	0.0024	0.0015	0.0010
45	0.0024	0.0015	0.0010
46	0.0024	0.0015	0.0010
47	0.0025	0.0015	0.0010
48	0.0025	0.0015	0.0010
49	0.0025	0.0015	0.0010
50	0.0025	0.0015	0.0010
51	0.0025	0.0015	0.0010
52	0.0025	0.0015	0.0010
53	0.0025	0.0015	0.0010
54	0.0026	0.0015	0.0010
55	0.0026	0.0016	0.0010
56	0.0026	0.0016	0.0010
57	0.0026	0.0016	0.0010
58	0.0026	0.0016	0.0010
59	0.0026	0.0016	0.0010
60	0.0026	0.0016	0.0010
61	0.0027	0.0016	0.0011
62	0.0027	0.0016	0.0011
63	0.0027	0.0016	0.0011
64	0.0027	0.0016	0.0011
65	0.0027	0.0017	0.0011
66	0.0027	0.0017	0.0011
67	0.0028	0.0017	0.0011
68	0.0028	0.0017	0.0011
69	0.0028	0.0017	0.0011
70	0.0028	0.0017	0.0011
71	0.0028	0.0017	0.0011
72	0.0028	0.0017	0.0011
73	0.0029	0.0017	0.0011
74	0.0029	0.0017	0.0011
75	0.0029	0.0018	0.0011
76	0.0029	0.0018	0.0012
77	0.0029	0.0018	0.0012
78	0.0030	0.0018	0.0012
79	0.0030	0.0018	0.0012
80	0.0030	0.0018	0.0012
81	0.0030	0.0018	0.0012
82	0.0030	0.0018	0.0012
83	0.0031	0.0019	0.0012
84	0.0031	0.0019	0.0012
85	0.0031	0.0019	0.0012
86	0.0031	0.0019	0.0012
87	0.0032	0.0019	0.0012
88	0.0032	0.0019	0.0013
89	0.0032	0.0019	0.0013
90	0.0032	0.0020	0.0013
91	0.0033	0.0020	0.0013
92	0.0033	0.0020	0.0013
93	0.0033	0.0020	0.0013
94	0.0033	0.0020	0.0013
95	0.0034	0.0020	0.0013
96	0.0034	0.0020	0.0013
97	0.0034	0.0021	0.0013
98	0.0034	0.0021	0.0014
99	0.0035	0.0021	0.0014
100	0.0035	0.0021	0.0014
101	0.0035	0.0021	0.0014
102	0.0035	0.0021	0.0014

EX5.out

103	0.0036	0.0022	0.0014
104	0.0036	0.0022	0.0014
105	0.0036	0.0022	0.0014
106	0.0037	0.0022	0.0014
107	0.0037	0.0022	0.0015
108	0.0037	0.0023	0.0015
109	0.0038	0.0023	0.0015
110	0.0038	0.0023	0.0015
111	0.0039	0.0023	0.0015
112	0.0039	0.0023	0.0015
113	0.0039	0.0024	0.0015
114	0.0040	0.0024	0.0016
115	0.0040	0.0024	0.0016
116	0.0040	0.0024	0.0016
117	0.0041	0.0025	0.0016
118	0.0041	0.0025	0.0016
119	0.0042	0.0025	0.0016
120	0.0042	0.0025	0.0017
121	0.0043	0.0026	0.0017
122	0.0043	0.0026	0.0017
123	0.0044	0.0026	0.0017
124	0.0044	0.0027	0.0017
125	0.0045	0.0027	0.0018
126	0.0045	0.0027	0.0018
127	0.0046	0.0028	0.0018
128	0.0046	0.0028	0.0018
129	0.0047	0.0028	0.0018
130	0.0047	0.0029	0.0019
131	0.0048	0.0029	0.0019
132	0.0048	0.0029	0.0019
133	0.0049	0.0030	0.0019
134	0.0049	0.0030	0.0020
135	0.0050	0.0031	0.0020
136	0.0051	0.0031	0.0020
137	0.0052	0.0031	0.0020
138	0.0052	0.0032	0.0021
139	0.0053	0.0032	0.0021
140	0.0054	0.0033	0.0021
141	0.0055	0.0033	0.0022
142	0.0055	0.0034	0.0022
143	0.0057	0.0034	0.0022
144	0.0057	0.0035	0.0023
145	0.0040	0.0024	0.0016
146	0.0040	0.0024	0.0016
147	0.0041	0.0025	0.0016
148	0.0042	0.0025	0.0016
149	0.0043	0.0026	0.0017
150	0.0043	0.0026	0.0017
151	0.0045	0.0027	0.0018
152	0.0045	0.0027	0.0018
153	0.0046	0.0028	0.0018
154	0.0047	0.0029	0.0019
155	0.0049	0.0029	0.0019
156	0.0049	0.0030	0.0019
157	0.0051	0.0031	0.0020
158	0.0052	0.0031	0.0020
159	0.0053	0.0032	0.0021
160	0.0054	0.0033	0.0021
161	0.0056	0.0034	0.0022
162	0.0057	0.0035	0.0023
163	0.0059	0.0036	0.0023
164	0.0061	0.0037	0.0024
165	0.0063	0.0038	0.0025
166	0.0064	0.0039	0.0025
167	0.0067	0.0041	0.0026
168	0.0069	0.0042	0.0027
169	0.0081	0.0049	0.0032
170	0.0083	0.0050	0.0033
171	0.0087	0.0053	0.0034
172	0.0089	0.0054	0.0035
173	0.0094	0.0057	0.0037
174	0.0097	0.0059	0.0038
175	0.0103	0.0062	0.0041
176	0.0106	0.0064	0.0042
177	0.0114	0.0069	0.0045
178	0.0118	0.0071	0.0046
179	0.0127	0.0077	0.0050
180	0.0133	0.0080	0.0052

EX5.out

181	0.0145	0.0088	0.0057
182	0.0152	0.0092	0.0060
183	0.0169	0.0103	0.0067
184	0.0180	0.0109	0.0071
185	0.0348	0.0211	0.0137
186	0.0371	0.0225	0.0146
187	0.0430	0.0261	0.0170
188	0.0470	0.0284	0.0186
189	0.0584	0.0284	0.0301
190	0.0673	0.0284	0.0390
191	0.1021	0.0284	0.0738
192	0.1483	0.0284	0.1199
193	0.6414	0.0284	0.6131
194	0.0804	0.0284	0.0520
195	0.0520	0.0284	0.0236
196	0.0398	0.0241	0.0157
197	0.0191	0.0116	0.0075
198	0.0160	0.0097	0.0063
199	0.0139	0.0084	0.0055
200	0.0122	0.0074	0.0048
201	0.0110	0.0067	0.0043
202	0.0100	0.0061	0.0039
203	0.0092	0.0056	0.0036
204	0.0085	0.0051	0.0033
205	0.0070	0.0043	0.0028
206	0.0066	0.0040	0.0026
207	0.0062	0.0037	0.0024
208	0.0058	0.0035	0.0023
209	0.0055	0.0033	0.0022
210	0.0052	0.0032	0.0021
211	0.0050	0.0030	0.0020
212	0.0048	0.0029	0.0019
213	0.0046	0.0028	0.0018
214	0.0044	0.0027	0.0017
215	0.0042	0.0026	0.0017
216	0.0041	0.0025	0.0016
217	0.0058	0.0035	0.0023
218	0.0056	0.0034	0.0022
219	0.0054	0.0033	0.0021
220	0.0053	0.0032	0.0021
221	0.0051	0.0031	0.0020
222	0.0050	0.0030	0.0020
223	0.0049	0.0029	0.0019
224	0.0047	0.0029	0.0019
225	0.0046	0.0028	0.0018
226	0.0045	0.0027	0.0018
227	0.0044	0.0027	0.0017
228	0.0043	0.0026	0.0017
229	0.0042	0.0026	0.0017
230	0.0041	0.0025	0.0016
231	0.0041	0.0025	0.0016
232	0.0040	0.0024	0.0016
233	0.0039	0.0024	0.0015
234	0.0038	0.0023	0.0015
235	0.0038	0.0023	0.0015
236	0.0037	0.0022	0.0015
237	0.0036	0.0022	0.0014
238	0.0036	0.0022	0.0014
239	0.0035	0.0021	0.0014
240	0.0034	0.0021	0.0014
241	0.0034	0.0021	0.0013
242	0.0033	0.0020	0.0013
243	0.0033	0.0020	0.0013
244	0.0032	0.0020	0.0013
245	0.0032	0.0019	0.0013
246	0.0031	0.0019	0.0012
247	0.0031	0.0019	0.0012
248	0.0031	0.0018	0.0012
249	0.0030	0.0018	0.0012
250	0.0030	0.0018	0.0012
251	0.0029	0.0018	0.0012
252	0.0029	0.0018	0.0011
253	0.0029	0.0017	0.0011
254	0.0028	0.0017	0.0011
255	0.0028	0.0017	0.0011
256	0.0028	0.0017	0.0011
257	0.0027	0.0016	0.0011
258	0.0027	0.0016	0.0011

EX5.out

259	0.0027	0.0016	0.0010
260	0.0026	0.0016	0.0010
261	0.0026	0.0016	0.0010
262	0.0026	0.0016	0.0010
263	0.0025	0.0015	0.0010
264	0.0025	0.0015	0.0010
265	0.0025	0.0015	0.0010
266	0.0025	0.0015	0.0010
267	0.0024	0.0015	0.0010
268	0.0024	0.0015	0.0009
269	0.0024	0.0014	0.0009
270	0.0024	0.0014	0.0009
271	0.0023	0.0014	0.0009
272	0.0023	0.0014	0.0009
273	0.0023	0.0014	0.0009
274	0.0023	0.0014	0.0009
275	0.0022	0.0014	0.0009
276	0.0022	0.0013	0.0009
277	0.0022	0.0013	0.0009
278	0.0022	0.0013	0.0009
279	0.0022	0.0013	0.0009
280	0.0021	0.0013	0.0008
281	0.0021	0.0013	0.0008
282	0.0021	0.0013	0.0008
283	0.0021	0.0013	0.0008
284	0.0021	0.0013	0.0008
285	0.0021	0.0012	0.0008
286	0.0020	0.0012	0.0008
287	0.0020	0.0012	0.0008
288	0.0020	0.0012	0.0008

Total soil rain loss = 1.02(In)
 Total effective rainfall = 1.49(In)
 Peak flow rate in flood hydrograph = 999.47(CFS)

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24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	250.0	500.0	750.0	1000.0
0+ 5	0.0004	0.05	Q				
0+10	0.0020	0.23	Q				
0+15	0.0059	0.57	Q				
0+20	0.0148	1.30	Q				
0+25	0.0304	2.26	Q				
0+30	0.0507	2.95	Q				
0+35	0.0742	3.42	Q				
0+40	0.1002	3.76	Q				
0+45	0.1280	4.04	Q				
0+50	0.1574	4.27	Q				
0+55	0.1881	4.46	Q				
1+ 0	0.2199	4.62	Q				
1+ 5	0.2528	4.77	Q				
1+10	0.2865	4.90	Q				
1+15	0.3210	5.02	Q				
1+20	0.3563	5.12	Q				
1+25	0.3922	5.21	Q				
1+30	0.4287	5.30	Q				
1+35	0.4657	5.38	Q				
1+40	0.5033	5.45	Q				
1+45	0.5413	5.52	Q				
1+50	0.5798	5.59	Q				
1+55	0.6187	5.65	Q				
2+ 0	0.6581	5.71	Q				
2+ 5	0.6977	5.76	Q				
2+10	0.7378	5.82	Q				
2+15	0.7782	5.87	Q				
2+20	0.8190	5.91	Q				
2+25	0.8600	5.96	Q				
2+30	0.9013	6.00	Q				
2+35	0.9429	6.04	Q				
2+40	0.9848	6.08	Q				
2+45	1.0269	6.12	Q				

2+50	1.0693	6.16	Q
2+55	1.1120	6.20	Q
3+ 0	1.1550	6.24	Q
3+ 5	1.1983	6.28	Q
3+10	1.2418	6.32	Q
3+15	1.2856	6.36	Q
3+20	1.3297	6.40	Q
3+25	1.3740	6.43	Q
3+30	1.4185	6.46	Q
3+35	1.4632	6.49	Q
3+40	1.5081	6.53	Q
3+45	1.5533	6.56	Q
3+50	1.5987	6.59	Q
3+55	1.6443	6.62	Q
4+ 0	1.6902	6.66	Q
4+ 5	1.7363	6.69	Q
4+10	1.7826	6.73	Q
4+15	1.8291	6.76	QV
4+20	1.8760	6.80	QV
4+25	1.9230	6.83	QV
4+30	1.9703	6.87	QV
4+35	2.0179	6.90	QV
4+40	2.0657	6.94	QV
4+45	2.1137	6.98	QV
4+50	2.1620	7.02	QV
4+55	2.2106	7.05	QV
5+ 0	2.2595	7.09	QV
5+ 5	2.3086	7.13	QV
5+10	2.3580	7.17	QV
5+15	2.4077	7.21	QV
5+20	2.4576	7.25	QV
5+25	2.5079	7.30	QV
5+30	2.5584	7.34	QV
5+35	2.6092	7.38	QV
5+40	2.6604	7.42	QV
5+45	2.7118	7.47	QV
5+50	2.7635	7.51	QV
5+55	2.8155	7.56	QV
6+ 0	2.8679	7.60	QV
6+ 5	2.9206	7.65	QV
6+10	2.9735	7.69	QV
6+15	3.0269	7.74	QV
6+20	3.0805	7.79	QV
6+25	3.1345	7.84	QV
6+30	3.1888	7.89	QV
6+35	3.2435	7.94	QV
6+40	3.2985	7.99	QV
6+45	3.3539	8.04	QV
6+50	3.4096	8.09	QV
6+55	3.4657	8.15	QV
7+ 0	3.5222	8.20	QV
7+ 5	3.5791	8.26	QV
7+10	3.6363	8.31	Q V
7+15	3.6939	8.37	Q V
7+20	3.7520	8.43	Q V
7+25	3.8104	8.48	Q V
7+30	3.8692	8.54	Q V
7+35	3.9285	8.60	Q V
7+40	3.9882	8.67	Q V
7+45	4.0483	8.73	Q V
7+50	4.1088	8.79	Q V
7+55	4.1698	8.86	Q V
8+ 0	4.2313	8.92	Q V
8+ 5	4.2932	8.99	Q V
8+10	4.3555	9.06	Q V
8+15	4.4184	9.13	Q V
8+20	4.4817	9.20	Q V
8+25	4.5456	9.27	Q V
8+30	4.6099	9.34	Q V
8+35	4.6747	9.41	Q V
8+40	4.7401	9.49	Q V
8+45	4.8060	9.57	Q V
8+50	4.8724	9.65	Q V
8+55	4.9394	9.73	Q V
9+ 0	5.0069	9.81	Q V
9+ 5	5.0751	9.89	Q V
9+10	5.1438	9.98	Q V
9+15	5.2131	10.06	Q V

9+20	5.2830	10.15	Q	V
9+25	5.3535	10.24	Q	V
9+30	5.4247	10.33	Q	V
9+35	5.4965	10.43	Q	V
9+40	5.5689	10.52	Q	V
9+45	5.6421	10.62	Q	V
9+50	5.7159	10.72	Q	V
9+55	5.7904	10.82	Q	V
10+ 0	5.8657	10.93	Q	V
10+ 5	5.9417	11.03	Q	V
10+10	6.0184	11.14	Q	V
10+15	6.0959	11.26	Q	V
10+20	6.1742	11.37	Q	V
10+25	6.2534	11.49	Q	V
10+30	6.3333	11.61	Q	V
10+35	6.4141	11.73	Q	V
10+40	6.4957	11.86	Q	V
10+45	6.5783	11.99	Q	V
10+50	6.6617	12.12	Q	V
10+55	6.7461	12.25	Q	V
11+ 0	6.8315	12.39	Q	V
11+ 5	6.9178	12.54	Q	V
11+10	7.0051	12.68	Q	V
11+15	7.0935	12.83	Q	V
11+20	7.1830	12.99	Q	V
11+25	7.2736	13.15	Q	V
11+30	7.3652	13.31	Q	V
11+35	7.4581	13.48	Q	V
11+40	7.5522	13.66	Q	V
11+45	7.6475	13.84	Q	V
11+50	7.7440	14.02	Q	V
11+55	7.8419	14.21	Q	V
12+ 0	7.9412	14.41	Q	V
12+ 5	8.0415	14.57	Q	V
12+10	8.1421	14.61	Q	V
12+15	8.2420	14.51	Q	V
12+20	8.3388	14.05	Q	V
12+25	8.4310	13.38	Q	V
12+30	8.5203	12.96	Q	V
12+35	8.6081	12.75	Q	V
12+40	8.6952	12.66	Q	V
12+45	8.7823	12.64	Q	V
12+50	8.8695	12.67	Q	V
12+55	8.9572	12.74	Q	V
13+ 0	9.0457	12.84	Q	V
13+ 5	9.1350	12.98	Q	V
13+10	9.2255	13.13	Q	V
13+15	9.3171	13.31	Q	V
13+20	9.4102	13.51	Q	V
13+25	9.5048	13.74	Q	V
13+30	9.6011	13.99	Q	V
13+35	9.6993	14.26	Q	V
13+40	9.7995	14.55	Q	V
13+45	9.9018	14.86	Q	V
13+50	10.0065	15.19	Q	V
13+55	10.1136	15.56	Q	V
14+ 0	10.2234	15.95	Q	V
14+ 5	10.3363	16.39	Q	V
14+10	10.4528	16.92	Q	V
14+15	10.5738	17.56	Q	V
14+20	10.7007	18.42	Q	V
14+25	10.8346	19.44	Q	V
14+30	10.9750	20.40	Q	V
14+35	11.1218	21.32	Q	V
14+40	11.2750	22.24	Q	V
14+45	11.4348	23.21	Q	V
14+50	11.6017	24.23	Q	V
14+55	11.7761	25.33	Q	V
15+ 0	11.9589	26.53	Q	V
15+ 5	12.1507	27.85	Q	V
15+10	12.3526	29.32	Q	V
15+15	12.5658	30.96	Q	V
15+20	12.7919	32.82	Q	V
15+25	13.0352	35.33	Q	V
15+30	13.3047	39.13	Q	V
15+35	13.6117	44.57	Q	V
15+40	13.9811	53.64	Q	V
15+45	14.4362	66.08	Q	V

			EX5.out				
15+50	14.9880	80.12	Q	V			
15+55	15.6716	99.26	Q	V			
16+ 0	16.5860	132.77	Q	V			
16+ 5	18.0937	218.92		QV			
16+10	20.6597	372.57		V	Q		
16+15	24.4751	554.00		V		Q	
16+20	30.4277	864.31			V		Q
16+25	37.3111	999.47				V	Q
16+30	42.5818	765.31				V	
16+35	46.4388	560.03				Q	
16+40	49.3525	423.07			Q		
16+45	51.7150	343.04		Q		V	
16+50	53.6642	283.01				V	
16+55	55.3280	241.59				V	
17+ 0	56.7383	204.77		Q		V	
17+ 5	57.9683	178.60				V	
17+10	59.0709	160.10		Q		V	
17+15	60.0640	144.19		Q		V	
17+20	60.9376	126.85		Q		V	
17+25	61.6876	108.90		Q		V	
17+30	62.3648	98.33		Q		V	
17+35	62.9904	90.83		Q		V	
17+40	63.5576	82.36		Q		V	
17+45	64.0812	76.03		Q		V	
17+50	64.5499	68.05		Q		V	
17+55	64.9755	61.80		Q		V	
18+ 0	65.3772	58.33		Q		V	
18+ 5	65.7324	51.57		Q		V	
18+10	66.0653	48.33	Q			V	
18+15	66.3706	44.33	Q			V	
18+20	66.6400	39.13	Q			V	
18+25	66.8995	37.68	Q			V	
18+30	67.1254	32.79	Q			V	
18+35	67.3333	30.19	Q			V	
18+40	67.5400	30.02	Q			V	
18+45	67.7514	30.69	Q			V	
18+50	67.9601	30.30	Q			V	
18+55	68.1644	29.66	Q			V	
19+ 0	68.3623	28.75	Q			V	
19+ 5	68.5498	27.22	Q			V	
19+10	68.7083	23.01	Q			V	
19+15	68.8528	20.98	Q			V	
19+20	68.9886	19.73	Q			V	
19+25	69.1008	16.28	Q			V	
19+30	69.1916	13.19	Q			V	
19+35	69.2787	12.64	Q			V	
19+40	69.3630	12.25	Q			V	
19+45	69.4452	11.93	Q			V	
19+50	69.5256	11.67	Q			V	
19+55	69.6043	11.42	Q			V	
20+ 0	69.6814	11.20	Q			V	
20+ 5	69.7570	10.98	Q			V	
20+10	69.8311	10.77	Q			V	
20+15	69.9040	10.58	Q			V	
20+20	69.9755	10.38	Q			V	
20+25	70.0458	10.21	Q			V	
20+30	70.1149	10.03	Q			V	
20+35	70.1828	9.86	Q			V	
20+40	70.2496	9.70	Q			V	
20+45	70.3153	9.55	Q			V	
20+50	70.3801	9.40	Q			V	
20+55	70.4439	9.26	Q			V	
21+ 0	70.5067	9.13	Q			V	
21+ 5	70.5687	9.00	Q			V	
21+10	70.6298	8.87	Q			V	
21+15	70.6900	8.74	Q			V	
21+20	70.7493	8.62	Q			V	
21+25	70.8079	8.50	Q			V	
21+30	70.8656	8.38	Q			V	
21+35	70.9225	8.27	Q			V	
21+40	70.9787	8.16	Q			V	
21+45	71.0341	8.05	Q			V	
21+50	71.0888	7.94	Q			V	
21+55	71.1428	7.84	Q			V	
22+ 0	71.1962	7.74	Q			V	
22+ 5	71.2488	7.65	Q			V	
22+10	71.3009	7.55	Q			V	
22+15	71.3523	7.46	Q			V	

22+20	71.4031	7.38	Q				V
22+25	71.4533	7.29	Q				V
22+30	71.5029	7.21	Q				V
22+35	71.5520	7.13	Q				V
22+40	71.6005	7.05	Q				V
22+45	71.6485	6.97	Q				V
22+50	71.6960	6.90	Q				V
22+55	71.7430	6.82	Q				V
23+ 0	71.7895	6.75	Q				V
23+ 5	71.8355	6.68	Q				V
23+10	71.8811	6.61	Q				V
23+15	71.9262	6.55	Q				V
23+20	71.9708	6.48	Q				V
23+25	72.0150	6.42	Q				V
23+30	72.0588	6.36	Q				V
23+35	72.1022	6.30	Q				V
23+40	72.1452	6.24	Q				V
23+45	72.1877	6.18	Q				V
23+50	72.2299	6.12	Q				V
23+55	72.2717	6.07	Q				V
24+ 0	72.3131	6.01	Q				V
24+ 5	72.3538	5.91	Q				V
24+10	72.3929	5.68	Q				V
24+15	72.4294	5.29	Q				V
24+20	72.4605	4.52	Q				V
24+25	72.4848	3.53	Q				V
24+30	72.5042	2.82	Q				V
24+35	72.5203	2.33	Q				V
24+40	72.5340	1.99	Q				V
24+45	72.5458	1.71	Q				V
24+50	72.5560	1.48	Q				V
24+55	72.5649	1.30	Q				V
25+ 0	72.5728	1.14	Q				V
25+ 5	72.5797	1.01	Q				V
25+10	72.5858	0.89	Q				V
25+15	72.5912	0.78	Q				V
25+20	72.5960	0.69	Q				V
25+25	72.6002	0.61	Q				V
25+30	72.6040	0.55	Q				V
25+35	72.6073	0.48	Q				V
25+40	72.6103	0.43	Q				V
25+45	72.6129	0.38	Q				V
25+50	72.6152	0.33	Q				V
25+55	72.6172	0.29	Q				V
26+ 0	72.6190	0.26	Q				V
26+ 5	72.6205	0.23	Q				V
26+10	72.6219	0.20	Q				V
26+15	72.6230	0.17	Q				V
26+20	72.6241	0.15	Q				V
26+25	72.6250	0.13	Q				V
26+30	72.6257	0.11	Q				V
26+35	72.6265	0.10	Q				V
26+40	72.6271	0.09	Q				V
26+45	72.6276	0.08	Q				V
26+50	72.6281	0.06	Q				V
26+55	72.6284	0.05	Q				V
27+ 0	72.6287	0.04	Q				V
27+ 5	72.6288	0.03	Q				V
27+10	72.6290	0.02	Q				V
27+15	72.6290	0.01	Q				V
27+20	72.6290	0.00	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
EXISTING CONDITIONS AREA 6
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
343.42	1	1.40

Rainfall data for year 100		
343.42	6	1.85

Rainfall data for year 100		
343.42	24	2.56

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
82.1	95.3	343.42	1.000	0.093	1.000	0.093

Area-averaged adjusted loss rate Fm (In/Hr) = 0.093

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
343.42	1.000	82.1	95.3	0.50	0.799

Area-averaged catchment yield fraction, Y = 0.799

Area-averaged low loss fraction, Yb = 0.201

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Watercourse length = 3833.00(Ft.)
Length from concentration point to centroid = 1917.00(Ft.)
Elevation difference along watercourse = 10.00(Ft.)
Mannings friction factor along watercourse = 0.035
Watershed area = 343.42(Ac.)
Catchment Lag time = 0.307 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 27.1037
Hydrograph baseflow = 0.00(CFS)

EX6.out
Average maximum watershed loss rate(Fm) = 0.093(In/Hr)
Average low loss rate fraction (Yb) = 0.201 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.664(In)
Computed peak 30-minute rainfall = 1.137(In)
Specified peak 1-hour rainfall = 1.400(In)
Computed peak 3-hour rainfall = 1.661(In)
Specified peak 6-hour rainfall = 1.850(In)
Specified peak 24-hour rainfall = 2.560(In)

Rainfall depth area reduction factors:
Using a total area of 343.42(Ac.) (Ref: fig. E-4)

5-minute factor = 0.984	Adjusted rainfall = 0.654(In)
30-minute factor = 0.984	Adjusted rainfall = 1.119(In)
1-hour factor = 0.984	Adjusted rainfall = 1.377(In)
3-hour factor = 0.998	Adjusted rainfall = 1.658(In)
6-hour factor = 0.999	Adjusted rainfall = 1.848(In)
24-hour factor = 1.000	Adjusted rainfall = 2.559(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 4153.24 (CFS))	
1	1.514	62.873
2	7.635	254.226
3	24.249	690.024
4	46.403	920.097
5	59.946	562.492
6	68.181	341.985
7	74.138	247.430
8	78.663	187.913
9	82.152	144.910
10	85.010	118.732
11	87.462	101.839
12	89.400	80.482
13	90.972	65.268
14	92.362	57.728
15	93.584	50.773
16	94.584	41.508
17	95.488	37.563
18	96.232	30.904
19	96.904	27.894
20	97.413	21.165
21	97.847	18.008
22	98.127	11.642
23	98.419	12.095
24	98.743	13.487
25	99.068	13.508
26	99.391	13.411
27	99.614	9.248
28	99.783	7.035
29	100.000	3.518

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6536	0.6536
2	0.8047	0.1511
3	0.9088	0.1041
4	0.9907	0.0819
5	1.0593	0.0686
6	1.1188	0.0596
7	1.1718	0.0530
8	1.2197	0.0479
9	1.2636	0.0439
10	1.3041	0.0406
11	1.3420	0.0378
12	1.3775	0.0355
13	1.3962	0.0187
14	1.4137	0.0175
15	1.4302	0.0165
16	1.4459	0.0156
17	1.4607	0.0148

		EX6.out
18	1.4748	0.0141
19	1.4883	0.0135
20	1.5013	0.0129
21	1.5136	0.0124
22	1.5256	0.0119
23	1.5370	0.0115
24	1.5481	0.0111
25	1.5588	0.0107
26	1.5691	0.0103
27	1.5791	0.0100
28	1.5888	0.0097
29	1.5982	0.0094
30	1.6074	0.0092
31	1.6163	0.0089
32	1.6250	0.0087
33	1.6334	0.0084
34	1.6416	0.0082
35	1.6497	0.0080
36	1.6575	0.0078
37	1.6647	0.0071
38	1.6716	0.0070
39	1.6785	0.0068
40	1.6852	0.0067
41	1.6917	0.0065
42	1.6981	0.0064
43	1.7044	0.0063
44	1.7106	0.0062
45	1.7166	0.0060
46	1.7225	0.0059
47	1.7284	0.0058
48	1.7341	0.0057
49	1.7397	0.0056
50	1.7452	0.0055
51	1.7507	0.0054
52	1.7560	0.0053
53	1.7613	0.0053
54	1.7664	0.0052
55	1.7715	0.0051
56	1.7765	0.0050
57	1.7815	0.0049
58	1.7864	0.0049
59	1.7912	0.0048
60	1.7959	0.0047
61	1.8005	0.0047
62	1.8051	0.0046
63	1.8097	0.0045
64	1.8142	0.0045
65	1.8186	0.0044
66	1.8229	0.0044
67	1.8273	0.0043
68	1.8315	0.0043
69	1.8357	0.0042
70	1.8399	0.0042
71	1.8440	0.0041
72	1.8480	0.0041
73	1.8540	0.0060
74	1.8599	0.0059
75	1.8658	0.0059
76	1.8716	0.0058
77	1.8774	0.0058
78	1.8831	0.0057
79	1.8887	0.0056
80	1.8943	0.0056
81	1.8998	0.0055
82	1.9053	0.0055
83	1.9107	0.0054
84	1.9161	0.0054
85	1.9215	0.0053
86	1.9267	0.0053
87	1.9320	0.0052
88	1.9372	0.0052
89	1.9423	0.0051
90	1.9474	0.0051
91	1.9525	0.0051
92	1.9575	0.0050
93	1.9625	0.0050
94	1.9674	0.0049
95	1.9723	0.0049

		EX6.out
96	1.9771	0.0049
97	1.9820	0.0048
98	1.9867	0.0048
99	1.9915	0.0047
100	1.9962	0.0047
101	2.0009	0.0047
102	2.0055	0.0046
103	2.0101	0.0046
104	2.0146	0.0046
105	2.0192	0.0045
106	2.0237	0.0045
107	2.0281	0.0045
108	2.0326	0.0044
109	2.0370	0.0044
110	2.0414	0.0044
111	2.0457	0.0043
112	2.0500	0.0043
113	2.0543	0.0043
114	2.0585	0.0043
115	2.0628	0.0042
116	2.0670	0.0042
117	2.0711	0.0042
118	2.0753	0.0041
119	2.0794	0.0041
120	2.0835	0.0041
121	2.0875	0.0041
122	2.0916	0.0040
123	2.0956	0.0040
124	2.0996	0.0040
125	2.1035	0.0040
126	2.1075	0.0039
127	2.1114	0.0039
128	2.1153	0.0039
129	2.1192	0.0039
130	2.1230	0.0038
131	2.1268	0.0038
132	2.1306	0.0038
133	2.1344	0.0038
134	2.1382	0.0038
135	2.1419	0.0037
136	2.1456	0.0037
137	2.1493	0.0037
138	2.1530	0.0037
139	2.1566	0.0037
140	2.1603	0.0036
141	2.1639	0.0036
142	2.1675	0.0036
143	2.1710	0.0036
144	2.1746	0.0036
145	2.1781	0.0035
146	2.1817	0.0035
147	2.1852	0.0035
148	2.1886	0.0035
149	2.1921	0.0035
150	2.1955	0.0034
151	2.1990	0.0034
152	2.2024	0.0034
153	2.2058	0.0034
154	2.2091	0.0034
155	2.2125	0.0034
156	2.2159	0.0033
157	2.2192	0.0033
158	2.2225	0.0033
159	2.2258	0.0033
160	2.2291	0.0033
161	2.2323	0.0033
162	2.2356	0.0032
163	2.2388	0.0032
164	2.2420	0.0032
165	2.2452	0.0032
166	2.2484	0.0032
167	2.2516	0.0032
168	2.2547	0.0032
169	2.2579	0.0031
170	2.2610	0.0031
171	2.2641	0.0031
172	2.2672	0.0031
173	2.2703	0.0031

		EX6.out
174	2.2734	0.0031
175	2.2765	0.0031
176	2.2795	0.0030
177	2.2825	0.0030
178	2.2856	0.0030
179	2.2886	0.0030
180	2.2916	0.0030
181	2.2945	0.0030
182	2.2975	0.0030
183	2.3005	0.0030
184	2.3034	0.0029
185	2.3063	0.0029
186	2.3093	0.0029
187	2.3122	0.0029
188	2.3151	0.0029
189	2.3180	0.0029
190	2.3208	0.0029
191	2.3237	0.0029
192	2.3265	0.0029
193	2.3294	0.0028
194	2.3322	0.0028
195	2.3350	0.0028
196	2.3378	0.0028
197	2.3406	0.0028
198	2.3434	0.0028
199	2.3462	0.0028
200	2.3490	0.0028
201	2.3517	0.0028
202	2.3544	0.0027
203	2.3572	0.0027
204	2.3599	0.0027
205	2.3626	0.0027
206	2.3653	0.0027
207	2.3680	0.0027
208	2.3707	0.0027
209	2.3734	0.0027
210	2.3760	0.0027
211	2.3787	0.0027
212	2.3813	0.0026
213	2.3839	0.0026
214	2.3866	0.0026
215	2.3892	0.0026
216	2.3918	0.0026
217	2.3944	0.0026
218	2.3970	0.0026
219	2.3995	0.0026
220	2.4021	0.0026
221	2.4047	0.0026
222	2.4072	0.0026
223	2.4098	0.0025
224	2.4123	0.0025
225	2.4148	0.0025
226	2.4173	0.0025
227	2.4198	0.0025
228	2.4223	0.0025
229	2.4248	0.0025
230	2.4273	0.0025
231	2.4298	0.0025
232	2.4322	0.0025
233	2.4347	0.0025
234	2.4372	0.0024
235	2.4396	0.0024
236	2.4420	0.0024
237	2.4445	0.0024
238	2.4469	0.0024
239	2.4493	0.0024
240	2.4517	0.0024
241	2.4541	0.0024
242	2.4565	0.0024
243	2.4588	0.0024
244	2.4612	0.0024
245	2.4636	0.0024
246	2.4659	0.0024
247	2.4683	0.0023
248	2.4706	0.0023
249	2.4730	0.0023
250	2.4753	0.0023
251	2.4776	0.0023

		EX6.out
252	2.4799	0.0023
253	2.4822	0.0023
254	2.4845	0.0023
255	2.4868	0.0023
256	2.4891	0.0023
257	2.4914	0.0023
258	2.4937	0.0023
259	2.4959	0.0023
260	2.4982	0.0023
261	2.5004	0.0023
262	2.5027	0.0022
263	2.5049	0.0022
264	2.5072	0.0022
265	2.5094	0.0022
266	2.5116	0.0022
267	2.5138	0.0022
268	2.5160	0.0022
269	2.5182	0.0022
270	2.5204	0.0022
271	2.5226	0.0022
272	2.5248	0.0022
273	2.5270	0.0022
274	2.5291	0.0022
275	2.5313	0.0022
276	2.5335	0.0022
277	2.5356	0.0022
278	2.5378	0.0021
279	2.5399	0.0021
280	2.5420	0.0021
281	2.5442	0.0021
282	2.5463	0.0021
283	2.5484	0.0021
284	2.5505	0.0021
285	2.5526	0.0021
286	2.5547	0.0021
287	2.5568	0.0021
288	2.5589	0.0021

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0021	0.0004	0.0017
2	0.0021	0.0004	0.0017
3	0.0021	0.0004	0.0017
4	0.0021	0.0004	0.0017
5	0.0021	0.0004	0.0017
6	0.0021	0.0004	0.0017
7	0.0021	0.0004	0.0017
8	0.0021	0.0004	0.0017
9	0.0022	0.0004	0.0017
10	0.0022	0.0004	0.0017
11	0.0022	0.0004	0.0017
12	0.0022	0.0004	0.0017
13	0.0022	0.0004	0.0018
14	0.0022	0.0004	0.0018
15	0.0022	0.0004	0.0018
16	0.0022	0.0004	0.0018
17	0.0022	0.0004	0.0018
18	0.0022	0.0004	0.0018
19	0.0023	0.0005	0.0018
20	0.0023	0.0005	0.0018
21	0.0023	0.0005	0.0018
22	0.0023	0.0005	0.0018
23	0.0023	0.0005	0.0018
24	0.0023	0.0005	0.0018
25	0.0023	0.0005	0.0018
26	0.0023	0.0005	0.0019
27	0.0023	0.0005	0.0019
28	0.0023	0.0005	0.0019
29	0.0024	0.0005	0.0019
30	0.0024	0.0005	0.0019
31	0.0024	0.0005	0.0019
32	0.0024	0.0005	0.0019
33	0.0024	0.0005	0.0019
34	0.0024	0.0005	0.0019
35	0.0024	0.0005	0.0019
36	0.0024	0.0005	0.0019

		EX6.out	
37	0.0024	0.0005	0.0020
38	0.0025	0.0005	0.0020
39	0.0025	0.0005	0.0020
40	0.0025	0.0005	0.0020
41	0.0025	0.0005	0.0020
42	0.0025	0.0005	0.0020
43	0.0025	0.0005	0.0020
44	0.0025	0.0005	0.0020
45	0.0026	0.0005	0.0020
46	0.0026	0.0005	0.0020
47	0.0026	0.0005	0.0021
48	0.0026	0.0005	0.0021
49	0.0026	0.0005	0.0021
50	0.0026	0.0005	0.0021
51	0.0026	0.0005	0.0021
52	0.0026	0.0005	0.0021
53	0.0027	0.0005	0.0021
54	0.0027	0.0005	0.0021
55	0.0027	0.0005	0.0022
56	0.0027	0.0005	0.0022
57	0.0027	0.0005	0.0022
58	0.0027	0.0005	0.0022
59	0.0028	0.0006	0.0022
60	0.0028	0.0006	0.0022
61	0.0028	0.0006	0.0022
62	0.0028	0.0006	0.0022
63	0.0028	0.0006	0.0023
64	0.0028	0.0006	0.0023
65	0.0029	0.0006	0.0023
66	0.0029	0.0006	0.0023
67	0.0029	0.0006	0.0023
68	0.0029	0.0006	0.0023
69	0.0029	0.0006	0.0023
70	0.0029	0.0006	0.0023
71	0.0030	0.0006	0.0024
72	0.0030	0.0006	0.0024
73	0.0030	0.0006	0.0024
74	0.0030	0.0006	0.0024
75	0.0030	0.0006	0.0024
76	0.0030	0.0006	0.0024
77	0.0031	0.0006	0.0025
78	0.0031	0.0006	0.0025
79	0.0031	0.0006	0.0025
80	0.0031	0.0006	0.0025
81	0.0032	0.0006	0.0025
82	0.0032	0.0006	0.0025
83	0.0032	0.0006	0.0026
84	0.0032	0.0006	0.0026
85	0.0032	0.0007	0.0026
86	0.0033	0.0007	0.0026
87	0.0033	0.0007	0.0026
88	0.0033	0.0007	0.0026
89	0.0033	0.0007	0.0027
90	0.0034	0.0007	0.0027
91	0.0034	0.0007	0.0027
92	0.0034	0.0007	0.0027
93	0.0034	0.0007	0.0028
94	0.0035	0.0007	0.0028
95	0.0035	0.0007	0.0028
96	0.0035	0.0007	0.0028
97	0.0036	0.0007	0.0028
98	0.0036	0.0007	0.0029
99	0.0036	0.0007	0.0029
100	0.0036	0.0007	0.0029
101	0.0037	0.0007	0.0029
102	0.0037	0.0007	0.0030
103	0.0037	0.0007	0.0030
104	0.0038	0.0008	0.0030
105	0.0038	0.0008	0.0030
106	0.0038	0.0008	0.0031
107	0.0039	0.0008	0.0031
108	0.0039	0.0008	0.0031
109	0.0039	0.0008	0.0031
110	0.0040	0.0008	0.0032
111	0.0040	0.0008	0.0032
112	0.0040	0.0008	0.0032
113	0.0041	0.0008	0.0033
114	0.0041	0.0008	0.0033

EX6.out

115	0.0042	0.0008	0.0033
116	0.0042	0.0008	0.0034
117	0.0043	0.0009	0.0034
118	0.0043	0.0009	0.0034
119	0.0043	0.0009	0.0035
120	0.0044	0.0009	0.0035
121	0.0044	0.0009	0.0035
122	0.0045	0.0009	0.0036
123	0.0045	0.0009	0.0036
124	0.0046	0.0009	0.0036
125	0.0046	0.0009	0.0037
126	0.0047	0.0009	0.0037
127	0.0047	0.0010	0.0038
128	0.0048	0.0010	0.0038
129	0.0049	0.0010	0.0039
130	0.0049	0.0010	0.0039
131	0.0050	0.0010	0.0040
132	0.0050	0.0010	0.0040
133	0.0051	0.0010	0.0041
134	0.0051	0.0010	0.0041
135	0.0052	0.0011	0.0042
136	0.0053	0.0011	0.0042
137	0.0054	0.0011	0.0043
138	0.0054	0.0011	0.0043
139	0.0055	0.0011	0.0044
140	0.0056	0.0011	0.0045
141	0.0057	0.0011	0.0046
142	0.0058	0.0012	0.0046
143	0.0059	0.0012	0.0047
144	0.0059	0.0012	0.0047
145	0.0041	0.0008	0.0032
146	0.0041	0.0008	0.0033
147	0.0042	0.0008	0.0034
148	0.0043	0.0009	0.0034
149	0.0044	0.0009	0.0035
150	0.0044	0.0009	0.0035
151	0.0045	0.0009	0.0036
152	0.0046	0.0009	0.0037
153	0.0047	0.0009	0.0038
154	0.0048	0.0010	0.0038
155	0.0049	0.0010	0.0040
156	0.0050	0.0010	0.0040
157	0.0052	0.0010	0.0041
158	0.0053	0.0011	0.0042
159	0.0054	0.0011	0.0043
160	0.0055	0.0011	0.0044
161	0.0057	0.0011	0.0046
162	0.0058	0.0012	0.0047
163	0.0060	0.0012	0.0048
164	0.0062	0.0012	0.0049
165	0.0064	0.0013	0.0051
166	0.0065	0.0013	0.0052
167	0.0068	0.0014	0.0055
168	0.0070	0.0014	0.0056
169	0.0078	0.0016	0.0063
170	0.0080	0.0016	0.0064
171	0.0084	0.0017	0.0068
172	0.0087	0.0017	0.0069
173	0.0092	0.0018	0.0073
174	0.0094	0.0019	0.0075
175	0.0100	0.0020	0.0080
176	0.0103	0.0021	0.0083
177	0.0111	0.0022	0.0088
178	0.0115	0.0023	0.0092
179	0.0124	0.0025	0.0099
180	0.0129	0.0026	0.0103
181	0.0141	0.0028	0.0113
182	0.0148	0.0030	0.0119
183	0.0165	0.0033	0.0132
184	0.0175	0.0035	0.0140
185	0.0355	0.0071	0.0284
186	0.0378	0.0076	0.0302
187	0.0439	0.0078	0.0361
188	0.0479	0.0078	0.0401
189	0.0596	0.0078	0.0518
190	0.0686	0.0078	0.0608
191	0.1041	0.0078	0.0963
192	0.1511	0.0078	0.1433

EX6.out

193	0.6536	0.0078	0.6459
194	0.0819	0.0078	0.0742
195	0.0530	0.0078	0.0452
196	0.0406	0.0078	0.0328
197	0.0187	0.0038	0.0149
198	0.0156	0.0031	0.0125
199	0.0135	0.0027	0.0108
200	0.0119	0.0024	0.0095
201	0.0107	0.0021	0.0085
202	0.0097	0.0019	0.0078
203	0.0089	0.0018	0.0071
204	0.0082	0.0017	0.0066
205	0.0071	0.0014	0.0057
206	0.0067	0.0013	0.0053
207	0.0063	0.0013	0.0050
208	0.0059	0.0012	0.0047
209	0.0056	0.0011	0.0045
210	0.0053	0.0011	0.0043
211	0.0051	0.0010	0.0041
212	0.0049	0.0010	0.0039
213	0.0047	0.0009	0.0037
214	0.0045	0.0009	0.0036
215	0.0043	0.0009	0.0034
216	0.0042	0.0008	0.0033
217	0.0060	0.0012	0.0048
218	0.0058	0.0012	0.0046
219	0.0056	0.0011	0.0045
220	0.0055	0.0011	0.0044
221	0.0053	0.0011	0.0043
222	0.0052	0.0010	0.0041
223	0.0051	0.0010	0.0040
224	0.0049	0.0010	0.0039
225	0.0048	0.0010	0.0039
226	0.0047	0.0009	0.0038
227	0.0046	0.0009	0.0037
228	0.0045	0.0009	0.0036
229	0.0044	0.0009	0.0035
230	0.0043	0.0009	0.0034
231	0.0042	0.0008	0.0034
232	0.0041	0.0008	0.0033
233	0.0041	0.0008	0.0032
234	0.0040	0.0008	0.0032
235	0.0039	0.0008	0.0031
236	0.0038	0.0008	0.0031
237	0.0038	0.0008	0.0030
238	0.0037	0.0007	0.0030
239	0.0037	0.0007	0.0029
240	0.0036	0.0007	0.0029
241	0.0035	0.0007	0.0028
242	0.0035	0.0007	0.0028
243	0.0034	0.0007	0.0027
244	0.0034	0.0007	0.0027
245	0.0033	0.0007	0.0027
246	0.0033	0.0007	0.0026
247	0.0032	0.0006	0.0026
248	0.0032	0.0006	0.0025
249	0.0031	0.0006	0.0025
250	0.0031	0.0006	0.0025
251	0.0031	0.0006	0.0024
252	0.0030	0.0006	0.0024
253	0.0030	0.0006	0.0024
254	0.0029	0.0006	0.0024
255	0.0029	0.0006	0.0023
256	0.0029	0.0006	0.0023
257	0.0028	0.0006	0.0023
258	0.0028	0.0006	0.0022
259	0.0028	0.0006	0.0022
260	0.0027	0.0005	0.0022
261	0.0027	0.0005	0.0022
262	0.0027	0.0005	0.0021
263	0.0027	0.0005	0.0021
264	0.0026	0.0005	0.0021
265	0.0026	0.0005	0.0021
266	0.0026	0.0005	0.0021
267	0.0025	0.0005	0.0020
268	0.0025	0.0005	0.0020
269	0.0025	0.0005	0.0020
270	0.0025	0.0005	0.0020

EX6.out

271	0.0024	0.0005	0.0020
272	0.0024	0.0005	0.0019
273	0.0024	0.0005	0.0019
274	0.0024	0.0005	0.0019
275	0.0023	0.0005	0.0019
276	0.0023	0.0005	0.0019
277	0.0023	0.0005	0.0018
278	0.0023	0.0005	0.0018
279	0.0023	0.0005	0.0018
280	0.0022	0.0005	0.0018
281	0.0022	0.0004	0.0018
282	0.0022	0.0004	0.0018
283	0.0022	0.0004	0.0017
284	0.0022	0.0004	0.0017
285	0.0022	0.0004	0.0017
286	0.0021	0.0004	0.0017
287	0.0021	0.0004	0.0017
288	0.0021	0.0004	0.0017

 Total soil rain loss = 0.33(In)
 Total effective rainfall = 2.23(In)
 Peak flow rate in flood hydrograph = 817.43(CFS)

+++++
 24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	225.0	450.0	675.0	900.0
0+ 5	0.0007	0.10	Q				
0+10	0.0044	0.53	Q				
0+15	0.0160	1.68	Q				
0+20	0.0382	3.23	Q				
0+25	0.0670	4.18	Q				
0+30	0.0998	4.76	Q				
0+35	0.1356	5.20	Q				
0+40	0.1737	5.53	Q				
0+45	0.2136	5.80	Q				
0+50	0.2550	6.02	Q				
0+55	0.2978	6.21	Q				
1+ 0	0.3417	6.37	Q				
1+ 5	0.3865	6.51	Q				
1+10	0.4322	6.63	Q				
1+15	0.4786	6.74	Q				
1+20	0.5258	6.84	Q				
1+25	0.5735	6.93	Q				
1+30	0.6218	7.01	Q				
1+35	0.6707	7.09	Q				
1+40	0.7199	7.16	Q				
1+45	0.7697	7.22	Q				
1+50	0.8197	7.27	Q				
1+55	0.8701	7.32	Q				
2+ 0	0.9209	7.38	Q				
2+ 5	0.9721	7.43	Q				
2+10	1.0237	7.49	Q				
2+15	1.0756	7.54	Q				
2+20	1.1278	7.58	Q				
2+25	1.1803	7.62	Q				
2+30	1.2330	7.66	Q				
2+35	1.2859	7.69	Q				
2+40	1.3392	7.73	Q				
2+45	1.3926	7.76	Q				
2+50	1.4463	7.80	Q				
2+55	1.5003	7.83	Q				
3+ 0	1.5545	7.87	Q				
3+ 5	1.6090	7.91	QV				
3+10	1.6637	7.95	QV				
3+15	1.7187	7.98	QV				
3+20	1.7739	8.02	QV				
3+25	1.8295	8.06	QV				
3+30	1.8853	8.10	QV				
3+35	1.9413	8.14	QV				
3+40	1.9977	8.18	QV				
3+45	2.0543	8.22	QV				

3+50	2.1112	8.26	QV
3+55	2.1685	8.31	QV
4+ 0	2.2260	8.35	QV
4+ 5	2.2838	8.39	QV
4+10	2.3418	8.44	QV
4+15	2.4002	8.48	QV
4+20	2.4589	8.52	QV
4+25	2.5180	8.57	QV
4+30	2.5773	8.61	QV
4+35	2.6369	8.66	QV
4+40	2.6969	8.71	QV
4+45	2.7572	8.75	QV
4+50	2.8178	8.80	QV
4+55	2.8787	8.85	QV
5+ 0	2.9400	8.90	QV
5+ 5	3.0017	8.95	QV
5+10	3.0636	9.00	QV
5+15	3.1260	9.05	QV
5+20	3.1886	9.10	Q V
5+25	3.2517	9.15	Q V
5+30	3.3151	9.21	Q V
5+35	3.3789	9.26	Q V
5+40	3.4430	9.32	Q V
5+45	3.5076	9.37	Q V
5+50	3.5725	9.43	Q V
5+55	3.6378	9.48	Q V
6+ 0	3.7035	9.54	Q V
6+ 5	3.7696	9.60	Q V
6+10	3.8361	9.66	Q V
6+15	3.9030	9.72	Q V
6+20	3.9704	9.78	Q V
6+25	4.0382	9.84	Q V
6+30	4.1064	9.90	Q V
6+35	4.1750	9.97	Q V
6+40	4.2441	10.03	Q V
6+45	4.3136	10.10	Q V
6+50	4.3836	10.16	Q V
6+55	4.4541	10.23	Q V
7+ 0	4.5250	10.30	Q V
7+ 5	4.5965	10.37	Q V
7+10	4.6684	10.44	Q V
7+15	4.7408	10.51	Q V
7+20	4.8137	10.59	Q V
7+25	4.8871	10.66	Q V
7+30	4.9610	10.74	Q V
7+35	5.0355	10.81	Q V
7+40	5.1105	10.89	Q V
7+45	5.1860	10.97	Q V
7+50	5.2621	11.05	Q V
7+55	5.3388	11.13	Q V
8+ 0	5.4161	11.22	Q V
8+ 5	5.4939	11.30	Q V
8+10	5.5723	11.39	Q V
8+15	5.6513	11.47	Q V
8+20	5.7310	11.56	Q V
8+25	5.8113	11.66	Q V
8+30	5.8922	11.75	Q V
8+35	5.9737	11.84	Q V
8+40	6.0560	11.94	Q V
8+45	6.1389	12.04	Q V
8+50	6.2225	12.14	Q V
8+55	6.3068	12.24	Q V
9+ 0	6.3918	12.34	Q V
9+ 5	6.4775	12.45	Q V
9+10	6.5640	12.56	Q V
9+15	6.6513	12.67	Q V
9+20	6.7393	12.78	Q V
9+25	6.8281	12.90	Q V
9+30	6.9177	13.01	Q V
9+35	7.0082	13.13	Q V
9+40	7.0995	13.26	Q V
9+45	7.1917	13.38	Q V
9+50	7.2847	13.51	Q V
9+55	7.3787	13.64	Q V
10+ 0	7.4735	13.78	Q V
10+ 5	7.5693	13.91	Q V
10+10	7.6661	14.05	Q V
10+15	7.7639	14.20	Q V

10+20	7.8627	14.34	Q	V
10+25	7.9625	14.49	Q	V
10+30	8.0634	14.65	Q	V
10+35	8.1653	14.81	Q	V
10+40	8.2684	14.97	Q	V
10+45	8.3726	15.13	Q	V
10+50	8.4780	15.30	Q	V
10+55	8.5847	15.48	Q	V
11+ 0	8.6925	15.66	Q	V
11+ 5	8.8016	15.84	Q	V
11+10	8.9120	16.03	Q	V
11+15	9.0238	16.23	Q	V
11+20	9.1370	16.43	Q	V
11+25	9.2515	16.64	Q	V
11+30	9.3676	16.85	Q	V
11+35	9.4851	17.07	Q	V
11+40	9.6042	17.29	Q	V
11+45	9.7249	17.53	Q	V
11+50	9.8473	17.77	Q	V
11+55	9.9714	18.01	Q	V
12+ 0	10.0972	18.27	Q	V
12+ 5	10.2242	18.43	Q	V
12+10	10.3502	18.30	Q	V
12+15	10.4705	17.47	Q	V
12+20	10.5826	16.27	Q	V
12+25	10.6903	15.64	Q	V
12+30	10.7960	15.35	Q	V
12+35	10.9009	15.22	Q	V
12+40	11.0055	15.19	Q	V
12+45	11.1104	15.24	Q	V
12+50	11.2160	15.33	Q	V
12+55	11.3225	15.46	Q	V
13+ 0	11.4302	15.64	Q	V
13+ 5	11.5394	15.86	Q	V
13+10	11.6503	16.10	Q	V
13+15	11.7630	16.36	Q	V
13+20	11.8777	16.66	Q	V
13+25	11.9947	16.98	Q	V
13+30	12.1141	17.33	Q	V
13+35	12.2360	17.71	Q	V
13+40	12.3608	18.12	Q	V
13+45	12.4886	18.56	Q	V
13+50	12.6197	19.04	Q	V
13+55	12.7543	19.54	Q	V
14+ 0	12.8926	20.08	Q	V
14+ 5	13.0350	20.68	Q	V
14+10	13.1824	21.41	Q	V
14+15	13.3364	22.37	Q	V
14+20	13.4982	23.49	Q	V
14+25	13.6672	24.54	Q	V
14+30	13.8434	25.57	Q	V
14+35	14.0268	26.64	Q	V
14+40	14.2181	27.78	Q	V
14+45	14.4178	28.99	Q	V
14+50	14.6265	30.31	Q	V
14+55	14.8452	31.75	Q	V
15+ 0	15.0749	33.35	Q	V
15+ 5	15.3168	35.12	Q	V
15+10	15.5724	37.12	Q	V
15+15	15.8436	39.38	Q	V
15+20	16.1327	41.98	Q	V
15+25	16.4479	45.76	Q	V
15+30	16.8095	52.51	Q	V
15+35	17.2614	65.62	Q	V
15+40	17.8362	83.45	Q	V
15+45	18.5262	100.20	Q	V
15+50	19.3442	118.76	Q	V
15+55	20.3308	143.25	Q	V
16+ 0	21.5719	180.22	Q	V
16+ 5	23.4237	268.88	Q	V
16+10	26.4495	439.34	Q	V
16+15	31.3513	711.76	Q	V
16+20	36.9810	817.43	Q	V
16+25	40.9788	580.48	Q	V
16+30	43.8295	413.91	Q	V
16+35	46.0330	319.96	Q	V
16+40	47.7668	251.75	Q	V
16+45	49.1706	203.83	Q	V

16+50	50.3544	171.88			V
16+55	51.3771	148.50			V
17+ 0	52.2408	125.41			V
17+ 5	52.9842	107.95			V
17+10	53.6455	96.02			V
17+15	54.2329	85.29			V
17+20	54.7445	74.28			V
17+25	55.2059	67.00			V
17+30	55.6118	58.93			V
17+35	55.9781	53.20			V
17+40	56.2948	45.98			V
17+45	56.5776	41.07			V
17+50	56.8202	35.23			V
17+55	57.0515	33.58			V
18+ 0	57.2769	32.72			V
18+ 5	57.4916	31.17			V
18+10	57.6959	29.67			V
18+15	57.8792	26.61			V
18+20	58.0508	24.92			V
18+25	58.2032	22.13			V
18+30	58.3366	19.37			V
18+35	58.4655	18.71			V
18+40	58.5908	18.19			V
18+45	58.7129	17.74			V
18+50	58.8325	17.36			V
18+55	58.9495	16.99			V
19+ 0	59.0640	16.63			V
19+ 5	59.1761	16.28			V
19+10	59.2859	15.94			V
19+15	59.3934	15.62			V
19+20	59.4988	15.30			V
19+25	59.6021	15.00			V
19+30	59.7035	14.71			V
19+35	59.8029	14.44			V
19+40	59.9004	14.16			V
19+45	59.9961	13.90			V
19+50	60.0901	13.64			V
19+55	60.1823	13.39			V
20+ 0	60.2729	13.16			V
20+ 5	60.3620	12.94			V
20+10	60.4496	12.72			V
20+15	60.5358	12.51			V
20+20	60.6206	12.31			V
20+25	60.7040	12.11			V
20+30	60.7860	11.91			V
20+35	60.8667	11.72			V
20+40	60.9461	11.53			V
20+45	61.0243	11.35			V
20+50	61.1013	11.18			V
20+55	61.1771	11.01			V
21+ 0	61.2519	10.85			V
21+ 5	61.3255	10.70			V
21+10	61.3982	10.55			V
21+15	61.4698	10.40			V
21+20	61.5405	10.26			V
21+25	61.6103	10.13			V
21+30	61.6791	10.00			V
21+35	61.7471	9.87			V
21+40	61.8142	9.74			V
21+45	61.8805	9.62			V
21+50	61.9459	9.51			V
21+55	62.0106	9.39			V
22+ 0	62.0745	9.28			V
22+ 5	62.1377	9.17			V
22+10	62.2002	9.07			V
22+15	62.2619	8.97			V
22+20	62.3230	8.87			V
22+25	62.3834	8.77			V
22+30	62.4431	8.67			V
22+35	62.5022	8.58			V
22+40	62.5607	8.49			V
22+45	62.6186	8.40			V
22+50	62.6759	8.32			V
22+55	62.7326	8.23			V
23+ 0	62.7887	8.15			V
23+ 5	62.8443	8.07			V
23+10	62.8994	7.99			V
23+15	62.9539	7.92			V

23+20	63.0079	7.84	Q				V
23+25	63.0614	7.77	Q				V
23+30	63.1145	7.70	Q				V
23+35	63.1670	7.63	Q				V
23+40	63.2191	7.56	Q				V
23+45	63.2707	7.49	Q				V
23+50	63.3218	7.43	Q				V
23+55	63.3725	7.36	Q				V
24+ 0	63.4228	7.30	Q				V
24+ 5	63.4719	7.13	Q				V
24+10	63.5177	6.65	Q				V
24+15	63.5552	5.44	Q				V
24+20	63.5818	3.87	Q				V
24+25	63.6018	2.90	Q				V
24+30	63.6177	2.30	Q				V
24+35	63.6306	1.87	Q				V
24+40	63.6412	1.54	Q				V
24+45	63.6501	1.29	Q				V
24+50	63.6575	1.08	Q				V
24+55	63.6637	0.90	Q				V
25+ 0	63.6689	0.76	Q				V
25+ 5	63.6734	0.64	Q				V
25+10	63.6771	0.54	Q				V
25+15	63.6803	0.45	Q				V
25+20	63.6829	0.38	Q				V
25+25	63.6851	0.32	Q				V
25+30	63.6869	0.26	Q				V
25+35	63.6883	0.21	Q				V
25+40	63.6895	0.18	Q				V
25+45	63.6905	0.14	Q				V
25+50	63.6914	0.12	Q				V
25+55	63.6921	0.10	Q				V
26+ 0	63.6926	0.08	Q				V
26+ 5	63.6930	0.06	Q				V
26+10	63.6933	0.03	Q				V
26+15	63.6934	0.02	Q				V
26+20	63.6934	0.01	Q				V

ATTACHMENT 2

Developed Conditions
100-Year, 24-Hour Hydrograph
Calculations

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
DEVELOPED CONDITIONS AREA 1.1
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
127.89	1	1.36

Rainfall data for year 100		
127.89	6	1.84

Rainfall data for year 100		
127.89	24	2.46

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
78.0	92.8	127.89	1.000	0.140	0.900	0.126

Area-averaged adjusted loss rate Fm (In/Hr) = 0.126

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
115.10	0.900	78.0	92.8	0.78	0.701
12.79	0.100	98.0	98.0	0.20	0.907

Area-averaged catchment yield fraction, Y = 0.722

Area-averaged low loss fraction, Yb = 0.278

+++++

Watercourse length = 2390.00(Ft.)

Length from concentration point to centroid = 1195.00(Ft.)

Elevation difference along watercourse = 7.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 127.89(Ac.)

Catchment Lag time = 0.210 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 39.6756

Hydrograph baseflow = 0.00(CFS)
 Average maximum watershed loss rate(Fm) = 0.126(In/Hr)
 Average low loss rate fraction (Yb) = 0.278 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.645(In)
 Computed peak 30-minute rainfall = 1.105(In)
 Specified peak 1-hour rainfall = 1.360(In)
 Computed peak 3-hour rainfall = 1.637(In)
 Specified peak 6-hour rainfall = 1.840(In)
 Specified peak 24-hour rainfall = 2.460(In)

Rainfall depth area reduction factors:

Using a total area of 127.89(Ac.) (Ref: fig. E-4)

5-minute factor = 0.994	Adjusted rainfall = 0.641(In)
30-minute factor = 0.994	Adjusted rainfall = 1.098(In)
1-hour factor = 0.994	Adjusted rainfall = 1.352(In)
3-hour factor = 0.999	Adjusted rainfall = 1.636(In)
6-hour factor = 1.000	Adjusted rainfall = 1.839(In)
24-hour factor = 1.000	Adjusted rainfall = 2.460(In)

U n i t H y d r o g r a p h

Interval Number	'S' Graph Mean values	Unit Hydrograph (CFS)

(K = 1546.67 (CFS))

1	2.713	41.956
2	18.331	241.565
3	48.680	469.394
4	65.299	257.038
5	74.524	142.680
6	80.652	94.783
7	85.035	67.786
8	88.429	52.502
9	90.878	37.872
10	92.868	30.788
11	94.463	24.664
12	95.744	19.822
13	96.769	15.854
14	97.538	11.889
15	98.053	7.962
16	98.480	6.609
17	98.956	7.355
18	99.417	7.139
19	99.712	4.565
20	100.000	4.447

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)

1	0.6415	0.6415
2	0.7897	0.1483
3	0.8919	0.1021
4	0.9723	0.0804
5	1.0396	0.0673
6	1.0980	0.0584
7	1.1500	0.0520
8	1.1970	0.0470
9	1.2401	0.0431
10	1.2799	0.0398
11	1.3170	0.0371
12	1.3518	0.0348
13	1.3708	0.0189
14	1.3885	0.0177
15	1.4052	0.0167
16	1.4210	0.0158
17	1.4361	0.0150
18	1.4504	0.0143
19	1.4640	0.0137
20	1.4771	0.0131
21	1.4897	0.0126
22	1.5017	0.0121
23	1.5134	0.0116
24	1.5246	0.0112
25	1.5354	0.0108

		PR11.out
26	1.5459	0.0105
27	1.5561	0.0102
28	1.5659	0.0098
29	1.5755	0.0096
30	1.5848	0.0093
31	1.5938	0.0090
32	1.6026	0.0088
33	1.6112	0.0086
34	1.6196	0.0084
35	1.6277	0.0082
36	1.6357	0.0080
37	1.6433	0.0076
38	1.6507	0.0074
39	1.6580	0.0073
40	1.6651	0.0071
41	1.6721	0.0070
42	1.6789	0.0068
43	1.6856	0.0067
44	1.6922	0.0066
45	1.6986	0.0064
46	1.7050	0.0063
47	1.7112	0.0062
48	1.7173	0.0061
49	1.7233	0.0060
50	1.7292	0.0059
51	1.7350	0.0058
52	1.7407	0.0057
53	1.7463	0.0056
54	1.7519	0.0055
55	1.7573	0.0054
56	1.7627	0.0054
57	1.7680	0.0053
58	1.7732	0.0052
59	1.7783	0.0051
60	1.7834	0.0051
61	1.7884	0.0050
62	1.7933	0.0049
63	1.7982	0.0049
64	1.8030	0.0048
65	1.8077	0.0047
66	1.8124	0.0047
67	1.8170	0.0046
68	1.8216	0.0046
69	1.8261	0.0045
70	1.8305	0.0045
71	1.8349	0.0044
72	1.8393	0.0043
73	1.8446	0.0053
74	1.8499	0.0053
75	1.8551	0.0052
76	1.8602	0.0052
77	1.8653	0.0051
78	1.8704	0.0051
79	1.8754	0.0050
80	1.8803	0.0050
81	1.8852	0.0049
82	1.8901	0.0049
83	1.8949	0.0048
84	1.8997	0.0048
85	1.9044	0.0047
86	1.9091	0.0047
87	1.9137	0.0046
88	1.9183	0.0046
89	1.9228	0.0045
90	1.9274	0.0045
91	1.9318	0.0045
92	1.9363	0.0044
93	1.9406	0.0044
94	1.9450	0.0044
95	1.9493	0.0043
96	1.9536	0.0043
97	1.9579	0.0042
98	1.9621	0.0042
99	1.9663	0.0042
100	1.9704	0.0041
101	1.9745	0.0041
102	1.9786	0.0041
103	1.9826	0.0041

		PR11.out
104	1.9867	0.0040
105	1.9907	0.0040
106	1.9946	0.0040
107	1.9985	0.0039
108	2.0024	0.0039
109	2.0063	0.0039
110	2.0102	0.0038
111	2.0140	0.0038
112	2.0178	0.0038
113	2.0215	0.0038
114	2.0253	0.0037
115	2.0290	0.0037
116	2.0327	0.0037
117	2.0363	0.0037
118	2.0400	0.0036
119	2.0436	0.0036
120	2.0472	0.0036
121	2.0507	0.0036
122	2.0543	0.0035
123	2.0578	0.0035
124	2.0613	0.0035
125	2.0648	0.0035
126	2.0682	0.0035
127	2.0717	0.0034
128	2.0751	0.0034
129	2.0784	0.0034
130	2.0818	0.0034
131	2.0852	0.0033
132	2.0885	0.0033
133	2.0918	0.0033
134	2.0951	0.0033
135	2.0984	0.0033
136	2.1016	0.0032
137	2.1048	0.0032
138	2.1080	0.0032
139	2.1112	0.0032
140	2.1144	0.0032
141	2.1176	0.0032
142	2.1207	0.0031
143	2.1238	0.0031
144	2.1269	0.0031
145	2.1300	0.0031
146	2.1331	0.0031
147	2.1362	0.0031
148	2.1392	0.0030
149	2.1422	0.0030
150	2.1452	0.0030
151	2.1482	0.0030
152	2.1512	0.0030
153	2.1541	0.0030
154	2.1571	0.0029
155	2.1600	0.0029
156	2.1629	0.0029
157	2.1658	0.0029
158	2.1687	0.0029
159	2.1716	0.0029
160	2.1744	0.0029
161	2.1773	0.0028
162	2.1801	0.0028
163	2.1829	0.0028
164	2.1857	0.0028
165	2.1885	0.0028
166	2.1913	0.0028
167	2.1941	0.0028
168	2.1968	0.0027
169	2.1995	0.0027
170	2.2023	0.0027
171	2.2050	0.0027
172	2.2077	0.0027
173	2.2103	0.0027
174	2.2130	0.0027
175	2.2157	0.0027
176	2.2183	0.0026
177	2.2210	0.0026
178	2.2236	0.0026
179	2.2262	0.0026
180	2.2288	0.0026
181	2.2314	0.0026

		PR11.out
182	2.2340	0.0026
183	2.2365	0.0026
184	2.2391	0.0026
185	2.2416	0.0025
186	2.2442	0.0025
187	2.2467	0.0025
188	2.2492	0.0025
189	2.2517	0.0025
190	2.2542	0.0025
191	2.2567	0.0025
192	2.2592	0.0025
193	2.2616	0.0025
194	2.2641	0.0025
195	2.2665	0.0024
196	2.2690	0.0024
197	2.2714	0.0024
198	2.2738	0.0024
199	2.2762	0.0024
200	2.2786	0.0024
201	2.2810	0.0024
202	2.2833	0.0024
203	2.2857	0.0024
204	2.2881	0.0024
205	2.2904	0.0023
206	2.2927	0.0023
207	2.2951	0.0023
208	2.2974	0.0023
209	2.2997	0.0023
210	2.3020	0.0023
211	2.3043	0.0023
212	2.3066	0.0023
213	2.3089	0.0023
214	2.3111	0.0023
215	2.3134	0.0023
216	2.3156	0.0023
217	2.3179	0.0022
218	2.3201	0.0022
219	2.3224	0.0022
220	2.3246	0.0022
221	2.3268	0.0022
222	2.3290	0.0022
223	2.3312	0.0022
224	2.3334	0.0022
225	2.3356	0.0022
226	2.3377	0.0022
227	2.3399	0.0022
228	2.3420	0.0022
229	2.3442	0.0021
230	2.3463	0.0021
231	2.3485	0.0021
232	2.3506	0.0021
233	2.3527	0.0021
234	2.3548	0.0021
235	2.3569	0.0021
236	2.3590	0.0021
237	2.3611	0.0021
238	2.3632	0.0021
239	2.3653	0.0021
240	2.3674	0.0021
241	2.3694	0.0021
242	2.3715	0.0021
243	2.3735	0.0021
244	2.3756	0.0020
245	2.3776	0.0020
246	2.3797	0.0020
247	2.3817	0.0020
248	2.3837	0.0020
249	2.3857	0.0020
250	2.3877	0.0020
251	2.3897	0.0020
252	2.3917	0.0020
253	2.3937	0.0020
254	2.3957	0.0020
255	2.3976	0.0020
256	2.3996	0.0020
257	2.4016	0.0020
258	2.4035	0.0020
259	2.4055	0.0020

		PR11.out
260	2.4074	0.0019
261	2.4094	0.0019
262	2.4113	0.0019
263	2.4132	0.0019
264	2.4151	0.0019
265	2.4171	0.0019
266	2.4190	0.0019
267	2.4209	0.0019
268	2.4228	0.0019
269	2.4247	0.0019
270	2.4266	0.0019
271	2.4284	0.0019
272	2.4303	0.0019
273	2.4322	0.0019
274	2.4340	0.0019
275	2.4359	0.0019
276	2.4378	0.0019
277	2.4396	0.0018
278	2.4415	0.0018
279	2.4433	0.0018
280	2.4451	0.0018
281	2.4470	0.0018
282	2.4488	0.0018
283	2.4506	0.0018
284	2.4524	0.0018
285	2.4542	0.0018
286	2.4560	0.0018
287	2.4578	0.0018
288	2.4596	0.0018

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0018	0.0005	0.0013
2	0.0018	0.0005	0.0013
3	0.0018	0.0005	0.0013
4	0.0018	0.0005	0.0013
5	0.0018	0.0005	0.0013
6	0.0018	0.0005	0.0013
7	0.0018	0.0005	0.0013
8	0.0018	0.0005	0.0013
9	0.0019	0.0005	0.0013
10	0.0019	0.0005	0.0013
11	0.0019	0.0005	0.0013
12	0.0019	0.0005	0.0014
13	0.0019	0.0005	0.0014
14	0.0019	0.0005	0.0014
15	0.0019	0.0005	0.0014
16	0.0019	0.0005	0.0014
17	0.0019	0.0005	0.0014
18	0.0019	0.0005	0.0014
19	0.0019	0.0005	0.0014
20	0.0019	0.0005	0.0014
21	0.0020	0.0005	0.0014
22	0.0020	0.0005	0.0014
23	0.0020	0.0005	0.0014
24	0.0020	0.0006	0.0014
25	0.0020	0.0006	0.0014
26	0.0020	0.0006	0.0014
27	0.0020	0.0006	0.0015
28	0.0020	0.0006	0.0015
29	0.0020	0.0006	0.0015
30	0.0020	0.0006	0.0015
31	0.0021	0.0006	0.0015
32	0.0021	0.0006	0.0015
33	0.0021	0.0006	0.0015
34	0.0021	0.0006	0.0015
35	0.0021	0.0006	0.0015
36	0.0021	0.0006	0.0015
37	0.0021	0.0006	0.0015
38	0.0021	0.0006	0.0015
39	0.0021	0.0006	0.0015
40	0.0021	0.0006	0.0015
41	0.0022	0.0006	0.0016
42	0.0022	0.0006	0.0016
43	0.0022	0.0006	0.0016
44	0.0022	0.0006	0.0016

		PR11.out	
45	0.0022	0.0006	0.0016
46	0.0022	0.0006	0.0016
47	0.0022	0.0006	0.0016
48	0.0022	0.0006	0.0016
49	0.0023	0.0006	0.0016
50	0.0023	0.0006	0.0016
51	0.0023	0.0006	0.0016
52	0.0023	0.0006	0.0016
53	0.0023	0.0006	0.0017
54	0.0023	0.0006	0.0017
55	0.0023	0.0006	0.0017
56	0.0023	0.0007	0.0017
57	0.0024	0.0007	0.0017
58	0.0024	0.0007	0.0017
59	0.0024	0.0007	0.0017
60	0.0024	0.0007	0.0017
61	0.0024	0.0007	0.0017
62	0.0024	0.0007	0.0017
63	0.0024	0.0007	0.0018
64	0.0025	0.0007	0.0018
65	0.0025	0.0007	0.0018
66	0.0025	0.0007	0.0018
67	0.0025	0.0007	0.0018
68	0.0025	0.0007	0.0018
69	0.0025	0.0007	0.0018
70	0.0025	0.0007	0.0018
71	0.0026	0.0007	0.0019
72	0.0026	0.0007	0.0019
73	0.0026	0.0007	0.0019
74	0.0026	0.0007	0.0019
75	0.0026	0.0007	0.0019
76	0.0026	0.0007	0.0019
77	0.0027	0.0007	0.0019
78	0.0027	0.0007	0.0019
79	0.0027	0.0008	0.0020
80	0.0027	0.0008	0.0020
81	0.0027	0.0008	0.0020
82	0.0028	0.0008	0.0020
83	0.0028	0.0008	0.0020
84	0.0028	0.0008	0.0020
85	0.0028	0.0008	0.0020
86	0.0028	0.0008	0.0021
87	0.0029	0.0008	0.0021
88	0.0029	0.0008	0.0021
89	0.0029	0.0008	0.0021
90	0.0029	0.0008	0.0021
91	0.0030	0.0008	0.0021
92	0.0030	0.0008	0.0021
93	0.0030	0.0008	0.0022
94	0.0030	0.0008	0.0022
95	0.0031	0.0009	0.0022
96	0.0031	0.0009	0.0022
97	0.0031	0.0009	0.0022
98	0.0031	0.0009	0.0023
99	0.0032	0.0009	0.0023
100	0.0032	0.0009	0.0023
101	0.0032	0.0009	0.0023
102	0.0032	0.0009	0.0023
103	0.0033	0.0009	0.0024
104	0.0033	0.0009	0.0024
105	0.0033	0.0009	0.0024
106	0.0033	0.0009	0.0024
107	0.0034	0.0009	0.0024
108	0.0034	0.0009	0.0025
109	0.0035	0.0010	0.0025
110	0.0035	0.0010	0.0025
111	0.0035	0.0010	0.0025
112	0.0035	0.0010	0.0026
113	0.0036	0.0010	0.0026
114	0.0036	0.0010	0.0026
115	0.0037	0.0010	0.0026
116	0.0037	0.0010	0.0027
117	0.0037	0.0010	0.0027
118	0.0038	0.0010	0.0027
119	0.0038	0.0011	0.0028
120	0.0038	0.0011	0.0028
121	0.0039	0.0011	0.0028
122	0.0039	0.0011	0.0028

		PR11.out	
123	0.0040	0.0011	0.0029
124	0.0040	0.0011	0.0029
125	0.0041	0.0011	0.0029
126	0.0041	0.0011	0.0030
127	0.0042	0.0012	0.0030
128	0.0042	0.0012	0.0030
129	0.0043	0.0012	0.0031
130	0.0043	0.0012	0.0031
131	0.0044	0.0012	0.0032
132	0.0044	0.0012	0.0032
133	0.0045	0.0013	0.0033
134	0.0045	0.0013	0.0033
135	0.0046	0.0013	0.0033
136	0.0047	0.0013	0.0034
137	0.0048	0.0013	0.0034
138	0.0048	0.0013	0.0035
139	0.0049	0.0014	0.0035
140	0.0050	0.0014	0.0036
141	0.0051	0.0014	0.0036
142	0.0051	0.0014	0.0037
143	0.0052	0.0015	0.0038
144	0.0053	0.0015	0.0038
145	0.0043	0.0012	0.0031
146	0.0044	0.0012	0.0032
147	0.0045	0.0013	0.0033
148	0.0046	0.0013	0.0033
149	0.0047	0.0013	0.0034
150	0.0047	0.0013	0.0034
151	0.0049	0.0014	0.0035
152	0.0049	0.0014	0.0036
153	0.0051	0.0014	0.0037
154	0.0051	0.0014	0.0037
155	0.0053	0.0015	0.0038
156	0.0054	0.0015	0.0039
157	0.0055	0.0015	0.0040
158	0.0056	0.0016	0.0041
159	0.0058	0.0016	0.0042
160	0.0059	0.0016	0.0043
161	0.0061	0.0017	0.0044
162	0.0062	0.0017	0.0045
163	0.0064	0.0018	0.0047
164	0.0066	0.0018	0.0047
165	0.0068	0.0019	0.0049
166	0.0070	0.0019	0.0050
167	0.0073	0.0020	0.0052
168	0.0074	0.0021	0.0054
169	0.0080	0.0022	0.0058
170	0.0082	0.0023	0.0059
171	0.0086	0.0024	0.0062
172	0.0088	0.0025	0.0064
173	0.0093	0.0026	0.0067
174	0.0096	0.0027	0.0069
175	0.0102	0.0028	0.0073
176	0.0105	0.0029	0.0076
177	0.0112	0.0031	0.0081
178	0.0116	0.0032	0.0084
179	0.0126	0.0035	0.0091
180	0.0131	0.0036	0.0094
181	0.0143	0.0040	0.0103
182	0.0150	0.0042	0.0108
183	0.0167	0.0047	0.0121
184	0.0177	0.0049	0.0128
185	0.0348	0.0097	0.0251
186	0.0371	0.0103	0.0268
187	0.0431	0.0105	0.0326
188	0.0470	0.0105	0.0365
189	0.0584	0.0105	0.0479
190	0.0673	0.0105	0.0568
191	0.1021	0.0105	0.0916
192	0.1483	0.0105	0.1378
193	0.6415	0.0105	0.6310
194	0.0804	0.0105	0.0699
195	0.0520	0.0105	0.0415
196	0.0398	0.0105	0.0293
197	0.0189	0.0053	0.0136
198	0.0158	0.0044	0.0114
199	0.0137	0.0038	0.0099
200	0.0121	0.0034	0.0087

		PR11.out	
201	0.0108	0.0030	0.0078
202	0.0098	0.0027	0.0071
203	0.0090	0.0025	0.0065
204	0.0084	0.0023	0.0060
205	0.0076	0.0021	0.0055
206	0.0071	0.0020	0.0051
207	0.0067	0.0019	0.0048
208	0.0063	0.0018	0.0046
209	0.0060	0.0017	0.0043
210	0.0057	0.0016	0.0041
211	0.0054	0.0015	0.0039
212	0.0052	0.0015	0.0038
213	0.0050	0.0014	0.0036
214	0.0048	0.0013	0.0035
215	0.0046	0.0013	0.0033
216	0.0045	0.0012	0.0032
217	0.0053	0.0015	0.0038
218	0.0052	0.0014	0.0037
219	0.0050	0.0014	0.0036
220	0.0049	0.0014	0.0035
221	0.0047	0.0013	0.0034
222	0.0046	0.0013	0.0033
223	0.0045	0.0012	0.0032
224	0.0044	0.0012	0.0031
225	0.0042	0.0012	0.0031
226	0.0041	0.0012	0.0030
227	0.0041	0.0011	0.0029
228	0.0040	0.0011	0.0029
229	0.0039	0.0011	0.0028
230	0.0038	0.0011	0.0027
231	0.0037	0.0010	0.0027
232	0.0036	0.0010	0.0026
233	0.0036	0.0010	0.0026
234	0.0035	0.0010	0.0025
235	0.0034	0.0010	0.0025
236	0.0034	0.0009	0.0024
237	0.0033	0.0009	0.0024
238	0.0032	0.0009	0.0023
239	0.0032	0.0009	0.0023
240	0.0031	0.0009	0.0023
241	0.0031	0.0009	0.0022
242	0.0030	0.0008	0.0022
243	0.0030	0.0008	0.0022
244	0.0029	0.0008	0.0021
245	0.0029	0.0008	0.0021
246	0.0029	0.0008	0.0021
247	0.0028	0.0008	0.0020
248	0.0028	0.0008	0.0020
249	0.0027	0.0008	0.0020
250	0.0027	0.0008	0.0019
251	0.0027	0.0007	0.0019
252	0.0026	0.0007	0.0019
253	0.0026	0.0007	0.0019
254	0.0026	0.0007	0.0018
255	0.0025	0.0007	0.0018
256	0.0025	0.0007	0.0018
257	0.0025	0.0007	0.0018
258	0.0024	0.0007	0.0018
259	0.0024	0.0007	0.0017
260	0.0024	0.0007	0.0017
261	0.0023	0.0007	0.0017
262	0.0023	0.0006	0.0017
263	0.0023	0.0006	0.0017
264	0.0023	0.0006	0.0016
265	0.0022	0.0006	0.0016
266	0.0022	0.0006	0.0016
267	0.0022	0.0006	0.0016
268	0.0022	0.0006	0.0016
269	0.0021	0.0006	0.0016
270	0.0021	0.0006	0.0015
271	0.0021	0.0006	0.0015
272	0.0021	0.0006	0.0015
273	0.0021	0.0006	0.0015
274	0.0020	0.0006	0.0015
275	0.0020	0.0006	0.0015
276	0.0020	0.0006	0.0014
277	0.0020	0.0006	0.0014
278	0.0020	0.0005	0.0014

PR11.out

279	0.0020	0.0005	0.0014
280	0.0019	0.0005	0.0014
281	0.0019	0.0005	0.0014
282	0.0019	0.0005	0.0014
283	0.0019	0.0005	0.0014
284	0.0019	0.0005	0.0013
285	0.0018	0.0005	0.0013
286	0.0018	0.0005	0.0013
287	0.0018	0.0005	0.0013
288	0.0018	0.0005	0.0013

Total soil rain loss = 0.43(In)
Total effective rainfall = 2.03(In)
Peak flow rate in flood hydrograph = 377.43(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	100.0	200.0	300.0	400.0
0+ 5	0.0004	0.05	Q					
0+10	0.0029	0.37	Q					
0+15	0.0096	0.98	Q					
0+20	0.0187	1.31	Q					
0+25	0.0290	1.50	Q					
0+30	0.0402	1.63	Q					
0+35	0.0521	1.72	Q					
0+40	0.0645	1.80	Q					
0+45	0.0773	1.86	Q					
0+50	0.0904	1.90	Q					
0+55	0.1038	1.94	Q					
1+ 0	0.1174	1.98	Q					
1+ 5	0.1312	2.01	Q					
1+10	0.1452	2.03	Q					
1+15	0.1593	2.05	Q					
1+20	0.1736	2.07	Q					
1+25	0.1879	2.09	Q					
1+30	0.2024	2.10	Q					
1+35	0.2170	2.12	Q					
1+40	0.2318	2.14	Q					
1+45	0.2465	2.15	Q					
1+50	0.2614	2.15	Q					
1+55	0.2763	2.16	Q					
2+ 0	0.2913	2.17	Q					
2+ 5	0.3063	2.18	Q					
2+10	0.3214	2.19	Q					
2+15	0.3366	2.21	Q					
2+20	0.3519	2.22	Q					
2+25	0.3672	2.23	Q					
2+30	0.3826	2.24	Q					
2+35	0.3981	2.25	Q					
2+40	0.4136	2.26	Q					
2+45	0.4292	2.27	Q					
2+50	0.4449	2.28	Q					
2+55	0.4607	2.29	Q					
3+ 0	0.4766	2.30	Q					
3+ 5	0.4925	2.31	Q					
3+10	0.5085	2.32	Q					
3+15	0.5246	2.34	Q					
3+20	0.5408	2.35	QV					
3+25	0.5570	2.36	QV					
3+30	0.5734	2.37	QV					
3+35	0.5898	2.38	QV					
3+40	0.6063	2.40	QV					
3+45	0.6229	2.41	QV					
3+50	0.6396	2.42	QV					
3+55	0.6564	2.44	QV					
4+ 0	0.6732	2.45	QV					
4+ 5	0.6902	2.46	QV					
4+10	0.7072	2.47	QV					
4+15	0.7243	2.49	QV					
4+20	0.7416	2.50	QV					
4+25	0.7589	2.52	QV					

4+30	0.7763	2.53	QV
4+35	0.7938	2.54	QV
4+40	0.8114	2.56	QV
4+45	0.8291	2.57	QV
4+50	0.8470	2.59	QV
4+55	0.8649	2.60	QV
5+ 0	0.8829	2.62	QV
5+ 5	0.9010	2.63	QV
5+10	0.9193	2.65	QV
5+15	0.9376	2.66	QV
5+20	0.9560	2.68	QV
5+25	0.9746	2.70	QV
5+30	0.9933	2.71	QV
5+35	1.0121	2.73	QV
5+40	1.0310	2.74	QV
5+45	1.0500	2.76	QV
5+50	1.0691	2.78	QV
5+55	1.0884	2.80	Q V
6+ 0	1.1078	2.81	Q V
6+ 5	1.1273	2.83	Q V
6+10	1.1469	2.85	Q V
6+15	1.1667	2.87	Q V
6+20	1.1865	2.89	Q V
6+25	1.2066	2.91	Q V
6+30	1.2267	2.93	Q V
6+35	1.2470	2.95	Q V
6+40	1.2674	2.97	Q V
6+45	1.2880	2.99	Q V
6+50	1.3087	3.01	Q V
6+55	1.3296	3.03	Q V
7+ 0	1.3506	3.05	Q V
7+ 5	1.3717	3.07	Q V
7+10	1.3930	3.09	Q V
7+15	1.4145	3.12	Q V
7+20	1.4361	3.14	Q V
7+25	1.4578	3.16	Q V
7+30	1.4798	3.18	Q V
7+35	1.5019	3.21	Q V
7+40	1.5241	3.23	Q V
7+45	1.5465	3.26	Q V
7+50	1.5691	3.28	Q V
7+55	1.5919	3.31	Q V
8+ 0	1.6149	3.33	Q V
8+ 5	1.6380	3.36	Q V
8+10	1.6614	3.39	Q V
8+15	1.6849	3.41	Q V
8+20	1.7086	3.44	Q V
8+25	1.7325	3.47	Q V
8+30	1.7566	3.50	Q V
8+35	1.7809	3.53	Q V
8+40	1.8054	3.56	Q V
8+45	1.8301	3.59	Q V
8+50	1.8551	3.62	Q V
8+55	1.8802	3.65	Q V
9+ 0	1.9056	3.69	Q V
9+ 5	1.9313	3.72	Q V
9+10	1.9571	3.75	Q V
9+15	1.9832	3.79	Q V
9+20	2.0095	3.82	Q V
9+25	2.0361	3.86	Q V
9+30	2.0630	3.90	Q V
9+35	2.0901	3.94	Q V
9+40	2.1174	3.97	Q V
9+45	2.1451	4.01	Q V
9+50	2.1730	4.05	Q V
9+55	2.2012	4.10	Q V
10+ 0	2.2297	4.14	Q V
10+ 5	2.2585	4.18	Q V
10+10	2.2876	4.22	Q V
10+15	2.3170	4.27	Q V
10+20	2.3467	4.32	Q V
10+25	2.3768	4.37	Q V
10+30	2.4072	4.41	Q V
10+35	2.4379	4.46	Q V
10+40	2.4690	4.52	Q V
10+45	2.5005	4.57	Q V
10+50	2.5323	4.62	Q V
10+55	2.5645	4.68	Q V

[illegible]

[illegible]

24+ 0	21.5290	2.08	Q			V
24+ 5	21.5429	2.01	Q			V
24+10	21.5544	1.68	Q			V
24+15	21.5617	1.06	Q			V
24+20	21.5666	0.72	Q			V
24+25	21.5703	0.53	Q			V
24+30	21.5730	0.40	Q			V
24+35	21.5752	0.31	Q			V
24+40	21.5768	0.24	Q			V
24+45	21.5781	0.19	Q			V
24+50	21.5791	0.15	Q			V
24+55	21.5799	0.11	Q			V
25+ 0	21.5805	0.09	Q			V
25+ 5	21.5810	0.07	Q			V
25+10	21.5813	0.05	Q			V
25+15	21.5816	0.04	Q			V
25+20	21.5818	0.03	Q			V
25+25	21.5820	0.02	Q			V
25+30	21.5820	0.01	Q			V
25+35	21.5821	0.01	Q			V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
DEVELOPED CONDITIONS AREA 1.2
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
140.22	1	1.37

Rainfall data for year 100		
140.22	6	1.84

Rainfall data for year 100		
140.22	24	2.46

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
78.0	92.8	140.22	1.000	0.140	0.900	0.126

Area-averaged adjusted loss rate Fm (In/Hr) = 0.126

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
126.20	0.900	78.0	92.8	0.78	0.701
14.02	0.100	98.0	98.0	0.20	0.907

Area-averaged catchment yield fraction, Y = 0.722

Area-averaged low loss fraction, Yb = 0.278

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Watercourse length = 2624.00(Ft.)

Length from concentration point to centroid = 1312.00(Ft.)

Elevation difference along watercourse = 10.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 140.22(Ac.)

Catchment Lag time = 0.214 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 38.8524

Hydrograph baseflow = 0.00(CFS)
 Average maximum watershed loss rate(Fm) = 0.126(In/Hr)
 Average low loss rate fraction (Yb) = 0.278 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.650(In)
 Computed peak 30-minute rainfall = 1.113(In)
 Specified peak 1-hour rainfall = 1.370(In)
 Computed peak 3-hour rainfall = 1.642(In)
 Specified peak 6-hour rainfall = 1.840(In)
 Specified peak 24-hour rainfall = 2.460(In)

Rainfall depth area reduction factors:

Using a total area of 140.22(Ac.) (Ref: fig. E-4)

5-minute factor = 0.993	Adjusted rainfall = 0.646(In)
30-minute factor = 0.993	Adjusted rainfall = 1.105(In)
1-hour factor = 0.993	Adjusted rainfall = 1.361(In)
3-hour factor = 0.999	Adjusted rainfall = 1.640(In)
6-hour factor = 1.000	Adjusted rainfall = 1.839(In)
24-hour factor = 1.000	Adjusted rainfall = 2.460(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 1695.79 (CFS))	
1	2.624	44.499
2	17.411	250.756
3	47.445	509.309
4	64.454	288.430
5	73.822	158.868
6	80.071	105.974
7	84.500	75.100
8	87.979	59.006
9	90.483	42.462
10	92.507	34.321
11	94.153	27.914
12	95.464	22.229
13	96.524	17.979
14	97.341	13.851
15	97.930	9.983
16	98.334	6.857
17	98.793	7.777
18	99.259	7.906
19	99.617	6.076
20	99.860	4.118
21	100.000	2.372

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6458	0.6458
2	0.7951	0.1493
3	0.8979	0.1028
4	0.9789	0.0809
5	1.0466	0.0678
6	1.1055	0.0588
7	1.1578	0.0523
8	1.2051	0.0473
9	1.2485	0.0433
10	1.2886	0.0401
11	1.3259	0.0374
12	1.3610	0.0351
13	1.3796	0.0186
14	1.3971	0.0175
15	1.4136	0.0165
16	1.4292	0.0156
17	1.4439	0.0148
18	1.4580	0.0141
19	1.4715	0.0135
20	1.4844	0.0129
21	1.4967	0.0124
22	1.5086	0.0119
23	1.5200	0.0114
24	1.5311	0.0110

		PR12.out
25	1.5417	0.0107
26	1.5520	0.0103
27	1.5620	0.0100
28	1.5717	0.0097
29	1.5811	0.0094
30	1.5902	0.0091
31	1.5991	0.0089
32	1.6077	0.0086
33	1.6162	0.0084
34	1.6244	0.0082
35	1.6324	0.0080
36	1.6402	0.0078
37	1.6477	0.0074
38	1.6549	0.0073
39	1.6620	0.0071
40	1.6690	0.0070
41	1.6758	0.0068
42	1.6825	0.0067
43	1.6891	0.0066
44	1.6955	0.0064
45	1.7018	0.0063
46	1.7080	0.0062
47	1.7141	0.0061
48	1.7200	0.0060
49	1.7259	0.0059
50	1.7317	0.0058
51	1.7374	0.0057
52	1.7429	0.0056
53	1.7484	0.0055
54	1.7538	0.0054
55	1.7592	0.0053
56	1.7644	0.0052
57	1.7696	0.0052
58	1.7747	0.0051
59	1.7797	0.0050
60	1.7846	0.0049
61	1.7895	0.0049
62	1.7943	0.0048
63	1.7991	0.0047
64	1.8038	0.0047
65	1.8084	0.0046
66	1.8129	0.0046
67	1.8175	0.0045
68	1.8219	0.0045
69	1.8263	0.0044
70	1.8307	0.0043
71	1.8349	0.0043
72	1.8392	0.0042
73	1.8445	0.0053
74	1.8498	0.0053
75	1.8550	0.0052
76	1.8602	0.0052
77	1.8653	0.0051
78	1.8703	0.0051
79	1.8753	0.0050
80	1.8803	0.0050
81	1.8852	0.0049
82	1.8900	0.0049
83	1.8948	0.0048
84	1.8996	0.0048
85	1.9043	0.0047
86	1.9090	0.0047
87	1.9136	0.0046
88	1.9182	0.0046
89	1.9228	0.0045
90	1.9273	0.0045
91	1.9318	0.0045
92	1.9362	0.0044
93	1.9406	0.0044
94	1.9449	0.0044
95	1.9493	0.0043
96	1.9535	0.0043
97	1.9578	0.0042
98	1.9620	0.0042
99	1.9662	0.0042
100	1.9703	0.0041
101	1.9744	0.0041
102	1.9785	0.0041

		PR12.out
103	1.9826	0.0041
104	1.9866	0.0040
105	1.9906	0.0040
106	1.9946	0.0040
107	1.9985	0.0039
108	2.0024	0.0039
109	2.0063	0.0039
110	2.0101	0.0038
111	2.0139	0.0038
112	2.0177	0.0038
113	2.0215	0.0038
114	2.0252	0.0037
115	2.0289	0.0037
116	2.0326	0.0037
117	2.0363	0.0037
118	2.0399	0.0036
119	2.0435	0.0036
120	2.0471	0.0036
121	2.0507	0.0036
122	2.0542	0.0035
123	2.0577	0.0035
124	2.0612	0.0035
125	2.0647	0.0035
126	2.0682	0.0035
127	2.0716	0.0034
128	2.0750	0.0034
129	2.0784	0.0034
130	2.0818	0.0034
131	2.0851	0.0033
132	2.0884	0.0033
133	2.0917	0.0033
134	2.0950	0.0033
135	2.0983	0.0033
136	2.1015	0.0032
137	2.1048	0.0032
138	2.1080	0.0032
139	2.1112	0.0032
140	2.1144	0.0032
141	2.1175	0.0032
142	2.1207	0.0031
143	2.1238	0.0031
144	2.1269	0.0031
145	2.1300	0.0031
146	2.1330	0.0031
147	2.1361	0.0031
148	2.1391	0.0030
149	2.1422	0.0030
150	2.1452	0.0030
151	2.1482	0.0030
152	2.1511	0.0030
153	2.1541	0.0030
154	2.1570	0.0029
155	2.1600	0.0029
156	2.1629	0.0029
157	2.1658	0.0029
158	2.1687	0.0029
159	2.1715	0.0029
160	2.1744	0.0029
161	2.1772	0.0028
162	2.1801	0.0028
163	2.1829	0.0028
164	2.1857	0.0028
165	2.1885	0.0028
166	2.1912	0.0028
167	2.1940	0.0028
168	2.1967	0.0027
169	2.1995	0.0027
170	2.2022	0.0027
171	2.2049	0.0027
172	2.2076	0.0027
173	2.2103	0.0027
174	2.2130	0.0027
175	2.2156	0.0027
176	2.2183	0.0026
177	2.2209	0.0026
178	2.2235	0.0026
179	2.2262	0.0026
180	2.2288	0.0026

		PR12.out
181	2.2313	0.0026
182	2.2339	0.0026
183	2.2365	0.0026
184	2.2390	0.0026
185	2.2416	0.0025
186	2.2441	0.0025
187	2.2467	0.0025
188	2.2492	0.0025
189	2.2517	0.0025
190	2.2542	0.0025
191	2.2566	0.0025
192	2.2591	0.0025
193	2.2616	0.0025
194	2.2640	0.0025
195	2.2665	0.0024
196	2.2689	0.0024
197	2.2713	0.0024
198	2.2737	0.0024
199	2.2761	0.0024
200	2.2785	0.0024
201	2.2809	0.0024
202	2.2833	0.0024
203	2.2857	0.0024
204	2.2880	0.0024
205	2.2904	0.0023
206	2.2927	0.0023
207	2.2950	0.0023
208	2.2973	0.0023
209	2.2997	0.0023
210	2.3020	0.0023
211	2.3043	0.0023
212	2.3065	0.0023
213	2.3088	0.0023
214	2.3111	0.0023
215	2.3133	0.0023
216	2.3156	0.0023
217	2.3178	0.0022
218	2.3201	0.0022
219	2.3223	0.0022
220	2.3245	0.0022
221	2.3267	0.0022
222	2.3289	0.0022
223	2.3311	0.0022
224	2.3333	0.0022
225	2.3355	0.0022
226	2.3377	0.0022
227	2.3398	0.0022
228	2.3420	0.0022
229	2.3441	0.0021
230	2.3463	0.0021
231	2.3484	0.0021
232	2.3506	0.0021
233	2.3527	0.0021
234	2.3548	0.0021
235	2.3569	0.0021
236	2.3590	0.0021
237	2.3611	0.0021
238	2.3632	0.0021
239	2.3653	0.0021
240	2.3673	0.0021
241	2.3694	0.0021
242	2.3714	0.0021
243	2.3735	0.0021
244	2.3755	0.0020
245	2.3776	0.0020
246	2.3796	0.0020
247	2.3816	0.0020
248	2.3837	0.0020
249	2.3857	0.0020
250	2.3877	0.0020
251	2.3897	0.0020
252	2.3917	0.0020
253	2.3937	0.0020
254	2.3956	0.0020
255	2.3976	0.0020
256	2.3996	0.0020
257	2.4015	0.0020
258	2.4035	0.0020

		PR12.out
259	2.4054	0.0020
260	2.4074	0.0019
261	2.4093	0.0019
262	2.4113	0.0019
263	2.4132	0.0019
264	2.4151	0.0019
265	2.4170	0.0019
266	2.4189	0.0019
267	2.4208	0.0019
268	2.4227	0.0019
269	2.4246	0.0019
270	2.4265	0.0019
271	2.4284	0.0019
272	2.4303	0.0019
273	2.4321	0.0019
274	2.4340	0.0019
275	2.4359	0.0019
276	2.4377	0.0019
277	2.4396	0.0018
278	2.4414	0.0018
279	2.4433	0.0018
280	2.4451	0.0018
281	2.4469	0.0018
282	2.4487	0.0018
283	2.4506	0.0018
284	2.4524	0.0018
285	2.4542	0.0018
286	2.4560	0.0018
287	2.4578	0.0018
288	2.4596	0.0018

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0018	0.0005	0.0013
2	0.0018	0.0005	0.0013
3	0.0018	0.0005	0.0013
4	0.0018	0.0005	0.0013
5	0.0018	0.0005	0.0013
6	0.0018	0.0005	0.0013
7	0.0018	0.0005	0.0013
8	0.0018	0.0005	0.0013
9	0.0019	0.0005	0.0013
10	0.0019	0.0005	0.0013
11	0.0019	0.0005	0.0013
12	0.0019	0.0005	0.0014
13	0.0019	0.0005	0.0014
14	0.0019	0.0005	0.0014
15	0.0019	0.0005	0.0014
16	0.0019	0.0005	0.0014
17	0.0019	0.0005	0.0014
18	0.0019	0.0005	0.0014
19	0.0019	0.0005	0.0014
20	0.0019	0.0005	0.0014
21	0.0020	0.0005	0.0014
22	0.0020	0.0005	0.0014
23	0.0020	0.0005	0.0014
24	0.0020	0.0006	0.0014
25	0.0020	0.0006	0.0014
26	0.0020	0.0006	0.0014
27	0.0020	0.0006	0.0015
28	0.0020	0.0006	0.0015
29	0.0020	0.0006	0.0015
30	0.0020	0.0006	0.0015
31	0.0021	0.0006	0.0015
32	0.0021	0.0006	0.0015
33	0.0021	0.0006	0.0015
34	0.0021	0.0006	0.0015
35	0.0021	0.0006	0.0015
36	0.0021	0.0006	0.0015
37	0.0021	0.0006	0.0015
38	0.0021	0.0006	0.0015
39	0.0021	0.0006	0.0015
40	0.0021	0.0006	0.0015
41	0.0022	0.0006	0.0016
42	0.0022	0.0006	0.0016
43	0.0022	0.0006	0.0016

		PR12.out	
44	0.0022	0.0006	0.0016
45	0.0022	0.0006	0.0016
46	0.0022	0.0006	0.0016
47	0.0022	0.0006	0.0016
48	0.0022	0.0006	0.0016
49	0.0023	0.0006	0.0016
50	0.0023	0.0006	0.0016
51	0.0023	0.0006	0.0016
52	0.0023	0.0006	0.0016
53	0.0023	0.0006	0.0017
54	0.0023	0.0006	0.0017
55	0.0023	0.0006	0.0017
56	0.0023	0.0007	0.0017
57	0.0024	0.0007	0.0017
58	0.0024	0.0007	0.0017
59	0.0024	0.0007	0.0017
60	0.0024	0.0007	0.0017
61	0.0024	0.0007	0.0017
62	0.0024	0.0007	0.0017
63	0.0024	0.0007	0.0018
64	0.0025	0.0007	0.0018
65	0.0025	0.0007	0.0018
66	0.0025	0.0007	0.0018
67	0.0025	0.0007	0.0018
68	0.0025	0.0007	0.0018
69	0.0025	0.0007	0.0018
70	0.0025	0.0007	0.0018
71	0.0026	0.0007	0.0019
72	0.0026	0.0007	0.0019
73	0.0026	0.0007	0.0019
74	0.0026	0.0007	0.0019
75	0.0026	0.0007	0.0019
76	0.0026	0.0007	0.0019
77	0.0027	0.0007	0.0019
78	0.0027	0.0007	0.0019
79	0.0027	0.0008	0.0020
80	0.0027	0.0008	0.0020
81	0.0027	0.0008	0.0020
82	0.0028	0.0008	0.0020
83	0.0028	0.0008	0.0020
84	0.0028	0.0008	0.0020
85	0.0028	0.0008	0.0020
86	0.0028	0.0008	0.0021
87	0.0029	0.0008	0.0021
88	0.0029	0.0008	0.0021
89	0.0029	0.0008	0.0021
90	0.0029	0.0008	0.0021
91	0.0030	0.0008	0.0021
92	0.0030	0.0008	0.0021
93	0.0030	0.0008	0.0022
94	0.0030	0.0008	0.0022
95	0.0031	0.0009	0.0022
96	0.0031	0.0009	0.0022
97	0.0031	0.0009	0.0022
98	0.0031	0.0009	0.0023
99	0.0032	0.0009	0.0023
100	0.0032	0.0009	0.0023
101	0.0032	0.0009	0.0023
102	0.0032	0.0009	0.0023
103	0.0033	0.0009	0.0024
104	0.0033	0.0009	0.0024
105	0.0033	0.0009	0.0024
106	0.0033	0.0009	0.0024
107	0.0034	0.0009	0.0024
108	0.0034	0.0009	0.0025
109	0.0035	0.0010	0.0025
110	0.0035	0.0010	0.0025
111	0.0035	0.0010	0.0025
112	0.0035	0.0010	0.0026
113	0.0036	0.0010	0.0026
114	0.0036	0.0010	0.0026
115	0.0037	0.0010	0.0026
116	0.0037	0.0010	0.0027
117	0.0037	0.0010	0.0027
118	0.0038	0.0010	0.0027
119	0.0038	0.0011	0.0028
120	0.0038	0.0011	0.0028
121	0.0039	0.0011	0.0028

		PR12.out	
122	0.0039	0.0011	0.0028
123	0.0040	0.0011	0.0029
124	0.0040	0.0011	0.0029
125	0.0041	0.0011	0.0029
126	0.0041	0.0011	0.0030
127	0.0042	0.0012	0.0030
128	0.0042	0.0012	0.0030
129	0.0043	0.0012	0.0031
130	0.0043	0.0012	0.0031
131	0.0044	0.0012	0.0032
132	0.0044	0.0012	0.0032
133	0.0045	0.0013	0.0033
134	0.0045	0.0013	0.0033
135	0.0046	0.0013	0.0033
136	0.0047	0.0013	0.0034
137	0.0048	0.0013	0.0034
138	0.0048	0.0013	0.0035
139	0.0049	0.0014	0.0035
140	0.0050	0.0014	0.0036
141	0.0051	0.0014	0.0036
142	0.0051	0.0014	0.0037
143	0.0052	0.0015	0.0038
144	0.0053	0.0015	0.0038
145	0.0042	0.0012	0.0031
146	0.0043	0.0012	0.0031
147	0.0044	0.0012	0.0032
148	0.0045	0.0012	0.0032
149	0.0046	0.0013	0.0033
150	0.0046	0.0013	0.0033
151	0.0047	0.0013	0.0034
152	0.0048	0.0013	0.0035
153	0.0049	0.0014	0.0036
154	0.0050	0.0014	0.0036
155	0.0052	0.0014	0.0037
156	0.0052	0.0015	0.0038
157	0.0054	0.0015	0.0039
158	0.0055	0.0015	0.0040
159	0.0057	0.0016	0.0041
160	0.0058	0.0016	0.0042
161	0.0060	0.0017	0.0043
162	0.0061	0.0017	0.0044
163	0.0063	0.0018	0.0045
164	0.0064	0.0018	0.0046
165	0.0067	0.0019	0.0048
166	0.0068	0.0019	0.0049
167	0.0071	0.0020	0.0051
168	0.0073	0.0020	0.0052
169	0.0078	0.0022	0.0056
170	0.0080	0.0022	0.0058
171	0.0084	0.0023	0.0061
172	0.0086	0.0024	0.0062
173	0.0091	0.0025	0.0066
174	0.0094	0.0026	0.0068
175	0.0100	0.0028	0.0072
176	0.0103	0.0029	0.0074
177	0.0110	0.0031	0.0080
178	0.0114	0.0032	0.0083
179	0.0124	0.0034	0.0089
180	0.0129	0.0036	0.0093
181	0.0141	0.0039	0.0102
182	0.0148	0.0041	0.0107
183	0.0165	0.0046	0.0119
184	0.0175	0.0049	0.0126
185	0.0351	0.0098	0.0253
186	0.0374	0.0104	0.0270
187	0.0433	0.0105	0.0328
188	0.0473	0.0105	0.0368
189	0.0588	0.0105	0.0483
190	0.0678	0.0105	0.0573
191	0.1028	0.0105	0.0923
192	0.1493	0.0105	0.1388
193	0.6458	0.0105	0.6353
194	0.0809	0.0105	0.0704
195	0.0523	0.0105	0.0418
196	0.0401	0.0105	0.0296
197	0.0186	0.0052	0.0134
198	0.0156	0.0043	0.0112
199	0.0135	0.0037	0.0097

		PR12.out	
200	0.0119	0.0033	0.0086
201	0.0107	0.0030	0.0077
202	0.0097	0.0027	0.0070
203	0.0089	0.0025	0.0064
204	0.0082	0.0023	0.0059
205	0.0074	0.0021	0.0054
206	0.0070	0.0019	0.0050
207	0.0066	0.0018	0.0047
208	0.0062	0.0017	0.0045
209	0.0059	0.0016	0.0042
210	0.0056	0.0016	0.0040
211	0.0053	0.0015	0.0038
212	0.0051	0.0014	0.0037
213	0.0049	0.0014	0.0035
214	0.0047	0.0013	0.0034
215	0.0045	0.0013	0.0033
216	0.0043	0.0012	0.0031
217	0.0053	0.0015	0.0038
218	0.0052	0.0014	0.0037
219	0.0050	0.0014	0.0036
220	0.0049	0.0014	0.0035
221	0.0047	0.0013	0.0034
222	0.0046	0.0013	0.0033
223	0.0045	0.0012	0.0032
224	0.0044	0.0012	0.0031
225	0.0042	0.0012	0.0031
226	0.0041	0.0012	0.0030
227	0.0041	0.0011	0.0029
228	0.0040	0.0011	0.0029
229	0.0039	0.0011	0.0028
230	0.0038	0.0011	0.0027
231	0.0037	0.0010	0.0027
232	0.0036	0.0010	0.0026
233	0.0036	0.0010	0.0026
234	0.0035	0.0010	0.0025
235	0.0034	0.0010	0.0025
236	0.0034	0.0009	0.0024
237	0.0033	0.0009	0.0024
238	0.0032	0.0009	0.0023
239	0.0032	0.0009	0.0023
240	0.0031	0.0009	0.0023
241	0.0031	0.0009	0.0022
242	0.0030	0.0008	0.0022
243	0.0030	0.0008	0.0022
244	0.0029	0.0008	0.0021
245	0.0029	0.0008	0.0021
246	0.0029	0.0008	0.0021
247	0.0028	0.0008	0.0020
248	0.0028	0.0008	0.0020
249	0.0027	0.0008	0.0020
250	0.0027	0.0008	0.0019
251	0.0027	0.0007	0.0019
252	0.0026	0.0007	0.0019
253	0.0026	0.0007	0.0019
254	0.0026	0.0007	0.0018
255	0.0025	0.0007	0.0018
256	0.0025	0.0007	0.0018
257	0.0025	0.0007	0.0018
258	0.0024	0.0007	0.0018
259	0.0024	0.0007	0.0017
260	0.0024	0.0007	0.0017
261	0.0023	0.0007	0.0017
262	0.0023	0.0006	0.0017
263	0.0023	0.0006	0.0017
264	0.0023	0.0006	0.0016
265	0.0022	0.0006	0.0016
266	0.0022	0.0006	0.0016
267	0.0022	0.0006	0.0016
268	0.0022	0.0006	0.0016
269	0.0021	0.0006	0.0016
270	0.0021	0.0006	0.0015
271	0.0021	0.0006	0.0015
272	0.0021	0.0006	0.0015
273	0.0021	0.0006	0.0015
274	0.0020	0.0006	0.0015
275	0.0020	0.0006	0.0015
276	0.0020	0.0006	0.0014
277	0.0020	0.0006	0.0014

PR12.out

278	0.0020	0.0005	0.0014
279	0.0020	0.0005	0.0014
280	0.0019	0.0005	0.0014
281	0.0019	0.0005	0.0014
282	0.0019	0.0005	0.0014
283	0.0019	0.0005	0.0014
284	0.0019	0.0005	0.0013
285	0.0018	0.0005	0.0013
286	0.0018	0.0005	0.0013
287	0.0018	0.0005	0.0013
288	0.0018	0.0005	0.0013

Total soil rain loss = 0.43(In)
Total effective rainfall = 2.03(In)
Peak flow rate in flood hydrograph = 413.72(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	125.0	250.0	375.0	500.0
0+ 5	0.0004	0.06	Q					
0+10	0.0030	0.38	Q					
0+15	0.0102	1.04	Q					
0+20	0.0200	1.42	Q					
0+25	0.0312	1.63	Q					
0+30	0.0434	1.77	Q					
0+35	0.0564	1.88	Q					
0+40	0.0699	1.96	Q					
0+45	0.0838	2.03	Q					
0+50	0.0982	2.08	Q					
0+55	0.1128	2.12	Q					
1+ 0	0.1277	2.16	Q					
1+ 5	0.1428	2.19	Q					
1+10	0.1581	2.22	Q					
1+15	0.1736	2.24	Q					
1+20	0.1892	2.26	Q					
1+25	0.2049	2.28	Q					
1+30	0.2208	2.30	Q					
1+35	0.2367	2.32	Q					
1+40	0.2528	2.34	Q					
1+45	0.2690	2.35	Q					
1+50	0.2853	2.36	Q					
1+55	0.3016	2.37	Q					
2+ 0	0.3181	2.38	Q					
2+ 5	0.3346	2.39	Q					
2+10	0.3511	2.41	Q					
2+15	0.3678	2.42	Q					
2+20	0.3845	2.43	Q					
2+25	0.4013	2.44	Q					
2+30	0.4182	2.45	Q					
2+35	0.4351	2.46	Q					
2+40	0.4522	2.47	Q					
2+45	0.4693	2.49	Q					
2+50	0.4865	2.50	Q					
2+55	0.5038	2.51	Q					
3+ 0	0.5212	2.52	Q					
3+ 5	0.5386	2.54	Q					
3+10	0.5562	2.55	Q					
3+15	0.5738	2.56	Q					
3+20	0.5916	2.57	Q					
3+25	0.6094	2.59	QV					
3+30	0.6273	2.60	QV					
3+35	0.6453	2.61	QV					
3+40	0.6634	2.63	QV					
3+45	0.6816	2.64	QV					
3+50	0.6998	2.65	QV					
3+55	0.7182	2.67	QV					
4+ 0	0.7367	2.68	QV					
4+ 5	0.7553	2.70	QV					
4+10	0.7740	2.71	QV					
4+15	0.7927	2.73	QV					
4+20	0.8116	2.74	QV					

4+25	0.8306	2.76	QV
4+30	0.8497	2.77	QV
4+35	0.8689	2.79	QV
4+40	0.8882	2.80	QV
4+45	0.9076	2.82	QV
4+50	0.9271	2.83	QV
4+55	0.9468	2.85	QV
5+ 0	0.9665	2.87	QV
5+ 5	0.9864	2.88	QV
5+10	1.0064	2.90	QV
5+15	1.0265	2.92	QV
5+20	1.0467	2.94	QV
5+25	1.0670	2.95	QV
5+30	1.0875	2.97	QV
5+35	1.1081	2.99	QV
5+40	1.1288	3.01	QV
5+45	1.1497	3.03	QV
5+50	1.1706	3.05	QV
5+55	1.1917	3.06	Q V
6+ 0	1.2130	3.08	Q V
6+ 5	1.2343	3.10	Q V
6+10	1.2559	3.12	Q V
6+15	1.2775	3.14	Q V
6+20	1.2993	3.16	Q V
6+25	1.3213	3.19	Q V
6+30	1.3433	3.21	Q V
6+35	1.3656	3.23	Q V
6+40	1.3880	3.25	Q V
6+45	1.4105	3.27	Q V
6+50	1.4332	3.29	Q V
6+55	1.4560	3.32	Q V
7+ 0	1.4791	3.34	Q V
7+ 5	1.5022	3.37	Q V
7+10	1.5256	3.39	Q V
7+15	1.5491	3.41	Q V
7+20	1.5728	3.44	Q V
7+25	1.5966	3.46	Q V
7+30	1.6206	3.49	Q V
7+35	1.6449	3.52	Q V
7+40	1.6692	3.54	Q V
7+45	1.6938	3.57	Q V
7+50	1.7186	3.60	Q V
7+55	1.7436	3.62	Q V
8+ 0	1.7687	3.65	Q V
8+ 5	1.7941	3.68	Q V
8+10	1.8196	3.71	Q V
8+15	1.8454	3.74	Q V
8+20	1.8714	3.77	Q V
8+25	1.8976	3.80	Q V
8+30	1.9240	3.83	Q V
8+35	1.9506	3.87	Q V
8+40	1.9775	3.90	Q V
8+45	2.0046	3.93	Q V
8+50	2.0319	3.97	Q V
8+55	2.0595	4.00	Q V
9+ 0	2.0873	4.04	Q V
9+ 5	2.1154	4.08	Q V
9+10	2.1437	4.11	Q V
9+15	2.1723	4.15	Q V
9+20	2.2011	4.19	Q V
9+25	2.2303	4.23	Q V
9+30	2.2597	4.27	Q V
9+35	2.2894	4.31	Q V
9+40	2.3194	4.35	Q V
9+45	2.3496	4.40	Q V
9+50	2.3802	4.44	Q V
9+55	2.4111	4.49	Q V
10+ 0	2.4423	4.53	Q V
10+ 5	2.4739	4.58	Q V
10+10	2.5058	4.63	Q V
10+15	2.5380	4.68	Q V
10+20	2.5706	4.73	Q V
10+25	2.6035	4.78	Q V
10+30	2.6368	4.83	Q V
10+35	2.6705	4.89	Q V
10+40	2.7046	4.95	Q V
10+45	2.7390	5.01	Q V
10+50	2.7739	5.06	Q V

[illegible]

17+25	21.2815	17.18	Q			V
17+30	21.3916	15.99	Q			V
17+35	21.4865	13.78	Q			V
17+40	21.5662	11.57	Q			V
17+45	21.6321	9.58	Q			V
17+50	21.6839	7.52	Q			V
17+55	21.7317	6.93	Q			V
18+ 0	21.7764	6.50	Q			V
18+ 5	21.8191	6.20	Q			V
18+10	21.8613	6.13	Q			V
18+15	21.9046	6.29	Q			V
18+20	21.9479	6.29	Q			V
18+25	21.9906	6.20	Q			V
18+30	22.0324	6.07	Q			V
18+35	22.0734	5.94	Q			V
18+40	22.1134	5.81	Q			V
18+45	22.1524	5.67	Q			V
18+50	22.1906	5.54	Q			V
18+55	22.2279	5.42	Q			V
19+ 0	22.2643	5.29	Q			V
19+ 5	22.3000	5.17	Q			V
19+10	22.3348	5.06	Q			V
19+15	22.3689	4.95	Q			V
19+20	22.4022	4.84	Q			V
19+25	22.4349	4.74	Q			V
19+30	22.4668	4.64	Q			V
19+35	22.4982	4.55	Q			V
19+40	22.5289	4.46	Q			V
19+45	22.5590	4.37	Q			V
19+50	22.5885	4.29	Q			V
19+55	22.6175	4.21	Q			V
20+ 0	22.6459	4.13	Q			V
20+ 5	22.6738	4.05	Q			V
20+10	22.7012	3.98	Q			V
20+15	22.7282	3.91	Q			V
20+20	22.7547	3.85	Q			V
20+25	22.7807	3.78	Q			V
20+30	22.8063	3.72	Q			V
20+35	22.8316	3.66	Q			V
20+40	22.8564	3.60	Q			V
20+45	22.8808	3.55	Q			V
20+50	22.9049	3.50	Q			V
20+55	22.9286	3.45	Q			V
21+ 0	22.9520	3.40	Q			V
21+ 5	22.9751	3.35	Q			V
21+10	22.9978	3.30	Q			V
21+15	23.0202	3.26	Q			V
21+20	23.0424	3.21	Q			V
21+25	23.0642	3.17	Q			V
21+30	23.0857	3.13	Q			V
21+35	23.1070	3.09	Q			V
21+40	23.1280	3.05	Q			V
21+45	23.1488	3.01	Q			V
21+50	23.1693	2.98	Q			V
21+55	23.1895	2.94	Q			V
22+ 0	23.2095	2.90	Q			V
22+ 5	23.2293	2.87	Q			V
22+10	23.2488	2.84	Q			V
22+15	23.2681	2.81	Q			V
22+20	23.2873	2.77	Q			V
22+25	23.3062	2.74	Q			V
22+30	23.3249	2.71	Q			V
22+35	23.3434	2.69	Q			V
22+40	23.3617	2.66	Q			V
22+45	23.3798	2.63	Q			V
22+50	23.3977	2.60	Q			V
22+55	23.4154	2.58	Q			V
23+ 0	23.4330	2.55	Q			V
23+ 5	23.4504	2.53	Q			V
23+10	23.4676	2.50	Q			V
23+15	23.4847	2.48	Q			V
23+20	23.5016	2.45	Q			V
23+25	23.5183	2.43	Q			V
23+30	23.5349	2.41	Q			V
23+35	23.5513	2.39	Q			V
23+40	23.5676	2.36	Q			V
23+45	23.5837	2.34	Q			V
23+50	23.5997	2.32	Q			V

23+55	23.6155	2.30	Q				V
24+ 0	23.6312	2.28	Q				V
24+ 5	23.6464	2.20	Q				V
24+10	23.6592	1.86	Q				V
24+15	23.6674	1.19	Q				V
24+20	23.6730	0.81	Q				V
24+25	23.6771	0.59	Q				V
24+30	23.6802	0.45	Q				V
24+35	23.6826	0.35	Q				V
24+40	23.6845	0.27	Q				V
24+45	23.6860	0.22	Q				V
24+50	23.6872	0.17	Q				V
24+55	23.6881	0.13	Q				V
25+ 0	23.6888	0.10	Q				V
25+ 5	23.6893	0.08	Q				V
25+10	23.6897	0.06	Q				V
25+15	23.6900	0.05	Q				V
25+20	23.6903	0.04	Q				V
25+25	23.6905	0.03	Q				V
25+30	23.6906	0.02	Q				V
25+35	23.6907	0.01	Q				V
25+40	23.6907	0.00	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
DEVELOPED CONDITIONS AREA 1.3
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
443.93	1	1.35

Rainfall data for year 100		
443.93	6	1.84

Rainfall data for year 100		
443.93	24	2.48

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
78.0	92.8	443.93	1.000	0.140	0.900	0.126

Area-averaged adjusted loss rate Fm (In/Hr) = 0.126

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
399.54	0.900	78.0	92.8	0.78	0.703
44.39	0.100	98.0	98.0	0.20	0.908

Area-averaged catchment yield fraction, Y = 0.723

Area-averaged low loss fraction, Yb = 0.277

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Watercourse length = 5386.00(Ft.)

Length from concentration point to centroid = 2693.00(Ft.)

Elevation difference along watercourse = 12.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 443.93(Ac.)

Catchment Lag time = 0.410 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 20.3130

Hydrograph baseflow = 0.00(CFS)
 Average maximum watershed loss rate(Fm) = 0.126(In/Hr)
 Average low loss rate fraction (Yb) = 0.277 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.641(In)
 Computed peak 30-minute rainfall = 1.097(In)
 Specified peak 1-hour rainfall = 1.350(In)
 Computed peak 3-hour rainfall = 1.632(In)
 Specified peak 6-hour rainfall = 1.840(In)
 Specified peak 24-hour rainfall = 2.480(In)

Rainfall depth area reduction factors:

Using a total area of 443.93(Ac.) (Ref: fig. E-4)

5-minute factor = 0.979	Adjusted rainfall = 0.627(In)
30-minute factor = 0.979	Adjusted rainfall = 1.074(In)
1-hour factor = 0.979	Adjusted rainfall = 1.322(In)
3-hour factor = 0.997	Adjusted rainfall = 1.628(In)
6-hour factor = 0.999	Adjusted rainfall = 1.837(In)
24-hour factor = 0.999	Adjusted rainfall = 2.479(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 5368.78 (CFS))	
1	1.014	54.438
2	4.621	193.646
3	11.658	377.827
4	27.163	832.423
5	44.287	919.321
6	55.801	618.167
7	63.452	410.750
8	69.027	299.357
9	73.496	239.910
10	77.107	193.842
11	80.054	158.232
12	82.527	132.796
13	84.664	114.718
14	86.591	103.451
15	88.252	89.189
16	89.591	71.880
17	90.769	63.251
18	91.859	58.487
19	92.826	51.945
20	93.719	47.930
21	94.458	39.689
22	95.149	37.079
23	95.781	33.952
24	96.311	28.457
25	96.827	27.707
26	97.224	21.279
27	97.589	19.630
28	97.886	15.908
29	98.089	10.931
30	98.297	11.139
31	98.535	12.771
32	98.778	13.087
33	99.022	13.087
34	99.266	13.087
35	99.493	12.175
36	99.632	7.481
37	99.759	6.816
38	99.886	6.816
39	100.000	6.128

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6273	0.6273
2	0.7722	0.1450
3	0.8721	0.0999
4	0.9507	0.0786
5	1.0166	0.0658
6	1.0737	0.0572

		PR13.out
7	1.1245	0.0508
8	1.1705	0.0460
9	1.2126	0.0421
10	1.2515	0.0389
11	1.2878	0.0363
12	1.3219	0.0341
13	1.3421	0.0202
14	1.3611	0.0190
15	1.3790	0.0179
16	1.3960	0.0170
17	1.4121	0.0161
18	1.4275	0.0154
19	1.4422	0.0147
20	1.4563	0.0141
21	1.4698	0.0135
22	1.4829	0.0130
23	1.4954	0.0125
24	1.5075	0.0121
25	1.5192	0.0117
26	1.5306	0.0113
27	1.5416	0.0110
28	1.5522	0.0107
29	1.5626	0.0104
30	1.5727	0.0101
31	1.5825	0.0098
32	1.5920	0.0096
33	1.6013	0.0093
34	1.6104	0.0091
35	1.6193	0.0089
36	1.6280	0.0087
37	1.6358	0.0078
38	1.6434	0.0076
39	1.6509	0.0075
40	1.6582	0.0073
41	1.6654	0.0072
42	1.6724	0.0070
43	1.6793	0.0069
44	1.6860	0.0068
45	1.6927	0.0066
46	1.6992	0.0065
47	1.7056	0.0064
48	1.7118	0.0063
49	1.7180	0.0062
50	1.7241	0.0061
51	1.7301	0.0060
52	1.7359	0.0059
53	1.7417	0.0058
54	1.7474	0.0057
55	1.7530	0.0056
56	1.7586	0.0055
57	1.7640	0.0054
58	1.7694	0.0054
59	1.7747	0.0053
60	1.7799	0.0052
61	1.7850	0.0051
62	1.7901	0.0051
63	1.7951	0.0050
64	1.8000	0.0049
65	1.8049	0.0049
66	1.8097	0.0048
67	1.8145	0.0048
68	1.8192	0.0047
69	1.8238	0.0046
70	1.8284	0.0046
71	1.8330	0.0045
72	1.8374	0.0045
73	1.8429	0.0055
74	1.8483	0.0054
75	1.8537	0.0054
76	1.8590	0.0053
77	1.8643	0.0053
78	1.8695	0.0052
79	1.8746	0.0051
80	1.8797	0.0051
81	1.8848	0.0050
82	1.8898	0.0050
83	1.8947	0.0050
84	1.8996	0.0049

		PR13.out
85	1.9045	0.0049
86	1.9093	0.0048
87	1.9141	0.0048
88	1.9188	0.0047
89	1.9235	0.0047
90	1.9281	0.0046
91	1.9328	0.0046
92	1.9373	0.0046
93	1.9418	0.0045
94	1.9463	0.0045
95	1.9508	0.0045
96	1.9552	0.0044
97	1.9596	0.0044
98	1.9639	0.0043
99	1.9682	0.0043
100	1.9725	0.0043
101	1.9768	0.0042
102	1.9810	0.0042
103	1.9851	0.0042
104	1.9893	0.0041
105	1.9934	0.0041
106	1.9975	0.0041
107	2.0015	0.0041
108	2.0056	0.0040
109	2.0096	0.0040
110	2.0135	0.0040
111	2.0175	0.0039
112	2.0214	0.0039
113	2.0253	0.0039
114	2.0291	0.0039
115	2.0329	0.0038
116	2.0367	0.0038
117	2.0405	0.0038
118	2.0443	0.0038
119	2.0480	0.0037
120	2.0517	0.0037
121	2.0554	0.0037
122	2.0590	0.0037
123	2.0627	0.0036
124	2.0663	0.0036
125	2.0699	0.0036
126	2.0734	0.0036
127	2.0770	0.0035
128	2.0805	0.0035
129	2.0840	0.0035
130	2.0875	0.0035
131	2.0909	0.0035
132	2.0944	0.0034
133	2.0978	0.0034
134	2.1012	0.0034
135	2.1046	0.0034
136	2.1079	0.0034
137	2.1113	0.0033
138	2.1146	0.0033
139	2.1179	0.0033
140	2.1211	0.0033
141	2.1244	0.0033
142	2.1277	0.0032
143	2.1309	0.0032
144	2.1341	0.0032
145	2.1373	0.0032
146	2.1405	0.0032
147	2.1436	0.0032
148	2.1468	0.0031
149	2.1499	0.0031
150	2.1530	0.0031
151	2.1561	0.0031
152	2.1591	0.0031
153	2.1622	0.0031
154	2.1653	0.0030
155	2.1683	0.0030
156	2.1713	0.0030
157	2.1743	0.0030
158	2.1773	0.0030
159	2.1802	0.0030
160	2.1832	0.0030
161	2.1861	0.0029
162	2.1891	0.0029

		PR13.out
163	2.1920	0.0029
164	2.1949	0.0029
165	2.1977	0.0029
166	2.2006	0.0029
167	2.2035	0.0029
168	2.2063	0.0028
169	2.2091	0.0028
170	2.2120	0.0028
171	2.2148	0.0028
172	2.2176	0.0028
173	2.2203	0.0028
174	2.2231	0.0028
175	2.2258	0.0028
176	2.2286	0.0027
177	2.2313	0.0027
178	2.2340	0.0027
179	2.2367	0.0027
180	2.2394	0.0027
181	2.2421	0.0027
182	2.2448	0.0027
183	2.2474	0.0027
184	2.2501	0.0026
185	2.2527	0.0026
186	2.2553	0.0026
187	2.2580	0.0026
188	2.2606	0.0026
189	2.2631	0.0026
190	2.2657	0.0026
191	2.2683	0.0026
192	2.2709	0.0026
193	2.2734	0.0025
194	2.2759	0.0025
195	2.2785	0.0025
196	2.2810	0.0025
197	2.2835	0.0025
198	2.2860	0.0025
199	2.2885	0.0025
200	2.2910	0.0025
201	2.2934	0.0025
202	2.2959	0.0025
203	2.2983	0.0024
204	2.3008	0.0024
205	2.3032	0.0024
206	2.3056	0.0024
207	2.3080	0.0024
208	2.3104	0.0024
209	2.3128	0.0024
210	2.3152	0.0024
211	2.3176	0.0024
212	2.3200	0.0024
213	2.3223	0.0024
214	2.3247	0.0023
215	2.3270	0.0023
216	2.3293	0.0023
217	2.3317	0.0023
218	2.3340	0.0023
219	2.3363	0.0023
220	2.3386	0.0023
221	2.3409	0.0023
222	2.3432	0.0023
223	2.3454	0.0023
224	2.3477	0.0023
225	2.3500	0.0023
226	2.3522	0.0023
227	2.3545	0.0022
228	2.3567	0.0022
229	2.3589	0.0022
230	2.3611	0.0022
231	2.3634	0.0022
232	2.3656	0.0022
233	2.3678	0.0022
234	2.3700	0.0022
235	2.3721	0.0022
236	2.3743	0.0022
237	2.3765	0.0022
238	2.3786	0.0022
239	2.3808	0.0022
240	2.3829	0.0021

		PR13.out
241	2.3851	0.0021
242	2.3872	0.0021
243	2.3893	0.0021
244	2.3915	0.0021
245	2.3936	0.0021
246	2.3957	0.0021
247	2.3978	0.0021
248	2.3999	0.0021
249	2.4020	0.0021
250	2.4040	0.0021
251	2.4061	0.0021
252	2.4082	0.0021
253	2.4102	0.0021
254	2.4123	0.0021
255	2.4143	0.0020
256	2.4164	0.0020
257	2.4184	0.0020
258	2.4204	0.0020
259	2.4225	0.0020
260	2.4245	0.0020
261	2.4265	0.0020
262	2.4285	0.0020
263	2.4305	0.0020
264	2.4325	0.0020
265	2.4345	0.0020
266	2.4365	0.0020
267	2.4384	0.0020
268	2.4404	0.0020
269	2.4424	0.0020
270	2.4443	0.0020
271	2.4463	0.0020
272	2.4482	0.0019
273	2.4502	0.0019
274	2.4521	0.0019
275	2.4540	0.0019
276	2.4560	0.0019
277	2.4579	0.0019
278	2.4598	0.0019
279	2.4617	0.0019
280	2.4636	0.0019
281	2.4655	0.0019
282	2.4674	0.0019
283	2.4693	0.0019
284	2.4711	0.0019
285	2.4730	0.0019
286	2.4749	0.0019
287	2.4768	0.0019
288	2.4786	0.0019

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0019	0.0005	0.0013
2	0.0019	0.0005	0.0013
3	0.0019	0.0005	0.0014
4	0.0019	0.0005	0.0014
5	0.0019	0.0005	0.0014
6	0.0019	0.0005	0.0014
7	0.0019	0.0005	0.0014
8	0.0019	0.0005	0.0014
9	0.0019	0.0005	0.0014
10	0.0019	0.0005	0.0014
11	0.0019	0.0005	0.0014
12	0.0019	0.0005	0.0014
13	0.0020	0.0005	0.0014
14	0.0020	0.0005	0.0014
15	0.0020	0.0005	0.0014
16	0.0020	0.0005	0.0014
17	0.0020	0.0006	0.0014
18	0.0020	0.0006	0.0014
19	0.0020	0.0006	0.0015
20	0.0020	0.0006	0.0015
21	0.0020	0.0006	0.0015
22	0.0020	0.0006	0.0015
23	0.0020	0.0006	0.0015
24	0.0021	0.0006	0.0015
25	0.0021	0.0006	0.0015

		PR13.out	
26	0.0021	0.0006	0.0015
27	0.0021	0.0006	0.0015
28	0.0021	0.0006	0.0015
29	0.0021	0.0006	0.0015
30	0.0021	0.0006	0.0015
31	0.0021	0.0006	0.0015
32	0.0021	0.0006	0.0015
33	0.0021	0.0006	0.0016
34	0.0022	0.0006	0.0016
35	0.0022	0.0006	0.0016
36	0.0022	0.0006	0.0016
37	0.0022	0.0006	0.0016
38	0.0022	0.0006	0.0016
39	0.0022	0.0006	0.0016
40	0.0022	0.0006	0.0016
41	0.0022	0.0006	0.0016
42	0.0022	0.0006	0.0016
43	0.0023	0.0006	0.0016
44	0.0023	0.0006	0.0016
45	0.0023	0.0006	0.0017
46	0.0023	0.0006	0.0017
47	0.0023	0.0006	0.0017
48	0.0023	0.0006	0.0017
49	0.0023	0.0006	0.0017
50	0.0023	0.0006	0.0017
51	0.0024	0.0007	0.0017
52	0.0024	0.0007	0.0017
53	0.0024	0.0007	0.0017
54	0.0024	0.0007	0.0017
55	0.0024	0.0007	0.0017
56	0.0024	0.0007	0.0018
57	0.0024	0.0007	0.0018
58	0.0024	0.0007	0.0018
59	0.0025	0.0007	0.0018
60	0.0025	0.0007	0.0018
61	0.0025	0.0007	0.0018
62	0.0025	0.0007	0.0018
63	0.0025	0.0007	0.0018
64	0.0025	0.0007	0.0018
65	0.0026	0.0007	0.0019
66	0.0026	0.0007	0.0019
67	0.0026	0.0007	0.0019
68	0.0026	0.0007	0.0019
69	0.0026	0.0007	0.0019
70	0.0026	0.0007	0.0019
71	0.0027	0.0007	0.0019
72	0.0027	0.0007	0.0019
73	0.0027	0.0007	0.0019
74	0.0027	0.0007	0.0020
75	0.0027	0.0008	0.0020
76	0.0027	0.0008	0.0020
77	0.0028	0.0008	0.0020
78	0.0028	0.0008	0.0020
79	0.0028	0.0008	0.0020
80	0.0028	0.0008	0.0020
81	0.0028	0.0008	0.0021
82	0.0029	0.0008	0.0021
83	0.0029	0.0008	0.0021
84	0.0029	0.0008	0.0021
85	0.0029	0.0008	0.0021
86	0.0029	0.0008	0.0021
87	0.0030	0.0008	0.0021
88	0.0030	0.0008	0.0022
89	0.0030	0.0008	0.0022
90	0.0030	0.0008	0.0022
91	0.0031	0.0008	0.0022
92	0.0031	0.0009	0.0022
93	0.0031	0.0009	0.0022
94	0.0031	0.0009	0.0023
95	0.0032	0.0009	0.0023
96	0.0032	0.0009	0.0023
97	0.0032	0.0009	0.0023
98	0.0032	0.0009	0.0023
99	0.0033	0.0009	0.0024
100	0.0033	0.0009	0.0024
101	0.0033	0.0009	0.0024
102	0.0033	0.0009	0.0024
103	0.0034	0.0009	0.0024

		PR13.out	
104	0.0034	0.0009	0.0025
105	0.0034	0.0010	0.0025
106	0.0035	0.0010	0.0025
107	0.0035	0.0010	0.0025
108	0.0035	0.0010	0.0025
109	0.0036	0.0010	0.0026
110	0.0036	0.0010	0.0026
111	0.0036	0.0010	0.0026
112	0.0037	0.0010	0.0026
113	0.0037	0.0010	0.0027
114	0.0037	0.0010	0.0027
115	0.0038	0.0010	0.0027
116	0.0038	0.0011	0.0028
117	0.0039	0.0011	0.0028
118	0.0039	0.0011	0.0028
119	0.0039	0.0011	0.0028
120	0.0040	0.0011	0.0029
121	0.0040	0.0011	0.0029
122	0.0041	0.0011	0.0029
123	0.0041	0.0011	0.0030
124	0.0041	0.0011	0.0030
125	0.0042	0.0012	0.0030
126	0.0042	0.0012	0.0031
127	0.0043	0.0012	0.0031
128	0.0043	0.0012	0.0031
129	0.0044	0.0012	0.0032
130	0.0045	0.0012	0.0032
131	0.0045	0.0013	0.0033
132	0.0046	0.0013	0.0033
133	0.0046	0.0013	0.0034
134	0.0047	0.0013	0.0034
135	0.0048	0.0013	0.0035
136	0.0048	0.0013	0.0035
137	0.0049	0.0014	0.0035
138	0.0050	0.0014	0.0036
139	0.0050	0.0014	0.0037
140	0.0051	0.0014	0.0037
141	0.0052	0.0014	0.0038
142	0.0053	0.0015	0.0038
143	0.0054	0.0015	0.0039
144	0.0054	0.0015	0.0039
145	0.0045	0.0012	0.0032
146	0.0045	0.0013	0.0033
147	0.0046	0.0013	0.0034
148	0.0047	0.0013	0.0034
149	0.0048	0.0013	0.0035
150	0.0049	0.0014	0.0035
151	0.0050	0.0014	0.0036
152	0.0051	0.0014	0.0037
153	0.0052	0.0014	0.0038
154	0.0053	0.0015	0.0038
155	0.0054	0.0015	0.0039
156	0.0055	0.0015	0.0040
157	0.0057	0.0016	0.0041
158	0.0058	0.0016	0.0042
159	0.0060	0.0017	0.0043
160	0.0061	0.0017	0.0044
161	0.0063	0.0017	0.0045
162	0.0064	0.0018	0.0046
163	0.0066	0.0018	0.0048
164	0.0068	0.0019	0.0049
165	0.0070	0.0019	0.0051
166	0.0072	0.0020	0.0052
167	0.0075	0.0021	0.0054
168	0.0076	0.0021	0.0055
169	0.0087	0.0024	0.0063
170	0.0089	0.0025	0.0064
171	0.0093	0.0026	0.0067
172	0.0096	0.0026	0.0069
173	0.0101	0.0028	0.0073
174	0.0104	0.0029	0.0075
175	0.0110	0.0030	0.0079
176	0.0113	0.0031	0.0082
177	0.0121	0.0034	0.0088
178	0.0125	0.0035	0.0091
179	0.0135	0.0037	0.0098
180	0.0141	0.0039	0.0102
181	0.0154	0.0043	0.0111

		PR13.out	
182	0.0161	0.0045	0.0117
183	0.0179	0.0050	0.0130
184	0.0190	0.0053	0.0137
185	0.0341	0.0094	0.0246
186	0.0363	0.0100	0.0263
187	0.0421	0.0105	0.0316
188	0.0460	0.0105	0.0355
189	0.0572	0.0105	0.0467
190	0.0658	0.0105	0.0553
191	0.0999	0.0105	0.0894
192	0.1450	0.0105	0.1345
193	0.6273	0.0105	0.6168
194	0.0786	0.0105	0.0681
195	0.0508	0.0105	0.0403
196	0.0389	0.0105	0.0284
197	0.0202	0.0056	0.0146
198	0.0170	0.0047	0.0123
199	0.0147	0.0041	0.0106
200	0.0130	0.0036	0.0094
201	0.0117	0.0032	0.0085
202	0.0107	0.0030	0.0077
203	0.0098	0.0027	0.0071
204	0.0091	0.0025	0.0066
205	0.0078	0.0022	0.0056
206	0.0073	0.0020	0.0053
207	0.0069	0.0019	0.0050
208	0.0065	0.0018	0.0047
209	0.0062	0.0017	0.0045
210	0.0059	0.0016	0.0043
211	0.0056	0.0016	0.0041
212	0.0054	0.0015	0.0039
213	0.0051	0.0014	0.0037
214	0.0049	0.0014	0.0036
215	0.0048	0.0013	0.0034
216	0.0046	0.0013	0.0033
217	0.0055	0.0015	0.0040
218	0.0053	0.0015	0.0038
219	0.0051	0.0014	0.0037
220	0.0050	0.0014	0.0036
221	0.0049	0.0013	0.0035
222	0.0047	0.0013	0.0034
223	0.0046	0.0013	0.0033
224	0.0045	0.0012	0.0032
225	0.0044	0.0012	0.0032
226	0.0043	0.0012	0.0031
227	0.0042	0.0012	0.0030
228	0.0041	0.0011	0.0030
229	0.0040	0.0011	0.0029
230	0.0039	0.0011	0.0028
231	0.0038	0.0011	0.0028
232	0.0038	0.0010	0.0027
233	0.0037	0.0010	0.0027
234	0.0036	0.0010	0.0026
235	0.0035	0.0010	0.0026
236	0.0035	0.0010	0.0025
237	0.0034	0.0009	0.0025
238	0.0034	0.0009	0.0024
239	0.0033	0.0009	0.0024
240	0.0032	0.0009	0.0023
241	0.0032	0.0009	0.0023
242	0.0031	0.0009	0.0023
243	0.0031	0.0009	0.0022
244	0.0030	0.0008	0.0022
245	0.0030	0.0008	0.0022
246	0.0030	0.0008	0.0021
247	0.0029	0.0008	0.0021
248	0.0029	0.0008	0.0021
249	0.0028	0.0008	0.0020
250	0.0028	0.0008	0.0020
251	0.0028	0.0008	0.0020
252	0.0027	0.0008	0.0020
253	0.0027	0.0007	0.0019
254	0.0026	0.0007	0.0019
255	0.0026	0.0007	0.0019
256	0.0026	0.0007	0.0019
257	0.0025	0.0007	0.0018
258	0.0025	0.0007	0.0018
259	0.0025	0.0007	0.0018

PR13.out

260	0.0025	0.0007	0.0018
261	0.0024	0.0007	0.0018
262	0.0024	0.0007	0.0017
263	0.0024	0.0007	0.0017
264	0.0023	0.0007	0.0017
265	0.0023	0.0006	0.0017
266	0.0023	0.0006	0.0017
267	0.0023	0.0006	0.0016
268	0.0023	0.0006	0.0016
269	0.0022	0.0006	0.0016
270	0.0022	0.0006	0.0016
271	0.0022	0.0006	0.0016
272	0.0022	0.0006	0.0016
273	0.0021	0.0006	0.0015
274	0.0021	0.0006	0.0015
275	0.0021	0.0006	0.0015
276	0.0021	0.0006	0.0015
277	0.0021	0.0006	0.0015
278	0.0020	0.0006	0.0015
279	0.0020	0.0006	0.0015
280	0.0020	0.0006	0.0014
281	0.0020	0.0005	0.0014
282	0.0020	0.0005	0.0014
283	0.0020	0.0005	0.0014
284	0.0019	0.0005	0.0014
285	0.0019	0.0005	0.0014
286	0.0019	0.0005	0.0014
287	0.0019	0.0005	0.0014
288	0.0019	0.0005	0.0014

Total soil rain loss = 0.44(In)
Total effective rainfall = 2.03(In)
Peak flow rate in flood hydrograph = 818.98(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	225.0	450.0	675.0	900.0
0+ 5	0.0005	0.07	Q				
0+10	0.0028	0.33	Q				
0+15	0.0086	0.84	Q				
0+20	0.0222	1.97	Q				
0+25	0.0443	3.21	Q				
0+30	0.0722	4.06	Q				
0+35	0.1041	4.63	Q				
0+40	0.1388	5.05	Q				
0+45	0.1760	5.39	Q				
0+50	0.2150	5.67	Q				
0+55	0.2558	5.91	Q				
1+ 0	0.2979	6.11	Q				
1+ 5	0.3412	6.29	Q				
1+10	0.3857	6.46	Q				
1+15	0.4312	6.61	Q				
1+20	0.4776	6.73	Q				
1+25	0.5248	6.85	Q				
1+30	0.5727	6.96	Q				
1+35	0.6213	7.06	Q				
1+40	0.6705	7.15	Q				
1+45	0.7204	7.24	Q				
1+50	0.7708	7.32	Q				
1+55	0.8217	7.40	Q				
2+ 0	0.8732	7.47	Q				
2+ 5	0.9251	7.54	Q				
2+10	0.9774	7.60	Q				
2+15	1.0302	7.66	Q				
2+20	1.0834	7.72	Q				
2+25	1.1369	7.77	Q				
2+30	1.1908	7.82	Q				
2+35	1.2450	7.87	Q				
2+40	1.2996	7.93	Q				
2+45	1.3546	7.98	Q				
2+50	1.4099	8.04	Q				

2+55	1.4657	8.09	Q
3+ 0	1.5218	8.14	Q
3+ 5	1.5782	8.19	Q
3+10	1.6349	8.24	Q
3+15	1.6920	8.29	Q
3+20	1.7494	8.33	Q
3+25	1.8070	8.37	Q
3+30	1.8649	8.41	Q
3+35	1.9232	8.45	QV
3+40	1.9817	8.50	QV
3+45	2.0405	8.54	QV
3+50	2.0996	8.58	QV
3+55	2.1590	8.63	QV
4+ 0	2.2187	8.67	QV
4+ 5	2.2788	8.72	QV
4+10	2.3391	8.76	QV
4+15	2.3998	8.81	QV
4+20	2.4607	8.85	QV
4+25	2.5221	8.90	QV
4+30	2.5837	8.95	QV
4+35	2.6457	9.00	QV
4+40	2.7080	9.05	QV
4+45	2.7706	9.10	QV
4+50	2.8336	9.15	QV
4+55	2.8970	9.20	QV
5+ 0	2.9607	9.25	QV
5+ 5	3.0248	9.30	QV
5+10	3.0892	9.36	QV
5+15	3.1540	9.41	QV
5+20	3.2192	9.46	QV
5+25	3.2847	9.52	QV
5+30	3.3507	9.57	QV
5+35	3.4170	9.63	QV
5+40	3.4837	9.69	QV
5+45	3.5508	9.75	QV
5+50	3.6184	9.81	QV
5+55	3.6863	9.86	QV
6+ 0	3.7547	9.93	QV
6+ 5	3.8234	9.99	Q V
6+10	3.8926	10.05	Q V
6+15	3.9623	10.11	Q V
6+20	4.0324	10.18	Q V
6+25	4.1029	10.24	Q V
6+30	4.1739	10.31	Q V
6+35	4.2453	10.37	Q V
6+40	4.3172	10.44	Q V
6+45	4.3896	10.51	Q V
6+50	4.4625	10.58	Q V
6+55	4.5359	10.65	Q V
7+ 0	4.6097	10.72	Q V
7+ 5	4.6841	10.80	Q V
7+10	4.7590	10.87	Q V
7+15	4.8344	10.95	Q V
7+20	4.9103	11.02	Q V
7+25	4.9868	11.10	Q V
7+30	5.0638	11.18	Q V
7+35	5.1414	11.26	Q V
7+40	5.2195	11.35	Q V
7+45	5.2982	11.43	Q V
7+50	5.3775	11.51	Q V
7+55	5.4574	11.60	Q V
8+ 0	5.5379	11.69	Q V
8+ 5	5.6190	11.78	Q V
8+10	5.7007	11.87	Q V
8+15	5.7831	11.96	Q V
8+20	5.8661	12.05	Q V
8+25	5.9498	12.15	Q V
8+30	6.0341	12.25	Q V
8+35	6.1191	12.35	Q V
8+40	6.2049	12.45	Q V
8+45	6.2913	12.55	Q V
8+50	6.3785	12.66	Q V
8+55	6.4664	12.76	Q V
9+ 0	6.5550	12.87	Q V
9+ 5	6.6445	12.98	Q V
9+10	6.7347	13.10	Q V
9+15	6.8257	13.21	Q V
9+20	6.9175	13.33	Q V

9+25	7.0101	13.45	Q	V
9+30	7.1037	13.58	Q	V
9+35	7.1980	13.70	Q	V
9+40	7.2933	13.83	Q	V
9+45	7.3894	13.96	Q	V
9+50	7.4865	14.10	Q	V
9+55	7.5845	14.23	Q	V
10+ 0	7.6835	14.37	Q	V
10+ 5	7.7835	14.52	Q	V
10+10	7.8845	14.67	Q	V
10+15	7.9866	14.82	Q	V
10+20	8.0897	14.97	Q	V
10+25	8.1938	15.13	Q	V
10+30	8.2991	15.29	Q	V
10+35	8.4056	15.45	Q	V
10+40	8.5132	15.62	Q	V
10+45	8.6220	15.80	Q	V
10+50	8.7320	15.98	Q	V
10+55	8.8433	16.16	Q	V
11+ 0	8.9559	16.35	Q	V
11+ 5	9.0698	16.54	Q	V
11+10	9.1851	16.74	Q	V
11+15	9.3018	16.94	Q	V
11+20	9.4199	17.15	Q	V
11+25	9.5395	17.37	Q	V
11+30	9.6606	17.59	Q	V
11+35	9.7834	17.82	Q	V
11+40	9.9077	18.06	Q	V
11+45	10.0337	18.30	Q	V
11+50	10.1615	18.55	Q	V
11+55	10.2910	18.81	Q	V
12+ 0	10.4224	19.07	Q	V
12+ 5	10.5553	19.31	Q	V
12+10	10.6892	19.44	Q	V
12+15	10.8232	19.45	Q	V
12+20	10.9548	19.11	Q	V
12+25	11.0836	18.71	Q	V
12+30	11.2113	18.54	Q	V
12+35	11.3390	18.54	Q	V
12+40	11.4673	18.63	Q	V
12+45	11.5965	18.77	Q	V
12+50	11.7271	18.96	Q	V
12+55	11.8592	19.18	Q	V
13+ 0	11.9932	19.45	Q	V
13+ 5	12.1291	19.74	Q	V
13+10	12.2672	20.05	Q	V
13+15	12.4076	20.39	Q	V
13+20	12.5506	20.77	Q	V
13+25	12.6964	21.16	Q	V
13+30	12.8451	21.59	Q	V
13+35	12.9969	22.04	Q	V
13+40	13.1520	22.53	Q	V
13+45	13.3107	23.04	Q	V
13+50	13.4732	23.60	Q	V
13+55	13.6398	24.18	Q	V
14+ 0	13.8106	24.81	Q	V
14+ 5	13.9862	25.50	Q	V
14+10	14.1674	26.31	Q	V
14+15	14.3552	27.27	Q	V
14+20	14.5516	28.51	Q	V
14+25	14.7573	29.87	Q	V
14+30	14.9720	31.17	Q	V
14+35	15.1955	32.45	Q	V
14+40	15.4281	33.78	Q	V
14+45	15.6703	35.17	Q	V
14+50	15.9229	36.68	Q	V
14+55	16.1867	38.30	Q	V
15+ 0	16.4628	40.09	Q	V
15+ 5	16.7523	42.04	Q	V
15+10	17.0571	44.24	Q	V
15+15	17.3786	46.69	Q	V
15+20	17.7194	49.49	Q	V
15+25	18.0856	53.16	Q	V
15+30	18.4897	58.68	Q	V
15+35	18.9488	66.66	Q	V
15+40	19.5011	80.20	Q	V
15+45	20.1681	96.85	Q	V
15+50	20.9606	115.07	Q	V

			PR13.out			
15+55	21.9083	137.61				
16+ 0	23.0860	171.00	Q	V		
16+ 5	24.7724	244.87	Q	V		
16+10	27.3556	375.07		V		
16+15	31.0294	533.43		V	Q	
16+20	36.5059	795.20			V	
16+25	42.1463	818.98				Q
16+30	46.4046	618.30			V	Q
16+35	49.5987	463.79			V	
16+40	52.1087	364.45		Q	V	
16+45	54.1757	300.13			V	
16+50	55.9083	251.58	Q	Q	V	
16+55	57.3850	214.42		Q	V	
17+ 0	58.6701	186.59		Q	V	
17+ 5	59.8082	165.26		Q	V	
17+10	60.8342	148.97		Q	V	
17+15	61.7447	132.21		Q	V	
17+20	62.5375	115.12		Q	V	
17+25	63.2522	103.77		Q	V	
17+30	63.9092	95.40		Q	V	
17+35	64.5075	86.87		Q	V	
17+40	65.0590	80.08		Q	V	
17+45	65.5528	71.70		Q	V	
17+50	66.0114	66.59		Q	V	
17+55	66.4352	61.54		Q	V	
18+ 0	66.8181	55.59		Q	V	
18+ 5	67.1779	52.24		Q	V	
18+10	67.4975	46.41		Q	V	
18+15	67.7959	43.33		Q	V	
18+20	68.0700	39.80		Q	V	
18+25	68.3194	36.21		Q	V	
18+30	68.5642	35.54		Q	V	
18+35	68.8096	35.63		Q	V	
18+40	69.0500	34.91		Q	V	
18+45	69.2840	33.97		Q	V	
18+50	69.5098	32.78		Q	V	
18+55	69.7224	30.88		Q	V	
19+ 0	69.9093	27.13		Q	V	
19+ 5	70.0856	25.60		Q	V	
19+10	70.2533	24.36		Q	V	
19+15	70.4090	22.61		Q	V	
19+20	70.5355	18.37	Q		V	
19+25	70.6564	17.55	Q		V	
19+30	70.7731	16.94	Q		V	
19+35	70.8862	16.43	Q		V	
19+40	70.9965	16.02	Q		V	
19+45	71.1042	15.64	Q		V	
19+50	71.2095	15.29	Q		V	
19+55	71.3125	14.96	Q		V	
20+ 0	71.4133	14.64	Q		V	
20+ 5	71.5122	14.35	Q		V	
20+10	71.6091	14.07	Q		V	
20+15	71.7041	13.80	Q		V	
20+20	71.7974	13.55	Q		V	
20+25	71.8890	13.30	Q		V	
20+30	71.9790	13.06	Q		V	
20+35	72.0674	12.84	Q		V	
20+40	72.1544	12.63	Q		V	
20+45	72.2399	12.42	Q		V	
20+50	72.3242	12.23	Q		V	
20+55	72.4071	12.04	Q		V	
21+ 0	72.4887	11.85	Q		V	
21+ 5	72.5691	11.67	Q		V	
21+10	72.6483	11.50	Q		V	
21+15	72.7264	11.33	Q		V	
21+20	72.8033	11.17	Q		V	
21+25	72.8791	11.01	Q		V	
21+30	72.9539	10.85	Q		V	
21+35	73.0276	10.70	Q		V	
21+40	73.1003	10.56	Q		V	
21+45	73.1721	10.42	Q		V	
21+50	73.2429	10.28	Q		V	
21+55	73.3128	10.15	Q		V	
22+ 0	73.3818	10.02	Q		V	
22+ 5	73.4500	9.90	Q		V	
22+10	73.5173	9.78	Q		V	
22+15	73.5839	9.66	Q		V	
22+20	73.6496	9.55	Q		V	

22+25	73.7146	9.43	Q			V
22+30	73.7788	9.33	Q			V
22+35	73.8423	9.22	Q			V
22+40	73.9051	9.12	Q			V
22+45	73.9672	9.02	Q			V
22+50	74.0286	8.92	Q			V
22+55	74.0894	8.82	Q			V
23+ 0	74.1495	8.73	Q			V
23+ 5	74.2090	8.64	Q			V
23+10	74.2679	8.55	Q			V
23+15	74.3263	8.47	Q			V
23+20	74.3840	8.38	Q			V
23+25	74.4411	8.30	Q			V
23+30	74.4977	8.22	Q			V
23+35	74.5538	8.14	Q			V
23+40	74.6093	8.06	Q			V
23+45	74.6643	7.99	Q			V
23+50	74.7188	7.91	Q			V
23+55	74.7728	7.84	Q			V
24+ 0	74.8263	7.77	Q			V
24+ 5	74.8788	7.63	Q			V
24+10	74.9291	7.30	Q			V
24+15	74.9754	6.73	Q			V
24+20	75.0136	5.55	Q			V
24+25	75.0430	4.27	Q			V
24+30	75.0665	3.40	Q			V
24+35	75.0859	2.82	Q			V
24+40	75.1024	2.39	Q			V
24+45	75.1165	2.05	Q			V
24+50	75.1287	1.77	Q			V
24+55	75.1393	1.54	Q			V
25+ 0	75.1486	1.35	Q			V
25+ 5	75.1568	1.19	Q			V
25+10	75.1639	1.04	Q			V
25+15	75.1702	0.91	Q			V
25+20	75.1757	0.80	Q			V
25+25	75.1806	0.71	Q			V
25+30	75.1849	0.63	Q			V
25+35	75.1887	0.55	Q			V
25+40	75.1920	0.48	Q			V
25+45	75.1950	0.42	Q			V
25+50	75.1975	0.37	Q			V
25+55	75.1997	0.32	Q			V
26+ 0	75.2017	0.28	Q			V
26+ 5	75.2033	0.24	Q			V
26+10	75.2048	0.21	Q			V
26+15	75.2060	0.18	Q			V
26+20	75.2071	0.16	Q			V
26+25	75.2081	0.14	Q			V
26+30	75.2090	0.13	Q			V
26+35	75.2097	0.11	Q			V
26+40	75.2104	0.09	Q			V
26+45	75.2109	0.07	Q			V
26+50	75.2112	0.05	Q			V
26+55	75.2115	0.04	Q			V
27+ 0	75.2117	0.03	Q			V
27+ 5	75.2118	0.02	Q			V
27+10	75.2119	0.01	Q			V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
DEVELOPED CONDITIONS AREA 1.4
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
41.87	1	1.36

Rainfall data for year 100		
41.87	6	1.84

Rainfall data for year 100		
41.87	24	2.48

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
78.0	92.8	41.87	1.000	0.140	0.900	0.126

Area-averaged adjusted loss rate Fm (In/Hr) = 0.126

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
37.68	0.900	78.0	92.8	0.78	0.703
4.19	0.100	98.0	98.0	0.20	0.908

Area-averaged catchment yield fraction, Y = 0.723

Area-averaged low loss fraction, Yb = 0.277

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Watercourse length = 1993.00(Ft.)

Length from concentration point to centroid = 997.00(Ft.)

Elevation difference along watercourse = 12.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 41.87(Ac.)

Catchment Lag time = 0.160 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 52.2231

Hydrograph baseflow = 0.00(CFS)
 Average maximum watershed loss rate(Fm) = 0.126(In/Hr)
 Average low loss rate fraction (Yb) = 0.277 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.645(In)
 Computed peak 30-minute rainfall = 1.105(In)
 Specified peak 1-hour rainfall = 1.360(In)
 Computed peak 3-hour rainfall = 1.637(In)
 Specified peak 6-hour rainfall = 1.840(In)
 Specified peak 24-hour rainfall = 2.480(In)

Rainfall depth area reduction factors:

Using a total area of 41.87(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998	Adjusted rainfall = 0.644(In)
30-minute factor = 0.998	Adjusted rainfall = 1.102(In)
1-hour factor = 0.998	Adjusted rainfall = 1.357(In)
3-hour factor = 1.000	Adjusted rainfall = 1.637(In)
6-hour factor = 1.000	Adjusted rainfall = 1.840(In)
24-hour factor = 1.000	Adjusted rainfall = 2.480(In)

U n i t H y d r o g r a p h

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 Interval 'S' Graph Unit Hydrograph
 Number Mean values ((CFS))

(K = 506.37 (CFS))

1	4.271	21.627
2	33.092	145.938
3	62.479	148.808
4	75.217	64.499
5	82.607	37.419
6	87.615	25.359
7	90.985	17.069
8	93.500	12.732
9	95.362	9.428
10	96.761	7.086
11	97.724	4.877
12	98.319	3.012
13	98.933	3.110
14	99.507	2.903
15	100.000	2.497

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.6441	0.6441
2	0.7929	0.1489
3	0.8955	0.1026
4	0.9762	0.0807
5	1.0438	0.0676
6	1.1025	0.0587
7	1.1547	0.0522
8	1.2019	0.0472
9	1.2451	0.0432
10	1.2851	0.0400
11	1.3224	0.0373
12	1.3573	0.0350
13	1.3760	0.0186
14	1.3934	0.0175
15	1.4099	0.0165
16	1.4255	0.0156
17	1.4403	0.0148
18	1.4543	0.0141
19	1.4678	0.0135
20	1.4807	0.0129
21	1.4930	0.0124
22	1.5049	0.0119
23	1.5163	0.0114
24	1.5274	0.0110
25	1.5380	0.0107
26	1.5483	0.0103
27	1.5583	0.0100
28	1.5680	0.0097
29	1.5774	0.0094
30	1.5865	0.0091

		PR14.out
31	1.5954	0.0089
32	1.6040	0.0086
33	1.6125	0.0084
34	1.6207	0.0082
35	1.6287	0.0080
36	1.6365	0.0078
37	1.6441	0.0076
38	1.6515	0.0074
39	1.6588	0.0073
40	1.6659	0.0071
41	1.6729	0.0070
42	1.6797	0.0068
43	1.6864	0.0067
44	1.6929	0.0066
45	1.6994	0.0064
46	1.7057	0.0063
47	1.7119	0.0062
48	1.7180	0.0061
49	1.7240	0.0060
50	1.7299	0.0059
51	1.7357	0.0058
52	1.7414	0.0057
53	1.7470	0.0056
54	1.7525	0.0055
55	1.7580	0.0054
56	1.7633	0.0054
57	1.7686	0.0053
58	1.7738	0.0052
59	1.7789	0.0051
60	1.7840	0.0051
61	1.7890	0.0050
62	1.7939	0.0049
63	1.7987	0.0049
64	1.8035	0.0048
65	1.8083	0.0047
66	1.8129	0.0047
67	1.8175	0.0046
68	1.8221	0.0046
69	1.8266	0.0045
70	1.8310	0.0044
71	1.8354	0.0044
72	1.8398	0.0043
73	1.8452	0.0055
74	1.8506	0.0054
75	1.8560	0.0054
76	1.8613	0.0053
77	1.8666	0.0052
78	1.8718	0.0052
79	1.8769	0.0051
80	1.8820	0.0051
81	1.8870	0.0050
82	1.8920	0.0050
83	1.8970	0.0049
84	1.9019	0.0049
85	1.9067	0.0049
86	1.9115	0.0048
87	1.9163	0.0048
88	1.9210	0.0047
89	1.9257	0.0047
90	1.9303	0.0046
91	1.9349	0.0046
92	1.9395	0.0046
93	1.9440	0.0045
94	1.9485	0.0045
95	1.9529	0.0044
96	1.9574	0.0044
97	1.9617	0.0044
98	1.9661	0.0043
99	1.9704	0.0043
100	1.9746	0.0043
101	1.9789	0.0042
102	1.9831	0.0042
103	1.9873	0.0042
104	1.9914	0.0041
105	1.9955	0.0041
106	1.9996	0.0041
107	2.0036	0.0040
108	2.0076	0.0040

		PR14.out
109	2.0116	0.0040
110	2.0156	0.0040
111	2.0195	0.0039
112	2.0234	0.0039
113	2.0273	0.0039
114	2.0312	0.0039
115	2.0350	0.0038
116	2.0388	0.0038
117	2.0426	0.0038
118	2.0463	0.0037
119	2.0500	0.0037
120	2.0537	0.0037
121	2.0574	0.0037
122	2.0610	0.0037
123	2.0647	0.0036
124	2.0683	0.0036
125	2.0719	0.0036
126	2.0754	0.0036
127	2.0790	0.0035
128	2.0825	0.0035
129	2.0860	0.0035
130	2.0894	0.0035
131	2.0929	0.0035
132	2.0963	0.0034
133	2.0997	0.0034
134	2.1031	0.0034
135	2.1065	0.0034
136	2.1098	0.0034
137	2.1132	0.0033
138	2.1165	0.0033
139	2.1198	0.0033
140	2.1230	0.0033
141	2.1263	0.0033
142	2.1295	0.0032
143	2.1328	0.0032
144	2.1360	0.0032
145	2.1392	0.0032
146	2.1423	0.0032
147	2.1455	0.0032
148	2.1486	0.0031
149	2.1517	0.0031
150	2.1548	0.0031
151	2.1579	0.0031
152	2.1610	0.0031
153	2.1640	0.0031
154	2.1671	0.0030
155	2.1701	0.0030
156	2.1731	0.0030
157	2.1761	0.0030
158	2.1791	0.0030
159	2.1820	0.0030
160	2.1850	0.0029
161	2.1879	0.0029
162	2.1908	0.0029
163	2.1938	0.0029
164	2.1966	0.0029
165	2.1995	0.0029
166	2.2024	0.0029
167	2.2052	0.0029
168	2.2081	0.0028
169	2.2109	0.0028
170	2.2137	0.0028
171	2.2165	0.0028
172	2.2193	0.0028
173	2.2221	0.0028
174	2.2248	0.0028
175	2.2276	0.0027
176	2.2303	0.0027
177	2.2330	0.0027
178	2.2357	0.0027
179	2.2384	0.0027
180	2.2411	0.0027
181	2.2438	0.0027
182	2.2465	0.0027
183	2.2491	0.0027
184	2.2518	0.0026
185	2.2544	0.0026
186	2.2570	0.0026

		PR14.out
187	2.2596	0.0026
188	2.2622	0.0026
189	2.2648	0.0026
190	2.2674	0.0026
191	2.2699	0.0026
192	2.2725	0.0026
193	2.2750	0.0025
194	2.2776	0.0025
195	2.2801	0.0025
196	2.2826	0.0025
197	2.2851	0.0025
198	2.2876	0.0025
199	2.2901	0.0025
200	2.2926	0.0025
201	2.2950	0.0025
202	2.2975	0.0025
203	2.2999	0.0024
204	2.3024	0.0024
205	2.3048	0.0024
206	2.3072	0.0024
207	2.3096	0.0024
208	2.3120	0.0024
209	2.3144	0.0024
210	2.3168	0.0024
211	2.3192	0.0024
212	2.3215	0.0024
213	2.3239	0.0024
214	2.3262	0.0023
215	2.3286	0.0023
216	2.3309	0.0023
217	2.3332	0.0023
218	2.3355	0.0023
219	2.3378	0.0023
220	2.3401	0.0023
221	2.3424	0.0023
222	2.3447	0.0023
223	2.3469	0.0023
224	2.3492	0.0023
225	2.3515	0.0023
226	2.3537	0.0022
227	2.3560	0.0022
228	2.3582	0.0022
229	2.3604	0.0022
230	2.3626	0.0022
231	2.3648	0.0022
232	2.3670	0.0022
233	2.3692	0.0022
234	2.3714	0.0022
235	2.3736	0.0022
236	2.3758	0.0022
237	2.3779	0.0022
238	2.3801	0.0022
239	2.3822	0.0022
240	2.3844	0.0021
241	2.3865	0.0021
242	2.3886	0.0021
243	2.3908	0.0021
244	2.3929	0.0021
245	2.3950	0.0021
246	2.3971	0.0021
247	2.3992	0.0021
248	2.4013	0.0021
249	2.4034	0.0021
250	2.4054	0.0021
251	2.4075	0.0021
252	2.4096	0.0021
253	2.4116	0.0021
254	2.4137	0.0020
255	2.4157	0.0020
256	2.4178	0.0020
257	2.4198	0.0020
258	2.4218	0.0020
259	2.4238	0.0020
260	2.4258	0.0020
261	2.4278	0.0020
262	2.4298	0.0020
263	2.4318	0.0020
264	2.4338	0.0020

		PR14.out
265	2.4358	0.0020
266	2.4378	0.0020
267	2.4398	0.0020
268	2.4417	0.0020
269	2.4437	0.0020
270	2.4456	0.0020
271	2.4476	0.0019
272	2.4495	0.0019
273	2.4515	0.0019
274	2.4534	0.0019
275	2.4553	0.0019
276	2.4572	0.0019
277	2.4592	0.0019
278	2.4611	0.0019
279	2.4630	0.0019
280	2.4649	0.0019
281	2.4668	0.0019
282	2.4687	0.0019
283	2.4705	0.0019
284	2.4724	0.0019
285	2.4743	0.0019
286	2.4762	0.0019
287	2.4780	0.0019
288	2.4799	0.0019

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0019	0.0005	0.0013
2	0.0019	0.0005	0.0013
3	0.0019	0.0005	0.0014
4	0.0019	0.0005	0.0014
5	0.0019	0.0005	0.0014
6	0.0019	0.0005	0.0014
7	0.0019	0.0005	0.0014
8	0.0019	0.0005	0.0014
9	0.0019	0.0005	0.0014
10	0.0019	0.0005	0.0014
11	0.0019	0.0005	0.0014
12	0.0019	0.0005	0.0014
13	0.0020	0.0005	0.0014
14	0.0020	0.0005	0.0014
15	0.0020	0.0005	0.0014
16	0.0020	0.0005	0.0014
17	0.0020	0.0006	0.0014
18	0.0020	0.0006	0.0014
19	0.0020	0.0006	0.0015
20	0.0020	0.0006	0.0015
21	0.0020	0.0006	0.0015
22	0.0020	0.0006	0.0015
23	0.0020	0.0006	0.0015
24	0.0020	0.0006	0.0015
25	0.0021	0.0006	0.0015
26	0.0021	0.0006	0.0015
27	0.0021	0.0006	0.0015
28	0.0021	0.0006	0.0015
29	0.0021	0.0006	0.0015
30	0.0021	0.0006	0.0015
31	0.0021	0.0006	0.0015
32	0.0021	0.0006	0.0015
33	0.0021	0.0006	0.0016
34	0.0022	0.0006	0.0016
35	0.0022	0.0006	0.0016
36	0.0022	0.0006	0.0016
37	0.0022	0.0006	0.0016
38	0.0022	0.0006	0.0016
39	0.0022	0.0006	0.0016
40	0.0022	0.0006	0.0016
41	0.0022	0.0006	0.0016
42	0.0022	0.0006	0.0016
43	0.0023	0.0006	0.0016
44	0.0023	0.0006	0.0016
45	0.0023	0.0006	0.0016
46	0.0023	0.0006	0.0017
47	0.0023	0.0006	0.0017
48	0.0023	0.0006	0.0017
49	0.0023	0.0006	0.0017

		PR14.out	
50	0.0023	0.0006	0.0017
51	0.0024	0.0007	0.0017
52	0.0024	0.0007	0.0017
53	0.0024	0.0007	0.0017
54	0.0024	0.0007	0.0017
55	0.0024	0.0007	0.0017
56	0.0024	0.0007	0.0017
57	0.0024	0.0007	0.0018
58	0.0024	0.0007	0.0018
59	0.0025	0.0007	0.0018
60	0.0025	0.0007	0.0018
61	0.0025	0.0007	0.0018
62	0.0025	0.0007	0.0018
63	0.0025	0.0007	0.0018
64	0.0025	0.0007	0.0018
65	0.0026	0.0007	0.0018
66	0.0026	0.0007	0.0019
67	0.0026	0.0007	0.0019
68	0.0026	0.0007	0.0019
69	0.0026	0.0007	0.0019
70	0.0026	0.0007	0.0019
71	0.0027	0.0007	0.0019
72	0.0027	0.0007	0.0019
73	0.0027	0.0007	0.0019
74	0.0027	0.0007	0.0020
75	0.0027	0.0008	0.0020
76	0.0027	0.0008	0.0020
77	0.0028	0.0008	0.0020
78	0.0028	0.0008	0.0020
79	0.0028	0.0008	0.0020
80	0.0028	0.0008	0.0020
81	0.0028	0.0008	0.0021
82	0.0029	0.0008	0.0021
83	0.0029	0.0008	0.0021
84	0.0029	0.0008	0.0021
85	0.0029	0.0008	0.0021
86	0.0029	0.0008	0.0021
87	0.0030	0.0008	0.0021
88	0.0030	0.0008	0.0022
89	0.0030	0.0008	0.0022
90	0.0030	0.0008	0.0022
91	0.0031	0.0008	0.0022
92	0.0031	0.0008	0.0022
93	0.0031	0.0009	0.0022
94	0.0031	0.0009	0.0023
95	0.0032	0.0009	0.0023
96	0.0032	0.0009	0.0023
97	0.0032	0.0009	0.0023
98	0.0032	0.0009	0.0023
99	0.0033	0.0009	0.0024
100	0.0033	0.0009	0.0024
101	0.0033	0.0009	0.0024
102	0.0033	0.0009	0.0024
103	0.0034	0.0009	0.0024
104	0.0034	0.0009	0.0025
105	0.0034	0.0009	0.0025
106	0.0035	0.0010	0.0025
107	0.0035	0.0010	0.0025
108	0.0035	0.0010	0.0025
109	0.0036	0.0010	0.0026
110	0.0036	0.0010	0.0026
111	0.0036	0.0010	0.0026
112	0.0037	0.0010	0.0026
113	0.0037	0.0010	0.0027
114	0.0037	0.0010	0.0027
115	0.0038	0.0010	0.0027
116	0.0038	0.0011	0.0027
117	0.0039	0.0011	0.0028
118	0.0039	0.0011	0.0028
119	0.0039	0.0011	0.0028
120	0.0040	0.0011	0.0029
121	0.0040	0.0011	0.0029
122	0.0040	0.0011	0.0029
123	0.0041	0.0011	0.0030
124	0.0041	0.0011	0.0030
125	0.0042	0.0012	0.0030
126	0.0042	0.0012	0.0031
127	0.0043	0.0012	0.0031

		PR14.out	
128	0.0043	0.0012	0.0031
129	0.0044	0.0012	0.0032
130	0.0044	0.0012	0.0032
131	0.0045	0.0013	0.0033
132	0.0046	0.0013	0.0033
133	0.0046	0.0013	0.0034
134	0.0047	0.0013	0.0034
135	0.0048	0.0013	0.0034
136	0.0048	0.0013	0.0035
137	0.0049	0.0014	0.0035
138	0.0049	0.0014	0.0036
139	0.0050	0.0014	0.0036
140	0.0051	0.0014	0.0037
141	0.0052	0.0014	0.0038
142	0.0052	0.0015	0.0038
143	0.0054	0.0015	0.0039
144	0.0054	0.0015	0.0039
145	0.0043	0.0012	0.0031
146	0.0044	0.0012	0.0032
147	0.0045	0.0012	0.0033
148	0.0046	0.0013	0.0033
149	0.0047	0.0013	0.0034
150	0.0047	0.0013	0.0034
151	0.0049	0.0013	0.0035
152	0.0049	0.0014	0.0036
153	0.0051	0.0014	0.0037
154	0.0051	0.0014	0.0037
155	0.0053	0.0015	0.0038
156	0.0054	0.0015	0.0039
157	0.0055	0.0015	0.0040
158	0.0056	0.0016	0.0041
159	0.0058	0.0016	0.0042
160	0.0059	0.0016	0.0043
161	0.0061	0.0017	0.0044
162	0.0062	0.0017	0.0045
163	0.0064	0.0018	0.0047
164	0.0066	0.0018	0.0047
165	0.0068	0.0019	0.0049
166	0.0070	0.0019	0.0050
167	0.0073	0.0020	0.0053
168	0.0074	0.0021	0.0054
169	0.0078	0.0022	0.0057
170	0.0080	0.0022	0.0058
171	0.0084	0.0023	0.0061
172	0.0086	0.0024	0.0063
173	0.0091	0.0025	0.0066
174	0.0094	0.0026	0.0068
175	0.0100	0.0028	0.0072
176	0.0103	0.0029	0.0075
177	0.0110	0.0031	0.0080
178	0.0114	0.0032	0.0083
179	0.0124	0.0034	0.0089
180	0.0129	0.0036	0.0093
181	0.0141	0.0039	0.0102
182	0.0148	0.0041	0.0107
183	0.0165	0.0046	0.0119
184	0.0175	0.0048	0.0126
185	0.0350	0.0097	0.0253
186	0.0373	0.0103	0.0270
187	0.0432	0.0105	0.0327
188	0.0472	0.0105	0.0367
189	0.0587	0.0105	0.0482
190	0.0676	0.0105	0.0571
191	0.1026	0.0105	0.0921
192	0.1489	0.0105	0.1384
193	0.6441	0.0105	0.6336
194	0.0807	0.0105	0.0702
195	0.0522	0.0105	0.0417
196	0.0400	0.0105	0.0295
197	0.0186	0.0052	0.0135
198	0.0156	0.0043	0.0113
199	0.0135	0.0037	0.0097
200	0.0119	0.0033	0.0086
201	0.0107	0.0029	0.0077
202	0.0097	0.0027	0.0070
203	0.0089	0.0025	0.0064
204	0.0082	0.0023	0.0059
205	0.0076	0.0021	0.0055

		PR14.out	
206	0.0071	0.0020	0.0051
207	0.0067	0.0019	0.0048
208	0.0063	0.0017	0.0046
209	0.0060	0.0017	0.0043
210	0.0057	0.0016	0.0041
211	0.0054	0.0015	0.0039
212	0.0052	0.0014	0.0038
213	0.0050	0.0014	0.0036
214	0.0048	0.0013	0.0035
215	0.0046	0.0013	0.0033
216	0.0044	0.0012	0.0032
217	0.0055	0.0015	0.0040
218	0.0053	0.0015	0.0038
219	0.0051	0.0014	0.0037
220	0.0050	0.0014	0.0036
221	0.0049	0.0013	0.0035
222	0.0047	0.0013	0.0034
223	0.0046	0.0013	0.0033
224	0.0045	0.0012	0.0032
225	0.0044	0.0012	0.0032
226	0.0043	0.0012	0.0031
227	0.0042	0.0012	0.0030
228	0.0041	0.0011	0.0029
229	0.0040	0.0011	0.0029
230	0.0039	0.0011	0.0028
231	0.0038	0.0011	0.0028
232	0.0037	0.0010	0.0027
233	0.0037	0.0010	0.0027
234	0.0036	0.0010	0.0026
235	0.0035	0.0010	0.0026
236	0.0035	0.0010	0.0025
237	0.0034	0.0009	0.0025
238	0.0034	0.0009	0.0024
239	0.0033	0.0009	0.0024
240	0.0032	0.0009	0.0023
241	0.0032	0.0009	0.0023
242	0.0031	0.0009	0.0023
243	0.0031	0.0009	0.0022
244	0.0030	0.0008	0.0022
245	0.0030	0.0008	0.0022
246	0.0029	0.0008	0.0021
247	0.0029	0.0008	0.0021
248	0.0029	0.0008	0.0021
249	0.0028	0.0008	0.0020
250	0.0028	0.0008	0.0020
251	0.0027	0.0008	0.0020
252	0.0027	0.0008	0.0020
253	0.0027	0.0007	0.0019
254	0.0026	0.0007	0.0019
255	0.0026	0.0007	0.0019
256	0.0026	0.0007	0.0019
257	0.0025	0.0007	0.0018
258	0.0025	0.0007	0.0018
259	0.0025	0.0007	0.0018
260	0.0025	0.0007	0.0018
261	0.0024	0.0007	0.0018
262	0.0024	0.0007	0.0017
263	0.0024	0.0007	0.0017
264	0.0023	0.0006	0.0017
265	0.0023	0.0006	0.0017
266	0.0023	0.0006	0.0017
267	0.0023	0.0006	0.0016
268	0.0022	0.0006	0.0016
269	0.0022	0.0006	0.0016
270	0.0022	0.0006	0.0016
271	0.0022	0.0006	0.0016
272	0.0022	0.0006	0.0016
273	0.0021	0.0006	0.0015
274	0.0021	0.0006	0.0015
275	0.0021	0.0006	0.0015
276	0.0021	0.0006	0.0015
277	0.0021	0.0006	0.0015
278	0.0020	0.0006	0.0015
279	0.0020	0.0006	0.0015
280	0.0020	0.0006	0.0014
281	0.0020	0.0005	0.0014
282	0.0020	0.0005	0.0014
283	0.0019	0.0005	0.0014

PR14.out

284	0.0019	0.0005	0.0014
285	0.0019	0.0005	0.0014
286	0.0019	0.0005	0.0014
287	0.0019	0.0005	0.0014
288	0.0019	0.0005	0.0014

Total soil rain loss = 0.44(In)
Total effective rainfall = 2.04(In)
Peak flow rate in flood hydrograph = 125.53(CFS)

+++++
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	50.0	100.0	150.0	200.0
0+ 5	0.0002		0.03 Q					
0+10	0.0018		0.23 Q					
0+15	0.0047		0.43 Q					
0+20	0.0082		0.51 Q					
0+25	0.0121		0.57 Q					
0+30	0.0163		0.60 Q					
0+35	0.0206		0.63 Q					
0+40	0.0251		0.65 Q					
0+45	0.0296		0.66 Q					
0+50	0.0343		0.68 Q					
0+55	0.0390		0.69 Q					
1+ 0	0.0438		0.69 Q					
1+ 5	0.0486		0.70 Q					
1+10	0.0535		0.71 Q					
1+15	0.0584		0.71 Q					
1+20	0.0633		0.72 Q					
1+25	0.0682		0.72 Q					
1+30	0.0732		0.72 Q					
1+35	0.0782		0.73 Q					
1+40	0.0832		0.73 Q					
1+45	0.0883		0.73 Q					
1+50	0.0933		0.74 Q					
1+55	0.0984		0.74 Q					
2+ 0	0.1035		0.74 Q					
2+ 5	0.1086		0.75 Q					
2+10	0.1138		0.75 Q					
2+15	0.1190		0.75 Q					
2+20	0.1242		0.76 Q					
2+25	0.1294		0.76 Q					
2+30	0.1347		0.76 Q					
2+35	0.1399		0.77 Q					
2+40	0.1452		0.77 Q					
2+45	0.1506		0.77 Q					
2+50	0.1559		0.78 Q					
2+55	0.1613		0.78 Q					
3+ 0	0.1667		0.79 Q					
3+ 5	0.1722		0.79 Q					
3+10	0.1776		0.79 Q					
3+15	0.1831		0.80 QV					
3+20	0.1886		0.80 QV					
3+25	0.1942		0.80 QV					
3+30	0.1997		0.81 QV					
3+35	0.2053		0.81 QV					
3+40	0.2110		0.82 QV					
3+45	0.2166		0.82 QV					
3+50	0.2223		0.83 QV					
3+55	0.2280		0.83 QV					
4+ 0	0.2338		0.83 QV					
4+ 5	0.2396		0.84 QV					
4+10	0.2454		0.84 QV					
4+15	0.2512		0.85 QV					
4+20	0.2571		0.85 QV					
4+25	0.2630		0.86 QV					
4+30	0.2689		0.86 QV					
4+35	0.2749		0.87 QV					
4+40	0.2809		0.87 QV					
4+45	0.2870		0.88 QV					
4+50	0.2930		0.88 QV					

4+55	0.2991	0.89	QV
5+ 0	0.3053	0.89	QV
5+ 5	0.3115	0.90	QV
5+10	0.3177	0.90	QV
5+15	0.3239	0.91	QV
5+20	0.3302	0.91	QV
5+25	0.3366	0.92	QV
5+30	0.3429	0.92	QV
5+35	0.3493	0.93	QV
5+40	0.3558	0.94	QV
5+45	0.3623	0.94	Q V
5+50	0.3688	0.95	Q V
5+55	0.3753	0.95	Q V
6+ 0	0.3820	0.96	Q V
6+ 5	0.3886	0.97	Q V
6+10	0.3953	0.97	Q V
6+15	0.4020	0.98	Q V
6+20	0.4088	0.98	Q V
6+25	0.4156	0.99	Q V
6+30	0.4225	1.00	Q V
6+35	0.4294	1.00	Q V
6+40	0.4364	1.01	Q V
6+45	0.4434	1.02	Q V
6+50	0.4505	1.03	Q V
6+55	0.4576	1.03	Q V
7+ 0	0.4647	1.04	Q V
7+ 5	0.4720	1.05	Q V
7+10	0.4792	1.05	Q V
7+15	0.4865	1.06	Q V
7+20	0.4939	1.07	Q V
7+25	0.5013	1.08	Q V
7+30	0.5088	1.09	Q V
7+35	0.5163	1.09	Q V
7+40	0.5239	1.10	Q V
7+45	0.5316	1.11	Q V
7+50	0.5393	1.12	Q V
7+55	0.5470	1.13	Q V
8+ 0	0.5549	1.14	Q V
8+ 5	0.5628	1.15	Q V
8+10	0.5707	1.15	Q V
8+15	0.5787	1.16	Q V
8+20	0.5868	1.17	Q V
8+25	0.5950	1.18	Q V
8+30	0.6032	1.19	Q V
8+35	0.6115	1.20	Q V
8+40	0.6198	1.21	Q V
8+45	0.6283	1.22	Q V
8+50	0.6368	1.24	Q V
8+55	0.6454	1.25	Q V
9+ 0	0.6540	1.26	Q V
9+ 5	0.6628	1.27	Q V
9+10	0.6716	1.28	Q V
9+15	0.6805	1.29	Q V
9+20	0.6894	1.30	Q V
9+25	0.6985	1.32	Q V
9+30	0.7077	1.33	Q V
9+35	0.7169	1.34	Q V
9+40	0.7262	1.36	Q V
9+45	0.7357	1.37	Q V
9+50	0.7452	1.38	Q V
9+55	0.7548	1.40	Q V
10+ 0	0.7645	1.41	Q V
10+ 5	0.7744	1.43	Q V
10+10	0.7843	1.44	Q V
10+15	0.7943	1.46	Q V
10+20	0.8045	1.47	Q V
10+25	0.8147	1.49	Q V
10+30	0.8251	1.51	Q V
10+35	0.8356	1.52	Q V
10+40	0.8462	1.54	Q V
10+45	0.8569	1.56	Q V
10+50	0.8678	1.58	Q V
10+55	0.8788	1.60	Q V
11+ 0	0.8899	1.62	Q V
11+ 5	0.9012	1.64	Q V
11+10	0.9126	1.66	Q V
11+15	0.9242	1.68	Q V
11+20	0.9359	1.70	Q V

[illegible]

17+55	6.5405	1.93	Q			V
18+ 0	6.5532	1.84	Q			V
18+ 5	6.5655	1.79	Q			V
18+10	6.5782	1.84	Q			V
18+15	6.5913	1.90	Q			V
18+20	6.6043	1.89	Q			V
18+25	6.6172	1.87	Q			V
18+30	6.6298	1.83	Q			V
18+35	6.6421	1.79	Q			V
18+40	6.6542	1.75	Q			V
18+45	6.6659	1.71	Q			V
18+50	6.6775	1.67	Q			V
18+55	6.6887	1.63	Q			V
19+ 0	6.6997	1.60	Q			V
19+ 5	6.7104	1.56	Q			V
19+10	6.7210	1.53	Q			V
19+15	6.7312	1.49	Q			V
19+20	6.7413	1.46	Q			V
19+25	6.7512	1.43	Q			V
19+30	6.7608	1.40	Q			V
19+35	6.7703	1.37	Q			V
19+40	6.7795	1.35	Q			V
19+45	6.7886	1.32	Q			V
19+50	6.7975	1.30	Q			V
19+55	6.8063	1.27	Q			V
20+ 0	6.8149	1.25	Q			V
20+ 5	6.8233	1.23	Q			V
20+10	6.8317	1.21	Q			V
20+15	6.8398	1.19	Q			V
20+20	6.8478	1.17	Q			V
20+25	6.8558	1.15	Q			V
20+30	6.8635	1.13	Q			V
20+35	6.8712	1.11	Q			V
20+40	6.8787	1.10	Q			V
20+45	6.8862	1.08	Q			V
20+50	6.8935	1.06	Q			V
20+55	6.9007	1.05	Q			V
21+ 0	6.9078	1.03	Q			V
21+ 5	6.9149	1.02	Q			V
21+10	6.9218	1.01	Q			V
21+15	6.9286	0.99	Q			V
21+20	6.9354	0.98	Q			V
21+25	6.9420	0.97	Q			V
21+30	6.9486	0.95	Q			V
21+35	6.9551	0.94	Q			V
21+40	6.9615	0.93	Q			V
21+45	6.9678	0.92	Q			V
21+50	6.9741	0.91	Q			V
21+55	6.9803	0.90	Q			V
22+ 0	6.9864	0.89	Q			V
22+ 5	6.9924	0.88	Q			V
22+10	6.9984	0.87	Q			V
22+15	7.0043	0.86	Q			V
22+20	7.0102	0.85	Q			V
22+25	7.0159	0.84	Q			V
22+30	7.0217	0.83	Q			V
22+35	7.0273	0.82	Q			V
22+40	7.0329	0.81	Q			V
22+45	7.0385	0.81	Q			V
22+50	7.0440	0.80	Q			V
22+55	7.0494	0.79	Q			V
23+ 0	7.0548	0.78	Q			V
23+ 5	7.0601	0.77	Q			V
23+10	7.0654	0.77	Q			V
23+15	7.0706	0.76	Q			V
23+20	7.0758	0.75	Q			V
23+25	7.0810	0.75	Q			V
23+30	7.0860	0.74	Q			V
23+35	7.0911	0.73	Q			V
23+40	7.0961	0.73	Q			V
23+45	7.1010	0.72	Q			V
23+50	7.1059	0.71	Q			V
23+55	7.1108	0.71	Q			V
24+ 0	7.1156	0.70	Q			V
24+ 5	7.1202	0.67	Q			V
24+10	7.1234	0.46	Q			V
24+15	7.1252	0.26	Q			V
24+20	7.1264	0.17	Q			V

24+25	7.1273	0.12	Q				V
24+30	7.1279	0.09	Q				V
24+35	7.1283	0.06	Q				V
24+40	7.1286	0.05	Q				V
24+45	7.1288	0.03	Q				V
24+50	7.1290	0.02	Q				V
24+55	7.1291	0.02	Q				V
25+ 0	7.1292	0.01	Q				V
25+ 5	7.1292	0.01	Q				V
25+10	7.1292	0.00	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
DEVELOPED CONDITIONS AREA 1.5
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
165.80	1	1.36

Rainfall data for year 100		
165.80	6	1.83

Rainfall data for year 100		
165.80	24	2.53

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
78.0	92.8	165.80	1.000	0.140	0.900	0.126

Area-averaged adjusted loss rate Fm (In/Hr) = 0.126

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
149.22	0.900	78.0	92.8	0.78	0.708
16.58	0.100	98.0	98.0	0.20	0.909

Area-averaged catchment yield fraction, Y = 0.728

Area-averaged low loss fraction, Yb = 0.272

+++++

Watercourse length = 2634.00(Ft.)

Length from concentration point to centroid = 1317.00(Ft.)

Elevation difference along watercourse = 11.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 165.80(Ac.)

Catchment Lag time = 0.211 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 39.4196

Hydrograph baseflow = 0.00(CFS)
 Average maximum watershed loss rate(Fm) = 0.126(In/Hr)
 Average low loss rate fraction (Yb) = 0.272 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.645(In)
 Computed peak 30-minute rainfall = 1.105(In)
 Specified peak 1-hour rainfall = 1.360(In)
 Computed peak 3-hour rainfall = 1.631(In)
 Specified peak 6-hour rainfall = 1.830(In)
 Specified peak 24-hour rainfall = 2.530(In)

Rainfall depth area reduction factors:

Using a total area of 165.80(Ac.) (Ref: fig. E-4)

5-minute factor = 0.992	Adjusted rainfall = 0.640(In)
30-minute factor = 0.992	Adjusted rainfall = 1.096(In)
1-hour factor = 0.992	Adjusted rainfall = 1.349(In)
3-hour factor = 0.999	Adjusted rainfall = 1.630(In)
6-hour factor = 0.999	Adjusted rainfall = 1.829(In)
24-hour factor = 1.000	Adjusted rainfall = 2.529(In)

U n i t H y d r o g r a p h

Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))

(K = 2005.14 (CFS))

1	2.685	53.836
2	18.043	307.961
3	48.301	606.713
4	65.039	335.614
5	74.308	185.856
6	80.474	123.648
7	84.870	88.138
8	88.292	68.615
9	90.757	49.422
10	92.757	40.102
11	94.369	32.320
12	95.659	25.880
13	96.696	20.781
14	97.479	15.700
15	98.016	10.772
16	98.434	8.384
17	98.905	9.446
18	99.371	9.352
19	99.683	6.245
20	100.000	3.122

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)

1	0.6403	0.6403
2	0.7883	0.1480
3	0.8903	0.1020
4	0.9705	0.0802
5	1.0377	0.0672
6	1.0961	0.0583
7	1.1480	0.0519
8	1.1949	0.0469
9	1.2379	0.0430
10	1.2776	0.0398
11	1.3147	0.0371
12	1.3494	0.0348
13	1.3681	0.0187
14	1.3857	0.0175
15	1.4022	0.0165
16	1.4178	0.0156
17	1.4327	0.0149
18	1.4468	0.0141
19	1.4603	0.0135
20	1.4733	0.0129
21	1.4857	0.0124
22	1.4976	0.0119
23	1.5091	0.0115
24	1.5202	0.0111
25	1.5309	0.0107

		PR15.out
26	1.5412	0.0104
27	1.5512	0.0100
28	1.5610	0.0097
29	1.5704	0.0094
30	1.5796	0.0092
31	1.5885	0.0089
32	1.5972	0.0087
33	1.6057	0.0085
34	1.6139	0.0083
35	1.6220	0.0081
36	1.6299	0.0079
37	1.6373	0.0074
38	1.6446	0.0073
39	1.6517	0.0071
40	1.6587	0.0070
41	1.6655	0.0068
42	1.6722	0.0067
43	1.6788	0.0066
44	1.6852	0.0064
45	1.6915	0.0063
46	1.6977	0.0062
47	1.7038	0.0061
48	1.7098	0.0060
49	1.7156	0.0059
50	1.7214	0.0058
51	1.7271	0.0057
52	1.7327	0.0056
53	1.7382	0.0055
54	1.7436	0.0054
55	1.7489	0.0053
56	1.7542	0.0052
57	1.7593	0.0052
58	1.7644	0.0051
59	1.7695	0.0050
60	1.7744	0.0050
61	1.7793	0.0049
62	1.7841	0.0048
63	1.7889	0.0048
64	1.7936	0.0047
65	1.7982	0.0046
66	1.8028	0.0046
67	1.8073	0.0045
68	1.8117	0.0045
69	1.8161	0.0044
70	1.8205	0.0044
71	1.8248	0.0043
72	1.8291	0.0043
73	1.8350	0.0059
74	1.8408	0.0058
75	1.8466	0.0058
76	1.8523	0.0057
77	1.8580	0.0057
78	1.8636	0.0056
79	1.8692	0.0056
80	1.8747	0.0055
81	1.8801	0.0055
82	1.8855	0.0054
83	1.8909	0.0054
84	1.8962	0.0053
85	1.9015	0.0053
86	1.9067	0.0052
87	1.9118	0.0052
88	1.9169	0.0051
89	1.9220	0.0051
90	1.9270	0.0050
91	1.9320	0.0050
92	1.9370	0.0049
93	1.9419	0.0049
94	1.9467	0.0049
95	1.9516	0.0048
96	1.9563	0.0048
97	1.9611	0.0047
98	1.9658	0.0047
99	1.9705	0.0047
100	1.9751	0.0046
101	1.9797	0.0046
102	1.9843	0.0046
103	1.9888	0.0045

		PR15.out
104	1.9933	0.0045
105	1.9978	0.0045
106	2.0022	0.0044
107	2.0066	0.0044
108	2.0110	0.0044
109	2.0153	0.0043
110	2.0196	0.0043
111	2.0239	0.0043
112	2.0282	0.0042
113	2.0324	0.0042
114	2.0366	0.0042
115	2.0407	0.0042
116	2.0449	0.0041
117	2.0490	0.0041
118	2.0531	0.0041
119	2.0571	0.0041
120	2.0612	0.0040
121	2.0652	0.0040
122	2.0691	0.0040
123	2.0731	0.0040
124	2.0770	0.0039
125	2.0809	0.0039
126	2.0848	0.0039
127	2.0887	0.0039
128	2.0925	0.0038
129	2.0963	0.0038
130	2.1001	0.0038
131	2.1039	0.0038
132	2.1076	0.0037
133	2.1113	0.0037
134	2.1150	0.0037
135	2.1187	0.0037
136	2.1224	0.0037
137	2.1260	0.0036
138	2.1296	0.0036
139	2.1332	0.0036
140	2.1368	0.0036
141	2.1404	0.0036
142	2.1439	0.0035
143	2.1474	0.0035
144	2.1509	0.0035
145	2.1544	0.0035
146	2.1579	0.0035
147	2.1613	0.0034
148	2.1648	0.0034
149	2.1682	0.0034
150	2.1716	0.0034
151	2.1750	0.0034
152	2.1783	0.0034
153	2.1817	0.0033
154	2.1850	0.0033
155	2.1883	0.0033
156	2.1916	0.0033
157	2.1949	0.0033
158	2.1981	0.0033
159	2.2014	0.0032
160	2.2046	0.0032
161	2.2078	0.0032
162	2.2110	0.0032
163	2.2142	0.0032
164	2.2174	0.0032
165	2.2205	0.0032
166	2.2237	0.0031
167	2.2268	0.0031
168	2.2299	0.0031
169	2.2330	0.0031
170	2.2361	0.0031
171	2.2391	0.0031
172	2.2422	0.0031
173	2.2452	0.0030
174	2.2483	0.0030
175	2.2513	0.0030
176	2.2543	0.0030
177	2.2573	0.0030
178	2.2603	0.0030
179	2.2632	0.0030
180	2.2662	0.0030
181	2.2691	0.0029

		PR15.out
182	2.2720	0.0029
183	2.2749	0.0029
184	2.2778	0.0029
185	2.2807	0.0029
186	2.2836	0.0029
187	2.2865	0.0029
188	2.2893	0.0029
189	2.2922	0.0028
190	2.2950	0.0028
191	2.2978	0.0028
192	2.3006	0.0028
193	2.3034	0.0028
194	2.3062	0.0028
195	2.3090	0.0028
196	2.3118	0.0028
197	2.3145	0.0028
198	2.3173	0.0027
199	2.3200	0.0027
200	2.3227	0.0027
201	2.3254	0.0027
202	2.3281	0.0027
203	2.3308	0.0027
204	2.3335	0.0027
205	2.3362	0.0027
206	2.3388	0.0027
207	2.3415	0.0027
208	2.3441	0.0026
209	2.3467	0.0026
210	2.3494	0.0026
211	2.3520	0.0026
212	2.3546	0.0026
213	2.3572	0.0026
214	2.3598	0.0026
215	2.3623	0.0026
216	2.3649	0.0026
217	2.3674	0.0026
218	2.3700	0.0025
219	2.3725	0.0025
220	2.3751	0.0025
221	2.3776	0.0025
222	2.3801	0.0025
223	2.3826	0.0025
224	2.3851	0.0025
225	2.3876	0.0025
226	2.3901	0.0025
227	2.3925	0.0025
228	2.3950	0.0025
229	2.3974	0.0025
230	2.3999	0.0024
231	2.4023	0.0024
232	2.4047	0.0024
233	2.4072	0.0024
234	2.4096	0.0024
235	2.4120	0.0024
236	2.4144	0.0024
237	2.4168	0.0024
238	2.4191	0.0024
239	2.4215	0.0024
240	2.4239	0.0024
241	2.4262	0.0024
242	2.4286	0.0024
243	2.4309	0.0023
244	2.4333	0.0023
245	2.4356	0.0023
246	2.4379	0.0023
247	2.4402	0.0023
248	2.4425	0.0023
249	2.4448	0.0023
250	2.4471	0.0023
251	2.4494	0.0023
252	2.4517	0.0023
253	2.4540	0.0023
254	2.4562	0.0023
255	2.4585	0.0023
256	2.4607	0.0023
257	2.4630	0.0022
258	2.4652	0.0022
259	2.4675	0.0022

		PR15.out
260	2.4697	0.0022
261	2.4719	0.0022
262	2.4741	0.0022
263	2.4763	0.0022
264	2.4785	0.0022
265	2.4807	0.0022
266	2.4829	0.0022
267	2.4851	0.0022
268	2.4873	0.0022
269	2.4894	0.0022
270	2.4916	0.0022
271	2.4937	0.0022
272	2.4959	0.0021
273	2.4980	0.0021
274	2.5002	0.0021
275	2.5023	0.0021
276	2.5044	0.0021
277	2.5065	0.0021
278	2.5087	0.0021
279	2.5108	0.0021
280	2.5129	0.0021
281	2.5150	0.0021
282	2.5171	0.0021
283	2.5191	0.0021
284	2.5212	0.0021
285	2.5233	0.0021
286	2.5254	0.0021
287	2.5274	0.0021
288	2.5295	0.0021

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0021	0.0006	0.0015
2	0.0021	0.0006	0.0015
3	0.0021	0.0006	0.0015
4	0.0021	0.0006	0.0015
5	0.0021	0.0006	0.0015
6	0.0021	0.0006	0.0015
7	0.0021	0.0006	0.0015
8	0.0021	0.0006	0.0015
9	0.0021	0.0006	0.0015
10	0.0021	0.0006	0.0016
11	0.0021	0.0006	0.0016
12	0.0021	0.0006	0.0016
13	0.0022	0.0006	0.0016
14	0.0022	0.0006	0.0016
15	0.0022	0.0006	0.0016
16	0.0022	0.0006	0.0016
17	0.0022	0.0006	0.0016
18	0.0022	0.0006	0.0016
19	0.0022	0.0006	0.0016
20	0.0022	0.0006	0.0016
21	0.0022	0.0006	0.0016
22	0.0022	0.0006	0.0016
23	0.0023	0.0006	0.0016
24	0.0023	0.0006	0.0016
25	0.0023	0.0006	0.0017
26	0.0023	0.0006	0.0017
27	0.0023	0.0006	0.0017
28	0.0023	0.0006	0.0017
29	0.0023	0.0006	0.0017
30	0.0023	0.0006	0.0017
31	0.0023	0.0006	0.0017
32	0.0024	0.0006	0.0017
33	0.0024	0.0006	0.0017
34	0.0024	0.0006	0.0017
35	0.0024	0.0007	0.0017
36	0.0024	0.0007	0.0017
37	0.0024	0.0007	0.0018
38	0.0024	0.0007	0.0018
39	0.0024	0.0007	0.0018
40	0.0024	0.0007	0.0018
41	0.0025	0.0007	0.0018
42	0.0025	0.0007	0.0018
43	0.0025	0.0007	0.0018
44	0.0025	0.0007	0.0018

		PR15.out	
45	0.0025	0.0007	0.0018
46	0.0025	0.0007	0.0018
47	0.0025	0.0007	0.0018
48	0.0025	0.0007	0.0019
49	0.0026	0.0007	0.0019
50	0.0026	0.0007	0.0019
51	0.0026	0.0007	0.0019
52	0.0026	0.0007	0.0019
53	0.0026	0.0007	0.0019
54	0.0026	0.0007	0.0019
55	0.0027	0.0007	0.0019
56	0.0027	0.0007	0.0019
57	0.0027	0.0007	0.0020
58	0.0027	0.0007	0.0020
59	0.0027	0.0007	0.0020
60	0.0027	0.0007	0.0020
61	0.0027	0.0007	0.0020
62	0.0028	0.0007	0.0020
63	0.0028	0.0008	0.0020
64	0.0028	0.0008	0.0020
65	0.0028	0.0008	0.0020
66	0.0028	0.0008	0.0021
67	0.0028	0.0008	0.0021
68	0.0029	0.0008	0.0021
69	0.0029	0.0008	0.0021
70	0.0029	0.0008	0.0021
71	0.0029	0.0008	0.0021
72	0.0029	0.0008	0.0021
73	0.0030	0.0008	0.0021
74	0.0030	0.0008	0.0022
75	0.0030	0.0008	0.0022
76	0.0030	0.0008	0.0022
77	0.0030	0.0008	0.0022
78	0.0030	0.0008	0.0022
79	0.0031	0.0008	0.0022
80	0.0031	0.0008	0.0022
81	0.0031	0.0008	0.0023
82	0.0031	0.0009	0.0023
83	0.0032	0.0009	0.0023
84	0.0032	0.0009	0.0023
85	0.0032	0.0009	0.0023
86	0.0032	0.0009	0.0023
87	0.0032	0.0009	0.0024
88	0.0033	0.0009	0.0024
89	0.0033	0.0009	0.0024
90	0.0033	0.0009	0.0024
91	0.0033	0.0009	0.0024
92	0.0034	0.0009	0.0024
93	0.0034	0.0009	0.0025
94	0.0034	0.0009	0.0025
95	0.0034	0.0009	0.0025
96	0.0035	0.0009	0.0025
97	0.0035	0.0010	0.0025
98	0.0035	0.0010	0.0026
99	0.0036	0.0010	0.0026
100	0.0036	0.0010	0.0026
101	0.0036	0.0010	0.0026
102	0.0036	0.0010	0.0026
103	0.0037	0.0010	0.0027
104	0.0037	0.0010	0.0027
105	0.0037	0.0010	0.0027
106	0.0038	0.0010	0.0027
107	0.0038	0.0010	0.0028
108	0.0038	0.0010	0.0028
109	0.0039	0.0011	0.0028
110	0.0039	0.0011	0.0028
111	0.0040	0.0011	0.0029
112	0.0040	0.0011	0.0029
113	0.0040	0.0011	0.0029
114	0.0041	0.0011	0.0030
115	0.0041	0.0011	0.0030
116	0.0041	0.0011	0.0030
117	0.0042	0.0011	0.0031
118	0.0042	0.0011	0.0031
119	0.0043	0.0012	0.0031
120	0.0043	0.0012	0.0031
121	0.0044	0.0012	0.0032
122	0.0044	0.0012	0.0032

		PR15.out	
123	0.0045	0.0012	0.0032
124	0.0045	0.0012	0.0033
125	0.0046	0.0012	0.0033
126	0.0046	0.0013	0.0033
127	0.0047	0.0013	0.0034
128	0.0047	0.0013	0.0034
129	0.0048	0.0013	0.0035
130	0.0048	0.0013	0.0035
131	0.0049	0.0013	0.0036
132	0.0049	0.0013	0.0036
133	0.0050	0.0014	0.0037
134	0.0051	0.0014	0.0037
135	0.0052	0.0014	0.0038
136	0.0052	0.0014	0.0038
137	0.0053	0.0014	0.0039
138	0.0054	0.0015	0.0039
139	0.0055	0.0015	0.0040
140	0.0055	0.0015	0.0040
141	0.0056	0.0015	0.0041
142	0.0057	0.0015	0.0041
143	0.0058	0.0016	0.0042
144	0.0058	0.0016	0.0043
145	0.0043	0.0012	0.0031
146	0.0043	0.0012	0.0031
147	0.0044	0.0012	0.0032
148	0.0045	0.0012	0.0032
149	0.0046	0.0012	0.0033
150	0.0046	0.0013	0.0034
151	0.0048	0.0013	0.0035
152	0.0048	0.0013	0.0035
153	0.0050	0.0013	0.0036
154	0.0050	0.0014	0.0037
155	0.0052	0.0014	0.0038
156	0.0052	0.0014	0.0038
157	0.0054	0.0015	0.0039
158	0.0055	0.0015	0.0040
159	0.0057	0.0015	0.0041
160	0.0058	0.0016	0.0042
161	0.0060	0.0016	0.0043
162	0.0061	0.0017	0.0044
163	0.0063	0.0017	0.0046
164	0.0064	0.0018	0.0047
165	0.0067	0.0018	0.0049
166	0.0068	0.0019	0.0050
167	0.0071	0.0019	0.0052
168	0.0073	0.0020	0.0053
169	0.0079	0.0021	0.0057
170	0.0081	0.0022	0.0059
171	0.0085	0.0023	0.0062
172	0.0087	0.0024	0.0063
173	0.0092	0.0025	0.0067
174	0.0094	0.0026	0.0069
175	0.0100	0.0027	0.0073
176	0.0104	0.0028	0.0075
177	0.0111	0.0030	0.0081
178	0.0115	0.0031	0.0084
179	0.0124	0.0034	0.0090
180	0.0129	0.0035	0.0094
181	0.0141	0.0039	0.0103
182	0.0149	0.0040	0.0108
183	0.0165	0.0045	0.0120
184	0.0175	0.0048	0.0128
185	0.0348	0.0095	0.0253
186	0.0371	0.0101	0.0270
187	0.0430	0.0105	0.0325
188	0.0469	0.0105	0.0364
189	0.0583	0.0105	0.0478
190	0.0672	0.0105	0.0567
191	0.1020	0.0105	0.0915
192	0.1480	0.0105	0.1375
193	0.6403	0.0105	0.6298
194	0.0802	0.0105	0.0697
195	0.0519	0.0105	0.0414
196	0.0398	0.0105	0.0292
197	0.0187	0.0051	0.0136
198	0.0156	0.0043	0.0114
199	0.0135	0.0037	0.0098
200	0.0119	0.0032	0.0087

		PR15.out	
201	0.0107	0.0029	0.0078
202	0.0097	0.0026	0.0071
203	0.0089	0.0024	0.0065
204	0.0083	0.0022	0.0060
205	0.0074	0.0020	0.0054
206	0.0070	0.0019	0.0051
207	0.0066	0.0018	0.0048
208	0.0062	0.0017	0.0045
209	0.0059	0.0016	0.0043
210	0.0056	0.0015	0.0041
211	0.0053	0.0015	0.0039
212	0.0051	0.0014	0.0037
213	0.0049	0.0013	0.0036
214	0.0047	0.0013	0.0034
215	0.0045	0.0012	0.0033
216	0.0044	0.0012	0.0032
217	0.0059	0.0016	0.0043
218	0.0057	0.0016	0.0042
219	0.0056	0.0015	0.0040
220	0.0054	0.0015	0.0039
221	0.0053	0.0014	0.0038
222	0.0051	0.0014	0.0037
223	0.0050	0.0014	0.0036
224	0.0049	0.0013	0.0035
225	0.0047	0.0013	0.0035
226	0.0046	0.0013	0.0034
227	0.0045	0.0012	0.0033
228	0.0044	0.0012	0.0032
229	0.0043	0.0012	0.0032
230	0.0042	0.0012	0.0031
231	0.0042	0.0011	0.0030
232	0.0041	0.0011	0.0030
233	0.0040	0.0011	0.0029
234	0.0039	0.0011	0.0029
235	0.0039	0.0011	0.0028
236	0.0038	0.0010	0.0028
237	0.0037	0.0010	0.0027
238	0.0037	0.0010	0.0027
239	0.0036	0.0010	0.0026
240	0.0035	0.0010	0.0026
241	0.0035	0.0009	0.0025
242	0.0034	0.0009	0.0025
243	0.0034	0.0009	0.0025
244	0.0033	0.0009	0.0024
245	0.0033	0.0009	0.0024
246	0.0032	0.0009	0.0024
247	0.0032	0.0009	0.0023
248	0.0031	0.0009	0.0023
249	0.0031	0.0008	0.0023
250	0.0031	0.0008	0.0022
251	0.0030	0.0008	0.0022
252	0.0030	0.0008	0.0022
253	0.0029	0.0008	0.0021
254	0.0029	0.0008	0.0021
255	0.0029	0.0008	0.0021
256	0.0028	0.0008	0.0021
257	0.0028	0.0008	0.0020
258	0.0028	0.0008	0.0020
259	0.0027	0.0007	0.0020
260	0.0027	0.0007	0.0020
261	0.0027	0.0007	0.0019
262	0.0026	0.0007	0.0019
263	0.0026	0.0007	0.0019
264	0.0026	0.0007	0.0019
265	0.0026	0.0007	0.0019
266	0.0025	0.0007	0.0018
267	0.0025	0.0007	0.0018
268	0.0025	0.0007	0.0018
269	0.0025	0.0007	0.0018
270	0.0024	0.0007	0.0018
271	0.0024	0.0007	0.0017
272	0.0024	0.0006	0.0017
273	0.0024	0.0006	0.0017
274	0.0023	0.0006	0.0017
275	0.0023	0.0006	0.0017
276	0.0023	0.0006	0.0017
277	0.0023	0.0006	0.0017
278	0.0023	0.0006	0.0016

PR15.out

279	0.0022	0.0006	0.0016
280	0.0022	0.0006	0.0016
281	0.0022	0.0006	0.0016
282	0.0022	0.0006	0.0016
283	0.0022	0.0006	0.0016
284	0.0021	0.0006	0.0016
285	0.0021	0.0006	0.0015
286	0.0021	0.0006	0.0015
287	0.0021	0.0006	0.0015
288	0.0021	0.0006	0.0015

Total soil rain loss = 0.45(In)
Total effective rainfall = 2.08(In)
Peak flow rate in flood hydrograph = 487.38(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	125.0	250.0	375.0	500.0
0+ 5	0.0006	0.08	Q					
0+10	0.0043	0.54	Q					
0+15	0.0143	1.45	Q					
0+20	0.0278	1.96	Q					
0+25	0.0432	2.25	Q					
0+30	0.0600	2.44	Q					
0+35	0.0778	2.58	Q					
0+40	0.0964	2.69	Q					
0+45	0.1155	2.78	Q					
0+50	0.1351	2.85	Q					
0+55	0.1552	2.91	Q					
1+ 0	0.1756	2.96	Q					
1+ 5	0.1963	3.00	Q					
1+10	0.2172	3.04	Q					
1+15	0.2383	3.07	Q					
1+20	0.2597	3.10	Q					
1+25	0.2812	3.12	Q					
1+30	0.3029	3.15	Q					
1+35	0.3247	3.17	Q					
1+40	0.3467	3.19	Q					
1+45	0.3688	3.21	Q					
1+50	0.3909	3.22	Q					
1+55	0.4132	3.23	Q					
2+ 0	0.4356	3.25	Q					
2+ 5	0.4580	3.26	Q					
2+10	0.4806	3.28	Q					
2+15	0.5033	3.29	Q					
2+20	0.5261	3.31	Q					
2+25	0.5489	3.32	Q					
2+30	0.5719	3.34	Q					
2+35	0.5950	3.35	Q					
2+40	0.6182	3.37	Q					
2+45	0.6415	3.38	Q					
2+50	0.6649	3.40	Q					
2+55	0.6885	3.42	Q					
3+ 0	0.7121	3.43	Q					
3+ 5	0.7359	3.45	QV					
3+10	0.7597	3.47	QV					
3+15	0.7837	3.48	QV					
3+20	0.8078	3.50	QV					
3+25	0.8320	3.52	QV					
3+30	0.8564	3.53	QV					
3+35	0.8808	3.55	QV					
3+40	0.9054	3.57	QV					
3+45	0.9301	3.59	QV					
3+50	0.9550	3.61	QV					
3+55	0.9799	3.62	QV					
4+ 0	1.0050	3.64	QV					
4+ 5	1.0302	3.66	QV					
4+10	1.0556	3.68	QV					
4+15	1.0811	3.70	QV					
4+20	1.1067	3.72	QV					
4+25	1.1325	3.74	QV					

4+30	1.1584	3.76	QV
4+35	1.1844	3.78	QV
4+40	1.2106	3.80	QV
4+45	1.2369	3.82	QV
4+50	1.2634	3.84	QV
4+55	1.2900	3.86	QV
5+ 0	1.3167	3.89	QV
5+ 5	1.3437	3.91	QV
5+10	1.3707	3.93	QV
5+15	1.3979	3.95	QV
5+20	1.4253	3.98	QV
5+25	1.4529	4.00	Q V
5+30	1.4806	4.02	Q V
5+35	1.5084	4.05	Q V
5+40	1.5365	4.07	Q V
5+45	1.5647	4.10	Q V
5+50	1.5930	4.12	Q V
5+55	1.6216	4.14	Q V
6+ 0	1.6503	4.17	Q V
6+ 5	1.6792	4.20	Q V
6+10	1.7083	4.22	Q V
6+15	1.7375	4.25	Q V
6+20	1.7670	4.28	Q V
6+25	1.7966	4.30	Q V
6+30	1.8265	4.33	Q V
6+35	1.8565	4.36	Q V
6+40	1.8867	4.39	Q V
6+45	1.9171	4.42	Q V
6+50	1.9477	4.45	Q V
6+55	1.9786	4.48	Q V
7+ 0	2.0096	4.51	Q V
7+ 5	2.0409	4.54	Q V
7+10	2.0723	4.57	Q V
7+15	2.1040	4.60	Q V
7+20	2.1360	4.63	Q V
7+25	2.1681	4.67	Q V
7+30	2.2005	4.70	Q V
7+35	2.2331	4.74	Q V
7+40	2.2659	4.77	Q V
7+45	2.2990	4.81	Q V
7+50	2.3324	4.84	Q V
7+55	2.3659	4.88	Q V
8+ 0	2.3998	4.91	Q V
8+ 5	2.4339	4.95	Q V
8+10	2.4683	4.99	Q V
8+15	2.5029	5.03	Q V
8+20	2.5378	5.07	Q V
8+25	2.5730	5.11	Q V
8+30	2.6085	5.15	Q V
8+35	2.6443	5.19	Q V
8+40	2.6803	5.24	Q V
8+45	2.7167	5.28	Q V
8+50	2.7534	5.33	Q V
8+55	2.7904	5.37	Q V
9+ 0	2.8277	5.42	Q V
9+ 5	2.8653	5.47	Q V
9+10	2.9033	5.51	Q V
9+15	2.9416	5.56	Q V
9+20	2.9803	5.61	Q V
9+25	3.0193	5.67	Q V
9+30	3.0587	5.72	Q V
9+35	3.0984	5.77	Q V
9+40	3.1385	5.83	Q V
9+45	3.1791	5.88	Q V
9+50	3.2200	5.94	Q V
9+55	3.2613	6.00	Q V
10+ 0	3.3030	6.06	Q V
10+ 5	3.3452	6.12	Q V
10+10	3.3877	6.18	Q V
10+15	3.4308	6.25	Q V
10+20	3.4743	6.31	Q V
10+25	3.5182	6.38	Q V
10+30	3.5626	6.45	Q V
10+35	3.6076	6.52	Q V
10+40	3.6530	6.59	Q V
10+45	3.6989	6.67	Q V
10+50	3.7454	6.75	Q V
10+55	3.7924	6.83	Q V

11+ 0	3.8400	6.91	Q	V					
11+ 5	3.8881	6.99	Q	V					
11+10	3.9368	7.08	Q	V					
11+15	3.9862	7.17	Q	V					
11+20	4.0362	7.25	Q	V					
11+25	4.0868	7.35	Q	V					
11+30	4.1380	7.44	Q	V					
11+35	4.1900	7.55	Q	V					
11+40	4.2427	7.65	Q	V					
11+45	4.2961	7.75	Q	V					
11+50	4.3502	7.86	Q	V					
11+55	4.4052	7.98	Q	V					
12+ 0	4.4609	8.09	Q	V					
12+ 5	4.5170	8.15	Q	V					
12+10	4.5713	7.88	Q	V					
12+15	4.6212	7.25	Q	V					
12+20	4.6690	6.95	Q	V					
12+25	4.7161	6.83	Q	V					
12+30	4.7629	6.80	Q	V					
12+35	4.8098	6.81	Q	V					
12+40	4.8569	6.85	Q	V					
12+45	4.9046	6.92	Q	V					
12+50	4.9528	7.00	Q	V					
12+55	5.0017	7.10	Q	V					
13+ 0	5.0514	7.21	Q	V					
13+ 5	5.1019	7.34	Q	V					
13+10	5.1534	7.48	Q	V					
13+15	5.2060	7.64	Q	V					
13+20	5.2597	7.80	Q	V					
13+25	5.3146	7.97	Q	V					
13+30	5.3708	8.15	Q	V					
13+35	5.4283	8.35	Q	V					
13+40	5.4872	8.56	Q	V					
13+45	5.5478	8.79	Q	V					
13+50	5.6100	9.03	Q	V					
13+55	5.6740	9.30	Q	V					
14+ 0	5.7399	9.56	Q	V					
14+ 5	5.8079	9.88	Q	V					
14+10	5.8784	10.24	Q	V					
14+15	5.9521	10.70	Q	V					
14+20	6.0287	11.12	Q	V					
14+25	6.1084	11.57	Q	V					
14+30	6.1911	12.01	Q	V					
14+35	6.2773	12.52	Q	V					
14+40	6.3671	13.04	Q	V					
14+45	6.4610	13.63	Q	V					
14+50	6.5591	14.25	Q	V					
14+55	6.6623	14.97	Q	V					
15+ 0	6.7707	15.74	Q	V					
15+ 5	6.8853	16.65	Q	V					
15+10	7.0067	17.63	Q	V					
15+15	7.1362	18.80	Q	V					
15+20	7.2746	20.10	Q	V					
15+25	7.4281	22.28	Q	V					
15+30	7.6171	27.45	Q	V					
15+35	7.8691	36.60	Q	V					
15+40	8.1736	44.21	Q	V					
15+45	8.5360	52.62	Q	V					
15+50	8.9698	62.98	Q	V					
15+55	9.5096	78.37	Q	V					
16+ 0	10.2213	103.35	Q	V					
16+ 5	11.4063	172.05	Q	V					
16+10	13.7312	337.59	Q	V					
16+15	17.0878	487.38	Q	V					
16+20	19.2827	318.69	Q	V					
16+25	20.7362	211.05	Q	V					
16+30	21.7960	153.89	Q	V					
16+35	22.5841	114.43	Q	V					
16+40	23.2075	90.52	Q	V					
16+45	23.6974	71.13	Q	V					
16+50	24.1056	59.28	Q	V					
16+55	24.4481	49.73	Q	V					
17+ 0	24.7364	41.86	Q	V					
17+ 5	24.9802	35.40	Q	V					
17+10	25.1834	29.51	Q	V					
17+15	25.3509	24.33	Q	V					
17+20	25.4968	21.18	Q	V					
17+25	25.6354	20.13	Q	V					

24+ 0	28.6474	3.11	Q				V
24+ 5	28.6681	3.00	Q				V
24+10	28.6855	2.52	Q				V
24+15	28.6964	1.59	Q				V
24+20	28.7038	1.08	Q				V
24+25	28.7093	0.79	Q				V
24+30	28.7134	0.60	Q				V
24+35	28.7166	0.46	Q				V
24+40	28.7191	0.36	Q				V
24+45	28.7210	0.28	Q				V
24+50	28.7225	0.22	Q				V
24+55	28.7237	0.17	Q				V
25+ 0	28.7246	0.13	Q				V
25+ 5	28.7252	0.10	Q				V
25+10	28.7257	0.07	Q				V
25+15	28.7261	0.06	Q				V
25+20	28.7264	0.04	Q				V
25+25	28.7266	0.03	Q				V
25+30	28.7267	0.01	Q				V
25+35	28.7268	0.00	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
DEVELOPED CONDITIONS AREA 2
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
169.66	1	1.37

Rainfall data for year 100		
169.66	6	1.83

Rainfall data for year 100		
169.66	24	2.50

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
78.0	92.8	169.66	1.000	0.140	0.900	0.126

Area-averaged adjusted loss rate Fm (In/Hr) = 0.126

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
152.69	0.900	78.0	92.8	0.78	0.705
16.97	0.100	98.0	98.0	0.20	0.908

Area-averaged catchment yield fraction, Y = 0.725

Area-averaged low loss fraction, Yb = 0.275

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Watercourse length = 2379.00(Ft.)

Length from concentration point to centroid = 1190.00(Ft.)

Elevation difference along watercourse = 4.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 169.66(Ac.)

Catchment Lag time = 0.233 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 35.8245

Hydrograph baseflow = 0.00(CFS)
 Average maximum watershed loss rate(Fm) = 0.126(In/Hr)
 Average low loss rate fraction (Yb) = 0.275 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.650(In)
 Computed peak 30-minute rainfall = 1.113(In)
 Specified peak 1-hour rainfall = 1.370(In)
 Computed peak 3-hour rainfall = 1.636(In)
 Specified peak 6-hour rainfall = 1.830(In)
 Specified peak 24-hour rainfall = 2.500(In)

Rainfall depth area reduction factors:

Using a total area of 169.66(Ac.) (Ref: fig. E-4)

5-minute factor = 0.992	Adjusted rainfall = 0.645(In)
30-minute factor = 0.992	Adjusted rainfall = 1.104(In)
1-hour factor = 0.992	Adjusted rainfall = 1.359(In)
3-hour factor = 0.999	Adjusted rainfall = 1.634(In)
6-hour factor = 0.999	Adjusted rainfall = 1.829(In)
24-hour factor = 1.000	Adjusted rainfall = 2.499(In)

U n i t H y d r o g r a p h

Interval Number	'S' Graph Mean values	Unit Hydrograph (CFS)

(K = 2051.83 (CFS))

1	2.315	47.490
2	14.196	243.791
3	42.442	579.553
4	61.041	381.625
5	71.015	204.655
6	77.682	136.780
7	82.415	97.115
8	86.064	74.866
9	88.920	58.615
10	91.051	43.711
11	92.835	36.616
12	94.302	30.105
13	95.498	24.527
14	96.474	20.032
15	97.250	15.923
16	97.835	11.999
17	98.213	7.763
18	98.623	8.409
19	99.053	8.821
20	99.461	8.373
21	99.715	5.210
22	100.000	2.605

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.6449	0.6449
2	0.7940	0.1491
3	0.8967	0.1027
4	0.9775	0.0808
5	1.0452	0.0677
6	1.1039	0.0588
7	1.1562	0.0523
8	1.2034	0.0473
9	1.2467	0.0433
10	1.2868	0.0400
11	1.3241	0.0373
12	1.3591	0.0350
13	1.3775	0.0184
14	1.3947	0.0172
15	1.4110	0.0163
16	1.4264	0.0154
17	1.4410	0.0146
18	1.4549	0.0139
19	1.4681	0.0133
20	1.4808	0.0127
21	1.4930	0.0122
22	1.5047	0.0117
23	1.5160	0.0113

		PR2.out
24	1.5269	0.0109
25	1.5374	0.0105
26	1.5475	0.0102
27	1.5574	0.0098
28	1.5669	0.0095
29	1.5762	0.0093
30	1.5852	0.0090
31	1.5939	0.0088
32	1.6024	0.0085
33	1.6108	0.0083
34	1.6188	0.0081
35	1.6267	0.0079
36	1.6345	0.0077
37	1.6417	0.0073
38	1.6489	0.0071
39	1.6558	0.0070
40	1.6626	0.0068
41	1.6693	0.0067
42	1.6759	0.0065
43	1.6823	0.0064
44	1.6886	0.0063
45	1.6947	0.0062
46	1.7008	0.0061
47	1.7067	0.0059
48	1.7126	0.0058
49	1.7183	0.0057
50	1.7239	0.0056
51	1.7295	0.0055
52	1.7350	0.0055
53	1.7403	0.0054
54	1.7456	0.0053
55	1.7508	0.0052
56	1.7559	0.0051
57	1.7610	0.0051
58	1.7660	0.0050
59	1.7709	0.0049
60	1.7757	0.0048
61	1.7805	0.0048
62	1.7852	0.0047
63	1.7898	0.0046
64	1.7944	0.0046
65	1.7989	0.0045
66	1.8034	0.0045
67	1.8078	0.0044
68	1.8121	0.0044
69	1.8164	0.0043
70	1.8207	0.0042
71	1.8249	0.0042
72	1.8290	0.0041
73	1.8347	0.0057
74	1.8404	0.0056
75	1.8459	0.0056
76	1.8514	0.0055
77	1.8569	0.0055
78	1.8623	0.0054
79	1.8677	0.0054
80	1.8730	0.0053
81	1.8782	0.0052
82	1.8834	0.0052
83	1.8886	0.0051
84	1.8937	0.0051
85	1.8987	0.0051
86	1.9037	0.0050
87	1.9087	0.0050
88	1.9136	0.0049
89	1.9185	0.0049
90	1.9233	0.0048
91	1.9281	0.0048
92	1.9329	0.0048
93	1.9376	0.0047
94	1.9423	0.0047
95	1.9469	0.0046
96	1.9515	0.0046
97	1.9560	0.0046
98	1.9606	0.0045
99	1.9651	0.0045
100	1.9695	0.0045
101	1.9739	0.0044

		PR2.out
102	1.9783	0.0044
103	1.9827	0.0044
104	1.9870	0.0043
105	1.9913	0.0043
106	1.9955	0.0043
107	1.9998	0.0042
108	2.0040	0.0042
109	2.0081	0.0042
110	2.0123	0.0041
111	2.0164	0.0041
112	2.0204	0.0041
113	2.0245	0.0040
114	2.0285	0.0040
115	2.0325	0.0040
116	2.0365	0.0040
117	2.0404	0.0039
118	2.0443	0.0039
119	2.0482	0.0039
120	2.0521	0.0039
121	2.0559	0.0038
122	2.0597	0.0038
123	2.0635	0.0038
124	2.0673	0.0038
125	2.0711	0.0037
126	2.0748	0.0037
127	2.0785	0.0037
128	2.0821	0.0037
129	2.0858	0.0037
130	2.0894	0.0036
131	2.0930	0.0036
132	2.0966	0.0036
133	2.1002	0.0036
134	2.1037	0.0035
135	2.1073	0.0035
136	2.1108	0.0035
137	2.1143	0.0035
138	2.1177	0.0035
139	2.1212	0.0034
140	2.1246	0.0034
141	2.1280	0.0034
142	2.1314	0.0034
143	2.1348	0.0034
144	2.1381	0.0034
145	2.1415	0.0033
146	2.1448	0.0033
147	2.1481	0.0033
148	2.1514	0.0033
149	2.1546	0.0033
150	2.1579	0.0032
151	2.1611	0.0032
152	2.1643	0.0032
153	2.1675	0.0032
154	2.1707	0.0032
155	2.1739	0.0032
156	2.1770	0.0032
157	2.1802	0.0031
158	2.1833	0.0031
159	2.1864	0.0031
160	2.1895	0.0031
161	2.1926	0.0031
162	2.1956	0.0031
163	2.1987	0.0030
164	2.2017	0.0030
165	2.2047	0.0030
166	2.2077	0.0030
167	2.2107	0.0030
168	2.2137	0.0030
169	2.2166	0.0030
170	2.2196	0.0029
171	2.2225	0.0029
172	2.2254	0.0029
173	2.2284	0.0029
174	2.2313	0.0029
175	2.2341	0.0029
176	2.2370	0.0029
177	2.2399	0.0029
178	2.2427	0.0028
179	2.2455	0.0028

		PR2.out
180	2.2484	0.0028
181	2.2512	0.0028
182	2.2540	0.0028
183	2.2567	0.0028
184	2.2595	0.0028
185	2.2623	0.0028
186	2.2650	0.0027
187	2.2678	0.0027
188	2.2705	0.0027
189	2.2732	0.0027
190	2.2759	0.0027
191	2.2786	0.0027
192	2.2813	0.0027
193	2.2840	0.0027
194	2.2866	0.0027
195	2.2893	0.0026
196	2.2919	0.0026
197	2.2945	0.0026
198	2.2972	0.0026
199	2.2998	0.0026
200	2.3024	0.0026
201	2.3049	0.0026
202	2.3075	0.0026
203	2.3101	0.0026
204	2.3127	0.0026
205	2.3152	0.0025
206	2.3177	0.0025
207	2.3203	0.0025
208	2.3228	0.0025
209	2.3253	0.0025
210	2.3278	0.0025
211	2.3303	0.0025
212	2.3328	0.0025
213	2.3353	0.0025
214	2.3377	0.0025
215	2.3402	0.0025
216	2.3426	0.0024
217	2.3451	0.0024
218	2.3475	0.0024
219	2.3499	0.0024
220	2.3523	0.0024
221	2.3547	0.0024
222	2.3571	0.0024
223	2.3595	0.0024
224	2.3619	0.0024
225	2.3643	0.0024
226	2.3666	0.0024
227	2.3690	0.0024
228	2.3713	0.0023
229	2.3737	0.0023
230	2.3760	0.0023
231	2.3783	0.0023
232	2.3806	0.0023
233	2.3829	0.0023
234	2.3852	0.0023
235	2.3875	0.0023
236	2.3898	0.0023
237	2.3921	0.0023
238	2.3944	0.0023
239	2.3966	0.0023
240	2.3989	0.0023
241	2.4011	0.0022
242	2.4034	0.0022
243	2.4056	0.0022
244	2.4078	0.0022
245	2.4101	0.0022
246	2.4123	0.0022
247	2.4145	0.0022
248	2.4167	0.0022
249	2.4189	0.0022
250	2.4211	0.0022
251	2.4232	0.0022
252	2.4254	0.0022
253	2.4276	0.0022
254	2.4297	0.0022
255	2.4319	0.0022
256	2.4340	0.0021
257	2.4362	0.0021

		PR2.out
258	2.4383	0.0021
259	2.4404	0.0021
260	2.4425	0.0021
261	2.4447	0.0021
262	2.4468	0.0021
263	2.4489	0.0021
264	2.4510	0.0021
265	2.4530	0.0021
266	2.4551	0.0021
267	2.4572	0.0021
268	2.4593	0.0021
269	2.4613	0.0021
270	2.4634	0.0021
271	2.4654	0.0021
272	2.4675	0.0020
273	2.4695	0.0020
274	2.4716	0.0020
275	2.4736	0.0020
276	2.4756	0.0020
277	2.4776	0.0020
278	2.4797	0.0020
279	2.4817	0.0020
280	2.4837	0.0020
281	2.4857	0.0020
282	2.4876	0.0020
283	2.4896	0.0020
284	2.4916	0.0020
285	2.4936	0.0020
286	2.4955	0.0020
287	2.4975	0.0020
288	2.4995	0.0020

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0020	0.0005	0.0014
2	0.0020	0.0005	0.0014
3	0.0020	0.0005	0.0014
4	0.0020	0.0005	0.0014
5	0.0020	0.0005	0.0014
6	0.0020	0.0005	0.0014
7	0.0020	0.0006	0.0015
8	0.0020	0.0006	0.0015
9	0.0020	0.0006	0.0015
10	0.0020	0.0006	0.0015
11	0.0020	0.0006	0.0015
12	0.0020	0.0006	0.0015
13	0.0021	0.0006	0.0015
14	0.0021	0.0006	0.0015
15	0.0021	0.0006	0.0015
16	0.0021	0.0006	0.0015
17	0.0021	0.0006	0.0015
18	0.0021	0.0006	0.0015
19	0.0021	0.0006	0.0015
20	0.0021	0.0006	0.0015
21	0.0021	0.0006	0.0015
22	0.0021	0.0006	0.0016
23	0.0022	0.0006	0.0016
24	0.0022	0.0006	0.0016
25	0.0022	0.0006	0.0016
26	0.0022	0.0006	0.0016
27	0.0022	0.0006	0.0016
28	0.0022	0.0006	0.0016
29	0.0022	0.0006	0.0016
30	0.0022	0.0006	0.0016
31	0.0022	0.0006	0.0016
32	0.0022	0.0006	0.0016
33	0.0023	0.0006	0.0016
34	0.0023	0.0006	0.0016
35	0.0023	0.0006	0.0017
36	0.0023	0.0006	0.0017
37	0.0023	0.0006	0.0017
38	0.0023	0.0006	0.0017
39	0.0023	0.0006	0.0017
40	0.0023	0.0006	0.0017
41	0.0023	0.0006	0.0017
42	0.0024	0.0006	0.0017

		PR2.out	
43	0.0024	0.0007	0.0017
44	0.0024	0.0007	0.0017
45	0.0024	0.0007	0.0017
46	0.0024	0.0007	0.0017
47	0.0024	0.0007	0.0018
48	0.0024	0.0007	0.0018
49	0.0024	0.0007	0.0018
50	0.0025	0.0007	0.0018
51	0.0025	0.0007	0.0018
52	0.0025	0.0007	0.0018
53	0.0025	0.0007	0.0018
54	0.0025	0.0007	0.0018
55	0.0025	0.0007	0.0018
56	0.0025	0.0007	0.0018
57	0.0026	0.0007	0.0019
58	0.0026	0.0007	0.0019
59	0.0026	0.0007	0.0019
60	0.0026	0.0007	0.0019
61	0.0026	0.0007	0.0019
62	0.0026	0.0007	0.0019
63	0.0026	0.0007	0.0019
64	0.0027	0.0007	0.0019
65	0.0027	0.0007	0.0019
66	0.0027	0.0007	0.0020
67	0.0027	0.0007	0.0020
68	0.0027	0.0007	0.0020
69	0.0027	0.0008	0.0020
70	0.0028	0.0008	0.0020
71	0.0028	0.0008	0.0020
72	0.0028	0.0008	0.0020
73	0.0028	0.0008	0.0020
74	0.0028	0.0008	0.0021
75	0.0029	0.0008	0.0021
76	0.0029	0.0008	0.0021
77	0.0029	0.0008	0.0021
78	0.0029	0.0008	0.0021
79	0.0029	0.0008	0.0021
80	0.0029	0.0008	0.0021
81	0.0030	0.0008	0.0022
82	0.0030	0.0008	0.0022
83	0.0030	0.0008	0.0022
84	0.0030	0.0008	0.0022
85	0.0031	0.0008	0.0022
86	0.0031	0.0008	0.0022
87	0.0031	0.0009	0.0023
88	0.0031	0.0009	0.0023
89	0.0032	0.0009	0.0023
90	0.0032	0.0009	0.0023
91	0.0032	0.0009	0.0023
92	0.0032	0.0009	0.0023
93	0.0032	0.0009	0.0024
94	0.0033	0.0009	0.0024
95	0.0033	0.0009	0.0024
96	0.0033	0.0009	0.0024
97	0.0034	0.0009	0.0024
98	0.0034	0.0009	0.0024
99	0.0034	0.0009	0.0025
100	0.0034	0.0009	0.0025
101	0.0035	0.0010	0.0025
102	0.0035	0.0010	0.0025
103	0.0035	0.0010	0.0026
104	0.0035	0.0010	0.0026
105	0.0036	0.0010	0.0026
106	0.0036	0.0010	0.0026
107	0.0037	0.0010	0.0026
108	0.0037	0.0010	0.0027
109	0.0037	0.0010	0.0027
110	0.0037	0.0010	0.0027
111	0.0038	0.0010	0.0027
112	0.0038	0.0010	0.0028
113	0.0039	0.0011	0.0028
114	0.0039	0.0011	0.0028
115	0.0039	0.0011	0.0029
116	0.0040	0.0011	0.0029
117	0.0040	0.0011	0.0029
118	0.0040	0.0011	0.0029
119	0.0041	0.0011	0.0030
120	0.0041	0.0011	0.0030

		PR2.out	
121	0.0042	0.0012	0.0030
122	0.0042	0.0012	0.0031
123	0.0043	0.0012	0.0031
124	0.0043	0.0012	0.0031
125	0.0044	0.0012	0.0032
126	0.0044	0.0012	0.0032
127	0.0045	0.0012	0.0033
128	0.0045	0.0012	0.0033
129	0.0046	0.0013	0.0033
130	0.0046	0.0013	0.0034
131	0.0047	0.0013	0.0034
132	0.0048	0.0013	0.0034
133	0.0048	0.0013	0.0035
134	0.0049	0.0013	0.0035
135	0.0050	0.0014	0.0036
136	0.0050	0.0014	0.0036
137	0.0051	0.0014	0.0037
138	0.0051	0.0014	0.0037
139	0.0052	0.0014	0.0038
140	0.0053	0.0015	0.0038
141	0.0054	0.0015	0.0039
142	0.0055	0.0015	0.0040
143	0.0056	0.0015	0.0040
144	0.0056	0.0015	0.0041
145	0.0041	0.0011	0.0030
146	0.0042	0.0012	0.0030
147	0.0043	0.0012	0.0031
148	0.0044	0.0012	0.0032
149	0.0045	0.0012	0.0032
150	0.0045	0.0012	0.0033
151	0.0046	0.0013	0.0034
152	0.0047	0.0013	0.0034
153	0.0048	0.0013	0.0035
154	0.0049	0.0013	0.0036
155	0.0051	0.0014	0.0037
156	0.0051	0.0014	0.0037
157	0.0053	0.0015	0.0038
158	0.0054	0.0015	0.0039
159	0.0055	0.0015	0.0040
160	0.0056	0.0016	0.0041
161	0.0058	0.0016	0.0042
162	0.0059	0.0016	0.0043
163	0.0062	0.0017	0.0045
164	0.0063	0.0017	0.0046
165	0.0065	0.0018	0.0047
166	0.0067	0.0018	0.0048
167	0.0070	0.0019	0.0050
168	0.0071	0.0020	0.0052
169	0.0077	0.0021	0.0056
170	0.0079	0.0022	0.0057
171	0.0083	0.0023	0.0060
172	0.0085	0.0023	0.0062
173	0.0090	0.0025	0.0065
174	0.0093	0.0025	0.0067
175	0.0098	0.0027	0.0071
176	0.0102	0.0028	0.0074
177	0.0109	0.0030	0.0079
178	0.0113	0.0031	0.0082
179	0.0122	0.0033	0.0088
180	0.0127	0.0035	0.0092
181	0.0139	0.0038	0.0101
182	0.0146	0.0040	0.0106
183	0.0163	0.0045	0.0118
184	0.0172	0.0047	0.0125
185	0.0350	0.0096	0.0254
186	0.0373	0.0103	0.0271
187	0.0433	0.0105	0.0328
188	0.0473	0.0105	0.0368
189	0.0588	0.0105	0.0483
190	0.0677	0.0105	0.0572
191	0.1027	0.0105	0.0922
192	0.1491	0.0105	0.1386
193	0.6449	0.0105	0.6344
194	0.0808	0.0105	0.0703
195	0.0523	0.0105	0.0417
196	0.0400	0.0105	0.0295
197	0.0184	0.0051	0.0133
198	0.0154	0.0042	0.0111

		PR2.out	
199	0.0133	0.0036	0.0096
200	0.0117	0.0032	0.0085
201	0.0105	0.0029	0.0076
202	0.0095	0.0026	0.0069
203	0.0088	0.0024	0.0063
204	0.0081	0.0022	0.0059
205	0.0073	0.0020	0.0053
206	0.0068	0.0019	0.0049
207	0.0064	0.0018	0.0046
208	0.0061	0.0017	0.0044
209	0.0057	0.0016	0.0042
210	0.0055	0.0015	0.0040
211	0.0052	0.0014	0.0038
212	0.0050	0.0014	0.0036
213	0.0048	0.0013	0.0035
214	0.0046	0.0013	0.0033
215	0.0044	0.0012	0.0032
216	0.0042	0.0012	0.0031
217	0.0057	0.0016	0.0041
218	0.0055	0.0015	0.0040
219	0.0054	0.0015	0.0039
220	0.0052	0.0014	0.0038
221	0.0051	0.0014	0.0037
222	0.0049	0.0014	0.0036
223	0.0048	0.0013	0.0035
224	0.0047	0.0013	0.0034
225	0.0046	0.0013	0.0033
226	0.0045	0.0012	0.0032
227	0.0044	0.0012	0.0032
228	0.0043	0.0012	0.0031
229	0.0042	0.0011	0.0030
230	0.0041	0.0011	0.0030
231	0.0040	0.0011	0.0029
232	0.0039	0.0011	0.0028
233	0.0038	0.0011	0.0028
234	0.0038	0.0010	0.0027
235	0.0037	0.0010	0.0027
236	0.0036	0.0010	0.0026
237	0.0036	0.0010	0.0026
238	0.0035	0.0010	0.0025
239	0.0034	0.0009	0.0025
240	0.0034	0.0009	0.0025
241	0.0033	0.0009	0.0024
242	0.0033	0.0009	0.0024
243	0.0032	0.0009	0.0023
244	0.0032	0.0009	0.0023
245	0.0031	0.0009	0.0023
246	0.0031	0.0008	0.0022
247	0.0030	0.0008	0.0022
248	0.0030	0.0008	0.0022
249	0.0030	0.0008	0.0021
250	0.0029	0.0008	0.0021
251	0.0029	0.0008	0.0021
252	0.0028	0.0008	0.0021
253	0.0028	0.0008	0.0020
254	0.0028	0.0008	0.0020
255	0.0027	0.0008	0.0020
256	0.0027	0.0007	0.0020
257	0.0027	0.0007	0.0019
258	0.0026	0.0007	0.0019
259	0.0026	0.0007	0.0019
260	0.0026	0.0007	0.0019
261	0.0025	0.0007	0.0018
262	0.0025	0.0007	0.0018
263	0.0025	0.0007	0.0018
264	0.0025	0.0007	0.0018
265	0.0024	0.0007	0.0018
266	0.0024	0.0007	0.0017
267	0.0024	0.0007	0.0017
268	0.0024	0.0006	0.0017
269	0.0023	0.0006	0.0017
270	0.0023	0.0006	0.0017
271	0.0023	0.0006	0.0017
272	0.0023	0.0006	0.0016
273	0.0022	0.0006	0.0016
274	0.0022	0.0006	0.0016
275	0.0022	0.0006	0.0016
276	0.0022	0.0006	0.0016

PR2.out

277	0.0022	0.0006	0.0016
278	0.0021	0.0006	0.0016
279	0.0021	0.0006	0.0015
280	0.0021	0.0006	0.0015
281	0.0021	0.0006	0.0015
282	0.0021	0.0006	0.0015
283	0.0021	0.0006	0.0015
284	0.0020	0.0006	0.0015
285	0.0020	0.0006	0.0015
286	0.0020	0.0006	0.0015
287	0.0020	0.0005	0.0014
288	0.0020	0.0005	0.0014

Total soil rain loss = 0.44(In)
Total effective rainfall = 2.06(In)
Peak flow rate in flood hydrograph = 479.31(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	125.0	250.0	375.0	500.0
0+ 5	0.0005	0.07	Q					
0+10	0.0033	0.41	Q					
0+15	0.0118	1.24	Q					
0+20	0.0241	1.78	Q					
0+25	0.0385	2.08	Q					
0+30	0.0542	2.28	Q					
0+35	0.0709	2.43	Q					
0+40	0.0885	2.55	Q					
0+45	0.1067	2.64	Q					
0+50	0.1254	2.71	Q					
0+55	0.1445	2.78	Q					
1+ 0	0.1640	2.83	Q					
1+ 5	0.1838	2.88	Q					
1+10	0.2039	2.92	Q					
1+15	0.2243	2.95	Q					
1+20	0.2448	2.98	Q					
1+25	0.2655	3.01	Q					
1+30	0.2864	3.03	Q					
1+35	0.3075	3.06	Q					
1+40	0.3287	3.08	Q					
1+45	0.3501	3.10	Q					
1+50	0.3716	3.12	Q					
1+55	0.3932	3.14	Q					
2+ 0	0.4149	3.15	Q					
2+ 5	0.4367	3.16	Q					
2+10	0.4586	3.18	Q					
2+15	0.4805	3.19	Q					
2+20	0.5026	3.21	Q					
2+25	0.5248	3.22	Q					
2+30	0.5471	3.24	Q					
2+35	0.5695	3.25	Q					
2+40	0.5920	3.27	Q					
2+45	0.6146	3.28	Q					
2+50	0.6374	3.30	Q					
2+55	0.6602	3.31	Q					
3+ 0	0.6831	3.33	Q					
3+ 5	0.7062	3.35	Q					
3+10	0.7293	3.36	QV					
3+15	0.7526	3.38	QV					
3+20	0.7760	3.40	QV					
3+25	0.7995	3.41	QV					
3+30	0.8231	3.43	QV					
3+35	0.8469	3.45	QV					
3+40	0.8707	3.46	QV					
3+45	0.8947	3.48	QV					
3+50	0.9188	3.50	QV					
3+55	0.9431	3.52	QV					
4+ 0	0.9674	3.54	QV					
4+ 5	0.9919	3.56	QV					
4+10	1.0165	3.57	QV					
4+15	1.0413	3.59	QV					

4+20	1.0662	3.61	QV
4+25	1.0912	3.63	QV
4+30	1.1163	3.65	QV
4+35	1.1416	3.67	QV
4+40	1.1670	3.69	QV
4+45	1.1926	3.71	QV
4+50	1.2183	3.73	QV
4+55	1.2441	3.75	QV
5+ 0	1.2701	3.77	QV
5+ 5	1.2963	3.80	QV
5+10	1.3226	3.82	QV
5+15	1.3490	3.84	QV
5+20	1.3756	3.86	QV
5+25	1.4024	3.89	QV
5+30	1.4293	3.91	QV
5+35	1.4564	3.93	Q V
5+40	1.4836	3.96	Q V
5+45	1.5110	3.98	Q V
5+50	1.5386	4.00	Q V
5+55	1.5664	4.03	Q V
6+ 0	1.5943	4.05	Q V
6+ 5	1.6224	4.08	Q V
6+10	1.6506	4.10	Q V
6+15	1.6791	4.13	Q V
6+20	1.7077	4.16	Q V
6+25	1.7365	4.18	Q V
6+30	1.7655	4.21	Q V
6+35	1.7947	4.24	Q V
6+40	1.8241	4.27	Q V
6+45	1.8537	4.30	Q V
6+50	1.8835	4.32	Q V
6+55	1.9134	4.35	Q V
7+ 0	1.9436	4.38	Q V
7+ 5	1.9740	4.41	Q V
7+10	2.0046	4.44	Q V
7+15	2.0355	4.48	Q V
7+20	2.0665	4.51	Q V
7+25	2.0978	4.54	Q V
7+30	2.1293	4.57	Q V
7+35	2.1610	4.61	Q V
7+40	2.1930	4.64	Q V
7+45	2.2252	4.68	Q V
7+50	2.2576	4.71	Q V
7+55	2.2903	4.75	Q V
8+ 0	2.3232	4.78	Q V
8+ 5	2.3564	4.82	Q V
8+10	2.3899	4.86	Q V
8+15	2.4236	4.90	Q V
8+20	2.4576	4.94	Q V
8+25	2.4919	4.98	Q V
8+30	2.5264	5.02	Q V
8+35	2.5612	5.06	Q V
8+40	2.5964	5.10	Q V
8+45	2.6318	5.14	Q V
8+50	2.6675	5.19	Q V
8+55	2.7035	5.23	Q V
9+ 0	2.7399	5.28	Q V
9+ 5	2.7765	5.32	Q V
9+10	2.8135	5.37	Q V
9+15	2.8509	5.42	Q V
9+20	2.8885	5.47	Q V
9+25	2.9265	5.52	Q V
9+30	2.9649	5.57	Q V
9+35	3.0036	5.62	Q V
9+40	3.0427	5.68	Q V
9+45	3.0822	5.73	Q V
9+50	3.1221	5.79	Q V
9+55	3.1624	5.85	Q V
10+ 0	3.2030	5.91	Q V
10+ 5	3.2441	5.97	Q V
10+10	3.2856	6.03	Q V
10+15	3.3276	6.09	Q V
10+20	3.3700	6.16	Q V
10+25	3.4128	6.22	Q V
10+30	3.4562	6.29	Q V
10+35	3.5000	6.36	Q V
10+40	3.5443	6.43	Q V
10+45	3.5891	6.51	Q V

[illegible]

17+20	25.7681	24.59	Q				V
17+25	25.9095	20.53	Q				V
17+30	26.0434	19.45	Q				V
17+35	26.1698	18.35	Q				V
17+40	26.2848	16.70	Q				V
17+45	26.3788	13.64	Q				V
17+50	26.4546	11.01	Q				V
17+55	26.5145	8.70	Q				V
18+ 0	26.5697	8.01	Q				V
18+ 5	26.6218	7.57	Q				V
18+10	26.6732	7.46	Q				V
18+15	26.7270	7.81	Q				V
18+20	26.7818	7.95	Q				V
18+25	26.8362	7.90	Q				V
18+30	26.8898	7.79	Q				V
18+35	26.9426	7.65	Q				V
18+40	26.9942	7.51	Q				V
18+45	27.0449	7.35	Q				V
18+50	27.0945	7.20	Q				V
18+55	27.1430	7.05	Q				V
19+ 0	27.1905	6.90	Q				V
19+ 5	27.2370	6.76	Q				V
19+10	27.2826	6.61	Q				V
19+15	27.3272	6.48	Q				V
19+20	27.3709	6.34	Q				V
19+25	27.4137	6.21	Q				V
19+30	27.4556	6.09	Q				V
19+35	27.4968	5.97	Q				V
19+40	27.5371	5.86	Q				V
19+45	27.5768	5.75	Q				V
19+50	27.6156	5.64	Q				V
19+55	27.6538	5.54	Q				V
20+ 0	27.6912	5.44	Q				V
20+ 5	27.7280	5.34	Q				V
20+10	27.7641	5.25	Q				V
20+15	27.7996	5.16	Q				V
20+20	27.8345	5.07	Q				V
20+25	27.8688	4.99	Q				V
20+30	27.9026	4.91	Q				V
20+35	27.9359	4.83	Q				V
20+40	27.9686	4.76	Q				V
20+45	28.0009	4.68	Q				V
20+50	28.0327	4.61	Q				V
20+55	28.0640	4.55	Q				V
21+ 0	28.0949	4.48	Q				V
21+ 5	28.1253	4.42	Q				V
21+10	28.1553	4.36	Q				V
21+15	28.1849	4.30	Q				V
21+20	28.2142	4.24	Q				V
21+25	28.2430	4.19	Q				V
21+30	28.2715	4.13	Q				V
21+35	28.2996	4.08	Q				V
21+40	28.3274	4.03	Q				V
21+45	28.3548	3.98	Q				V
21+50	28.3819	3.93	Q				V
21+55	28.4087	3.89	Q				V
22+ 0	28.4352	3.84	Q				V
22+ 5	28.4613	3.80	Q				V
22+10	28.4872	3.76	Q				V
22+15	28.5128	3.71	Q				V
22+20	28.5381	3.67	Q				V
22+25	28.5631	3.63	Q				V
22+30	28.5878	3.59	Q				V
22+35	28.6123	3.56	Q				V
22+40	28.6366	3.52	Q				V
22+45	28.6606	3.48	Q				V
22+50	28.6843	3.45	Q				V
22+55	28.7079	3.41	Q				V
23+ 0	28.7311	3.38	Q				V
23+ 5	28.7542	3.35	Q				V
23+10	28.7770	3.32	Q				V
23+15	28.7996	3.28	Q				V
23+20	28.8221	3.25	Q				V
23+25	28.8443	3.22	Q				V
23+30	28.8662	3.19	Q				V
23+35	28.8880	3.16	Q				V
23+40	28.9096	3.14	Q				V
23+45	28.9311	3.11	Q				V

23+50	28.9523	3.08	Q			V
23+55	28.9733	3.06	Q			V
24+ 0	28.9942	3.03	Q			V
24+ 5	29.0144	2.94	Q			V
24+10	29.0321	2.57	Q			V
24+15	29.0440	1.72	Q			V
24+20	29.0520	1.17	Q			V
24+25	29.0580	0.87	Q			V
24+30	29.0626	0.67	Q			V
24+35	29.0662	0.53	Q			V
24+40	29.0691	0.42	Q			V
24+45	29.0714	0.33	Q			V
24+50	29.0732	0.26	Q			V
24+55	29.0747	0.21	Q			V
25+ 0	29.0758	0.17	Q			V
25+ 5	29.0767	0.13	Q			V
25+10	29.0774	0.10	Q			V
25+15	29.0779	0.08	Q			V
25+20	29.0783	0.06	Q			V
25+25	29.0787	0.05	Q			V
25+30	29.0789	0.04	Q			V
25+35	29.0791	0.02	Q			V
25+40	29.0792	0.01	Q			V
25+45	29.0792	0.00	Q			V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
DEVELOPED CONDITIONS AREA 3
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
588.34	1	1.39

Rainfall data for year 100		
588.34	6	1.83

Rainfall data for year 100		
588.34	24	2.50

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
78.6	93.2	588.34	1.000	0.133	0.900	0.120

Area-averaged adjusted loss rate Fm (In/Hr) = 0.120

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
529.51	0.900	78.6	93.2	0.73	0.717
58.83	0.100	98.0	98.0	0.20	0.908

Area-averaged catchment yield fraction, Y = 0.737

Area-averaged low loss fraction, Yb = 0.263

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Watercourse length = 5144.00(Ft.)

Length from concentration point to centroid = 2572.00(Ft.)

Elevation difference along watercourse = 13.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 588.34(Ac.)

Catchment Lag time = 0.387 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 21.5450

Hydrograph baseflow = 0.00(CFS)
 Average maximum watershed loss rate(Fm) = 0.120(In/Hr)
 Average low loss rate fraction (Yb) = 0.263 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.660(In)
 Computed peak 30-minute rainfall = 1.129(In)
 Specified peak 1-hour rainfall = 1.390(In)
 Computed peak 3-hour rainfall = 1.645(In)
 Specified peak 6-hour rainfall = 1.830(In)
 Specified peak 24-hour rainfall = 2.500(In)

Rainfall depth area reduction factors:

Using a total area of 588.34(Ac.) (Ref: fig. E-4)

5-minute factor = 0.972	Adjusted rainfall = 0.641(In)
30-minute factor = 0.972	Adjusted rainfall = 1.098(In)
1-hour factor = 0.972	Adjusted rainfall = 1.352(In)
3-hour factor = 0.997	Adjusted rainfall = 1.640(In)
6-hour factor = 0.998	Adjusted rainfall = 1.827(In)
24-hour factor = 0.999	Adjusted rainfall = 2.498(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 7115.24 (CFS))	
1	1.100	78.258
2	5.101	284.670
3	13.349	586.919
4	31.230	1272.238
5	47.875	1184.311
6	58.701	770.291
7	65.795	504.811
8	71.191	383.892
9	75.420	300.908
10	78.886	246.655
11	81.681	198.859
12	84.039	167.731
13	86.144	149.834
14	87.967	129.709
15	89.444	105.077
16	90.701	89.410
17	91.858	82.374
18	92.883	72.867
19	93.817	66.510
20	94.584	54.575
21	95.316	52.042
22	95.944	44.677
23	96.504	39.857
24	97.010	36.004
25	97.401	27.857
26	97.770	26.227
27	98.009	17.039
28	98.225	15.365
29	98.468	17.292
30	98.727	18.396
31	98.985	18.396
32	99.244	18.396
33	99.486	17.250
34	99.636	10.640
35	99.771	9.581
36	99.905	9.581
37	100.000	6.738

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6414	0.6414
2	0.7896	0.1483
3	0.8918	0.1021
4	0.9721	0.0804
5	1.0395	0.0673
6	1.0979	0.0584
7	1.1499	0.0520
8	1.1969	0.0470

		PR3.out
9	1.2399	0.0430
10	1.2797	0.0398
11	1.3168	0.0371
12	1.3517	0.0348
13	1.3708	0.0191
14	1.3888	0.0180
15	1.4057	0.0169
16	1.4218	0.0160
17	1.4370	0.0152
18	1.4515	0.0145
19	1.4654	0.0139
20	1.4786	0.0133
21	1.4914	0.0127
22	1.5036	0.0122
23	1.5154	0.0118
24	1.5268	0.0114
25	1.5378	0.0110
26	1.5484	0.0106
27	1.5587	0.0103
28	1.5687	0.0100
29	1.5784	0.0097
30	1.5879	0.0094
31	1.5970	0.0092
32	1.6060	0.0089
33	1.6147	0.0087
34	1.6232	0.0085
35	1.6315	0.0083
36	1.6396	0.0081
37	1.6466	0.0070
38	1.6534	0.0069
39	1.6601	0.0067
40	1.6667	0.0066
41	1.6731	0.0064
42	1.6794	0.0063
43	1.6856	0.0062
44	1.6917	0.0061
45	1.6976	0.0059
46	1.7034	0.0058
47	1.7091	0.0057
48	1.7148	0.0056
49	1.7203	0.0055
50	1.7257	0.0054
51	1.7310	0.0053
52	1.7363	0.0052
53	1.7414	0.0052
54	1.7465	0.0051
55	1.7515	0.0050
56	1.7565	0.0049
57	1.7613	0.0049
58	1.7661	0.0048
59	1.7708	0.0047
60	1.7755	0.0046
61	1.7800	0.0046
62	1.7846	0.0045
63	1.7890	0.0045
64	1.7934	0.0044
65	1.7977	0.0043
66	1.8020	0.0043
67	1.8063	0.0042
68	1.8104	0.0042
69	1.8146	0.0041
70	1.8186	0.0041
71	1.8227	0.0040
72	1.8266	0.0040
73	1.8323	0.0057
74	1.8380	0.0056
75	1.8436	0.0056
76	1.8491	0.0055
77	1.8545	0.0055
78	1.8600	0.0054
79	1.8653	0.0054
80	1.8706	0.0053
81	1.8759	0.0053
82	1.8811	0.0052
83	1.8862	0.0052
84	1.8913	0.0051
85	1.8964	0.0051
86	1.9014	0.0050

		PR3.out
87	1.9064	0.0050
88	1.9113	0.0049
89	1.9162	0.0049
90	1.9210	0.0048
91	1.9258	0.0048
92	1.9306	0.0048
93	1.9353	0.0047
94	1.9400	0.0047
95	1.9446	0.0046
96	1.9493	0.0046
97	1.9538	0.0046
98	1.9583	0.0045
99	1.9628	0.0045
100	1.9673	0.0045
101	1.9717	0.0044
102	1.9761	0.0044
103	1.9805	0.0044
104	1.9848	0.0043
105	1.9891	0.0043
106	1.9934	0.0043
107	1.9976	0.0042
108	2.0018	0.0042
109	2.0060	0.0042
110	2.0101	0.0041
111	2.0142	0.0041
112	2.0183	0.0041
113	2.0224	0.0041
114	2.0264	0.0040
115	2.0304	0.0040
116	2.0344	0.0040
117	2.0383	0.0039
118	2.0422	0.0039
119	2.0461	0.0039
120	2.0500	0.0039
121	2.0538	0.0038
122	2.0577	0.0038
123	2.0615	0.0038
124	2.0652	0.0038
125	2.0690	0.0037
126	2.0727	0.0037
127	2.0764	0.0037
128	2.0801	0.0037
129	2.0838	0.0037
130	2.0874	0.0036
131	2.0910	0.0036
132	2.0946	0.0036
133	2.0982	0.0036
134	2.1017	0.0036
135	2.1053	0.0035
136	2.1088	0.0035
137	2.1123	0.0035
138	2.1157	0.0035
139	2.1192	0.0035
140	2.1226	0.0034
141	2.1260	0.0034
142	2.1294	0.0034
143	2.1328	0.0034
144	2.1362	0.0034
145	2.1395	0.0033
146	2.1428	0.0033
147	2.1461	0.0033
148	2.1494	0.0033
149	2.1527	0.0033
150	2.1560	0.0033
151	2.1592	0.0032
152	2.1624	0.0032
153	2.1656	0.0032
154	2.1688	0.0032
155	2.1720	0.0032
156	2.1751	0.0032
157	2.1783	0.0031
158	2.1814	0.0031
159	2.1845	0.0031
160	2.1876	0.0031
161	2.1907	0.0031
162	2.1938	0.0031
163	2.1968	0.0031
164	2.1998	0.0030

		PR3.out
165	2.2029	0.0030
166	2.2059	0.0030
167	2.2089	0.0030
168	2.2118	0.0030
169	2.2148	0.0030
170	2.2178	0.0030
171	2.2207	0.0029
172	2.2236	0.0029
173	2.2265	0.0029
174	2.2294	0.0029
175	2.2323	0.0029
176	2.2352	0.0029
177	2.2381	0.0029
178	2.2409	0.0028
179	2.2438	0.0028
180	2.2466	0.0028
181	2.2494	0.0028
182	2.2522	0.0028
183	2.2550	0.0028
184	2.2578	0.0028
185	2.2605	0.0028
186	2.2633	0.0028
187	2.2660	0.0027
188	2.2688	0.0027
189	2.2715	0.0027
190	2.2742	0.0027
191	2.2769	0.0027
192	2.2796	0.0027
193	2.2822	0.0027
194	2.2849	0.0027
195	2.2876	0.0027
196	2.2902	0.0026
197	2.2928	0.0026
198	2.2955	0.0026
199	2.2981	0.0026
200	2.3007	0.0026
201	2.3033	0.0026
202	2.3059	0.0026
203	2.3084	0.0026
204	2.3110	0.0026
205	2.3135	0.0026
206	2.3161	0.0025
207	2.3186	0.0025
208	2.3211	0.0025
209	2.3237	0.0025
210	2.3262	0.0025
211	2.3287	0.0025
212	2.3312	0.0025
213	2.3336	0.0025
214	2.3361	0.0025
215	2.3386	0.0025
216	2.3410	0.0025
217	2.3435	0.0024
218	2.3459	0.0024
219	2.3483	0.0024
220	2.3507	0.0024
221	2.3531	0.0024
222	2.3555	0.0024
223	2.3579	0.0024
224	2.3603	0.0024
225	2.3627	0.0024
226	2.3651	0.0024
227	2.3674	0.0024
228	2.3698	0.0024
229	2.3721	0.0023
230	2.3745	0.0023
231	2.3768	0.0023
232	2.3791	0.0023
233	2.3814	0.0023
234	2.3837	0.0023
235	2.3860	0.0023
236	2.3883	0.0023
237	2.3906	0.0023
238	2.3929	0.0023
239	2.3951	0.0023
240	2.3974	0.0023
241	2.3996	0.0023
242	2.4019	0.0022

		PR3.out
243	2.4041	0.0022
244	2.4064	0.0022
245	2.4086	0.0022
246	2.4108	0.0022
247	2.4130	0.0022
248	2.4152	0.0022
249	2.4174	0.0022
250	2.4196	0.0022
251	2.4218	0.0022
252	2.4239	0.0022
253	2.4261	0.0022
254	2.4283	0.0022
255	2.4304	0.0022
256	2.4326	0.0021
257	2.4347	0.0021
258	2.4369	0.0021
259	2.4390	0.0021
260	2.4411	0.0021
261	2.4432	0.0021
262	2.4453	0.0021
263	2.4475	0.0021
264	2.4496	0.0021
265	2.4516	0.0021
266	2.4537	0.0021
267	2.4558	0.0021
268	2.4579	0.0021
269	2.4600	0.0021
270	2.4620	0.0021
271	2.4641	0.0021
272	2.4661	0.0021
273	2.4682	0.0020
274	2.4702	0.0020
275	2.4722	0.0020
276	2.4743	0.0020
277	2.4763	0.0020
278	2.4783	0.0020
279	2.4803	0.0020
280	2.4823	0.0020
281	2.4843	0.0020
282	2.4863	0.0020
283	2.4883	0.0020
284	2.4903	0.0020
285	2.4923	0.0020
286	2.4942	0.0020
287	2.4962	0.0020
288	2.4982	0.0020

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0020	0.0005	0.0014
2	0.0020	0.0005	0.0014
3	0.0020	0.0005	0.0015
4	0.0020	0.0005	0.0015
5	0.0020	0.0005	0.0015
6	0.0020	0.0005	0.0015
7	0.0020	0.0005	0.0015
8	0.0020	0.0005	0.0015
9	0.0020	0.0005	0.0015
10	0.0020	0.0005	0.0015
11	0.0020	0.0005	0.0015
12	0.0021	0.0005	0.0015
13	0.0021	0.0005	0.0015
14	0.0021	0.0005	0.0015
15	0.0021	0.0005	0.0015
16	0.0021	0.0005	0.0015
17	0.0021	0.0006	0.0015
18	0.0021	0.0006	0.0016
19	0.0021	0.0006	0.0016
20	0.0021	0.0006	0.0016
21	0.0021	0.0006	0.0016
22	0.0021	0.0006	0.0016
23	0.0022	0.0006	0.0016
24	0.0022	0.0006	0.0016
25	0.0022	0.0006	0.0016
26	0.0022	0.0006	0.0016
27	0.0022	0.0006	0.0016

		PR3.out	
28	0.0022	0.0006	0.0016
29	0.0022	0.0006	0.0016
30	0.0022	0.0006	0.0016
31	0.0022	0.0006	0.0016
32	0.0022	0.0006	0.0017
33	0.0023	0.0006	0.0017
34	0.0023	0.0006	0.0017
35	0.0023	0.0006	0.0017
36	0.0023	0.0006	0.0017
37	0.0023	0.0006	0.0017
38	0.0023	0.0006	0.0017
39	0.0023	0.0006	0.0017
40	0.0023	0.0006	0.0017
41	0.0024	0.0006	0.0017
42	0.0024	0.0006	0.0017
43	0.0024	0.0006	0.0017
44	0.0024	0.0006	0.0018
45	0.0024	0.0006	0.0018
46	0.0024	0.0006	0.0018
47	0.0024	0.0006	0.0018
48	0.0024	0.0006	0.0018
49	0.0025	0.0006	0.0018
50	0.0025	0.0006	0.0018
51	0.0025	0.0007	0.0018
52	0.0025	0.0007	0.0018
53	0.0025	0.0007	0.0018
54	0.0025	0.0007	0.0019
55	0.0025	0.0007	0.0019
56	0.0025	0.0007	0.0019
57	0.0026	0.0007	0.0019
58	0.0026	0.0007	0.0019
59	0.0026	0.0007	0.0019
60	0.0026	0.0007	0.0019
61	0.0026	0.0007	0.0019
62	0.0026	0.0007	0.0019
63	0.0027	0.0007	0.0020
64	0.0027	0.0007	0.0020
65	0.0027	0.0007	0.0020
66	0.0027	0.0007	0.0020
67	0.0027	0.0007	0.0020
68	0.0027	0.0007	0.0020
69	0.0028	0.0007	0.0020
70	0.0028	0.0007	0.0020
71	0.0028	0.0007	0.0021
72	0.0028	0.0007	0.0021
73	0.0028	0.0007	0.0021
74	0.0028	0.0007	0.0021
75	0.0029	0.0008	0.0021
76	0.0029	0.0008	0.0021
77	0.0029	0.0008	0.0021
78	0.0029	0.0008	0.0021
79	0.0029	0.0008	0.0022
80	0.0030	0.0008	0.0022
81	0.0030	0.0008	0.0022
82	0.0030	0.0008	0.0022
83	0.0030	0.0008	0.0022
84	0.0030	0.0008	0.0022
85	0.0031	0.0008	0.0023
86	0.0031	0.0008	0.0023
87	0.0031	0.0008	0.0023
88	0.0031	0.0008	0.0023
89	0.0032	0.0008	0.0023
90	0.0032	0.0008	0.0023
91	0.0032	0.0008	0.0024
92	0.0032	0.0008	0.0024
93	0.0033	0.0009	0.0024
94	0.0033	0.0009	0.0024
95	0.0033	0.0009	0.0024
96	0.0033	0.0009	0.0024
97	0.0034	0.0009	0.0025
98	0.0034	0.0009	0.0025
99	0.0034	0.0009	0.0025
100	0.0034	0.0009	0.0025
101	0.0035	0.0009	0.0026
102	0.0035	0.0009	0.0026
103	0.0035	0.0009	0.0026
104	0.0036	0.0009	0.0026
105	0.0036	0.0009	0.0026

		PR3.out	
106	0.0036	0.0010	0.0027
107	0.0037	0.0010	0.0027
108	0.0037	0.0010	0.0027
109	0.0037	0.0010	0.0027
110	0.0037	0.0010	0.0028
111	0.0038	0.0010	0.0028
112	0.0038	0.0010	0.0028
113	0.0039	0.0010	0.0029
114	0.0039	0.0010	0.0029
115	0.0039	0.0010	0.0029
116	0.0040	0.0010	0.0029
117	0.0040	0.0011	0.0030
118	0.0041	0.0011	0.0030
119	0.0041	0.0011	0.0030
120	0.0041	0.0011	0.0031
121	0.0042	0.0011	0.0031
122	0.0042	0.0011	0.0031
123	0.0043	0.0011	0.0032
124	0.0043	0.0011	0.0032
125	0.0044	0.0012	0.0032
126	0.0044	0.0012	0.0033
127	0.0045	0.0012	0.0033
128	0.0045	0.0012	0.0033
129	0.0046	0.0012	0.0034
130	0.0046	0.0012	0.0034
131	0.0047	0.0012	0.0035
132	0.0048	0.0013	0.0035
133	0.0048	0.0013	0.0036
134	0.0049	0.0013	0.0036
135	0.0050	0.0013	0.0037
136	0.0050	0.0013	0.0037
137	0.0051	0.0013	0.0038
138	0.0052	0.0014	0.0038
139	0.0053	0.0014	0.0039
140	0.0053	0.0014	0.0039
141	0.0054	0.0014	0.0040
142	0.0055	0.0014	0.0040
143	0.0056	0.0015	0.0041
144	0.0056	0.0015	0.0042
145	0.0040	0.0010	0.0029
146	0.0040	0.0011	0.0030
147	0.0041	0.0011	0.0030
148	0.0042	0.0011	0.0031
149	0.0043	0.0011	0.0032
150	0.0043	0.0011	0.0032
151	0.0045	0.0012	0.0033
152	0.0045	0.0012	0.0033
153	0.0046	0.0012	0.0034
154	0.0047	0.0012	0.0035
155	0.0049	0.0013	0.0036
156	0.0049	0.0013	0.0036
157	0.0051	0.0013	0.0037
158	0.0052	0.0014	0.0038
159	0.0053	0.0014	0.0039
160	0.0054	0.0014	0.0040
161	0.0056	0.0015	0.0041
162	0.0057	0.0015	0.0042
163	0.0059	0.0016	0.0044
164	0.0061	0.0016	0.0045
165	0.0063	0.0017	0.0046
166	0.0064	0.0017	0.0047
167	0.0067	0.0018	0.0049
168	0.0069	0.0018	0.0051
169	0.0081	0.0021	0.0060
170	0.0083	0.0022	0.0061
171	0.0087	0.0023	0.0064
172	0.0089	0.0024	0.0066
173	0.0094	0.0025	0.0069
174	0.0097	0.0026	0.0071
175	0.0103	0.0027	0.0076
176	0.0106	0.0028	0.0078
177	0.0114	0.0030	0.0084
178	0.0118	0.0031	0.0087
179	0.0127	0.0034	0.0094
180	0.0133	0.0035	0.0098
181	0.0145	0.0038	0.0107
182	0.0152	0.0040	0.0112
183	0.0169	0.0045	0.0125

		PR3.out	
184	0.0180	0.0047	0.0132
185	0.0348	0.0092	0.0256
186	0.0371	0.0098	0.0273
187	0.0430	0.0100	0.0331
188	0.0470	0.0100	0.0370
189	0.0584	0.0100	0.0484
190	0.0673	0.0100	0.0573
191	0.1021	0.0100	0.0921
192	0.1483	0.0100	0.1383
193	0.6414	0.0100	0.6314
194	0.0804	0.0100	0.0704
195	0.0520	0.0100	0.0420
196	0.0398	0.0100	0.0298
197	0.0191	0.0050	0.0141
198	0.0160	0.0042	0.0118
199	0.0139	0.0037	0.0102
200	0.0122	0.0032	0.0090
201	0.0110	0.0029	0.0081
202	0.0100	0.0026	0.0074
203	0.0092	0.0024	0.0068
204	0.0085	0.0022	0.0063
205	0.0070	0.0018	0.0052
206	0.0066	0.0017	0.0048
207	0.0062	0.0016	0.0045
208	0.0058	0.0015	0.0043
209	0.0055	0.0015	0.0041
210	0.0052	0.0014	0.0039
211	0.0050	0.0013	0.0037
212	0.0048	0.0013	0.0035
213	0.0046	0.0012	0.0034
214	0.0044	0.0012	0.0032
215	0.0042	0.0011	0.0031
216	0.0041	0.0011	0.0030
217	0.0057	0.0015	0.0042
218	0.0055	0.0015	0.0041
219	0.0054	0.0014	0.0039
220	0.0052	0.0014	0.0038
221	0.0051	0.0013	0.0037
222	0.0049	0.0013	0.0036
223	0.0048	0.0013	0.0035
224	0.0047	0.0012	0.0034
225	0.0046	0.0012	0.0034
226	0.0045	0.0012	0.0033
227	0.0044	0.0011	0.0032
228	0.0043	0.0011	0.0031
229	0.0042	0.0011	0.0031
230	0.0041	0.0011	0.0030
231	0.0040	0.0011	0.0029
232	0.0039	0.0010	0.0029
233	0.0038	0.0010	0.0028
234	0.0038	0.0010	0.0028
235	0.0037	0.0010	0.0027
236	0.0036	0.0010	0.0027
237	0.0036	0.0009	0.0026
238	0.0035	0.0009	0.0026
239	0.0035	0.0009	0.0025
240	0.0034	0.0009	0.0025
241	0.0033	0.0009	0.0025
242	0.0033	0.0009	0.0024
243	0.0032	0.0009	0.0024
244	0.0032	0.0008	0.0023
245	0.0031	0.0008	0.0023
246	0.0031	0.0008	0.0023
247	0.0031	0.0008	0.0022
248	0.0030	0.0008	0.0022
249	0.0030	0.0008	0.0022
250	0.0029	0.0008	0.0022
251	0.0029	0.0008	0.0021
252	0.0028	0.0008	0.0021
253	0.0028	0.0007	0.0021
254	0.0028	0.0007	0.0020
255	0.0027	0.0007	0.0020
256	0.0027	0.0007	0.0020
257	0.0027	0.0007	0.0020
258	0.0026	0.0007	0.0019
259	0.0026	0.0007	0.0019
260	0.0026	0.0007	0.0019
261	0.0026	0.0007	0.0019

262	0.0025	0.0007	0.0019
263	0.0025	0.0007	0.0018
264	0.0025	0.0007	0.0018
265	0.0024	0.0006	0.0018
266	0.0024	0.0006	0.0018
267	0.0024	0.0006	0.0018
268	0.0024	0.0006	0.0017
269	0.0023	0.0006	0.0017
270	0.0023	0.0006	0.0017
271	0.0023	0.0006	0.0017
272	0.0023	0.0006	0.0017
273	0.0023	0.0006	0.0017
274	0.0022	0.0006	0.0016
275	0.0022	0.0006	0.0016
276	0.0022	0.0006	0.0016
277	0.0022	0.0006	0.0016
278	0.0021	0.0006	0.0016
279	0.0021	0.0006	0.0016
280	0.0021	0.0006	0.0016
281	0.0021	0.0006	0.0015
282	0.0021	0.0005	0.0015
283	0.0021	0.0005	0.0015
284	0.0020	0.0005	0.0015
285	0.0020	0.0005	0.0015
286	0.0020	0.0005	0.0015
287	0.0020	0.0005	0.0015
288	0.0020	0.0005	0.0015

Total soil rain loss = 0.42(In)
Total effective rainfall = 2.08(In)
Peak flow rate in flood hydrograph = 1180.83(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	300.0	600.0	900.0	1200.0
0+ 5	0.0008	0.11	Q					
0+10	0.0044	0.52	Q					
0+15	0.0139	1.37	Q					
0+20	0.0360	3.22	Q					
0+25	0.0700	4.94	Q					
0+30	0.1119	6.07	Q					
0+35	0.1589	6.83	Q					
0+40	0.2099	7.41	Q					
0+45	0.2641	7.87	Q					
0+50	0.3210	8.26	Q					
0+55	0.3801	8.58	Q					
1+ 0	0.4411	8.86	Q					
1+ 5	0.5039	9.11	Q					
1+10	0.5682	9.34	Q					
1+15	0.6339	9.53	Q					
1+20	0.7007	9.70	Q					
1+25	0.7686	9.86	Q					
1+30	0.8375	10.01	Q					
1+35	0.9074	10.15	Q					
1+40	0.9781	10.27	Q					
1+45	1.0497	10.39	Q					
1+50	1.1220	10.50	Q					
1+55	1.1950	10.60	Q					
2+ 0	1.2688	10.70	Q					
2+ 5	1.3431	10.79	Q					
2+10	1.4180	10.88	Q					
2+15	1.4934	10.95	Q					
2+20	1.5693	11.02	Q					
2+25	1.6457	11.10	Q					
2+30	1.7227	11.18	Q					
2+35	1.8002	11.25	Q					
2+40	1.8782	11.33	Q					
2+45	1.9568	11.41	Q					
2+50	2.0359	11.48	Q					
2+55	2.1154	11.55	Q					
3+ 0	2.1954	11.61	Q					

3+ 5	2.2758	11.68	Q
3+10	2.3566	11.74	Q
3+15	2.4379	11.79	Q
3+20	2.5195	11.85	Q
3+25	2.6015	11.91	QV
3+30	2.6839	11.97	QV
3+35	2.7667	12.02	QV
3+40	2.8499	12.09	QV
3+45	2.9336	12.15	QV
3+50	3.0176	12.21	QV
3+55	3.1021	12.27	QV
4+ 0	3.1871	12.33	QV
4+ 5	3.2724	12.39	QV
4+10	3.3582	12.46	QV
4+15	3.4445	12.52	QV
4+20	3.5312	12.59	QV
4+25	3.6184	12.66	QV
4+30	3.7060	12.72	QV
4+35	3.7941	12.79	QV
4+40	3.8827	12.86	QV
4+45	3.9717	12.93	QV
4+50	4.0613	13.00	QV
4+55	4.1513	13.07	QV
5+ 0	4.2418	13.15	QV
5+ 5	4.3329	13.22	QV
5+10	4.4244	13.29	QV
5+15	4.5165	13.37	QV
5+20	4.6091	13.45	QV
5+25	4.7022	13.52	QV
5+30	4.7959	13.60	QV
5+35	4.8901	13.68	QV
5+40	4.9849	13.76	QV
5+45	5.0803	13.84	QV
5+50	5.1762	13.93	Q V
5+55	5.2727	14.01	Q V
6+ 0	5.3698	14.10	Q V
6+ 5	5.4674	14.18	Q V
6+10	5.5657	14.27	Q V
6+15	5.6646	14.36	Q V
6+20	5.7641	14.45	Q V
6+25	5.8642	14.54	Q V
6+30	5.9650	14.63	Q V
6+35	6.0664	14.73	Q V
6+40	6.1685	14.82	Q V
6+45	6.2713	14.92	Q V
6+50	6.3747	15.02	Q V
6+55	6.4788	15.12	Q V
7+ 0	6.5836	15.22	Q V
7+ 5	6.6891	15.32	Q V
7+10	6.7954	15.43	Q V
7+15	6.9024	15.53	Q V
7+20	7.0101	15.64	Q V
7+25	7.1186	15.75	Q V
7+30	7.2278	15.86	Q V
7+35	7.3378	15.98	Q V
7+40	7.4487	16.09	Q V
7+45	7.5603	16.21	Q V
7+50	7.6727	16.33	Q V
7+55	7.7860	16.45	Q V
8+ 0	7.9002	16.57	Q V
8+ 5	8.0151	16.70	Q V
8+10	8.1310	16.83	Q V
8+15	8.2478	16.95	Q V
8+20	8.3655	17.09	Q V
8+25	8.4841	17.22	Q V
8+30	8.6036	17.36	Q V
8+35	8.7241	17.50	Q V
8+40	8.8456	17.64	Q V
8+45	8.9681	17.78	Q V
8+50	9.0916	17.93	Q V
8+55	9.2162	18.08	Q V
9+ 0	9.3418	18.24	Q V
9+ 5	9.4685	18.39	Q V
9+10	9.5962	18.55	Q V
9+15	9.7251	18.72	Q V
9+20	9.8552	18.88	Q V
9+25	9.9864	19.05	Q V
9+30	10.1188	19.23	Q V

9+35	10.2524	19.40	Q	V
9+40	10.3873	19.58	Q	V
9+45	10.5234	19.77	Q	V
9+50	10.6608	19.96	Q	V
9+55	10.7996	20.15	Q	V
10+ 0	10.9397	20.35	Q	V
10+ 5	11.0812	20.55	Q	V
10+10	11.2242	20.75	Q	V
10+15	11.3685	20.96	Q	V
10+20	11.5144	21.18	Q	V
10+25	11.6618	21.40	Q	V
10+30	11.8107	21.63	Q	V
10+35	11.9613	21.86	Q	V
10+40	12.1135	22.10	Q	V
10+45	12.2673	22.34	Q	V
10+50	12.4230	22.59	Q	V
10+55	12.5803	22.85	Q	V
11+ 0	12.7395	23.11	Q	V
11+ 5	12.9005	23.38	Q	V
11+10	13.0635	23.66	Q	V
11+15	13.2284	23.95	Q	V
11+20	13.3954	24.24	Q	V
11+25	13.5644	24.54	Q	V
11+30	13.7356	24.86	Q	V
11+35	13.9090	25.18	Q	V
11+40	14.0847	25.51	Q	V
11+45	14.2627	25.85	Q	V
11+50	14.4432	26.20	Q	V
11+55	14.6261	26.56	Q	V
12+ 0	14.8116	26.94	Q	V
12+ 5	14.9991	27.22	Q	V
12+10	15.1868	27.25	Q	V
12+15	15.3719	26.88	Q	V
12+20	15.5484	25.63	Q	V
12+25	15.7170	24.48	Q	V
12+30	15.8815	23.87	Q	V
12+35	16.0441	23.61	Q	V
12+40	16.2060	23.52	Q	V
12+45	16.3682	23.54	Q	V
12+50	16.5310	23.65	Q	V
12+55	16.6951	23.83	Q	V
13+ 0	16.8609	24.07	Q	V
13+ 5	17.0286	24.35	Q	V
13+10	17.1985	24.68	Q	V
13+15	17.3710	25.05	Q	V
13+20	17.5465	25.48	Q	V
13+25	17.7250	25.93	Q	V
13+30	17.9070	26.43	Q	V
13+35	18.0927	26.95	Q	V
13+40	18.2824	27.54	Q	V
13+45	18.4763	28.16	Q	V
13+50	18.6748	28.83	Q	V
13+55	18.8783	29.54	Q	V
14+ 0	19.0871	30.32	Q	V
14+ 5	19.3019	31.19	Q	V
14+10	19.5243	32.29	Q	V
14+15	19.7560	33.64	Q	V
14+20	20.0009	35.56	Q	V
14+25	20.2592	37.50	Q	V
14+30	20.5299	39.31	Q	V
14+35	20.8124	41.02	Q	V
14+40	21.1073	42.82	Q	V
14+45	21.4150	44.67	Q	V
14+50	21.7367	46.71	Q	V
14+55	22.0732	48.85	Q	V
15+ 0	22.4261	51.25	Q	V
15+ 5	22.7970	53.85	Q	V
15+10	23.1882	56.81	Q	V
15+15	23.6018	60.05	Q	V
15+20	24.0414	63.83	Q	V
15+25	24.5159	68.90	Q	V
15+30	25.0464	77.02	Q	V
15+35	25.6623	89.44	Q	V
15+40	26.4294	111.38	Q	V
15+45	27.3655	135.93	Q	V
15+50	28.4868	162.81	Q	V
15+55	29.8339	195.59	Q	V
16+ 0	31.5196	244.77	Q	V

			PR3.out			
16+ 5	33.9514	353.09		Q	V	
16+10	37.7316	548.88			V	Q
16+15	43.2121	795.78			V	
16+20	51.3445	1180.83				Q
16+25	58.8826	1094.52			V	
16+30	64.4492	808.28				Q
16+35	68.5959	602.09			VQ	
16+40	71.8960	479.18			V	
16+45	74.5802	389.74		Q		
16+50	76.8373	327.73		Q		
16+55	78.7494	277.64		Q		
17+ 0	80.4135	241.62				
17+ 5	81.8997	215.80				
17+10	83.2129	190.68				
17+15	84.3513	165.29				
17+20	85.3587	146.27				
17+25	86.2765	133.27				
17+30	87.1050	120.30				
17+35	87.8613	109.82				
17+40	88.5323	97.42				
17+45	89.1555	90.49				
17+50	89.7179	81.66				
17+55	90.2311	74.52				
18+ 0	90.7011	68.24				
18+ 5	91.1159	60.23				
18+10	91.5025	56.13				
18+15	91.8416	49.24				
18+20	92.1718	47.95				
18+25	92.5084	48.87				
18+30	92.8443	48.78				
18+35	93.1733	47.77				
18+40	93.4922	46.31				
18+45	93.7940	43.81				
18+50	94.0593	38.52				
18+55	94.3090	36.27				
19+ 0	94.5463	34.45				
19+ 5	94.7603	31.07				
19+10	94.9400	26.09				
19+15	95.1122	25.01				
19+20	95.2788	24.18				
19+25	95.4406	23.50				
19+30	95.5986	22.95				
19+35	95.7532	22.44				
19+40	95.9044	21.95				
19+45	96.0524	21.50				
19+50	96.1976	21.07				
19+55	96.3399	20.66				
20+ 0	96.4795	20.27				
20+ 5	96.6166	19.90				
20+10	96.7511	19.54				
20+15	96.8833	19.19				
20+20	97.0132	18.85				
20+25	97.1408	18.54				
20+30	97.2664	18.23				
20+35	97.3900	17.94				
20+40	97.5116	17.67				
20+45	97.6315	17.40				
20+50	97.7494	17.13				
20+55	97.8657	16.87				
21+ 0	97.9802	16.63				
21+ 5	98.0930	16.38				
21+10	98.2042	16.14				
21+15	98.3137	15.91				
21+20	98.4217	15.68				
21+25	98.5282	15.46				
21+30	98.6332	15.25				
21+35	98.7369	15.05				
21+40	98.8391	14.85				
21+45	98.9400	14.65				
21+50	99.0397	14.47				
21+55	99.1381	14.29				
22+ 0	99.2352	14.11				
22+ 5	99.3312	13.94				
22+10	99.4261	13.77				
22+15	99.5198	13.61				
22+20	99.6124	13.45				
22+25	99.7040	13.30				
22+30	99.7946	13.15				

22+35	99.8841	13.00	Q				V
22+40	99.9727	12.86	Q				V
22+45	100.0603	12.72	Q				V
22+50	100.1470	12.59	Q				V
22+55	100.2328	12.46	Q				V
23+ 0	100.3177	12.33	Q				V
23+ 5	100.4018	12.20	Q				V
23+10	100.4850	12.08	Q				V
23+15	100.5673	11.96	Q				V
23+20	100.6489	11.84	Q				V
23+25	100.7297	11.73	Q				V
23+30	100.8097	11.62	Q				V
23+35	100.8889	11.51	Q				V
23+40	100.9674	11.40	Q				V
23+45	101.0452	11.30	Q				V
23+50	101.1223	11.19	Q				V
23+55	101.1987	11.09	Q				V
24+ 0	101.2744	10.99	Q				V
24+ 5	101.3487	10.79	Q				V
24+10	101.4195	10.28	Q				V
24+15	101.4839	9.35	Q				V
24+20	101.5351	7.43	Q				V
24+25	101.5741	5.66	Q				V
24+30	101.6051	4.50	Q				V
24+35	101.6309	3.74	Q				V
24+40	101.6526	3.15	Q				V
24+45	101.6711	2.69	Q				V
24+50	101.6871	2.31	Q				V
24+55	101.7009	2.01	Q				V
25+ 0	101.7129	1.75	Q				V
25+ 5	101.7234	1.52	Q				V
25+10	101.7324	1.32	Q				V
25+15	101.7404	1.15	Q				V
25+20	101.7473	1.01	Q				V
25+25	101.7534	0.89	Q				V
25+30	101.7588	0.77	Q				V
25+35	101.7634	0.67	Q				V
25+40	101.7674	0.59	Q				V
25+45	101.7709	0.51	Q				V
25+50	101.7740	0.44	Q				V
25+55	101.7765	0.38	Q				V
26+ 0	101.7788	0.32	Q				V
26+ 5	101.7807	0.28	Q				V
26+10	101.7823	0.24	Q				V
26+15	101.7838	0.21	Q				V
26+20	101.7851	0.19	Q				V
26+25	101.7862	0.16	Q				V
26+30	101.7871	0.13	Q				V
26+35	101.7879	0.11	Q				V
26+40	101.7884	0.08	Q				V
26+45	101.7888	0.05	Q				V
26+50	101.7890	0.04	Q				V
26+55	101.7892	0.02	Q				V
27+ 0	101.7893	0.01	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
DEVELOPED CONDITIONS AREA 4
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
252.12	1	1.40

Rainfall data for year 100		
252.12	6	1.84

Rainfall data for year 100		
252.12	24	2.56

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
83.4	96.0	252.12	1.000	0.078	0.900	0.070

Area-averaged adjusted loss rate Fm (In/Hr) = 0.070

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
226.91	0.900	83.4	96.0	0.41	0.830
25.21	0.100	98.0	98.0	0.20	0.910

Area-averaged catchment yield fraction, Y = 0.838

Area-averaged low loss fraction, Yb = 0.162

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Watercourse length = 2544.00(Ft.)

Length from concentration point to centroid = 1272.00(Ft.)

Elevation difference along watercourse = 7.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 252.12(Ac.)

Catchment Lag time = 0.223 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 37.3904

Hydrograph baseflow = 0.00(CFS)
 Average maximum watershed loss rate(Fm) = 0.070(In/Hr)
 Average low loss rate fraction (Yb) = 0.162 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.664(In)
 Computed peak 30-minute rainfall = 1.137(In)
 Specified peak 1-hour rainfall = 1.400(In)
 Computed peak 3-hour rainfall = 1.655(In)
 Specified peak 6-hour rainfall = 1.840(In)
 Specified peak 24-hour rainfall = 2.560(In)

Rainfall depth area reduction factors:

Using a total area of 252.12(Ac.) (Ref: fig. E-4)

5-minute factor = 0.988	Adjusted rainfall = 0.656(In)
30-minute factor = 0.988	Adjusted rainfall = 1.124(In)
1-hour factor = 0.988	Adjusted rainfall = 1.383(In)
3-hour factor = 0.999	Adjusted rainfall = 1.653(In)
6-hour factor = 0.999	Adjusted rainfall = 1.839(In)
24-hour factor = 1.000	Adjusted rainfall = 2.559(In)

U n i t H y d r o g r a p h

++++++
 Interval 'S' Graph Unit Hydrograph
 Number Mean values ((CFS))

(K = 3049.08 (CFS))

1	2.472	75.379
2	15.816	406.853
3	45.120	893.499
4	62.878	541.477
5	72.516	293.858
6	78.963	196.590
7	83.526	139.111
8	87.097	108.875
9	89.762	81.265
10	91.831	63.078
11	93.557	52.648
12	94.920	41.541
13	96.052	34.517
14	96.965	27.851
15	97.646	20.769
16	98.096	13.697
17	98.503	12.436
18	98.952	13.678
19	99.392	13.426
20	99.682	8.831
21	100.000	4.416

 Peak Unit Adjusted mass rainfall Unit rainfall
 Number (In) (In)

1	0.6565	0.6565
2	0.8082	0.1517
3	0.9127	0.1045
4	0.9950	0.0823
5	1.0639	0.0689
6	1.1237	0.0598
7	1.1769	0.0532
8	1.2250	0.0481
9	1.2691	0.0441
10	1.3098	0.0408
11	1.3478	0.0380
12	1.3835	0.0356
13	1.4015	0.0181
14	1.4184	0.0169
15	1.4344	0.0159
16	1.4494	0.0151
17	1.4638	0.0143
18	1.4774	0.0136
19	1.4904	0.0130
20	1.5028	0.0124
21	1.5147	0.0119
22	1.5262	0.0115
23	1.5372	0.0110
24	1.5478	0.0106

		PR4.out
25	1.5581	0.0103
26	1.5680	0.0099
27	1.5777	0.0096
28	1.5870	0.0093
29	1.5960	0.0090
30	1.6048	0.0088
31	1.6134	0.0085
32	1.6217	0.0083
33	1.6298	0.0081
34	1.6377	0.0079
35	1.6454	0.0077
36	1.6529	0.0075
37	1.6599	0.0070
38	1.6667	0.0068
39	1.6734	0.0067
40	1.6799	0.0065
41	1.6863	0.0064
42	1.6925	0.0063
43	1.6986	0.0061
44	1.7046	0.0060
45	1.7105	0.0059
46	1.7163	0.0058
47	1.7220	0.0057
48	1.7276	0.0056
49	1.7331	0.0055
50	1.7384	0.0054
51	1.7437	0.0053
52	1.7489	0.0052
53	1.7541	0.0051
54	1.7591	0.0050
55	1.7641	0.0050
56	1.7690	0.0049
57	1.7738	0.0048
58	1.7785	0.0047
59	1.7832	0.0047
60	1.7878	0.0046
61	1.7923	0.0045
62	1.7968	0.0045
63	1.8012	0.0044
64	1.8056	0.0044
65	1.8099	0.0043
66	1.8141	0.0042
67	1.8183	0.0042
68	1.8225	0.0041
69	1.8266	0.0041
70	1.8306	0.0040
71	1.8346	0.0040
72	1.8386	0.0039
73	1.8446	0.0061
74	1.8506	0.0060
75	1.8565	0.0059
76	1.8624	0.0059
77	1.8682	0.0058
78	1.8740	0.0058
79	1.8797	0.0057
80	1.8853	0.0056
81	1.8909	0.0056
82	1.8965	0.0055
83	1.9020	0.0055
84	1.9074	0.0054
85	1.9128	0.0054
86	1.9182	0.0053
87	1.9235	0.0053
88	1.9287	0.0053
89	1.9339	0.0052
90	1.9391	0.0052
91	1.9442	0.0051
92	1.9493	0.0051
93	1.9543	0.0050
94	1.9593	0.0050
95	1.9642	0.0050
96	1.9692	0.0049
97	1.9740	0.0049
98	1.9789	0.0048
99	1.9837	0.0048
100	1.9884	0.0048
101	1.9932	0.0047
102	1.9978	0.0047

		PR4.out
103	2.0025	0.0047
104	2.0071	0.0046
105	2.0117	0.0046
106	2.0163	0.0046
107	2.0208	0.0045
108	2.0253	0.0045
109	2.0297	0.0045
110	2.0342	0.0044
111	2.0386	0.0044
112	2.0429	0.0044
113	2.0473	0.0043
114	2.0516	0.0043
115	2.0558	0.0043
116	2.0601	0.0043
117	2.0643	0.0042
118	2.0685	0.0042
119	2.0727	0.0042
120	2.0768	0.0041
121	2.0809	0.0041
122	2.0850	0.0041
123	2.0891	0.0041
124	2.0931	0.0040
125	2.0971	0.0040
126	2.1011	0.0040
127	2.1051	0.0040
128	2.1090	0.0039
129	2.1130	0.0039
130	2.1169	0.0039
131	2.1207	0.0039
132	2.1246	0.0039
133	2.1284	0.0038
134	2.1322	0.0038
135	2.1360	0.0038
136	2.1398	0.0038
137	2.1435	0.0037
138	2.1472	0.0037
139	2.1509	0.0037
140	2.1546	0.0037
141	2.1583	0.0037
142	2.1619	0.0036
143	2.1655	0.0036
144	2.1691	0.0036
145	2.1727	0.0036
146	2.1763	0.0036
147	2.1798	0.0035
148	2.1834	0.0035
149	2.1869	0.0035
150	2.1904	0.0035
151	2.1939	0.0035
152	2.1973	0.0035
153	2.2007	0.0034
154	2.2042	0.0034
155	2.2076	0.0034
156	2.2110	0.0034
157	2.2143	0.0034
158	2.2177	0.0034
159	2.2210	0.0033
160	2.2244	0.0033
161	2.2277	0.0033
162	2.2310	0.0033
163	2.2342	0.0033
164	2.2375	0.0033
165	2.2407	0.0032
166	2.2440	0.0032
167	2.2472	0.0032
168	2.2504	0.0032
169	2.2536	0.0032
170	2.2568	0.0032
171	2.2599	0.0032
172	2.2631	0.0031
173	2.2662	0.0031
174	2.2693	0.0031
175	2.2724	0.0031
176	2.2755	0.0031
177	2.2786	0.0031
178	2.2817	0.0031
179	2.2847	0.0031
180	2.2877	0.0030

		PR4.out
181	2.2908	0.0030
182	2.2938	0.0030
183	2.2968	0.0030
184	2.2998	0.0030
185	2.3028	0.0030
186	2.3057	0.0030
187	2.3087	0.0030
188	2.3116	0.0029
189	2.3145	0.0029
190	2.3174	0.0029
191	2.3204	0.0029
192	2.3232	0.0029
193	2.3261	0.0029
194	2.3290	0.0029
195	2.3319	0.0029
196	2.3347	0.0028
197	2.3375	0.0028
198	2.3404	0.0028
199	2.3432	0.0028
200	2.3460	0.0028
201	2.3488	0.0028
202	2.3516	0.0028
203	2.3543	0.0028
204	2.3571	0.0028
205	2.3598	0.0028
206	2.3626	0.0027
207	2.3653	0.0027
208	2.3680	0.0027
209	2.3707	0.0027
210	2.3734	0.0027
211	2.3761	0.0027
212	2.3788	0.0027
213	2.3815	0.0027
214	2.3842	0.0027
215	2.3868	0.0027
216	2.3894	0.0026
217	2.3921	0.0026
218	2.3947	0.0026
219	2.3973	0.0026
220	2.3999	0.0026
221	2.4025	0.0026
222	2.4051	0.0026
223	2.4077	0.0026
224	2.4103	0.0026
225	2.4128	0.0026
226	2.4154	0.0026
227	2.4179	0.0025
228	2.4205	0.0025
229	2.4230	0.0025
230	2.4255	0.0025
231	2.4280	0.0025
232	2.4305	0.0025
233	2.4330	0.0025
234	2.4355	0.0025
235	2.4380	0.0025
236	2.4405	0.0025
237	2.4429	0.0025
238	2.4454	0.0025
239	2.4478	0.0024
240	2.4503	0.0024
241	2.4527	0.0024
242	2.4551	0.0024
243	2.4575	0.0024
244	2.4599	0.0024
245	2.4624	0.0024
246	2.4647	0.0024
247	2.4671	0.0024
248	2.4695	0.0024
249	2.4719	0.0024
250	2.4742	0.0024
251	2.4766	0.0024
252	2.4790	0.0024
253	2.4813	0.0023
254	2.4836	0.0023
255	2.4860	0.0023
256	2.4883	0.0023
257	2.4906	0.0023
258	2.4929	0.0023

		PR4.out
259	2.4952	0.0023
260	2.4975	0.0023
261	2.4998	0.0023
262	2.5021	0.0023
263	2.5044	0.0023
264	2.5066	0.0023
265	2.5089	0.0023
266	2.5111	0.0023
267	2.5134	0.0022
268	2.5156	0.0022
269	2.5179	0.0022
270	2.5201	0.0022
271	2.5223	0.0022
272	2.5245	0.0022
273	2.5267	0.0022
274	2.5289	0.0022
275	2.5311	0.0022
276	2.5333	0.0022
277	2.5355	0.0022
278	2.5377	0.0022
279	2.5399	0.0022
280	2.5421	0.0022
281	2.5442	0.0022
282	2.5464	0.0022
283	2.5485	0.0022
284	2.5507	0.0021
285	2.5528	0.0021
286	2.5549	0.0021
287	2.5571	0.0021
288	2.5592	0.0021

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0021	0.0003	0.0018
2	0.0021	0.0003	0.0018
3	0.0021	0.0003	0.0018
4	0.0021	0.0003	0.0018
5	0.0022	0.0003	0.0018
6	0.0022	0.0004	0.0018
7	0.0022	0.0004	0.0018
8	0.0022	0.0004	0.0018
9	0.0022	0.0004	0.0018
10	0.0022	0.0004	0.0018
11	0.0022	0.0004	0.0019
12	0.0022	0.0004	0.0019
13	0.0022	0.0004	0.0019
14	0.0022	0.0004	0.0019
15	0.0022	0.0004	0.0019
16	0.0023	0.0004	0.0019
17	0.0023	0.0004	0.0019
18	0.0023	0.0004	0.0019
19	0.0023	0.0004	0.0019
20	0.0023	0.0004	0.0019
21	0.0023	0.0004	0.0019
22	0.0023	0.0004	0.0019
23	0.0023	0.0004	0.0020
24	0.0023	0.0004	0.0020
25	0.0024	0.0004	0.0020
26	0.0024	0.0004	0.0020
27	0.0024	0.0004	0.0020
28	0.0024	0.0004	0.0020
29	0.0024	0.0004	0.0020
30	0.0024	0.0004	0.0020
31	0.0024	0.0004	0.0020
32	0.0024	0.0004	0.0020
33	0.0024	0.0004	0.0020
34	0.0024	0.0004	0.0021
35	0.0025	0.0004	0.0021
36	0.0025	0.0004	0.0021
37	0.0025	0.0004	0.0021
38	0.0025	0.0004	0.0021
39	0.0025	0.0004	0.0021
40	0.0025	0.0004	0.0021
41	0.0025	0.0004	0.0021
42	0.0025	0.0004	0.0021
43	0.0026	0.0004	0.0021

		PR4.out	
44	0.0026	0.0004	0.0022
45	0.0026	0.0004	0.0022
46	0.0026	0.0004	0.0022
47	0.0026	0.0004	0.0022
48	0.0026	0.0004	0.0022
49	0.0026	0.0004	0.0022
50	0.0027	0.0004	0.0022
51	0.0027	0.0004	0.0022
52	0.0027	0.0004	0.0022
53	0.0027	0.0004	0.0023
54	0.0027	0.0004	0.0023
55	0.0027	0.0004	0.0023
56	0.0027	0.0004	0.0023
57	0.0028	0.0004	0.0023
58	0.0028	0.0004	0.0023
59	0.0028	0.0005	0.0023
60	0.0028	0.0005	0.0023
61	0.0028	0.0005	0.0024
62	0.0028	0.0005	0.0024
63	0.0029	0.0005	0.0024
64	0.0029	0.0005	0.0024
65	0.0029	0.0005	0.0024
66	0.0029	0.0005	0.0024
67	0.0029	0.0005	0.0025
68	0.0029	0.0005	0.0025
69	0.0030	0.0005	0.0025
70	0.0030	0.0005	0.0025
71	0.0030	0.0005	0.0025
72	0.0030	0.0005	0.0025
73	0.0030	0.0005	0.0025
74	0.0031	0.0005	0.0026
75	0.0031	0.0005	0.0026
76	0.0031	0.0005	0.0026
77	0.0031	0.0005	0.0026
78	0.0031	0.0005	0.0026
79	0.0032	0.0005	0.0026
80	0.0032	0.0005	0.0027
81	0.0032	0.0005	0.0027
82	0.0032	0.0005	0.0027
83	0.0032	0.0005	0.0027
84	0.0033	0.0005	0.0027
85	0.0033	0.0005	0.0028
86	0.0033	0.0005	0.0028
87	0.0033	0.0005	0.0028
88	0.0034	0.0005	0.0028
89	0.0034	0.0005	0.0028
90	0.0034	0.0006	0.0029
91	0.0034	0.0006	0.0029
92	0.0035	0.0006	0.0029
93	0.0035	0.0006	0.0029
94	0.0035	0.0006	0.0029
95	0.0035	0.0006	0.0030
96	0.0036	0.0006	0.0030
97	0.0036	0.0006	0.0030
98	0.0036	0.0006	0.0030
99	0.0037	0.0006	0.0031
100	0.0037	0.0006	0.0031
101	0.0037	0.0006	0.0031
102	0.0037	0.0006	0.0031
103	0.0038	0.0006	0.0032
104	0.0038	0.0006	0.0032
105	0.0039	0.0006	0.0032
106	0.0039	0.0006	0.0032
107	0.0039	0.0006	0.0033
108	0.0039	0.0006	0.0033
109	0.0040	0.0006	0.0033
110	0.0040	0.0007	0.0034
111	0.0041	0.0007	0.0034
112	0.0041	0.0007	0.0034
113	0.0041	0.0007	0.0035
114	0.0042	0.0007	0.0035
115	0.0042	0.0007	0.0035
116	0.0043	0.0007	0.0036
117	0.0043	0.0007	0.0036
118	0.0043	0.0007	0.0036
119	0.0044	0.0007	0.0037
120	0.0044	0.0007	0.0037
121	0.0045	0.0007	0.0038

		PR4.out	
122	0.0045	0.0007	0.0038
123	0.0046	0.0007	0.0038
124	0.0046	0.0007	0.0039
125	0.0047	0.0008	0.0039
126	0.0047	0.0008	0.0040
127	0.0048	0.0008	0.0040
128	0.0048	0.0008	0.0041
129	0.0049	0.0008	0.0041
130	0.0050	0.0008	0.0041
131	0.0050	0.0008	0.0042
132	0.0051	0.0008	0.0043
133	0.0052	0.0008	0.0043
134	0.0052	0.0008	0.0044
135	0.0053	0.0009	0.0044
136	0.0053	0.0009	0.0045
137	0.0054	0.0009	0.0046
138	0.0055	0.0009	0.0046
139	0.0056	0.0009	0.0047
140	0.0056	0.0009	0.0047
141	0.0058	0.0009	0.0048
142	0.0058	0.0009	0.0049
143	0.0059	0.0010	0.0050
144	0.0060	0.0010	0.0050
145	0.0039	0.0006	0.0033
146	0.0040	0.0006	0.0033
147	0.0041	0.0007	0.0034
148	0.0041	0.0007	0.0035
149	0.0042	0.0007	0.0036
150	0.0043	0.0007	0.0036
151	0.0044	0.0007	0.0037
152	0.0045	0.0007	0.0038
153	0.0046	0.0007	0.0039
154	0.0047	0.0008	0.0039
155	0.0048	0.0008	0.0040
156	0.0049	0.0008	0.0041
157	0.0050	0.0008	0.0042
158	0.0051	0.0008	0.0043
159	0.0053	0.0009	0.0044
160	0.0054	0.0009	0.0045
161	0.0056	0.0009	0.0047
162	0.0057	0.0009	0.0048
163	0.0059	0.0010	0.0049
164	0.0060	0.0010	0.0050
165	0.0063	0.0010	0.0052
166	0.0064	0.0010	0.0053
167	0.0067	0.0011	0.0056
168	0.0068	0.0011	0.0057
169	0.0075	0.0012	0.0063
170	0.0077	0.0013	0.0065
171	0.0081	0.0013	0.0068
172	0.0083	0.0013	0.0070
173	0.0088	0.0014	0.0074
174	0.0090	0.0015	0.0076
175	0.0096	0.0016	0.0081
176	0.0099	0.0016	0.0083
177	0.0106	0.0017	0.0089
178	0.0110	0.0018	0.0092
179	0.0119	0.0019	0.0100
180	0.0124	0.0020	0.0104
181	0.0136	0.0022	0.0114
182	0.0143	0.0023	0.0120
183	0.0159	0.0026	0.0134
184	0.0169	0.0027	0.0142
185	0.0356	0.0058	0.0299
186	0.0380	0.0058	0.0321
187	0.0441	0.0058	0.0382
188	0.0481	0.0058	0.0423
189	0.0598	0.0058	0.0540
190	0.0689	0.0058	0.0630
191	0.1045	0.0058	0.0987
192	0.1517	0.0058	0.1459
193	0.6565	0.0058	0.6506
194	0.0823	0.0058	0.0764
195	0.0532	0.0058	0.0473
196	0.0408	0.0058	0.0349
197	0.0181	0.0029	0.0151
198	0.0151	0.0024	0.0126
199	0.0130	0.0021	0.0109

		PR4.out	
200	0.0115	0.0019	0.0096
201	0.0103	0.0017	0.0086
202	0.0093	0.0015	0.0078
203	0.0085	0.0014	0.0072
204	0.0079	0.0013	0.0066
205	0.0070	0.0011	0.0058
206	0.0065	0.0011	0.0055
207	0.0061	0.0010	0.0051
208	0.0058	0.0009	0.0048
209	0.0055	0.0009	0.0046
210	0.0052	0.0008	0.0044
211	0.0050	0.0008	0.0042
212	0.0047	0.0008	0.0040
213	0.0045	0.0007	0.0038
214	0.0044	0.0007	0.0037
215	0.0042	0.0007	0.0035
216	0.0040	0.0007	0.0034
217	0.0061	0.0010	0.0051
218	0.0059	0.0010	0.0049
219	0.0057	0.0009	0.0048
220	0.0055	0.0009	0.0046
221	0.0054	0.0009	0.0045
222	0.0053	0.0009	0.0044
223	0.0051	0.0008	0.0043
224	0.0050	0.0008	0.0042
225	0.0049	0.0008	0.0041
226	0.0048	0.0008	0.0040
227	0.0047	0.0008	0.0039
228	0.0046	0.0007	0.0038
229	0.0045	0.0007	0.0037
230	0.0044	0.0007	0.0037
231	0.0043	0.0007	0.0036
232	0.0042	0.0007	0.0035
233	0.0041	0.0007	0.0034
234	0.0040	0.0007	0.0034
235	0.0040	0.0006	0.0033
236	0.0039	0.0006	0.0033
237	0.0038	0.0006	0.0032
238	0.0038	0.0006	0.0032
239	0.0037	0.0006	0.0031
240	0.0036	0.0006	0.0031
241	0.0036	0.0006	0.0030
242	0.0035	0.0006	0.0030
243	0.0035	0.0006	0.0029
244	0.0034	0.0006	0.0029
245	0.0034	0.0005	0.0028
246	0.0033	0.0005	0.0028
247	0.0033	0.0005	0.0027
248	0.0032	0.0005	0.0027
249	0.0032	0.0005	0.0027
250	0.0031	0.0005	0.0026
251	0.0031	0.0005	0.0026
252	0.0031	0.0005	0.0026
253	0.0030	0.0005	0.0025
254	0.0030	0.0005	0.0025
255	0.0030	0.0005	0.0025
256	0.0029	0.0005	0.0024
257	0.0029	0.0005	0.0024
258	0.0028	0.0005	0.0024
259	0.0028	0.0005	0.0024
260	0.0028	0.0005	0.0023
261	0.0028	0.0004	0.0023
262	0.0027	0.0004	0.0023
263	0.0027	0.0004	0.0023
264	0.0027	0.0004	0.0022
265	0.0026	0.0004	0.0022
266	0.0026	0.0004	0.0022
267	0.0026	0.0004	0.0022
268	0.0026	0.0004	0.0021
269	0.0025	0.0004	0.0021
270	0.0025	0.0004	0.0021
271	0.0025	0.0004	0.0021
272	0.0025	0.0004	0.0021
273	0.0024	0.0004	0.0020
274	0.0024	0.0004	0.0020
275	0.0024	0.0004	0.0020
276	0.0024	0.0004	0.0020
277	0.0023	0.0004	0.0020

PR4.out

278	0.0023	0.0004	0.0019
279	0.0023	0.0004	0.0019
280	0.0023	0.0004	0.0019
281	0.0023	0.0004	0.0019
282	0.0022	0.0004	0.0019
283	0.0022	0.0004	0.0019
284	0.0022	0.0004	0.0018
285	0.0022	0.0004	0.0018
286	0.0022	0.0004	0.0018
287	0.0022	0.0003	0.0018
288	0.0021	0.0003	0.0018

Total soil rain loss = 0.26(In)
 Total effective rainfall = 2.30(In)
 Peak flow rate in flood hydrograph = 757.43(CFS)

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24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	200.0	400.0	600.0	800.0
0+ 5	0.0009	0.13	Q				
0+10	0.0068	0.86	Q				
0+15	0.0237	2.45	Q				
0+20	0.0473	3.42	Q				
0+25	0.0745	3.96	Q				
0+30	0.1043	4.32	Q				
0+35	0.1359	4.59	Q				
0+40	0.1689	4.80	Q				
0+45	0.2031	4.96	Q				
0+50	0.2382	5.10	Q				
0+55	0.2741	5.21	Q				
1+ 0	0.3106	5.30	Q				
1+ 5	0.3477	5.39	Q				
1+10	0.3853	5.46	Q				
1+15	0.4233	5.52	Q				
1+20	0.4617	5.57	Q				
1+25	0.5004	5.61	Q				
1+30	0.5393	5.66	Q				
1+35	0.5787	5.71	Q				
1+40	0.6183	5.75	Q				
1+45	0.6581	5.78	Q				
1+50	0.6981	5.81	Q				
1+55	0.7383	5.83	Q				
2+ 0	0.7786	5.86	Q				
2+ 5	0.8192	5.89	Q				
2+10	0.8599	5.91	Q				
2+15	0.9008	5.94	Q				
2+20	0.9419	5.96	Q				
2+25	0.9831	5.99	Q				
2+30	1.0246	6.02	Q				
2+35	1.0662	6.05	Q				
2+40	1.1081	6.07	Q				
2+45	1.1501	6.10	Q				
2+50	1.1923	6.13	Q				
2+55	1.2348	6.16	QV				
3+ 0	1.2774	6.19	QV				
3+ 5	1.3202	6.22	QV				
3+10	1.3633	6.25	QV				
3+15	1.4065	6.28	QV				
3+20	1.4500	6.31	QV				
3+25	1.4936	6.34	QV				
3+30	1.5375	6.37	QV				
3+35	1.5816	6.40	QV				
3+40	1.6259	6.44	QV				
3+45	1.6705	6.47	QV				
3+50	1.7153	6.50	QV				
3+55	1.7603	6.53	QV				
4+ 0	1.8055	6.57	QV				
4+ 5	1.8509	6.60	QV				
4+10	1.8966	6.63	QV				
4+15	1.9426	6.67	QV				
4+20	1.9887	6.70	QV				

4+25	2.0352	6.74	QV
4+30	2.0818	6.78	QV
4+35	2.1287	6.81	QV
4+40	2.1759	6.85	QV
4+45	2.2233	6.89	QV
4+50	2.2710	6.92	QV
4+55	2.3190	6.96	QV
5+ 0	2.3672	7.00	QV
5+ 5	2.4157	7.04	Q V
5+10	2.4645	7.08	Q V
5+15	2.5135	7.12	Q V
5+20	2.5628	7.16	Q V
5+25	2.6124	7.20	Q V
5+30	2.6623	7.24	Q V
5+35	2.7125	7.29	Q V
5+40	2.7630	7.33	Q V
5+45	2.8138	7.37	Q V
5+50	2.8649	7.42	Q V
5+55	2.9163	7.46	Q V
6+ 0	2.9680	7.51	Q V
6+ 5	3.0201	7.56	Q V
6+10	3.0724	7.60	Q V
6+15	3.1251	7.65	Q V
6+20	3.1781	7.70	Q V
6+25	3.2315	7.75	Q V
6+30	3.2852	7.80	Q V
6+35	3.3392	7.85	Q V
6+40	3.3936	7.90	Q V
6+45	3.4484	7.95	Q V
6+50	3.5035	8.00	Q V
6+55	3.5590	8.06	Q V
7+ 0	3.6148	8.11	Q V
7+ 5	3.6711	8.17	Q V
7+10	3.7277	8.22	Q V
7+15	3.7847	8.28	Q V
7+20	3.8421	8.34	Q V
7+25	3.9000	8.40	Q V
7+30	3.9582	8.46	Q V
7+35	4.0169	8.52	Q V
7+40	4.0759	8.58	Q V
7+45	4.1355	8.64	Q V
7+50	4.1954	8.71	Q V
7+55	4.2558	8.77	Q V
8+ 0	4.3167	8.84	Q V
8+ 5	4.3780	8.91	Q V
8+10	4.4398	8.97	Q V
8+15	4.5021	9.04	Q V
8+20	4.5649	9.11	Q V
8+25	4.6282	9.19	Q V
8+30	4.6920	9.26	Q V
8+35	4.7563	9.34	Q V
8+40	4.8211	9.41	Q V
8+45	4.8865	9.49	Q V
8+50	4.9524	9.57	Q V
8+55	5.0189	9.65	Q V
9+ 0	5.0859	9.73	Q V
9+ 5	5.1536	9.82	Q V
9+10	5.2218	9.91	Q V
9+15	5.2906	10.00	Q V
9+20	5.3601	10.08	Q V
9+25	5.4302	10.18	Q V
9+30	5.5009	10.27	Q V
9+35	5.5723	10.37	Q V
9+40	5.6443	10.46	Q V
9+45	5.7171	10.56	Q V
9+50	5.7906	10.66	Q V
9+55	5.8647	10.77	Q V
10+ 0	5.9396	10.88	Q V
10+ 5	6.0153	10.99	Q V
10+10	6.0918	11.10	Q V
10+15	6.1690	11.22	Q V
10+20	6.2470	11.33	Q V
10+25	6.3259	11.45	Q V
10+30	6.4056	11.57	Q V
10+35	6.4862	11.70	Q V
10+40	6.5677	11.83	Q V
10+45	6.6501	11.97	Q V
10+50	6.7334	12.10	Q V

23+55	47.9892	5.67	Q			V
24+ 0	48.0280	5.63	Q			V
24+ 5	48.0655	5.44	Q			V
24+10	48.0977	4.68	Q			V
24+15	48.1188	3.06	Q			V
24+20	48.1330	2.07	Q			V
24+25	48.1436	1.53	Q			V
24+30	48.1516	1.17	Q			V
24+35	48.1579	0.91	Q			V
24+40	48.1628	0.71	Q			V
24+45	48.1667	0.56	Q			V
24+50	48.1698	0.45	Q			V
24+55	48.1722	0.35	Q			V
25+ 0	48.1741	0.27	Q			V
25+ 5	48.1755	0.21	Q			V
25+10	48.1766	0.16	Q			V
25+15	48.1775	0.12	Q			V
25+20	48.1781	0.10	Q			V
25+25	48.1786	0.07	Q			V
25+30	48.1790	0.05	Q			V
25+35	48.1791	0.02	Q			V
25+40	48.1792	0.01	Q			V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA
DEVELOPED CONDITIONS AREA 5
100-YEAR, 24-HOUR STORM EVENT
BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
587.02	1	1.39

Rainfall data for year 100		
587.02	6	1.83

Rainfall data for year 100		
587.02	24	2.51

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
80.1	94.1	587.02	1.000	0.116	0.900	0.104

Area-averaged adjusted loss rate Fm (In/Hr) = 0.104

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
528.32	0.900	80.1	94.1	0.63	0.751
58.70	0.100	98.0	98.0	0.20	0.909

Area-averaged catchment yield fraction, Y = 0.767

Area-averaged low loss fraction, Yb = 0.233

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Watercourse length = 5748.00(Ft.)

Length from concentration point to centroid = 2874.00(Ft.)

Elevation difference along watercourse = 12.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 587.02(Ac.)

Catchment Lag time = 0.436 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 19.0957

Hydrograph baseflow = 0.00(CFS)
 Average maximum watershed loss rate(Fm) = 0.104(In/Hr)
 Average low loss rate fraction (Yb) = 0.233 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.660(In)
 Computed peak 30-minute rainfall = 1.129(In)
 Specified peak 1-hour rainfall = 1.390(In)
 Computed peak 3-hour rainfall = 1.645(In)
 Specified peak 6-hour rainfall = 1.830(In)
 Specified peak 24-hour rainfall = 2.510(In)

Rainfall depth area reduction factors:

Using a total area of 587.02(Ac.) (Ref: fig. E-4)

5-minute factor = 0.972	Adjusted rainfall = 0.641(In)
30-minute factor = 0.972	Adjusted rainfall = 1.098(In)
1-hour factor = 0.972	Adjusted rainfall = 1.352(In)
3-hour factor = 0.997	Adjusted rainfall = 1.640(In)
6-hour factor = 0.998	Adjusted rainfall = 1.827(In)
24-hour factor = 0.999	Adjusted rainfall = 2.508(In)

U n i t H y d r o g r a p h		
Interval	'S' Graph	Unit Hydrograph
Number	Mean values	((CFS))

	(K = 7099.27 (CFS))	
1	0.931	66.118
2	4.178	230.471
3	10.163	424.919
4	23.204	925.804
5	40.297	1213.466
6	52.534	868.774
7	60.821	588.316
8	66.686	416.377
9	71.364	332.047
10	75.119	266.639
11	78.290	225.064
12	80.877	183.651
13	83.079	156.378
14	85.047	139.704
15	86.826	126.322
16	88.363	109.060
17	89.605	88.179
18	90.714	78.733
19	91.749	73.474
20	92.669	65.302
21	93.524	60.733
22	94.259	52.172
23	94.908	46.092
24	95.543	45.068
25	96.064	36.981
26	96.560	35.247
27	97.006	31.635
28	97.352	24.585
29	97.693	24.190
30	97.933	17.046
31	98.124	13.557
32	98.322	14.012
33	98.547	16.028
34	98.776	16.268
35	99.006	16.268
36	99.235	16.268
37	99.457	15.810
38	99.601	10.157
39	99.720	8.473
40	99.839	8.473
41	100.000	4.236

Peak Unit	Adjusted mass rainfall	Unit rainfall
Number	(In)	(In)
1	0.6414	0.6414
2	0.7897	0.1483
3	0.8918	0.1021
4	0.9722	0.0804

		PR5.out
5	1.0395	0.0673
6	1.0980	0.0584
7	1.1499	0.0520
8	1.1969	0.0470
9	1.2400	0.0430
10	1.2798	0.0398
11	1.3169	0.0371
12	1.3518	0.0348
13	1.3709	0.0191
14	1.3889	0.0180
15	1.4058	0.0169
16	1.4218	0.0160
17	1.4371	0.0152
18	1.4516	0.0145
19	1.4654	0.0139
20	1.4787	0.0133
21	1.4914	0.0127
22	1.5037	0.0122
23	1.5155	0.0118
24	1.5268	0.0114
25	1.5378	0.0110
26	1.5485	0.0106
27	1.5588	0.0103
28	1.5687	0.0100
29	1.5784	0.0097
30	1.5879	0.0094
31	1.5971	0.0092
32	1.6060	0.0089
33	1.6147	0.0087
34	1.6232	0.0085
35	1.6315	0.0083
36	1.6396	0.0081
37	1.6466	0.0070
38	1.6534	0.0069
39	1.6602	0.0067
40	1.6667	0.0066
41	1.6731	0.0064
42	1.6794	0.0063
43	1.6856	0.0062
44	1.6917	0.0061
45	1.6976	0.0059
46	1.7034	0.0058
47	1.7091	0.0057
48	1.7148	0.0056
49	1.7203	0.0055
50	1.7257	0.0054
51	1.7310	0.0053
52	1.7363	0.0052
53	1.7415	0.0052
54	1.7465	0.0051
55	1.7515	0.0050
56	1.7565	0.0049
57	1.7613	0.0049
58	1.7661	0.0048
59	1.7708	0.0047
60	1.7755	0.0046
61	1.7800	0.0046
62	1.7846	0.0045
63	1.7890	0.0045
64	1.7934	0.0044
65	1.7978	0.0043
66	1.8020	0.0043
67	1.8063	0.0042
68	1.8104	0.0042
69	1.8146	0.0041
70	1.8186	0.0041
71	1.8227	0.0040
72	1.8266	0.0040
73	1.8324	0.0058
74	1.8381	0.0057
75	1.8438	0.0057
76	1.8494	0.0056
77	1.8549	0.0055
78	1.8604	0.0055
79	1.8658	0.0054
80	1.8712	0.0054
81	1.8765	0.0053
82	1.8818	0.0053

		PR5.out
83	1.8870	0.0052
84	1.8922	0.0052
85	1.8973	0.0051
86	1.9024	0.0051
87	1.9074	0.0050
88	1.9124	0.0050
89	1.9174	0.0049
90	1.9223	0.0049
91	1.9272	0.0049
92	1.9320	0.0048
93	1.9368	0.0048
94	1.9415	0.0047
95	1.9462	0.0047
96	1.9509	0.0047
97	1.9555	0.0046
98	1.9601	0.0046
99	1.9647	0.0046
100	1.9692	0.0045
101	1.9737	0.0045
102	1.9781	0.0045
103	1.9825	0.0044
104	1.9869	0.0044
105	1.9913	0.0044
106	1.9956	0.0043
107	1.9999	0.0043
108	2.0041	0.0043
109	2.0084	0.0042
110	2.0126	0.0042
111	2.0167	0.0042
112	2.0209	0.0041
113	2.0250	0.0041
114	2.0291	0.0041
115	2.0331	0.0041
116	2.0372	0.0040
117	2.0412	0.0040
118	2.0451	0.0040
119	2.0491	0.0040
120	2.0530	0.0039
121	2.0569	0.0039
122	2.0608	0.0039
123	2.0647	0.0039
124	2.0685	0.0038
125	2.0723	0.0038
126	2.0761	0.0038
127	2.0798	0.0038
128	2.0836	0.0037
129	2.0873	0.0037
130	2.0910	0.0037
131	2.0946	0.0037
132	2.0983	0.0036
133	2.1019	0.0036
134	2.1055	0.0036
135	2.1091	0.0036
136	2.1126	0.0036
137	2.1162	0.0035
138	2.1197	0.0035
139	2.1232	0.0035
140	2.1267	0.0035
141	2.1302	0.0035
142	2.1336	0.0034
143	2.1370	0.0034
144	2.1404	0.0034
145	2.1438	0.0034
146	2.1472	0.0034
147	2.1506	0.0034
148	2.1539	0.0033
149	2.1572	0.0033
150	2.1605	0.0033
151	2.1638	0.0033
152	2.1671	0.0033
153	2.1703	0.0033
154	2.1736	0.0032
155	2.1768	0.0032
156	2.1800	0.0032
157	2.1832	0.0032
158	2.1864	0.0032
159	2.1895	0.0032
160	2.1927	0.0031

		PR5.out
161	2.1958	0.0031
162	2.1989	0.0031
163	2.2020	0.0031
164	2.2051	0.0031
165	2.2081	0.0031
166	2.2112	0.0031
167	2.2142	0.0030
168	2.2173	0.0030
169	2.2203	0.0030
170	2.2233	0.0030
171	2.2263	0.0030
172	2.2292	0.0030
173	2.2322	0.0030
174	2.2351	0.0029
175	2.2381	0.0029
176	2.2410	0.0029
177	2.2439	0.0029
178	2.2468	0.0029
179	2.2497	0.0029
180	2.2525	0.0029
181	2.2554	0.0029
182	2.2582	0.0028
183	2.2611	0.0028
184	2.2639	0.0028
185	2.2667	0.0028
186	2.2695	0.0028
187	2.2723	0.0028
188	2.2750	0.0028
189	2.2778	0.0028
190	2.2806	0.0028
191	2.2833	0.0027
192	2.2860	0.0027
193	2.2887	0.0027
194	2.2914	0.0027
195	2.2941	0.0027
196	2.2968	0.0027
197	2.2995	0.0027
198	2.3022	0.0027
199	2.3048	0.0027
200	2.3075	0.0026
201	2.3101	0.0026
202	2.3127	0.0026
203	2.3153	0.0026
204	2.3179	0.0026
205	2.3205	0.0026
206	2.3231	0.0026
207	2.3257	0.0026
208	2.3283	0.0026
209	2.3308	0.0026
210	2.3334	0.0025
211	2.3359	0.0025
212	2.3384	0.0025
213	2.3409	0.0025
214	2.3434	0.0025
215	2.3459	0.0025
216	2.3484	0.0025
217	2.3509	0.0025
218	2.3534	0.0025
219	2.3559	0.0025
220	2.3583	0.0025
221	2.3608	0.0024
222	2.3632	0.0024
223	2.3656	0.0024
224	2.3681	0.0024
225	2.3705	0.0024
226	2.3729	0.0024
227	2.3753	0.0024
228	2.3777	0.0024
229	2.3800	0.0024
230	2.3824	0.0024
231	2.3848	0.0024
232	2.3871	0.0024
233	2.3895	0.0023
234	2.3918	0.0023
235	2.3942	0.0023
236	2.3965	0.0023
237	2.3988	0.0023
238	2.4011	0.0023

		PR5.out
239	2.4034	0.0023
240	2.4057	0.0023
241	2.4080	0.0023
242	2.4103	0.0023
243	2.4126	0.0023
244	2.4148	0.0023
245	2.4171	0.0023
246	2.4193	0.0023
247	2.4216	0.0022
248	2.4238	0.0022
249	2.4261	0.0022
250	2.4283	0.0022
251	2.4305	0.0022
252	2.4327	0.0022
253	2.4349	0.0022
254	2.4371	0.0022
255	2.4393	0.0022
256	2.4415	0.0022
257	2.4437	0.0022
258	2.4458	0.0022
259	2.4480	0.0022
260	2.4502	0.0022
261	2.4523	0.0022
262	2.4545	0.0021
263	2.4566	0.0021
264	2.4587	0.0021
265	2.4609	0.0021
266	2.4630	0.0021
267	2.4651	0.0021
268	2.4672	0.0021
269	2.4693	0.0021
270	2.4714	0.0021
271	2.4735	0.0021
272	2.4756	0.0021
273	2.4777	0.0021
274	2.4797	0.0021
275	2.4818	0.0021
276	2.4839	0.0021
277	2.4859	0.0021
278	2.4880	0.0020
279	2.4900	0.0020
280	2.4920	0.0020
281	2.4941	0.0020
282	2.4961	0.0020
283	2.4981	0.0020
284	2.5001	0.0020
285	2.5022	0.0020
286	2.5042	0.0020
287	2.5062	0.0020
288	2.5082	0.0020

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0020	0.0005	0.0015
2	0.0020	0.0005	0.0015
3	0.0020	0.0005	0.0015
4	0.0020	0.0005	0.0015
5	0.0020	0.0005	0.0016
6	0.0020	0.0005	0.0016
7	0.0020	0.0005	0.0016
8	0.0020	0.0005	0.0016
9	0.0021	0.0005	0.0016
10	0.0021	0.0005	0.0016
11	0.0021	0.0005	0.0016
12	0.0021	0.0005	0.0016
13	0.0021	0.0005	0.0016
14	0.0021	0.0005	0.0016
15	0.0021	0.0005	0.0016
16	0.0021	0.0005	0.0016
17	0.0021	0.0005	0.0016
18	0.0021	0.0005	0.0016
19	0.0022	0.0005	0.0016
20	0.0022	0.0005	0.0017
21	0.0022	0.0005	0.0017
22	0.0022	0.0005	0.0017
23	0.0022	0.0005	0.0017

		PR5.out	
24	0.0022	0.0005	0.0017
25	0.0022	0.0005	0.0017
26	0.0022	0.0005	0.0017
27	0.0022	0.0005	0.0017
28	0.0022	0.0005	0.0017
29	0.0023	0.0005	0.0017
30	0.0023	0.0005	0.0017
31	0.0023	0.0005	0.0017
32	0.0023	0.0005	0.0017
33	0.0023	0.0005	0.0018
34	0.0023	0.0005	0.0018
35	0.0023	0.0005	0.0018
36	0.0023	0.0005	0.0018
37	0.0023	0.0005	0.0018
38	0.0023	0.0005	0.0018
39	0.0024	0.0006	0.0018
40	0.0024	0.0006	0.0018
41	0.0024	0.0006	0.0018
42	0.0024	0.0006	0.0018
43	0.0024	0.0006	0.0019
44	0.0024	0.0006	0.0019
45	0.0024	0.0006	0.0019
46	0.0024	0.0006	0.0019
47	0.0025	0.0006	0.0019
48	0.0025	0.0006	0.0019
49	0.0025	0.0006	0.0019
50	0.0025	0.0006	0.0019
51	0.0025	0.0006	0.0019
52	0.0025	0.0006	0.0019
53	0.0025	0.0006	0.0020
54	0.0026	0.0006	0.0020
55	0.0026	0.0006	0.0020
56	0.0026	0.0006	0.0020
57	0.0026	0.0006	0.0020
58	0.0026	0.0006	0.0020
59	0.0026	0.0006	0.0020
60	0.0026	0.0006	0.0020
61	0.0027	0.0006	0.0020
62	0.0027	0.0006	0.0021
63	0.0027	0.0006	0.0021
64	0.0027	0.0006	0.0021
65	0.0027	0.0006	0.0021
66	0.0027	0.0006	0.0021
67	0.0028	0.0006	0.0021
68	0.0028	0.0006	0.0021
69	0.0028	0.0007	0.0021
70	0.0028	0.0007	0.0022
71	0.0028	0.0007	0.0022
72	0.0028	0.0007	0.0022
73	0.0029	0.0007	0.0022
74	0.0029	0.0007	0.0022
75	0.0029	0.0007	0.0022
76	0.0029	0.0007	0.0022
77	0.0029	0.0007	0.0023
78	0.0030	0.0007	0.0023
79	0.0030	0.0007	0.0023
80	0.0030	0.0007	0.0023
81	0.0030	0.0007	0.0023
82	0.0030	0.0007	0.0023
83	0.0031	0.0007	0.0024
84	0.0031	0.0007	0.0024
85	0.0031	0.0007	0.0024
86	0.0031	0.0007	0.0024
87	0.0032	0.0007	0.0024
88	0.0032	0.0007	0.0024
89	0.0032	0.0007	0.0025
90	0.0032	0.0008	0.0025
91	0.0033	0.0008	0.0025
92	0.0033	0.0008	0.0025
93	0.0033	0.0008	0.0025
94	0.0033	0.0008	0.0025
95	0.0034	0.0008	0.0026
96	0.0034	0.0008	0.0026
97	0.0034	0.0008	0.0026
98	0.0034	0.0008	0.0026
99	0.0035	0.0008	0.0027
100	0.0035	0.0008	0.0027
101	0.0035	0.0008	0.0027

		PR5.out	
102	0.0035	0.0008	0.0027
103	0.0036	0.0008	0.0027
104	0.0036	0.0008	0.0028
105	0.0036	0.0009	0.0028
106	0.0037	0.0009	0.0028
107	0.0037	0.0009	0.0028
108	0.0037	0.0009	0.0029
109	0.0038	0.0009	0.0029
110	0.0038	0.0009	0.0029
111	0.0039	0.0009	0.0030
112	0.0039	0.0009	0.0030
113	0.0039	0.0009	0.0030
114	0.0040	0.0009	0.0030
115	0.0040	0.0009	0.0031
116	0.0040	0.0009	0.0031
117	0.0041	0.0010	0.0031
118	0.0041	0.0010	0.0032
119	0.0042	0.0010	0.0032
120	0.0042	0.0010	0.0032
121	0.0043	0.0010	0.0033
122	0.0043	0.0010	0.0033
123	0.0044	0.0010	0.0033
124	0.0044	0.0010	0.0034
125	0.0045	0.0010	0.0034
126	0.0045	0.0010	0.0034
127	0.0046	0.0011	0.0035
128	0.0046	0.0011	0.0035
129	0.0047	0.0011	0.0036
130	0.0047	0.0011	0.0036
131	0.0048	0.0011	0.0037
132	0.0048	0.0011	0.0037
133	0.0049	0.0011	0.0038
134	0.0049	0.0012	0.0038
135	0.0050	0.0012	0.0039
136	0.0051	0.0012	0.0039
137	0.0052	0.0012	0.0040
138	0.0052	0.0012	0.0040
139	0.0053	0.0012	0.0041
140	0.0054	0.0013	0.0041
141	0.0055	0.0013	0.0042
142	0.0055	0.0013	0.0042
143	0.0057	0.0013	0.0043
144	0.0057	0.0013	0.0044
145	0.0040	0.0009	0.0030
146	0.0040	0.0009	0.0031
147	0.0041	0.0010	0.0032
148	0.0042	0.0010	0.0032
149	0.0043	0.0010	0.0033
150	0.0043	0.0010	0.0033
151	0.0045	0.0010	0.0034
152	0.0045	0.0011	0.0035
153	0.0046	0.0011	0.0036
154	0.0047	0.0011	0.0036
155	0.0049	0.0011	0.0037
156	0.0049	0.0011	0.0038
157	0.0051	0.0012	0.0039
158	0.0052	0.0012	0.0040
159	0.0053	0.0012	0.0041
160	0.0054	0.0013	0.0042
161	0.0056	0.0013	0.0043
162	0.0057	0.0013	0.0044
163	0.0059	0.0014	0.0046
164	0.0061	0.0014	0.0046
165	0.0063	0.0015	0.0048
166	0.0064	0.0015	0.0049
167	0.0067	0.0016	0.0051
168	0.0069	0.0016	0.0053
169	0.0081	0.0019	0.0062
170	0.0083	0.0019	0.0064
171	0.0087	0.0020	0.0067
172	0.0089	0.0021	0.0068
173	0.0094	0.0022	0.0072
174	0.0097	0.0023	0.0074
175	0.0103	0.0024	0.0079
176	0.0106	0.0025	0.0082
177	0.0114	0.0027	0.0087
178	0.0118	0.0028	0.0090
179	0.0127	0.0030	0.0098

		PR5.out	
180	0.0133	0.0031	0.0102
181	0.0145	0.0034	0.0111
182	0.0152	0.0036	0.0117
183	0.0169	0.0040	0.0130
184	0.0180	0.0042	0.0138
185	0.0348	0.0081	0.0267
186	0.0371	0.0087	0.0285
187	0.0430	0.0087	0.0343
188	0.0470	0.0087	0.0383
189	0.0584	0.0087	0.0497
190	0.0673	0.0087	0.0586
191	0.1021	0.0087	0.0934
192	0.1483	0.0087	0.1396
193	0.6414	0.0087	0.6327
194	0.0804	0.0087	0.0717
195	0.0520	0.0087	0.0433
196	0.0398	0.0087	0.0311
197	0.0191	0.0045	0.0147
198	0.0160	0.0037	0.0123
199	0.0139	0.0032	0.0106
200	0.0122	0.0029	0.0094
201	0.0110	0.0026	0.0084
202	0.0100	0.0023	0.0077
203	0.0092	0.0021	0.0070
204	0.0085	0.0020	0.0065
205	0.0070	0.0016	0.0054
206	0.0066	0.0015	0.0050
207	0.0062	0.0014	0.0047
208	0.0058	0.0014	0.0045
209	0.0055	0.0013	0.0042
210	0.0052	0.0012	0.0040
211	0.0050	0.0012	0.0038
212	0.0048	0.0011	0.0037
213	0.0046	0.0011	0.0035
214	0.0044	0.0010	0.0034
215	0.0042	0.0010	0.0032
216	0.0041	0.0010	0.0031
217	0.0058	0.0013	0.0044
218	0.0056	0.0013	0.0043
219	0.0054	0.0013	0.0042
220	0.0053	0.0012	0.0040
221	0.0051	0.0012	0.0039
222	0.0050	0.0012	0.0038
223	0.0049	0.0011	0.0037
224	0.0047	0.0011	0.0036
225	0.0046	0.0011	0.0035
226	0.0045	0.0011	0.0035
227	0.0044	0.0010	0.0034
228	0.0043	0.0010	0.0033
229	0.0042	0.0010	0.0032
230	0.0041	0.0010	0.0032
231	0.0041	0.0009	0.0031
232	0.0040	0.0009	0.0030
233	0.0039	0.0009	0.0030
234	0.0038	0.0009	0.0029
235	0.0038	0.0009	0.0029
236	0.0037	0.0009	0.0028
237	0.0036	0.0008	0.0028
238	0.0036	0.0008	0.0027
239	0.0035	0.0008	0.0027
240	0.0034	0.0008	0.0026
241	0.0034	0.0008	0.0026
242	0.0033	0.0008	0.0026
243	0.0033	0.0008	0.0025
244	0.0032	0.0008	0.0025
245	0.0032	0.0007	0.0024
246	0.0031	0.0007	0.0024
247	0.0031	0.0007	0.0024
248	0.0031	0.0007	0.0023
249	0.0030	0.0007	0.0023
250	0.0030	0.0007	0.0023
251	0.0029	0.0007	0.0022
252	0.0029	0.0007	0.0022
253	0.0029	0.0007	0.0022
254	0.0028	0.0007	0.0022
255	0.0028	0.0007	0.0021
256	0.0028	0.0006	0.0021
257	0.0027	0.0006	0.0021

258	0.0027	0.0006	0.0021
259	0.0027	0.0006	0.0020
260	0.0026	0.0006	0.0020
261	0.0026	0.0006	0.0020
262	0.0026	0.0006	0.0020
263	0.0025	0.0006	0.0019
264	0.0025	0.0006	0.0019
265	0.0025	0.0006	0.0019
266	0.0025	0.0006	0.0019
267	0.0024	0.0006	0.0019
268	0.0024	0.0006	0.0018
269	0.0024	0.0006	0.0018
270	0.0024	0.0006	0.0018
271	0.0023	0.0005	0.0018
272	0.0023	0.0005	0.0018
273	0.0023	0.0005	0.0018
274	0.0023	0.0005	0.0017
275	0.0022	0.0005	0.0017
276	0.0022	0.0005	0.0017
277	0.0022	0.0005	0.0017
278	0.0022	0.0005	0.0017
279	0.0022	0.0005	0.0017
280	0.0021	0.0005	0.0016
281	0.0021	0.0005	0.0016
282	0.0021	0.0005	0.0016
283	0.0021	0.0005	0.0016
284	0.0021	0.0005	0.0016
285	0.0021	0.0005	0.0016
286	0.0020	0.0005	0.0016
287	0.0020	0.0005	0.0015
288	0.0020	0.0005	0.0015

Total soil rain loss = 0.37(In)
Total effective rainfall = 2.13(In)
Peak flow rate in flood hydrograph = 1116.46(CFS)

+++++

24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	300.0	600.0	900.0	1200.0
0+ 5	0.0007	0.10	Q				
0+10	0.0038	0.45	Q				
0+15	0.0114	1.10	Q				
0+20	0.0288	2.52	Q				
0+25	0.0590	4.39	Q				
0+30	0.0985	5.73	Q				
0+35	0.1444	6.66	Q				
0+40	0.1948	7.32	Q				
0+45	0.2489	7.86	Q				
0+50	0.3060	8.30	Q				
0+55	0.3658	8.67	Q				
1+ 0	0.4277	8.99	Q				
1+ 5	0.4915	9.27	Q				
1+10	0.5571	9.52	Q				
1+15	0.6242	9.75	Q				
1+20	0.6928	9.96	Q				
1+25	0.7626	10.14	Q				
1+30	0.8336	10.30	Q				
1+35	0.9056	10.46	Q				
1+40	0.9786	10.60	Q				
1+45	1.0526	10.74	Q				
1+50	1.1274	10.87	Q				
1+55	1.2031	10.99	Q				
2+ 0	1.2796	11.10	Q				
2+ 5	1.3568	11.21	Q				
2+10	1.4347	11.31	Q				
2+15	1.5133	11.41	Q				
2+20	1.5925	11.50	Q				
2+25	1.6723	11.59	Q				
2+30	1.7526	11.67	Q				
2+35	1.8335	11.74	Q				
2+40	1.9149	11.82	Q				

2+45	1.9968	11.90	Q
2+50	2.0793	11.98	Q
2+55	2.1623	12.06	Q
3+ 0	2.2459	12.14	Q
3+ 5	2.3301	12.22	Q
3+10	2.4147	12.29	Q
3+15	2.4999	12.37	Q
3+20	2.5855	12.44	Q
3+25	2.6717	12.50	QV
3+30	2.7582	12.57	QV
3+35	2.8452	12.63	QV
3+40	2.9326	12.69	QV
3+45	3.0204	12.75	QV
3+50	3.1086	12.82	QV
3+55	3.1974	12.88	QV
4+ 0	3.2865	12.95	QV
4+ 5	3.3761	13.01	QV
4+10	3.4662	13.08	QV
4+15	3.5568	13.15	QV
4+20	3.6478	13.21	QV
4+25	3.7393	13.28	QV
4+30	3.8312	13.35	QV
4+35	3.9237	13.43	QV
4+40	4.0166	13.50	QV
4+45	4.1101	13.57	QV
4+50	4.2041	13.64	QV
4+55	4.2985	13.72	QV
5+ 0	4.3935	13.79	QV
5+ 5	4.4890	13.87	QV
5+10	4.5851	13.95	QV
5+15	4.6817	14.03	QV
5+20	4.7788	14.10	QV
5+25	4.8765	14.19	QV
5+30	4.9748	14.27	QV
5+35	5.0736	14.35	QV
5+40	5.1730	14.43	QV
5+45	5.2730	14.52	Q V
5+50	5.3736	14.60	Q V
5+55	5.4748	14.69	Q V
6+ 0	5.5766	14.78	Q V
6+ 5	5.6790	14.87	Q V
6+10	5.7820	14.96	Q V
6+15	5.8857	15.05	Q V
6+20	5.9900	15.15	Q V
6+25	6.0950	15.24	Q V
6+30	6.2006	15.34	Q V
6+35	6.3069	15.44	Q V
6+40	6.4139	15.53	Q V
6+45	6.5216	15.64	Q V
6+50	6.6299	15.74	Q V
6+55	6.7390	15.84	Q V
7+ 0	6.8489	15.95	Q V
7+ 5	6.9594	16.05	Q V
7+10	7.0707	16.16	Q V
7+15	7.1828	16.27	Q V
7+20	7.2956	16.38	Q V
7+25	7.4092	16.50	Q V
7+30	7.5237	16.61	Q V
7+35	7.6389	16.73	Q V
7+40	7.7549	16.85	Q V
7+45	7.8718	16.97	Q V
7+50	7.9896	17.09	Q V
7+55	8.1081	17.22	Q V
8+ 0	8.2276	17.35	Q V
8+ 5	8.3480	17.48	Q V
8+10	8.4693	17.61	Q V
8+15	8.5915	17.74	Q V
8+20	8.7146	17.88	Q V
8+25	8.8388	18.02	Q V
8+30	8.9638	18.16	Q V
8+35	9.0899	18.31	Q V
8+40	9.2170	18.45	Q V
8+45	9.3451	18.60	Q V
8+50	9.4743	18.76	Q V
8+55	9.6046	18.91	Q V
9+ 0	9.7359	19.07	Q V
9+ 5	9.8684	19.23	Q V
9+10	10.0020	19.40	Q V

9+15	10.1367	19.57	Q	V
9+20	10.2726	19.74	Q	V
9+25	10.4098	19.91	Q	V
9+30	10.5482	20.09	Q	V
9+35	10.6878	20.27	Q	V
9+40	10.8287	20.46	Q	V
9+45	10.9709	20.65	Q	V
9+50	11.1145	20.85	Q	V
9+55	11.2594	21.04	Q	V
10+ 0	11.4057	21.25	Q	V
10+ 5	11.5535	21.46	Q	V
10+10	11.7027	21.67	Q	V
10+15	11.8535	21.89	Q	V
10+20	12.0057	22.11	Q	V
10+25	12.1595	22.34	Q	V
10+30	12.3150	22.57	Q	V
10+35	12.4721	22.81	Q	V
10+40	12.6308	23.05	Q	V
10+45	12.7913	23.30	Q	V
10+50	12.9536	23.56	Q	V
10+55	13.1177	23.83	Q	V
11+ 0	13.2837	24.10	Q	V
11+ 5	13.4515	24.38	Q	V
11+10	13.6214	24.66	Q	V
11+15	13.7933	24.96	Q	V
11+20	13.9672	25.26	Q	V
11+25	14.1433	25.57	Q	V
11+30	14.3216	25.89	Q	V
11+35	14.5022	26.22	Q	V
11+40	14.6851	26.56	Q	V
11+45	14.8704	26.91	Q	V
11+50	15.0581	27.27	Q	V
11+55	15.2485	27.64	Q	V
12+ 0	15.4415	28.02	Q	V
12+ 5	15.6365	28.32	Q	V
12+10	15.8322	28.40	Q	V
12+15	16.0265	28.22	Q	V
12+20	16.2147	27.33	Q	V
12+25	16.3939	26.03	Q	V
12+30	16.5675	25.21	Q	V
12+35	16.7382	24.79	Q	V
12+40	16.9078	24.61	Q	V
12+45	17.0770	24.57	Q	V
12+50	17.2466	24.63	Q	V
12+55	17.4172	24.76	Q	V
13+ 0	17.5892	24.97	Q	V
13+ 5	17.7629	25.23	Q	V
13+10	17.9388	25.54	Q	V
13+15	18.1170	25.88	Q	V
13+20	18.2979	26.27	Q	V
13+25	18.4819	26.71	Q	V
13+30	18.6692	27.20	Q	V
13+35	18.8602	27.72	Q	V
13+40	19.0549	28.28	Q	V
13+45	19.2539	28.89	Q	V
13+50	19.4574	29.55	Q	V
13+55	19.6658	30.25	Q	V
14+ 0	19.8793	31.01	Q	V
14+ 5	20.0988	31.87	Q	V
14+10	20.3254	32.90	Q	V
14+15	20.5606	34.15	Q	V
14+20	20.8073	35.83	Q	V
14+25	21.0676	37.80	Q	V
14+30	21.3408	39.66	Q	V
14+35	21.6262	41.45	Q	V
14+40	21.9240	43.24	Q	V
14+45	22.2348	45.12	Q	V
14+50	22.5593	47.11	Q	V
14+55	22.8985	49.26	Q	V
15+ 0	23.2538	51.59	Q	V
15+ 5	23.6268	54.15	Q	V
15+10	24.0194	57.01	Q	V
15+15	24.4341	60.21	Q	V
15+20	24.8736	63.83	Q	V
15+25	25.3468	68.70	Q	V
15+30	25.8708	76.09	Q	V
15+35	26.4683	86.75	Q	V
15+40	27.1897	104.75	Q	V

			PR5.out			
15+45	28.0779	128.96				
15+50	29.1437	154.75				
15+55	30.4216	185.56				
16+ 0	31.9968	228.71				
16+ 5	34.2140	321.94				
16+10	37.5258	480.87				
16+15	42.1160	666.50				
16+20	48.8649	979.94				
16+25	56.5540	1116.46				
16+30	62.6213	880.97				
16+35	67.2361	670.07				
16+40	70.8273	521.44				
16+45	73.7730	427.71				
16+50	76.2307	356.87				
16+55	78.3465	307.21				
17+ 0	80.1636	263.84				
17+ 5	81.7627	232.19				
17+10	83.2018	208.95				
17+15	84.5027	188.89				
17+20	85.6585	167.82				
17+25	86.6670	146.43				
17+30	87.5820	132.86				
17+35	88.4272	122.72				
17+40	89.1982	111.95				
17+45	89.9119	103.63				
17+50	90.5580	93.81				
17+55	91.1493	85.86				
18+ 0	91.7060	80.84				
18+ 5	92.2068	72.71				
18+10	92.6776	68.37				
18+15	93.1151	63.52				
18+20	93.5139	57.91				
18+25	93.9020	56.35				
18+30	94.2542	51.14				
18+35	94.5853	48.08				
18+40	94.9119	47.41				
18+45	95.2393	47.55				
18+50	95.5607	46.66				
18+55	95.8742	45.52				
19+ 0	96.1778	44.08				
19+ 5	96.4672	42.02				
19+10	96.7239	37.28				
19+15	96.9630	34.72				
19+20	97.1900	32.95				
19+25	97.3898	29.02				
19+30	97.5656	25.51				
19+35	97.7347	24.56				
19+40	97.8987	23.81				
19+45	98.0586	23.21				
19+50	98.2149	22.69				
19+55	98.3679	22.22				
20+ 0	98.5178	21.77				
20+ 5	98.6648	21.34				
20+10	98.8090	20.94				
20+15	98.9506	20.56				
20+20	99.0897	20.19				
20+25	99.2264	19.84				
20+30	99.3607	19.50				
20+35	99.4928	19.18				
20+40	99.6227	18.86				
20+45	99.7506	18.57				
20+50	99.8765	18.28				
20+55	100.0005	18.01				
21+ 0	100.1227	17.75				
21+ 5	100.2432	17.49				
21+10	100.3619	17.24				
21+15	100.4790	17.00				
21+20	100.5945	16.76				
21+25	100.7083	16.53				
21+30	100.8206	16.30				
21+35	100.9313	16.07				
21+40	101.0405	15.86				
21+45	101.1482	15.65				
21+50	101.2546	15.44				
21+55	101.3596	15.25				
22+ 0	101.4633	15.06				
22+ 5	101.5657	14.87				
22+10	101.6669	14.69				

22+15	101.7668	14.51	Q				V
22+20	101.8656	14.34	Q				V
22+25	101.9632	14.18	Q				V
22+30	102.0597	14.01	Q				V
22+35	102.1552	13.86	Q				V
22+40	102.2496	13.70	Q				V
22+45	102.3429	13.55	Q				V
22+50	102.4353	13.41	Q				V
22+55	102.5266	13.27	Q				V
23+ 0	102.6171	13.13	Q				V
23+ 5	102.7065	12.99	Q				V
23+10	102.7951	12.86	Q				V
23+15	102.8828	12.73	Q				V
23+20	102.9696	12.61	Q				V
23+25	103.0556	12.48	Q				V
23+30	103.1407	12.36	Q				V
23+35	103.2251	12.25	Q				V
23+40	103.3086	12.13	Q				V
23+45	103.3914	12.02	Q				V
23+50	103.4734	11.91	Q				V
23+55	103.5547	11.80	Q				V
24+ 0	103.6352	11.69	Q				V
24+ 5	103.7143	11.49	Q				V
24+10	103.7903	11.04	Q				V
24+15	103.8612	10.29	Q				V
24+20	103.9218	8.79	Q				V
24+25	103.9691	6.87	Q				V
24+30	104.0068	5.48	Q				V
24+35	104.0381	4.54	Q				V
24+40	104.0647	3.86	Q				V
24+45	104.0876	3.32	Q				V
24+50	104.1075	2.89	Q				V
24+55	104.1248	2.52	Q				V
25+ 0	104.1401	2.22	Q				V
25+ 5	104.1536	1.96	Q				V
25+10	104.1655	1.73	Q				V
25+15	104.1759	1.52	Q				V
25+20	104.1852	1.34	Q				V
25+25	104.1934	1.19	Q				V
25+30	104.2007	1.06	Q				V
25+35	104.2072	0.94	Q				V
25+40	104.2130	0.84	Q				V
25+45	104.2180	0.74	Q				V
25+50	104.2225	0.65	Q				V
25+55	104.2265	0.57	Q				V
26+ 0	104.2299	0.50	Q				V
26+ 5	104.2329	0.44	Q				V
26+10	104.2356	0.38	Q				V
26+15	104.2378	0.33	Q				V
26+20	104.2398	0.29	Q				V
26+25	104.2416	0.25	Q				V
26+30	104.2431	0.22	Q				V
26+35	104.2445	0.20	Q				V
26+40	104.2457	0.18	Q				V
26+45	104.2467	0.15	Q				V
26+50	104.2476	0.12	Q				V
26+55	104.2483	0.10	Q				V
27+ 0	104.2488	0.07	Q				V
27+ 5	104.2491	0.05	Q				V
27+10	104.2493	0.03	Q				V
27+15	104.2495	0.02	Q				V
27+20	104.2495	0.01	Q				V

Unit Hydrograph Analysis

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Study date 06/07/18

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San Bernardino County Synthetic Unit Hydrology Method

Manual date - August 1986

Program License Serial Number 6320

164309 - DAGGETT SOLAR FACILITY - SAN BERNARDINO COUNTY, CA

DEVELOPED CONDITIONS AREA 6

100-YEAR, 24-HOUR STORM EVENT

BY: JDN, DATE: 02-12-18

Storm Event Year = 100

Antecedent Moisture Condition = 3

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 100		
343.42	1	1.40

Rainfall data for year 100		
343.42	6	1.85

Rainfall data for year 100		
343.42	24	2.56

+++++

***** Area-averaged max loss rate, Fm *****

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
91.0	98.2	343.42	1.000	0.036	0.900	0.032

Area-averaged adjusted loss rate Fm (In/Hr) = 0.032

***** Area-Averaged low loss rate fraction, Yb *****

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
309.08	0.900	91.0	98.2	0.18	0.919
34.34	0.100	98.0	98.0	0.20	0.910

Area-averaged catchment yield fraction, Y = 0.918

Area-averaged low loss fraction, Yb = 0.082

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Watercourse length = 3833.00(Ft.)

Length from concentration point to centroid = 1917.00(Ft.)

Elevation difference along watercourse = 10.00(Ft.)

Mannings friction factor along watercourse = 0.035

Watershed area = 343.42(Ac.)

Catchment Lag time = 0.307 hours

Unit interval = 5.000 minutes

Unit interval percentage of lag time = 27.1037

Hydrograph baseflow = 0.00(CFS)
 Average maximum watershed loss rate(Fm) = 0.032(In/Hr)
 Average low loss rate fraction (Yb) = 0.082 (decimal)
 DESERT S-Graph Selected
 Computed peak 5-minute rainfall = 0.664(In)
 Computed peak 30-minute rainfall = 1.137(In)
 Specified peak 1-hour rainfall = 1.400(In)
 Computed peak 3-hour rainfall = 1.661(In)
 Specified peak 6-hour rainfall = 1.850(In)
 Specified peak 24-hour rainfall = 2.560(In)

Rainfall depth area reduction factors:

Using a total area of 343.42(Ac.) (Ref: fig. E-4)

5-minute factor = 0.984	Adjusted rainfall = 0.654(In)
30-minute factor = 0.984	Adjusted rainfall = 1.119(In)
1-hour factor = 0.984	Adjusted rainfall = 1.377(In)
3-hour factor = 0.998	Adjusted rainfall = 1.658(In)
6-hour factor = 0.999	Adjusted rainfall = 1.848(In)
24-hour factor = 1.000	Adjusted rainfall = 2.559(In)

U n i t H y d r o g r a p h

Interval Number	'S' Graph Mean values	Unit Hydrograph (CFS)

(K = 4153.24 (CFS))

1	1.514	62.873
2	7.635	254.226
3	24.249	690.024
4	46.403	920.097
5	59.946	562.492
6	68.181	341.985
7	74.138	247.430
8	78.663	187.913
9	82.152	144.910
10	85.010	118.732
11	87.462	101.839
12	89.400	80.482
13	90.972	65.268
14	92.362	57.728
15	93.584	50.773
16	94.584	41.508
17	95.488	37.563
18	96.232	30.904
19	96.904	27.894
20	97.413	21.165
21	97.847	18.008
22	98.127	11.642
23	98.419	12.095
24	98.743	13.487
25	99.068	13.508
26	99.391	13.411
27	99.614	9.248
28	99.783	7.035
29	100.000	3.518

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.6536	0.6536
2	0.8047	0.1511
3	0.9088	0.1041
4	0.9907	0.0819
5	1.0593	0.0686
6	1.1188	0.0596
7	1.1718	0.0530
8	1.2197	0.0479
9	1.2636	0.0439
10	1.3041	0.0406
11	1.3420	0.0378
12	1.3775	0.0355
13	1.3962	0.0187
14	1.4137	0.0175
15	1.4302	0.0165
16	1.4459	0.0156

		PR6.out
17	1.4607	0.0148
18	1.4748	0.0141
19	1.4883	0.0135
20	1.5013	0.0129
21	1.5136	0.0124
22	1.5256	0.0119
23	1.5370	0.0115
24	1.5481	0.0111
25	1.5588	0.0107
26	1.5691	0.0103
27	1.5791	0.0100
28	1.5888	0.0097
29	1.5982	0.0094
30	1.6074	0.0092
31	1.6163	0.0089
32	1.6250	0.0087
33	1.6334	0.0084
34	1.6416	0.0082
35	1.6497	0.0080
36	1.6575	0.0078
37	1.6647	0.0071
38	1.6716	0.0070
39	1.6785	0.0068
40	1.6852	0.0067
41	1.6917	0.0065
42	1.6981	0.0064
43	1.7044	0.0063
44	1.7106	0.0062
45	1.7166	0.0060
46	1.7225	0.0059
47	1.7284	0.0058
48	1.7341	0.0057
49	1.7397	0.0056
50	1.7452	0.0055
51	1.7507	0.0054
52	1.7560	0.0053
53	1.7613	0.0053
54	1.7664	0.0052
55	1.7715	0.0051
56	1.7765	0.0050
57	1.7815	0.0049
58	1.7864	0.0049
59	1.7912	0.0048
60	1.7959	0.0047
61	1.8005	0.0047
62	1.8051	0.0046
63	1.8097	0.0045
64	1.8142	0.0045
65	1.8186	0.0044
66	1.8229	0.0044
67	1.8273	0.0043
68	1.8315	0.0043
69	1.8357	0.0042
70	1.8399	0.0042
71	1.8440	0.0041
72	1.8480	0.0041
73	1.8540	0.0060
74	1.8599	0.0059
75	1.8658	0.0059
76	1.8716	0.0058
77	1.8774	0.0058
78	1.8831	0.0057
79	1.8887	0.0056
80	1.8943	0.0056
81	1.8998	0.0055
82	1.9053	0.0055
83	1.9107	0.0054
84	1.9161	0.0054
85	1.9215	0.0053
86	1.9267	0.0053
87	1.9320	0.0052
88	1.9372	0.0052
89	1.9423	0.0051
90	1.9474	0.0051
91	1.9525	0.0051
92	1.9575	0.0050
93	1.9625	0.0050
94	1.9674	0.0049

		PR6.out
95	1.9723	0.0049
96	1.9771	0.0049
97	1.9820	0.0048
98	1.9867	0.0048
99	1.9915	0.0047
100	1.9962	0.0047
101	2.0009	0.0047
102	2.0055	0.0046
103	2.0101	0.0046
104	2.0146	0.0046
105	2.0192	0.0045
106	2.0237	0.0045
107	2.0281	0.0045
108	2.0326	0.0044
109	2.0370	0.0044
110	2.0414	0.0044
111	2.0457	0.0043
112	2.0500	0.0043
113	2.0543	0.0043
114	2.0585	0.0043
115	2.0628	0.0042
116	2.0670	0.0042
117	2.0711	0.0042
118	2.0753	0.0041
119	2.0794	0.0041
120	2.0835	0.0041
121	2.0875	0.0041
122	2.0916	0.0040
123	2.0956	0.0040
124	2.0996	0.0040
125	2.1035	0.0040
126	2.1075	0.0039
127	2.1114	0.0039
128	2.1153	0.0039
129	2.1192	0.0039
130	2.1230	0.0038
131	2.1268	0.0038
132	2.1306	0.0038
133	2.1344	0.0038
134	2.1382	0.0038
135	2.1419	0.0037
136	2.1456	0.0037
137	2.1493	0.0037
138	2.1530	0.0037
139	2.1566	0.0037
140	2.1603	0.0036
141	2.1639	0.0036
142	2.1675	0.0036
143	2.1710	0.0036
144	2.1746	0.0036
145	2.1781	0.0035
146	2.1817	0.0035
147	2.1852	0.0035
148	2.1886	0.0035
149	2.1921	0.0035
150	2.1955	0.0034
151	2.1990	0.0034
152	2.2024	0.0034
153	2.2058	0.0034
154	2.2091	0.0034
155	2.2125	0.0034
156	2.2159	0.0033
157	2.2192	0.0033
158	2.2225	0.0033
159	2.2258	0.0033
160	2.2291	0.0033
161	2.2323	0.0033
162	2.2356	0.0032
163	2.2388	0.0032
164	2.2420	0.0032
165	2.2452	0.0032
166	2.2484	0.0032
167	2.2516	0.0032
168	2.2547	0.0032
169	2.2579	0.0031
170	2.2610	0.0031
171	2.2641	0.0031
172	2.2672	0.0031

		PR6.out
173	2.2703	0.0031
174	2.2734	0.0031
175	2.2765	0.0031
176	2.2795	0.0030
177	2.2825	0.0030
178	2.2856	0.0030
179	2.2886	0.0030
180	2.2916	0.0030
181	2.2945	0.0030
182	2.2975	0.0030
183	2.3005	0.0030
184	2.3034	0.0029
185	2.3063	0.0029
186	2.3093	0.0029
187	2.3122	0.0029
188	2.3151	0.0029
189	2.3180	0.0029
190	2.3208	0.0029
191	2.3237	0.0029
192	2.3265	0.0029
193	2.3294	0.0028
194	2.3322	0.0028
195	2.3350	0.0028
196	2.3378	0.0028
197	2.3406	0.0028
198	2.3434	0.0028
199	2.3462	0.0028
200	2.3490	0.0028
201	2.3517	0.0028
202	2.3544	0.0027
203	2.3572	0.0027
204	2.3599	0.0027
205	2.3626	0.0027
206	2.3653	0.0027
207	2.3680	0.0027
208	2.3707	0.0027
209	2.3734	0.0027
210	2.3760	0.0027
211	2.3787	0.0027
212	2.3813	0.0026
213	2.3839	0.0026
214	2.3866	0.0026
215	2.3892	0.0026
216	2.3918	0.0026
217	2.3944	0.0026
218	2.3970	0.0026
219	2.3995	0.0026
220	2.4021	0.0026
221	2.4047	0.0026
222	2.4072	0.0026
223	2.4098	0.0025
224	2.4123	0.0025
225	2.4148	0.0025
226	2.4173	0.0025
227	2.4198	0.0025
228	2.4223	0.0025
229	2.4248	0.0025
230	2.4273	0.0025
231	2.4298	0.0025
232	2.4322	0.0025
233	2.4347	0.0025
234	2.4372	0.0024
235	2.4396	0.0024
236	2.4420	0.0024
237	2.4445	0.0024
238	2.4469	0.0024
239	2.4493	0.0024
240	2.4517	0.0024
241	2.4541	0.0024
242	2.4565	0.0024
243	2.4588	0.0024
244	2.4612	0.0024
245	2.4636	0.0024
246	2.4659	0.0024
247	2.4683	0.0023
248	2.4706	0.0023
249	2.4730	0.0023
250	2.4753	0.0023

		PR6.out
251	2.4776	0.0023
252	2.4799	0.0023
253	2.4822	0.0023
254	2.4845	0.0023
255	2.4868	0.0023
256	2.4891	0.0023
257	2.4914	0.0023
258	2.4937	0.0023
259	2.4959	0.0023
260	2.4982	0.0023
261	2.5004	0.0023
262	2.5027	0.0022
263	2.5049	0.0022
264	2.5072	0.0022
265	2.5094	0.0022
266	2.5116	0.0022
267	2.5138	0.0022
268	2.5160	0.0022
269	2.5182	0.0022
270	2.5204	0.0022
271	2.5226	0.0022
272	2.5248	0.0022
273	2.5270	0.0022
274	2.5291	0.0022
275	2.5313	0.0022
276	2.5335	0.0022
277	2.5356	0.0022
278	2.5378	0.0021
279	2.5399	0.0021
280	2.5420	0.0021
281	2.5442	0.0021
282	2.5463	0.0021
283	2.5484	0.0021
284	2.5505	0.0021
285	2.5526	0.0021
286	2.5547	0.0021
287	2.5568	0.0021
288	2.5589	0.0021

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0021	0.0002	0.0019
2	0.0021	0.0002	0.0019
3	0.0021	0.0002	0.0019
4	0.0021	0.0002	0.0019
5	0.0021	0.0002	0.0019
6	0.0021	0.0002	0.0020
7	0.0021	0.0002	0.0020
8	0.0021	0.0002	0.0020
9	0.0022	0.0002	0.0020
10	0.0022	0.0002	0.0020
11	0.0022	0.0002	0.0020
12	0.0022	0.0002	0.0020
13	0.0022	0.0002	0.0020
14	0.0022	0.0002	0.0020
15	0.0022	0.0002	0.0020
16	0.0022	0.0002	0.0020
17	0.0022	0.0002	0.0020
18	0.0022	0.0002	0.0021
19	0.0023	0.0002	0.0021
20	0.0023	0.0002	0.0021
21	0.0023	0.0002	0.0021
22	0.0023	0.0002	0.0021
23	0.0023	0.0002	0.0021
24	0.0023	0.0002	0.0021
25	0.0023	0.0002	0.0021
26	0.0023	0.0002	0.0021
27	0.0023	0.0002	0.0021
28	0.0023	0.0002	0.0022
29	0.0024	0.0002	0.0022
30	0.0024	0.0002	0.0022
31	0.0024	0.0002	0.0022
32	0.0024	0.0002	0.0022
33	0.0024	0.0002	0.0022
34	0.0024	0.0002	0.0022
35	0.0024	0.0002	0.0022

		PR6.out	
36	0.0024	0.0002	0.0022
37	0.0024	0.0002	0.0022
38	0.0025	0.0002	0.0023
39	0.0025	0.0002	0.0023
40	0.0025	0.0002	0.0023
41	0.0025	0.0002	0.0023
42	0.0025	0.0002	0.0023
43	0.0025	0.0002	0.0023
44	0.0025	0.0002	0.0023
45	0.0026	0.0002	0.0023
46	0.0026	0.0002	0.0023
47	0.0026	0.0002	0.0024
48	0.0026	0.0002	0.0024
49	0.0026	0.0002	0.0024
50	0.0026	0.0002	0.0024
51	0.0026	0.0002	0.0024
52	0.0026	0.0002	0.0024
53	0.0027	0.0002	0.0024
54	0.0027	0.0002	0.0025
55	0.0027	0.0002	0.0025
56	0.0027	0.0002	0.0025
57	0.0027	0.0002	0.0025
58	0.0027	0.0002	0.0025
59	0.0028	0.0002	0.0025
60	0.0028	0.0002	0.0025
61	0.0028	0.0002	0.0026
62	0.0028	0.0002	0.0026
63	0.0028	0.0002	0.0026
64	0.0028	0.0002	0.0026
65	0.0029	0.0002	0.0026
66	0.0029	0.0002	0.0026
67	0.0029	0.0002	0.0026
68	0.0029	0.0002	0.0027
69	0.0029	0.0002	0.0027
70	0.0029	0.0002	0.0027
71	0.0030	0.0002	0.0027
72	0.0030	0.0002	0.0027
73	0.0030	0.0002	0.0027
74	0.0030	0.0002	0.0028
75	0.0030	0.0002	0.0028
76	0.0030	0.0002	0.0028
77	0.0031	0.0003	0.0028
78	0.0031	0.0003	0.0028
79	0.0031	0.0003	0.0029
80	0.0031	0.0003	0.0029
81	0.0032	0.0003	0.0029
82	0.0032	0.0003	0.0029
83	0.0032	0.0003	0.0029
84	0.0032	0.0003	0.0030
85	0.0032	0.0003	0.0030
86	0.0033	0.0003	0.0030
87	0.0033	0.0003	0.0030
88	0.0033	0.0003	0.0030
89	0.0033	0.0003	0.0031
90	0.0034	0.0003	0.0031
91	0.0034	0.0003	0.0031
92	0.0034	0.0003	0.0031
93	0.0034	0.0003	0.0032
94	0.0035	0.0003	0.0032
95	0.0035	0.0003	0.0032
96	0.0035	0.0003	0.0032
97	0.0036	0.0003	0.0033
98	0.0036	0.0003	0.0033
99	0.0036	0.0003	0.0033
100	0.0036	0.0003	0.0033
101	0.0037	0.0003	0.0034
102	0.0037	0.0003	0.0034
103	0.0037	0.0003	0.0034
104	0.0038	0.0003	0.0034
105	0.0038	0.0003	0.0035
106	0.0038	0.0003	0.0035
107	0.0039	0.0003	0.0036
108	0.0039	0.0003	0.0036
109	0.0039	0.0003	0.0036
110	0.0040	0.0003	0.0036
111	0.0040	0.0003	0.0037
112	0.0040	0.0003	0.0037
113	0.0041	0.0003	0.0038

		PR6.out	
114	0.0041	0.0003	0.0038
115	0.0042	0.0003	0.0038
116	0.0042	0.0003	0.0039
117	0.0043	0.0003	0.0039
118	0.0043	0.0004	0.0039
119	0.0043	0.0004	0.0040
120	0.0044	0.0004	0.0040
121	0.0044	0.0004	0.0041
122	0.0045	0.0004	0.0041
123	0.0045	0.0004	0.0042
124	0.0046	0.0004	0.0042
125	0.0046	0.0004	0.0043
126	0.0047	0.0004	0.0043
127	0.0047	0.0004	0.0044
128	0.0048	0.0004	0.0044
129	0.0049	0.0004	0.0045
130	0.0049	0.0004	0.0045
131	0.0050	0.0004	0.0046
132	0.0050	0.0004	0.0046
133	0.0051	0.0004	0.0047
134	0.0051	0.0004	0.0047
135	0.0052	0.0004	0.0048
136	0.0053	0.0004	0.0049
137	0.0054	0.0004	0.0049
138	0.0054	0.0004	0.0050
139	0.0055	0.0005	0.0051
140	0.0056	0.0005	0.0051
141	0.0057	0.0005	0.0052
142	0.0058	0.0005	0.0053
143	0.0059	0.0005	0.0054
144	0.0059	0.0005	0.0054
145	0.0041	0.0003	0.0037
146	0.0041	0.0003	0.0038
147	0.0042	0.0003	0.0039
148	0.0043	0.0003	0.0039
149	0.0044	0.0004	0.0040
150	0.0044	0.0004	0.0041
151	0.0045	0.0004	0.0042
152	0.0046	0.0004	0.0042
153	0.0047	0.0004	0.0043
154	0.0048	0.0004	0.0044
155	0.0049	0.0004	0.0045
156	0.0050	0.0004	0.0046
157	0.0052	0.0004	0.0048
158	0.0053	0.0004	0.0048
159	0.0054	0.0004	0.0050
160	0.0055	0.0005	0.0051
161	0.0057	0.0005	0.0053
162	0.0058	0.0005	0.0053
163	0.0060	0.0005	0.0055
164	0.0062	0.0005	0.0057
165	0.0064	0.0005	0.0059
166	0.0065	0.0005	0.0060
167	0.0068	0.0006	0.0063
168	0.0070	0.0006	0.0064
169	0.0078	0.0006	0.0072
170	0.0080	0.0007	0.0074
171	0.0084	0.0007	0.0078
172	0.0087	0.0007	0.0080
173	0.0092	0.0008	0.0084
174	0.0094	0.0008	0.0086
175	0.0100	0.0008	0.0092
176	0.0103	0.0008	0.0095
177	0.0111	0.0009	0.0102
178	0.0115	0.0009	0.0105
179	0.0124	0.0010	0.0114
180	0.0129	0.0011	0.0119
181	0.0141	0.0012	0.0130
182	0.0148	0.0012	0.0136
183	0.0165	0.0014	0.0152
184	0.0175	0.0014	0.0161
185	0.0355	0.0027	0.0328
186	0.0378	0.0027	0.0351
187	0.0439	0.0027	0.0412
188	0.0479	0.0027	0.0452
189	0.0596	0.0027	0.0569
190	0.0686	0.0027	0.0659
191	0.1041	0.0027	0.1014

		PR6.out	
192	0.1511	0.0027	0.1484
193	0.6536	0.0027	0.6509
194	0.0819	0.0027	0.0792
195	0.0530	0.0027	0.0503
196	0.0406	0.0027	0.0379
197	0.0187	0.0015	0.0172
198	0.0156	0.0013	0.0144
199	0.0135	0.0011	0.0124
200	0.0119	0.0010	0.0109
201	0.0107	0.0009	0.0098
202	0.0097	0.0008	0.0089
203	0.0089	0.0007	0.0082
204	0.0082	0.0007	0.0076
205	0.0071	0.0006	0.0066
206	0.0067	0.0005	0.0061
207	0.0063	0.0005	0.0058
208	0.0059	0.0005	0.0054
209	0.0056	0.0005	0.0052
210	0.0053	0.0004	0.0049
211	0.0051	0.0004	0.0047
212	0.0049	0.0004	0.0045
213	0.0047	0.0004	0.0043
214	0.0045	0.0004	0.0041
215	0.0043	0.0004	0.0040
216	0.0042	0.0003	0.0038
217	0.0060	0.0005	0.0055
218	0.0058	0.0005	0.0053
219	0.0056	0.0005	0.0052
220	0.0055	0.0004	0.0050
221	0.0053	0.0004	0.0049
222	0.0052	0.0004	0.0048
223	0.0051	0.0004	0.0046
224	0.0049	0.0004	0.0045
225	0.0048	0.0004	0.0044
226	0.0047	0.0004	0.0043
227	0.0046	0.0004	0.0042
228	0.0045	0.0004	0.0041
229	0.0044	0.0004	0.0040
230	0.0043	0.0004	0.0040
231	0.0042	0.0003	0.0039
232	0.0041	0.0003	0.0038
233	0.0041	0.0003	0.0037
234	0.0040	0.0003	0.0037
235	0.0039	0.0003	0.0036
236	0.0038	0.0003	0.0035
237	0.0038	0.0003	0.0035
238	0.0037	0.0003	0.0034
239	0.0037	0.0003	0.0034
240	0.0036	0.0003	0.0033
241	0.0035	0.0003	0.0032
242	0.0035	0.0003	0.0032
243	0.0034	0.0003	0.0031
244	0.0034	0.0003	0.0031
245	0.0033	0.0003	0.0031
246	0.0033	0.0003	0.0030
247	0.0032	0.0003	0.0030
248	0.0032	0.0003	0.0029
249	0.0031	0.0003	0.0029
250	0.0031	0.0003	0.0028
251	0.0031	0.0003	0.0028
252	0.0030	0.0002	0.0028
253	0.0030	0.0002	0.0027
254	0.0029	0.0002	0.0027
255	0.0029	0.0002	0.0027
256	0.0029	0.0002	0.0026
257	0.0028	0.0002	0.0026
258	0.0028	0.0002	0.0026
259	0.0028	0.0002	0.0025
260	0.0027	0.0002	0.0025
261	0.0027	0.0002	0.0025
262	0.0027	0.0002	0.0025
263	0.0027	0.0002	0.0024
264	0.0026	0.0002	0.0024
265	0.0026	0.0002	0.0024
266	0.0026	0.0002	0.0024
267	0.0025	0.0002	0.0023
268	0.0025	0.0002	0.0023
269	0.0025	0.0002	0.0023

270	0.0025	0.0002	0.0023
271	0.0024	0.0002	0.0022
272	0.0024	0.0002	0.0022
273	0.0024	0.0002	0.0022
274	0.0024	0.0002	0.0022
275	0.0023	0.0002	0.0022
276	0.0023	0.0002	0.0021
277	0.0023	0.0002	0.0021
278	0.0023	0.0002	0.0021
279	0.0023	0.0002	0.0021
280	0.0022	0.0002	0.0021
281	0.0022	0.0002	0.0020
282	0.0022	0.0002	0.0020
283	0.0022	0.0002	0.0020
284	0.0022	0.0002	0.0020
285	0.0022	0.0002	0.0020
286	0.0021	0.0002	0.0020
287	0.0021	0.0002	0.0019
288	0.0021	0.0002	0.0019

Total soil rain loss = 0.13(In)
Total effective rainfall = 2.43(In)
Peak flow rate in flood hydrograph = 836.89(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	225.0	450.0	675.0	900.0
0+ 5	0.0008	0.12	Q					
0+10	0.0050	0.61	Q					
0+15	0.0183	1.93	Q					
0+20	0.0438	3.70	Q					
0+25	0.0769	4.80	Q					
0+30	0.1146	5.47	Q					
0+35	0.1557	5.97	Q					
0+40	0.1994	6.35	Q					
0+45	0.2453	6.66	Q					
0+50	0.2929	6.91	Q					
0+55	0.3420	7.13	Q					
1+ 0	0.3924	7.32	Q					
1+ 5	0.4439	7.47	Q					
1+10	0.4963	7.62	Q					
1+15	0.5496	7.74	Q					
1+20	0.6038	7.86	Q					
1+25	0.6586	7.96	Q					
1+30	0.7141	8.06	Q					
1+35	0.7702	8.14	Q					
1+40	0.8268	8.22	Q					
1+45	0.8838	8.29	Q					
1+50	0.9413	8.35	Q					
1+55	0.9992	8.41	Q					
2+ 0	1.0576	8.47	Q					
2+ 5	1.1163	8.53	Q					
2+10	1.1755	8.60	Q					
2+15	1.2351	8.65	Q					
2+20	1.2951	8.71	Q					
2+25	1.3554	8.75	Q					
2+30	1.4159	8.79	Q					
2+35	1.4767	8.83	Q					
2+40	1.5378	8.87	Q					
2+45	1.5992	8.91	Q					
2+50	1.6609	8.96	Q					
2+55	1.7229	9.00	Q					
3+ 0	1.7851	9.04	QV					
3+ 5	1.8477	9.08	QV					
3+10	1.9105	9.13	QV					
3+15	1.9737	9.17	QV					
3+20	2.0371	9.21	QV					
3+25	2.1009	9.26	QV					
3+30	2.1650	9.30	QV					
3+35	2.2294	9.35	QV					
3+40	2.2941	9.40	QV					

3+45	2.3591	9.44	QV
3+50	2.4245	9.49	QV
3+55	2.4902	9.54	QV
4+ 0	2.5562	9.59	QV
4+ 5	2.6226	9.64	QV
4+10	2.6893	9.69	QV
4+15	2.7564	9.74	QV
4+20	2.8238	9.79	QV
4+25	2.8915	9.84	QV
4+30	2.9597	9.89	QV
4+35	3.0282	9.94	QV
4+40	3.0970	10.00	QV
4+45	3.1662	10.05	QV
4+50	3.2359	10.11	QV
4+55	3.3058	10.16	QV
5+ 0	3.3762	10.22	QV
5+ 5	3.4470	10.28	QV
5+10	3.5182	10.33	Q V
5+15	3.5897	10.39	Q V
5+20	3.6617	10.45	Q V
5+25	3.7341	10.51	Q V
5+30	3.8069	10.57	Q V
5+35	3.8802	10.63	Q V
5+40	3.9539	10.70	Q V
5+45	4.0280	10.76	Q V
5+50	4.1025	10.82	Q V
5+55	4.1775	10.89	Q V
6+ 0	4.2530	10.96	Q V
6+ 5	4.3289	11.02	Q V
6+10	4.4053	11.09	Q V
6+15	4.4821	11.16	Q V
6+20	4.5595	11.23	Q V
6+25	4.6373	11.30	Q V
6+30	4.7156	11.37	Q V
6+35	4.7945	11.45	Q V
6+40	4.8738	11.52	Q V
6+45	4.9537	11.60	Q V
6+50	5.0340	11.67	Q V
6+55	5.1150	11.75	Q V
7+ 0	5.1964	11.83	Q V
7+ 5	5.2784	11.91	Q V
7+10	5.3610	11.99	Q V
7+15	5.4442	12.07	Q V
7+20	5.5279	12.16	Q V
7+25	5.6122	12.24	Q V
7+30	5.6971	12.33	Q V
7+35	5.7826	12.42	Q V
7+40	5.8687	12.51	Q V
7+45	5.9555	12.60	Q V
7+50	6.0429	12.69	Q V
7+55	6.1309	12.78	Q V
8+ 0	6.2196	12.88	Q V
8+ 5	6.3090	12.98	Q V
8+10	6.3991	13.08	Q V
8+15	6.4898	13.18	Q V
8+20	6.5813	13.28	Q V
8+25	6.6735	13.38	Q V
8+30	6.7664	13.49	Q V
8+35	6.8600	13.60	Q V
8+40	6.9545	13.71	Q V
8+45	7.0497	13.82	Q V
8+50	7.1457	13.94	Q V
8+55	7.2425	14.06	Q V
9+ 0	7.3401	14.18	Q V
9+ 5	7.4386	14.30	Q V
9+10	7.5379	14.42	Q V
9+15	7.6381	14.55	Q V
9+20	7.7392	14.68	Q V
9+25	7.8412	14.81	Q V
9+30	7.9441	14.95	Q V
9+35	8.0480	15.08	Q V
9+40	8.1528	15.22	Q V
9+45	8.2587	15.37	Q V
9+50	8.3655	15.52	Q V
9+55	8.4734	15.66	Q V
10+ 0	8.5824	15.82	Q V
10+ 5	8.6924	15.98	Q V
10+10	8.8035	16.14	Q V

10+15	8.9158	16.30	Q	V
10+20	9.0292	16.47	Q	V
10+25	9.1439	16.64	Q	V
10+30	9.2597	16.82	Q	V
10+35	9.3768	17.00	Q	V
10+40	9.4952	17.19	Q	V
10+45	9.6149	17.38	Q	V
10+50	9.7359	17.58	Q	V
10+55	9.8583	17.78	Q	V
11+ 0	9.9822	17.98	Q	V
11+ 5	10.1075	18.19	Q	V
11+10	10.2343	18.41	Q	V
11+15	10.3627	18.64	Q	V
11+20	10.4926	18.87	Q	V
11+25	10.6242	19.10	Q	V
11+30	10.7574	19.35	Q	V
11+35	10.8924	19.60	Q	V
11+40	11.0292	19.86	Q	V
11+45	11.1678	20.13	Q	V
11+50	11.3083	20.40	Q	V
11+55	11.4508	20.69	Q	V
12+ 0	11.5953	20.98	Q	V
12+ 5	11.7411	21.17	Q	V
12+10	11.8859	21.02	Q	V
12+15	12.0240	20.06	Q	V
12+20	12.1528	18.69	Q	V
12+25	12.2764	17.96	Q	V
12+30	12.3978	17.63	Q	V
12+35	12.5182	17.48	Q	V
12+40	12.6383	17.44	Q	V
12+45	12.7588	17.50	Q	V
12+50	12.8801	17.61	Q	V
12+55	13.0024	17.76	Q	V
13+ 0	13.1261	17.96	Q	V
13+ 5	13.2515	18.21	Q	V
13+10	13.3789	18.49	Q	V
13+15	13.5083	18.79	Q	V
13+20	13.6400	19.13	Q	V
13+25	13.7743	19.50	Q	V
13+30	13.9114	19.90	Q	V
13+35	14.0514	20.33	Q	V
13+40	14.1947	20.81	Q	V
13+45	14.3415	21.31	Q	V
13+50	14.4921	21.86	Q	V
13+55	14.6466	22.44	Q	V
14+ 0	14.8054	23.06	Q	V
14+ 5	14.9689	23.75	Q	V
14+10	15.1382	24.58	Q	V
14+15	15.3151	25.69	Q	V
14+20	15.5010	26.98	Q	V
14+25	15.6950	28.18	Q	V
14+30	15.8973	29.37	Q	V
14+35	16.1080	30.59	Q	V
14+40	16.3276	31.90	Q	V
14+45	16.5569	33.29	Q	V
14+50	16.7966	34.81	Q	V
14+55	17.0478	36.46	Q	V
15+ 0	17.3115	38.30	Q	V
15+ 5	17.5893	40.33	Q	V
15+10	17.8829	42.63	Q	V
15+15	18.1943	45.22	Q	V
15+20	18.5263	48.21	Q	V
15+25	18.8883	52.57	Q	V
15+30	19.3042	60.38	Q	V
15+35	19.8249	75.60	Q	V
15+40	20.4874	96.20	Q	V
15+45	21.2794	114.99	Q	V
15+50	22.2085	134.92	Q	V
15+55	23.3129	160.35	Q	V
16+ 0	24.6767	198.02	Q	V
16+ 5	26.6548	287.23	Q	V
16+10	29.8099	458.12	Q	V
16+15	34.8438	730.91	Q	V
16+20	40.6074	836.89	Q	V
16+25	44.7397	600.01	Q	V
16+30	47.7211	432.90	Q	V
16+35	50.0424	337.05	Q	V
16+40	51.8747	266.04	Q	V

16+45	53.3628	216.08				V
16+50	54.6208	182.66				V
16+55	55.7096	158.09				V
17+ 0	56.6326	134.02				V
17+ 5	57.4297	115.73				V
17+10	58.1396	103.07				V
17+15	58.7710	91.68				V
17+20	59.3225	80.08				V
17+25	59.8205	72.32				V
17+30	60.2602	63.84				V
17+35	60.6578	57.73				V
17+40	61.0033	50.18				V
17+45	61.3130	44.96				V
17+50	61.5806	38.85				V
17+55	61.8350	36.95				V
18+ 0	62.0820	35.87				V
18+ 5	62.3171	34.14				V
18+10	62.5411	32.53				V
18+15	62.7441	29.48				V
18+20	62.9359	27.84				V
18+25	63.1083	25.04				V
18+30	63.2613	22.22				V
18+35	63.4093	21.49				V
18+40	63.5532	20.89				V
18+45	63.6935	20.37				V
18+50	63.8307	19.93				V
18+55	63.9651	19.51				V
19+ 0	64.0967	19.10				V
19+ 5	64.2254	18.69				V
19+10	64.3514	18.30				V
19+15	64.4749	17.93				V
19+20	64.5959	17.57				V
19+25	64.7146	17.23				V
19+30	64.8310	16.90				V
19+35	64.9451	16.58				V
19+40	65.0571	16.26				V
19+45	65.1671	15.96				V
19+50	65.2749	15.66				V
19+55	65.3808	15.38				V
20+ 0	65.4849	15.11				V
20+ 5	65.5872	14.86				V
20+10	65.6878	14.61				V
20+15	65.7868	14.37				V
20+20	65.8842	14.14				V
20+25	65.9799	13.90				V
20+30	66.0741	13.67				V
20+35	66.1667	13.45				V
20+40	66.2579	13.24				V
20+45	66.3477	13.04				V
20+50	66.4361	12.84				V
20+55	66.5232	12.65				V
21+ 0	66.6091	12.46				V
21+ 5	66.6937	12.29				V
21+10	66.7771	12.11				V
21+15	66.8594	11.95				V
21+20	66.9406	11.79				V
21+25	67.0207	11.63				V
21+30	67.0997	11.48				V
21+35	67.1778	11.33				V
21+40	67.2548	11.19				V
21+45	67.3310	11.05				V
21+50	67.4061	10.92				V
21+55	67.4804	10.79				V
22+ 0	67.5538	10.66				V
22+ 5	67.6264	10.53				V
22+10	67.6981	10.41				V
22+15	67.7690	10.30				V
22+20	67.8391	10.18				V
22+25	67.9085	10.07				V
22+30	67.9771	9.96				V
22+35	68.0449	9.86				V
22+40	68.1121	9.75				V
22+45	68.1786	9.65				V
22+50	68.2444	9.55				V
22+55	68.3095	9.46				V
23+ 0	68.3740	9.36				V
23+ 5	68.4378	9.27				V
23+10	68.5010	9.18				V

PR6.out

23+15	68.5637	9.09	Q				V
23+20	68.6257	9.01	Q				V
23+25	68.6872	8.92	Q				V
23+30	68.7480	8.84	Q				V
23+35	68.8084	8.76	Q				V
23+40	68.8682	8.68	Q				V
23+45	68.9274	8.60	Q				V
23+50	68.9862	8.53	Q				V
23+55	69.0444	8.45	Q				V
24+ 0	69.1021	8.38	Q				V
24+ 5	69.1585	8.19	Q				V
24+10	69.2111	7.64	Q				V
24+15	69.2542	6.25	Q				V
24+20	69.2848	4.44	Q				V
24+25	69.3077	3.33	Q				V
24+30	69.3259	2.65	Q				V
24+35	69.3407	2.15	Q				V
24+40	69.3529	1.77	Q				V
24+45	69.3631	1.48	Q				V
24+50	69.3716	1.24	Q				V
24+55	69.3788	1.04	Q				V
25+ 0	69.3848	0.87	Q				V
25+ 5	69.3899	0.74	Q				V
25+10	69.3942	0.62	Q				V
25+15	69.3978	0.52	Q				V
25+20	69.4008	0.44	Q				V
25+25	69.4033	0.36	Q				V
25+30	69.4054	0.30	Q				V
25+35	69.4070	0.24	Q				V
25+40	69.4084	0.20	Q				V
25+45	69.4096	0.17	Q				V
25+50	69.4106	0.14	Q				V
25+55	69.4114	0.12	Q				V
26+ 0	69.4120	0.09	Q				V
26+ 5	69.4124	0.06	Q				V
26+10	69.4127	0.04	Q				V
26+15	69.4128	0.02	Q				V
26+20	69.4129	0.01	Q				V

ATTACHMENT 3

NRCS Web Soils Survey



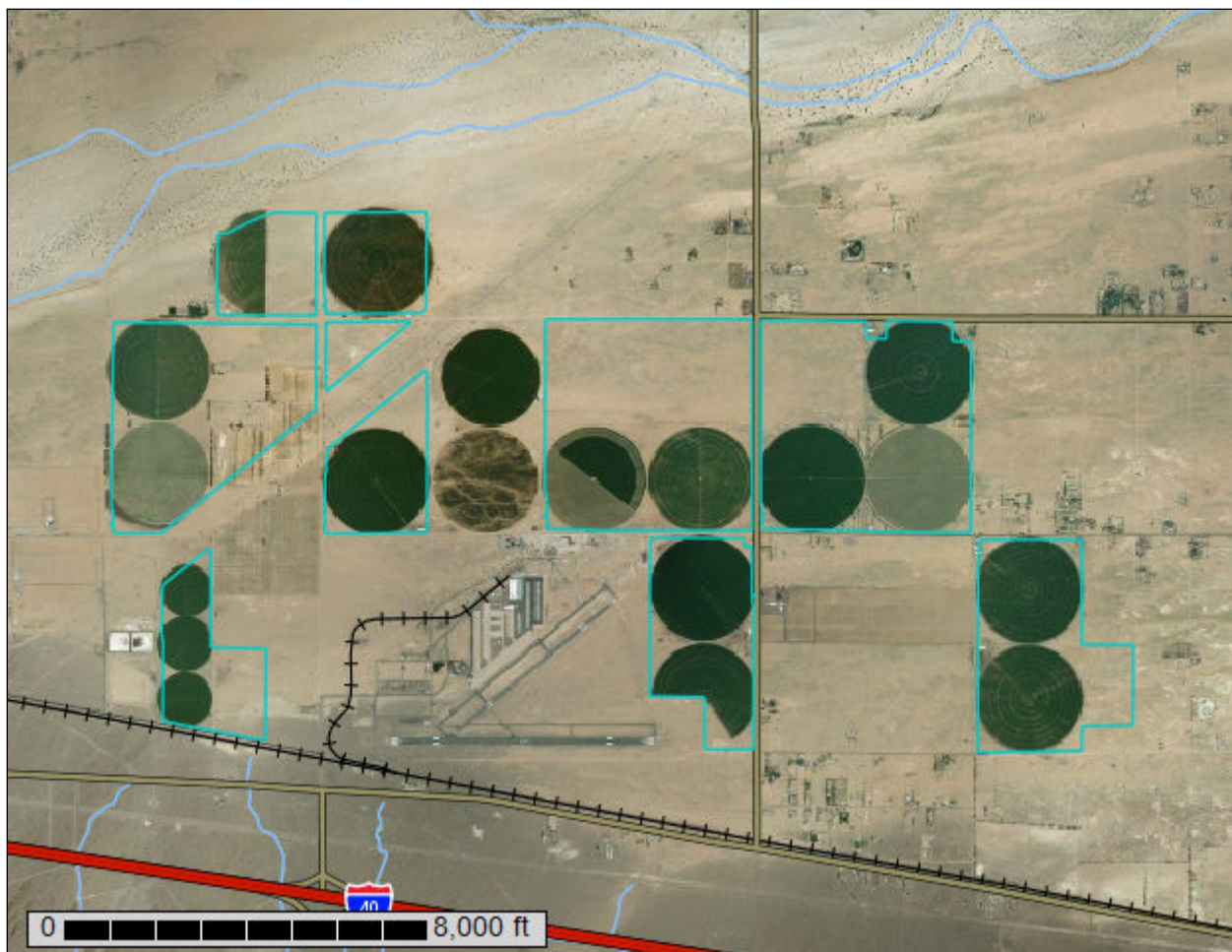
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for San Bernardino County, California, Mojave River Area



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

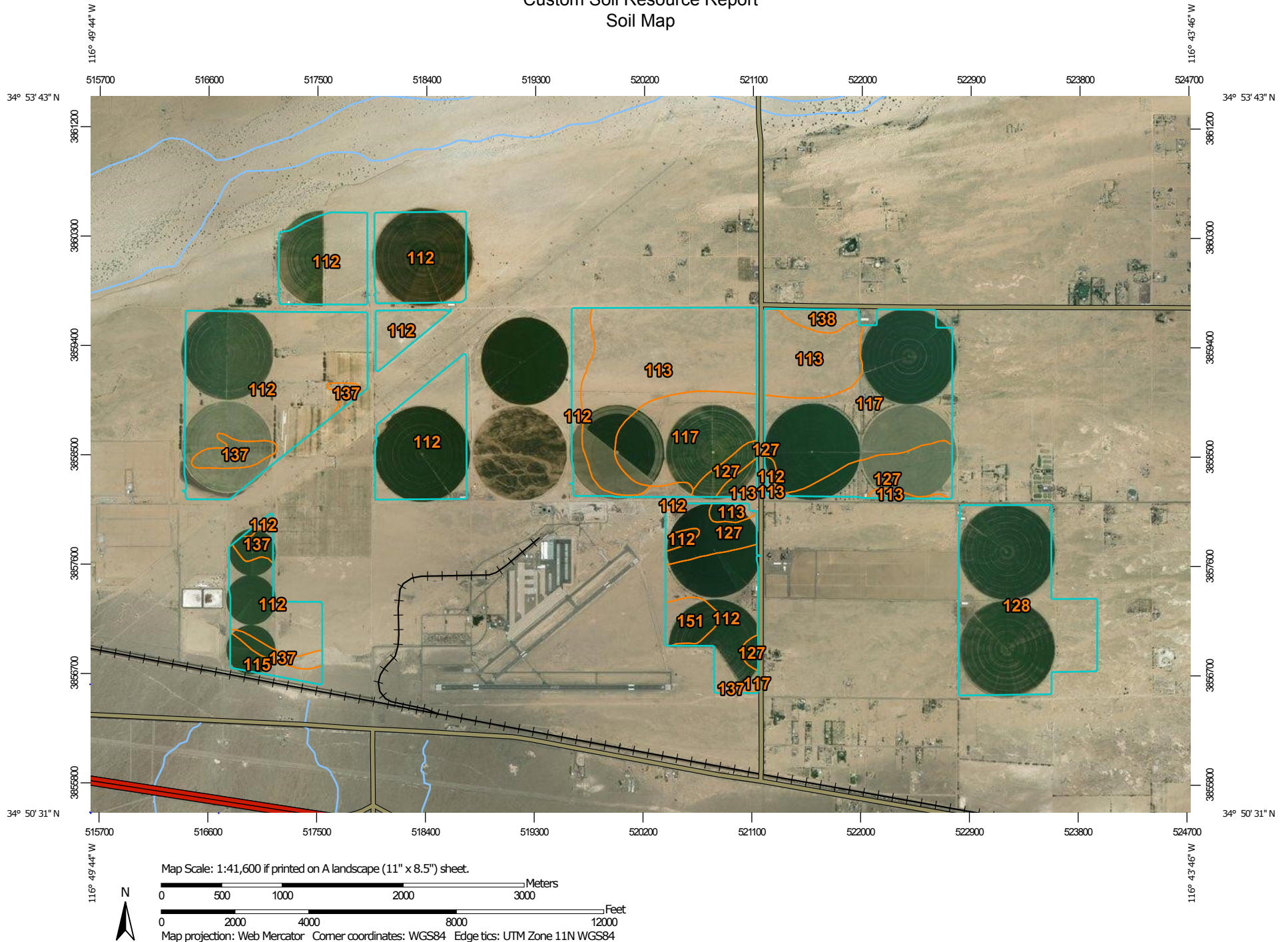
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County, California, Mojave River Area

Survey Area Data: Version 9, Sep 11, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 18, 2016—Oct 24, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
112	CAJON SAND, 0 TO 2 PERCENT SLOPES	1,206.0	41.8%
113	CAJON SAND, 2 TO 9 PERCENT SLOPES	464.5	16.1%
115	CAJON GRAVELLY SAND, 2 TO 15 PERCENT SLOPES	28.6	1.0%
117	CAJON LOAMY SAND, LOAMY SUBSTRATUM, 0 TO 2 PERCENT SLOPES	518.4	18.0%
127	HALLORAN SANDY LOAM	178.9	6.2%
128	HALLORAN-DUNELAND COMPLEX, 0 TO 15 PERCENT SLOPES*	353.2	12.2%
137	KIMBERLINA LOAMY FINE SAND, COOL, 0 TO 2 PERCENT SLOPES	77.2	2.7%
138	KIMBERLINA LOAMY FINE SAND, COOL, 2 TO 5 PERCENT SLOPES	22.8	0.8%
151	NEBONA-CUDDEBACK COMPLEX, 2 TO 9 PERCENT SLOPES*	34.8	1.2%
Totals for Area of Interest		2,884.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a

particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Custom Soil Resource Report

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

San Bernardino County, California, Mojave River Area

112—CAJON SAND, 0 TO 2 PERCENT SLOPES

Map Unit Setting

National map unit symbol: hkrj
Elevation: 1,800 to 3,200 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 66 degrees F
Frost-free period: 180 to 290 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Cajon and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cajon

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 7 inches: sand
H2 - 7 to 25 inches: sand
H3 - 25 to 45 inches: gravelly sand
H4 - 45 to 60 inches: stratified sand to loamy fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Sandy (R030XF012CA)
Hydric soil rating: No

Minor Components

Manet

Percent of map unit: 5 percent

Custom Soil Resource Report

Landform: Playas
Hydric soil rating: Yes

Kimberlina

Percent of map unit: 5 percent

Helendale

Percent of map unit: 5 percent

113—CAJON SAND, 2 TO 9 PERCENT SLOPES

Map Unit Setting

National map unit symbol: hkrk
Elevation: 1,800 to 3,500 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 68 degrees F
Frost-free period: 180 to 290 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Cajon and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cajon

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

A - 0 to 6 inches: sand
C1 - 6 to 25 inches: sand
C2 - 25 to 60 inches: stratified gravelly sand to sand, gravelly sand
C2 - 25 to 60 inches:

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent

Custom Soil Resource Report

Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: A

Ecological site: Sandy (R030XF012CA)

Hydric soil rating: No

Minor Components

Cajon, gravelly surface

Percent of map unit: 5 percent

Landform: Alluvial fans

Helendale

Percent of map unit: 5 percent

Landform: Alluvial fans

Hydric soil rating: No

Kimberlina

Percent of map unit: 5 percent

Landform: Alluvial fans

Hydric soil rating: No

115—CAJON GRAVELLY SAND, 2 TO 15 PERCENT SLOPES

Map Unit Setting

National map unit symbol: hkrm

Elevation: 2,300 to 3,500 feet

Mean annual precipitation: 3 to 6 inches

Mean annual air temperature: 59 to 66 degrees F

Frost-free period: 180 to 290 days

Farmland classification: Not prime farmland

Map Unit Composition

Cajon, gravelly surface, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cajon, Gravelly Surface

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 8 inches: gravelly sand

Custom Soil Resource Report

H2 - 8 to 60 inches: gravelly sand

Properties and qualities

Slope: 2 to 15 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Calcium carbonate, maximum in profile: 1 percent

Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: COBBLY SANDY (R030XF028CA)

Hydric soil rating: No

Minor Components

Arizo

Percent of map unit: 3 percent

Hydric soil rating: No

Cajon

Percent of map unit: 3 percent

Hydric soil rating: No

Kimberlina

Percent of map unit: 3 percent

Hydric soil rating: No

Yermo

Percent of map unit: 3 percent

Hydric soil rating: No

Cajon, cobbly surface

Percent of map unit: 3 percent

117—CAJON LOAMY SAND, LOAMY SUBSTRATUM, 0 TO 2 PERCENT SLOPES

Map Unit Setting

National map unit symbol: hkrp

Elevation: 1,800 to 2,300 feet

Mean annual precipitation: 3 to 6 inches

Mean annual air temperature: 59 to 66 degrees F

Frost-free period: 180 to 290 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Cajon, loamy substratum, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cajon, Loamy Substratum

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 7 inches: loamy sand

H2 - 7 to 20 inches: sand

H3 - 20 to 42 inches: loamy sand

H4 - 42 to 60 inches: stratified sand to clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 1 percent

Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)

Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: Sandy (R030XF012CA)

Hydric soil rating: No

Minor Components

Cajon

Percent of map unit: 8 percent

Halloran

Percent of map unit: 5 percent

Torrifluvents

Percent of map unit: 2 percent

Landform: Playas

Hydric soil rating: Yes

127—HALLORAN SANDY LOAM

Map Unit Setting

National map unit symbol: hks0

Elevation: 1,800 to 2,500 feet

Mean annual precipitation: 3 to 5 inches

Mean annual air temperature: 63 to 66 degrees F

Frost-free period: 200 to 290 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Halloran and similar soils: 85 percent

Minor components: 2 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Halloran

Setting

Landform: Fan remnants

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 2 inches: sand

H2 - 2 to 21 inches: sandy loam

H3 - 21 to 33 inches: loamy sand

H4 - 33 to 60 inches: stratified sand to sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Calcium carbonate, maximum in profile: 10 percent

Gypsum, maximum in profile: 1 percent

Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 60.0

Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s

Land capability classification (nonirrigated): 7s

Custom Soil Resource Report

Hydrologic Soil Group: C
Ecological site: ALKALI SANDY (R030XF013CA)
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 2 percent
Landform: Playas
Hydric soil rating: Yes

128—HALLORAN-DUNELAND COMPLEX, 0 TO 15 PERCENT SLOPES*

Map Unit Setting

National map unit symbol: hks1
Elevation: 1,800 to 2,500 feet
Mean annual precipitation: 3 to 5 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 200 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Halloran and similar soils: 50 percent
Dune land: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Halloran

Setting

Landform: Fan remnants
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 2 inches: sand
H2 - 2 to 21 inches: sandy loam
H3 - 21 to 33 inches: loamy sand
H4 - 33 to 60 inches: stratified sand to sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare

Custom Soil Resource Report

Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 60.0
Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: ALKALI SANDY (R030XF013CA)
Hydric soil rating: No

Description of Dune Land

Setting

Landform: Dunes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from mixed sources

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydric soil rating: No

Minor Components

Cajon, sand

Percent of map unit: 5 percent
Hydric soil rating: No

Cajon, loamy sand

Percent of map unit: 5 percent
Hydric soil rating: No

137—KIMBERLINA LOAMY FINE SAND, COOL, 0 TO 2 PERCENT SLOPES

Map Unit Setting

National map unit symbol: hksb
Elevation: 120 to 1,000 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 63 degrees F
Frost-free period: 180 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Kimberlina and similar soils: 85 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kimberlina

Setting

Landform: Fan aprons, fan skirts

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 7 inches: loamy fine sand

H2 - 7 to 51 inches: fine sandy loam, sandy loam

H2 - 7 to 51 inches: loam

H3 - 51 to 60 inches:

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 10 percent

Gypsum, maximum in profile: 5 percent

Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Available water storage in profile: Very high (about 12.5 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: Sandy (R030XF012CA)

Hydric soil rating: No

Minor Components

Cajon

Percent of map unit: 5 percent

Hydric soil rating: No

Helendale

Percent of map unit: 5 percent

Hydric soil rating: No

138—KIMBERLINA LOAMY FINE SAND, COOL, 2 TO 5 PERCENT SLOPES

Map Unit Setting

National map unit symbol: hksc
Elevation: 120 to 1,000 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 63 degrees F
Frost-free period: 180 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Kimberlina and similar soils: 85 percent
Minor components: 13 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kimberlina

Setting

Landform: Fan aprons
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 7 inches: loamy fine sand
H2 - 7 to 60 inches: fine sandy loam, sandy loam
H2 - 7 to 60 inches:

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Very high (about 13.3 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Sandy (R030XF012CA)

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Cajon

Percent of map unit: 5 percent

Hydric soil rating: No

Helendale

Percent of map unit: 5 percent

Hydric soil rating: No

Kimberlina

Percent of map unit: 3 percent

Hydric soil rating: No

151—NEBONA-CUDDEBACK COMPLEX, 2 TO 9 PERCENT SLOPES*

Map Unit Setting

National map unit symbol: hkss

Elevation: 1,800 to 3,400 feet

Mean annual precipitation: 3 to 5 inches

Mean annual air temperature: 63 to 66 degrees F

Frost-free period: 200 to 290 days

Farmland classification: Not prime farmland

Map Unit Composition

Nebona and similar soils: 60 percent

Cuddeback and similar soils: 20 percent

Minor components: 1 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nebona

Setting

Landform: Fan remnants

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 2 inches: sandy loam

H2 - 2 to 8 inches: sandy loam, fine sandy loam

H2 - 2 to 8 inches: stratified gravelly sand to loam

H4 - 12 to 65 inches:

Properties and qualities

Slope: 2 to 9 percent

Depth to restrictive feature: 6 to 14 inches to duripan

Natural drainage class: Well drained

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)

Available water storage in profile: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D

Ecological site: DESERT PAVEMENT (R030XF030CA)

Hydric soil rating: No

Description of Cuddeback

Setting

Landform: Inset fans

Landform position (two-dimensional): Backslope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 3 inches: sandy loam

H2 - 3 to 6 inches: sandy loam

H3 - 6 to 17 inches: gravelly sandy clay loam, sandy clay loam

H3 - 6 to 17 inches: gravelly sandy loam, loamy sand

H4 - 17 to 34 inches:

H4 - 17 to 34 inches:

Properties and qualities

Slope: 2 to 9 percent

Depth to restrictive feature: 20 to 40 inches to duripan

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 10 percent

Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)

Available water storage in profile: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: C

Ecological site: DESERT PAVEMENT (R030XG024CA)

Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 1 percent

Landform: Playas

Hydric soil rating: Yes

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ATTACHMENT 4

HEC-18 Scour Calculations

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Thursday, June 07, 2018

Project Units: U.S. Customary Units

Notes:

Bridge Scour Analysis: SQUARE - MEAN

Notes:

Pier Scour

Computation Type: HEC-18

Input Parameters

Pier Shape: Square Nose

Bed Condition: Clear-Water Scour

Depth Upstream of Pier: 1.17 ft

Velocity Upstream of Pier: 1.04 ft/s

Width of Pier: 0.50 ft

Length of Pier: 0.50 ft

Angle of Attack: 0.00 Degrees

Result Parameters

Froude Number Upstream: 0.17

Correction Factor for Pier Nose Shape (K1): 1.10

Correction Factor of Angle of Attack (K2): 1.00

Pier Length to Pier Width (L/a): 1.00

Correction Factor for Bed Condition (K3): 1.10

Scour Depth: 0.76 ft

6" SQ. PILING - MAXIMUM SCOUR DEPTH

Bridge Scour Analysis: SQUARE - MAX

Notes:

Pier Scour

Computation Type: HEC-18

Input Parameters

Pier Shape: Square Nose

Bed Condition: Clear-Water Scour

Depth Upstream of Pier: 4.00 ft

Velocity Upstream of Pier: 5.00 ft/s

Width of Pier: 0.50 ft

Length of Pier: 0.50 ft

Angle of Attack: 0.00 Degrees

Result Parameters

Froude Number Upstream: 0.44

Correction Factor for Pier Nose Shape (K1): 1.10

Correction Factor of Angle of Attack (K2): 1.00

Pier Length to Pier Width (L/a): 1.00

Correction Factor for Bed Condition (K3): 1.10

Scour Depth: 1.76 ft

4" ROUND PILING - AVERAGE SCOUR DEPTH

Bridge Scour Analysis: ROUND - MEAN

Notes:

Pier Scour

Computation Type: HEC-18

Input Parameters

Pier Shape: Circular Cylinder

Bed Condition: Clear-Water Scour

Depth Upstream of Pier: 1.17 ft

Velocity Upstream of Pier: 1.04 ft/s

Width of Pier: 0.33 ft

Length of Pier: 0.33 ft

Angle of Attack: 0.00 Degrees

Result Parameters

Froude Number Upstream: 0.17

Correction Factor for Pier Nose Shape (K1): 1.00

Correction Factor of Angle of Attack (K2): 1.00

Pier Length to Pier Width (L/a): 1.00

Correction Factor for Bed Condition (K3): 1.10

Scour Depth: 0.53 ft

4" ROUND PILING - MAXIMUM SCOUR DEPTH

Bridge Scour Analysis: ROUND - MAX

Notes:

Pier Scour

Computation Type: HEC-18

Input Parameters

Pier Shape: Circular Cylinder

Bed Condition: Clear-Water Scour

Depth Upstream of Pier: 4.00 ft

Velocity Upstream of Pier: 5.00 ft/s

Width of Pier: 0.33 ft

Length of Pier: 0.33 ft

Angle of Attack: 0.00 Degrees

Result Parameters

Froude Number Upstream: 0.44

Correction Factor for Pier Nose Shape (K1): 1.00

Correction Factor of Angle of Attack (K2): 1.00

Pier Length to Pier Width (L/a): 1.00

Correction Factor for Bed Condition (K3): 1.10

Scour Depth: 1.22 ft

ATTACHMENT 5

Existing Railroad Culverts 1 & 2
WSPGW Calculations

WATER SURFACE PROFILE LISTING

Date: 6- 8-2018 Time: 8:54:10

164390 - DAGGETT SOLAR FACILITY - 06-08-18

EXISTING CULVERT #1

BY: JDN, DATE: 06-08-18

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
0.000	1985.260	2.702	1987.962	1601.00	12.88	2.58	1990.54	.00	3.00	50.00	3.000	50.000	.00	2 2.0
4.062	.0103					.0050	.02	2.70	1.44	2.13	.013	.00	.00	BOX
----- WARNING - Flow depth near top of box conduit -----														
4.062	1985.302	2.726	1988.028	1601.00	12.77	2.53	1990.56	.00	3.00	50.00	3.000	50.000	.00	2 2.0
16.945	.0103					.0046	.08	2.73	1.42	2.13	.013	.00	.00	BOX
----- WARNING - Flow depth near top of box conduit -----														
21.007	1985.477	2.859	1988.336	1601.00	12.17	2.30	1990.64	.00	3.00	50.00	3.000	50.000	.00	2 2.0
10.993	.0103					.0059	.07	2.86	1.32	2.13	.013	.00	.00	BOX
----- WARNING - Flow depth near top of box conduit -----														
32.000	1985.590	3.000	1988.590	1601.00	11.60	2.09	1990.68	.00	3.00	50.00	3.000	50.000	.00	2 2.0

Program Package Serial Number: 7070

WATER SURFACE PROFILE LISTING

Date: 6- 8-2018 Time: 8:59:48

164309 - NRG DAGGETT SOLAR FACILITY - DAGGETT, CA

EXISTING CULVERT #2

BY: JDN, DATE: 06-08-18

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt |   | No Wth
      | Elev   | (FT)  | Elev  | (CFS) | (FPS) | Head | Grd.El. | Elev  | Depth   | Width   | Dia.-FT | or I.D. | ZL | Prs/Pip
L/Elem | Ch Slope |      |      |      |      |      |      |      |      |      |      |      | ZR | Type Ch
***** | ***** |      |      |      |      |      |      |      |      |      |      |      |      |
      |      |      |      |      |      |      |      |      |      |      |      |      |      |
.000 | 1985.190 | 3.000 | 1988.190 | 1830.00 | 23.46 | 8.55 | 1996.74 | .00 | 3.00 | 28.00 | 3.000 | 28.000 | .00 | 1 2.0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
32.000 | .0041 |  |  |  |  | .0324 | 1.04 | 3.00 | 2.48 | 3.00 | .013 | .00 | .00 | BOX
      |      |      |      |      |      |      |      |      |      |      |      |      |      |
32.000 | 1985.320 | 3.906 | 1989.225 | 1830.00 | 23.46 | 8.55 | 1997.77 | .00 | 3.00 | 28.00 | 3.000 | 28.000 | .00 | 1 2.0
- | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -

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