COMPLETION REPORT
PHASE I
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VOLUME F
APPENDIX II
OREGON REACH DATA TABLES CONTINUED

A RESOURCE SURVEY OF LOW-HEAD HYDROELECTRIC POTENTIAL PACIFIC NORTHWEST REGION

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FORWARD

Due to the tremendous volume of information presented in this report, final publication has been split into ten volumes. The first volume (Volume A) contains the main report which describes study methodologies and sample data tables. The remaining nine volumes (Volumes B-J) contain sets of complete data tables for all the streams studied. Page iii of this volume contains a listing of the contents of all of the volumes. A listing of the distribution of the different report volumes is contained on pages 98 and 99 of Volume A.

Those desiring information from or copies of any of the reach sheets should contact the Idaho Water Resources Research Institute or the water research institute in the particular state in which the stream or streams of interest are located. Institute addresses are shown on the distribution list.

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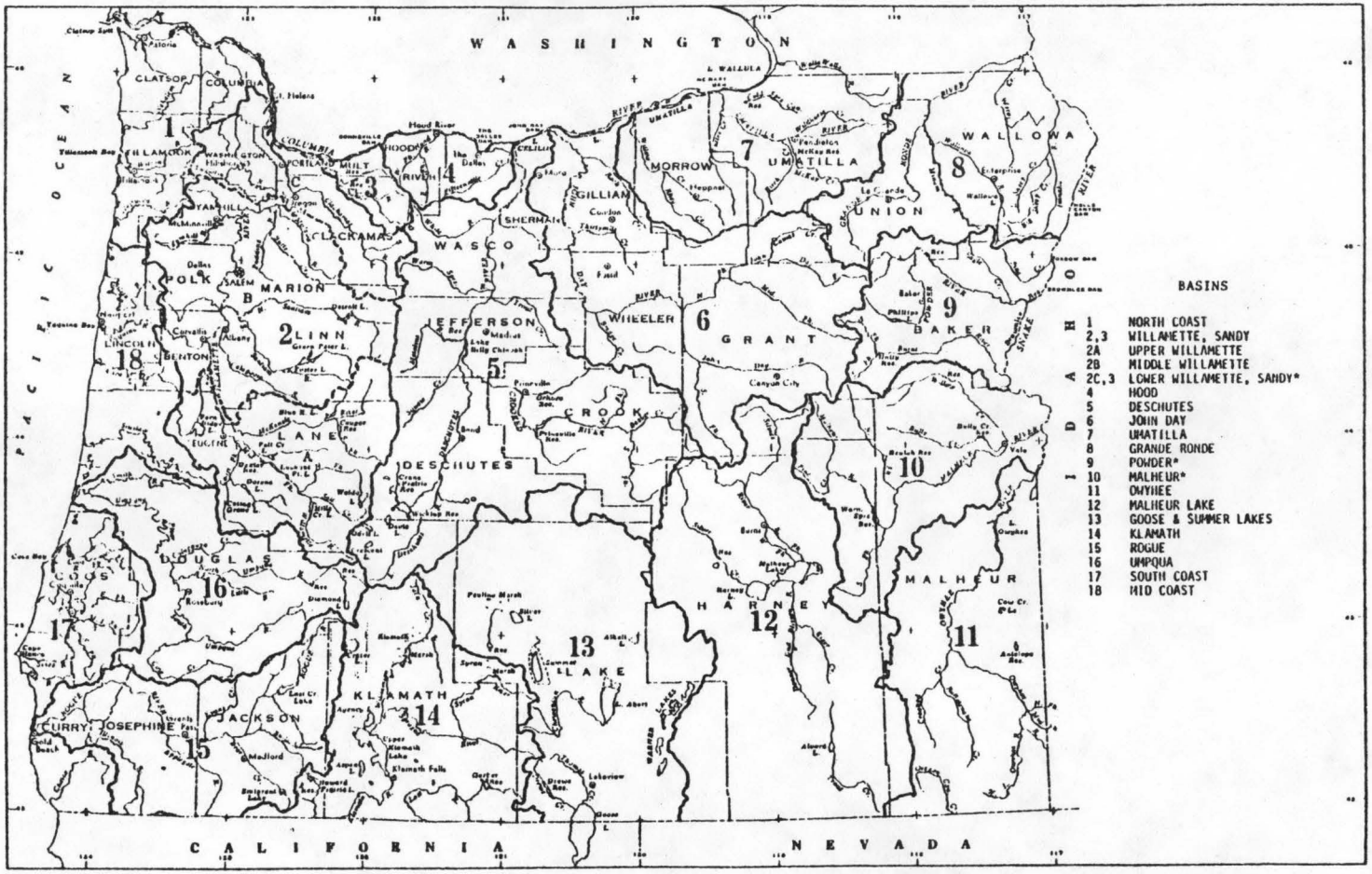
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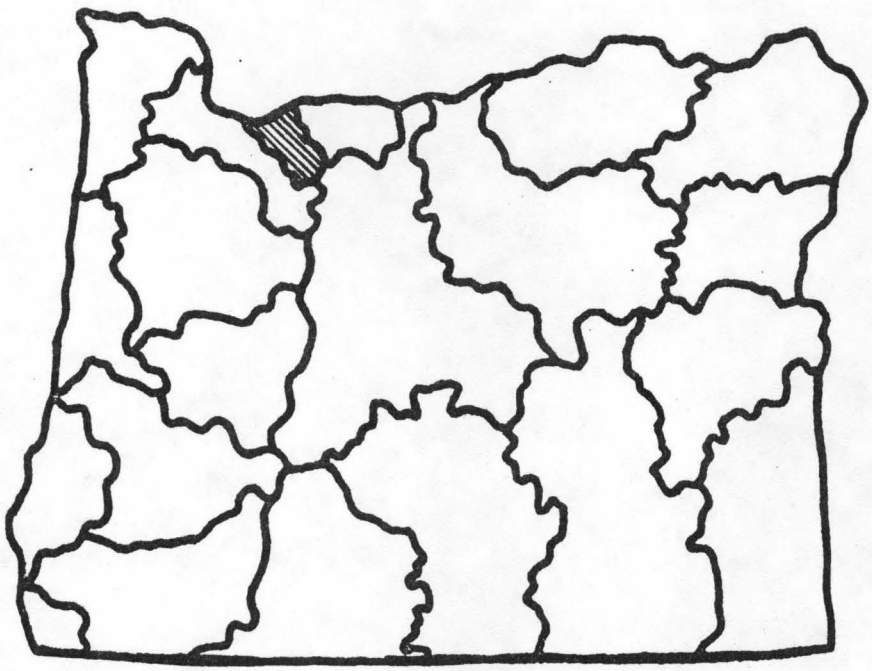
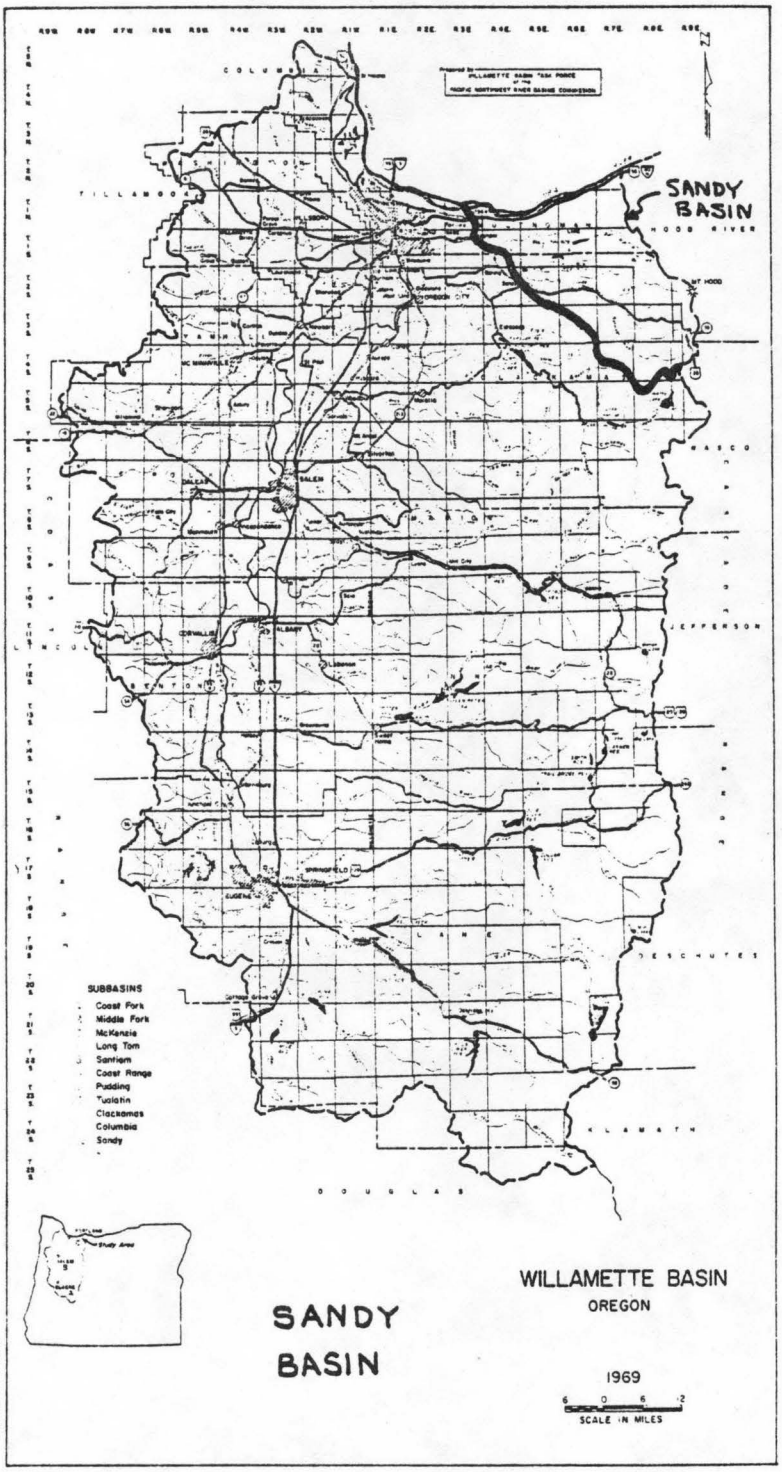
Big Creek	02-650-000-000-000-R0001 thru R0002	18-86 to 18-87
Siuslaw River & Tribs.	02-655-000-000-000-R0001 thru -062-000-000-R0001	18-88 to 18-133
Siltcoos River & Tribs.	02-660-000-000-000-R0001 thru -025-000-000-R0002	18-134 to 18-138
Tahkenitch Creek	02-665-000-000-000-R0001	18-139



APPENDIX 3

SANDY BASIN


SANDY BASIN
SUBBASINS
Coast Fork
Middle Fork
McKenzie
Long Tom
Santiam
Coast Range
Pudding
Tualatin
Clackamas
Columbia
Sandy
SANDY BASIN
WILLAMETTE BASIN
OREGON
1969
SCALE IN MILES

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-000-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Multnomah
C.	Township, Range	T1N, R3E
D.	Latitude, Longitude	45°33'N, 122°23'W
E.	Stream Name	Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to 2.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

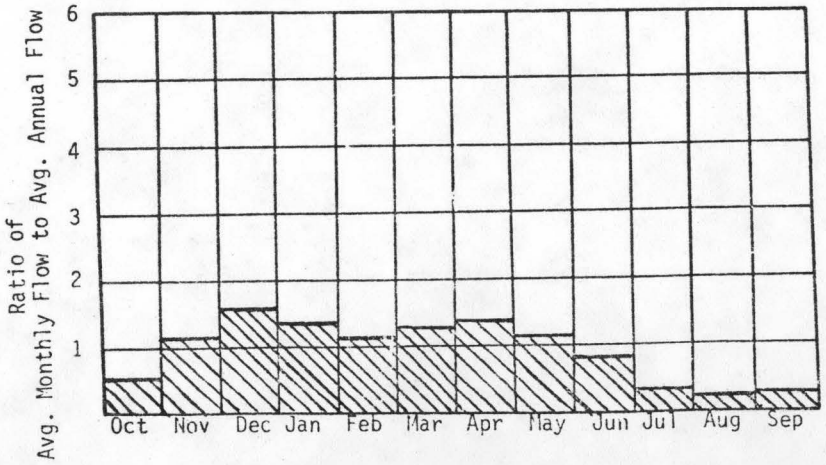
A.	Upstream Elevation of Reach	15	Ft. MSL
B.	Downstream Elevation of Reach	8	Ft. MSL
C.	Total Available Head in Reach	7	Ft.
D.	Average Slope in Reach	2.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	514.5	Sq.Mi.
F.	Inflow Classification	Regulated	

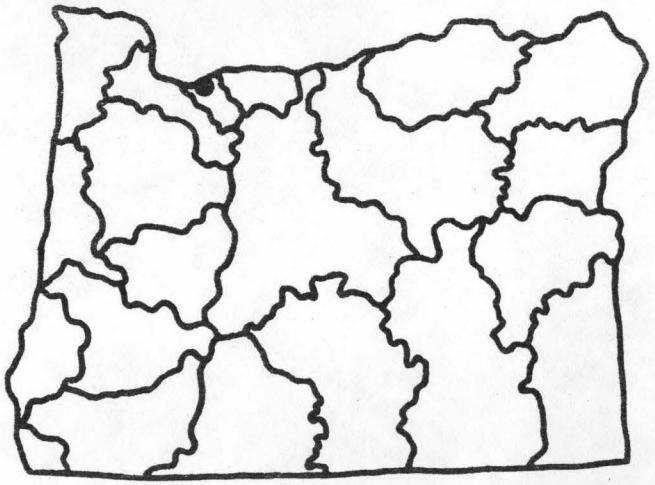
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	201.5	.12	1.05	1.000
80	361.4	.21	1.77	.945
50	1627.4	.97	6.05	.715
30	2974.4	1.76	8.85	.573
10	5571.6	3.31	11.55	.399

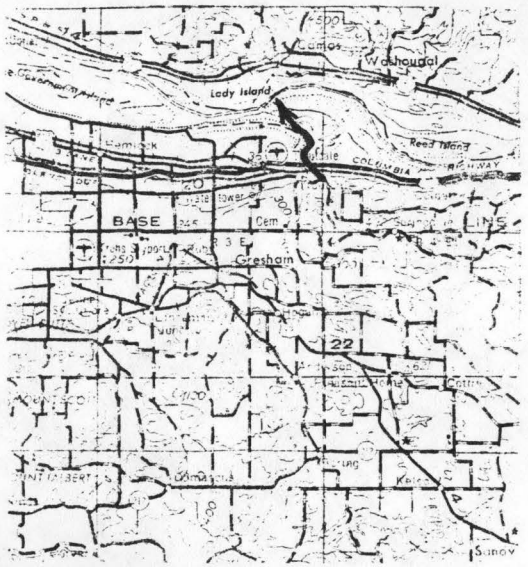
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2606 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-000-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Multnomah
C.	Township, Range	T1S, R4E
D.	Latitude, Longitude	45°30'N, 122°21'W
E.	Stream Name	Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	2.7 to 12.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

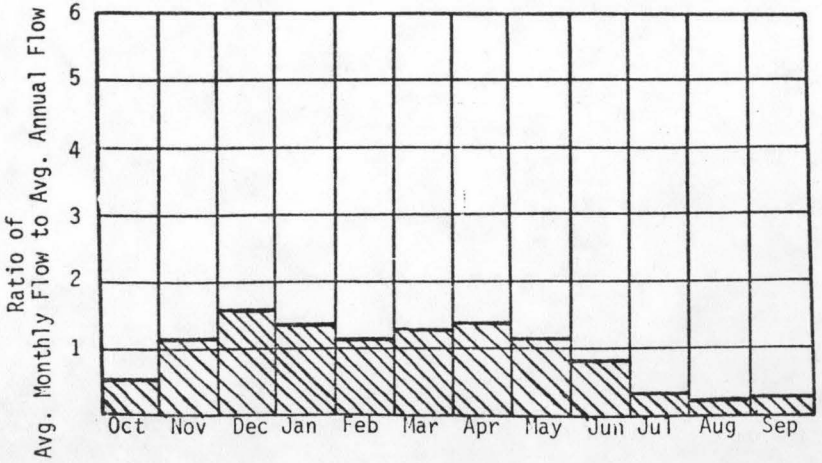
A.	Upstream Elevation of Reach	97	Ft. MSL
B.	Downstream Elevation of Reach	15	Ft. MSL
C.	Total Available Head in Reach	82	Ft.
D.	Average Slope in Reach	8.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	498.3	Sq.Mi.
F.	Inflow Classification	Regulated	

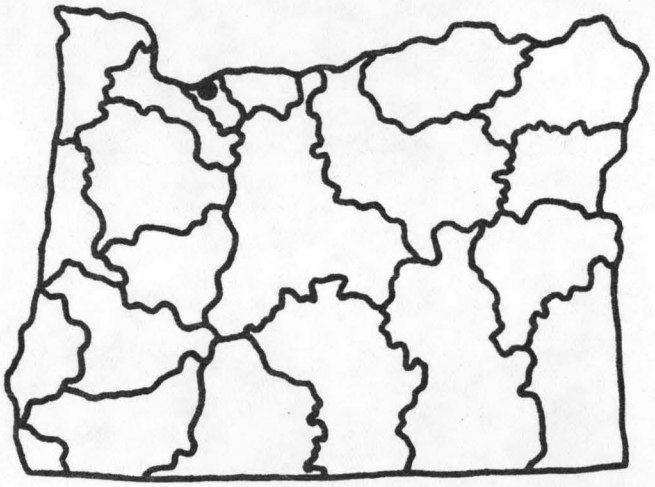
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	198.2	1.38	12.07	1.000
80	355.3	2.47	20.43	.945
50	1592.6	11.07	69.39	.716
30	2907.5	20.20	101.41	.573
10	5442.2	37.82	132.27	.399

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2548 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-010-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Multnomah
C.	Township, Range	T1s, R5E
D.	Latitude, Longitude	45°30'N, 122°13'W
E.	Stream Name	Gordon Creek
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to 6.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

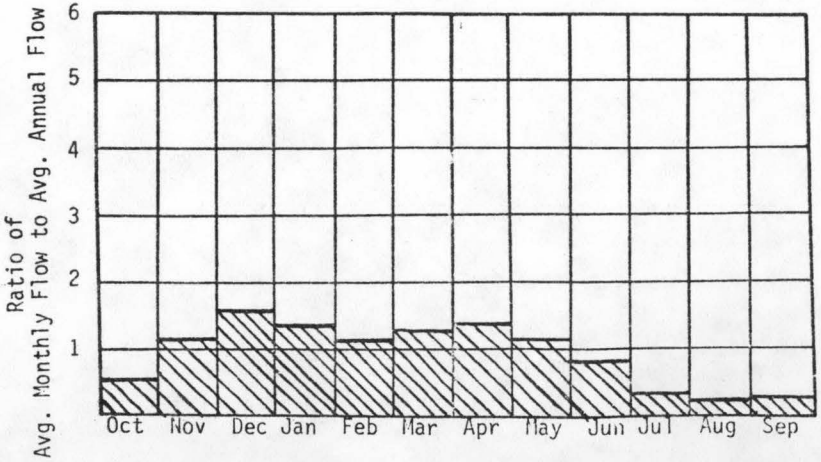
A.	Upstream Elevation of Reach	1570	Ft. MSL
B.	Downstream Elevation of Reach	97	Ft. MSL
C.	Total Available Head in Reach	1473	Ft.
D.	Average Slope in Reach	216.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	19	Sq.Mi.
F.	Inflow Classification	Natural	

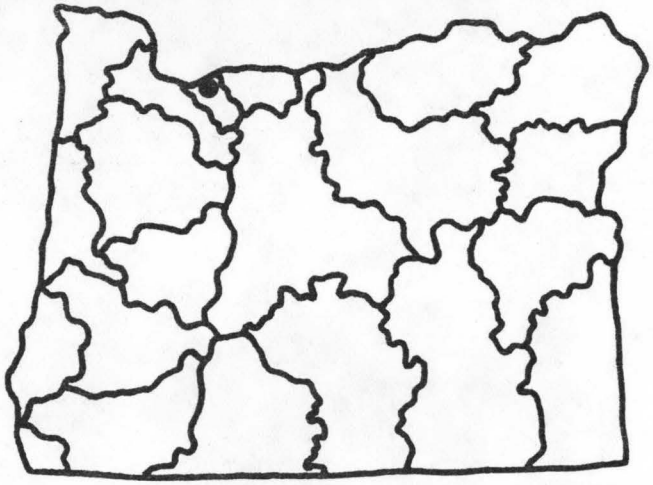
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	16.2	2.02	17.67	1.000
80	25.2	3.15	26.33	.955
50	57.2	7.14	49.04	.785
30	87.4	10.91	62.26	.652
10	145.8	18.21	75.05	.471

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 79 CFS





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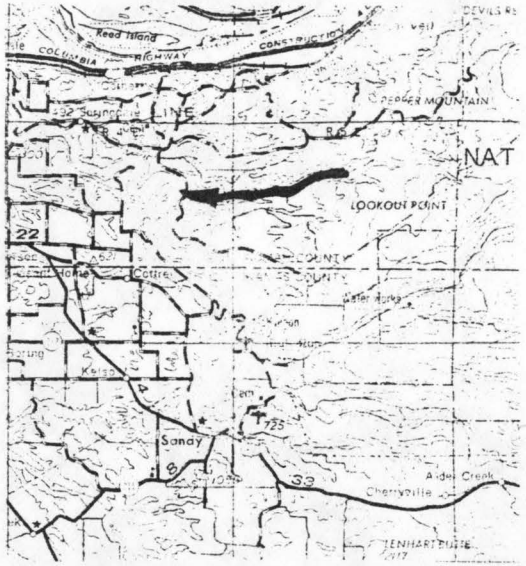


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-010-000-R0002

I. LOCATION

A. State	Oregon	
B. County	Multnomah	
C. Township, Range	T1s, R5E	
D. Latitude, Longitude	45°32'N, 122°09'W	
E. Stream Name	Gordon Creek	
F. Major Basin Name	Sandy	
G. River Mile	6.8 to H.W.	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

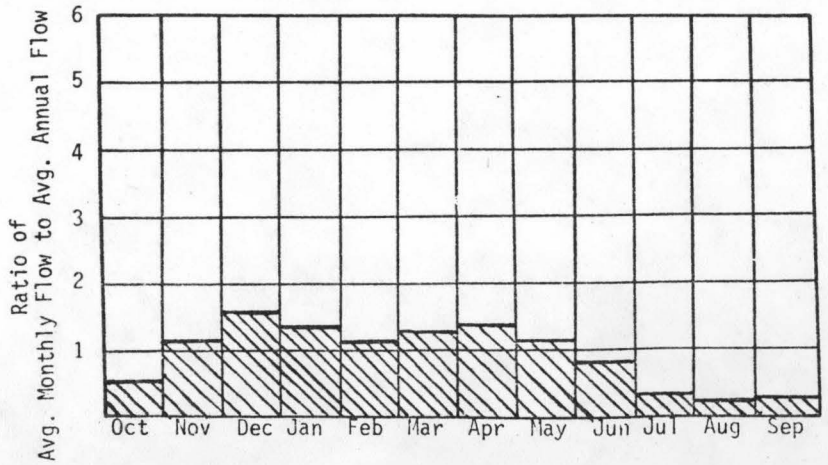
A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	9.4	Sq.Mi.
F. Inflow Classification	Natural	

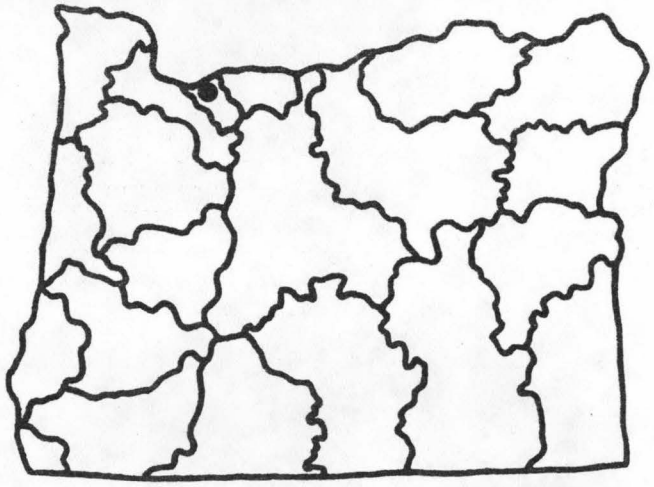
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.6	.07	.62	1.000
80	19.4	.11	.91	.956
50	41.0	.23	1.60	.795
30	61.6	.34	2.00	.663
10	101.6	.57	2.39	.480

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 56 CFS





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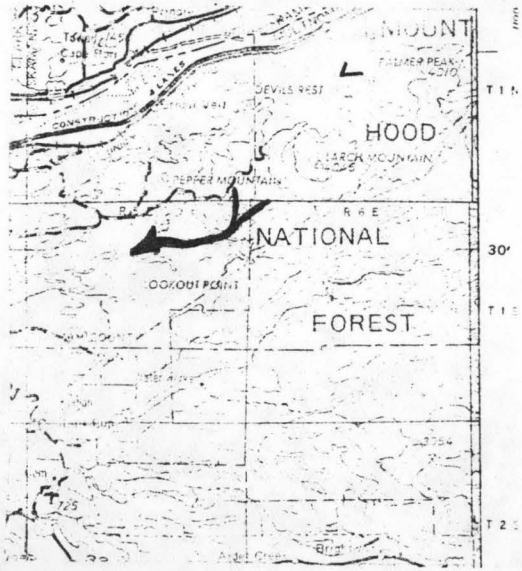


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-000-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Multnomah
C.	Township, Range	T1S, R4E
D.	Latitude, Longitude	45°28'N, 122°17'W
E.	Stream Name	Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	12.8 to 18.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

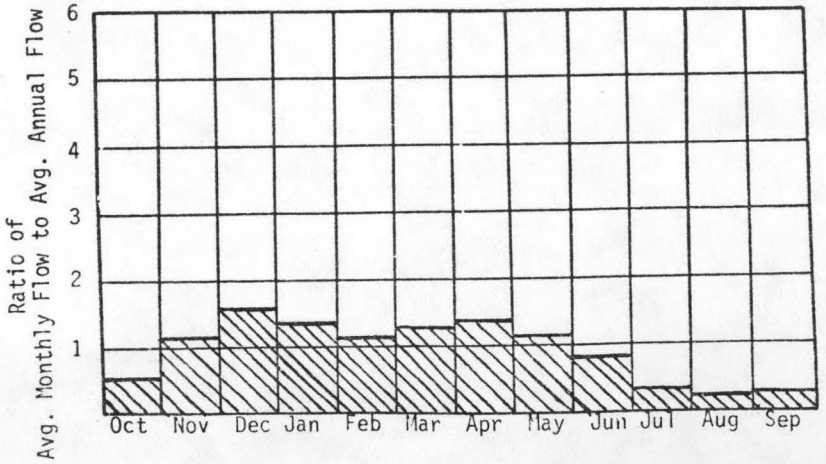
A.	Upstream Elevation of Reach	216	Ft. MSL
B.	Downstream Elevation of Reach	97	Ft. MSL
C.	Total Available Head in Reach	119	Ft.
D.	Average Slope in Reach	20.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	456	Sq.Mi.
F.	Inflow Classification	Regulated	

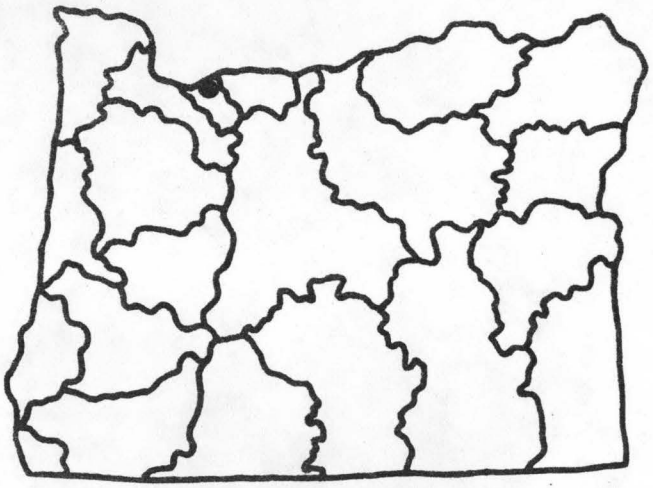
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	189.8	1.91	16.77	1.000
80	339.4	3.42	28.33	.945
50	1503.4	15.16	95.17	.717
30	2736.2	27.59	138.74	.574
10	5111.5	51.55	180.70	.400

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2398 CFS





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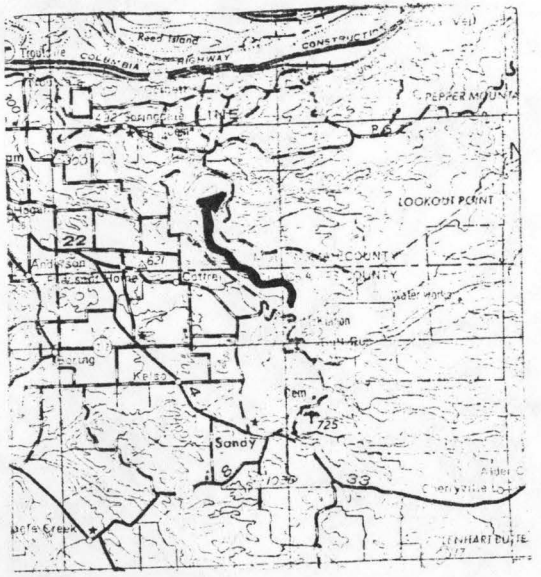


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R5E
D.	Latitude, Longitude	45°26'N, 122°13'W
E.	Stream Name	Bull Run River
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to 2.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

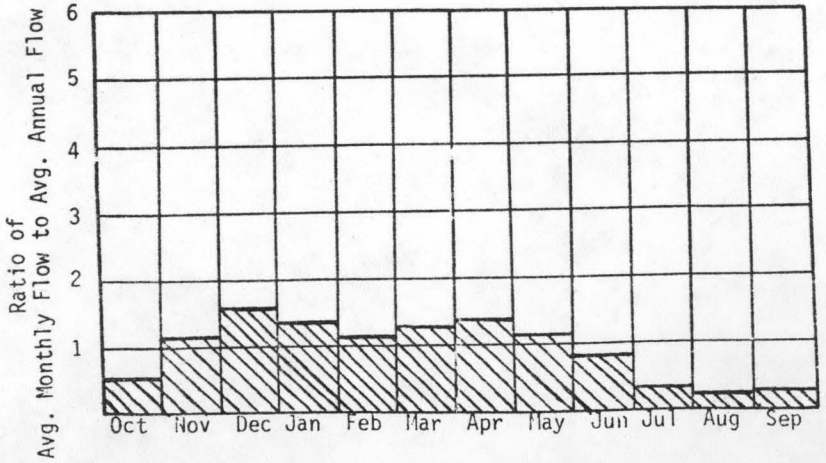
A.	Upstream Elevation of Reach	431	Ft. MSL
B.	Downstream Elevation of Reach	216	Ft. MSL
C.	Total Available Head in Reach	215	Ft.
D.	Average Slope in Reach	76.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	147.2	Sq.Mi.
F.	Inflow Classification	Regulated	

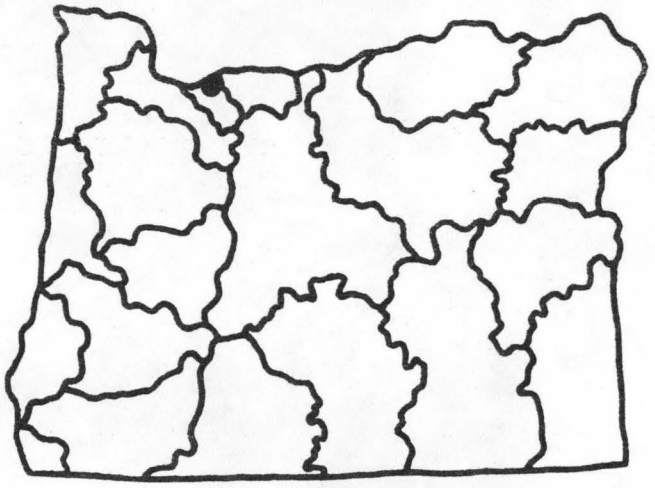
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	95.6	1.74	15.26	1.000
80	164.6	3.00	24.89	.948
50	605.0	11.02	70.59	.731
30	1049.0	19.11	98.93	.591
10	1899.1	34.60	126.07	.416

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 926 CFS





U.S.G.S. TOPO. SERIES
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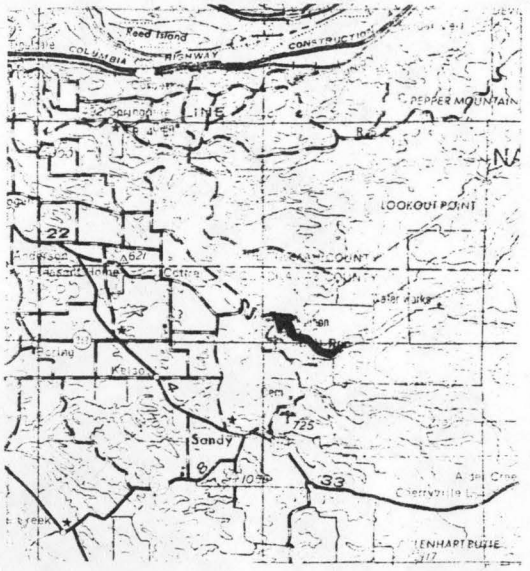
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-005-R0001

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R6E
D.	Latitude, Longitude	45°26'N, 122°08'W
E.	Stream Name	Little Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to 10.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

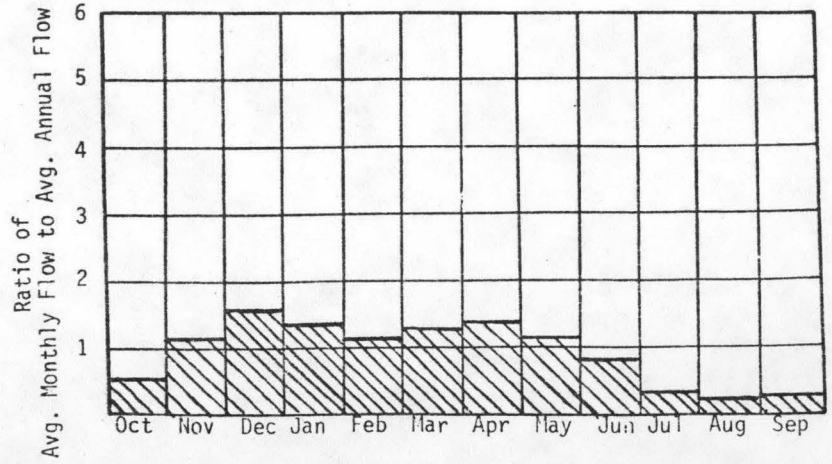
A.	Upstream Elevation of Reach	2438	Ft. MSL
B.	Downstream Elevation of Reach	431	Ft. MSL
C.	Total Available Head in Reach	2007	Ft.
D.	Average Slope in Reach	200.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	26.2	Sq.Mi.
F.	Inflow Classification	Natural	

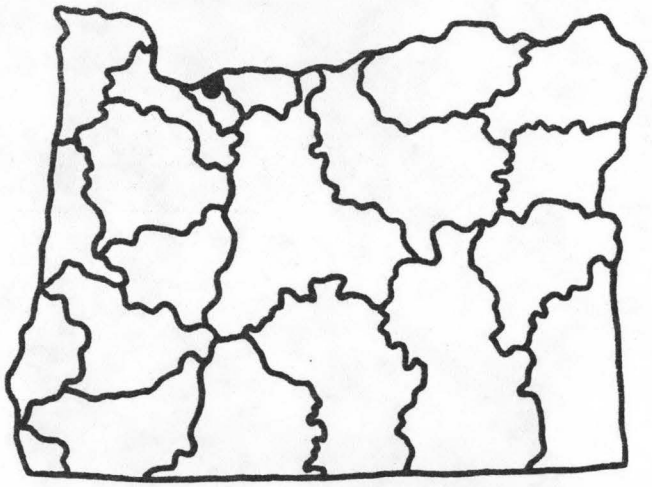
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	21.4	3.64	31.86	1.000
80	33.9	5.76	48.15	.954
50	82.9	14.10	95.63	.774
30	129.3	21.99	123.28	.640
10	218.6	37.17	149.88	.460

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 116 CFS





U.S.G.S. TOPO. SERIES
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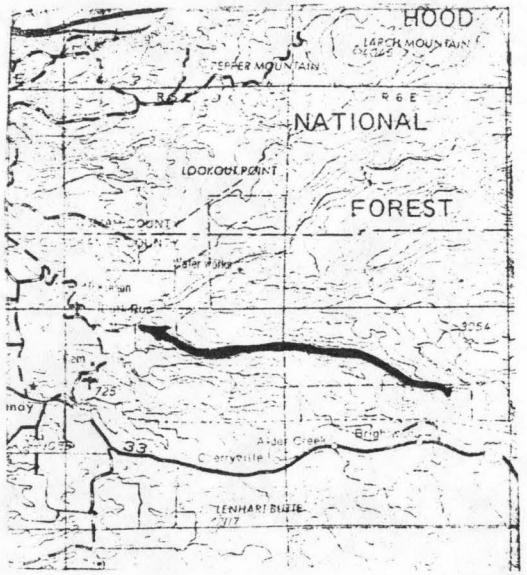


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-005-R0002

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R7E
D.	Latitude, Longitude	45°25'N, 121°58'W
E.	Stream Name	Little Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	10.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

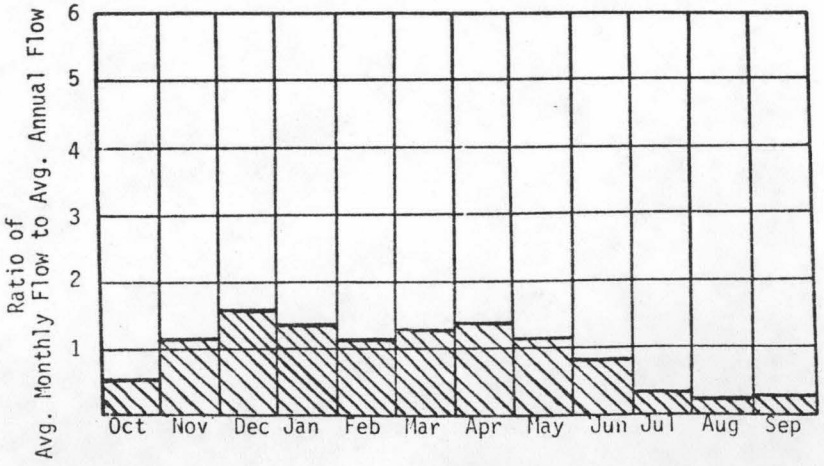
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	9.7	Sq.Mi.
F.	Inflow Classification	Natural	

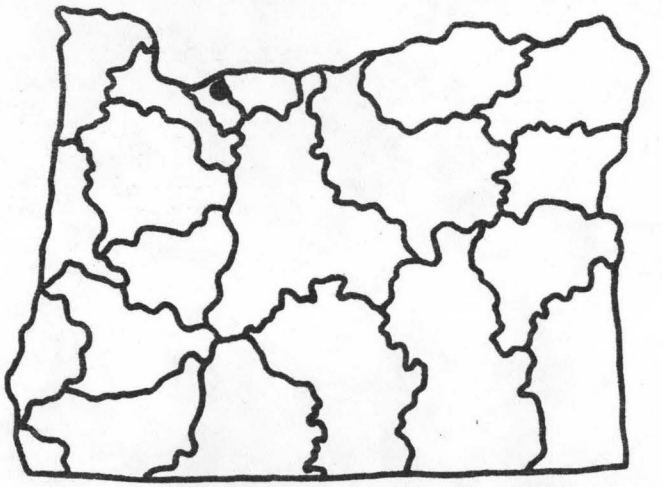
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	15.0	.08	.73	1.000
80	23.3	.13	1.09	.955
50	51.7	.29	1.99	.788
30	78.6	.44	2.52	.655
10	130.8	.73	3.03	.473

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 71 CFS





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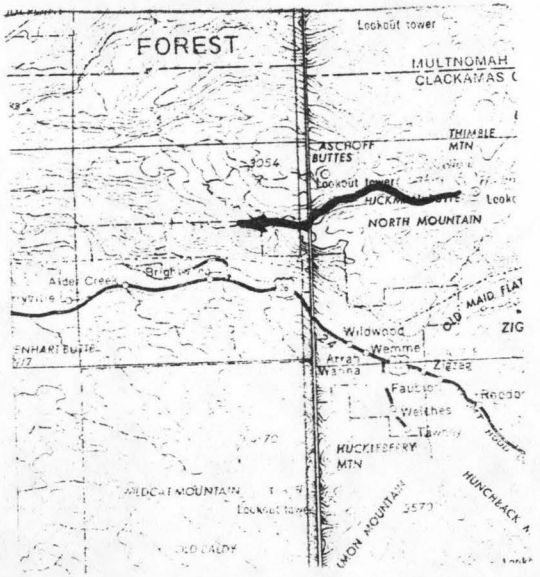


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T1S, R5E
D.	Latitude, Longitude	45°26'N, 122°10'W
E.	Stream Name	Bull Run River
F.	Major Basin Name	Sandy
G.	River Mile	2.8 to 6.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

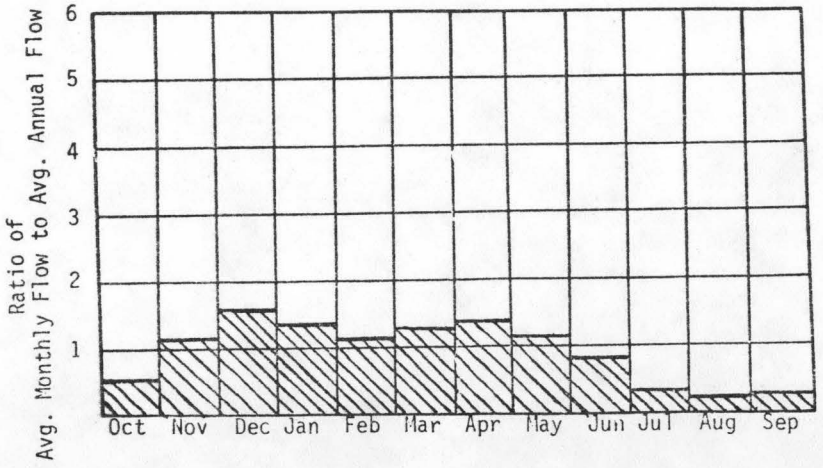
A.	Upstream Elevation of Reach	746	Ft. MSL
B.	Downstream Elevation of Reach	431	Ft. MSL
C.	Total Available Head in Reach	315	Ft.
D.	Average Slope in Reach	87.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	111.7	Sq.Mi.
F.	Inflow Classification	Regulated	

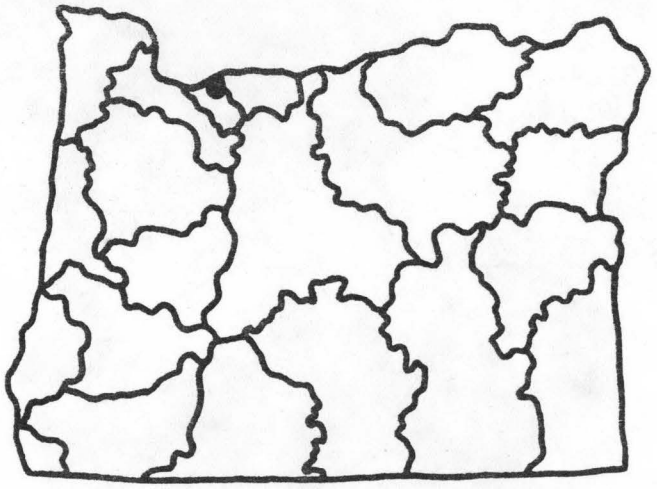
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	82.3	2.20	19.23	1.000
80	140.4	3.75	31.13	.948
50	495.5	13.23	85.11	.735
30	850.1	22.69	118.28	.595
10	1528.4	40.80	150.00	.420

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 752 CFS





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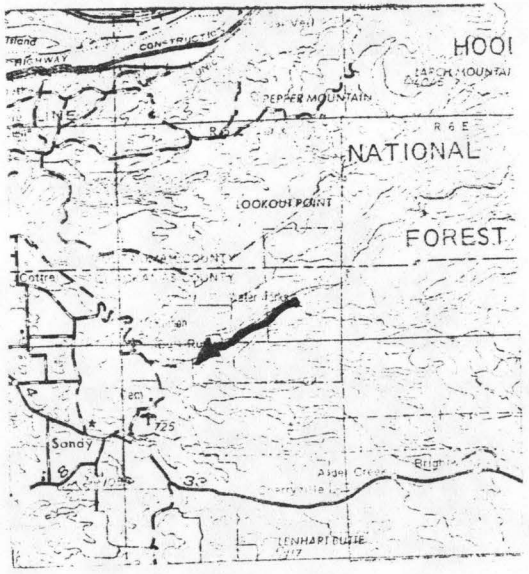
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-010-R0001

I. LOCATION

A. State	Oregon	
B. County	Clackamas	
C. Township, Range	T1S, R6E	
D. Latitude, Longitude	45°28'N, 122°06'W	
E. Stream Name	South Fork Bull Run	River
F. Major Basin Name	Sandy	
G. River Mile	0.0 to 2.2	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

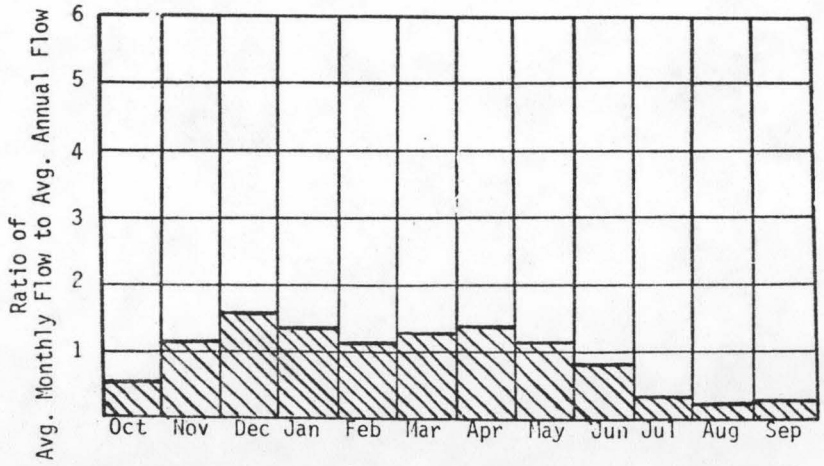
A. Upstream Elevation of Reach	1200	Ft. MSL
B. Downstream Elevation of Reach	746	Ft. MSL
C. Total Available Head in Reach	454	Ft.
D. Average Slope in Reach	206.4	Ft./Mi.
E. Drainage Area above Reach Mouth	18.1	Sq.Mi.
F. Inflow Classification	Natural	

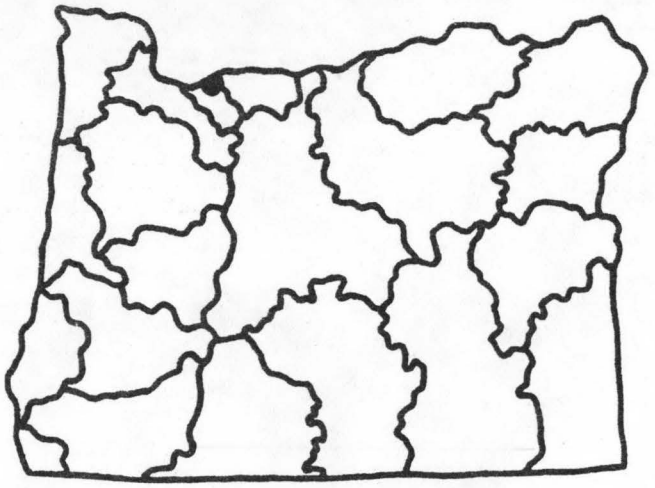
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	22.5	.87	7.59	1.000
80	35.8	1.38	11.50	.954
50	88.8	3.42	23.12	.772
30	139.0	5.35	29.89	.638
10	235.6	9.06	36.40	.458

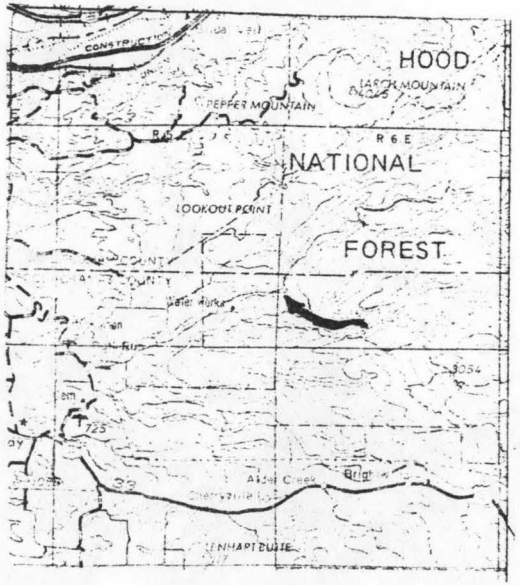
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 124 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-010-R0002

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T1S, R6E
D.	Latitude, Longitude	45°28'N, 122°00'W
E.	Stream Name	Cedar Creek
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

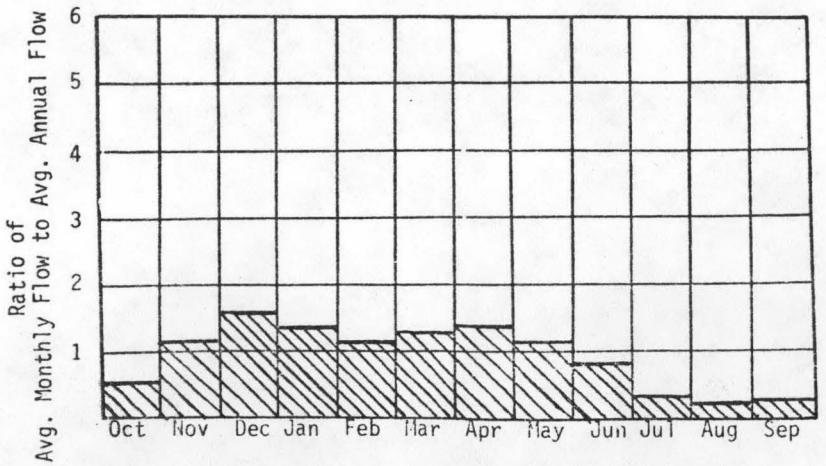
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	8.2	Sq.Mi.
F.	Inflow Classification	Natural	

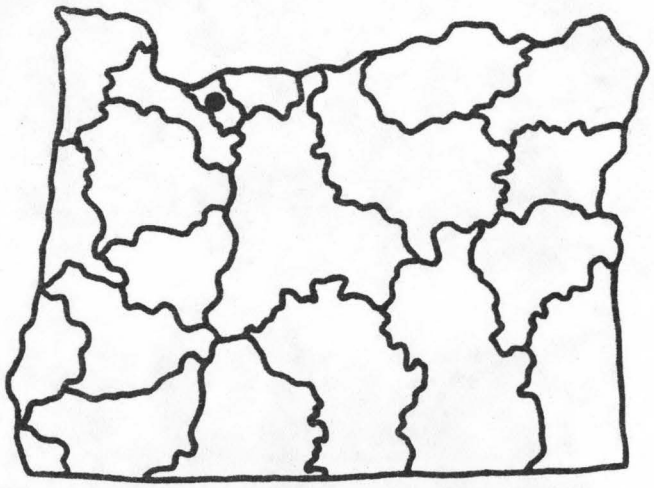
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.1	.08	.69	1.000
80	21.8	.12	1.02	.956
50	47.8	.27	1.85	.790
30	72.3	.40	2.33	.657
10	120.0	.67	2.80	.476

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 65 CFS





U.S.G.S. TOPO. SERIES
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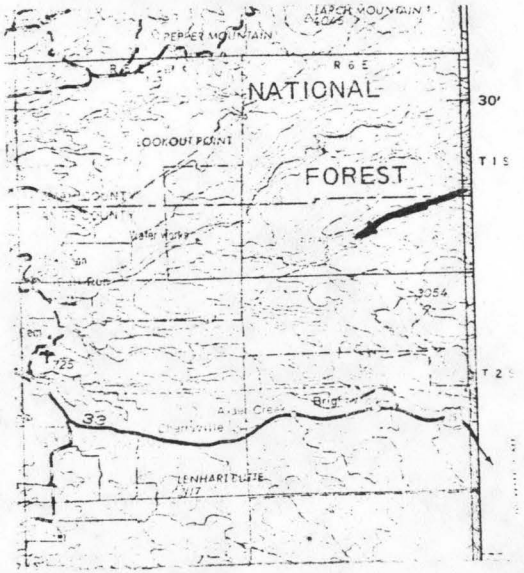
MAP NAME: VANCOUVER-THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-010-R0003

I. LOCATION

A. State	Oregon	
B. County	Clackamas	
C. Township, Range	T1S, R6E	
D. Latitude, Longitude	45°27'N, 122°01'W	
E. Stream Name	South Fork Bull Run	River
F. Major Basin Name	Sandy	
G. River Mile	2.2 to H.W.	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

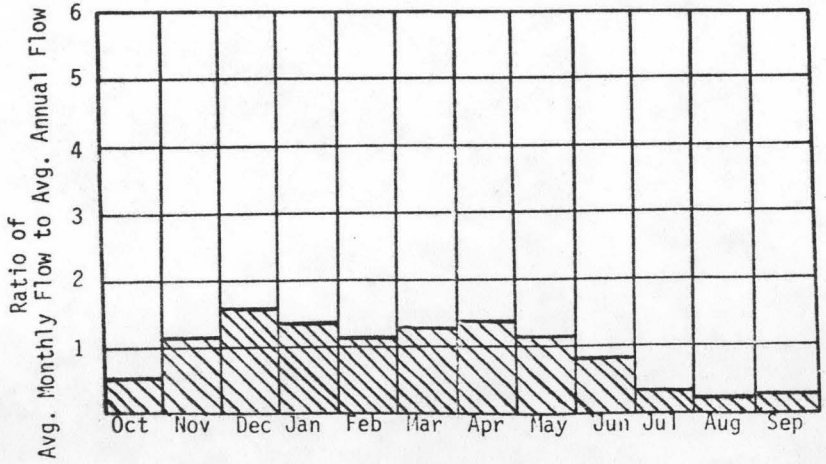
A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	7.6	Sq.Mi.
F. Inflow Classification	Natural	

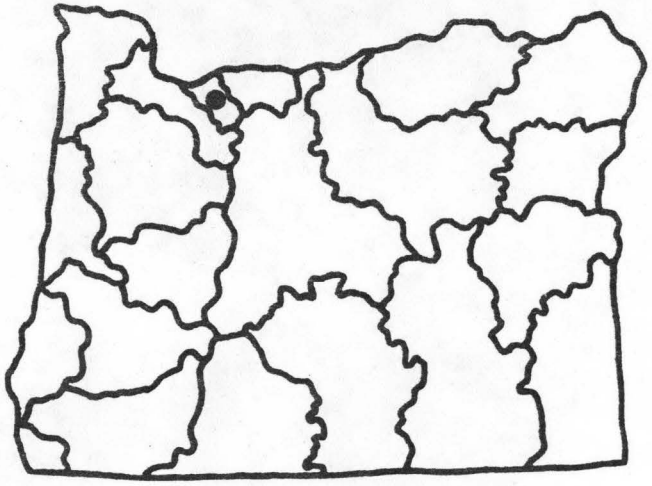
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.6	.07	.62	1.000
80	19.4	.11	.91	.956
50	41.0	.23	1.60	.795
30	61.7	.34	2.00	.663
10	101.7	.57	2.39	.480

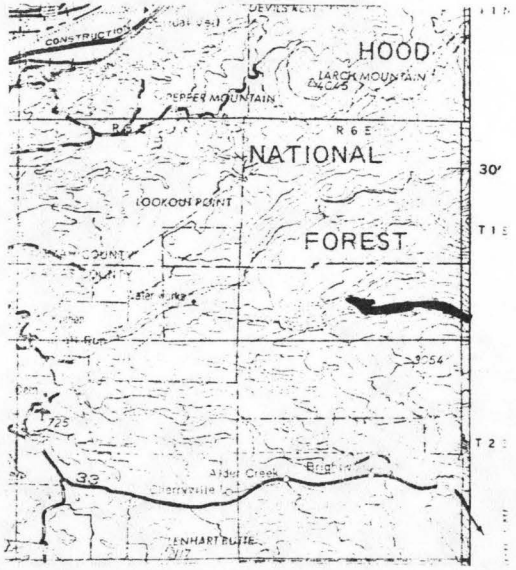
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 56 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER-THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-015-R0001

I. LOCATION

A. State	Oregon	
B. County	Multnomah	
C. Township, Range	T1N, R6E	
D. Latitude, Longitude	45°33'N, 122°01'W	
E. Stream Name	North Fork Bull Run	River
F. Major Basin Name	Sandy	
G. River Mile	0.0 to H.W.	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

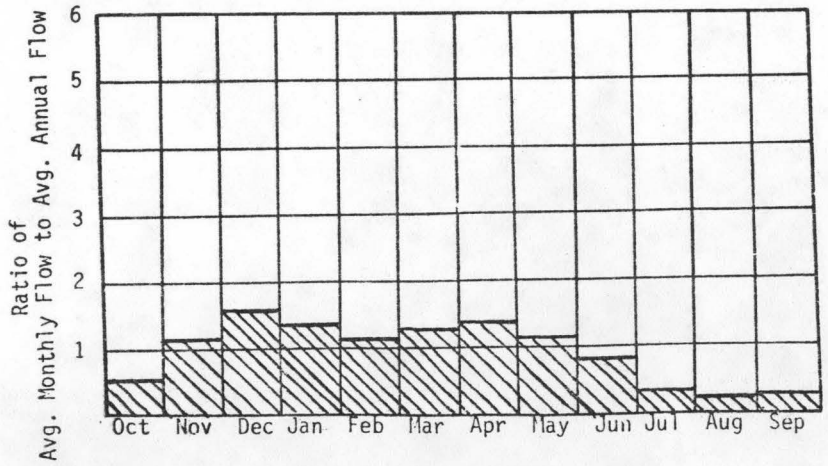
A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	9.8	Sq.Mi.
F. Inflow Classification	Regulated	

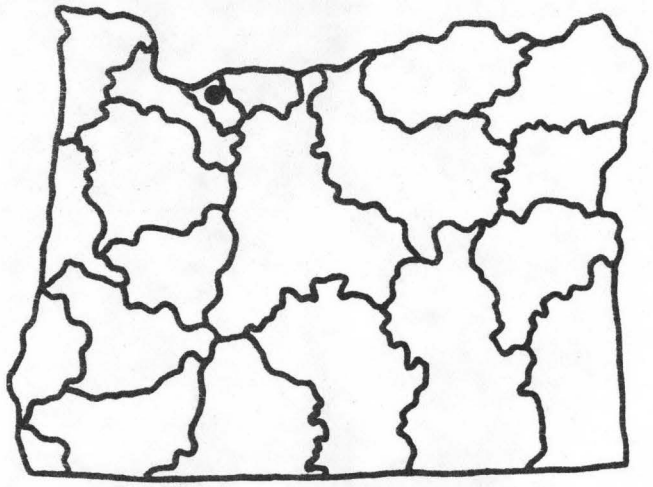
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.3	.08	.70	1.000
80	22.1	.12	1.04	.956
50	48.5	.27	1.88	.789
30	73.5	.41	2.37	.657
10	122.0	.68	2.84	.475

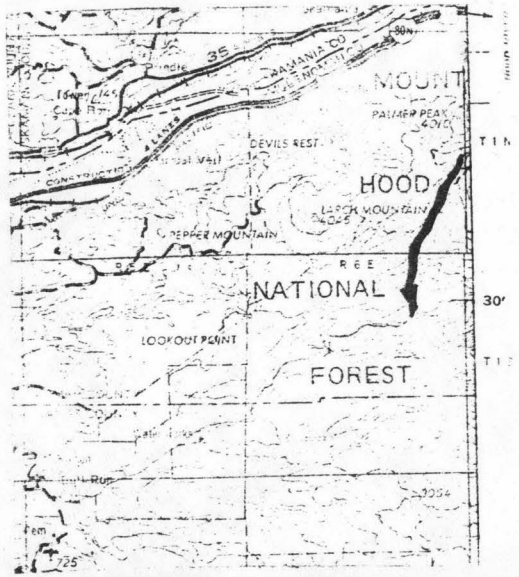
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 66 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER-THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-020-R0001

I. LOCATION

A.	State	Oregon
B.	County	Multnomah
C.	Township, Range	T1S, R7E
D.	Latitude, Longitude	45°28'N, 121°58'W
E.	Stream Name	Fir Creek
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

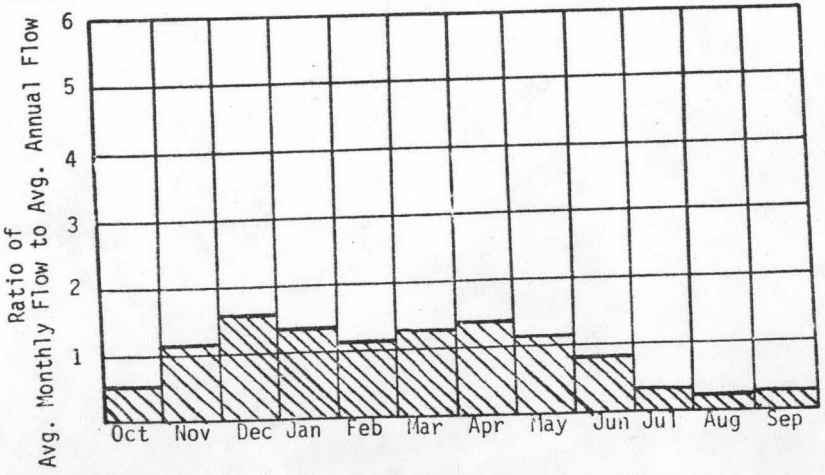
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	6.5	Sq.Mi.
F.	Inflow Classification	Natural	

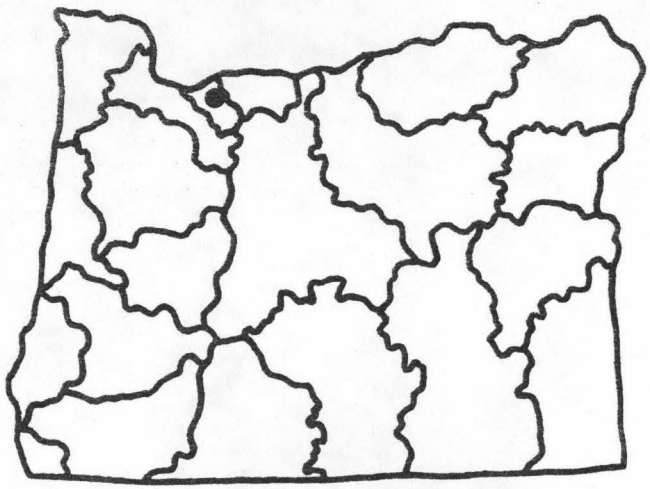
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.5	.07	.61	1.000
80	19.1	.11	.90	.956
50	40.4	.23	1.58	.795
30	60.7	.34	1.97	.663
10	100.1	.56	2.36	.481

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 55 CFS





U.S.G.S. TOPO. SERIES
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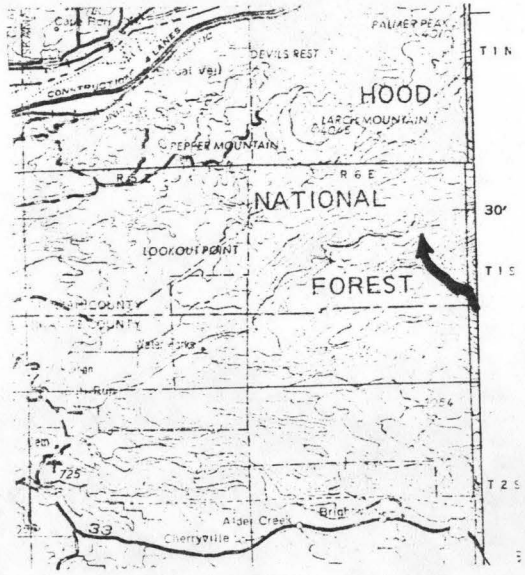
MAP NAME: VANCOUVER-THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Multnomah
C.	Township, Range	T1S, R7E
D.	Latitude, Longitude	45°30'N, 122°00'W
E.	Stream Name	Bull Run River
F.	Major Basin Name	Sandy
G.	River Mile	13.6 to 17.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

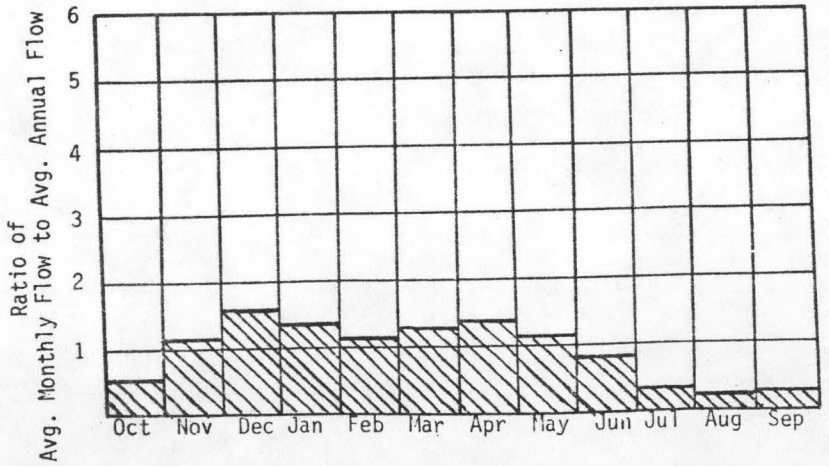
A.	Upstream Elevation of Reach	1280	Ft. MSL
B.	Downstream Elevation of Reach	1045	Ft. MSL
C.	Total Available Head in Reach	235	Ft.
D.	Average Slope in Reach	63.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	49.2	Sq.Mi.
F.	Inflow Classification	Natural	

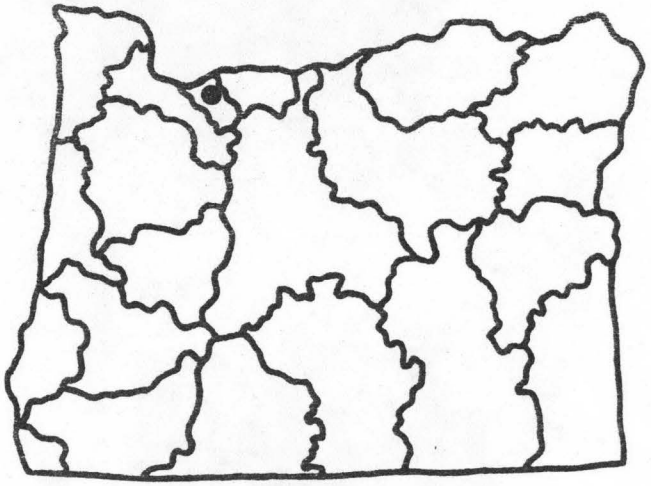
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	48.5	.97	8.46	1.000
80	80.4	1.60	13.33	.950
50	245.8	4.90	32.09	.748
30	406.3	8.09	43.29	.611
10	713.0	14.20	53.99	.434

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 362 CFS





U.S.G.S. TOPO. SERIES
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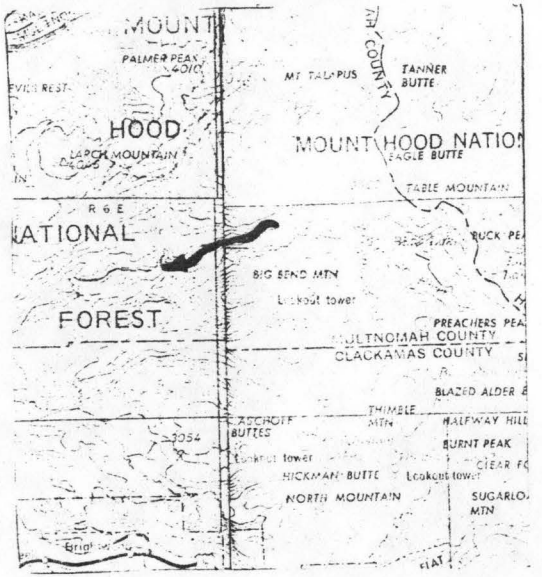
MAP NAME: VANCOUVER-THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-025-R0001

I. LOCATION

A.	State	Oregon
B.	County	Multnomah
C.	Township, Range	T1N, R7E
D.	Latitude, Longitude	45°32'N, 121°57'W
E.	Stream Name	Falls Creek
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

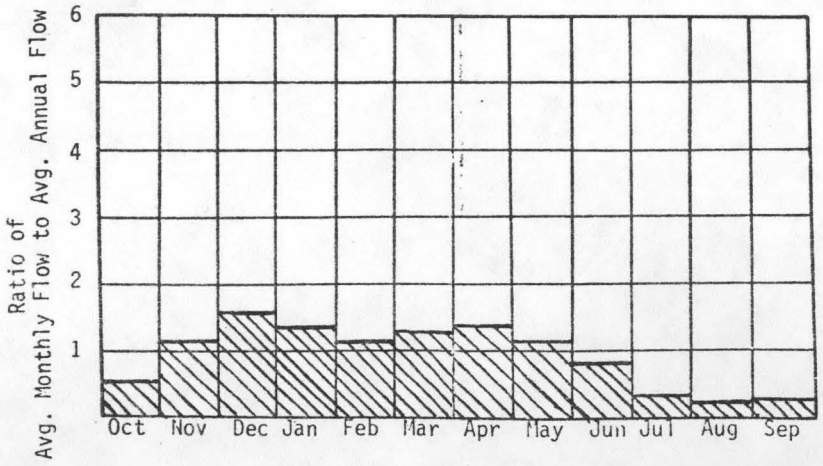
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	7.4	Sq.Mi.
F.	Inflow Classification	Natural	

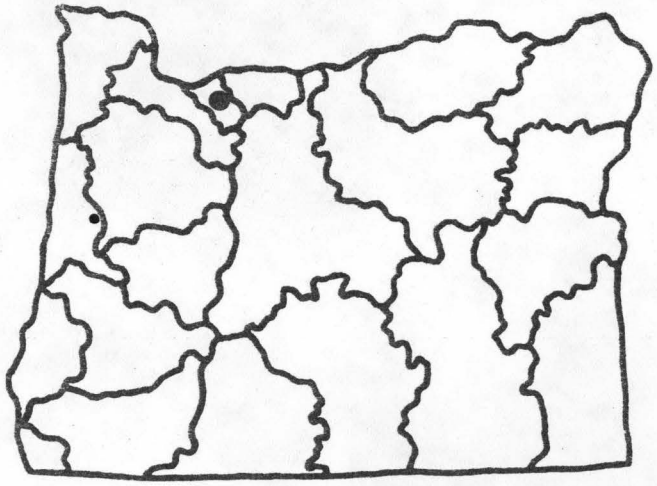
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.5	.07	.61	1.000
80	19.2	.11	.90	.956
50	40.6	.23	1.58	.795
30	60.9	.34	1.98	.663
10	100.5	.56	2.37	.481

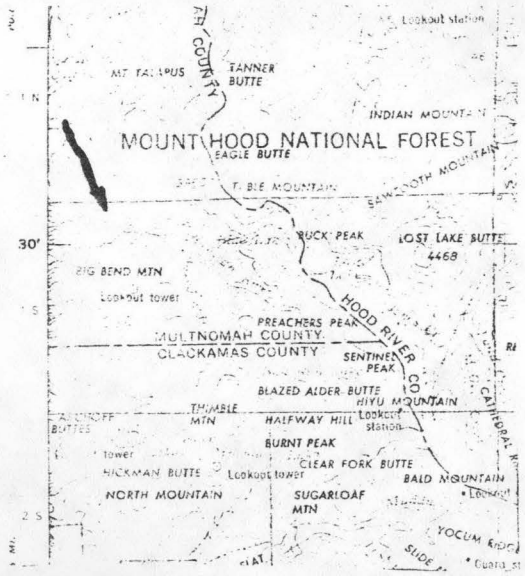
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 55 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-000-R0007

I. LOCATION

A. State	Oregon	
B. County	Multnomah	
C. Township, Range	T1S, R7E	
D. Latitude, Longitude	45°30'N, 121°56'W	
E. Stream Name	Bull Run River	
F. Major Basin Name	Sandy	
G. River Mile	17.3 to 20.6	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

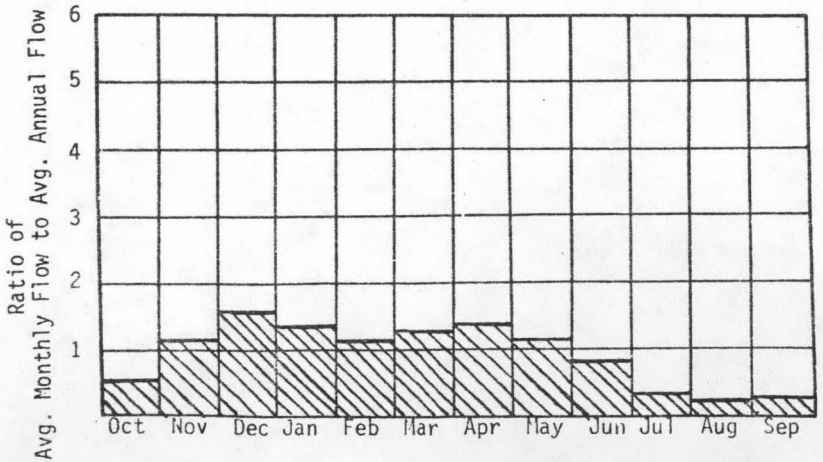
A. Upstream Elevation of Reach	1800	Ft. MSL
B. Downstream Elevation of Reach	1280	Ft. MSL
C. Total Available Head in Reach	520	Ft.
D. Average Slope in Reach	157.6	Ft./Mi.
E. Drainage Area above Reach Mouth	36.3	Sq.Mi.
F. Inflow Classification	Natural	

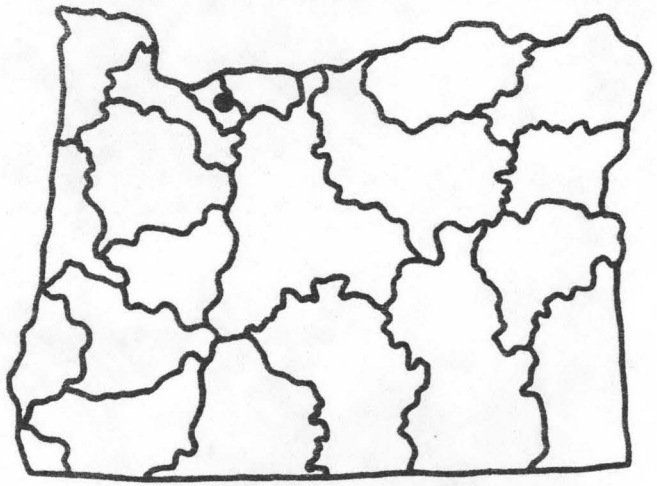
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	38.0	1.68	14.69	1.000
80	62.2	2.74	22.86	.951
50	178.1	7.85	51.93	.755
30	289.3	12.75	69.10	.619
10	502.1	22.13	85.53	.441

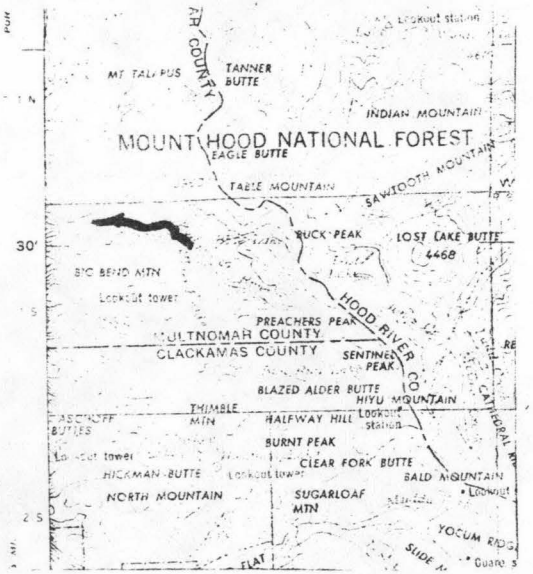
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 258 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

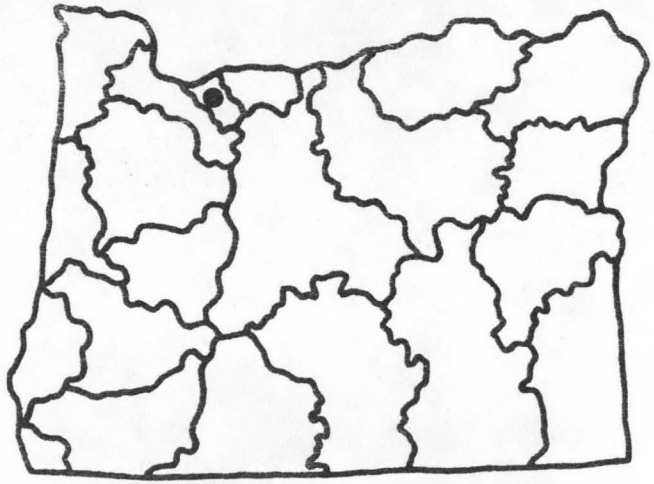


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-030-R0001

I. LOCATION

A.	State	Oregon
B.	County	Multnomah
C.	Township, Range	T1S, R7E
D.	Latitude, Longitude	45°29'N, 121°56'W
E.	Stream Name	Blazed Alder Creek
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to 3.6



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

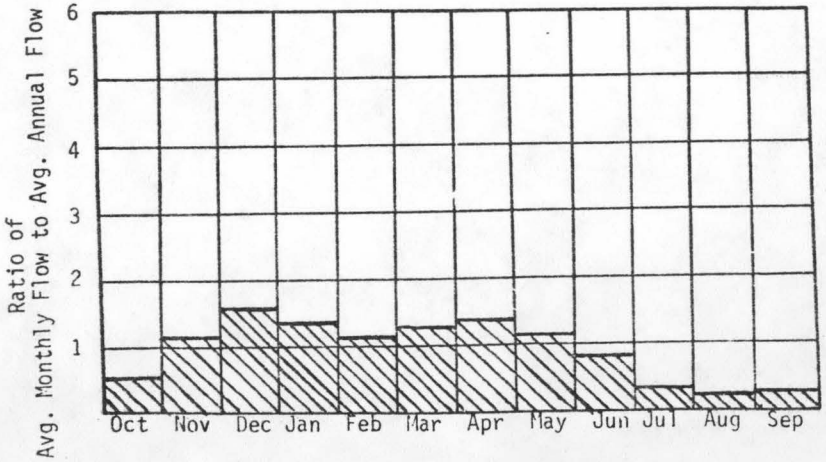
A.	Upstream Elevation of Reach	2520	Ft. MSL
B.	Downstream Elevation of Reach	1800	Ft. MSL
C.	Total Available Head in Reach	720	Ft.
D.	Average Slope in Reach	200	Ft./Mi.
E.	Drainage Area above Reach Mouth	17.0	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

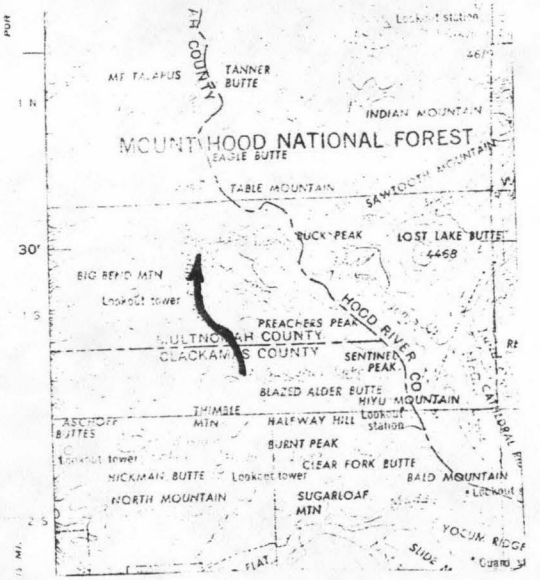
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	20.1	1.22	10.72	1.000
80	31.7	1.93	16.15	.954
50	76.1	4.65	31.60	.776
30	118.2	7.21	40.59	.643
10	199.2	12.16	49.25	.463

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 106 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-030-R0002

I. LOCATION

A.	State	Oregon
B.	County	Multnomah
C.	Township, Range	T1S, R8E
D.	Latitude, Longitude	45°27'N, 121°51'W
E.	Stream Name	Blazed Alder Creek
F.	Major Basin Name	Sandy
G.	River Mile	3.6 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

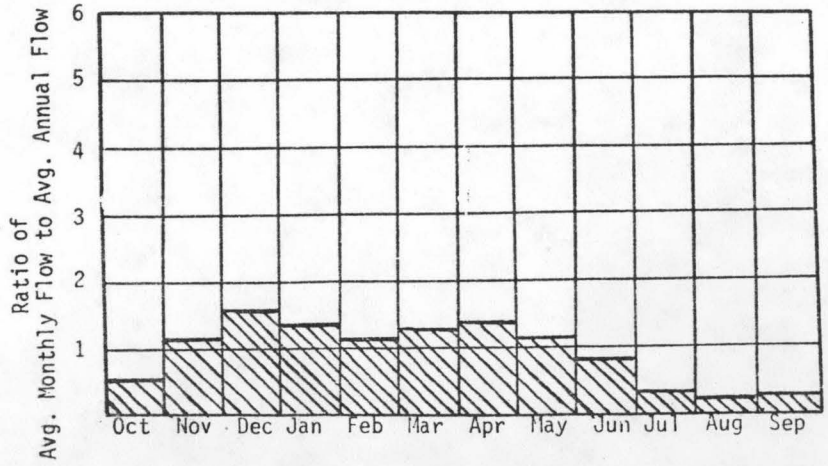
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	8.5	Sq.Mi.
F.	Inflow Classification	Natural	

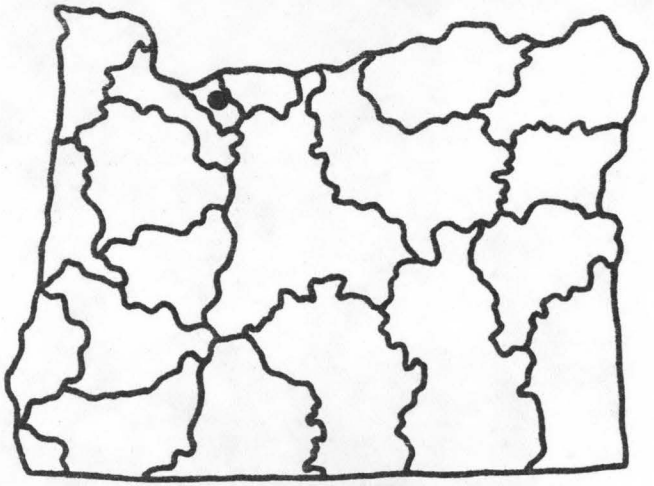
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	15.2	.09	.75	1.000
80	23.7	.13	1.11	.955
50	52.8	.30	2.04	.787
30	80.4	.45	2.58	.654
10	133.8	.75	3.10	.473

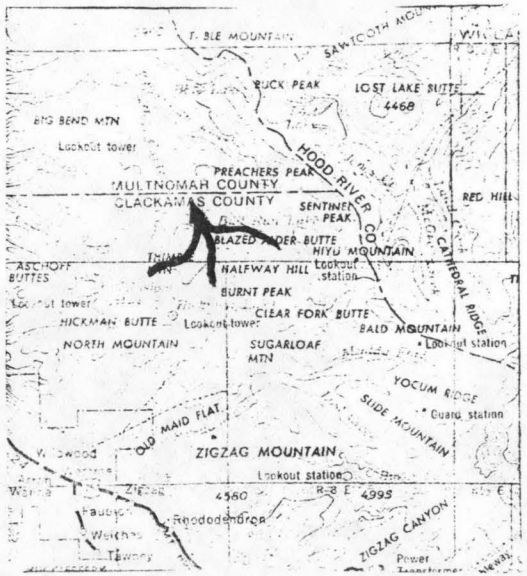
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 72 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-000-R0008

I. LOCATION

A.	State	Oregon
B.	County	Multnomah
C.	Township, Range	T1S, R7E
D.	Latitude, Longitude	45°28'N, 121°53'W
E.	Stream Name	Bull Run River
F.	Major Basin Name	Sandy
G.	River Mile	20.6 to 25.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

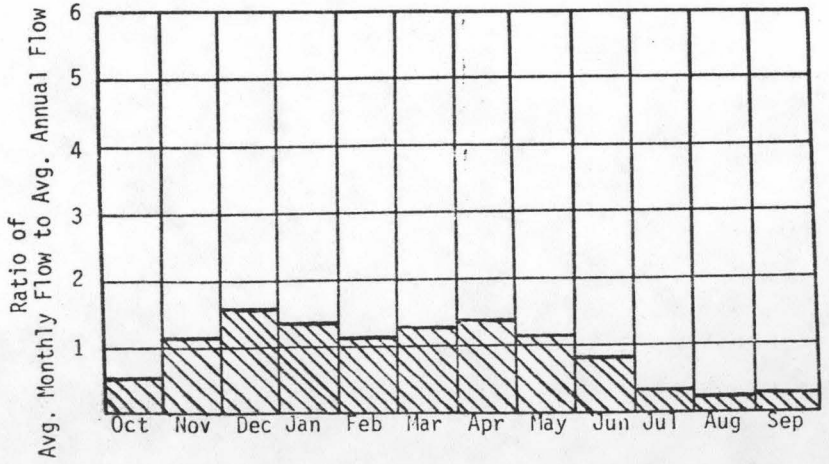
A.	Upstream Elevation of Reach	3145	Ft. MSL
B.	Downstream Elevation of Reach	1800	Ft. MSL
C.	Total Available Head in Reach	1345	Ft.
D.	Average Slope in Reach	305.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	10.1	Sq.Mi.
F.	Inflow Classification	Natural	

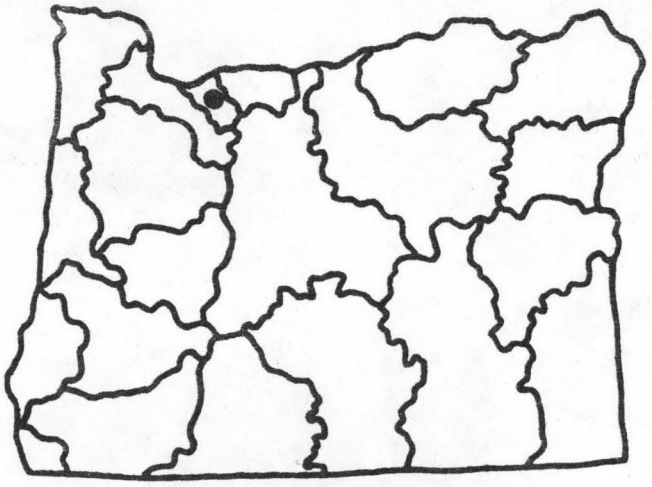
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.9	1.70	14.87	1.000
80	23.1	2.63	22.05	.956
50	51.3	5.84	40.32	.788
30	77.9	8.88	50.97	.655
10	129.6	14.77	61.29	.474

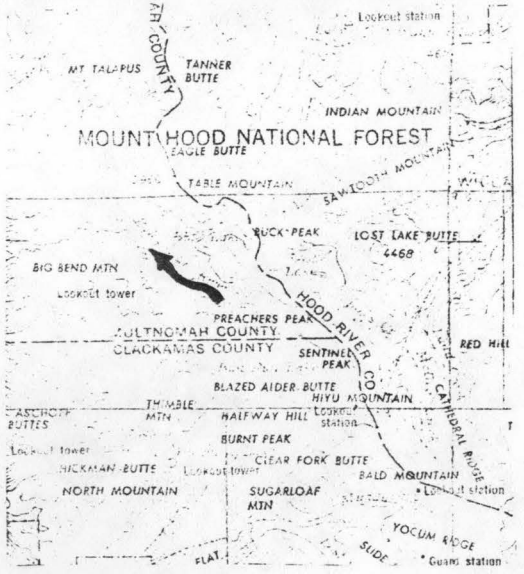
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 70 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-015-000-R0009

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T1S, R8E
D.	Latitude, Longitude	45°27'N, 121°51'W
E.	Stream Name	Bull Run River
F.	Major Basin Name	Sandy
G.	River Mile	25.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

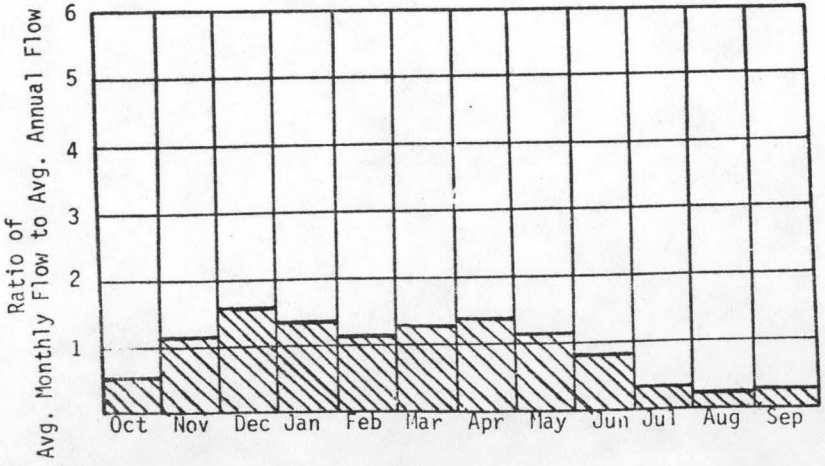
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	5.5	Sq.Mi.
F.	Inflow Classification	Natural	

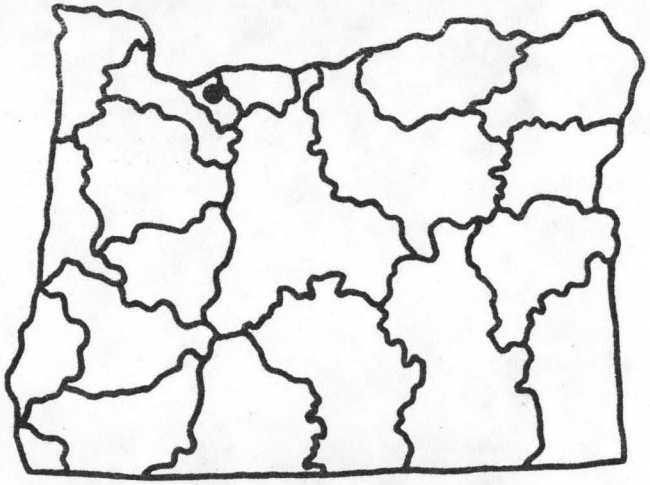
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	11.8	.07	.58	1.000
80	18.0	.10	.85	.957
50	37.5	.21	1.47	.797
30	56.1	.31	1.83	.666
10	92.3	.52	2.19	.483

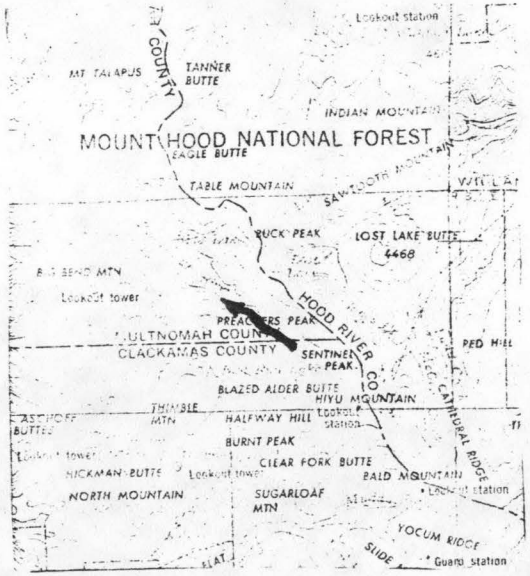
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 51 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-000-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R4E
D.	Latitude, Longitude	45°26'N, 122°15'W
E.	Stream Name	Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	18.5 to 21.9

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

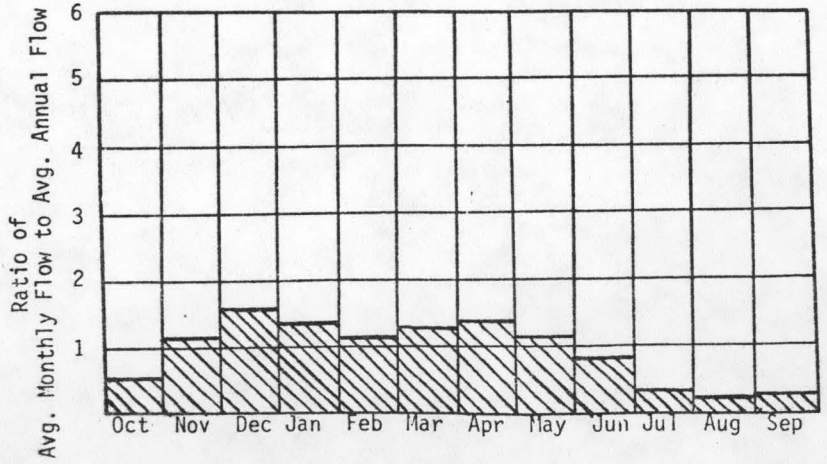
A.	Upstream Elevation of Reach	365	Ft. MSL
B.	Downstream Elevation of Reach	216	Ft. MSL
C.	Total Available Head in Reach	149	Ft.
D.	Average Slope in Reach	43.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	293.1	Sq.Mi.
F.	Inflow Classification	Natural	

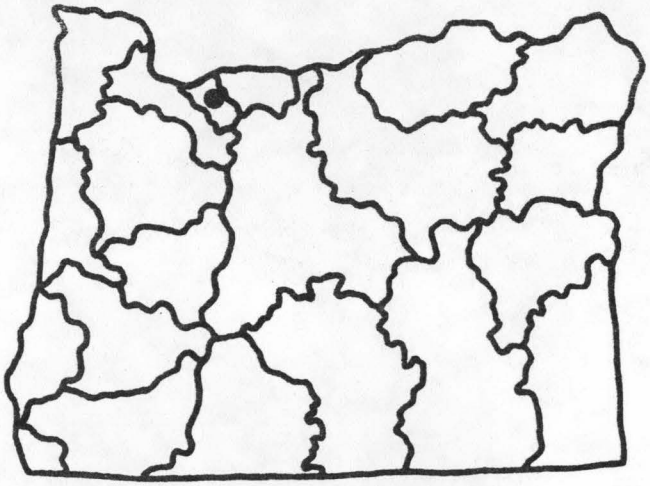
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	134.7	1.70	14.90	1.000
80	236.4	2.98	24.74	.946
50	954.0	12.05	76.34	.723
30	1694.6	21.40	109.11	.582
10	3116.4	39.35	140.56	.408

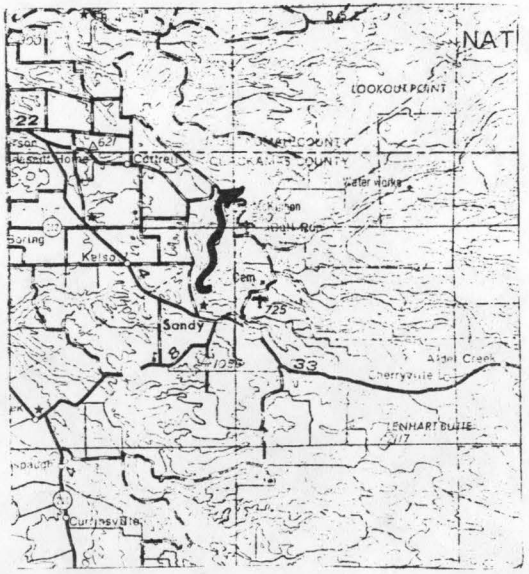
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1491CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-020-000-R0001

I. LOCATION

A. State	Oregon	
B. County	Clackamas	
C. Township, Range	T2S, R5E	
D. Latitude, Longitude	45°25'N, 122°14'W	
E. Stream Name	Cedar Creek	
F. Major Basin Name	Sandy	
G. River Mile	0.0 to 3.5	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

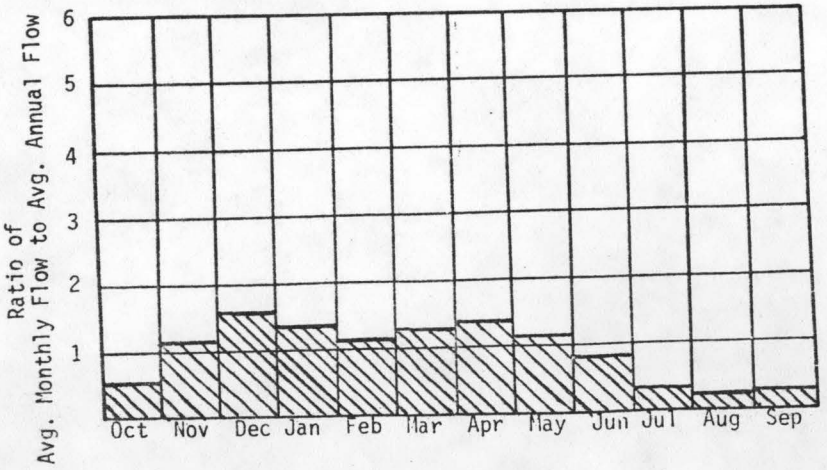
A. Upstream Elevation of Reach	940	Ft. MSL
B. Downstream Elevation of Reach	365	Ft. MSL
C. Total Available Head in Reach	575	Ft.
D. Average Slope in Reach	164.3	Ft./Mi.
E. Drainage Area above Reach Mouth	16.6	Sq.Mi.
F. Inflow Classification	Natural	

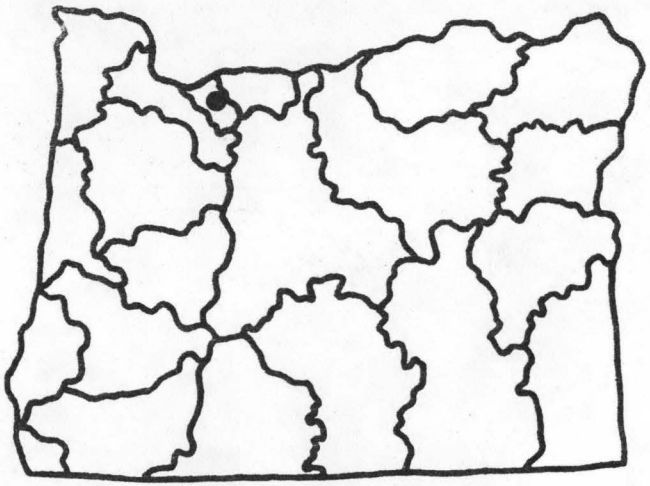
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	16.1	.78	6.87	1.000
80	25.1	1.22	10.23	.955
50	56.8	2.77	19.03	.785
30	86.8	4.23	24.15	.652
10	144.9	7.06	29.11	.471

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 78 CFS





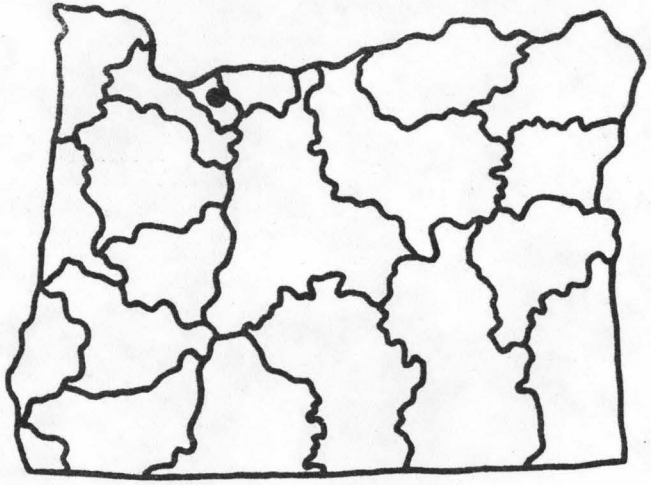
U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-020-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T3S, R5E
D.	Latitude, Longitude	45°21'N, 122°08'W
E.	Stream Name	Cedar Creek
F.	Major Basin Name	Sandy
G.	River Mile	3.5 to H.W.



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	13.3	Sq.Mi.
F.	Inflow Classification	Natural	

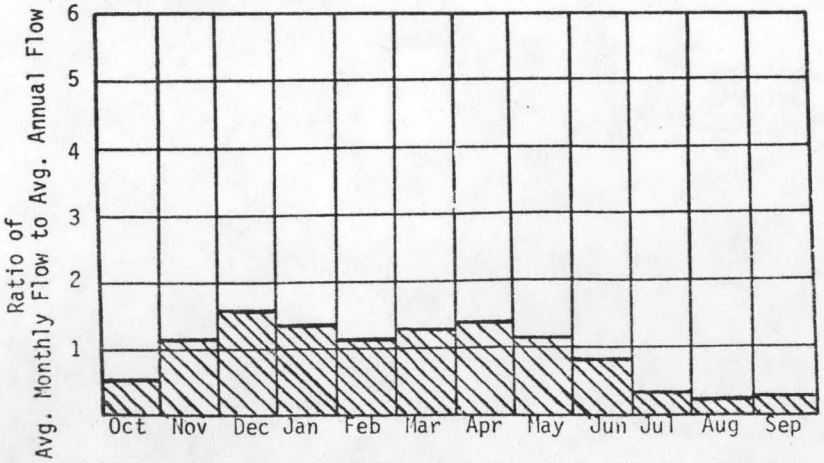
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

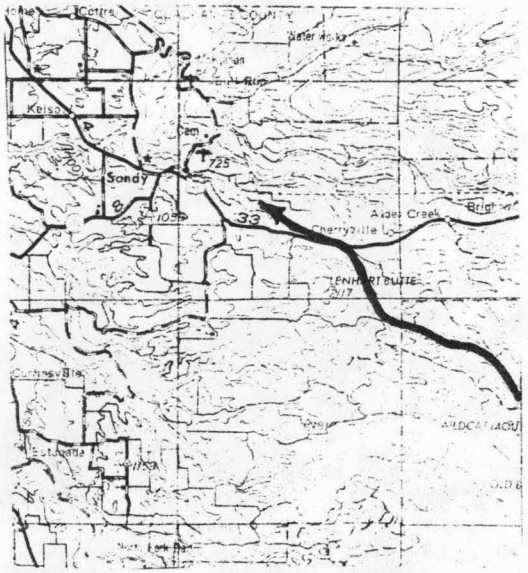
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	15.0	.08	.74	1.000
80	23.3	.13	1.09	.955
50	51.8	.29	2.00	.787
30	78.8	.44	2.53	.655
10	131.1	.73	3.04	.473

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 71 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-000-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R5E
D.	Latitude, Longitude	45°24'N, 122°12'W
E.	Stream Name	Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	21.9 to 30.1

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

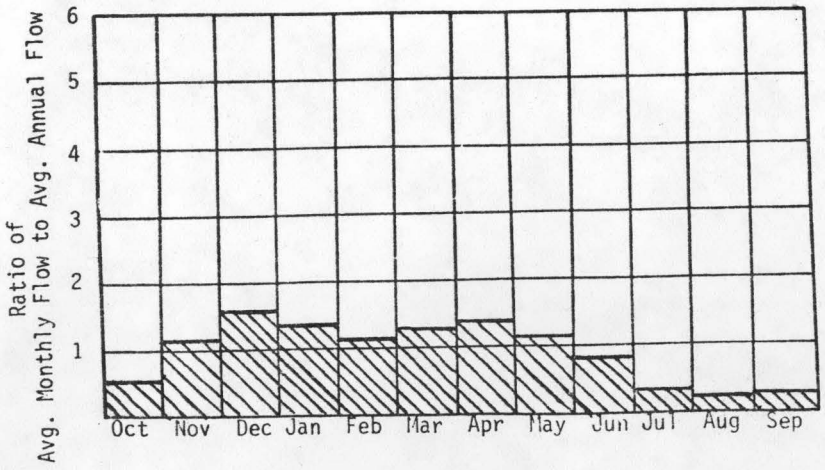
A.	Upstream Elevation of Reach	734	Ft. MSL
B.	Downstream Elevation of Reach	365	Ft. MSL
C.	Total Available Head in Reach	369	Ft.
D.	Average Slope in Reach	45.0	Ft./Mi.
E.	Drainage Area above Reach Mouth	273.3	Sq.Mi.
F.	Inflow Classification	Natural	

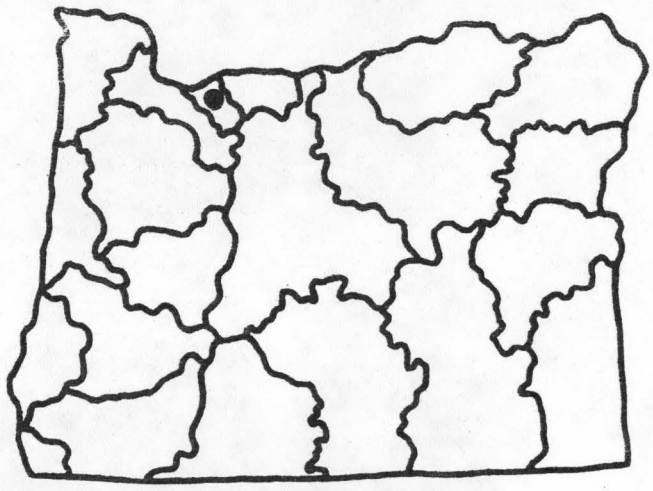
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	128.3	4.01	35.15	1.000
80	224.5	7.02	58.21	.946
50	894.2	27.96	177.46	.724
30	1583.0	49.50	252.93	.583
10	2904.7	90.83	325.35	.409

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1394 CFS





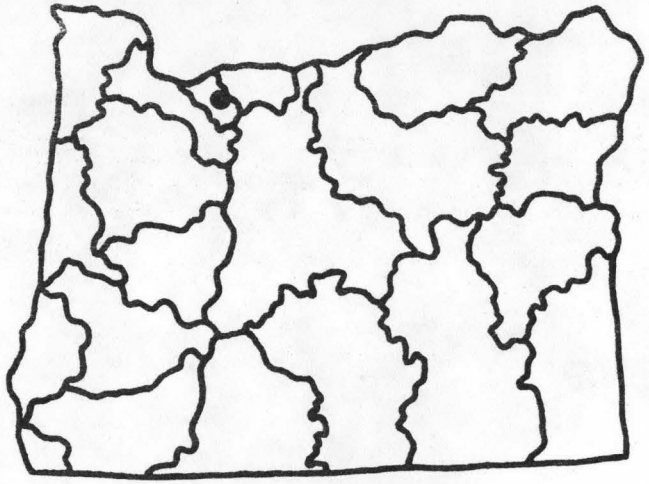
U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-000-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R6E
D.	Latitude, Longitude	45°24'N, 122°05'W
E.	Stream Name	Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	30.1 to 37.5



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

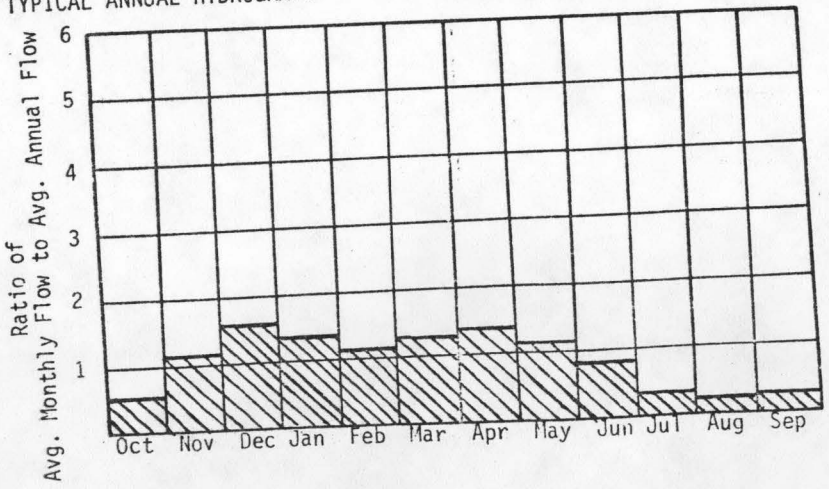
A.	Upstream Elevation of Reach	1077	Ft. MSL
B.	Downstream Elevation of Reach	734	Ft. MSL
C.	Total Available Head in Reach	343	Ft.
D.	Average Slope in Reach	46.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	263.3	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	123.8	3.60	31.52	1.000
80	216.1	6.28	52.10	.947
50	852.5	24.78	157.42	.725
30	1505.3	43.75	223.91	.584
10	2757.5	80.15	287.68	.410

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1326 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-025-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R6E
D.	Latitude, Longitude	45°22'N, 122°01'W
E.	Stream Name	Salmon River
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to 0.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

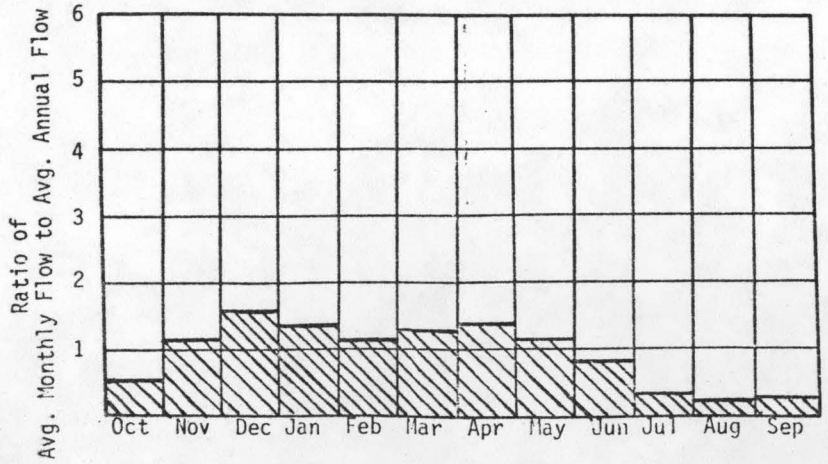
A.	Upstream Elevation of Reach	1087	Ft. MSL
B.	Downstream Elevation of Reach	1077	Ft. MSL
C.	Total Available Head in Reach	10	Ft.
D.	Average Slope in Reach	12.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	114.7	Sq.Mi.
F.	Inflow Classification	Natural	

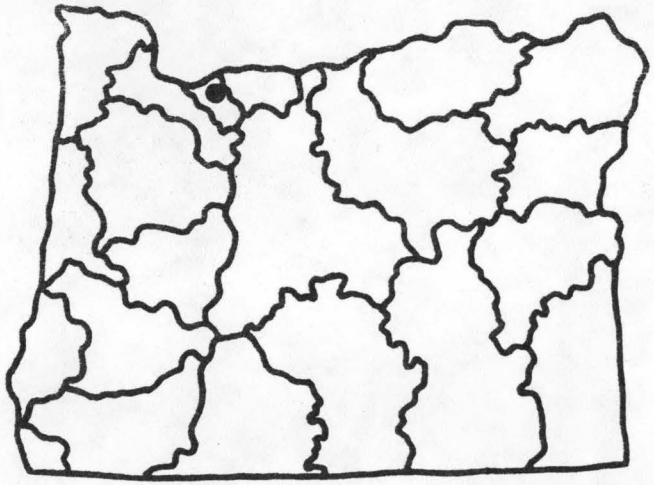
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	69.0	.06	.51	1.000
80	116.6	.10	.82	.949
50	392.3	.33	2.15	.739
30	664.6	.56	2.96	.600
10	1185.2	1.00	3.73	.424

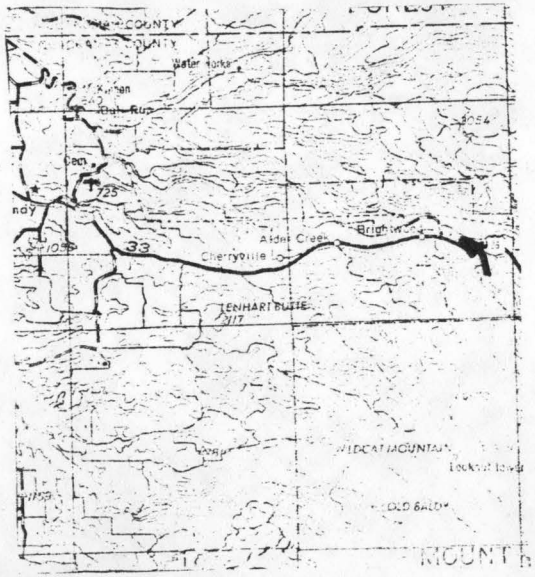
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 589 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER-THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-025-000-R0002

I. LOCATION

A. State	Oregon	
B. County	Clackamas	
C. Township, Range	T2S, R7E	
D. Latitude, Longitude	45°22'N, 121°59'W	
E. Stream Name	Salmon River	
F. Major Basin Name	Sandy	
G. River Mile	0.8 to 7.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

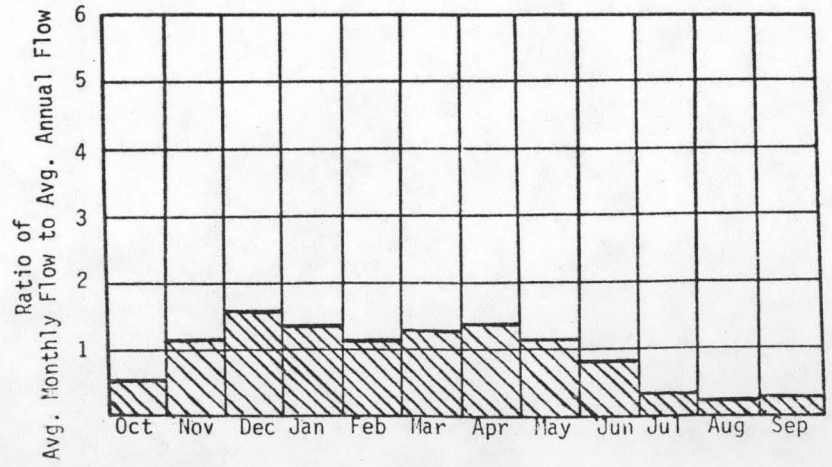
A. Upstream Elevation of Reach	1335	Ft. MSL
B. Downstream Elevation of Reach	1087	Ft. MSL
C. Total Available Head in Reach	248	Ft.
D. Average Slope in Reach	40.0	Ft./Mi.
E. Drainage Area above Reach Mouth	107.2	Sq.Mi.
F. Inflow Classification	Natural	

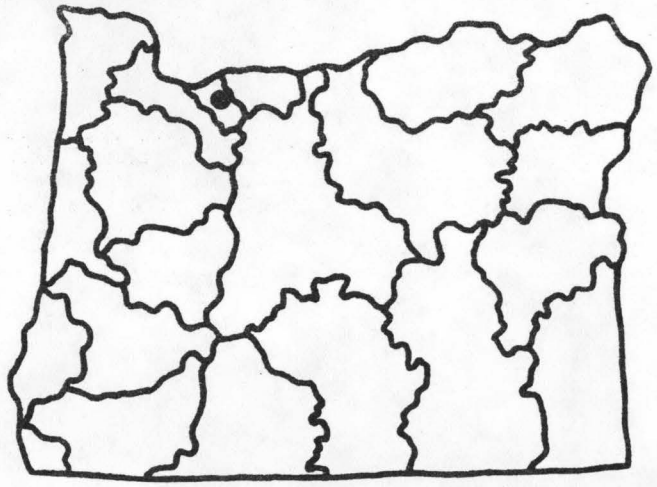
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	64.5	1.36	11.88	1.000
80	108.7	2.28	19.00	.949
50	359.1	7.55	48.97	.741
30	605.6	12.73	67.12	.602
10	1076.8	22.63	84.47	.426

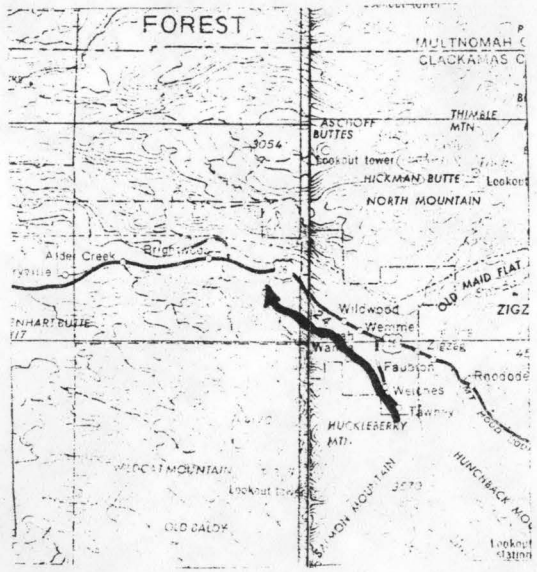
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 537 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-025-010-R0001

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T3S, R7E
D.	Latitude, Longitude	45°18'N, 121°57'W
E.	Stream Name	Cheeney Creek
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

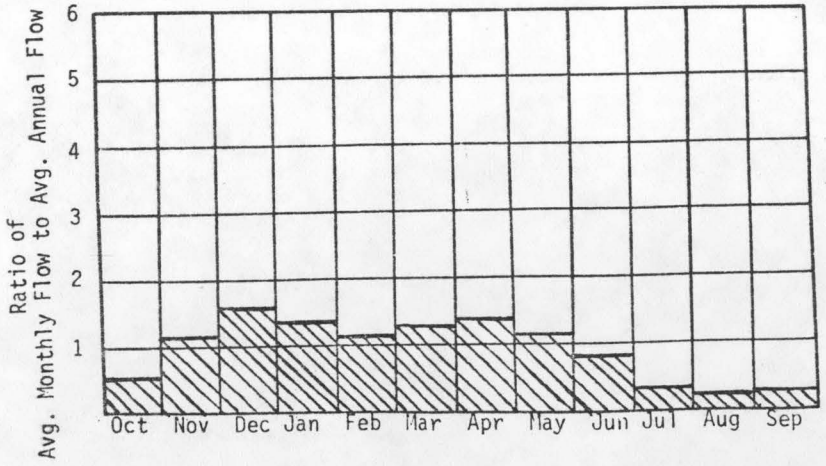
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	10.3	Sq.Mi.
F.	Inflow Classification	Natural	

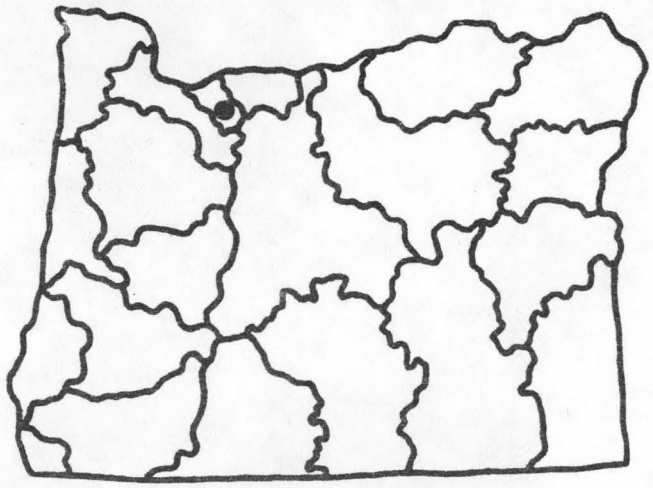
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	13.7	.08	.67	1.000
80	21.1	.12	.99	.956
50	45.7	.26	1.77	.791
30	69.1	.39	2.23	.659
10	114.5	.64	2.68	.477

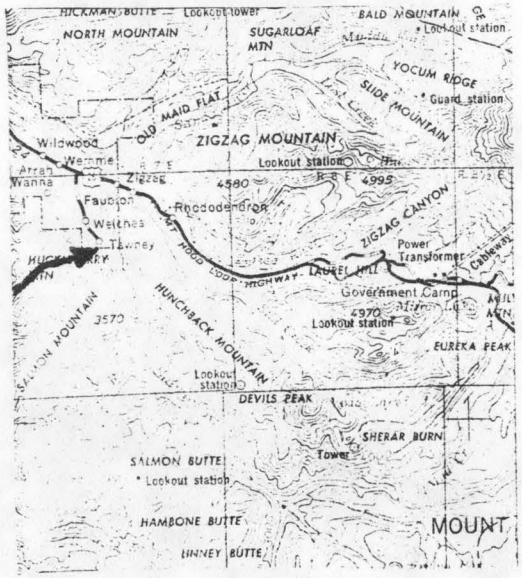
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 62 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-025-000-R0003

I. LOCATION

A. State	Oregon	
B. County	Clackamas	
C. Township, Range	T3S, R7E	
D. Latitude, Longitude	45°19'N, 121°57'W	
E. Stream Name	Salmon River	
F. Major Basin Name	Sandy	
G. River Mile	7.0 to 11.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

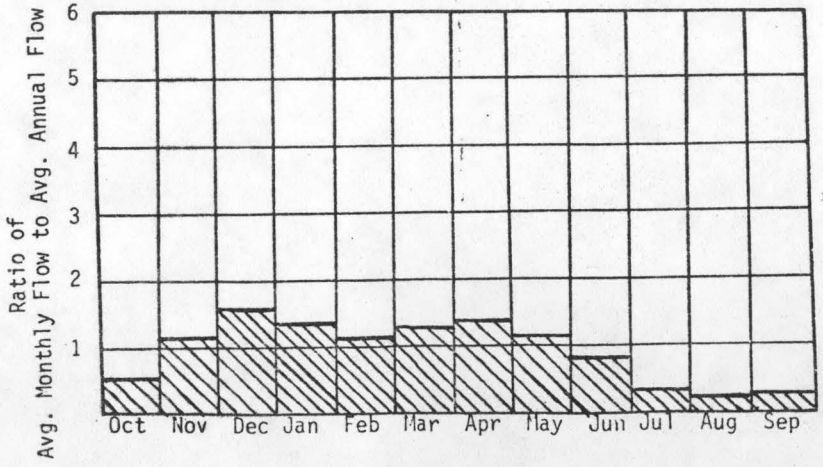
A. Upstream Elevation of Reach	1676	Ft. MSL
B. Downstream Elevation of Reach	1335	Ft. MSL
C. Total Available Head in Reach	341	Ft.
D. Average Slope in Reach	85.3	Ft./Mi.
E. Drainage Area above Reach Mouth	90.1	Sq.Mi.
F. Inflow Classification	Natural	

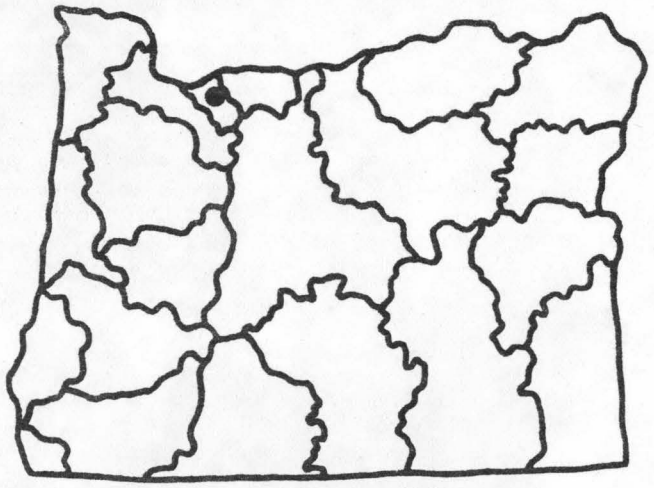
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	56.8	1.64	14.38	1.000
80	95.0	2.75	22.84	.950
50	303.2	8.76	57.09	.744
30	506.6	14.64	77.69	.606
10	895.5	25.88	97.38	.430

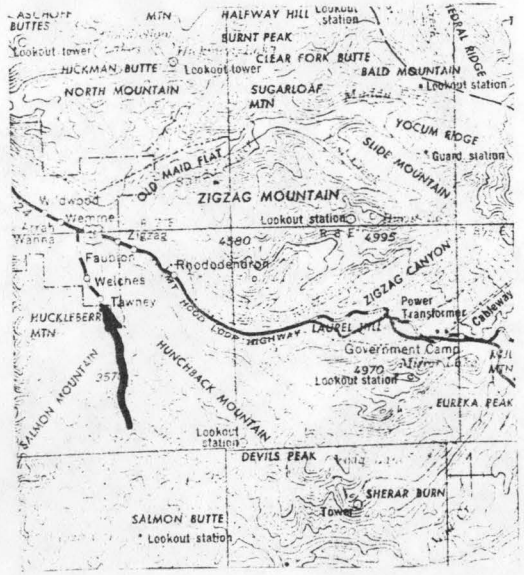
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 450 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-025-015-R0001

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T4S, R7E
D.	Latitude, Longitude	45°16'N, 121°59'W
E.	Stream Name	South Fork Salmon River
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

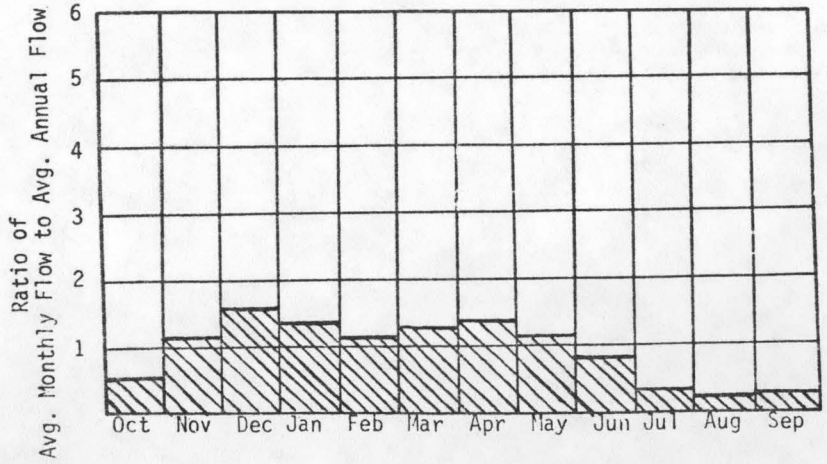
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	12.8	Sq.Mi.
F.	Inflow Classification	Natural	

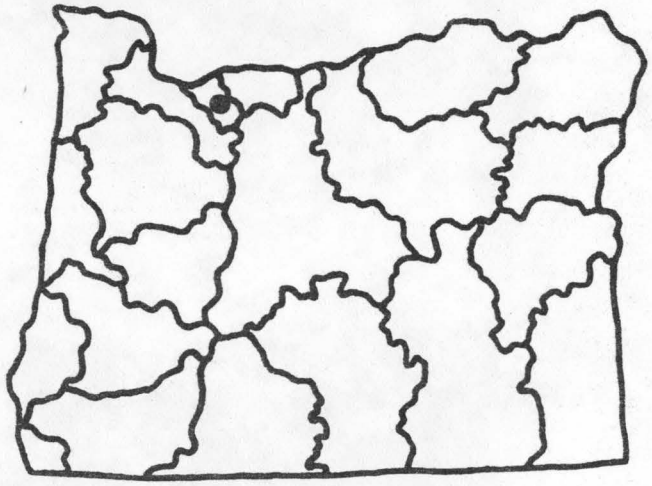
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	15.4	.09	.75	1.000
80	23.9	.13	1.12	.955
50	53.5	.30	2.06	.786
30	81.5	.46	2.61	.654
10	135.7	.76	3.14	.472

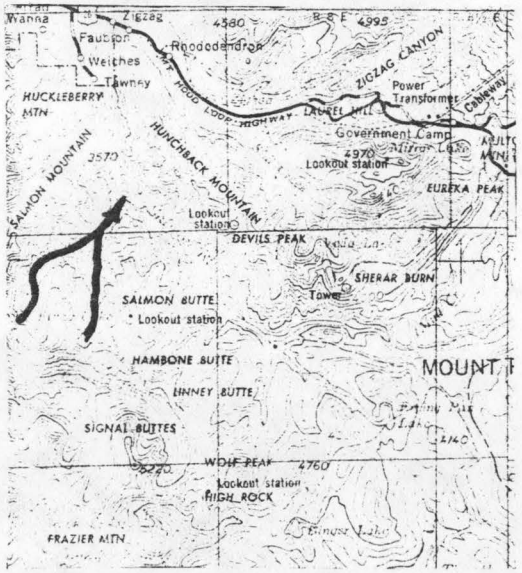
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 73 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-025-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T4S, R7E
D.	Latitude, Longitude	45°15'N, 121°53'W
E.	Stream Name	Salmon River
F.	Major Basin Name	Sandy
G.	River Mile	11.0 to 17.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

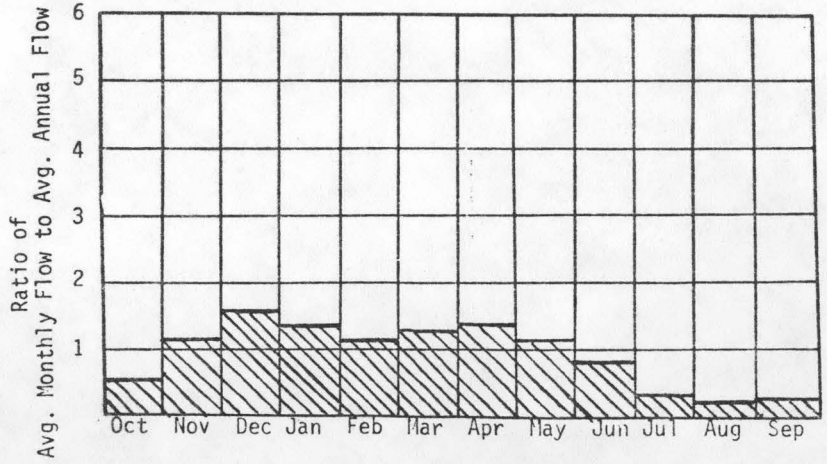
A.	Upstream Elevation of Reach	2679	Ft. MSL
B.	Downstream Elevation of Reach	1676	Ft. MSL
C.	Total Available Head in Reach	1003	Ft.
D.	Average Slope in Reach	167.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	70.7	Sq.Mi.
F.	Inflow Classification	Natural	

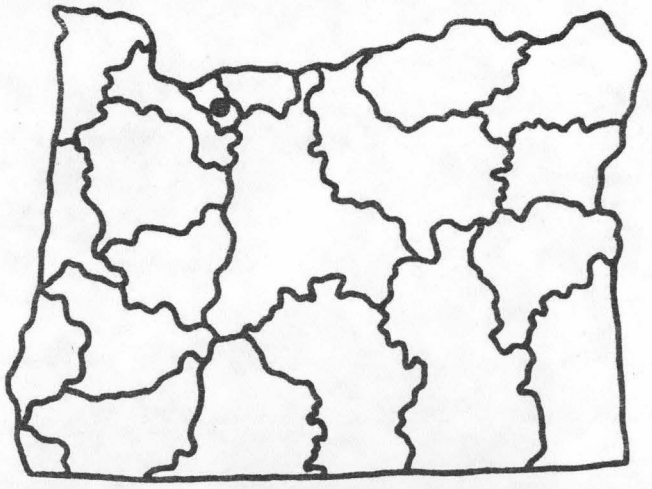
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	44.9	3.81	33.41	1.000
80	74.1	6.30	52.43	.951
50	221.7	18.84	123.88	.750
30	364.4	30.97	166.37	.613
10	637.2	54.16	207.00	.436

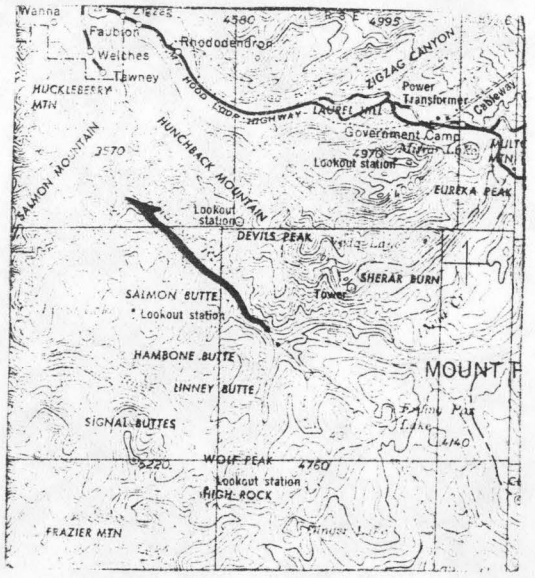
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 324 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

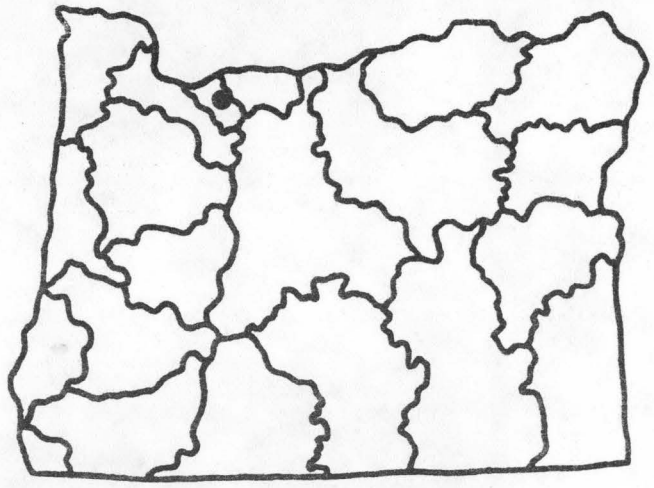


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-025-020-R0001

I. LOCATION

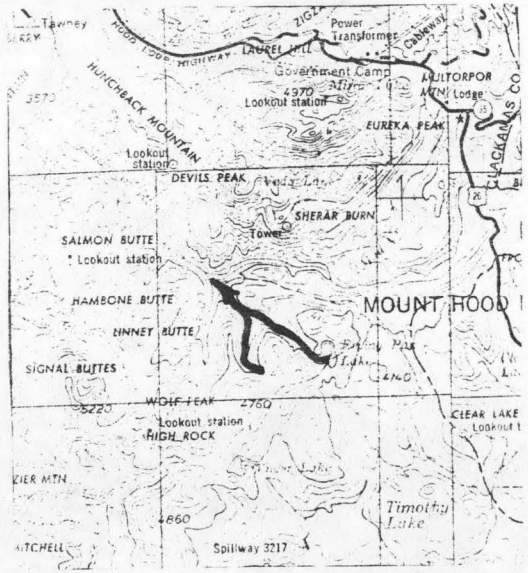
A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T4S, R8E
D.	Latitude, Longitude	45°13'N, 121°51'W
E.	Stream Name	Drawstring Creek
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to H.W.



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	15.9	Sq.Mi.
F.	Inflow Classification	Natural	

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

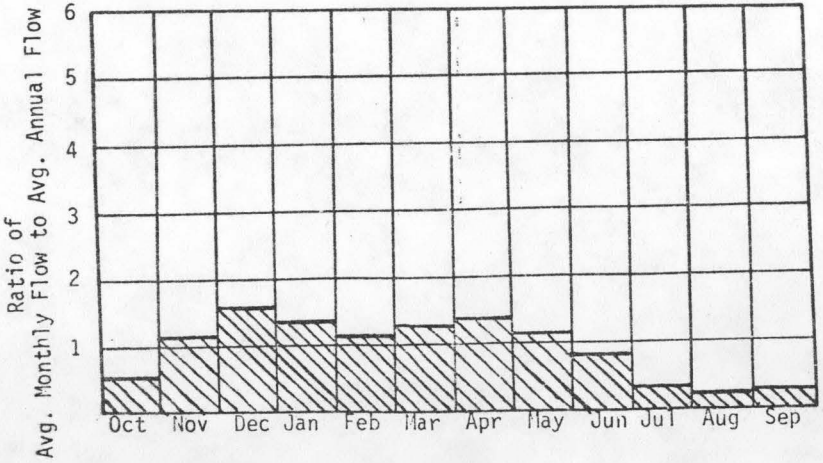


III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	17.0	.09	.83	1.000
80	26.5	.15	1.24	.955
50	60.9	.34	2.34	.783
30	93.5	.52	2.97	.649
10	156.3	.87	3.59	.469

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 84 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-025-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T4S, R8E
D.	Latitude, Longitude	45°14'N, 121°49'W
E.	Stream Name	Salmon River
F.	Major Basin Name	Sandy
G.	River Mile	17.0 to 21.9

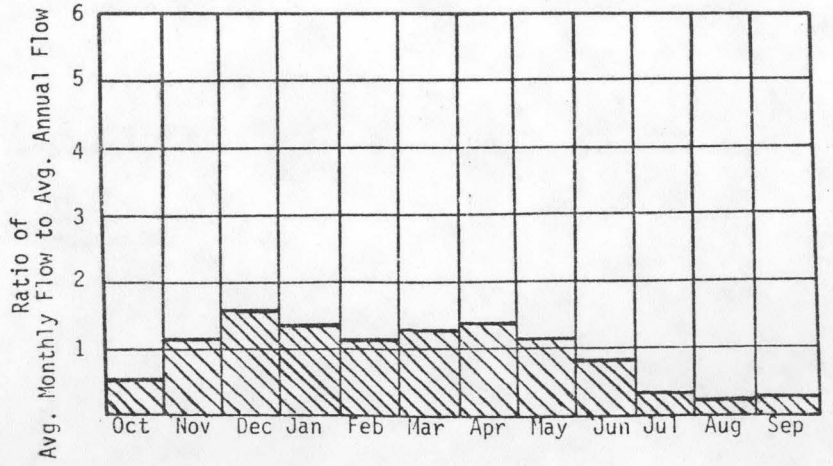
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

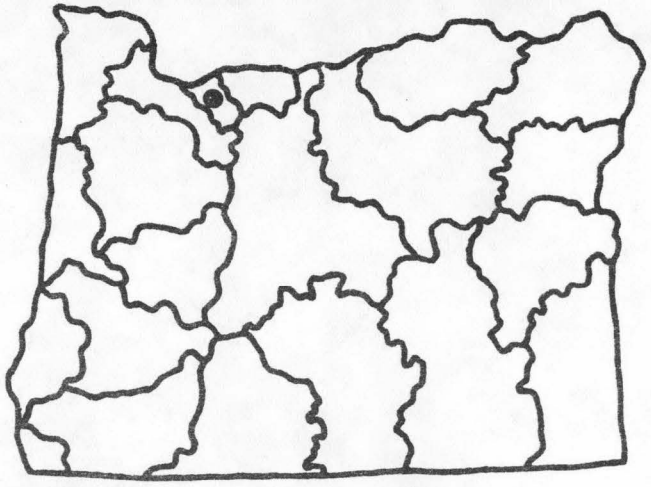
A.	Upstream Elevation of Reach	3040	Ft. MSL
B.	Downstream Elevation of Reach	2679	Ft. MSL
C.	Total Available Head in Reach	361	Ft.
D.	Average Slope in Reach	73.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	36.5	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

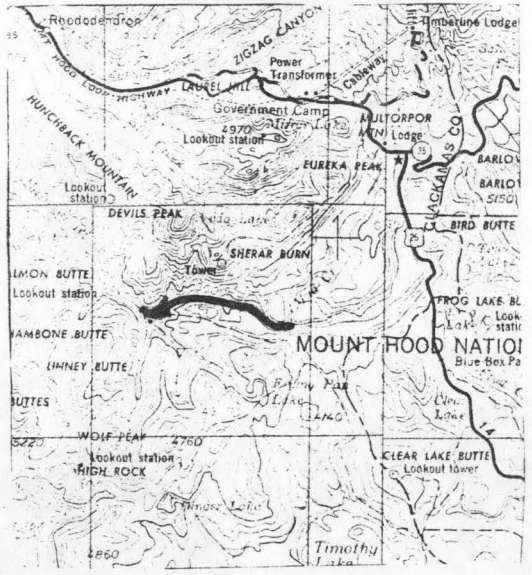
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	28.9	.88	7.74	1.000
80	46.5	1.42	11.88	.953
50	123.6	3.78	25.30	.764
30	196.8	6.02	33.15	.628
10	337.4	10.32	40.69	.450

IV. TYPICAL ANNUAL HYDROGRAPH AVG. ANNUAL FLOW = 176 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-025-000-R0007

I. LOCATION

A. State	Oregon	
B. County	Clackamas	
C. Township, Range	T4S, R9E	
D. Latitude, Longitude	45°14'N, 121°42'W	
E. Stream Name	Salmon River	
F. Major Basin Name	Sandy	
G. River Mile	21.9 to 28.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

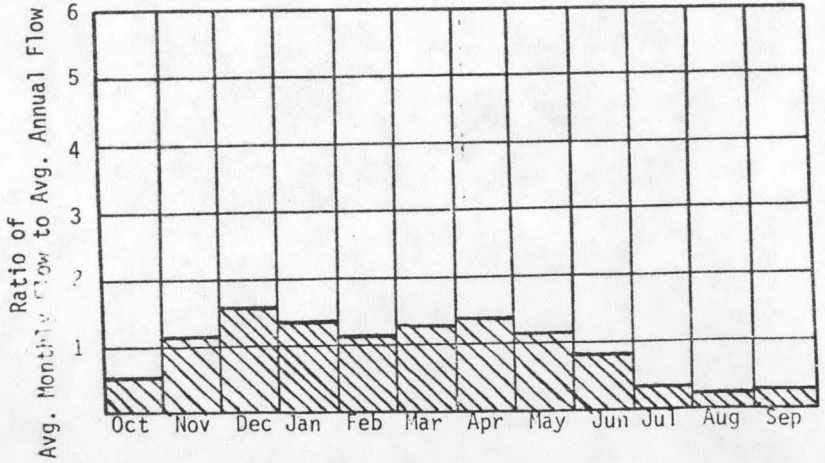
A. Upstream Elevation of Reach	3420	Ft. MSL
B. Downstream Elevation of Reach	3040	Ft. MSL
C. Total Available Head in Reach	380	Ft.
D. Average Slope in Reach	62.3	Ft./Mi.
E. Drainage Area above Reach Mouth	25.4	Sq.Mi.
F. Inflow Classification	Natural	

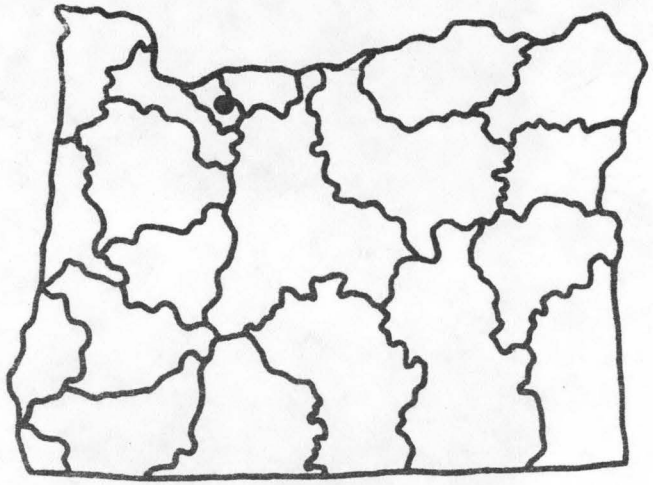
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.2	.62	5.41	1.000
80	30.2	.97	8.13	.954
50	71.8	2.31	15.76	.778
30	111.1	3.58	20.19	.644
10	186.9	6.02	24.47	.464

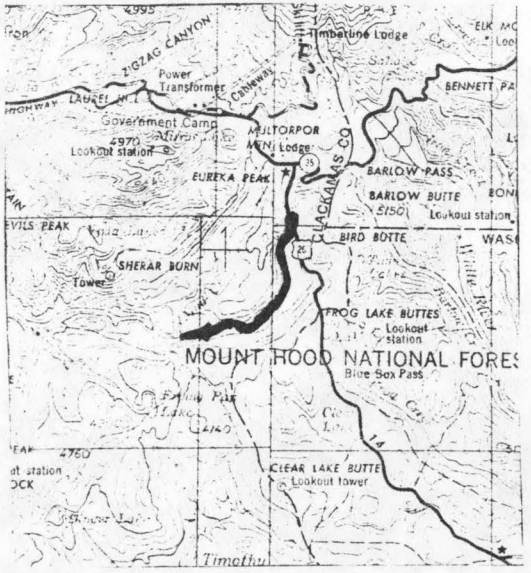
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 100 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-025-000-R0008

I. LOCATION

A.	State	Oreogn
B.	County	Clackamas
C.	Township, Range	T3S, R9E
D.	Latitude, Longitude	45°18'N, 121°42'W
E.	Stream Name	Salmon Creek
F.	Major Basin Name	Sandy
G.	River Mile	28.0 to H.W.

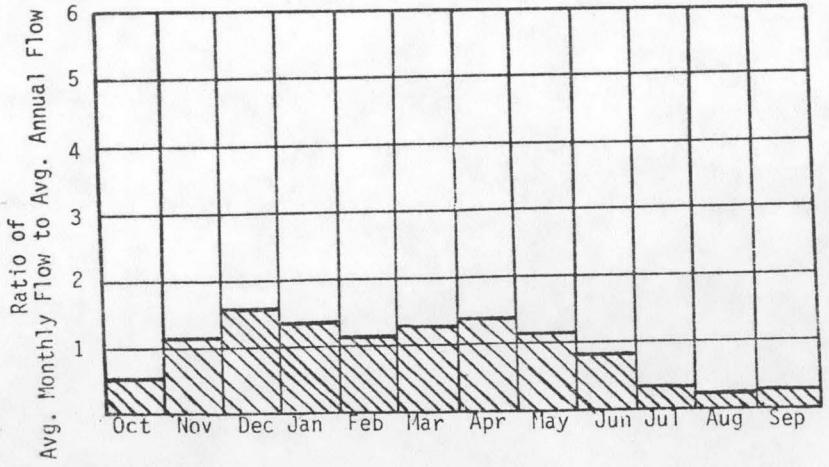
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

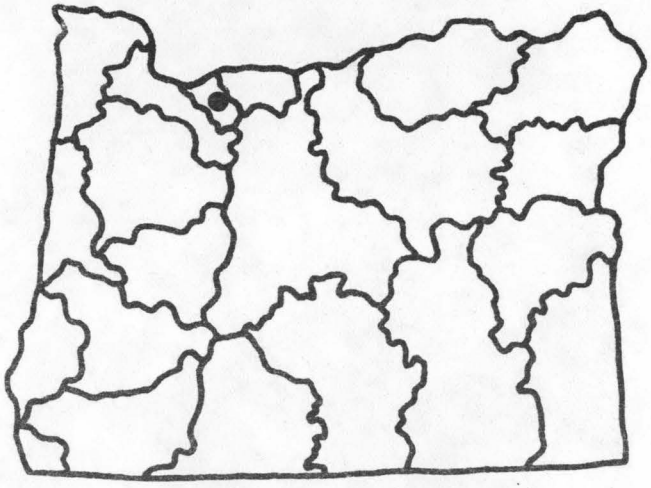
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	8.1	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

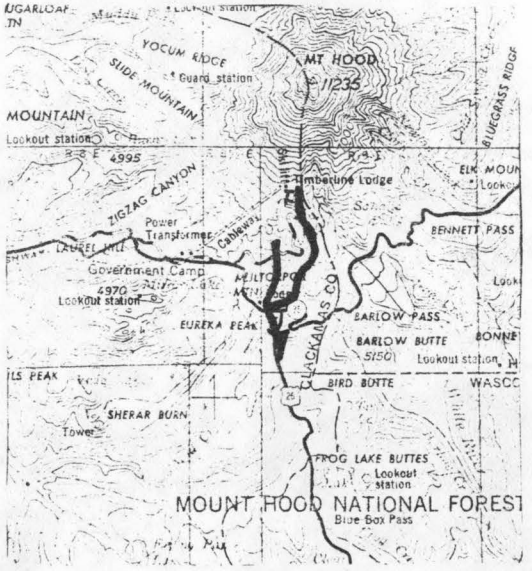
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.0	.07	.59	1.000
80	18.4	.10	.86	.956
50	38.3	.21	1.50	.797
30	57.4	.32	1.87	.665
10	94.5	.53	2.23	.482

IV IV. TYPICAL ANNUAL HYDROGRAPH AVG. ANNUAL FLOW = 52 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-000-000-R0008

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R7E
D.	Latitude, Longitude	45°23'N, 121°58'W
E.	Stream Name	Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	37.5 to 42.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

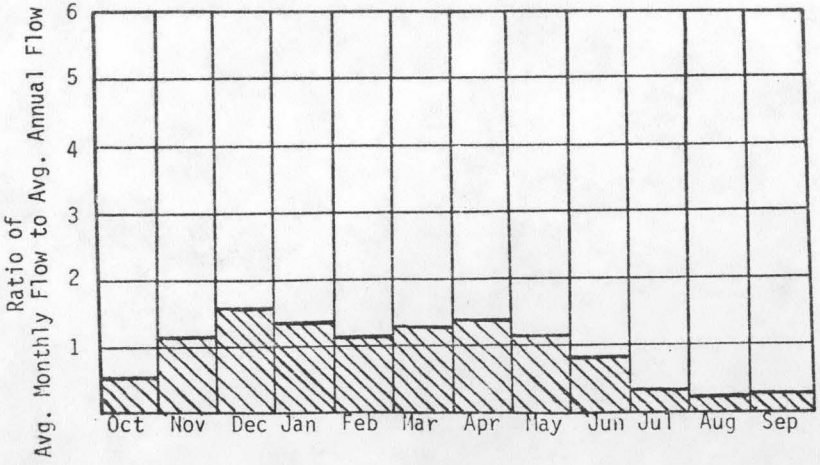
A.	Upstream Elevation of Reach	1370	Ft. MSL
B.	Downstream Elevation of Reach	1077	Ft. MSL
C.	Total Available Head in Reach	293	Ft.
D.	Average Slope in Reach	56.40	Ft./Mi.
E.	Drainage Area above Reach Mouth	127.3	Sq.Mi.
F.	Inflow Classification	Natural	

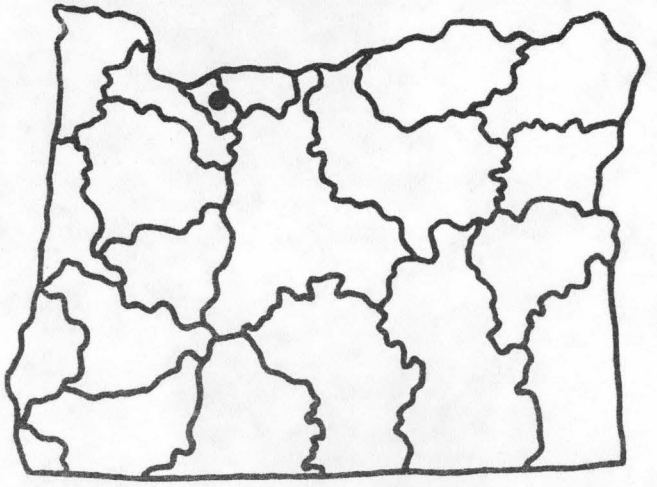
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	78.3	1.94	17.02	1.000
80	133.2	3.31	27.48	.948
50	463.9	11.52	74.23	.736
30	793.0	19.69	102.87	.596
10	1422.5	35.32	130.25	.421

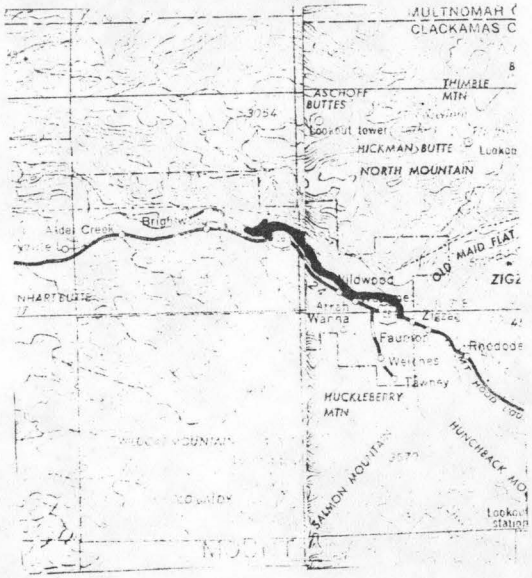
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 702 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-030-000-R0001

I. LOCATION

A. State	Oregon	
B. County	Clackamas	
C. Township, Range	T3S, R7E	
D. Latitude, Longitude	45°20'N, 121°55'W	
E. Stream Name	Zig-Zag River	
F. Major Basin Name	Sandy	
G. River Mile	0.0 to 2.1	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

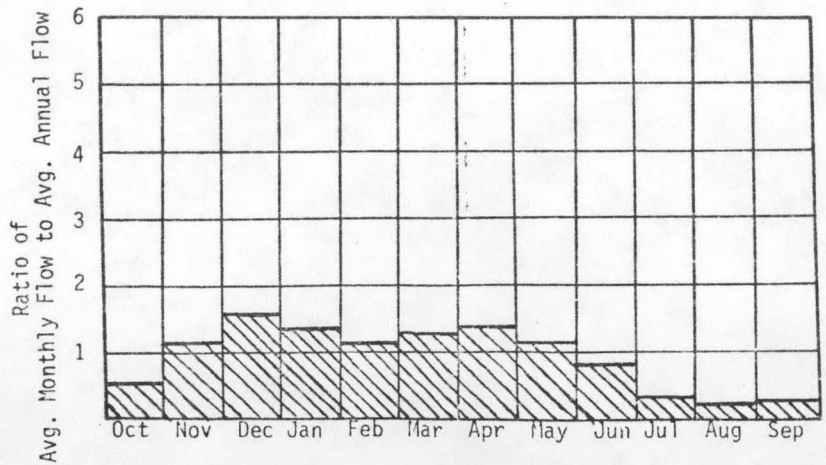
A. Upstream Elevation of Reach	1575	Ft. MSL
B. Downstream Elevation of Reach	1370	Ft. MSL
C. Total Available Head in Reach	205	Ft.
D. Average Slope in Reach	97.6	Ft./Mi.
E. Drainage Area above Reach Mouth	62.5	Sq.Mi.
F. Inflow Classification	Natural	

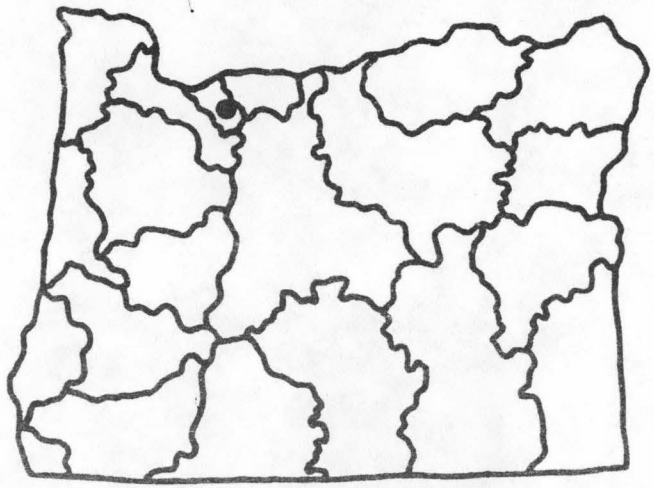
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	45.3	.79	6.89	1.000
80	74.8	1.30	10.82	.951
50	224.4	3.90	25.62	.750
30	369.0	6.41	34.42	.613
10	645.5	11.21	42.84	.436

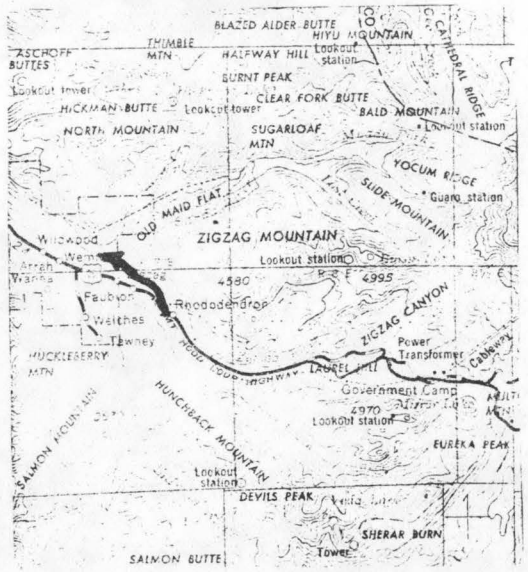
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 328 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-030-005-R0001

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T3S, R8E
D.	Latitude, Longitude	45°18'N, 121°52'W
E.	Stream Name	Still Creek
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to 8.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

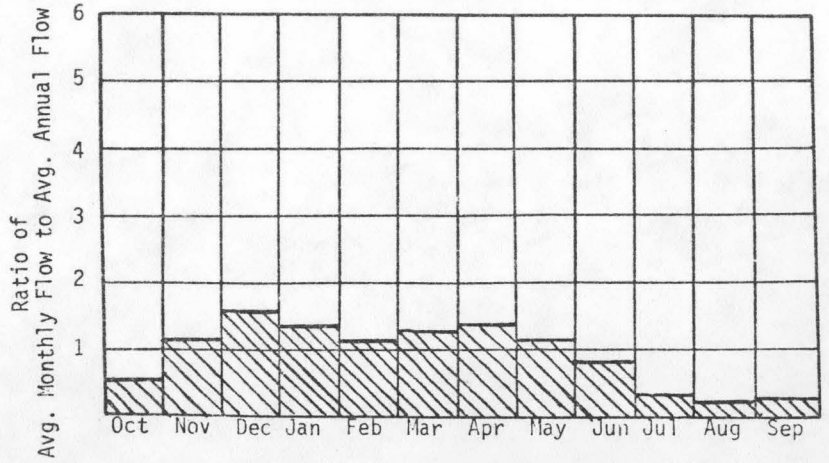
A.	Upstream Elevation of Reach	3040	Ft. MSL
B.	Downstream Elevation of Reach	1575	Ft. MSL
C.	Total Available Head in Reach	1465	Ft.
D.	Average Slope in Reach	170.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	24.4	Sq.Mi.
F.	Inflow Classification	Natural	

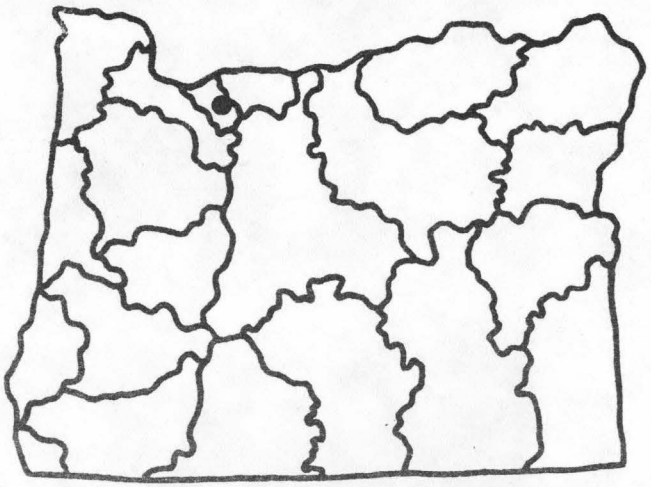
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	18.3	2.27	19.89	1.000
80	28.7	3.57	29.81	.955
50	67.3	8.36	57.12	.780
30	103.9	12.90	73.01	.646
10	174.3	21.64	88.34	.466

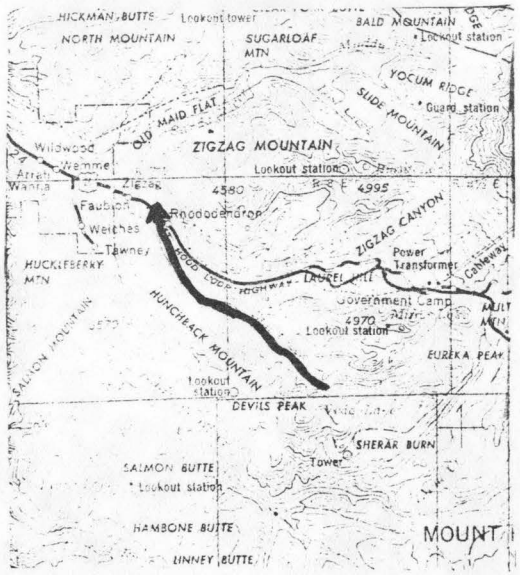
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 94 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-030-005-R0003

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T3S, R8E
D.	Latitude, Longitude	45°17'N, 121°46'W
E.	Stream Name	Still Creek
F.	Major Basin Name	Sandy
G.	River Mile	8.6 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

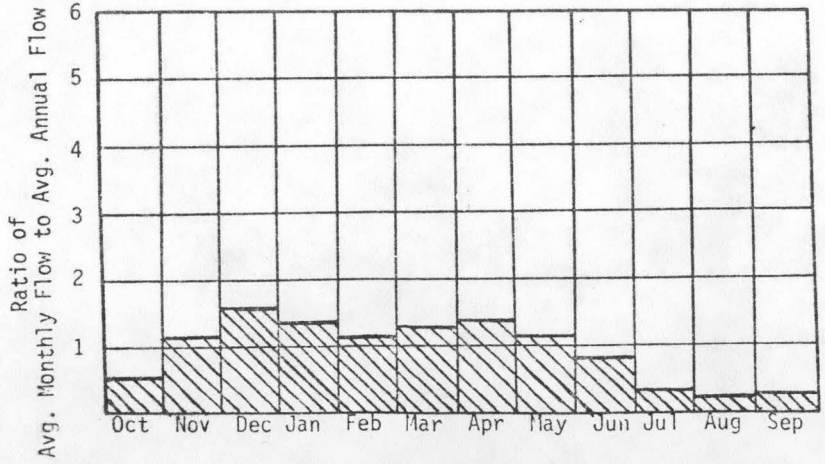
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	9.3	Sq.Mi.
F.	Inflow Classification	Natural	

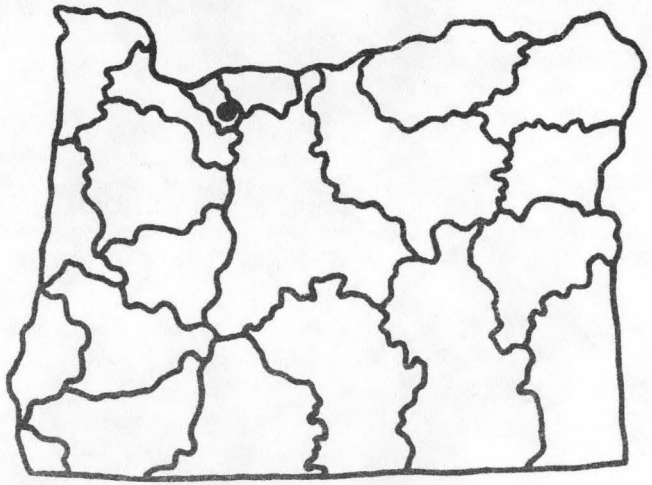
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.5	.07	.61	1.000
80	19.2	.11	.90	.956
50	40.5	.23	1.58	.795
30	60.8	.34	1.97	.663
10	100.2	.56	2.36	.481

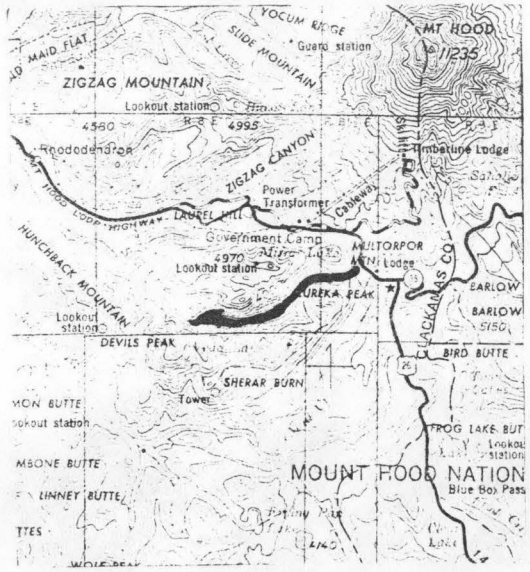
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 55 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-030-000-R0002

I. LOCATION

A. State	Oregon	
B. County	Clackamas	
C. Township, Range	T3S, R8E	
D. Latitude, Longitude	45°19'N, 121°52'W	
E. Stream Name	Zig-Zag River	
F. Major Basin Name	Sandy	
G. River Mile	2.1 to 8.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

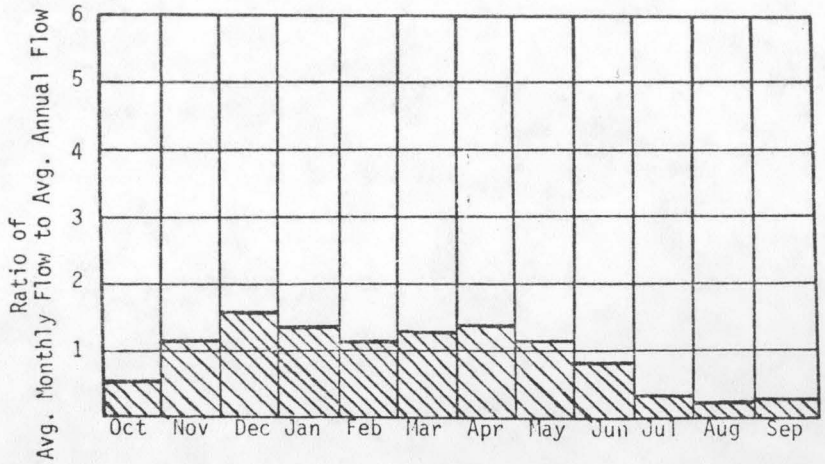
A. Upstream Elevation of Reach	3480	Ft. MSL
B. Downstream Elevation of Reach	1575	Ft. MSL
C. Total Available Head in Reach	1905	Ft.
D. Average Slope in Reach	322.9	Ft./Mi.
E. Drainage Area above Reach Mouth	34.4	Sq.Mi.
F. Inflow Classification	Natural	

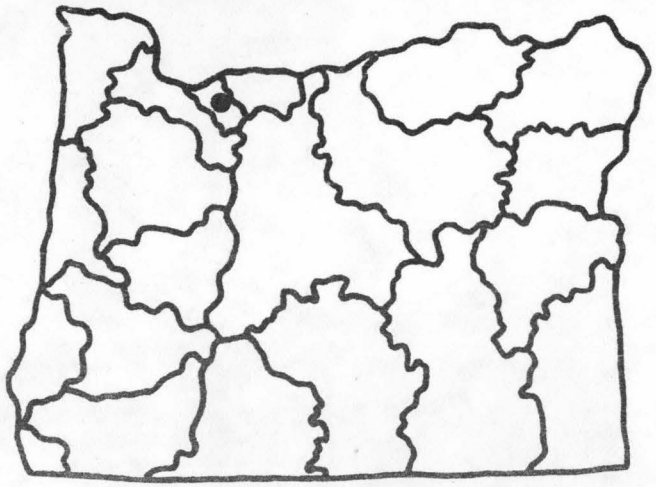
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	23.3	3.76	32.93	1.000
80	37.1	5.98	49.97	.954
50	92.8	14.98	101.22	.771
30	145.6	23.51	131.09	.637
10	247.1	39.89	159.80	.457

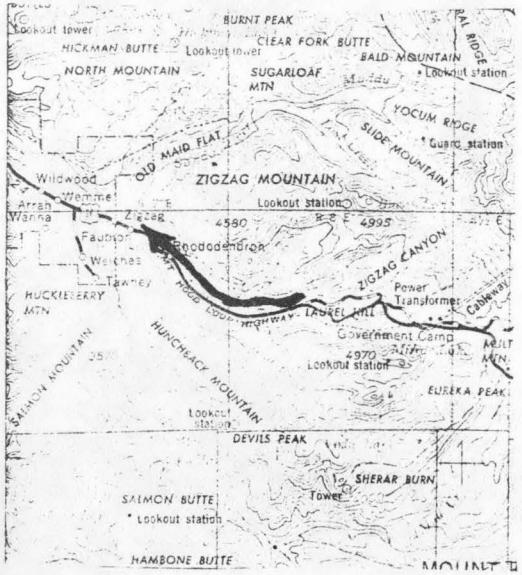
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 130 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-030-000-R0003

I. LOCATION

A. State	Oregon	
B. County	Clackamas	
C. Township, Range	T3S, R8E	
D. Latitude, Longitude	45°20'N, 121°47'W	
E. Stream Name	Zig-Zag River	
F. Major Basin Name	Sandy	
G. River Mile	8.0 to H.W.	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

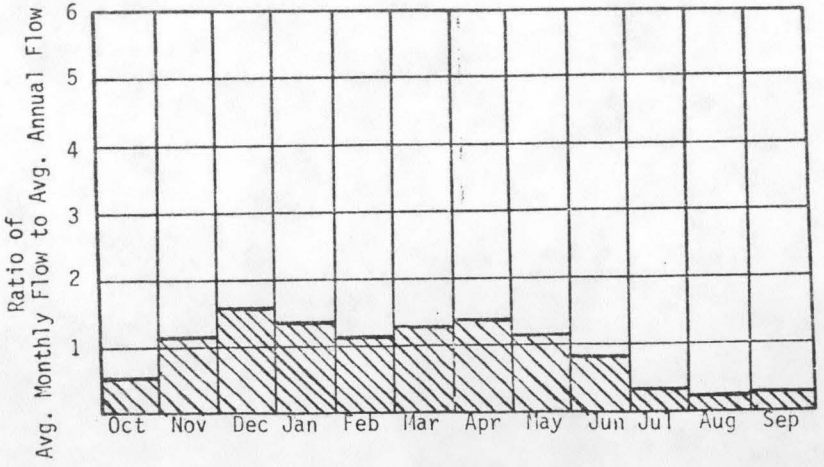
A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	9.9	Sq.Mi.
F. Inflow Classification	Natural	

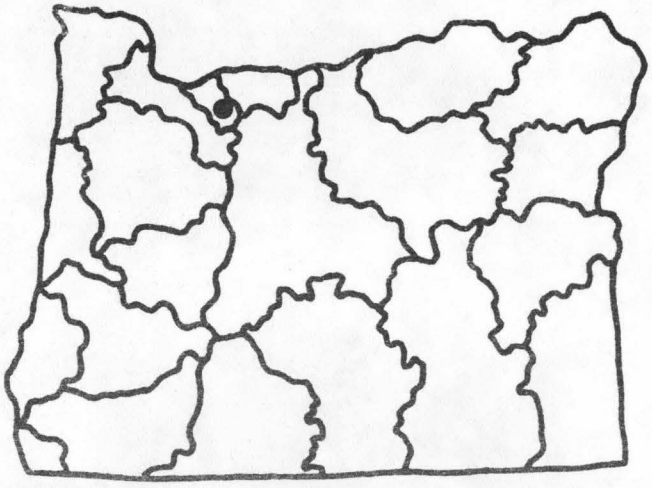
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.0	.08	.69	1.000
80	21.7	.12	1.02	.956
50	47.4	.27	1.84	.790
30	71.8	.40	2.31	.658
10	119.1	.67	2.78	.476

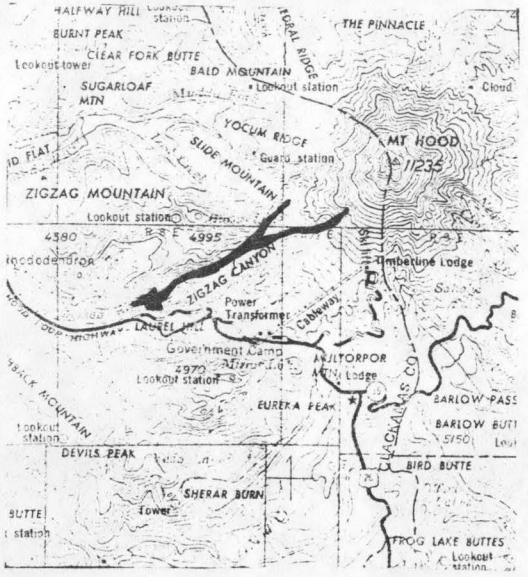
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 65 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-000-000-R0009

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R7E
D.	Latitude, Longitude	45°22'N, 121°56'W
E.	Stream Name	Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	42.7 to 43.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

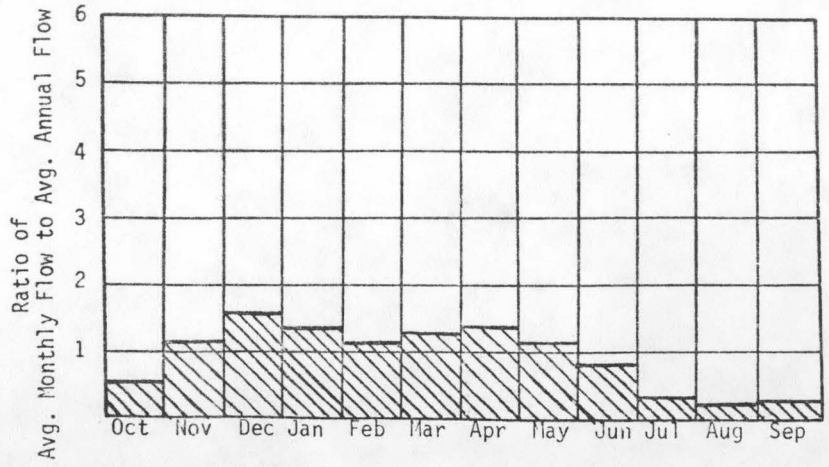
A.	Upstream Elevation of Reach	1433	Ft. MSL
B.	Downstream Elevation of Reach	1370	Ft. MSL
C.	Total Available Head in Reach	63	Ft.
D.	Average Slope in Reach	105.0	Ft./Mi.
E.	Drainage Area above Reach Mouth	54.4	Sq.Mi.
F.	Inflow Classification	Natural	

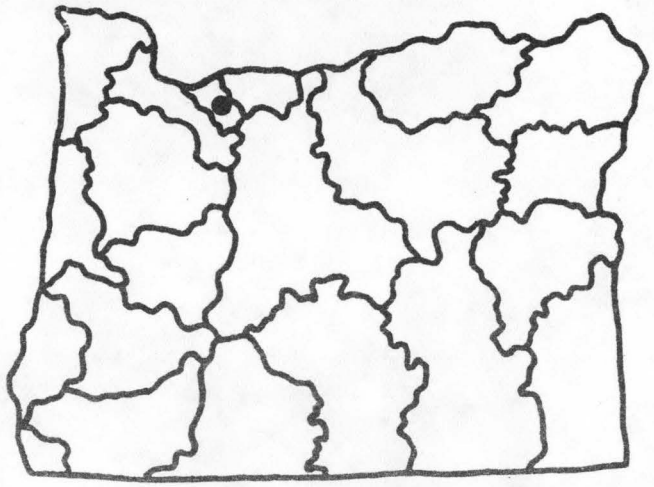
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	48.1	.26	2.25	1.000
80	79.7	.43	3.54	.950
50	243.1	1.30	8.51	.748
30	401.5	2.14	11.47	.611
10	704.3	3.76	14.31	.434

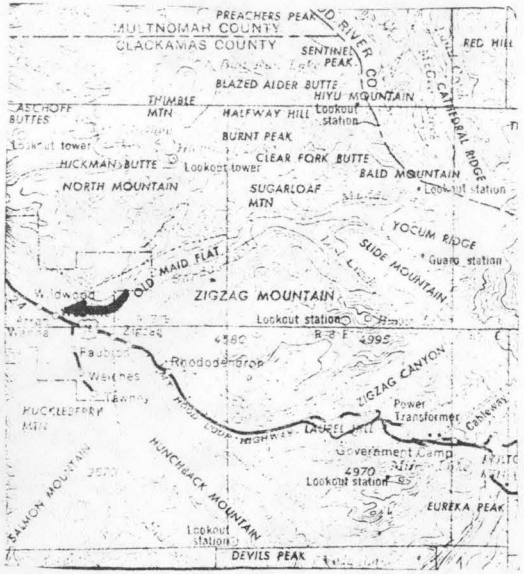
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 358 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-035-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R7E
D.	Latitude, Longitude	45°24'N, 121°53'W
E.	Stream Name	Clear Creek
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

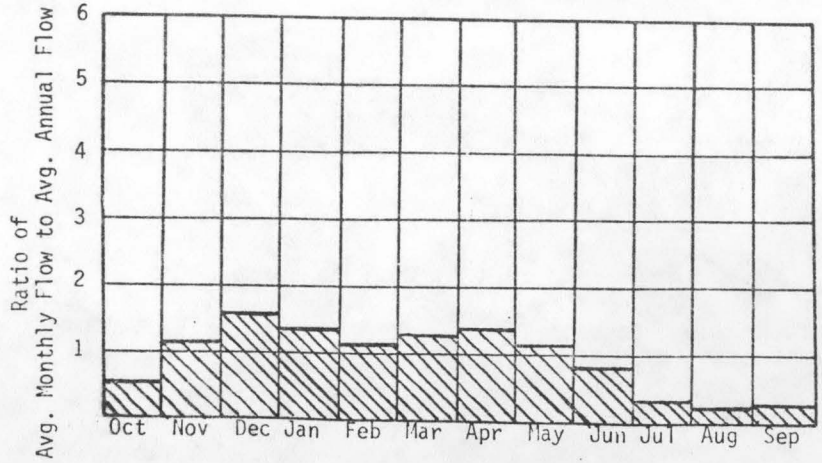
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	10.3	Sq.Mi.
F.	Inflow Classification	Natural	

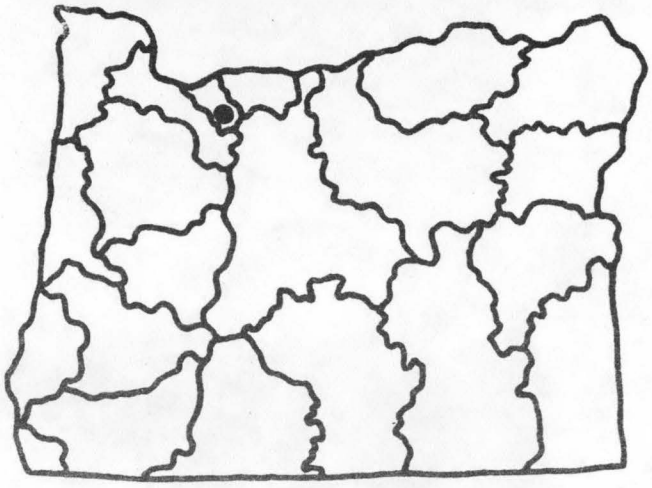
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	15.3	.09	.75	1.000
80	23.9	.13	1.12	.955
50	53.4	.30	2.06	.787
30	81.3	.45	2.60	.654
10	135.3	.76	3.13	.473

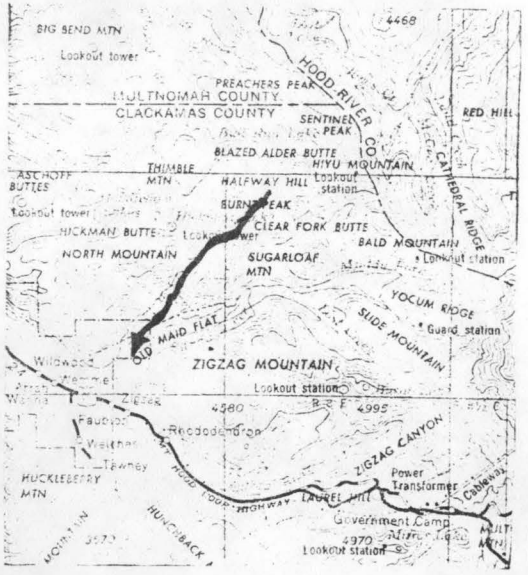
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 73 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-000-000-R0010

I. LOCATION

A. State	Oregon	
B. County	Clackamas	
C. Township, Range	T2S, R7E	
D. Latitude, Longitude	45°22'N, 121°54'W	
E. Stream Name	Sandy River	
F. Major Basin Name	Sandy	
G. River Mile	43.3 to 46.4	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

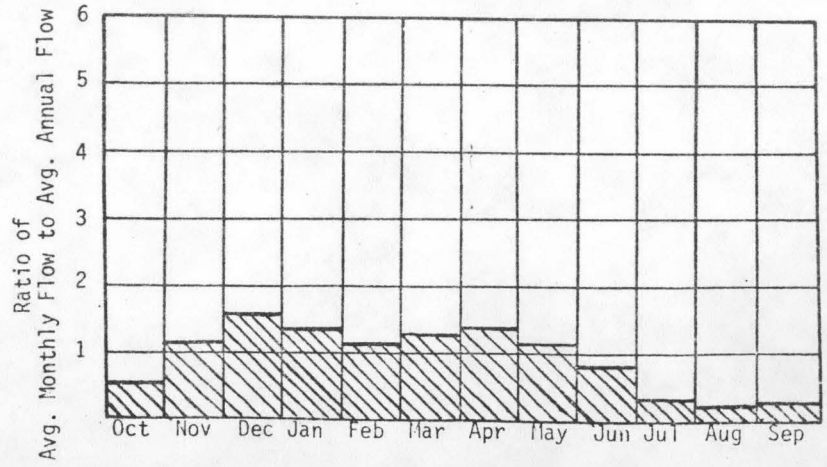
A. Upstream Elevation of Reach	1760	Ft. MSL
B. Downstream Elevation of Reach	1433	Ft. MSL
C. Total Available Head in Reach	327	Ft.
D. Average Slope in Reach	105.5	Ft./Mi.
E. Drainage Area above Reach Mouth	43.6	Sq.Mi.
F. Inflow Classification	Natural	

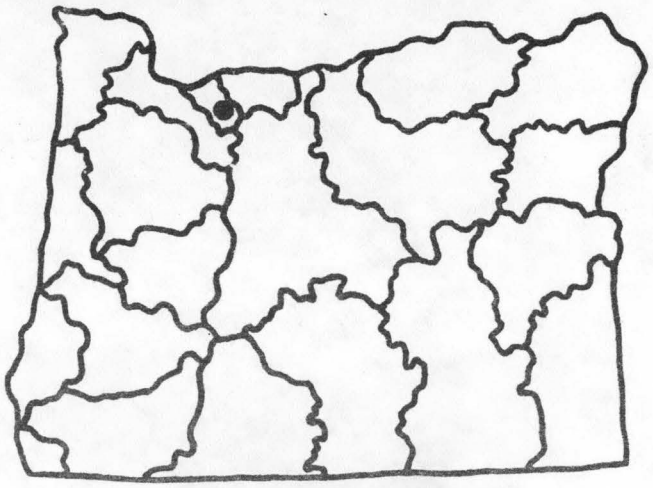
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWh	PLANT FACTOR
95	39.6	1.10	9.62	1.000
80	65.0	1.80	15.00	.951
50	188.0	5.21	34.41	.754
30	306.2	8.49	45.89	.617
10	532.5	14.76	56.88	.440

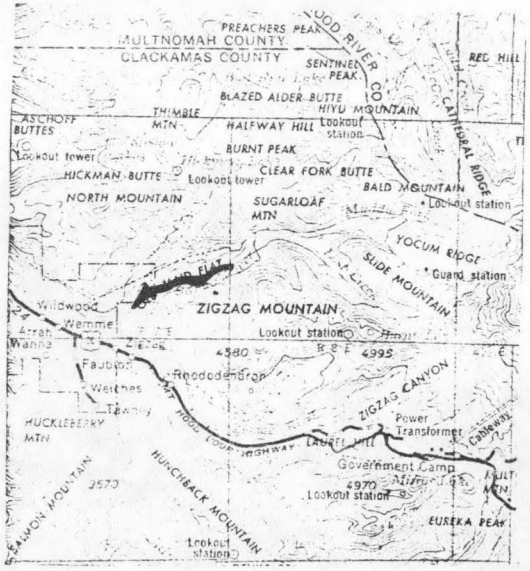
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 274 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-040-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R8E
D.	Latitude, Longitude	45°23'N, 121°53'W
E.	Stream Name	Lost Creek
F.	Major Basin Name	Sandy
G.	River Mile	0.0 to 3.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

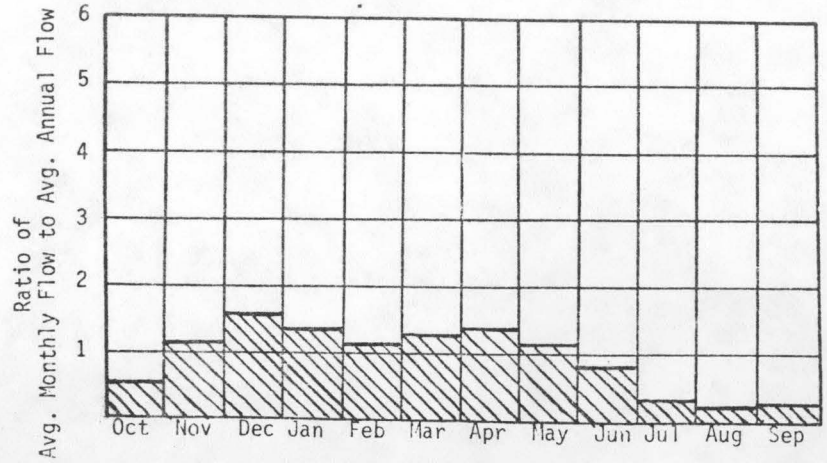
A.	Upstream Elevation of Reach	2348	Ft. MSL
B.	Downstream Elevation of Reach	1760	Ft. MSL
C.	Total Available Head in Reach	588	Ft.
D.	Average Slope in Reach	196.0	Ft./Mi.
E.	Drainage Area above Reach Mouth	12.7	Sq.Mi.
F.	Inflow Classification	Natural	

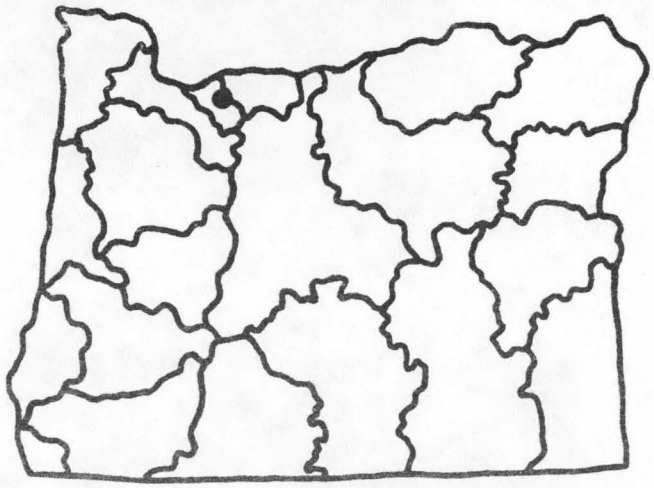
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	15.4	.77	6.73	1.000
80	24.0	1.20	10.00	.955
50	53.7	2.68	18.44	.786
30	81.9	4.08	23.35	.654
10	136.3	6.79	28.11	.472

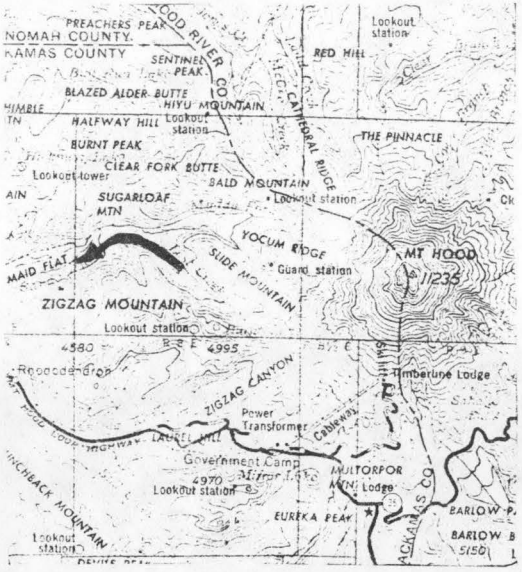
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 74 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-040-000-R0002

I. LOCATION

A. State	Oregon	
B. County	Clackamas	
C. Township, Range	T2S, R8E	
D. Latitude, Longitude	45°22'N, 121°49'W	
E. Stream Name	Lost Creek	
F. Major Basin Name	Sandy	
G. River Mile	3.0 to H.W.	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

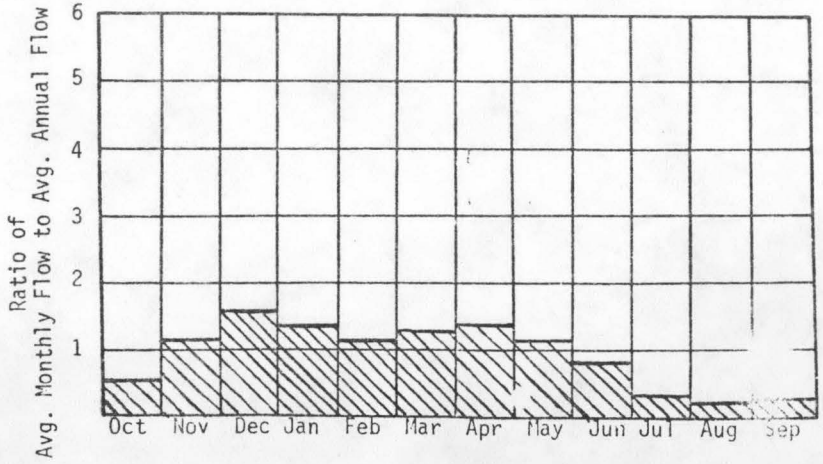
A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	8.5	Sq.Mi.
F. Inflow Classification	Natural	

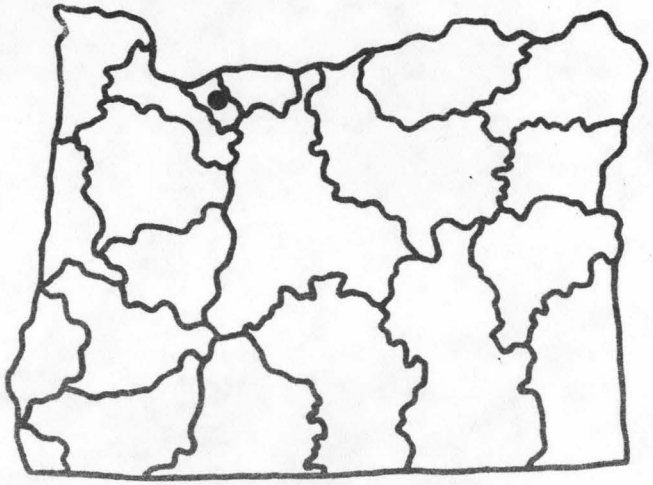
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	13.3	.07	.65	1.000
80	20.6	.12	.96	.956
50	44.3	.25	1.72	.792
30	66.7	.37	2.16	.660
10	110.4	.62	2.59	.478

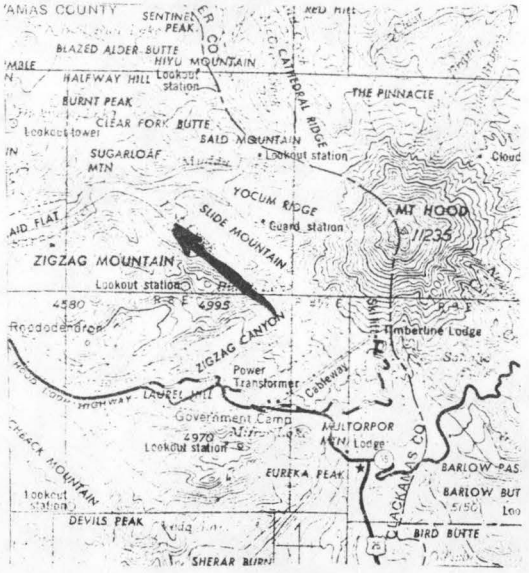
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 60 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-000-000-R0011

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R8E
D.	Latitude, Longitude	45°23'N, 121°53'W
E.	Stream Name	Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	46.4 to 48.1

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

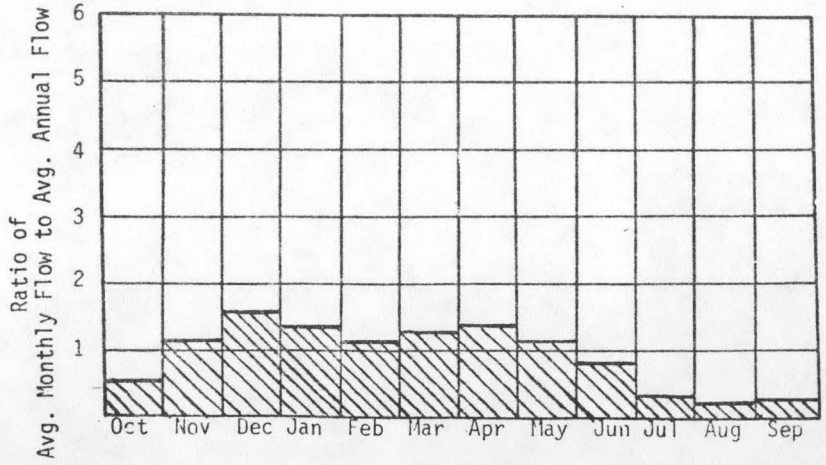
A.	Upstream Elevation of Reach	2070	Ft. MSL
B.	Downstream Elevation of Reach	1760	Ft. MSL
C.	Total Available Head in Reach	310	Ft.
D.	Average Slope in Reach	182.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	24.7	Sq.Mi.
F.	Inflow Classification	Natural	

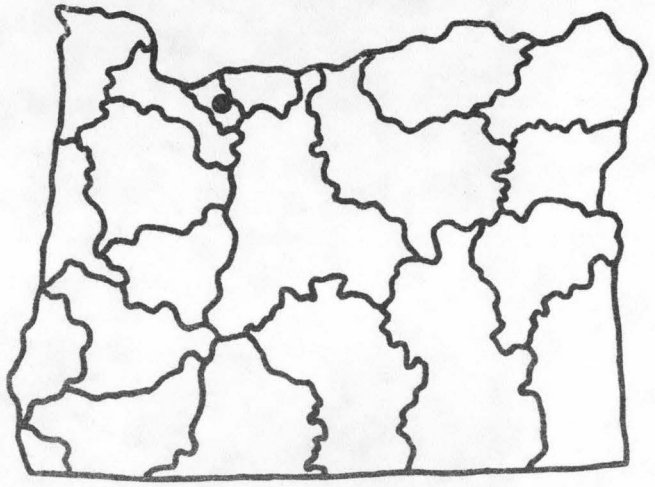
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	28.4	.75	6.53	1.000
80	45.7	1.20	10.02	.953
50	120.8	3.17	21.25	.765
30	192.2	5.05	27.82	.629
10	329.1	8.65	34.12	.451

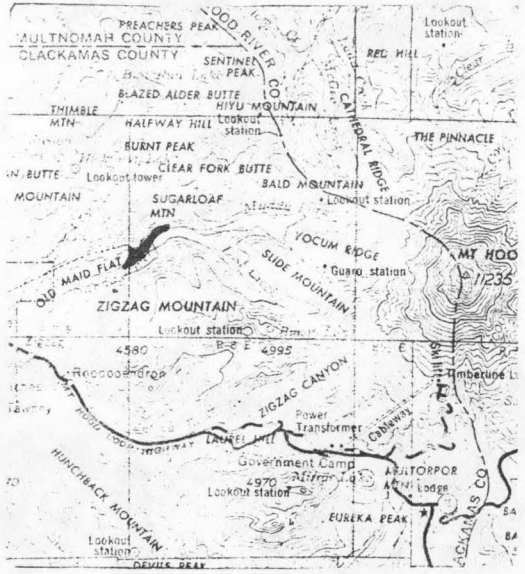
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 172 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-000-000-R0012

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R8E
D.	Latitude, Longitude	45°23'N, 121°52'W
E.	Stream Name	Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	48.1 to 49.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

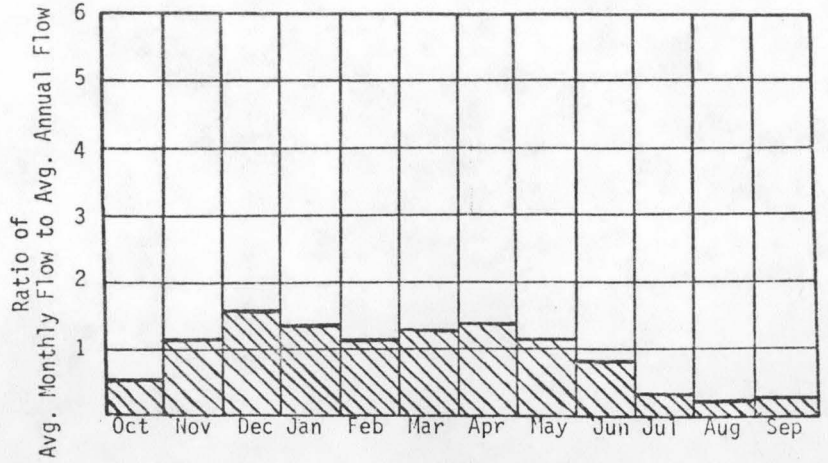
A.	Upstream Elevation of Reach	2260	Ft. MSL
B.	Downstream Elevation of Reach	2070	Ft. MSL
C.	Total Available Head in Reach	190	Ft.
D.	Average Slope in Reach	126.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	15.3	Sq.Mi.
F.	Inflow Classification	Natural	

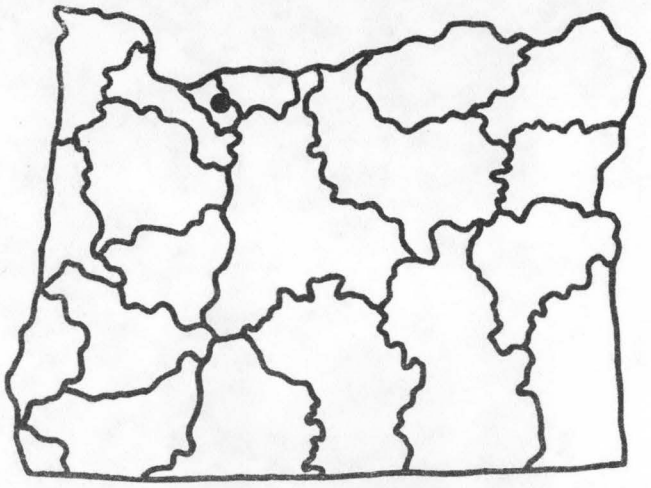
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.3	.31	2.72	1.000
80	30.4	.49	4.09	.954
50	72.2	1.16	7.92	.778
30	111.8	1.80	10.16	.644
10	188.1	3.03	12.31	.464

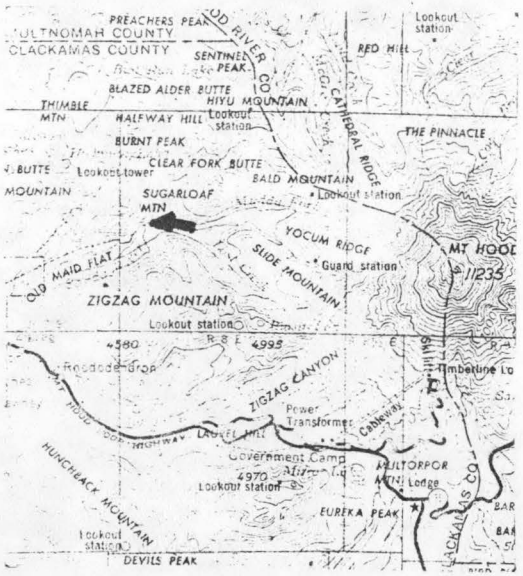
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 100 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

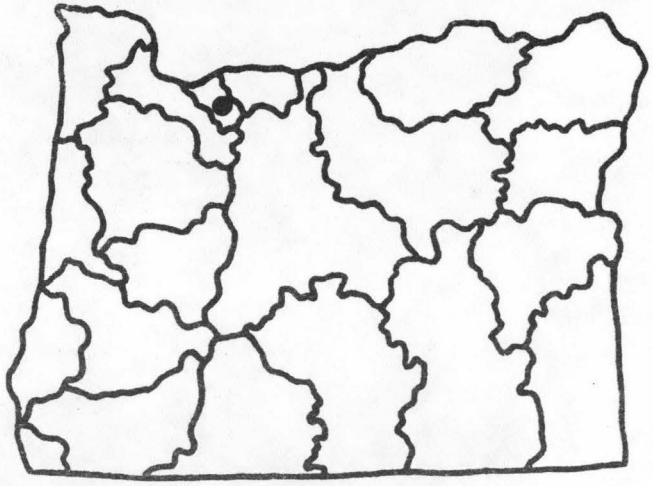


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-080-050-000-R0013

I. LOCATION

A.	State	Oregon
B.	County	Clackamas
C.	Township, Range	T2S, R8E
D.	Latitude, Longitude	45°23'N, 121°47'W
E.	Stream Name	Sandy River
F.	Major Basin Name	Sandy
G.	River Mile	49.6 to H.W.



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	8.0	Sq.Mi.
F.	Inflow Classification	Natural	

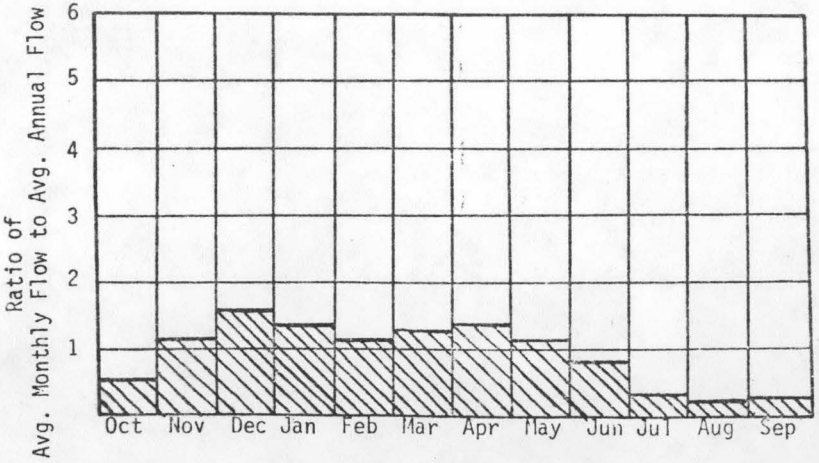
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

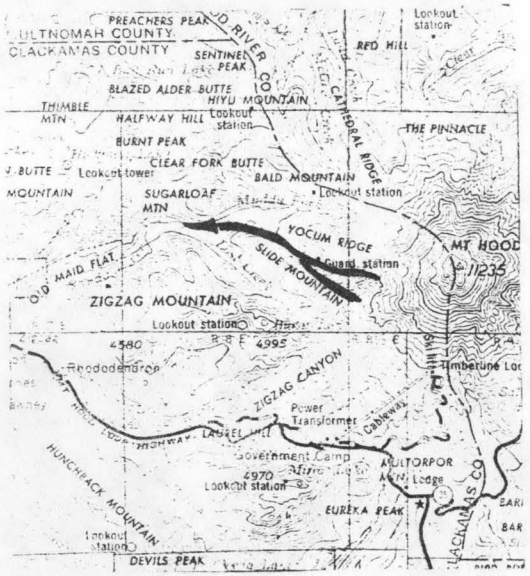
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	13.2	.07	.65	1.000
80	20.3	.11	.95	.956
50	43.5	.24	1.69	.793
30	65.6	.37	2.12	.661
10	108.5	.61	2.54	.479

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 59 CFS





FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-080-								
000-000-R0001	-	X	X	X	0.1	57-B	-	2.5
000-000-R0002	X	X	X	X	1.5	230/500-B	1	2.0
010-000-R0001	-	X	-	X	1.2	57-B	-	5.2
010-000-R0002	-	-	-	-	1.7	500	-	7.8
000-000-R0003	X	-	-	X	1.2	57-P	1	4.5
015-000-R0001	-	X	X	X	0.1	230/500-B	-	5.0
015-005-R0001	-	-	-	X	1.0	57-P	-	5.0
015-005-R0002	-	-	-	-	0.8	2-230/287-B	-	9.0
015-000-R0002	-	-	X	-	1.7	57-P	-	5.5
015-010-R0001	-	-	-	-	2.8	57-P	-	7.0
015-010-R0002	-	-	-	-	3.3	2-230/287-B	-	9.0
015-010-R0003	-	-	-	-	3.3	2-230/287-B	-	9.2
015-015-R0001	-	-	-	-	3.2	500	-	17.5
015-020-R0001	-	-	-	-	3.8	500	-	13.2

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

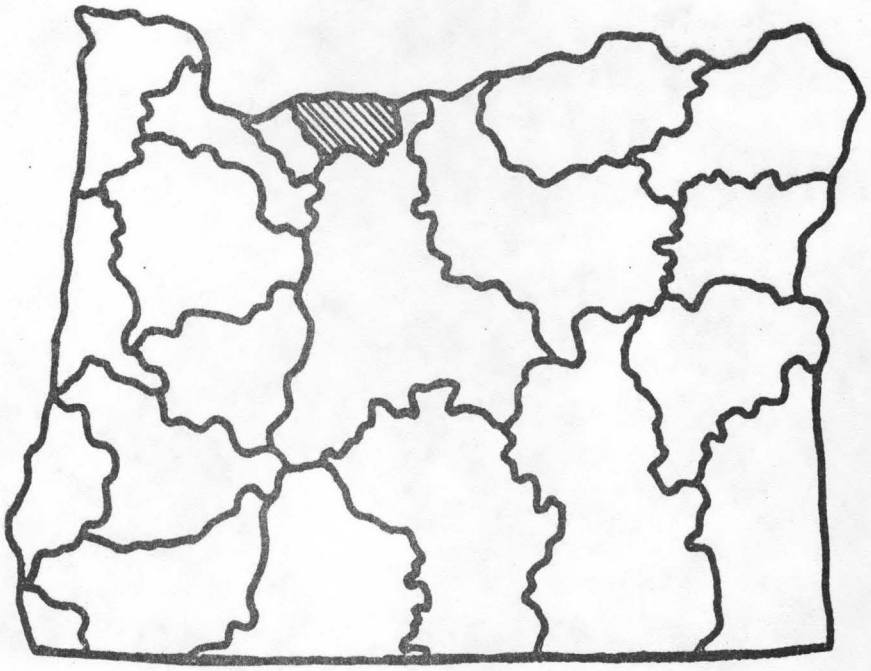
REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-080-								
015-000-R0006	-	-	-	-	3.9	500	-	14.0
015-025-R0001	-	-	-	-	4.0	500	-	12.8
015-000-R0007	-	-	-	-	5.1	500	-	17.2
015-030-R0001	-	-	-	-	5.3	2-230/287-B	-	17.3
015-030-R0002	-	-	-	-	4.6	2-230/287-B	-	16.8
015-000-R0008	-	-	-	-	5.6	2-230/287-B	-	17.2
015-000-R0009	-	-	-	-	4.2	2-230/287-B	-	17.0
000-000-R0004	X	X	X	X	0.2	230/500-B	-	4.5
020-000-R0001	-	-	X	X	0.1	500	1,2	2.8
020-000-R0002	-	X	-	X	0.3	2-230/287-B	1,2	1.0
000-000-R0005	-	X	X	X	0.1	2-230/287-B	1,2	1.5
000-000-R0007	-	X	X	X	0.1	2-230/287-B	-	7.5
025-000-R0001	-	X	X	X	0.2	57-P	-	8.5
025-000-R0002	-	-	X	X	0.1	57-P	-	8.6

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-080-								
025-010-R0001	-	-	-	X	0.1	57-P	-	13.0
025-000-R0003	-	-	-	X	0.3	57-P	-	13.1
025-015-R0001	-	-	-	X	3.0	57-P	-	15.0
025-000-R0005	-	-	-	X	3.7	57-P	-	12.2
025-020-R0001	-	-	-	-	4.0	57-P	-	13.0
025-000-R0006	-	-	-	-	3.5	57-P	-	13.0
025-000-R0007	-	X	-	-	4.9	57-P	-	15.0
025-000-R0008	-	X	-	-	2.1	57-P	-	18.5
000-000-R0008	-	X	X	X	0.1	2-230/287-B	-	11.0
030-000-R0001	-	X	X	X	0.9	57-P	-	14.2
030-005-R0001	-	-	X	X	0.4	57-P	-	17.0
030-005-R0003	-	X	X	X	1.2	57-P	-	17.0
030-000-R0002	-	X	X	X	1.0	57-P	-	17.2
030-000-R0003	-	-	-	X	2.1	57-P	-	17.3

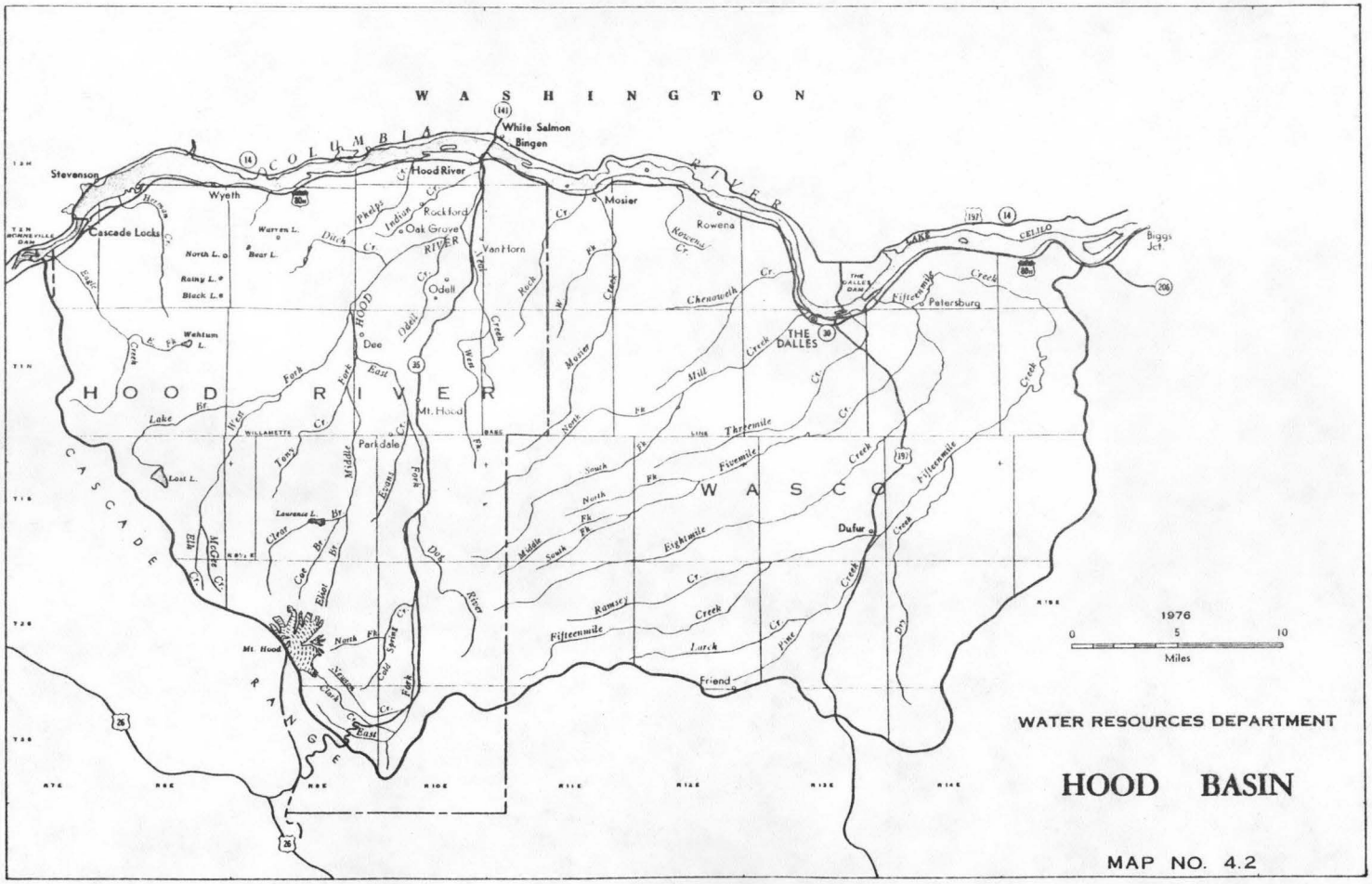
FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-080-								
000-000-R0009	-	-	X	X	0.4	2-230/287-B	-	14.5
035-000-R0001	-	-	X	X	0.2	2-230/287-B	-	15.0
000-000-R0010	-	-	X	X	0.1	2-230/287-B	-	16.2
040-000-R0001	-	-	-	X	1.0	2-230/287-B	-	17.5
040-000-R0002	-	-	-	-	0.7	2-230/287-B	-	18.6
000-000-R0011	-	-	-	X	0.3	2-230/287-B	-	19.5
000-000-R0012	-	-	-	X	2.0	2-230/287-B	-	20.5
050-000-R0013	-	-	-	-	3.0	2-230/287-B	-	22.0



APPENDIX 4

HOOD BASIN


WASHINGTON
COLUMBIA RIVER
White Salmon
Bingen
Stevenson
Hood River
Wyeth
Cascade Locks
Mosier
Rowena
Biggs Jct.
Rockford
Oak Grove
Odell
Dee
Van Horn
Parkdale
Mt. Hood
Petersburg
THE DALLES
Dufur
Friend
HOOD RIVER
WASCO
CASCADE RANGE
LAKE CELILO
1976
0 5 10
Miles
WATER RESOURCES DEPARTMENT
HOOD BASIN
MAP NO. 4.2

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-125-000-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T2N, R7E
D.	Latitude, Longitude	45°37'N, 121°36'W
E.	Stream Name	Eagle Creek
F.	Major Basin Name	Hood
G.	River Mile	0.0 to 4.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

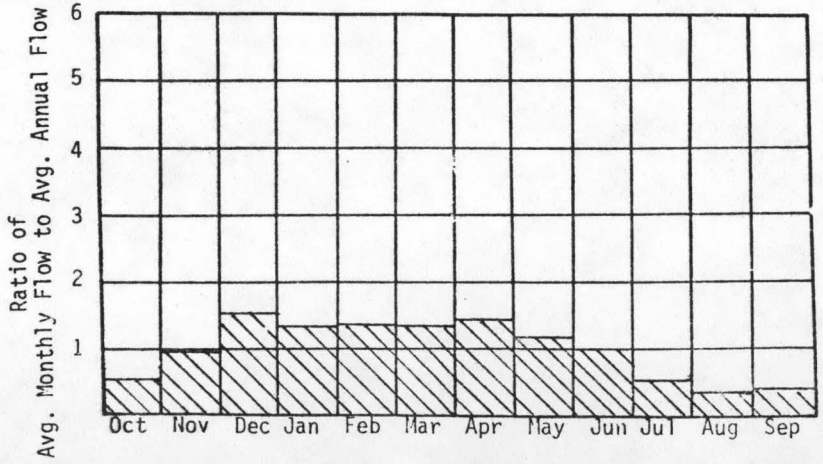
A.	Upstream Elevation of Reach	776	Ft. MSL
B.	Downstream Elevation of Reach	72	Ft. MSL
C.	Total Available Head in Reach	704	Ft.
D.	Average Slope in Reach	149.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	33.7	Sq.Mi.
F.	Inflow Classification	Natural	

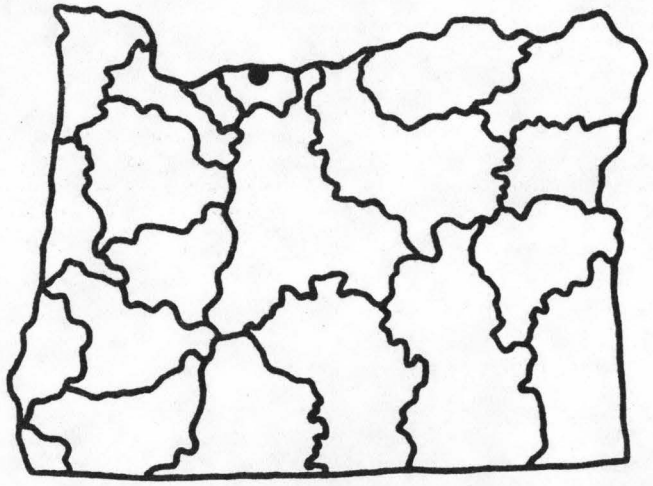
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.2	1.15	10.04	1.000
80	28.2	1.68	14.15	.960
50	57.3	3.42	24.03	.803
30	108.7	6.49	34.78	.612
10	231.7	13.82	47.64	.393

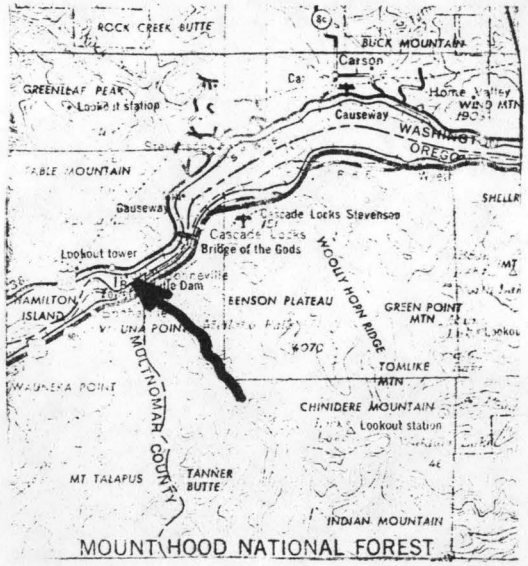
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 101 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-125-000-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T1N, R8E
D.	Latitude, Longitude	45°36'N, 121°37'W
E.	Stream Name	Eagle Creek
F.	Major Basin Name	Hood
G.	River Mile	4.7 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

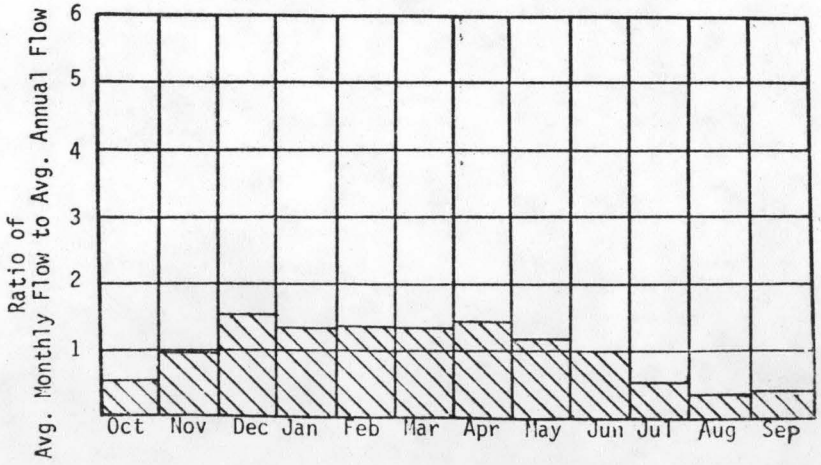
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	24.6	Sq.Mi.
F.	Inflow Classification	Natural	

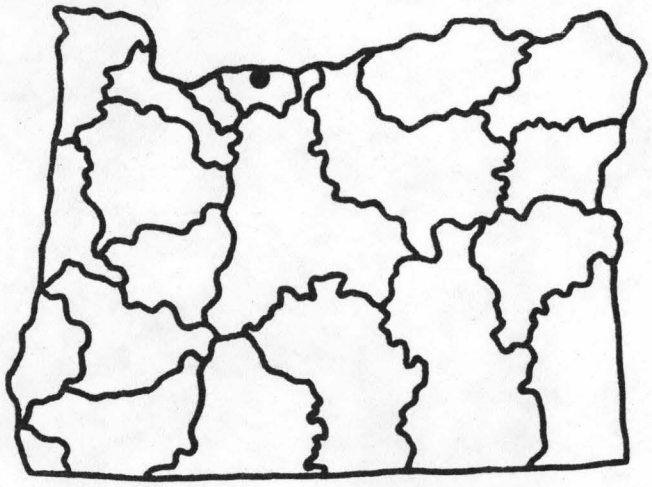
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	16.0	.09	.79	1.000
80	23.5	.13	1.11	.960
50	47.6	.27	1.87	.803
30	91.3	.51	2.73	.610
10	197.6	1.11	3.77	.390

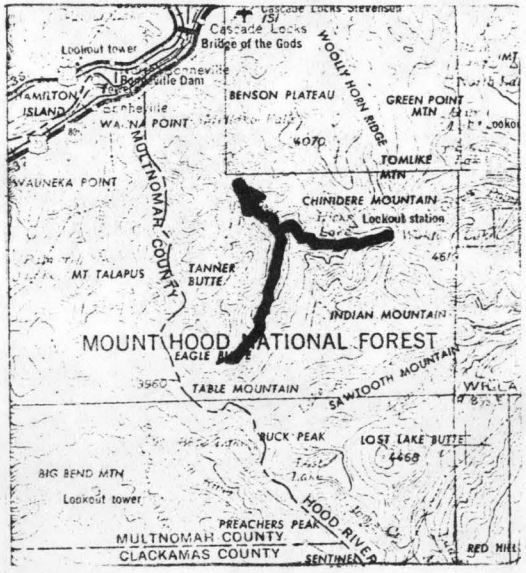
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 85 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

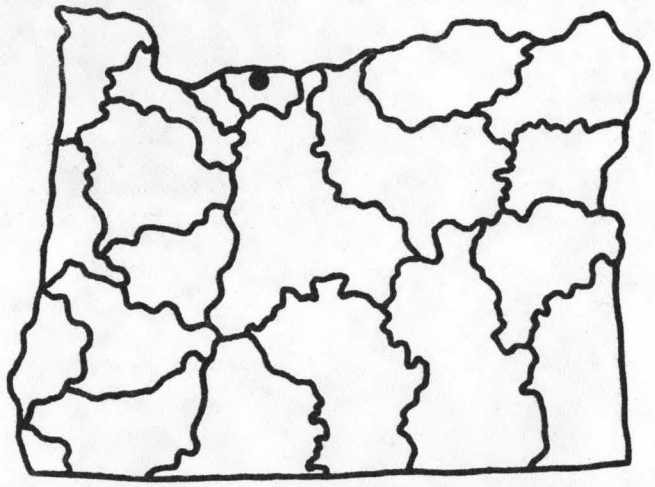


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-000-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T2N, R10E, Sec. 1
D.	Latitude, Longitude	45°41'N, 122°00'W
E.	Stream Name	Hood River
F.	Major Basin Name	Hood
G.	River Mile	0.0 to 4.5



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	302	Ft. MSL
B.	Downstream Elevation of Reach	47	Ft. MSL
C.	Total Available Head in Reach	255	Ft.
D.	Average Slope in Reach	56.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	340.1	Sq.Mi.
F.	Inflow Classification	Natural	

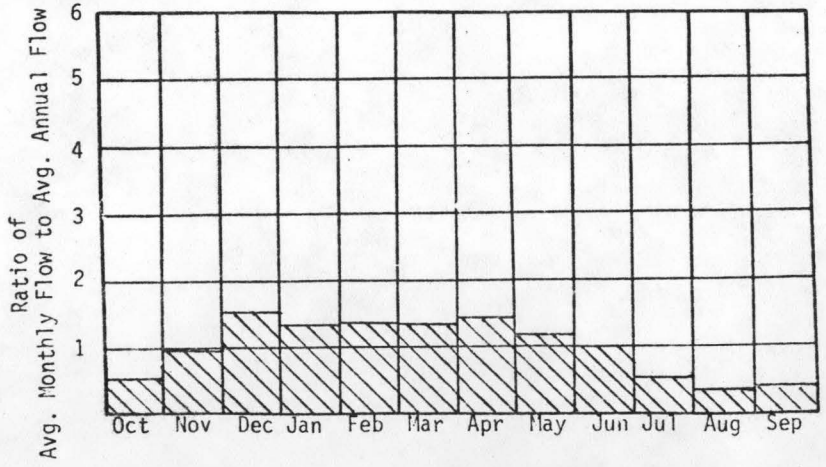
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

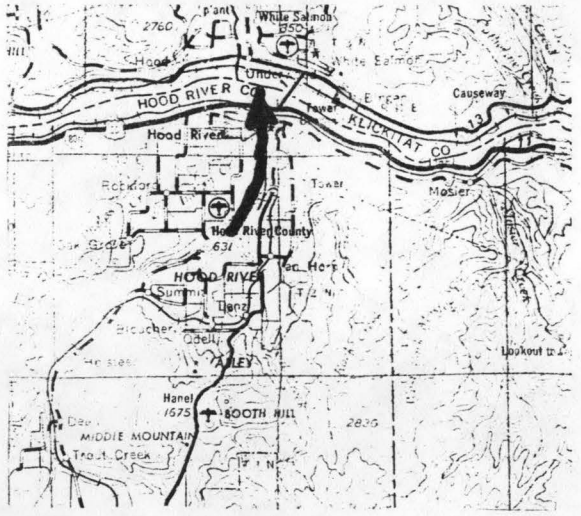
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	211.3	4.57	40.00	1.000
80	315.8	6.83	57.32	.959
50	667.4	14.42	100.58	.796
30	1100.4	23.78	133.36	.640
10	1922.5	41.55	164.49	.452

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1019 CFS



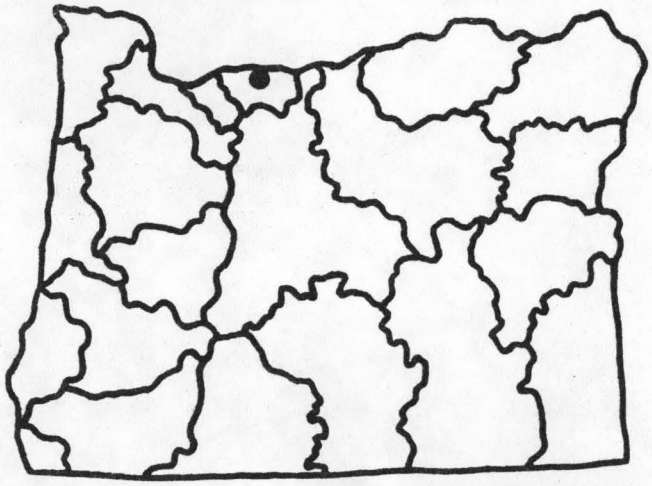


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-000-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T2N, R10E, Sec. 20
D.	Latitude, Longitude	45°35'N, 121°55'W
E.	Stream Name	Hood River
F.	Major Basin Name	Hood
G.	River Mile	4.5 to 12.2



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

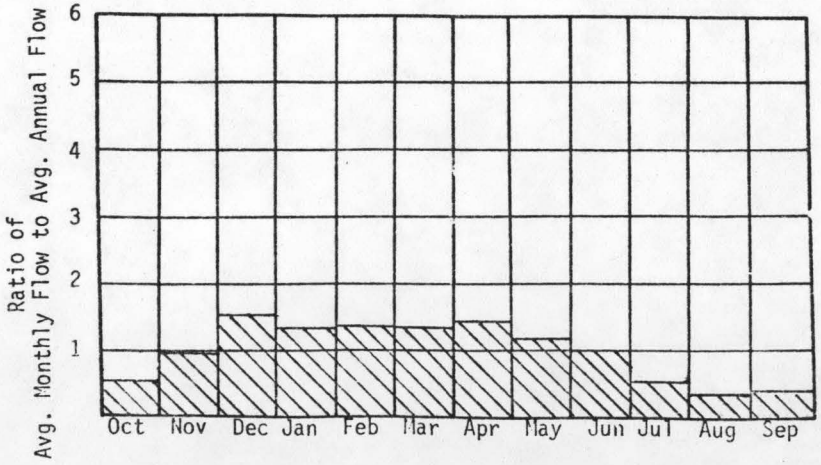
A.	Upstream Elevation of Reach	770	Ft. MSL
B.	Downstream Elevation of Reach	302	Ft. MSL
C.	Total Available Head in Reach	468	Ft.
D.	Average Slope in Reach	60.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	325.4	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

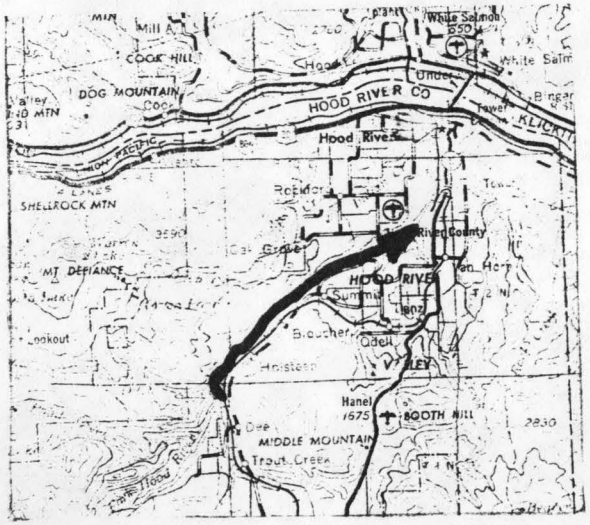
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	192.6	7.64	66.91	1.000
80	287.6	11.41	95.80	.959
50	606.9	24.07	167.89	.796
30	1006.0	39.90	223.36	.639
10	1771.2	70.25	276.54	.449

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 932 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-010-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T1N, R9E, Sec. 14
D.	Latitude, Longitude	45°34'N, 121°50'30"
E.	Stream Name	West Fork Hood River
F.	Major Basin Name	Hood
G.	River Mile	0.0 to 5.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

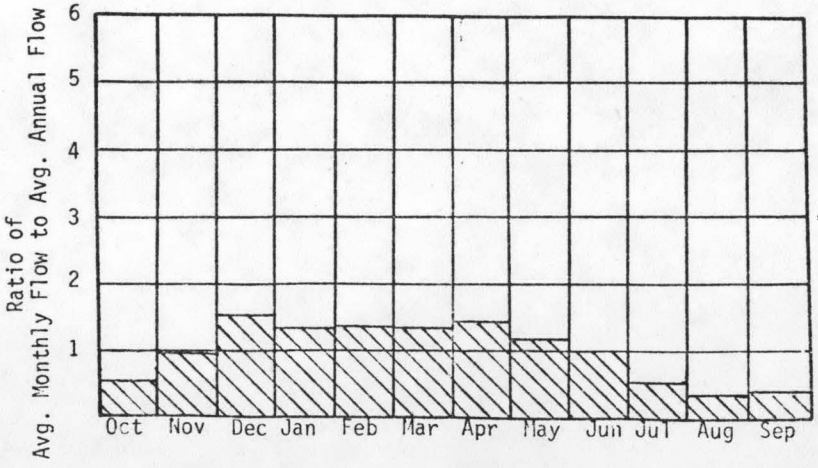
A.	Upstream Elevation of Reach	1220	Ft. MSL
B.	Downstream Elevation of Reach	770	Ft. MSL
C.	Total Available Head in Reach	450	Ft.
D.	Average Slope in Reach	81.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	102.4	Sq.Mi.
F.	Inflow Classification	Natural	

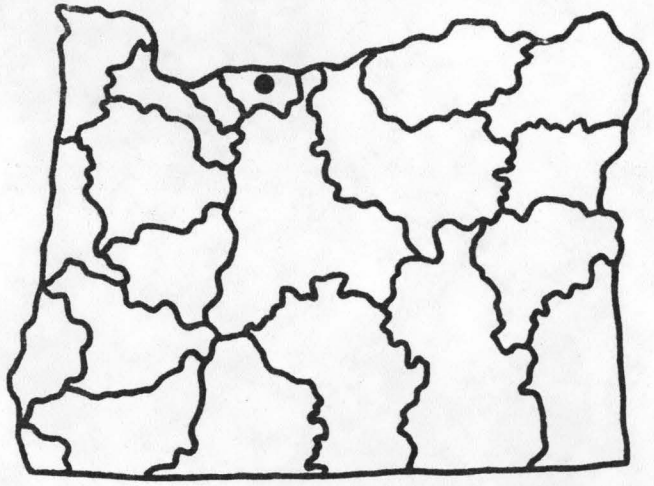
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	69.9	2.66	23.34	1.000
80	103.5	3.95	33.18	.959
50	214.8	8.19	57.35	.799
30	378.0	14.41	79.15	.627
10	723.8	27.60	102.25	.423

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 350 CFS





U.S.G.S. TOPO. SERIES
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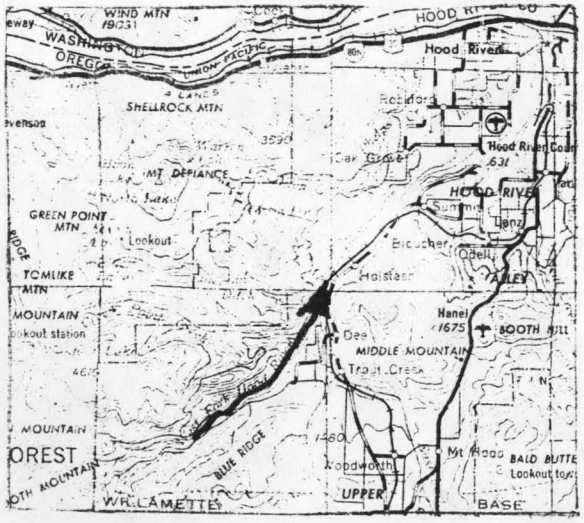
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-010-002-R0001

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T1N, R9E, Sec. 29
D.	Latitude, Longitude	45°32'30"N, 121°46'30"
E.	Stream Name	Lake Branch
F.	Major Basin Name	Hood
G.	River Mile	0.0 to 2.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

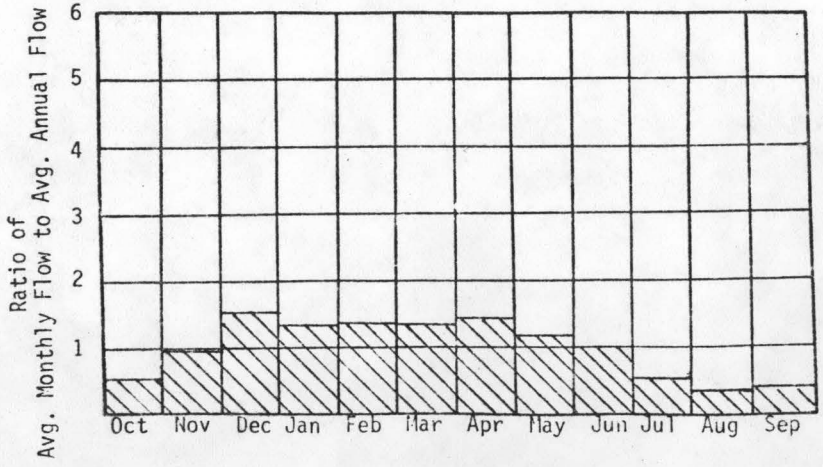
A.	Upstream Elevation of Reach	1516	Ft. MSL
B.	Downstream Elevation of Reach	1220	Ft. MSL
C.	Total Available Head in Reach	296	Ft.
D.	Average Slope in Reach	118.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	29.6	Sq.Mi.
F.	Inflow Classification	Natural	

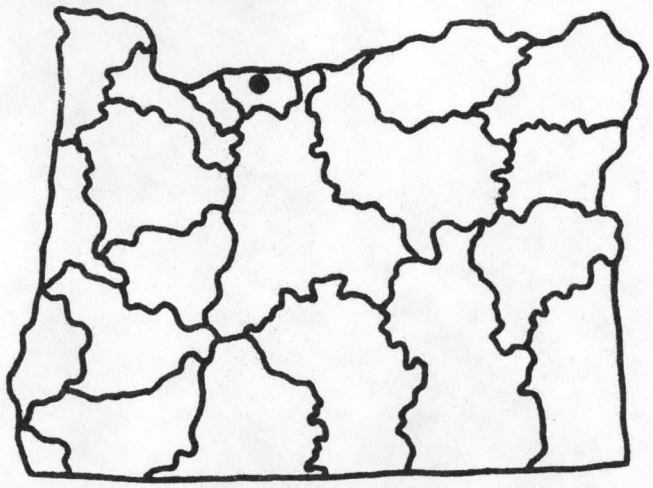
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	17.3	.43	3.79	1.000
80	25.3	.63	5.34	.960
50	51.3	1.29	9.06	.803
30	98.1	2.46	13.16	.611
10	210.8	5.29	18.12	.391

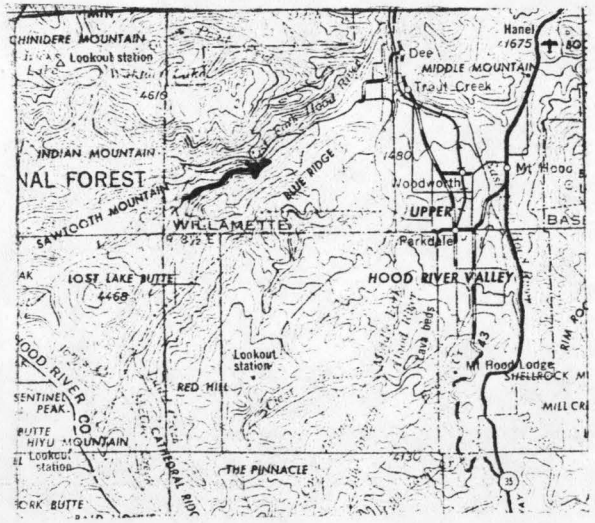
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 92 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-010-002-R0002

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T1N, R9E, Sec. 30
D.	Latitude, Longitude	45°32'N, 121°45'W
E.	Stream Name	Lake Branch
F.	Major Basin Name	Hood
G.	River Mile	2.5 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

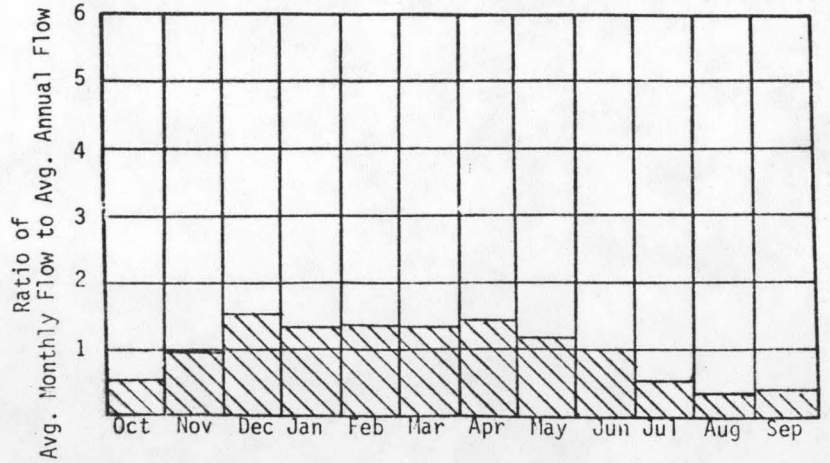
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	22.2	Sq.Mi.
F.	Inflow Classification	Natural	

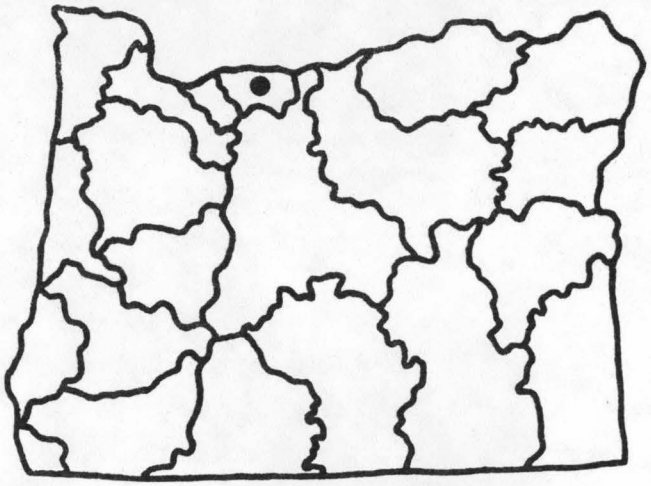
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.7	.08	.72	1.000
80	21.5	.12	1.01	.960
50	43.4	.24	1.71	.803
30	83.7	.47	2.50	.609
10	182.5	1.02	3.47	.388

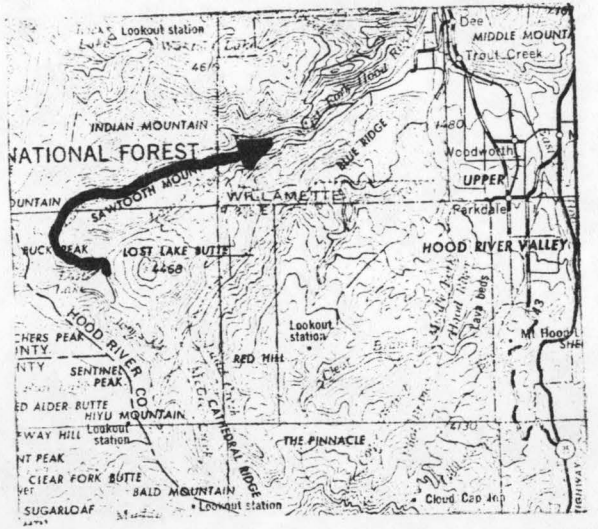
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 78 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-010-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T1N, R9E, Sec. 31
D.	Latitude, Longitude	45°31'30"N, 121°45'W
E.	Stream Name	West Fork Hood River
F.	Major Basin Name	Hood
G.	River Mile	5.5 to 11.9

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

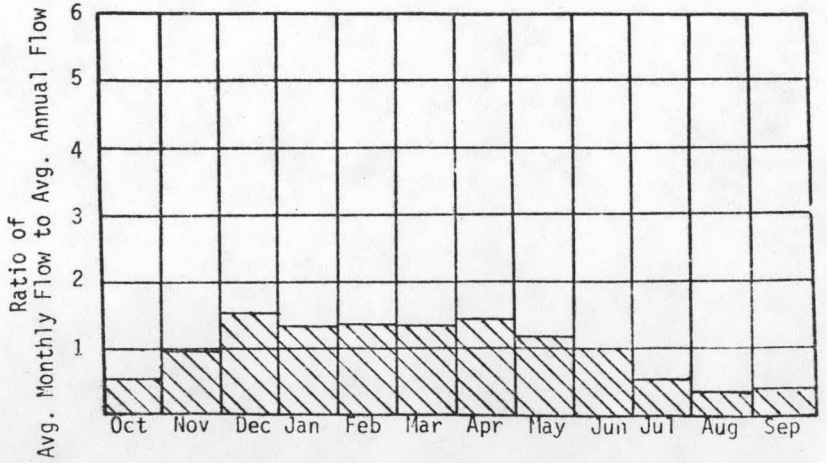
A.	Upstream Elevation of Reach	1943	Ft. MSL
B.	Downstream Elevation of Reach	1220	Ft. MSL
C.	Total Available Head in Reach	723	Ft.
D.	Average Slope in Reach	113	Ft./Mi.
E.	Drainage Area above Reach Mouth	38.5	Sq.Mi.
F.	Inflow Classification	Natural	

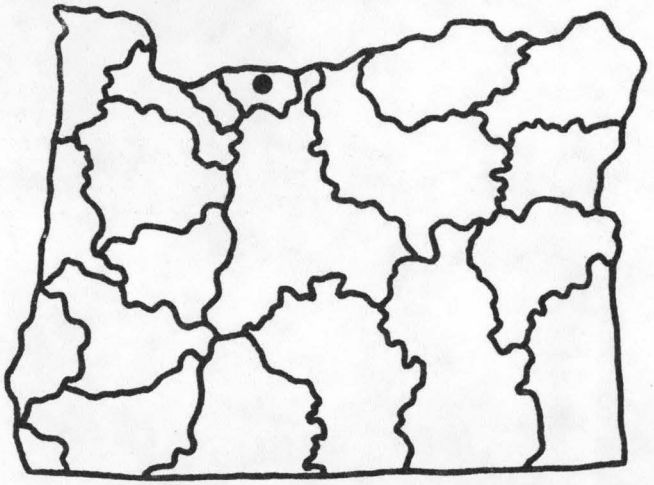
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	22.0	1.35	11.78	1.000
80	32.2	1.98	16.62	.960
50	65.7	4.02	28.27	.802
30	123.7	7.58	40.72	.614
10	260.6	15.97	55.43	.396

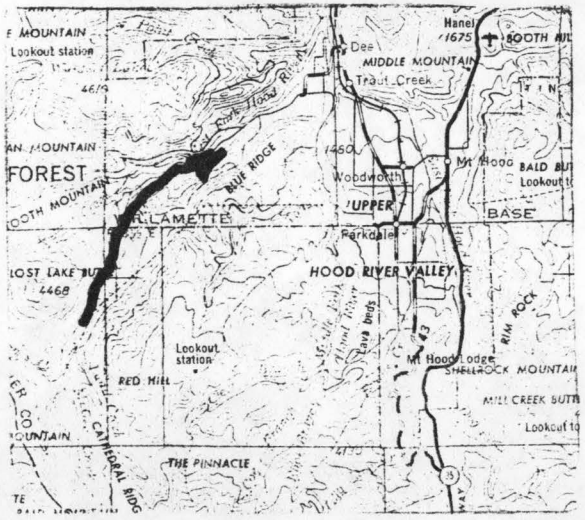
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 115 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-010-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T1S, R8E, Sec. 13
D.	Latitude, Longitude	45°28'30"N, 121°43'W
E.	Stream Name	West Fork Hood River
F.	Major Basin Name	Hood
G.	River Mile	11.9 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

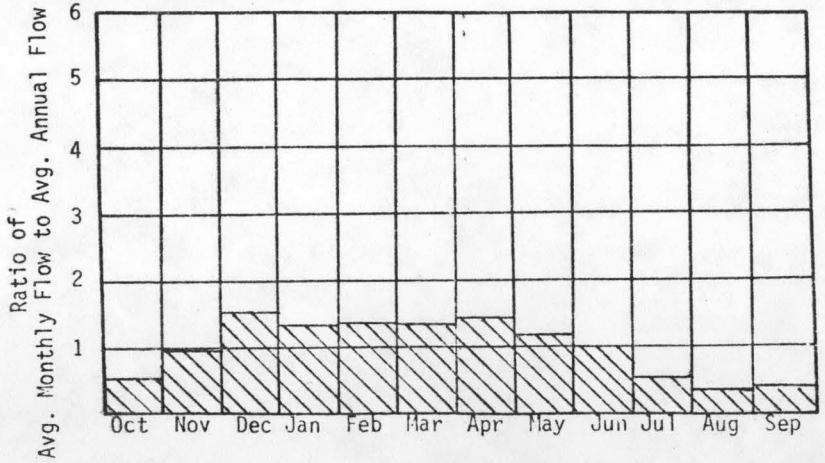
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	20.2	Sq.Mi.
F.	Inflow Classification	Natural	

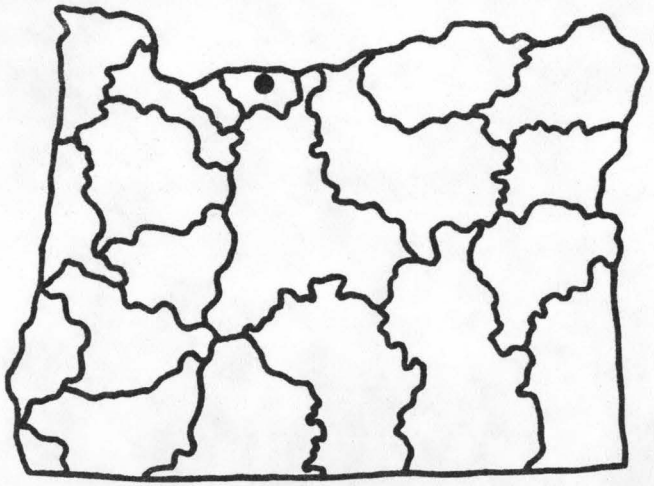
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.7	.08	.72	1.000
80	21.5	.12	1.01	.960
50	43.5	.24	1.71	.803
30	84.0	.47	2.51	.609
10	183.0	1.02	3.48	.388

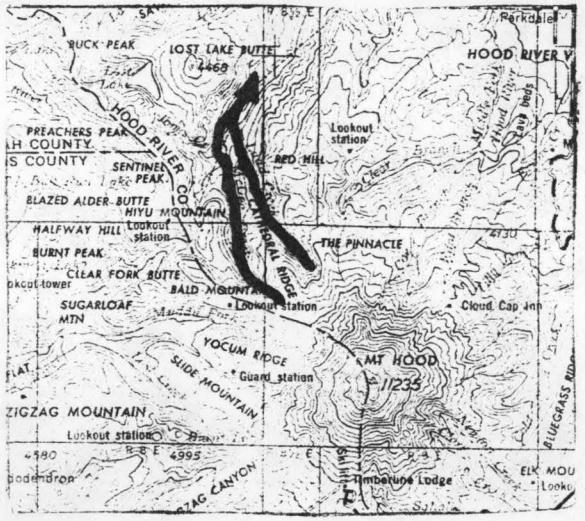
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 78 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-000-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T1N, R10E, Sec. 7
D.	Latitude, Longitude	45°35'30"N, 121°52'W
E.	Stream Name	Hood River
F.	Major Basin Name	Hood
G.	River Mile	12.2 to 14.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

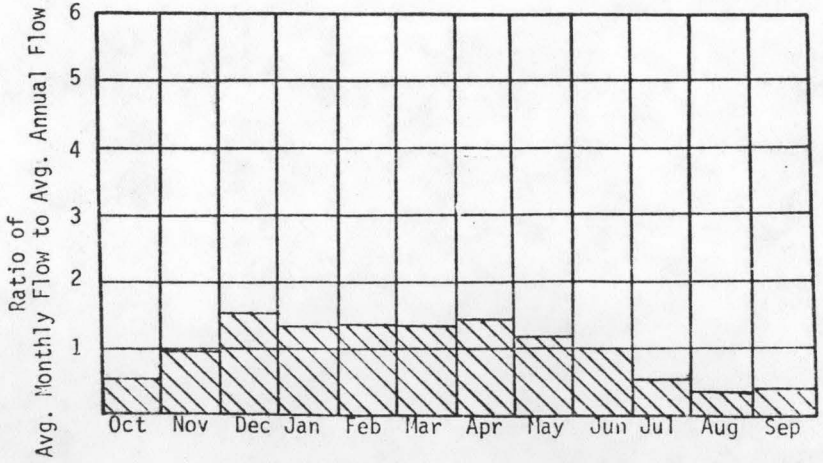
A.	Upstream Elevation of Reach	977	Ft. MSL
B.	Downstream Elevation of Reach	770	Ft. MSL
C.	Total Available Head in Reach	207	Ft.
D.	Average Slope in Reach	86.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	154.4	Sq.Mi.
F.	Inflow Classification	Natural	

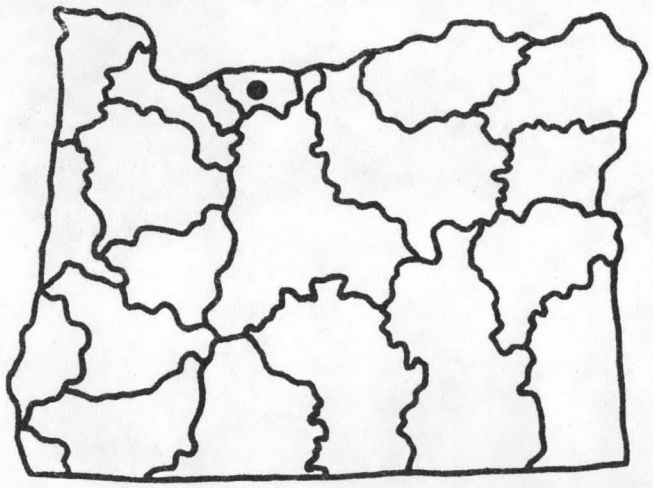
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	68.0	1.19	10.44	1.000
80	100.7	1.77	14.84	.959
50	208.8	3.66	25.65	.799
30	368.0	6.46	35.43	.626
10	706.4	12.39	45.83	.422

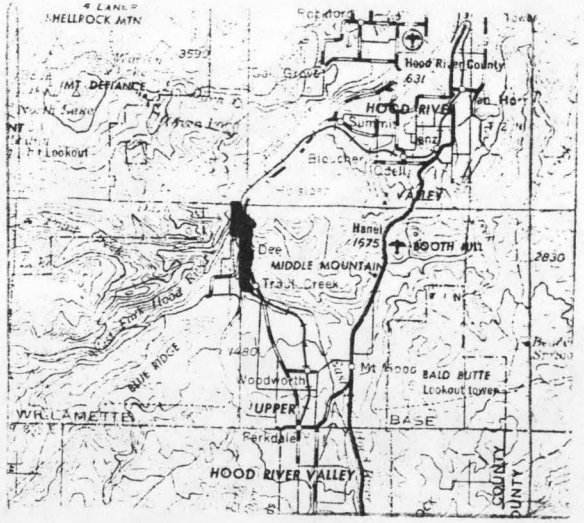
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 342 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-020-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T1N, R10E, Sec. 30
D.	Latitude, Longitude	45°32'N, 121°52'W
E.	Stream Name	Middle Fork Hood River
F.	Major Basin Name	Hood
G.	River Mile	0.0 to 6.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

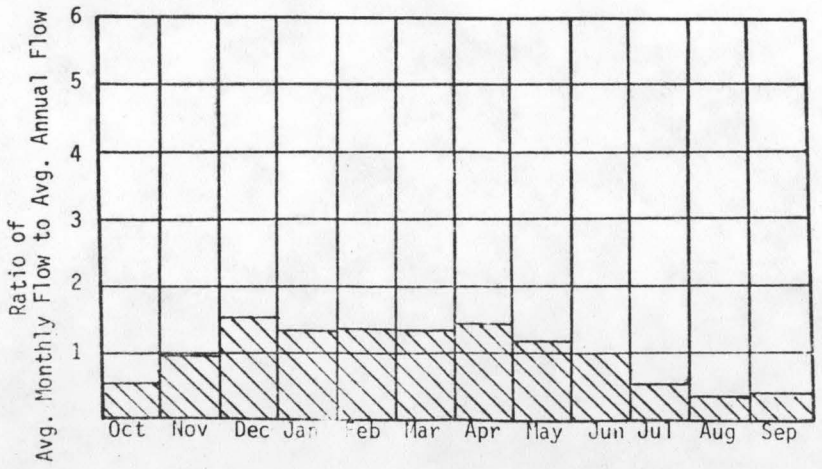
A.	Upstream Elevation of Reach	1945	Ft. MSL
B.	Downstream Elevation of Reach	977	Ft. MSL
C.	Total Available Head in Reach	968	Ft.
D.	Average Slope in Reach	153.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	45.9	Sq.Mi.
F.	Inflow Classification	Natural	

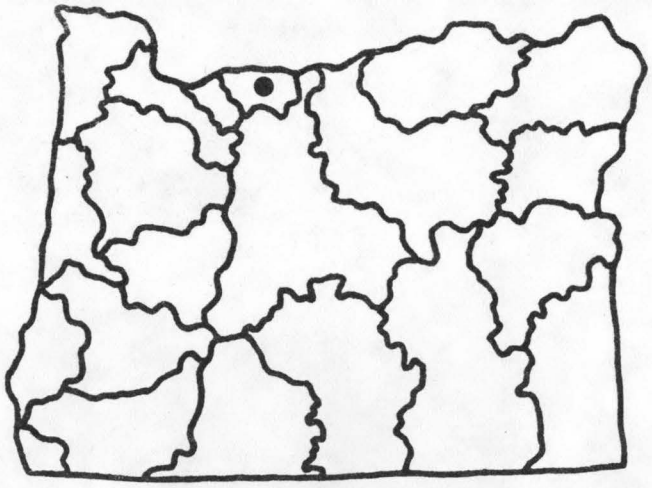
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.5	1.60	13.99	1.000
80	28.6	2.34	19.72	.960
50	58.1	4.76	33.50	.803
30	110.2	9.04	48.47	.612
10	234.5	19.24	66.34	.394

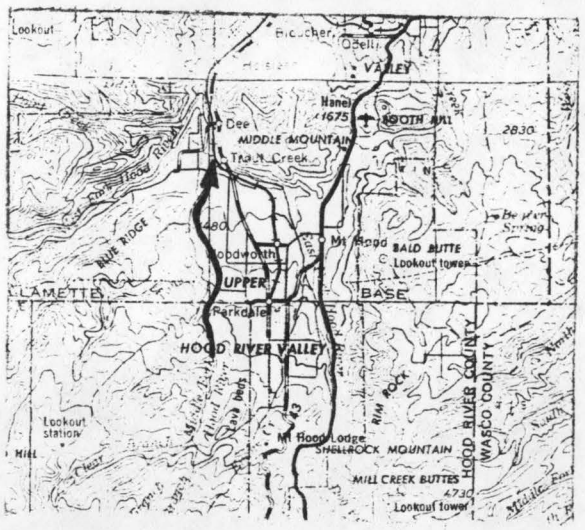
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 102 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-020-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T1S, R9E, Sec. 11
D.	Latitude, Longitude	45°30'N, 121°52'W
E.	Stream Name	Middle Fork Hood River
F.	Major Basin Name	Hood
G.	River Mile	6.3 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

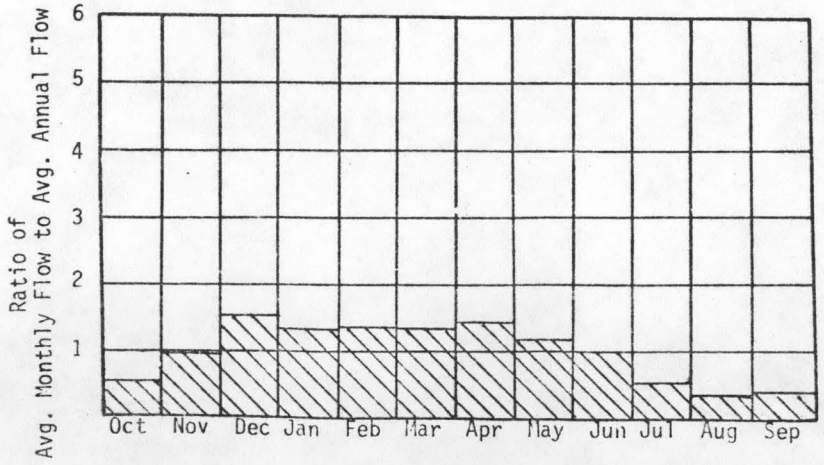
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	27.4	Sq.Mi.
F.	Inflow Classification	Natural	

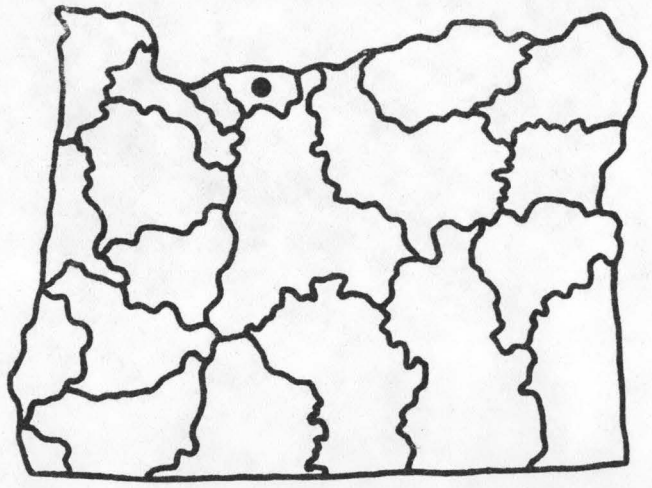
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.7	.08	.72	1.000
80	21.5	.12	1.01	.960
50	43.5	.24	1.71	.803
30	83.9	.47	2.50	.609
10	182.8	1.02	3.47	.388

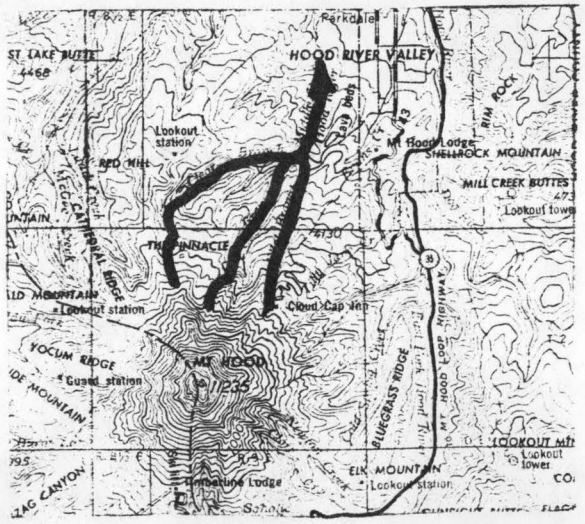
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 78 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-030-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T1N, R10E, Sec. 33
D.	Latitude, Longitude	45°31'30"N, 121°55'W
E.	Stream Name	East Fork Hood River
F.	Major Basin Name	Hood
G.	River Mile	0.0 to 10.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

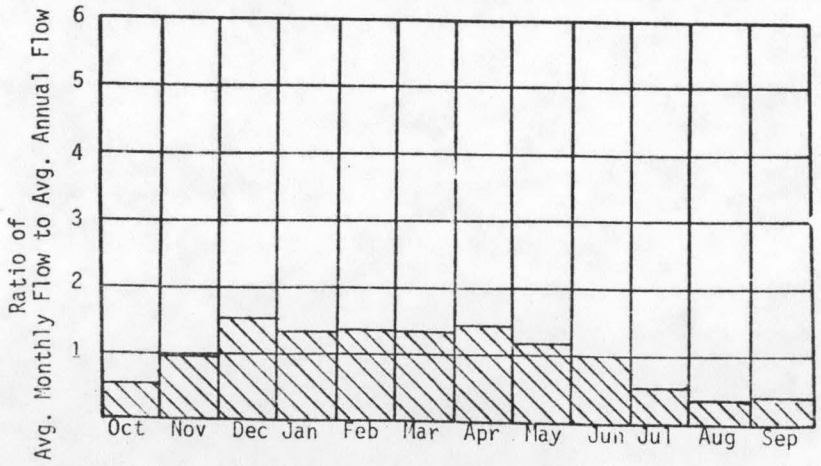
A.	Upstream Elevation of Reach	2152	Ft. MSL
B.	Downstream Elevation of Reach	977	Ft. MSL
C.	Total Available Head in Reach	1175	Ft.
D.	Average Slope in Reach	117.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	105.4	Sq.Mi.
F.	Inflow Classification	Natural	

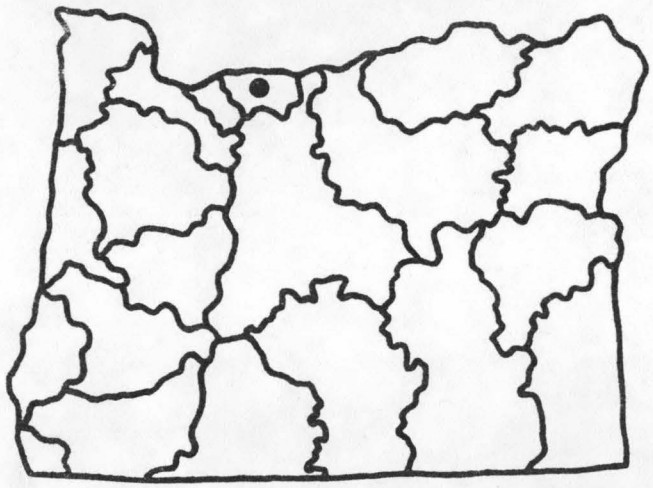
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	26.4	2.63	23.03	1.000
80	38.8	3.87	32.51	.960
50	79.3	7.90	55.46	.802
30	147.7	14.71	79.34	.616
10	306.7	30.54	107.07	.400

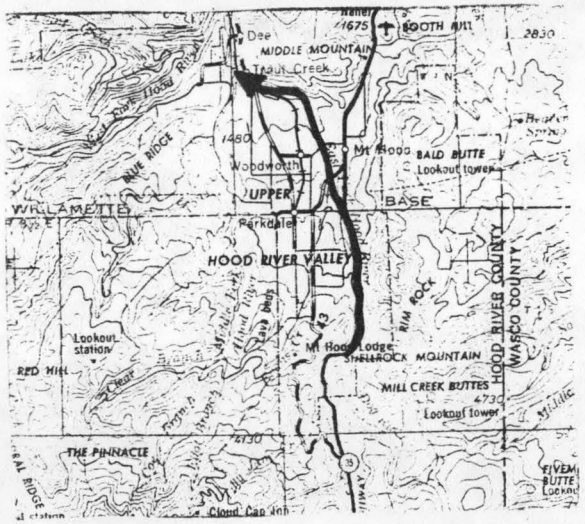
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 138 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-030-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T1S, R10E, Sec. 32
D.	Latitude, Longitude	45°26'30"N, 121°55'W
E.	Stream Name	East Fork Hood River
F.	Major Basin Name	Hood
G.	River Mile	10.0 to 15.1

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

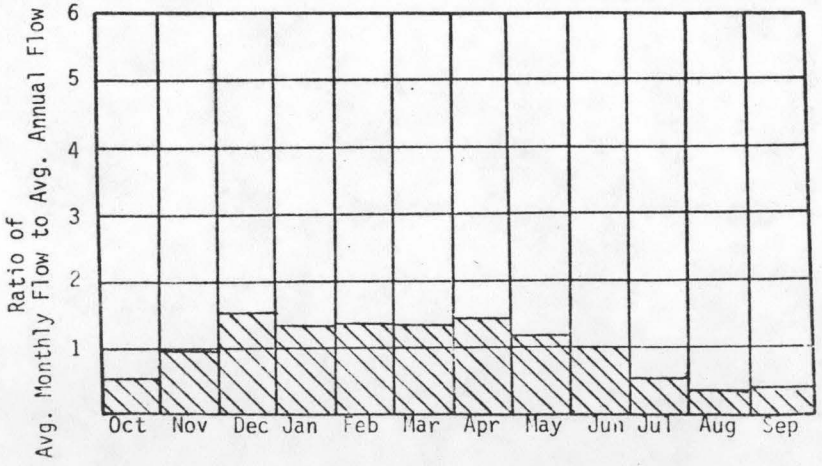
A.	Upstream Elevation of Reach	3000	Ft. MSL
B.	Downstream Elevation of Reach	2152	Ft. MSL
C.	Total Available Head in Reach	848	Ft.
D.	Average Slope in Reach	166	Ft./Mi.
E.	Drainage Area above Reach Mouth	71.5	Sq.Mi.
F.	Inflow Classification	Natural	

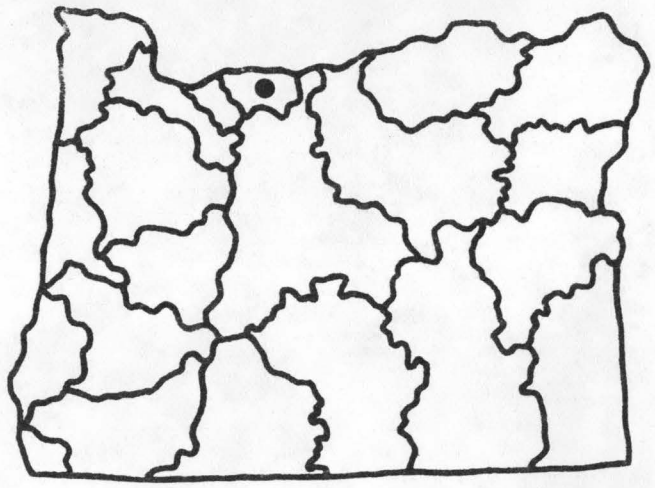
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	18.5	1.33	11.66	1.000
80	27.2	1.95	16.43	.960
50	55.2	3.97	27.89	.803
30	105.0	7.54	40.42	.612
10	224.4	16.12	55.46	.393

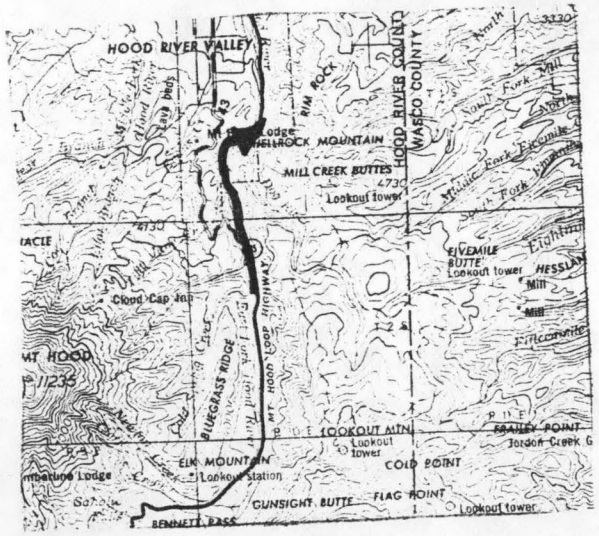
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 98 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

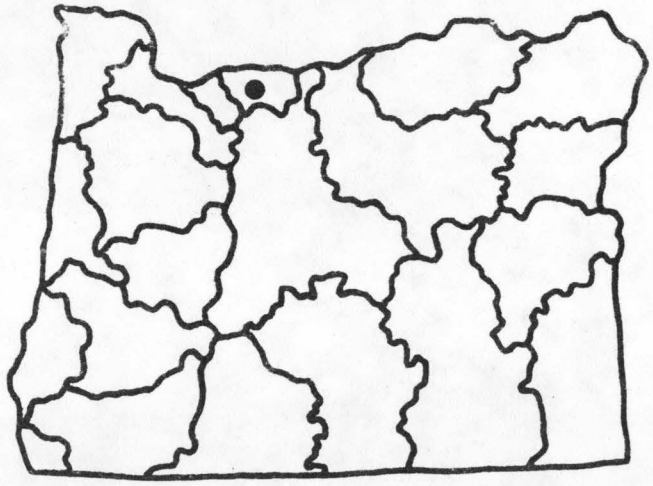


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-140-030-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Hood River
C.	Township, Range	T2S, R10E, Sec. 8
D.	Latitude, Longitude	45°24'N, 121°56'W
E.	Stream Name	East Fork Hood River
F.	Major Basin Name	Hood
G.	River Mile	15.1 to H.W.



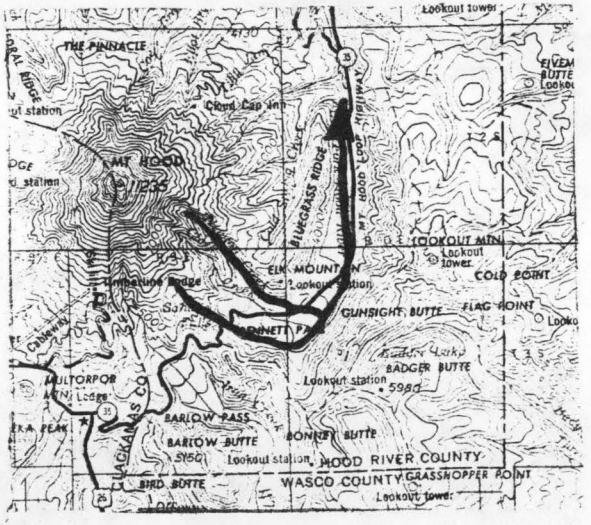
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	39.6	Sq.Mi.
F.	Inflow Classification	Natural	

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

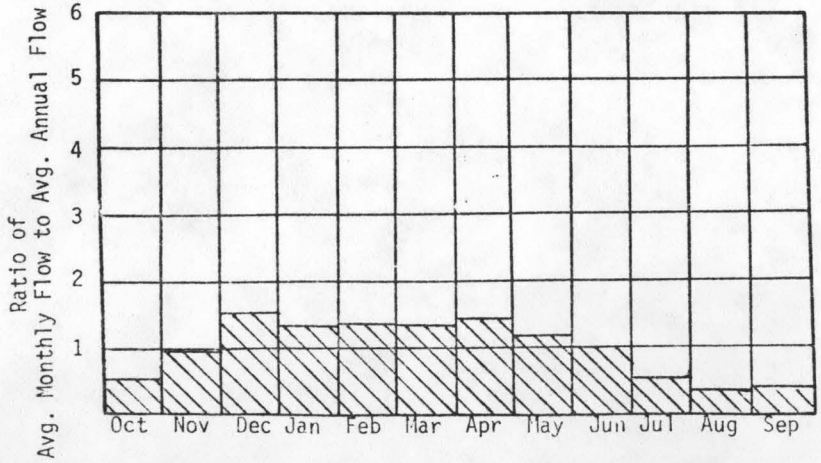
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	17.4	.10	.85	1.000
80	25.6	.14	1.20	.960
50	51.8	.29	2.04	.803
30	98.9	.55	2.96	.611
10	212.6	1.19	4.08	.391



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 92 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-165-000-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	T2N, R14E, Sec 31
D.	Latitude, Longitude	45°36'30"N, 122°23'W
E.	Stream Name	Fifteenmile Creek
F.	Major Basin Name	Hood
G.	River Mile	0.0 to 2.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

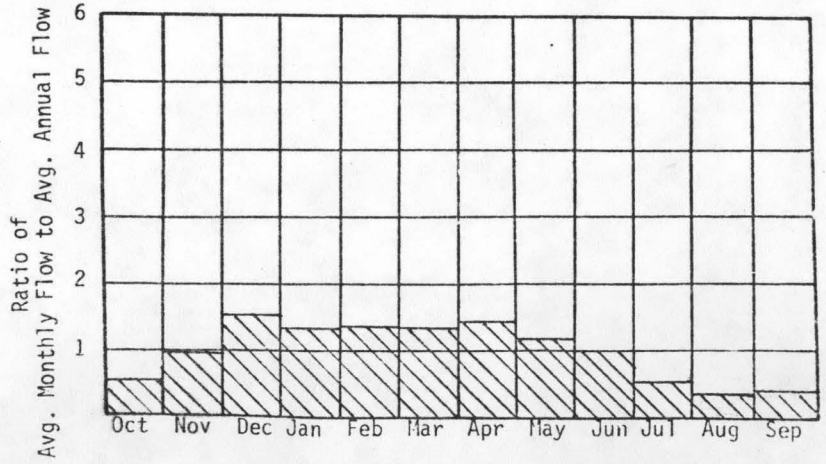
A.	Upstream Elevation of Reach	292	Ft. MSL
B.	Downstream Elevation of Reach	160	Ft. MSL
C.	Total Available Head in Reach	132	Ft.
D.	Average Slope in Reach	48.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	370.5	Sq.Mi.
F.	Inflow Classification	Natural	

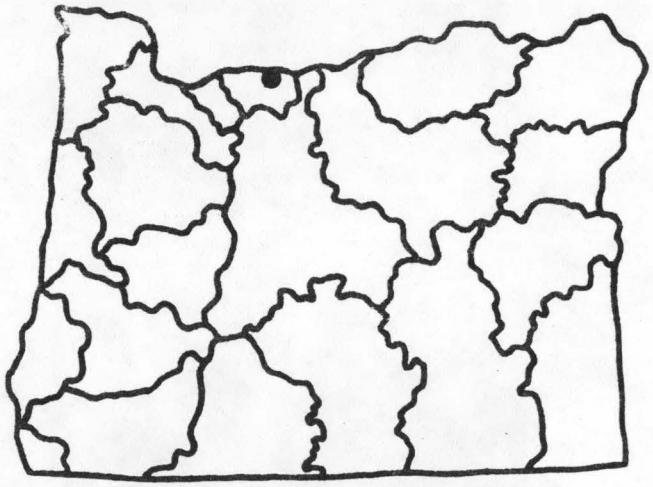
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	44.6	.50	4.37	1.000
80	65.9	.74	6.20	.960
50	135.7	1.52	10.65	.800
30	245.2	2.74	14.94	.622
10	487.3	5.45	19.68	.412

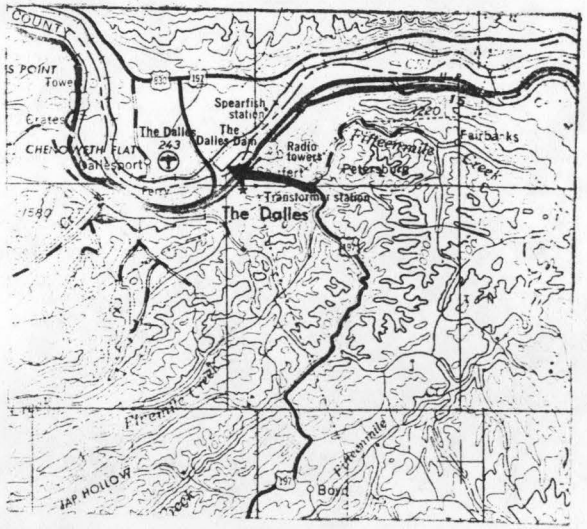
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 228 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-165-000-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	T2N, R14E, Sec. 32
D.	Latitude, Longitude	45°36'N, 122°25'W
E.	Stream Name	Fifteenmile Creek
F.	Major Basin Name	Hood
G.	River Mile	2.7 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

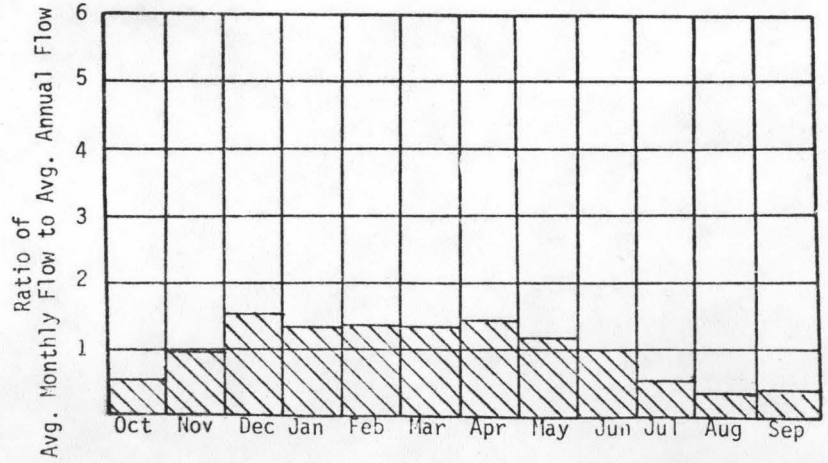
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	251.6	Sq.Mi.
F.	Inflow Classification	Natural	

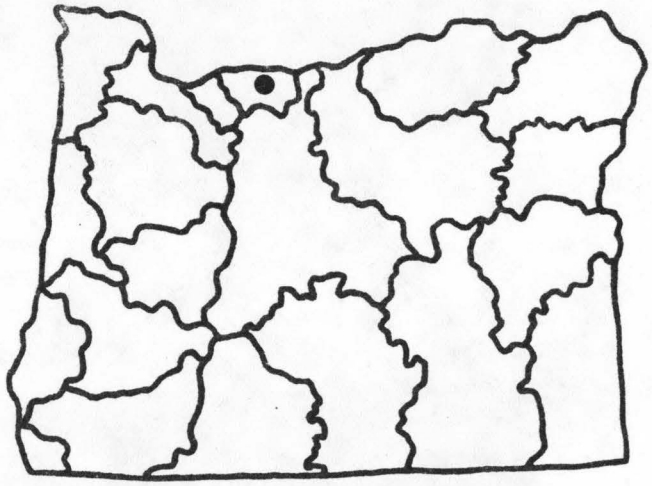
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	24.3	.14	1.19	1.000
80	35.7	.20	1.68	.960
50	72.8	.41	2.86	.802
30	136.3	.76	4.10	.615
10	284.8	1.59	5.56	.398

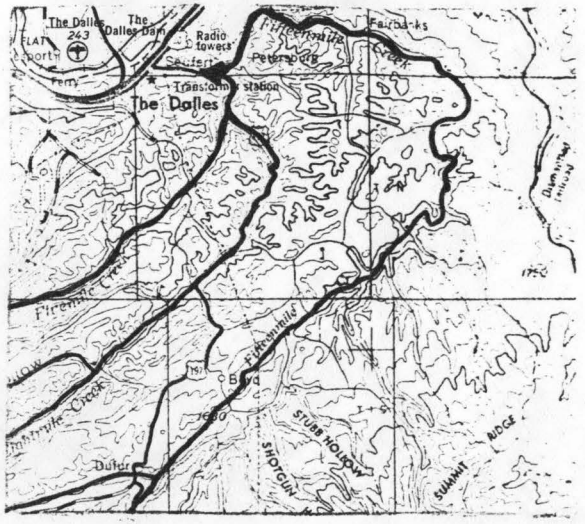
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 127 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

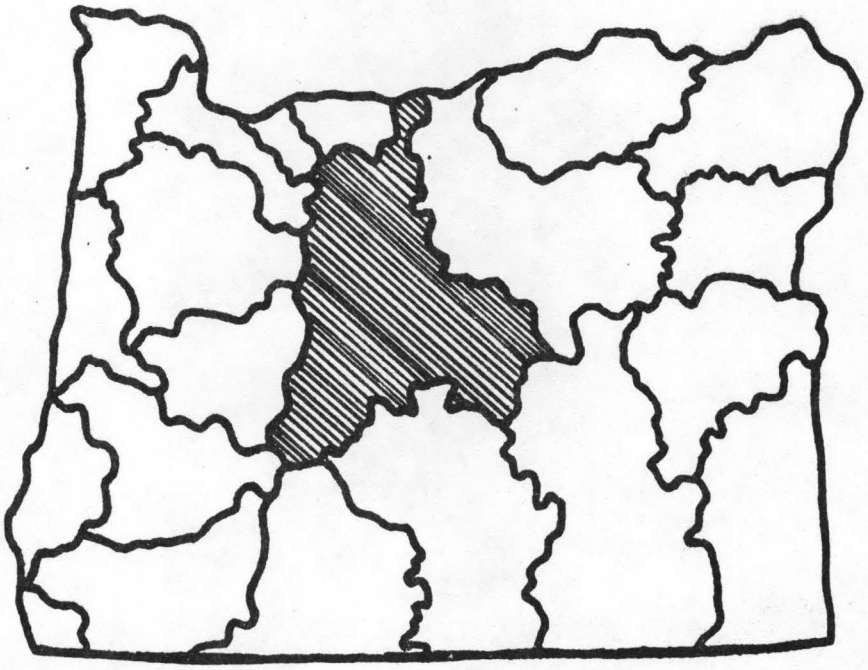


FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-								
125-000-000-R0001	-	-	-	X	3.8	115-B	-	37
125-000-000-R0002	-	-	-	-	6.0	115-B	-	38
140-000-000-R0001	-	X	-	X	0.1	69-PPL	-	17
140-000-000-R0002	-	X	-	X	0.3	69-PPL	-	20
140-010-000-R0001	-	-	-	X	3.5	69-PPL	-	23
140-010-002-R0001	-	-	-	X	1.2	500-B	-	26
140-010-002-R0002	-	-	-	X	2.2	500-B	-	27
140-010-000-R0002	-	-	-	X	1.2	500-B	-	27
140-010-000-R0003	-	-	-	X	1.2	500-B	-	29
140-000-000-R0003	-	X	X	X	2.2	69-PPL	-	22
140-020-000-R0001	-	X	-	X	0.6	230-B	-	22
140-020-000-R0002	-	-	-	X	1.2	500-B	-	23
140-030-000-R0001	-	X	-	X	1.0	230-B	-	20

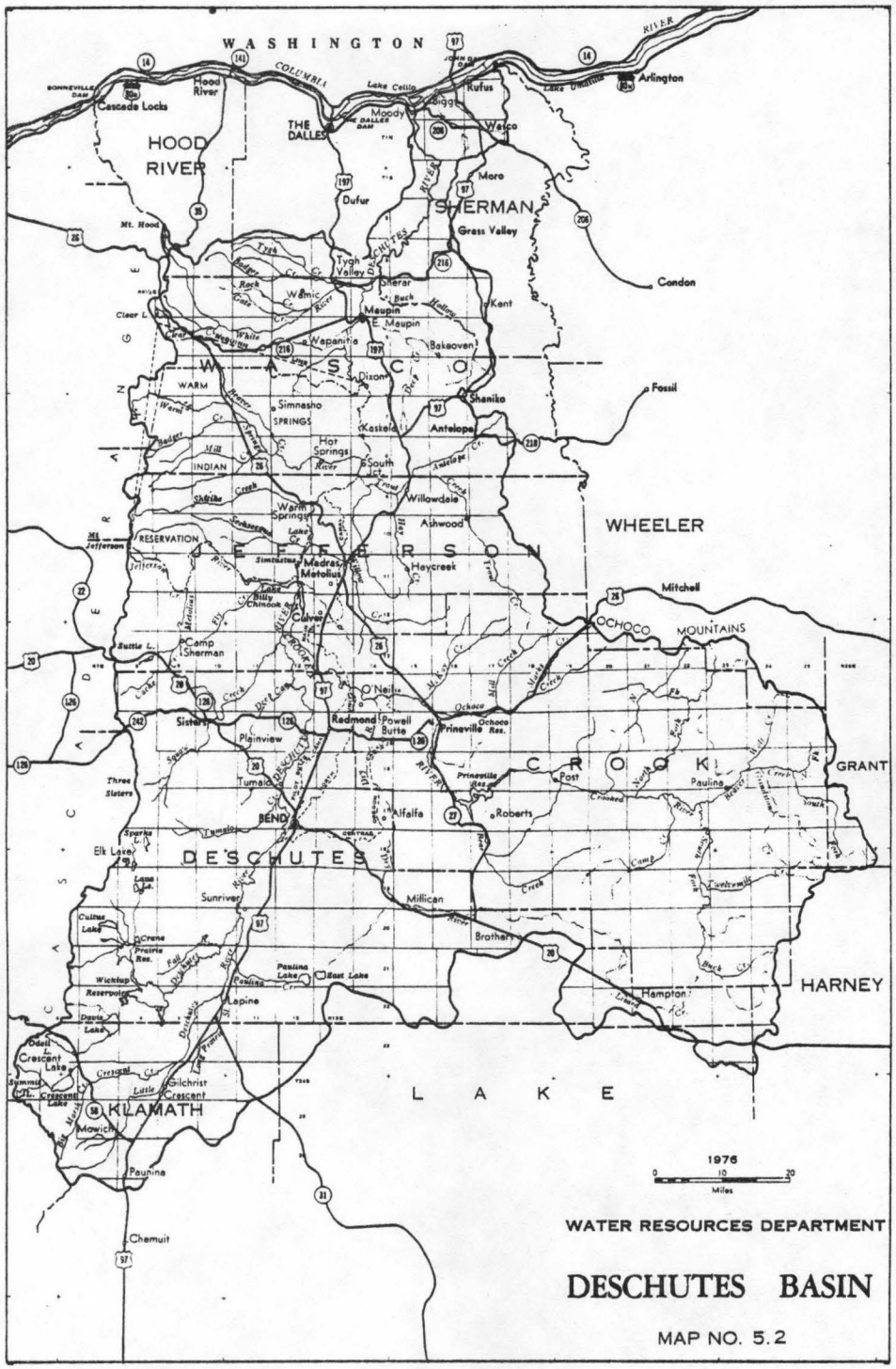
FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-								
140-030-000-R0002	-	X	-	X	2.0	500-B	-	21
140-030-000-R0003	-	X	-	X	7.2	500-B	-	23.5
165-000-000-R0001	X	X	-	X	0.2	230-B	1	4
165-000-000-R0002	-	-	-	X	0.4	230-B	1	3



APPENDIX 5

DESCHUTES BASIN


WASHINGTON
COLUMBIA RIVER
Cascade Locks
Hood River
THE DALLES
Moody
Rufus
Biggs
Wasco
Arlington
Lake Umatilla
HOOD RIVER
SHERMAN
Moro
Grass Valley
Dufur
Tygh Valley
Sherar
Condon
Mt. Hood
Maupin
E. Maupin
Kent
Wapinitia
Bakeoven
Dixon
Shaniko
Fossil
WASCO
WARM SPRINGS
RESERVATION
Simnasho
SPRINGS
Kaskela
Antelope
Hot Springs
South Junction
Willowdale
Ashwood
Warm Springs
WHEELER
JEFFERSON
Madras
Metolius
Haycreek
Mitchell
OCHOCO MOUNTAINS
Camp Sherman
Culver
Lake Billy Chinook
Sisters
Redmond
Powell Butte
Prineville
Ochoco Res.
Plainview
Tumalo
Post
Paulina
GRANT
CROOK
Three Sisters
BEND
Alfalfa
Roberts
Elk Lake
DESCHUTES
Sunriver
Millican
Brothers
Cultus Lake
Crane Prairie Res.
Wickiup Reservoir
Paulina Lake
East Lake
Hampton
HARNEY
Lapine
Davis Lake
Odell Lake
Crescent Lake
Gilchrist
Crescent
Crescent Creek
LAKE
KLAMATH
Mowich
Paulina
Chemult
1976
0 10 20
Miles
WATER RESOURCES DEPARTMENT
DESCHUTES BASIN
MAP NO. 5.2

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Sherman
C.	Township, Range	Sec.5, T1S, R16E
D.	Latitude, Longitude	45°30'N, 120°50'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 23.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

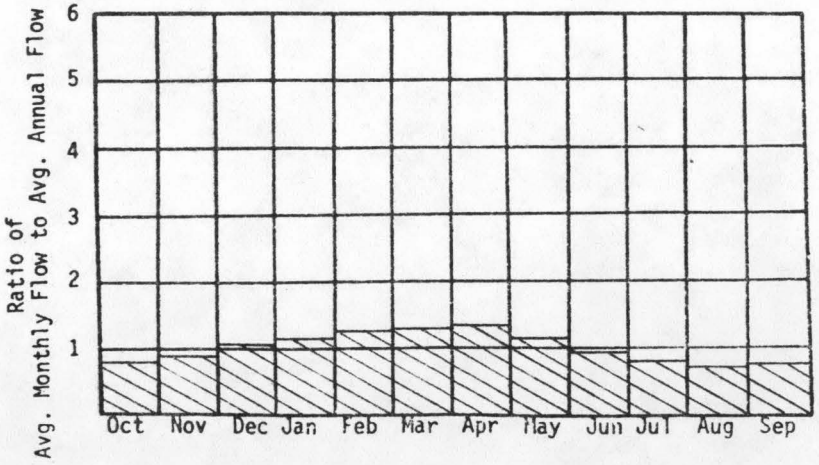
A.	Upstream Elevation of Reach	435	Ft. MSL
B.	Downstream Elevation of Reach	160	Ft. MSL
C.	Total Available Head in Reach	275	Ft.
D.	Average Slope in Reach	12.	Ft./Mi.
E.	Drainage Area above Reach Mouth	8428	Sq.Mi.
F.	Inflow Classification	Regulated	

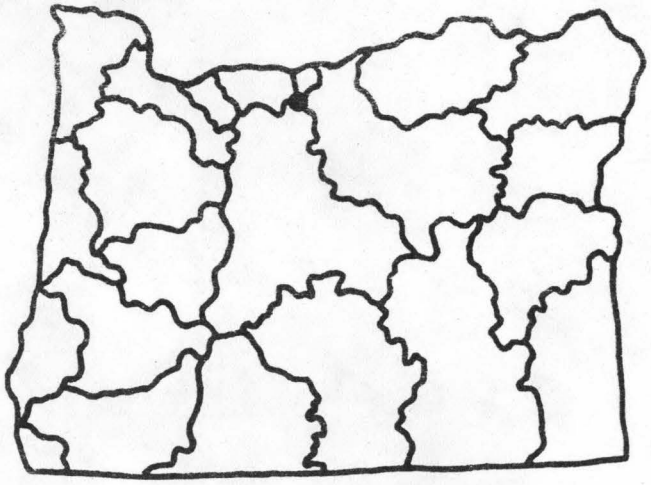
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3745.2	87.28	764.58	1.000
80	4318.5	100.64	867.01	.983
50	5093.8	118.71	969.88	.933
30	5906.1	137.64	1036.22	.859
10	7795.6	181.68	1113.37	.700

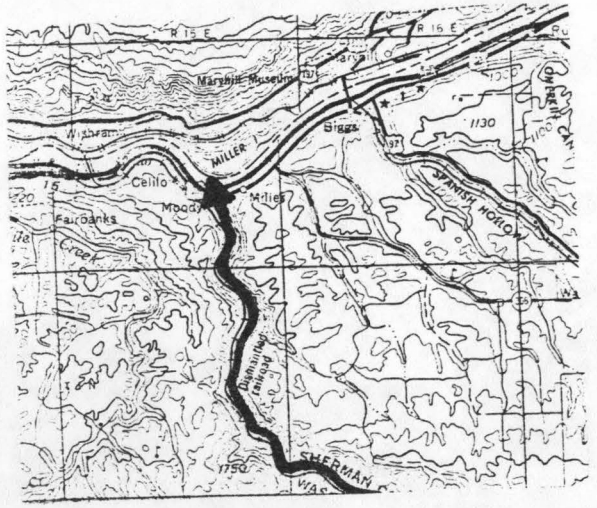
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 5526 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Sherman
C.	Township, Range	Sec.9, T3S, R15E
D.	Latitude, Longitude	45°20'N, 120°53'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	23.0 to 43.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

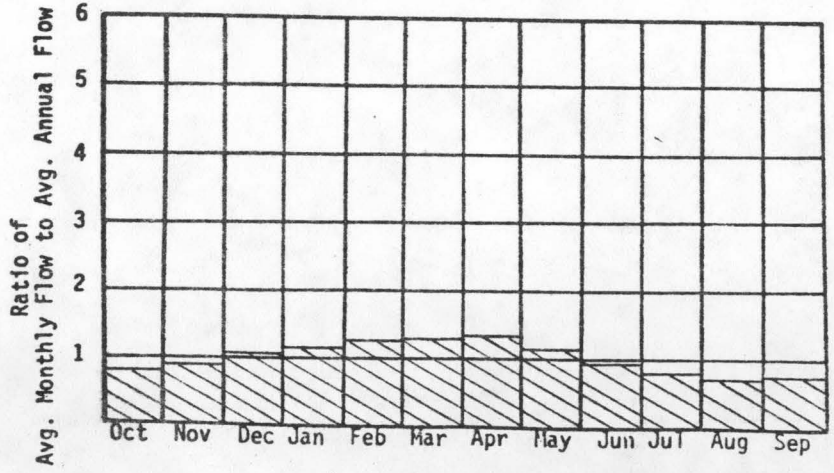
A.	Upstream Elevation of Reach	688	Ft. MSL
B.	Downstream Elevation of Reach	435	Ft. MSL
C.	Total Available Head in Reach	253	Ft.
D.	Average Slope in Reach	12.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	8342.4	Sq.Mi.
F.	Inflow Classification	Regulated	

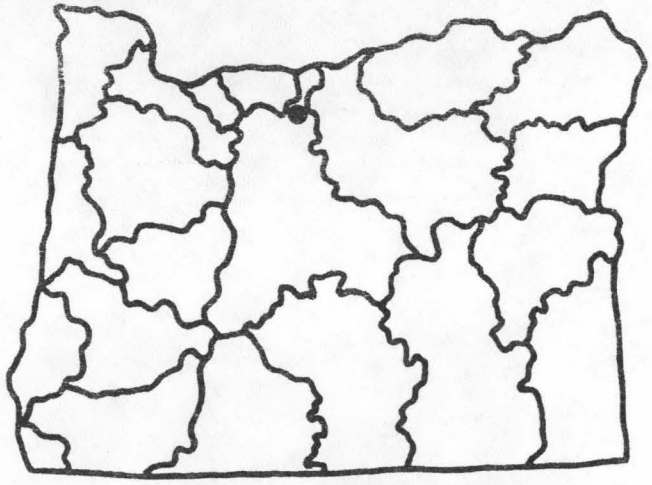
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3740.1	80.19	702.47	1.000
80	4312.8	92.47	796.59	.983
50	5082.8	108.98	890.59	.933
30	5889.9	126.28	951.23	.860
10	7769.1	166.57	1021.82	.700

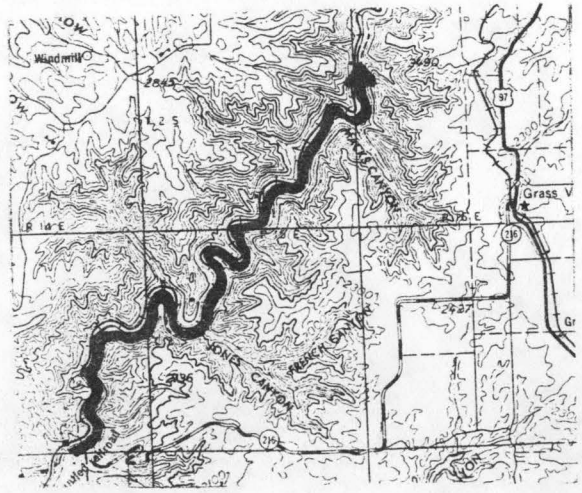
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 5510 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

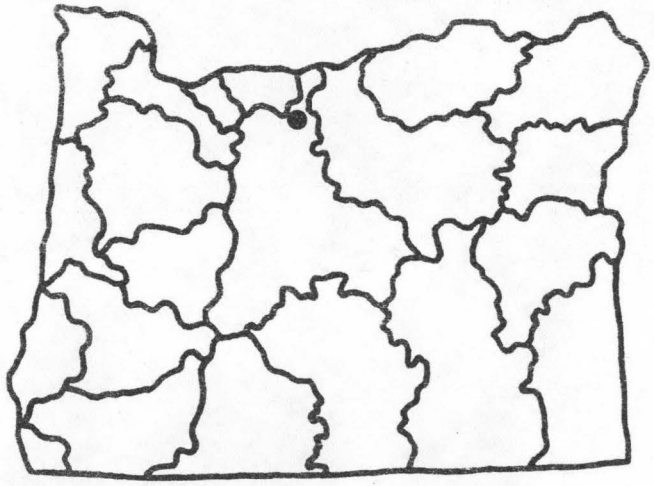


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.3, T4S, R14E
D.	Latitude, Longitude	45°15'N, 121°02'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	43.0 to 46.4



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	747	Ft. MSL
B.	Downstream Elevation of Reach	688	Ft. MSL
C.	Total Available Head in Reach	59	Ft.
D.	Average Slope in Reach	17.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	8033.9	Sq.Mi.
F.	Inflow Classification	Regulated	

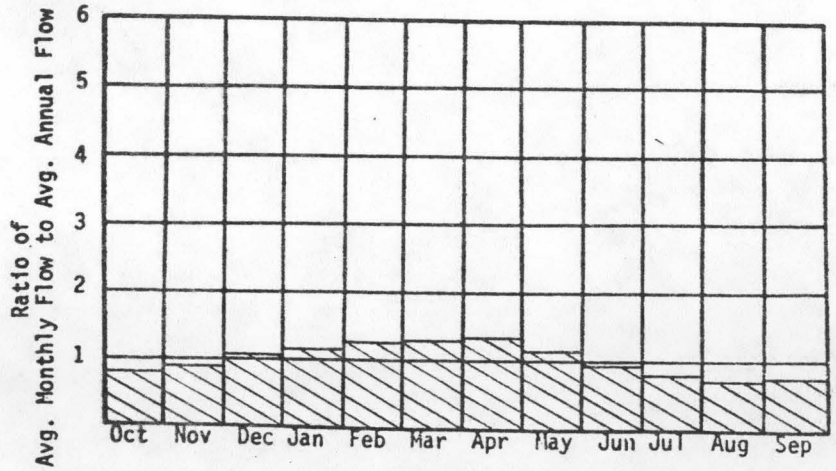
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

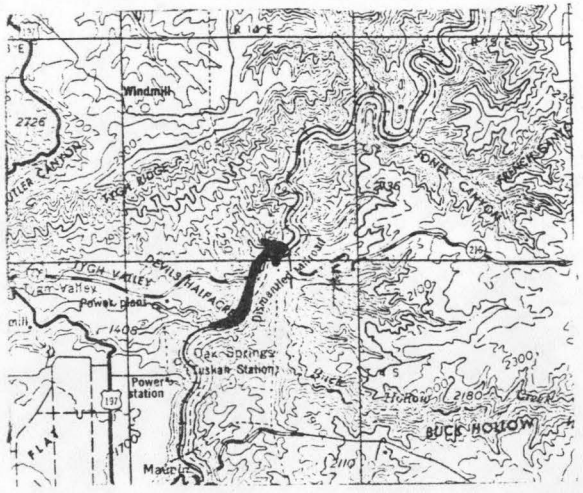
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3726.5	18.63	163.22	1.000
80	4297.3	21.49	185.10	.983
50	5053.1	25.27	206.61	.934
30	5846.0	29.23	220.51	.861
10	7697.4	38.49	236.72	.702

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 5468 CFS



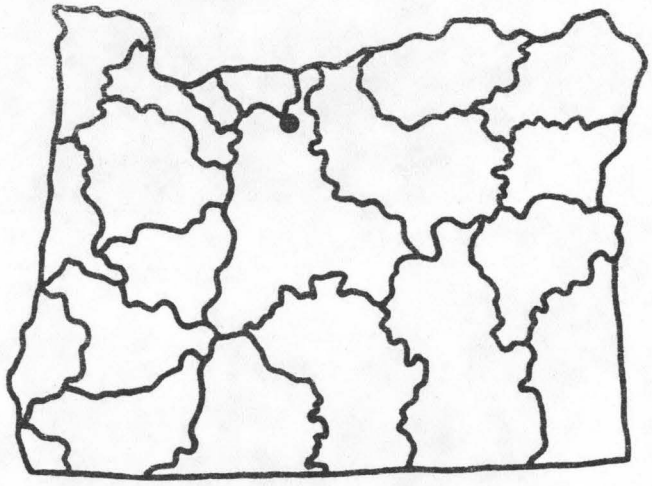


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.12, T4N, R14E
D.	Latitude, Longitude	45°15'N, 121°05'W
E.	Stream Name	White River
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 4.9



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

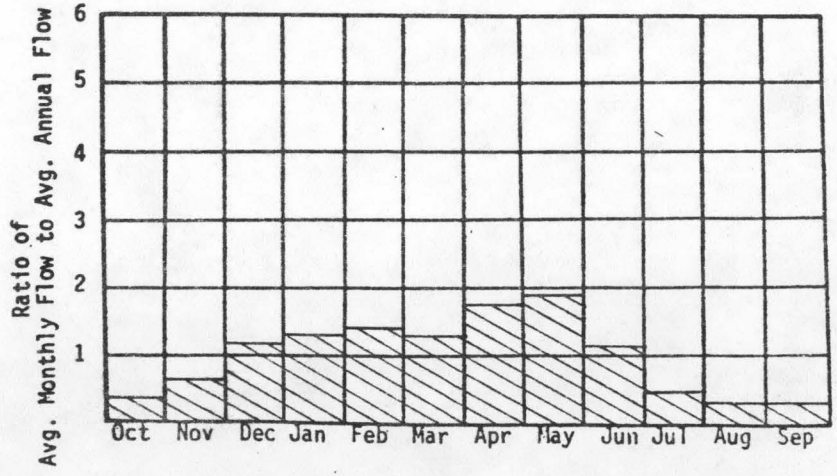
A.	Upstream Elevation of Reach	1060	Ft. MSL
B.	Downstream Elevation of Reach	747	Ft. MSL
C.	Total Available Head in Reach	313	Ft.
D.	Average Slope in Reach	63.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	399.7	Sq.Mi.
F.	Inflow Classification	Natural	

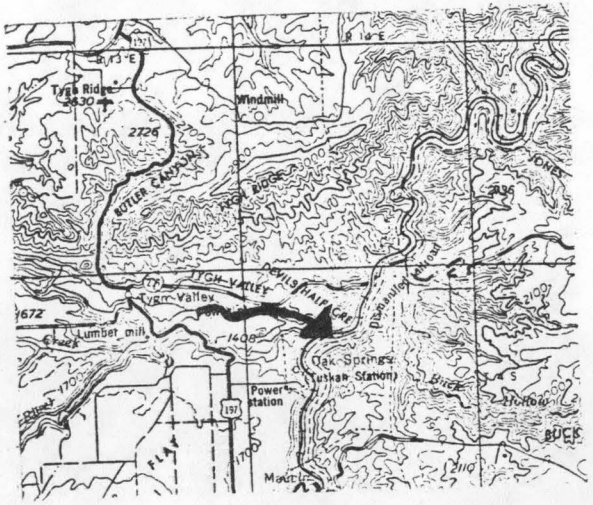
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	111.6	2.96	25.93	1.000
80	142.8	3.79	32.28	.973
50	231.9	6.15	45.73	.849
30	376.1	9.98	59.14	.677
10	648.5	17.20	71.80	.476

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 328 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-002-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.3, T4S, R13E
D.	Latitude, Longitude	45°15'N, 121°10'W
E.	Stream Name	Tygh Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 4.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

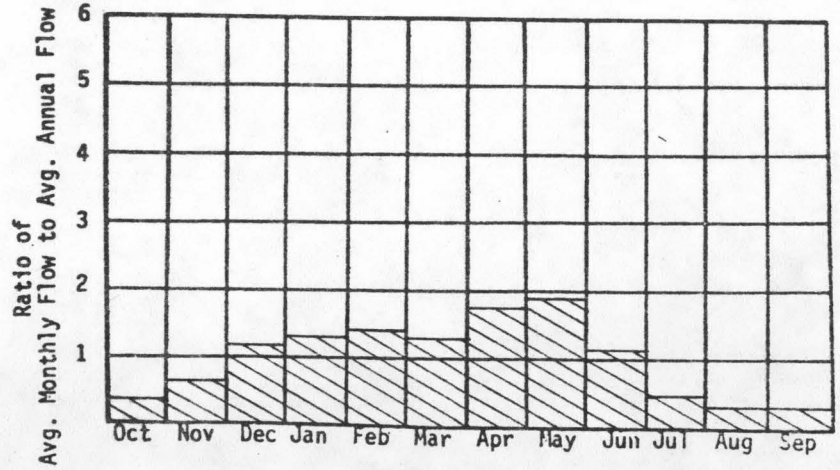
A.	Upstream Elevation of Reach	1300	Ft. MSL
B.	Downstream Elevation of Reach	1060	Ft. MSL
C.	Total Available Head in Reach	240	Ft.
D.	Average Slope in Reach	53.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	109.0	Sq.Mi.
F.	Inflow Classification	Natural	

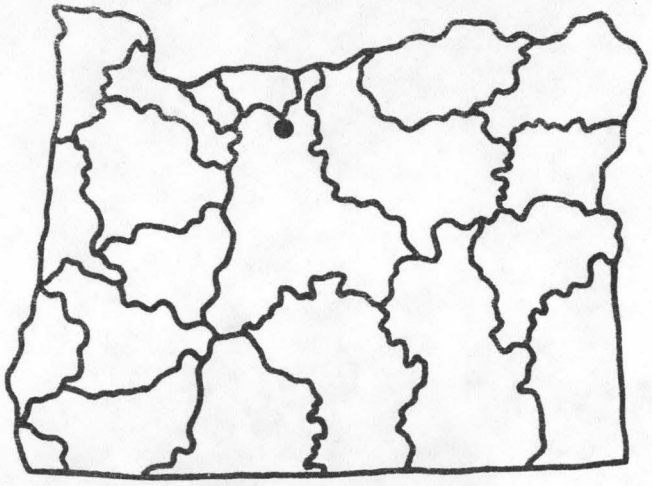
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	32.5	.66	5.79	1.000
80	41.5	.84	7.20	.973
50	67.0	1.36	10.15	.850
30	109.6	2.23	13.18	.675
10	209.6	4.26	16.75	.448

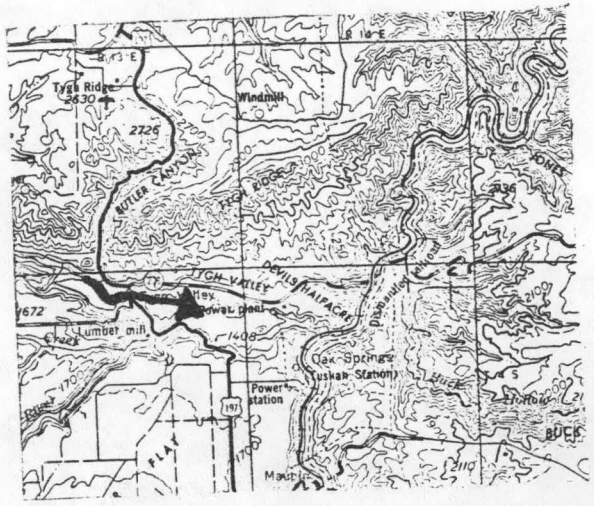
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 106 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-002-R0002

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.1, T4S, R12E
D.	Latitude, Longitude	45°15'N, 121°15'W
E.	Stream Name	Badger Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 6.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

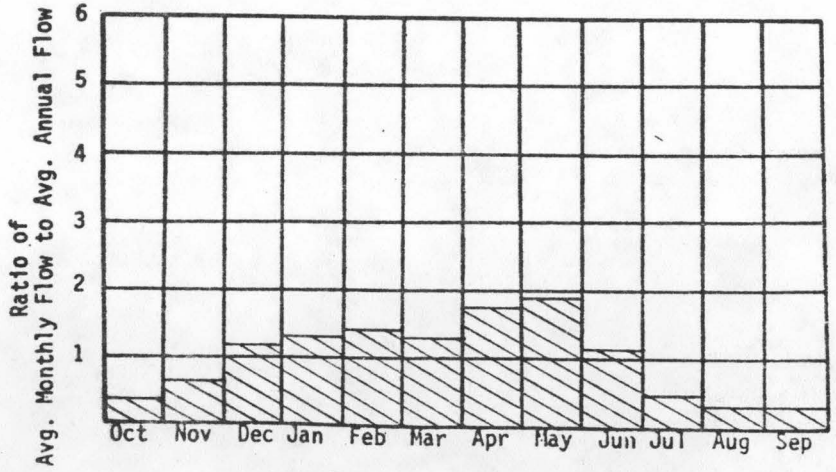
A.	Upstream Elevation of Reach	1540	Ft. MSL
B.	Downstream Elevation of Reach	1300	Ft. MSL
C.	Total Available Head in Reach	240	Ft.
D.	Average Slope in Reach	38.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	50.52	Sq.Mi.
F.	Inflow Classification	Natural	

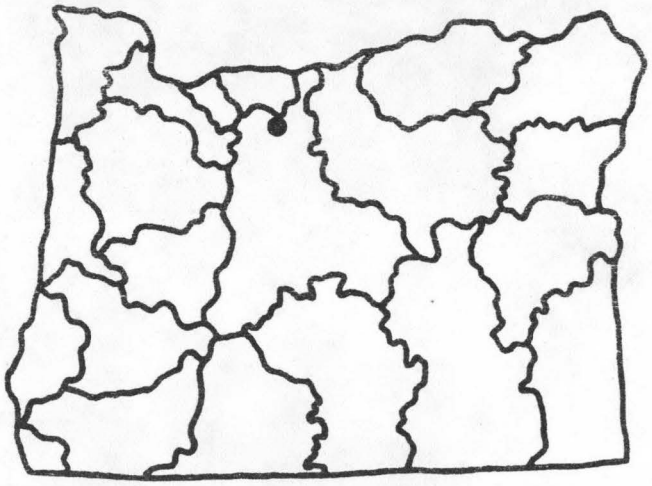
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	20.9	.42	3.72	1.000
80	26.7	.54	4.62	.973
50	42.9	.87	6.51	.850
30	70.4	1.43	8.46	.675
10	139.8	2.84	10.94	.439

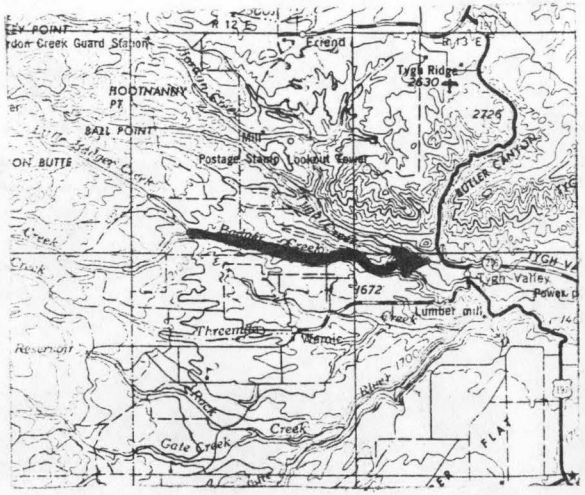
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 70 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

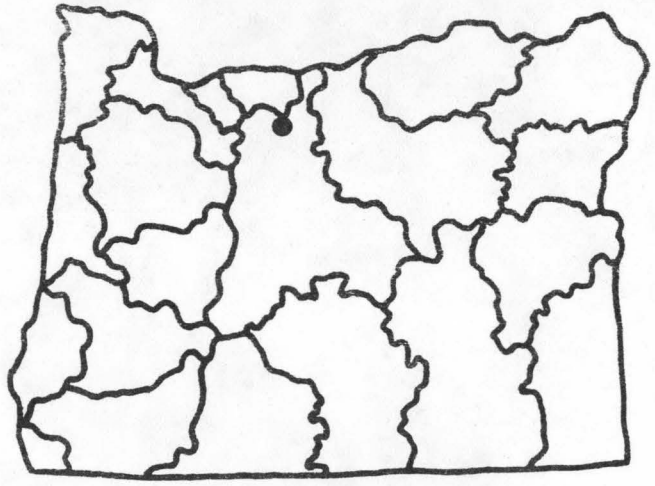


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-002-R0003

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.32, T3S, R12E
D.	Latitude, Longitude	45°15'N, 121°20'W
E.	Stream Name	Badger Creek
F.	Major Basin Name	Deschutes
G.	River Mile	6.3 to H.W.



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

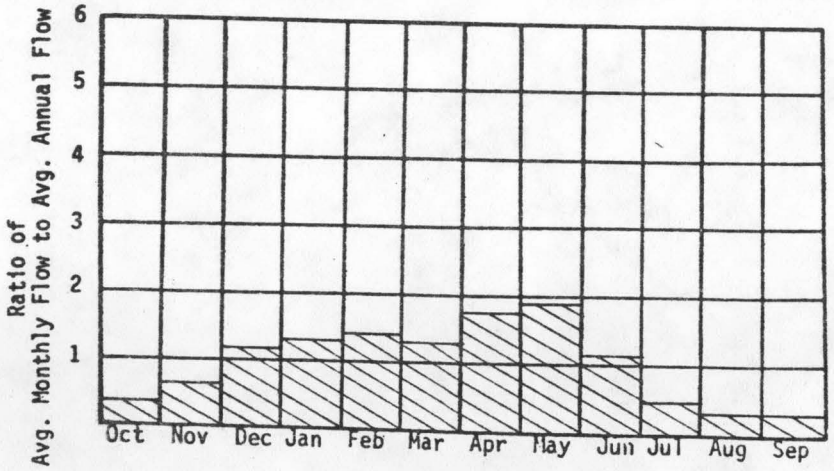
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	40.7	Sq.Mi.
F.	Inflow Classification	Natural	

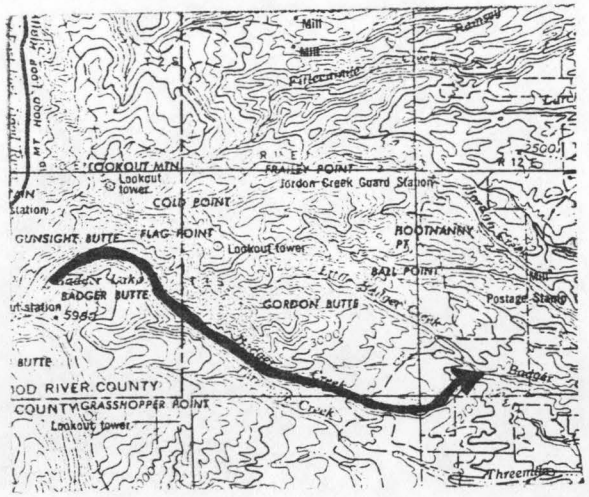
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	20.1	.11	.99	1.000
80	25.7	.14	1.22	.973
50	41.4	.23	1.72	.851
30	67.8	.38	2.24	.675
10	135.1	.76	2.90	.438

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 68 CFS



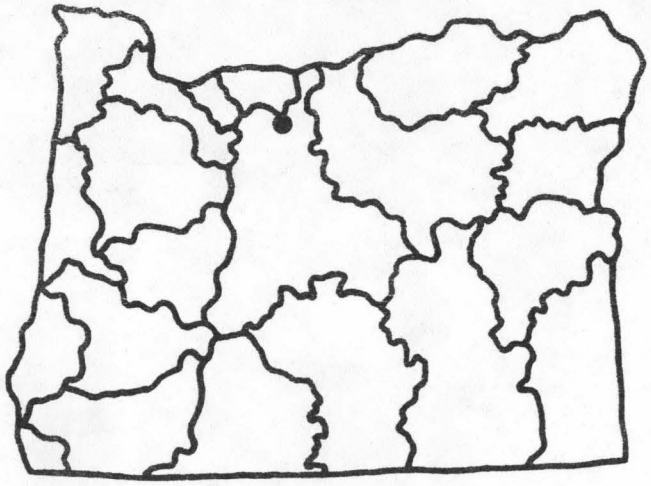


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-002-R0004

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.16, T3S, R12E
D.	Latitude, Longitude	45°18'N, 121°20'W
E.	Stream Name	Tygh Creek
F.	Major Basin Name	Deschutes
G.	River Mile	4.5 to H.W.



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

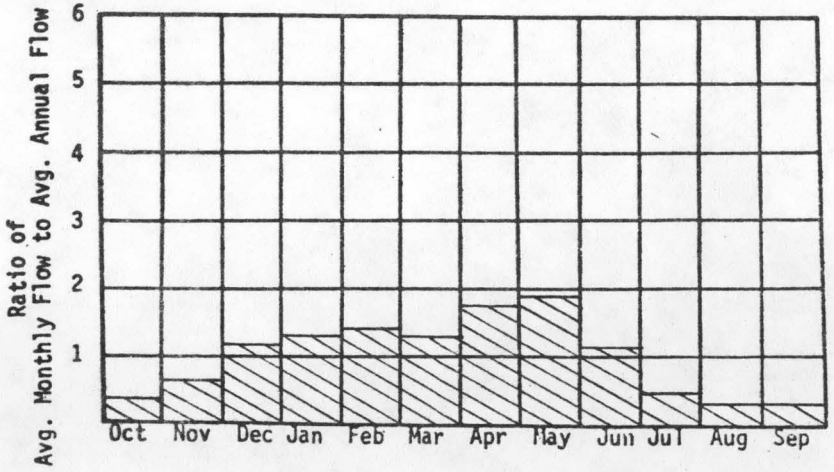
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	56.1	Sq.Mi.
F.	Inflow Classification	Natural	

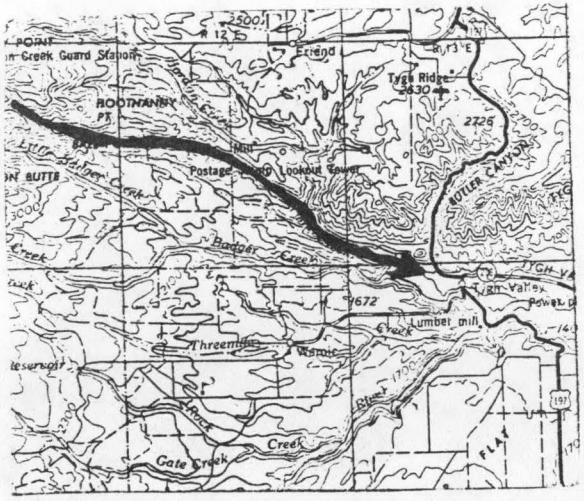
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.9	.08	.73	1.000
80	19.0	.11	.91	.973
50	30.6	.17	1.28	.851
30	50.3	.28	1.66	.674
10	102.7	.57	2.17	.432

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 52 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.11, T4S, R13E
D.	Latitude, Longitude	45°14'N, 121°21'W
E.	Stream Name	White River
F.	Major Basin Name	Deschutes
G.	River Mile	4.9 to 7.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

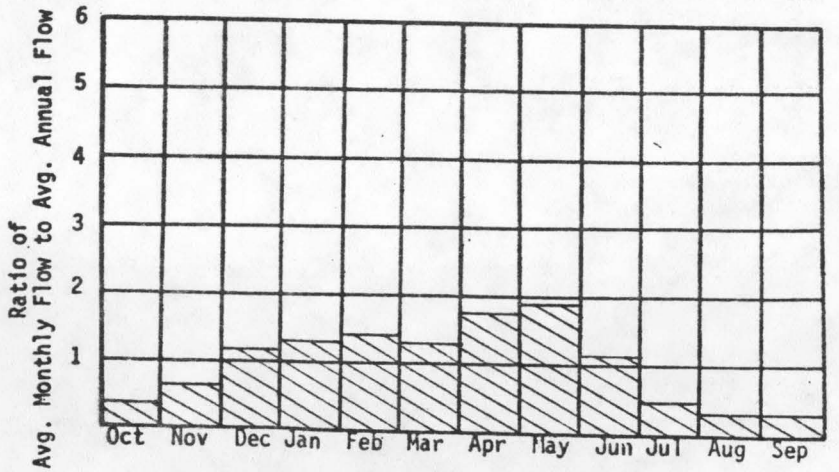
A.	Upstream Elevation of Reach	1120	Ft. MSL
B.	Downstream Elevation of Reach	1060	Ft. MSL
C.	Total Available Head in Reach	60	Ft.
D.	Average Slope in Reach	21.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	262.9	Sq.Mi.
F.	Inflow Classification	Natural	

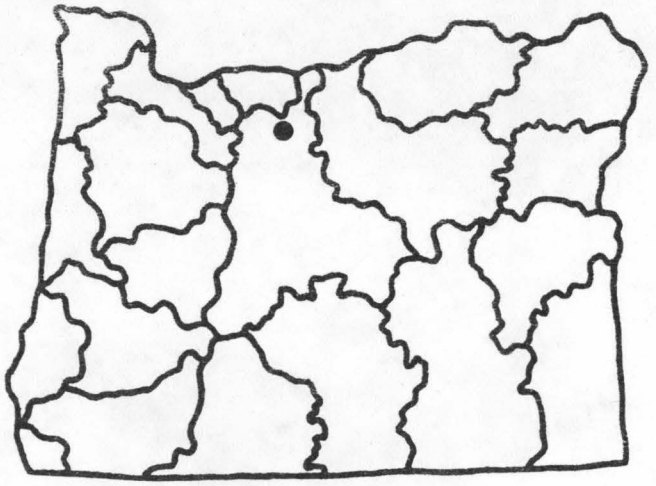
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	89.3	.45	3.98	1.000
80	114.3	.58	4.95	.973
50	185.3	.94	7.01	.849
30	301.0	1.53	9.07	.676
10	528.8	2.69	11.10	.471

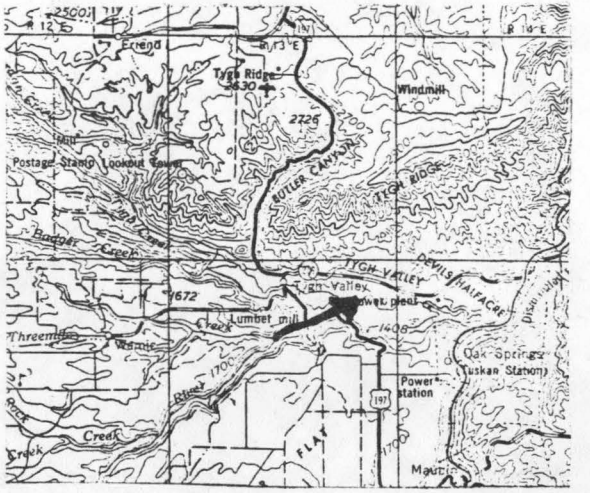
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 267 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-000-R0003

I. LOCATION

A. State	Oregon	
B. County	Wasco	
C. Township, Range	Sec.20, T4S, R13E	
D. Latitude, Longitude	45°13'N, 121°18'W	
E. Stream Name	White River	
F. Major Basin Name	Deschutes	
G. River Mile	7.7 to 12.1	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

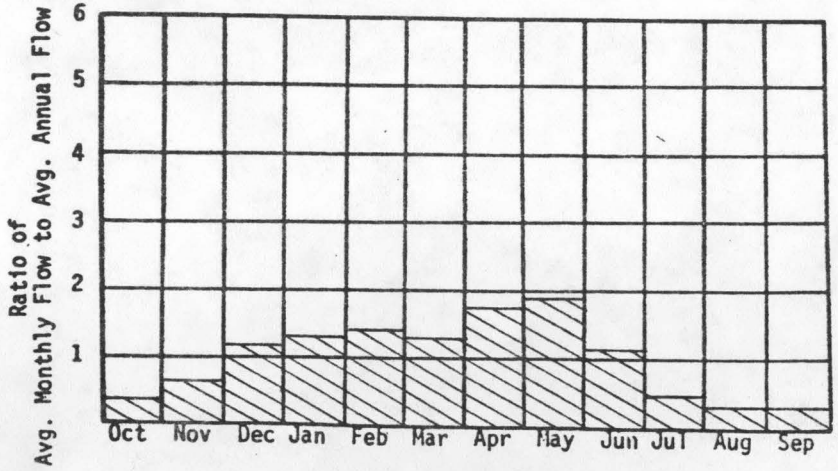
A. Upstream Elevation of Reach	1290	Ft. MSL
B. Downstream Elevation of Reach	1120	Ft. MSL
C. Total Available Head in Reach	170	Ft.
D. Average Slope in Reach	38.6	Ft./Mi.
E. Drainage Area above Reach Mouth	212.7	Sq.Mi.
F. Inflow Classification	Natural	

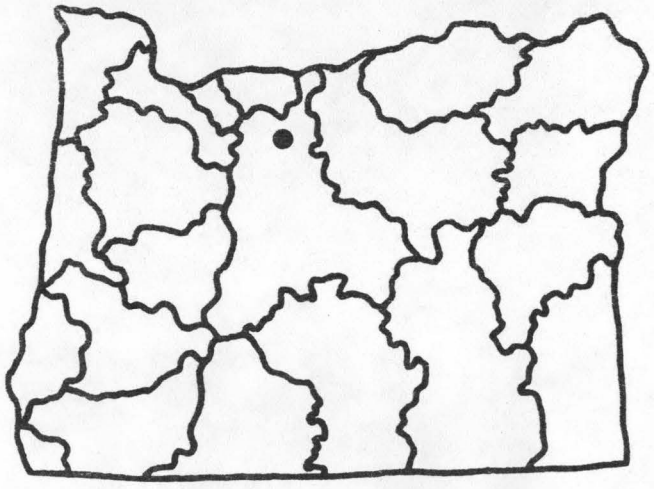
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	83.3	1.20	10.51	1.000
80	106.5	1.53	13.08	.973
50	172.7	2.49	18.51	.849
30	280.7	4.04	23.96	.676
10	496.0	7.15	29.39	.470

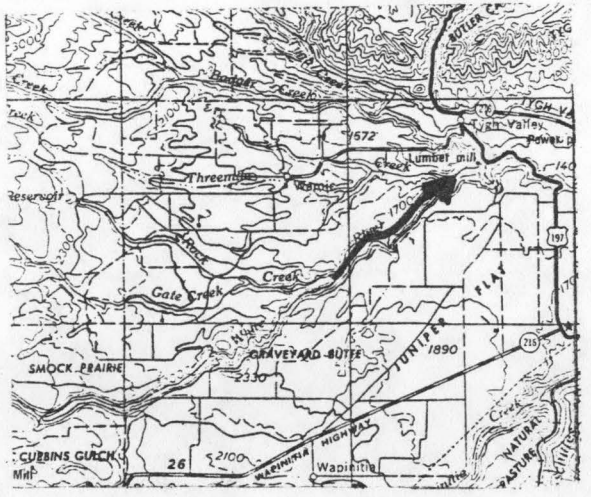
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 250 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-004-R0001

I. LOCATION

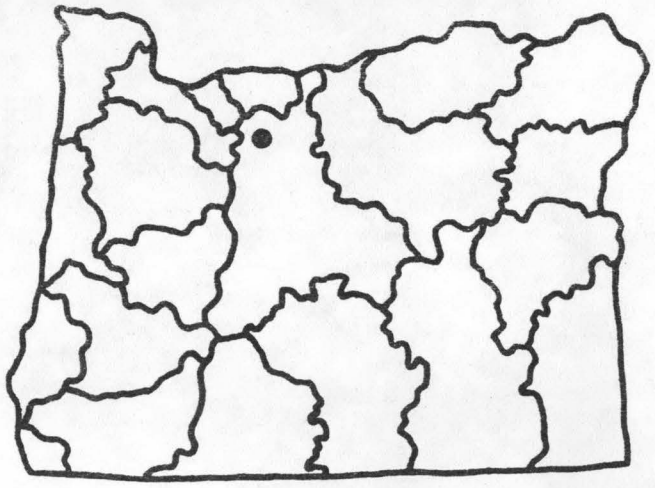
A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.24, T4S, R11E
D.	Latitude, Longitude	45°12'N, 121°22'W
E.	Stream Name	Rock Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	58.5	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

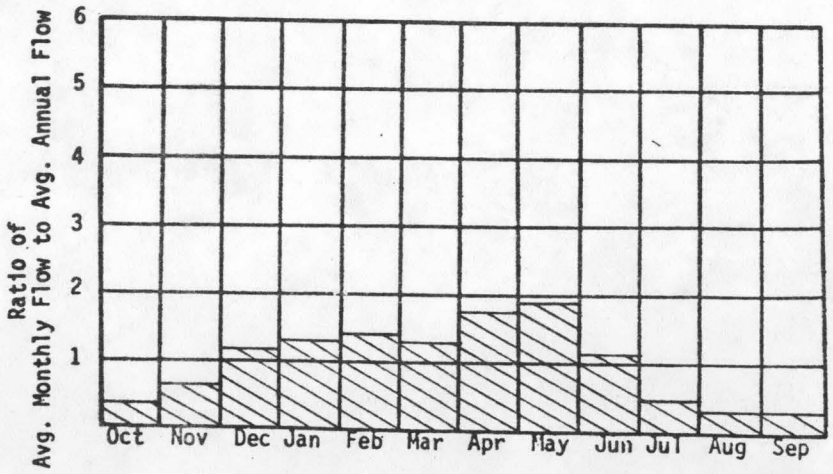
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	24.6	.14	1.20	1.000
80	31.4	.18	1.50	.973
50	50.6	.28	2.11	.850
30	82.9	.46	2.74	.675
10	162.3	.91	3.52	.442

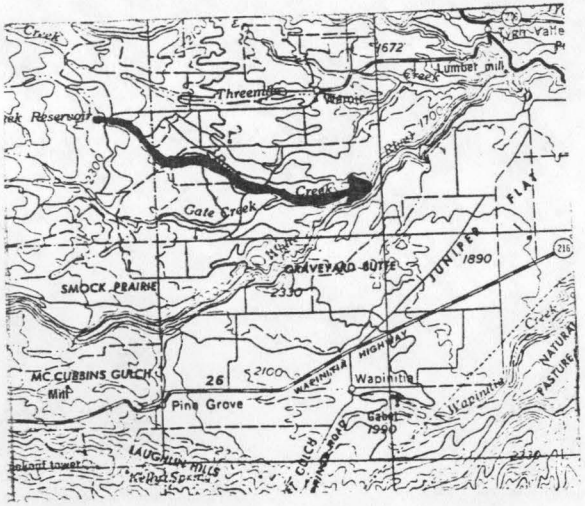


U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 82 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.18, T5S, R12E
D.	Latitude, Longitude	45°08'N, 121°22'W
E.	Stream Name	White River
F.	Major Basin Name	Deschutes
G.	River Mile	12.1 to 28.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

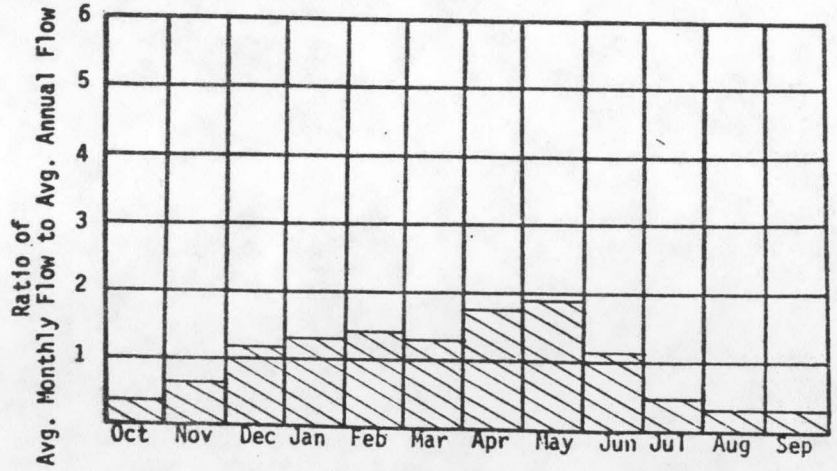
A.	Upstream Elevation of Reach	2370	Ft. MSL
B.	Downstream Elevation of Reach	1290	Ft. MSL
C.	Total Available Head in Reach	1080	Ft.
D.	Average Slope in Reach	65.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	138.4	Sq.Mi.
F.	Inflow Classification	Natural	

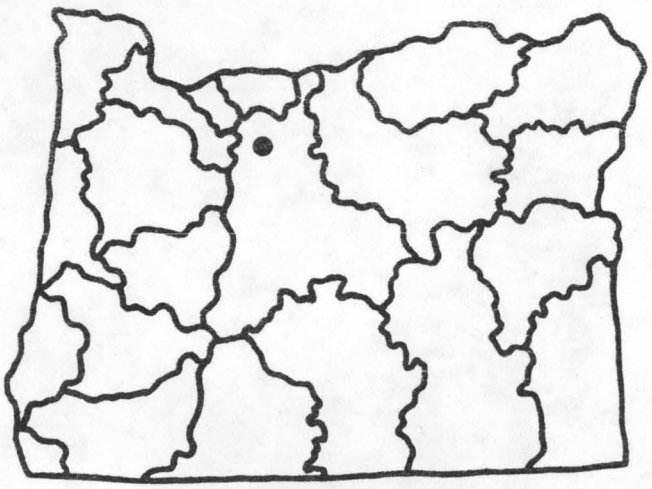
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	64.2	5.87	51.45	1.000
80	82.0	7.51	63.99	.973
50	132.9	12.16	90.47	.849
30	216.3	19.79	117.22	.676
10	390.7	35.76	145.19	.463

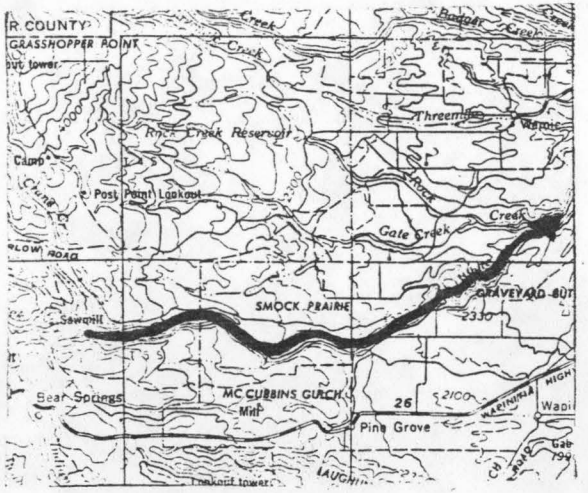
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 198 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-000-R0005

I. LOCATION

A. State	Oregon	
B. County	Wasco	
C. Township, Range	Sec.11, T5S, R10E	
D. Latitude, Longitude	45°09'N, 121°30'W	
E. Stream Name	White River	
F. Major Basin Name	Deschutes	
G. River Mile	28.7 to 29.5	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

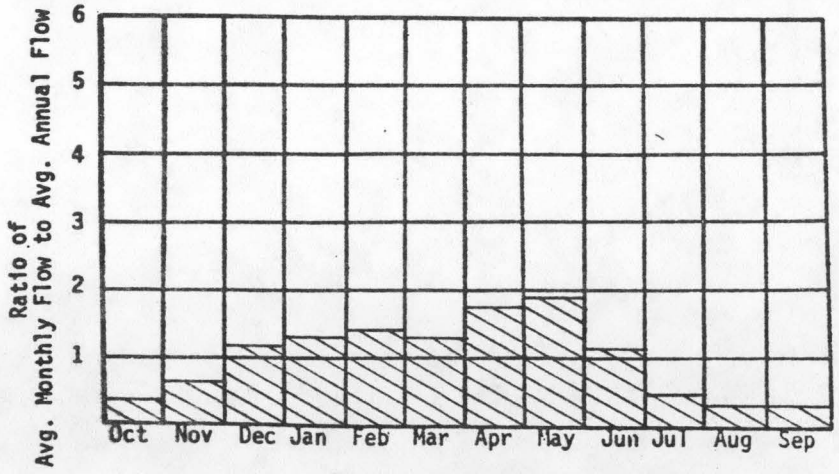
A. Upstream Elevation of Reach	2450	Ft. MSL
B. Downstream Elevation of Reach	2370	Ft. MSL
C. Total Available Head in Reach	80	Ft.
D. Average Slope in Reach	100	Ft./Mi.
E. Drainage Area above Reach Mouth	92.0	Sq.Mi.
F. Inflow Classification	Natural	

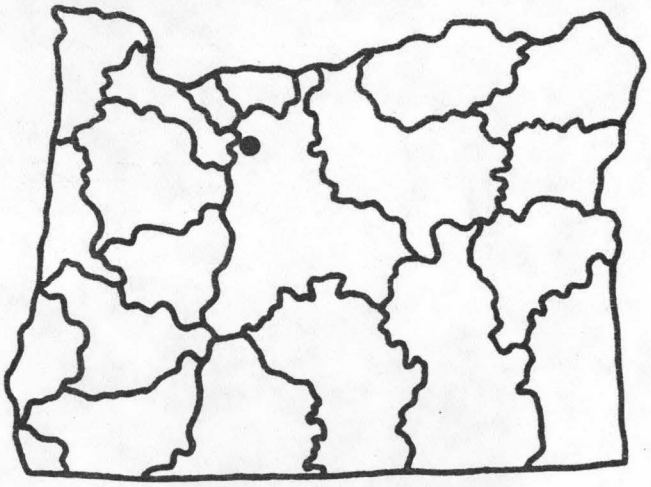
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	52.2	.35	3.10	1.000
80	66.7	.45	3.85	.973
50	107.9	.73	5.44	.850
30	175.9	1.19	7.06	.676
10	323.3	2.19	8.81	.459

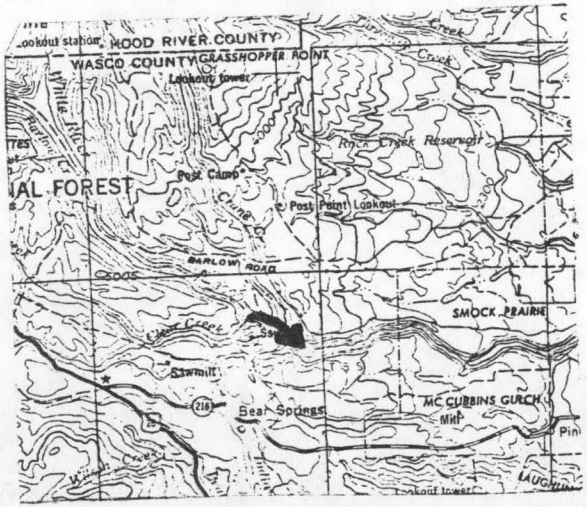
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 164 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

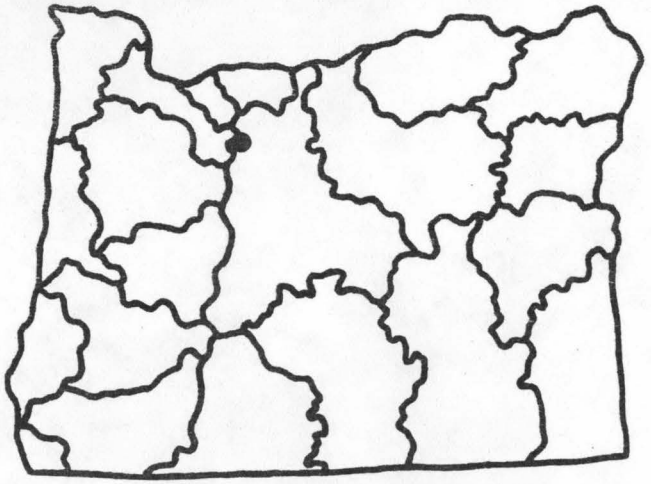


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-006-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.13, T5S, R9E
D.	Latitude, Longitude	45°08'N, 121°37'W
E.	Stream Name	Clear Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

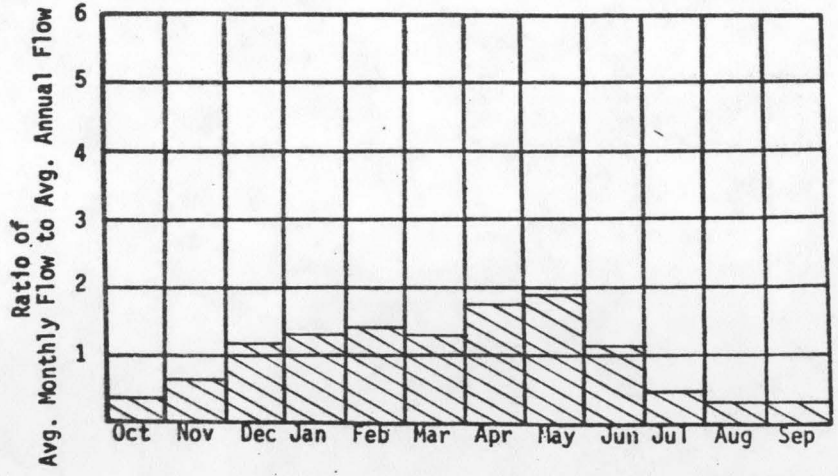
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	44.9	Sq.Mi.
F.	Inflow Classification	Regulated	

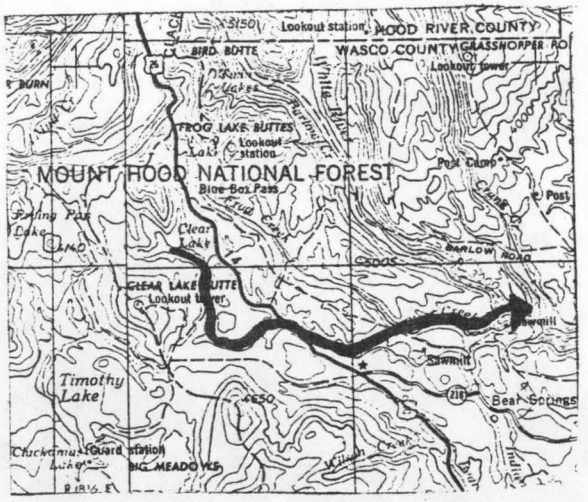
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	28.0	.16	1.37	1.000
80	35.8	.20	1.71	.973
50	57.7	.32	2.40	.850
30	94.5	.53	3.12	.675
10	183.0	1.02	3.99	.445

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 92 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.32, T4S, R10E
D.	Latitude, Longitude	45°11'N, 121°34'W
E.	Stream Name	White River
F.	Major Basin Name	Deschutes
G.	River Mile	29.5 to 36.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

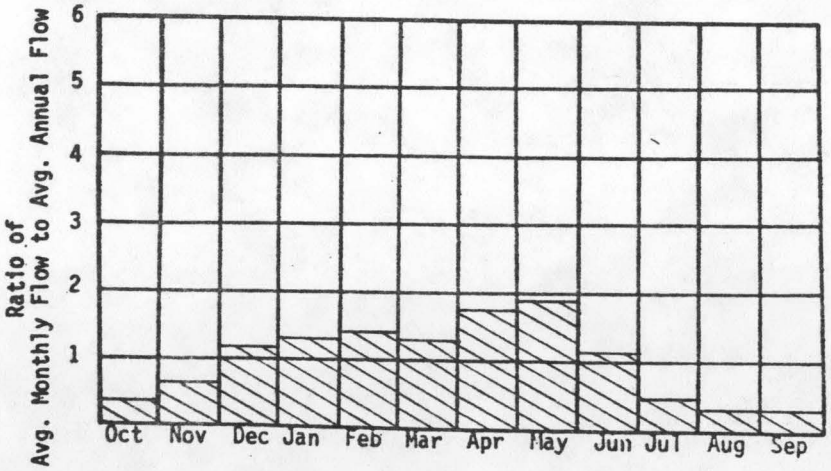
A.	Upstream Elevation of Reach	2870	Ft. MSL
B.	Downstream Elevation of Reach	2450	Ft. MSL
C.	Total Available Head in Reach	420	Ft.
D.	Average Slope in Reach	64.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	46.4	Sq.Mi.
F.	Inflow Classification	Natural	

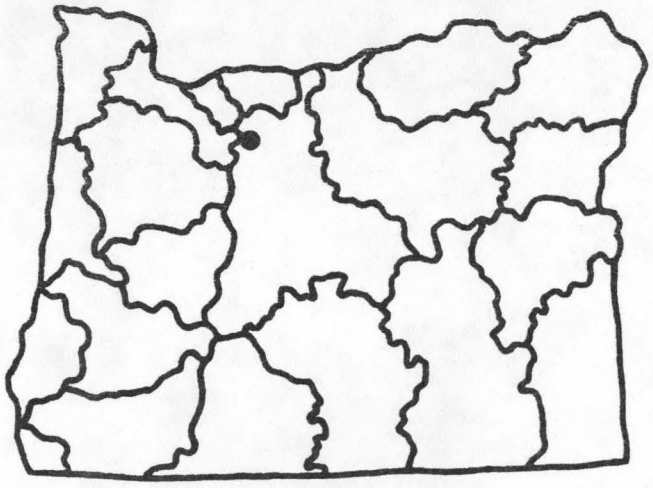
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	28.4	1.01	8.87	1.000
80	36.3	1.29	11.02	.973
50	58.6	2.09	15.53	.850
30	95.9	3.41	20.18	.675
10	185.5	6.60	25.77	.446

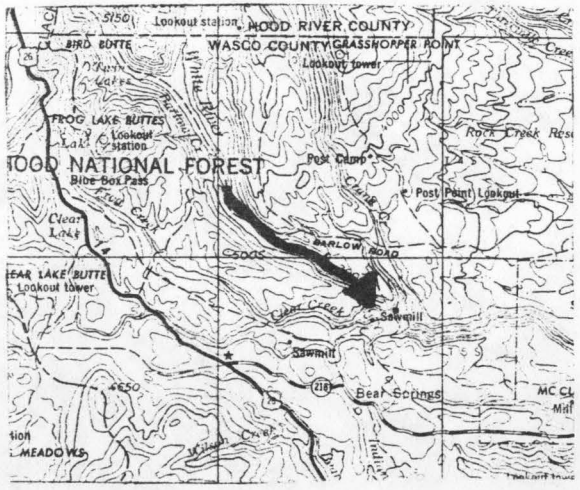
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 94 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

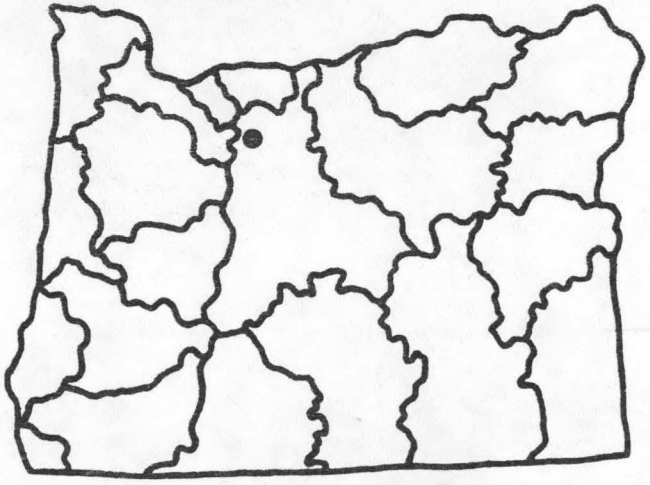


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-013-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.27, T3S, R9E
D.	Latitude, Longitude	45°16'N, 121°39'W
E.	Stream Name	White River
F.	Major Basin Name	Deschutes
G.	River Mile	36.0 to H.W.



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

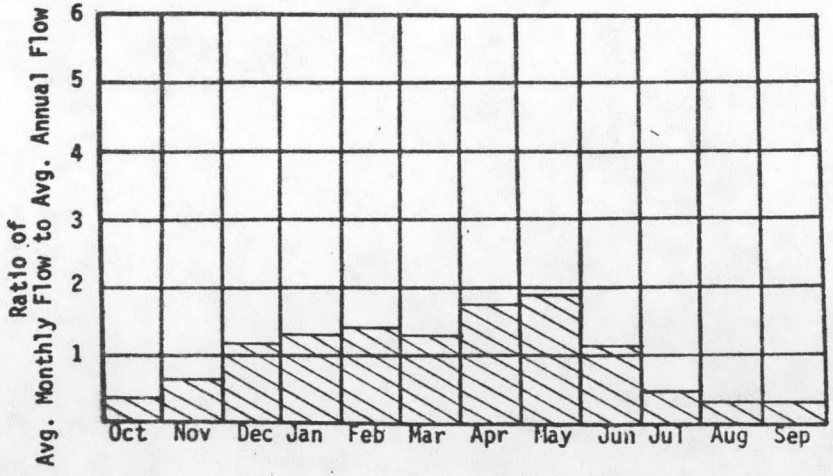
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	36.52	Sq.Mi.
F.	Inflow Classification	Natural	

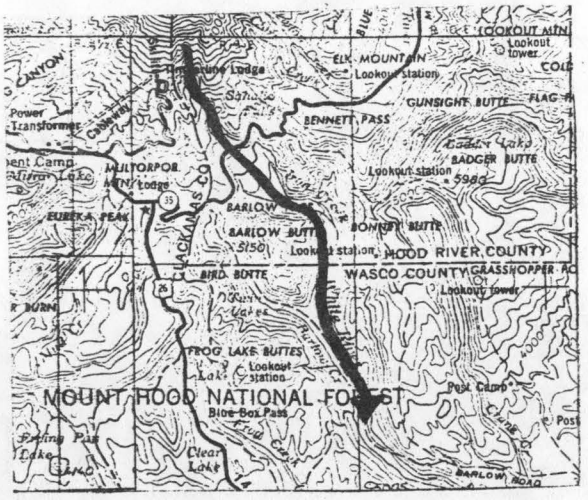
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	26.0	.15	1.27	1.000
80	33.2	.19	1.58	.973
50	53.5	.30	2.23	.850
30	87.6	.49	2.90	.675
10	170.8	.96	3.71	.444

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 86 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.29, T4S, R14E
D.	Latitude, Longitude	45°11'N,121°05'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	46.4 to 54.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

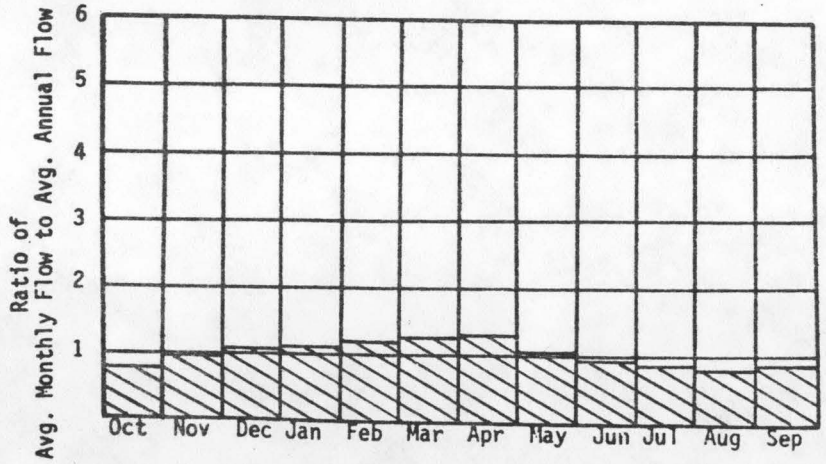
A.	Upstream Elevation of Reach	885	Ft. MSL
B.	Downstream Elevation of Reach	747	Ft. MSL
C.	Total Available Head in Reach	138	Ft.
D.	Average Slope in Reach	16.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	7618.7	Sq.Mi.
F.	Inflow Classification	Regulated	

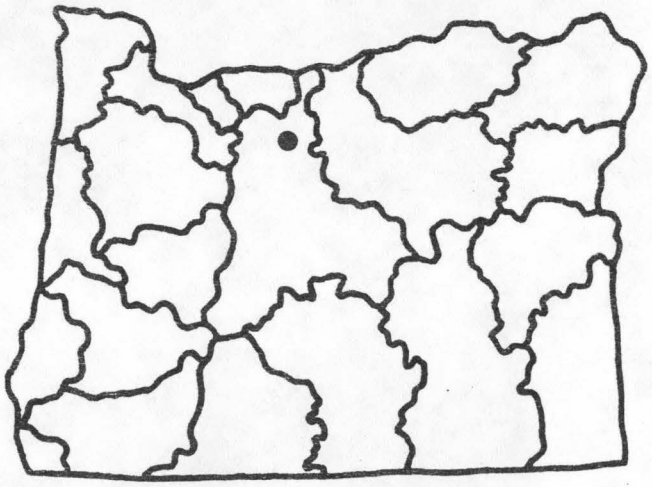
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3620.1	42.34	370.87	1.000
80	4176.1	48.84	420.71	.983
50	4823.6	56.41	463.83	.939
30	5509.6	64.43	491.94	.872
10	7152.8	83.65	525.61	.717

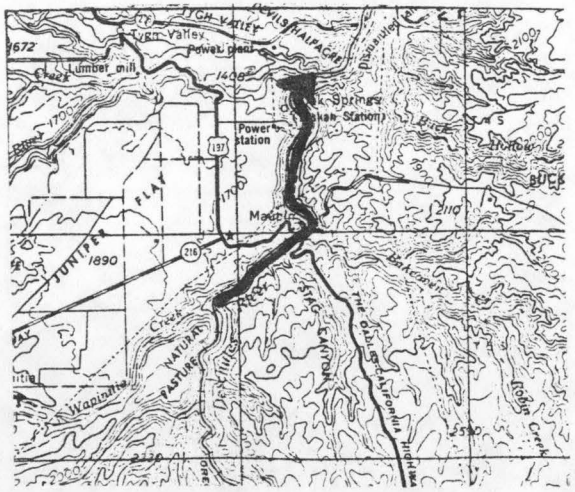
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 5146 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

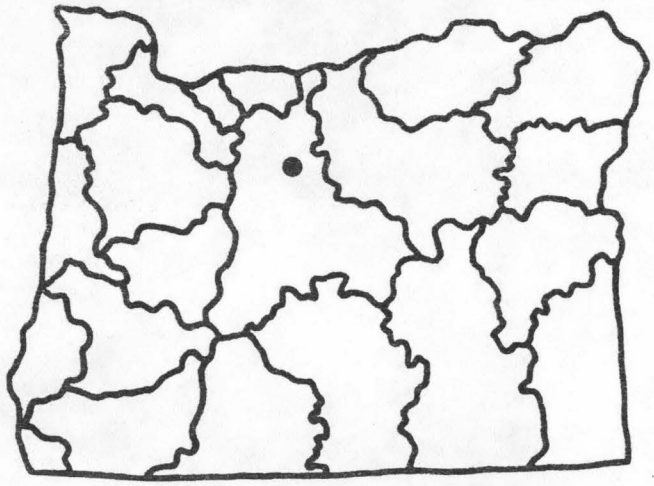


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-017-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.15, T4S, R13E
D.	Latitude, Longitude	45°08'N, 121°09'W
E.	Stream Name	Wapinita Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 3.0



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	1500	Ft. MSL
B.	Downstream Elevation of Reach	885	Ft. MSL
C.	Total Available Head in Reach	615	Ft.
D.	Average Slope in Reach	205	Ft./Mi.
E.	Drainage Area above Reach Mouth	78.46	Sq.Mi.
F.	Inflow Classification	Natural	

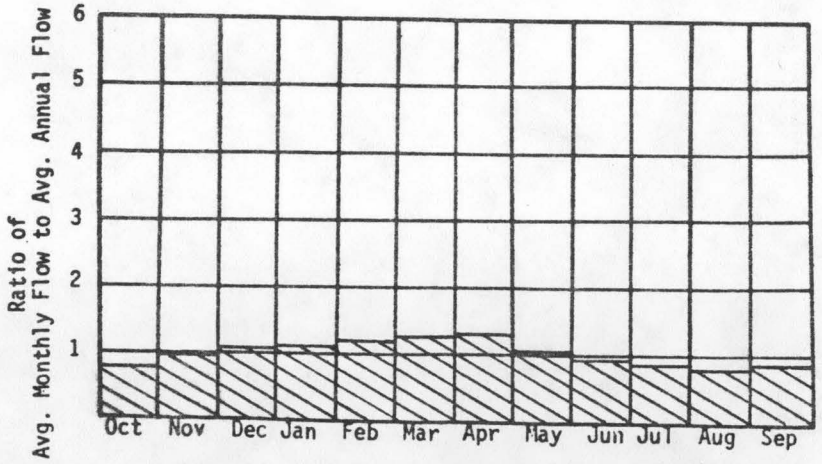
U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES

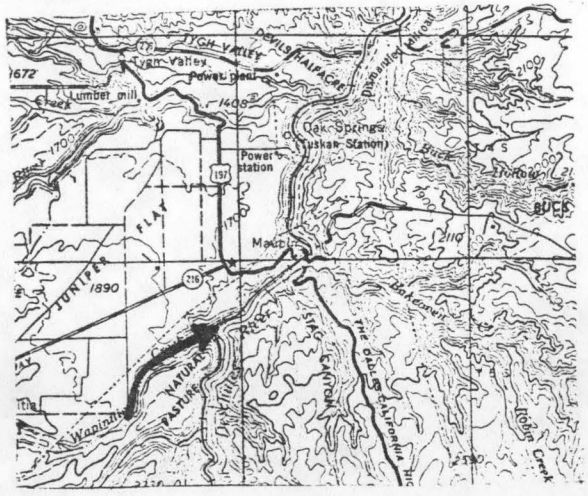
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	20.2	1.05	9.22	1.000
80	25.8	1.34	11.45	.973
50	41.5	2.16	16.12	.851
30	68.1	3.55	20.97	.675
10	135.6	7.06	27.13	.438

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 68 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-017-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.25, T5S, R12E
D.	Latitude, Longitude	45°07'N, 121°15'W
E.	Stream Name	Wapinita Creek
F.	Major Basin Name	Deschutes
G.	River Mile	3.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

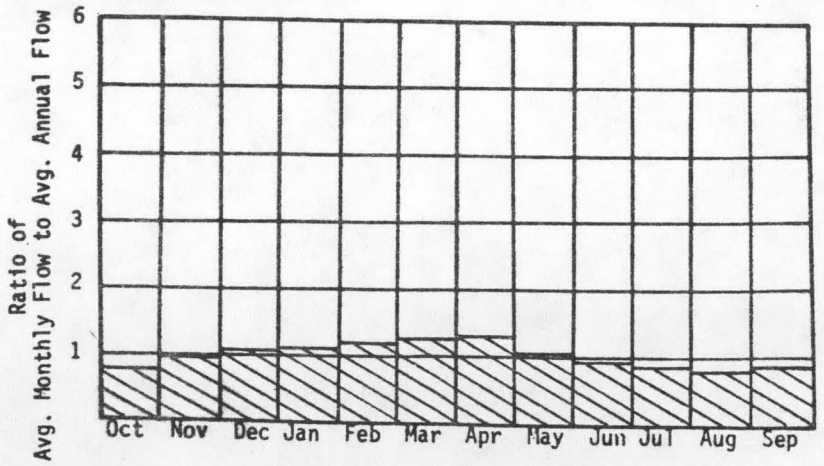
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	7342.6	Sq.Mi.
F.	Inflow Classification	Natural	

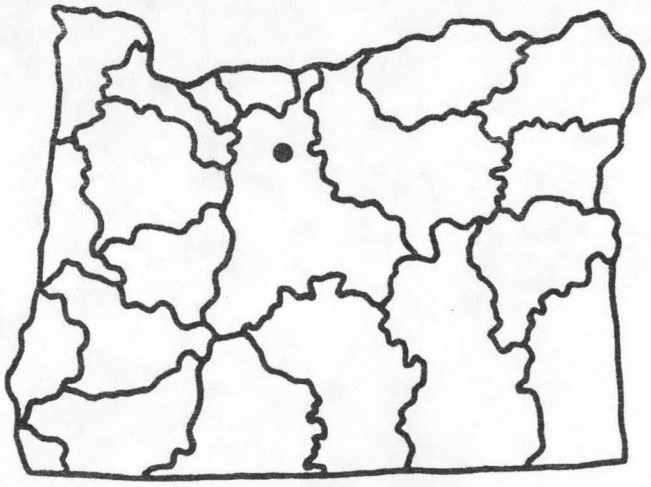
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.9	.11	.98	1.000
80	25.4	.14	1.21	.973
50	40.9	.23	1.71	.851
30	67.1	.38	2.22	.675
10	133.9	.75	2.87	.438

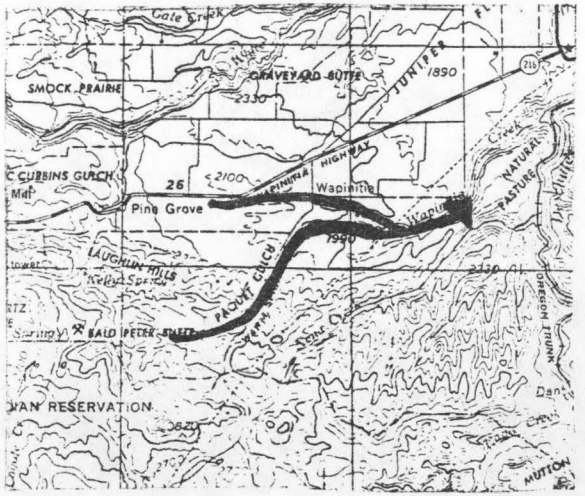
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 68 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0009

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.13, T6S, R13E
D.	Latitude, Longitude	45°03'N, 121°07'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	54.7 to 72.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

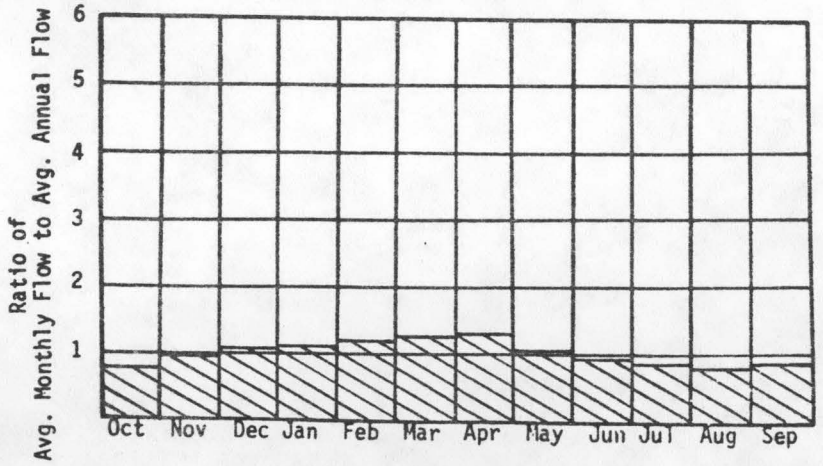
A.	Upstream Elevation of Reach	1085	Ft. MSL
B.	Downstream Elevation of Reach	885	Ft. MSL
C.	Total Available Head in Reach	200	Ft.
D.	Average Slope in Reach	11.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	72.4	Sq.Mi.
F.	Inflow Classification	Regulated	

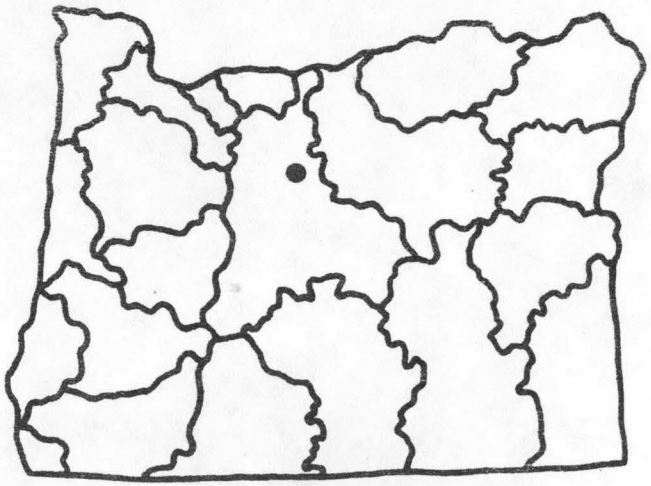
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3591.6	60.87	533.26	1.000
80	4143.6	70.23	604.97	.983
50	4762.7	80.72	664.72	.940
30	5421.1	91.88	703.83	.874
10	7010.8	118.83	751.03	.722

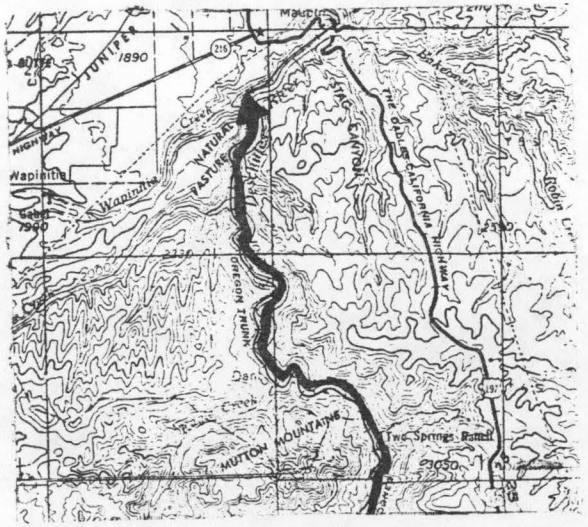
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 5062 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0011

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.32, T7S, R14E
D.	Latitude, Longitude	44°55'N, 121°05'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	72.6 to 83.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

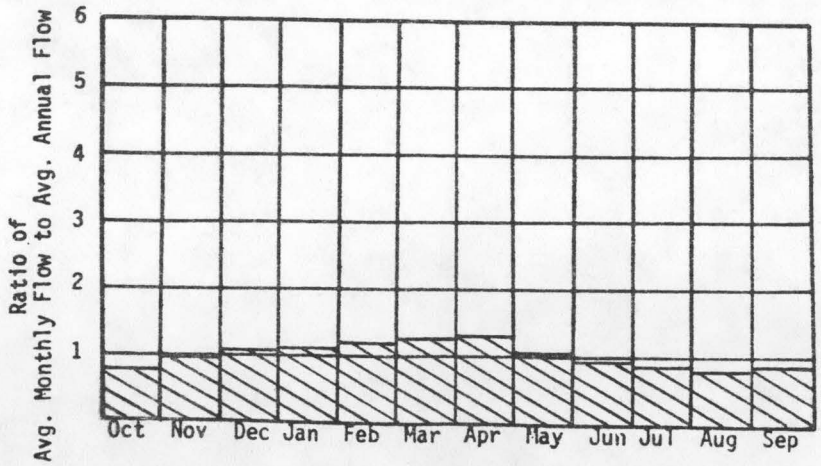
A.	Upstream Elevation of Reach	1232	Ft. MSL
B.	Downstream Elevation of Reach	1085	Ft. MSL
C.	Total Available Head in Reach	147	Ft.
D.	Average Slope in Reach	13.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	7222.2	Sq.Mi.
F.	Inflow Classification	Regulated	

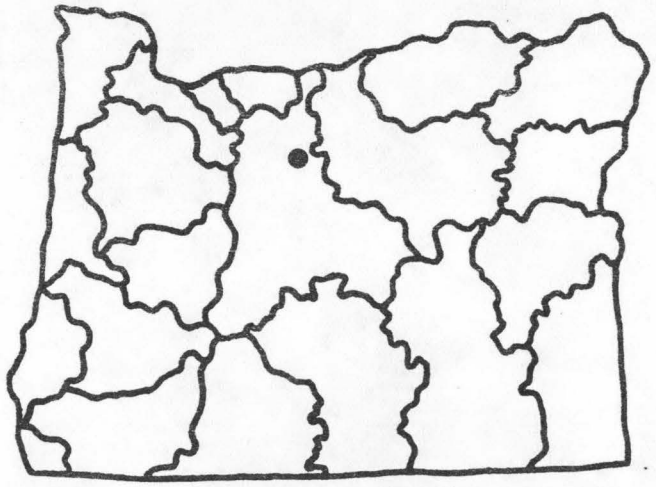
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3591.6	44.74	391.94	1.000
80	4143.6	51.62	444.66	.983
50	4762.7	59.33	488.57	.940
30	5421.1	67.53	517.31	.874
10	7010.8	87.34	552.01	.722

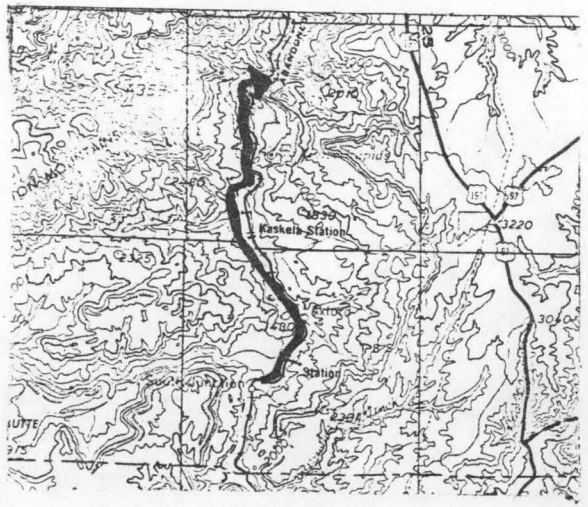
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 5062 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES-BEND

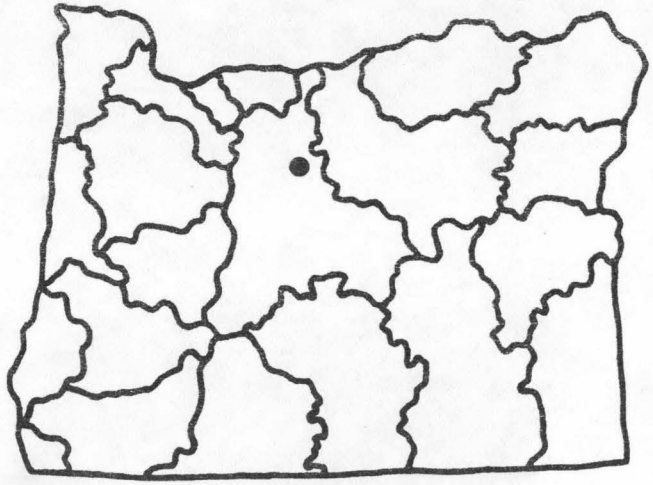


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.24, T8S, R13E
D.	Latitude, Longitude	44°52'N, 121°08'W
E.	Stream Name	Warm Springs River
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 8.4



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

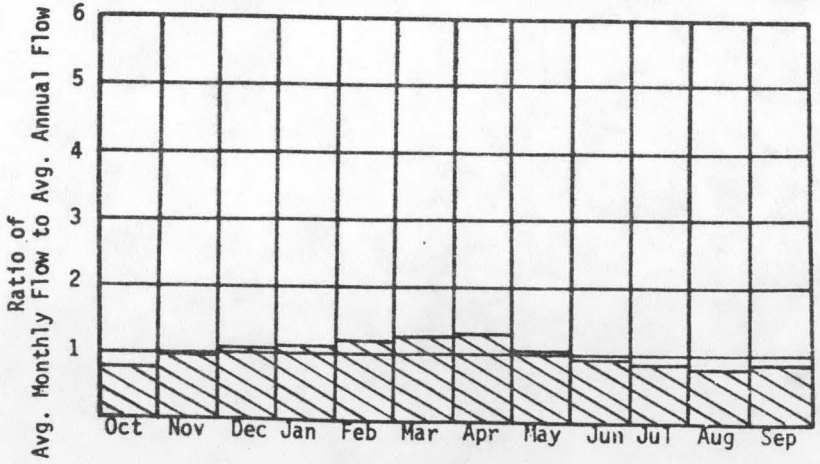
A.	Upstream Elevation of Reach	1534	Ft. MSL
B.	Downstream Elevation of Reach	1232	Ft. MSL
C.	Total Available Head in Reach	302	Ft.
D.	Average Slope in Reach	35.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	543.6	Sq.Mi.
F.	Inflow Classification	Natural	

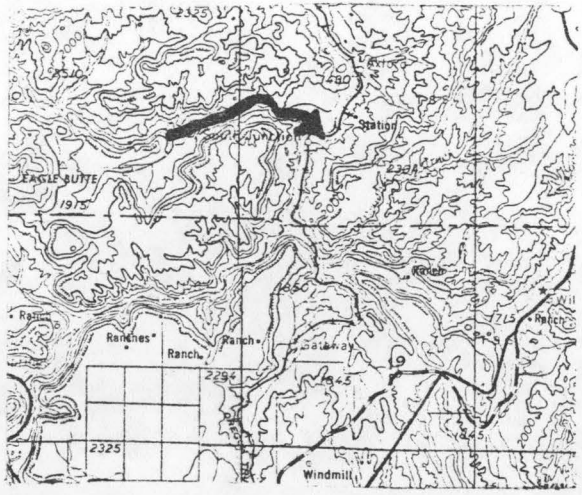
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	149.9	3.84	33.60	1.000
80	191.9	4.91	41.84	.973
50	311.9	7.98	59.34	.848
30	505.0	12.93	76.65	.677
10	849.4	21.74	92.10	.484

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 429 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.34, T8S, R12E
D.	Latitude, Longitude	44°50'N, 121°16'W
E.	Stream Name	Warm Springs River
F.	Major Basin Name	Deschutes
G.	River Mile	8.4 to 19.1

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

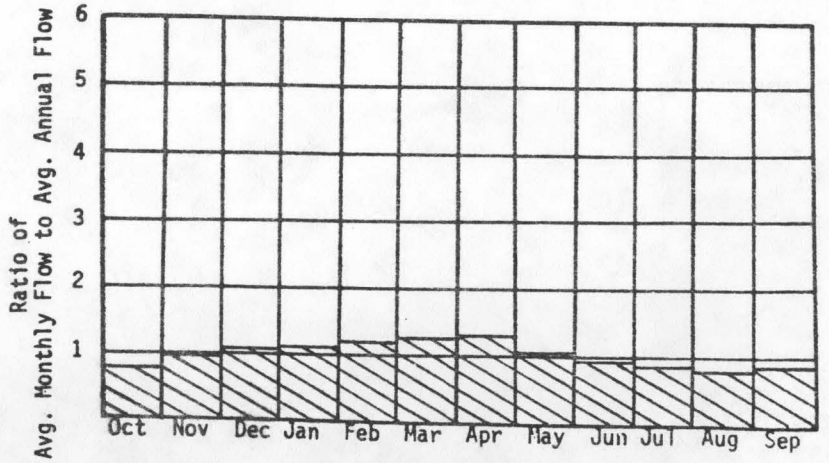
A.	Upstream Elevation of Reach	1884	Ft. MSL
B.	Downstream Elevation of Reach	1534	Ft. MSL
C.	Total Available Head in Reach	350	Ft.
D.	Average Slope in Reach	32.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	514.4	Sq.Mi.
F.	Inflow Classification	Natural	

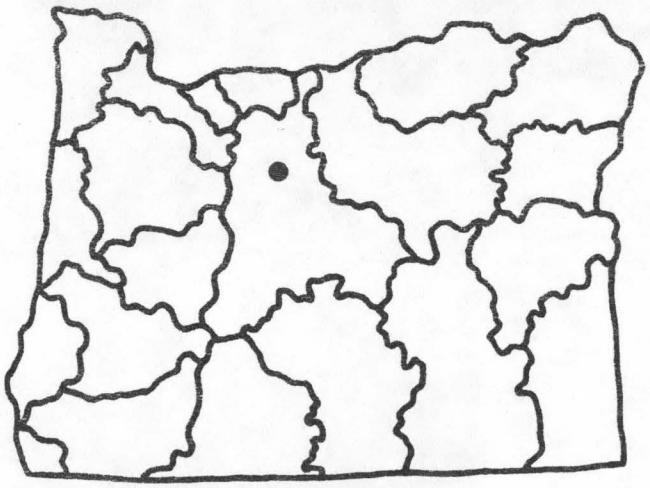
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	146.0	4.33	37.93	1.000
80	186.9	5.54	47.23	.973
50	303.8	9.01	66.97	.848
30	491.9	14.59	86.53	.677
10	829.2	24.60	104.05	.483

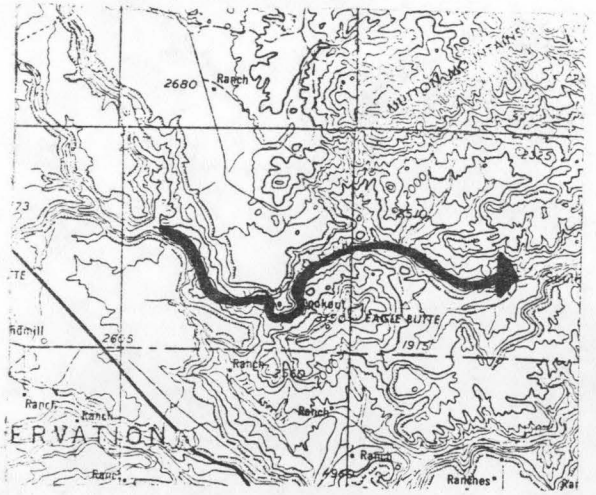
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 418 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

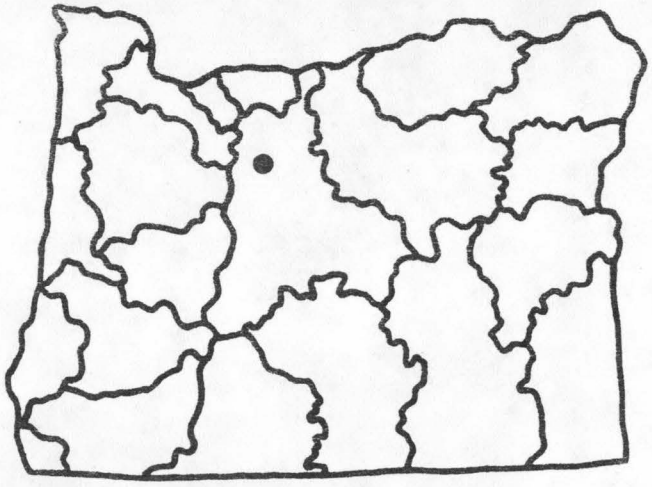


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-006-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.31, T7S, R12E
D.	Latitude, Longitude	44°55'N, 121°22'W
E.	Stream Name	Beaver Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 9.0



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

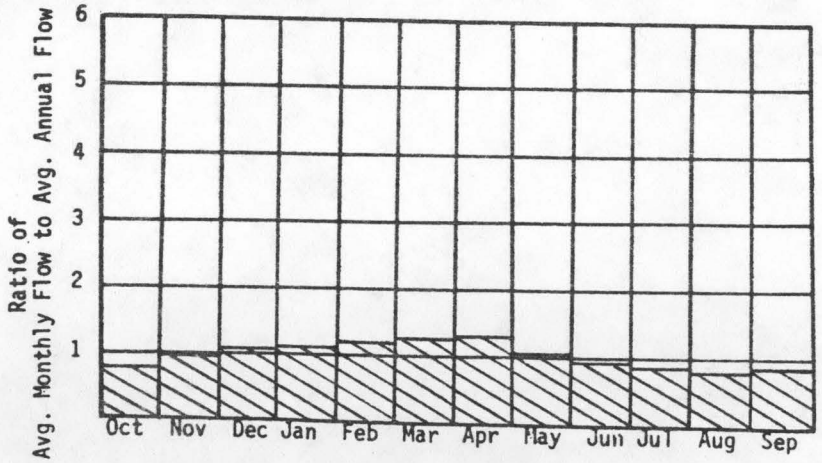
A.	Upstream Elevation of Reach	2300	Ft. MSL
B.	Downstream Elevation of Reach	1870	Ft. MSL
C.	Total Available Head in Reach	430	Ft.
D.	Average Slope in Reach	47.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	169.6	Sq.Mi.
F.	Inflow Classification	Natural	

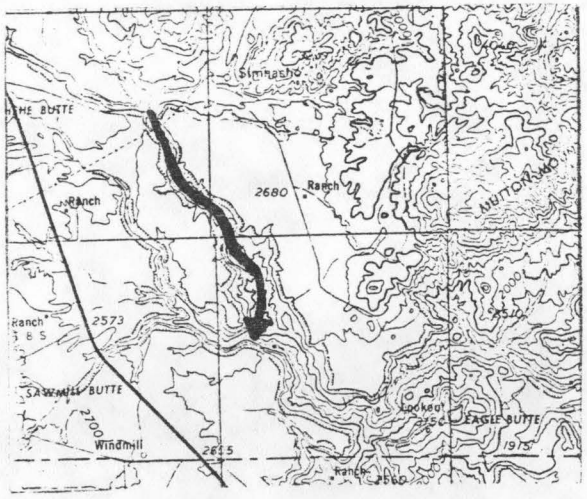
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	46.5	1.69	14.84	1.000
80	59.4	2.16	18.45	.973
50	96.0	3.50	26.05	.850
30	156.7	5.71	33.79	.676
10	290.8	10.60	42.36	.456

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 147 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-006-R0002

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.5, T7S, R11E
D.	Latitude, Longitude	44°59'N, 121°27'W
E.	Stream Name	Beaver Creek
F.	Major Basin Name	Deschutes
G.	River Mile	9.0 to 15.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

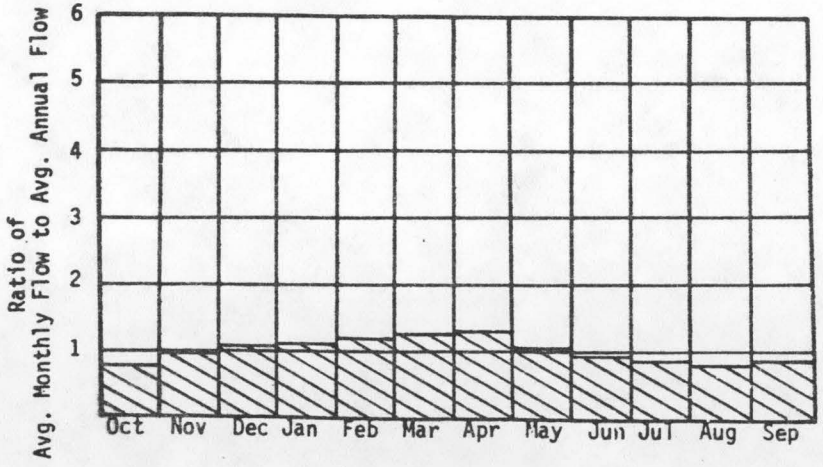
A.	Upstream Elevation of Reach	2505	Ft. MSL
B.	Downstream Elevation of Reach	2300	Ft. MSL
C.	Total Available Head in Reach	205	Ft.
D.	Average Slope in Reach	34.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	72.1	Sq.Mi.
F.	Inflow Classification	Natural	

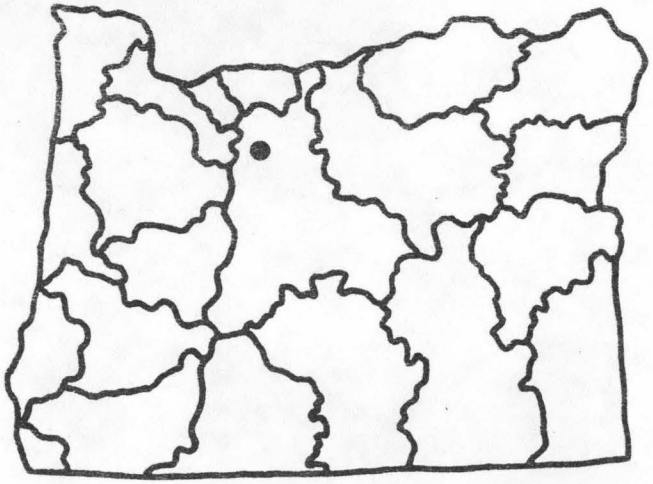
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	29.7	.52	4.52	1.000
80	37.9	.66	5.61	.973
50	61.1	1.06	7.91	.850
30	100.0	1.74	10.27	.675
10	192.8	3.35	13.10	.446

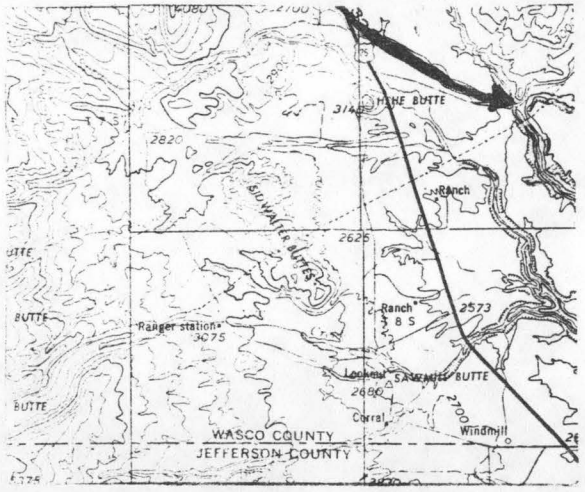
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 98 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-006-R0003

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.33, T5S, R10E
D.	Latitude, Longitude	45°05'N, 121°33'W
E.	Stream Name	Beaver Creek
F.	Major Basin Name	Deschutes
G.	River Mile	15.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

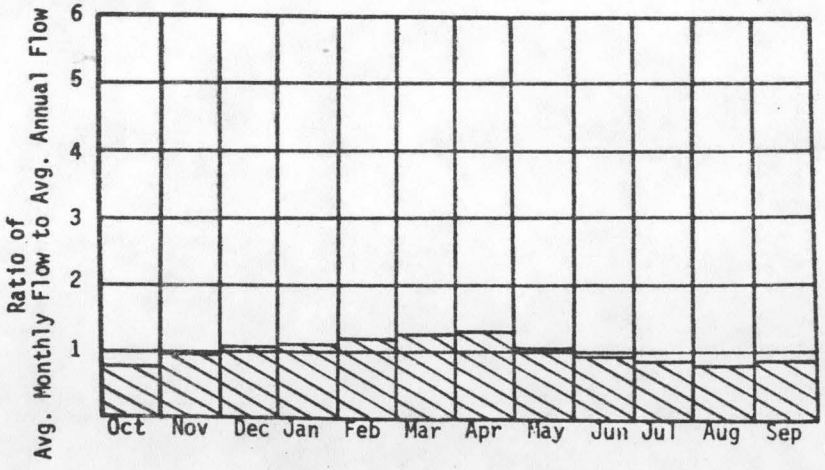
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	58.9	Sq.Mi.
F.	Inflow Classification	Natural	

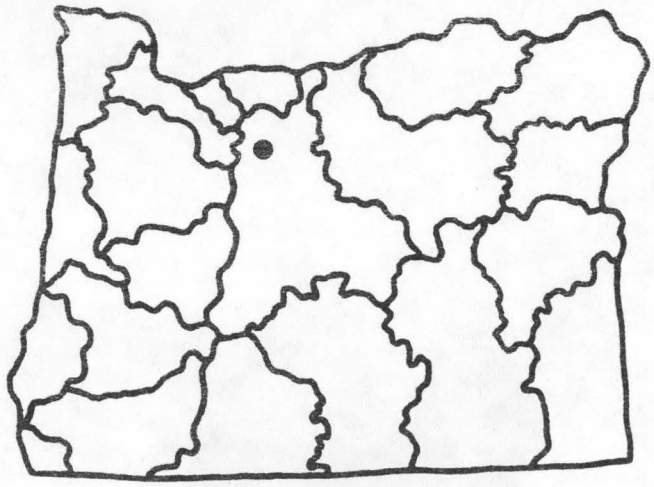
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	28.1	.16	1.37	1.000
80	35.8	.20	1.71	.973
50	57.8	.32	2.41	.850
30	94.6	.53	3.13	.675
10	183.2	1.02	4.00	.445

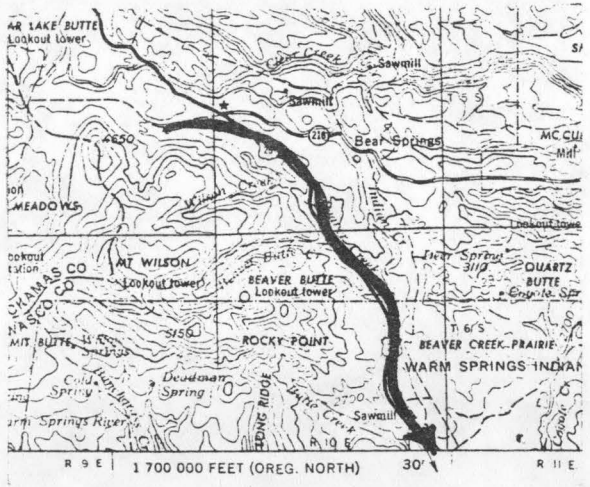
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 93 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND-THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.18, T8S, R12E
D.	Latitude, Longitude	44°52'N, 121°21'W
E.	Stream Name	Warm Springs River
F.	Major Basin Name	Deschutes
G.	River Mile	19.1 to 21.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

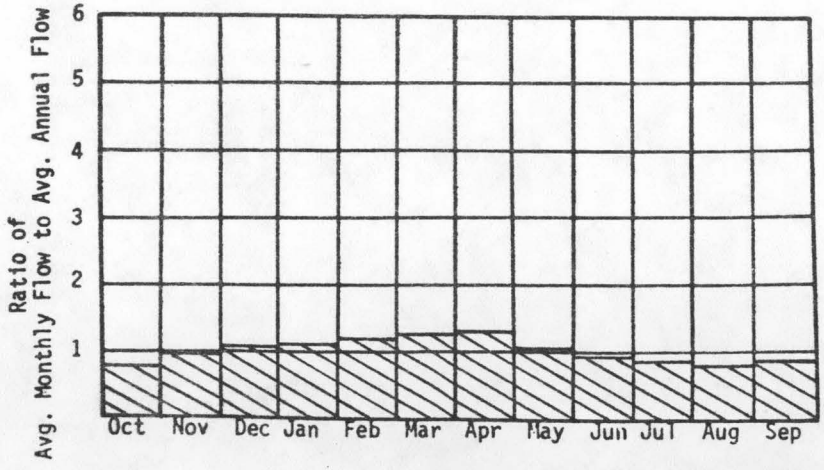
A.	Upstream Elevation of Reach	2035	Ft. MSL
B.	Downstream Elevation of Reach	1884	Ft. MSL
C.	Total Available Head in Reach	151	Ft.
D.	Average Slope in Reach	71.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	304.1	Sq.Mi.
F.	Inflow Classification	Natural	

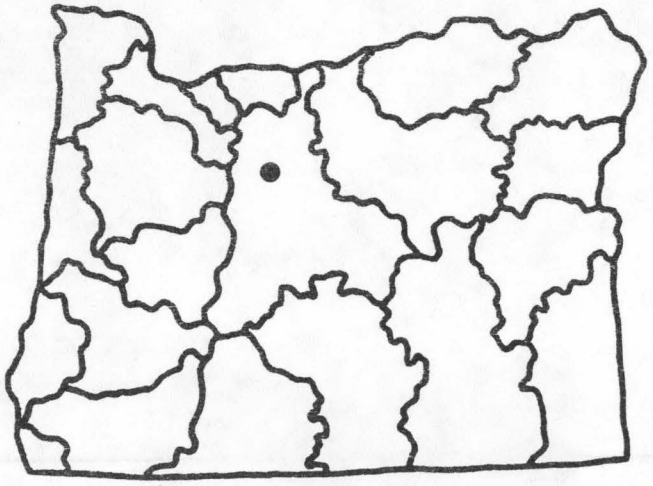
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	109.7	1.40	12.30	1.000
80	140.4	1.80	15.31	.973
50	227.9	2.92	21.68	.849
30	369.7	4.73	28.04	.677
10	638.4	8.17	34.07	.476

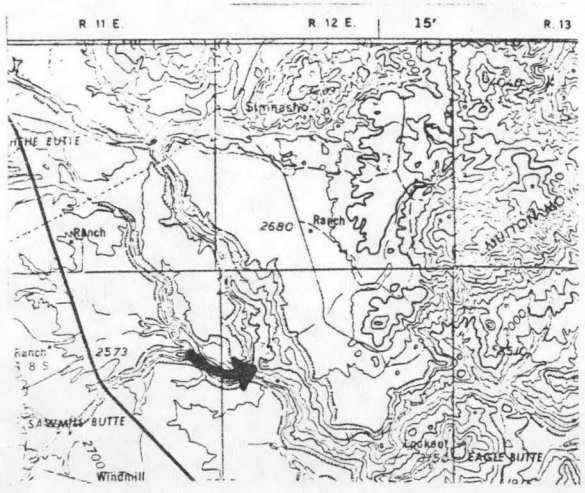
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 322 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-010-R0001

I. LOCATION

A. State	Oregon	
B. County	Wasco	
C. Township, Range	Sec.22, T8S, R11E	
D. Latitude, Longitude	44°52'N, 121°25'W	
E. Stream Name	Mill Creek	
F. Major Basin Name	Deschutes	
G. River Mile	0.0 to 6.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

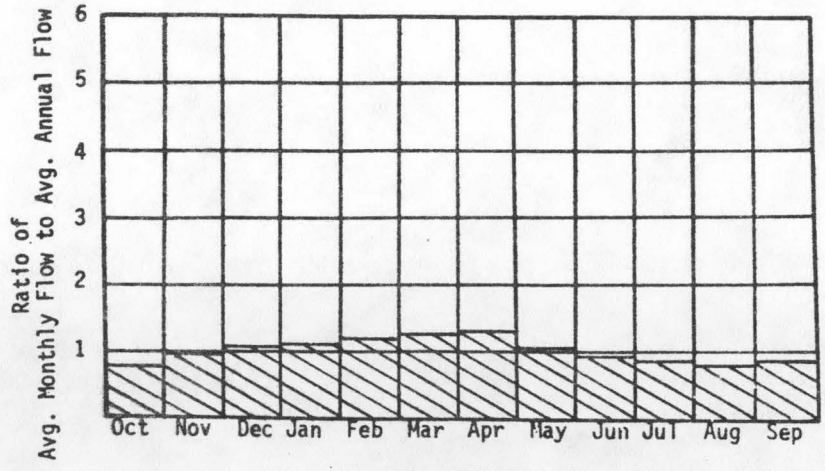
A. Upstream Elevation of Reach	2620	Ft. MSL
B. Downstream Elevation of Reach	1190	Ft. MSL
C. Total Available Head in Reach	1430	Ft.
D. Average Slope in Reach	238.3	Ft./Mi.
E. Drainage Area above Reach Mouth	106.5	Sq.Mi.
F. Inflow Classification	Natural	

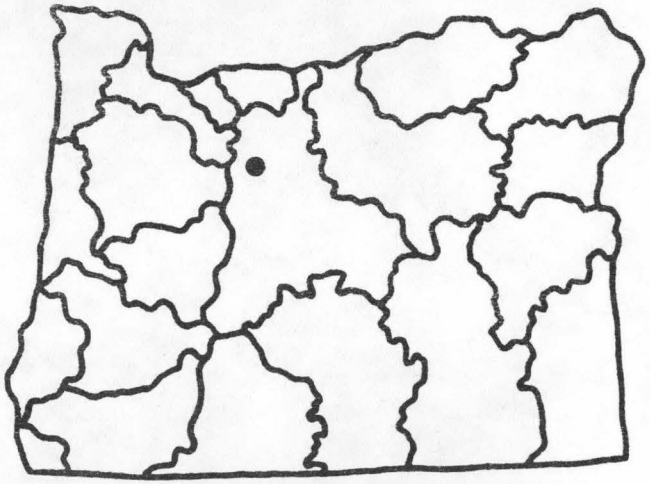
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	46.9	5.69	49.81	1.000
80	60.0	7.27	61.92	.973
50	96.9	11.75	87.44	.850
30	158.1	19.16	113.43	.676
10	293.3	35.55	142.13	.456

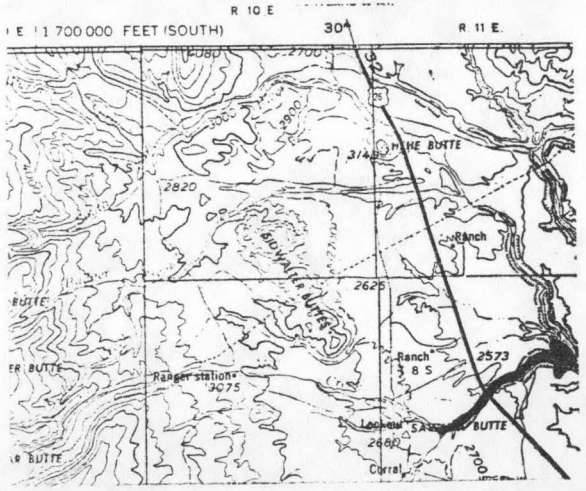
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 148 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-010-R0002

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.18, T8S, R10E
D.	Latitude, Longitude	44°52'N, 121°35'W
E.	Stream Name	Mill Creek
F.	Major Basin Name	Deschutes
G.	River Mile	6.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

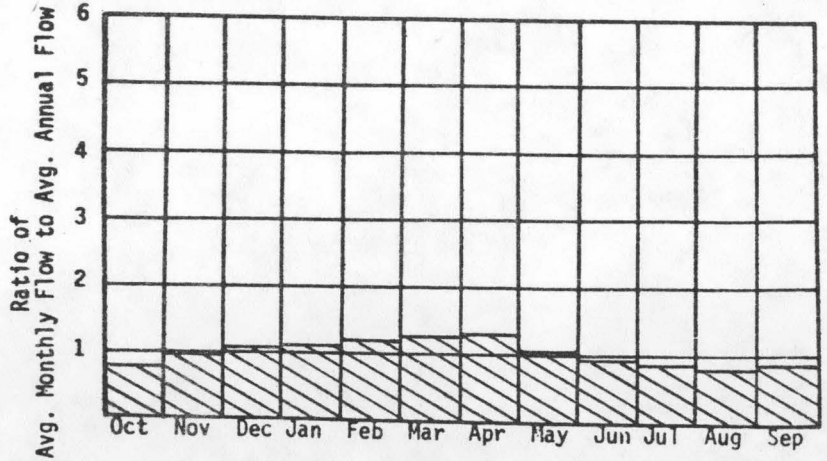
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	99.7	Sq.Mi.
F.	Inflow Classification	Natural	

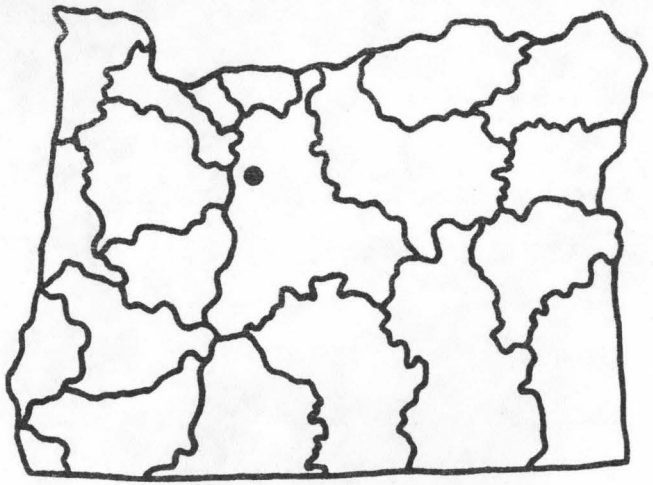
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	46.3	.26	2.27	1.000
80	59.2	.33	2.82	.973
50	95.7	.54	3.99	.850
30	156.2	.87	5.17	.676
10	289.9	1.62	6.48	.456

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 146 CFS





U.S.G.S. TOPO. SERIES
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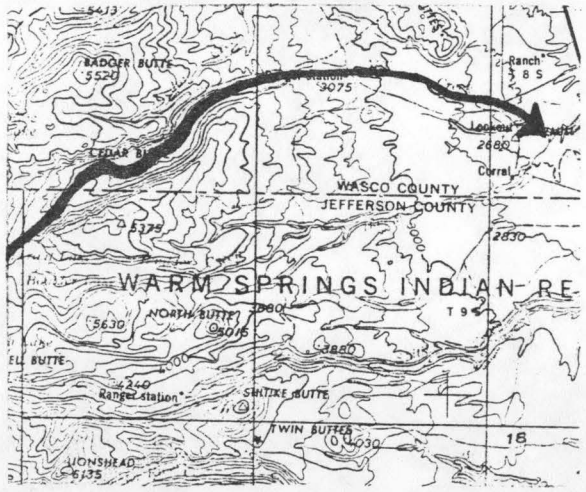
MAP NAME: BEND

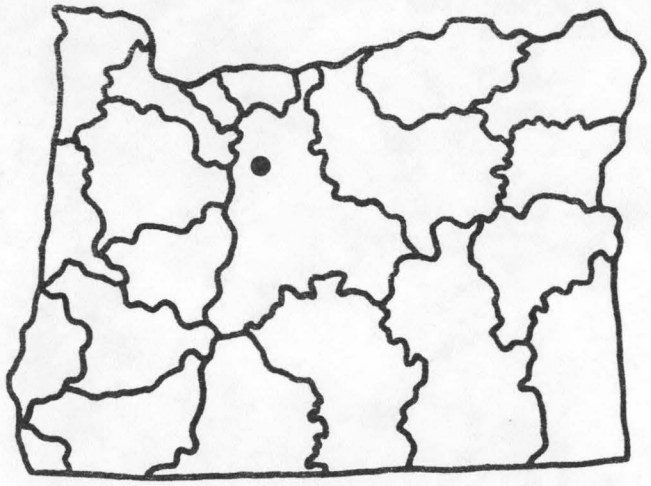


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.13, T8S, R11E
D.	Latitude, Longitude	44°53'N, 121°23'W
E.	Stream Name	Warm Springs River
F.	Major Basin Name	Deschutes
G.	River Mile	21.2 to 21.8



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2079	Ft. MSL
B.	Downstream Elevation of Reach	2035	Ft. MSL
C.	Total Available Head in Reach	44	Ft.
D.	Average Slope in Reach	73.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	195.3	Sq.Mi.
F.	Inflow Classification	Natural	

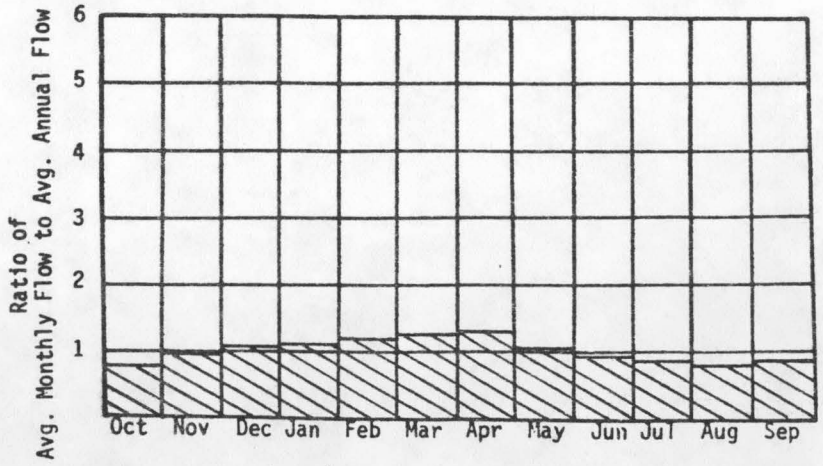
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

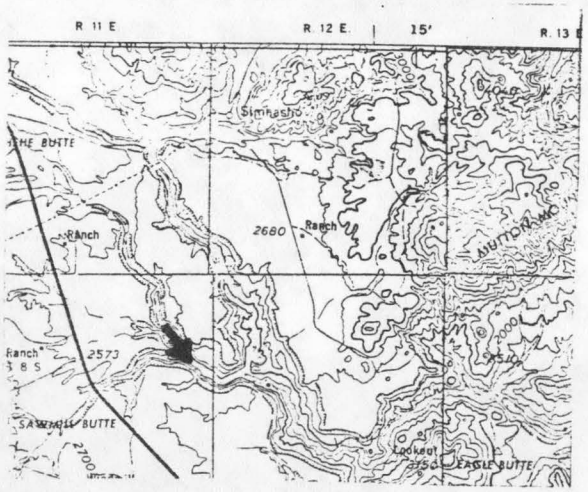
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	75.8	.28	2.48	1.000
80	97.0	.36	3.08	.973
50	157.2	.59	4.36	.849
30	255.6	.95	5.65	.676
10	455.3	1.70	6.95	.467

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 230 CFS



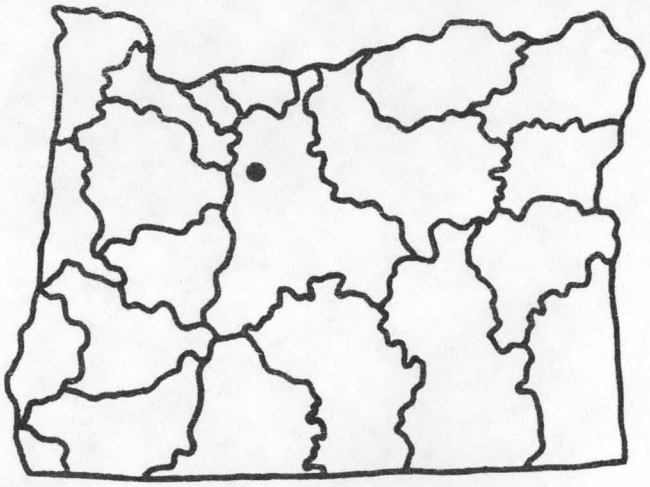


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.35, T7S, R11E
D.	Latitude, Longitude	44°55'N, 121°24'W
E.	Stream Name	Warm Springs River
F.	Major Basin Name	Deschutes
G.	River Mile	21.8 to 27.5



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2437	Ft. MSL
B.	Downstream Elevation of Reach	2079	Ft. MSL
C.	Total Available Head in Reach	358	Ft.
D.	Average Slope in Reach	62.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	164.6	Sq.Mi.
F.	Inflow Classification	Natural	

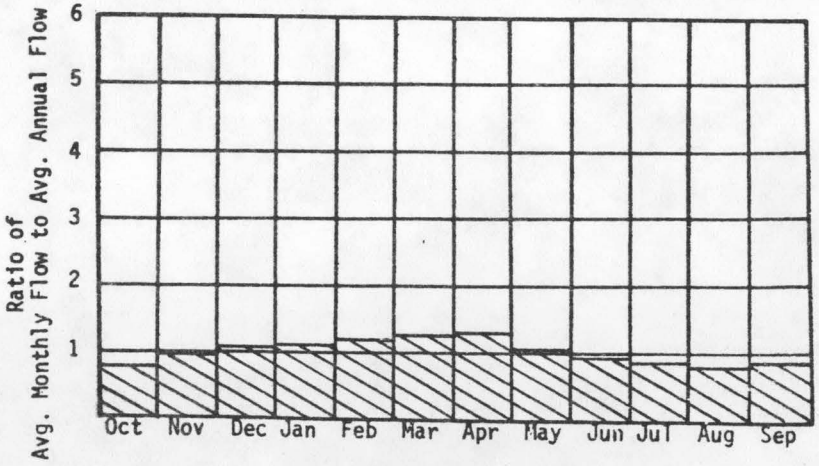
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

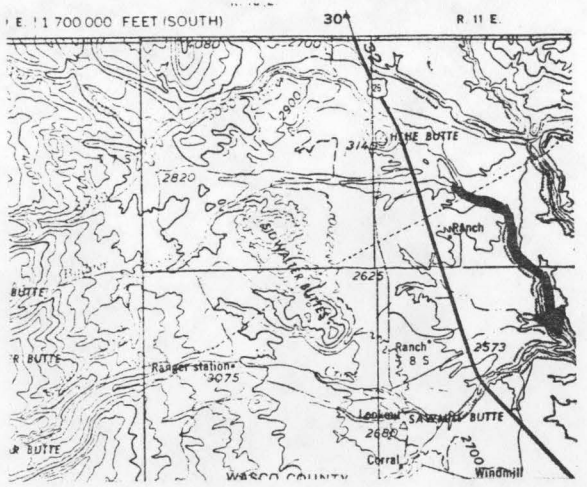
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	69.1	2.10	18.37	1.000
80	88.4	2.68	22.85	.973
50	143.2	4.34	32.32	.849
30	233.0	7.07	41.86	.676
10	418.2	12.69	51.71	.465

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 211 CFS



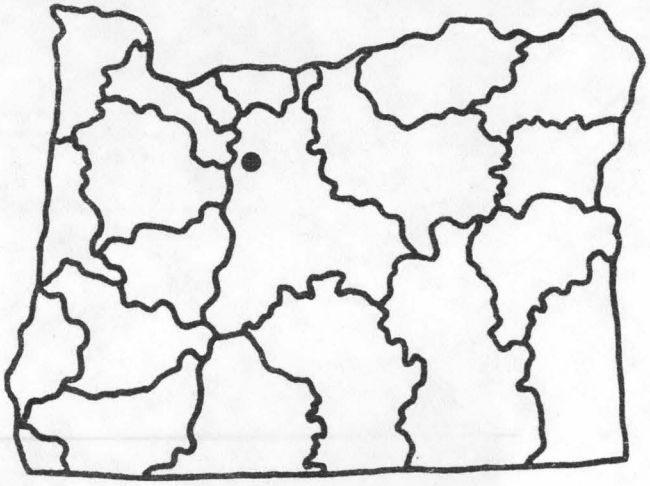


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-020-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.21, T7S, R11E
D.	Latitude, Longitude	44°56'N, 121°25'W
E.	Stream Name	Badger Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	44.1	Sq.Mi.
F.	Inflow Classification	Natural	

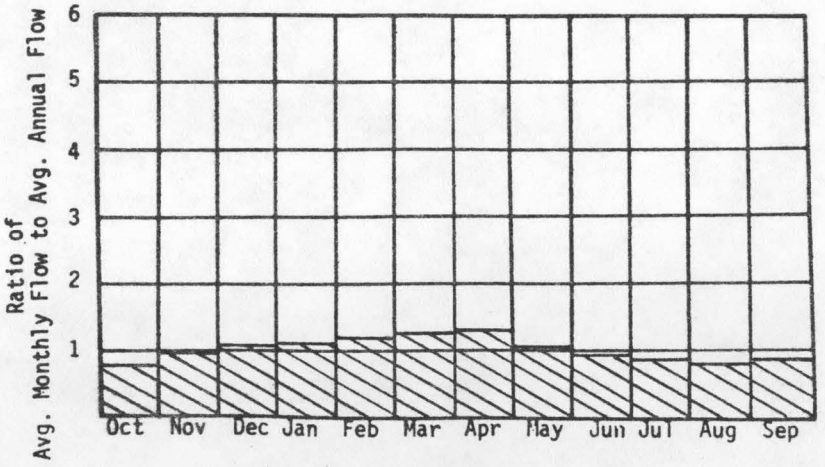
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

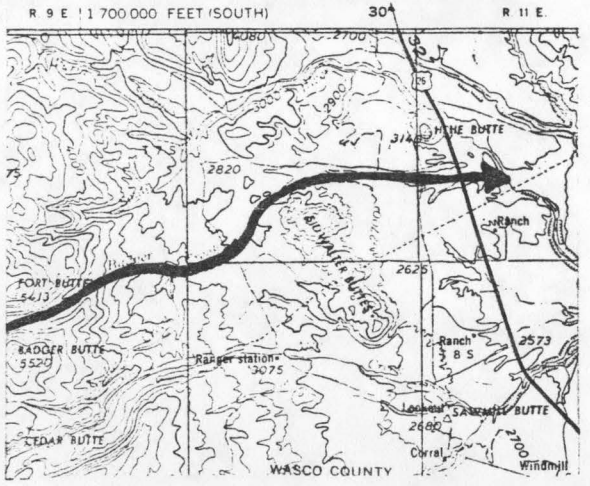
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	24.3	.14	1.19	1.000
80	31.0	.17	1.48	.973
50	50.0	.28	2.08	.850
30	81.9	.46	2.71	.675
10	160.6	.90	3.48	.442

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 81 CFS



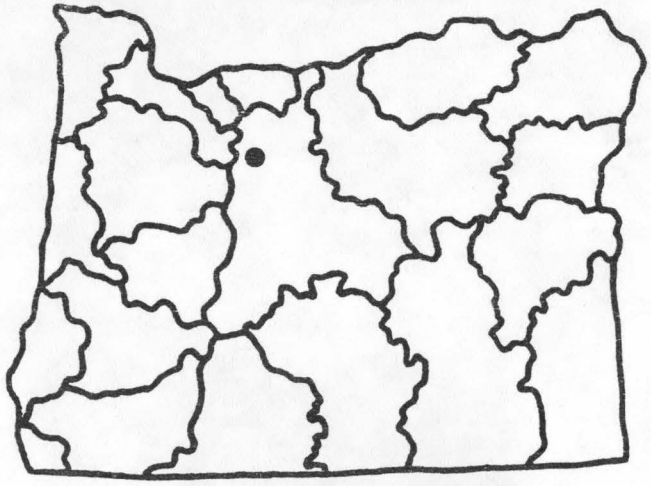


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-018-019-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.1, T7S, R10E
D.	Latitude, Longitude	44°59'N, 121°30'W
E.	Stream Name	Warm Springs River
F.	Major Basin Name	Deschutes
G.	River Mile	27.5 to 37.6



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2698	Ft. MSL
B.	Downstream Elevation of Reach	2437	Ft. MSL
C.	Total Available Head in Reach	261	Ft.
D.	Average Slope in Reach	25.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	112.6	Sq.Mi.
F.	Inflow Classification	Natural	

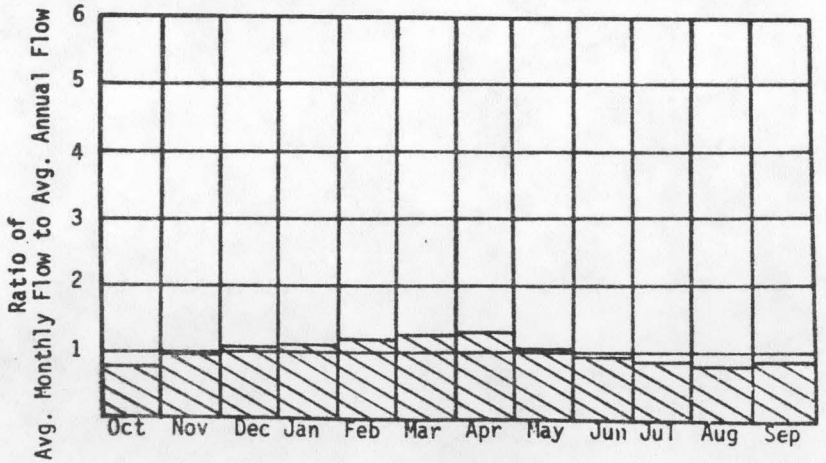
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

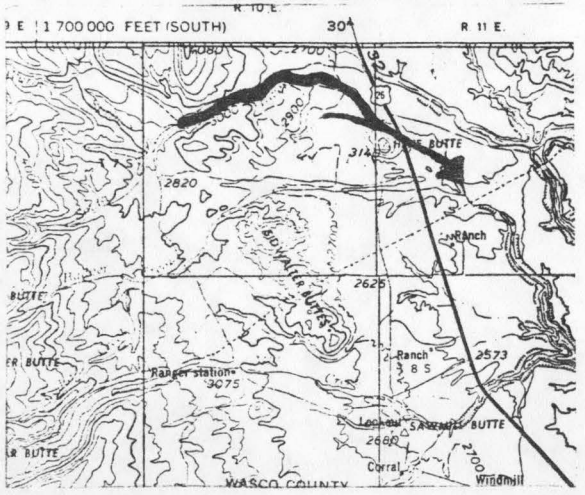
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	49.8	1.10	9.65	1.000
80	63.7	1.41	12.00	.973
50	103.0	2.28	16.95	.850
30	167.9	3.71	21.98	.676
10	309.9	6.85	27.48	.458

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 156 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	T7S, R9E
D.	Latitude, Longitude	44°58'N, 121°36'W
E.	Stream Name	Warm Springs River
F.	Major Basin Name	Deschutes
G.	River Mile	37.6 to 40.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

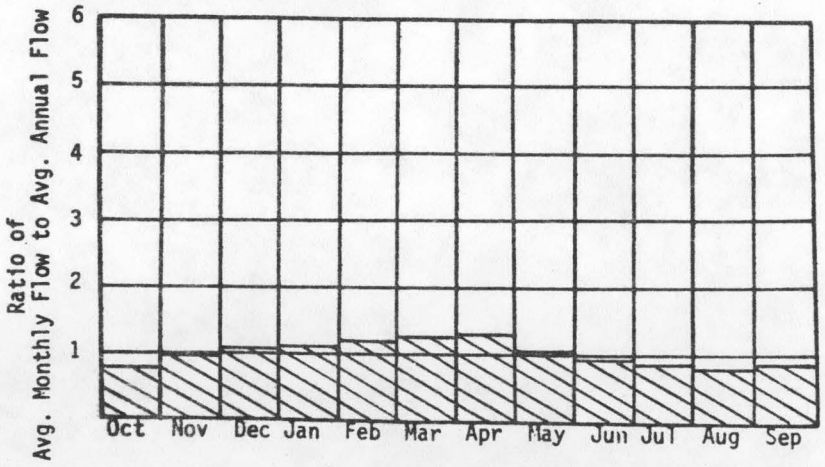
A.	Upstream Elevation of Reach	2791	Ft. MSL
B.	Downstream Elevation of Reach	2698	Ft. MSL
C.	Total Available Head in Reach	93	Ft.
D.	Average Slope in Reach	31	Ft./Mi.
E.	Drainage Area above Reach Mouth	67.5	Sq.Mi.
F.	Inflow Classification	Natural	

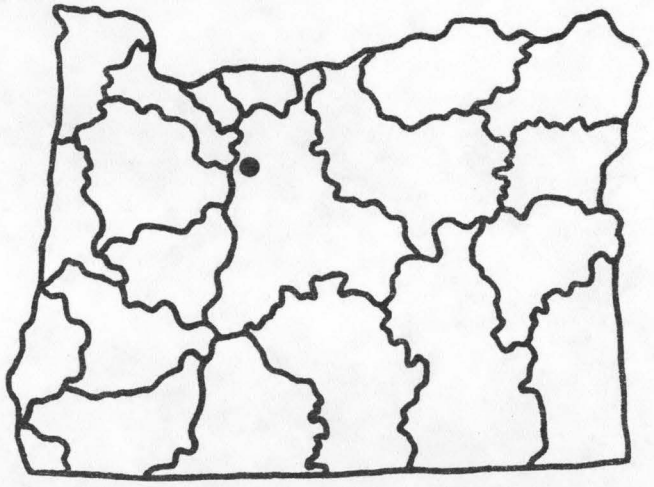
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	34.9	.27	2.41	1.000
80	44.5	.35	2.99	.973
50	71.9	.57	4.22	.850
30	117.4	.93	5.48	.675
10	223.4	1.76	6.94	.450

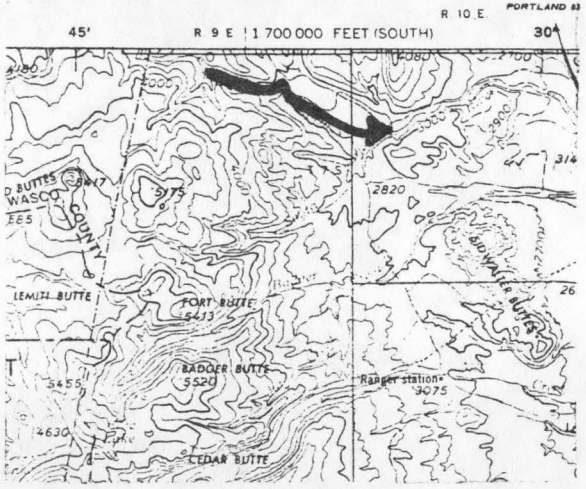
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 113 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-019-000-R0008

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	T7S, R9E
D.	Latitude, Longitude	44°58'N, 121°38'W
E.	Stream Name	Warm Springs River
F.	Major Basin Name	Deschutes
G.	River Mile	40.6 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

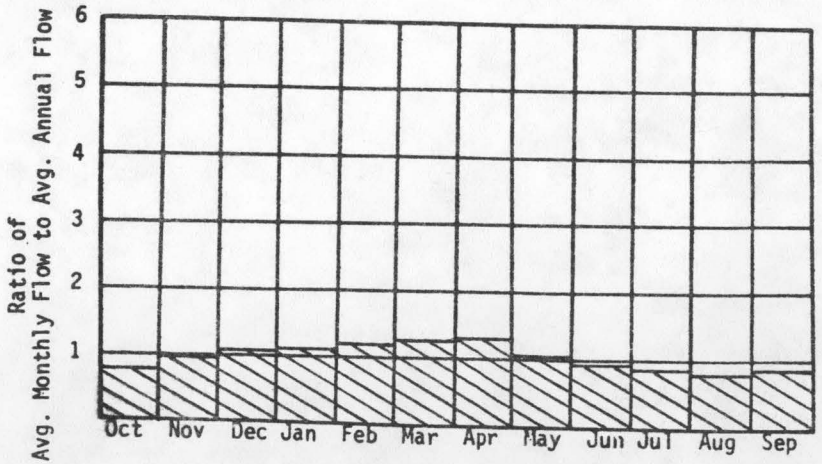
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	42.2	Sq.Mi.
F.	Inflow Classification	Natural	

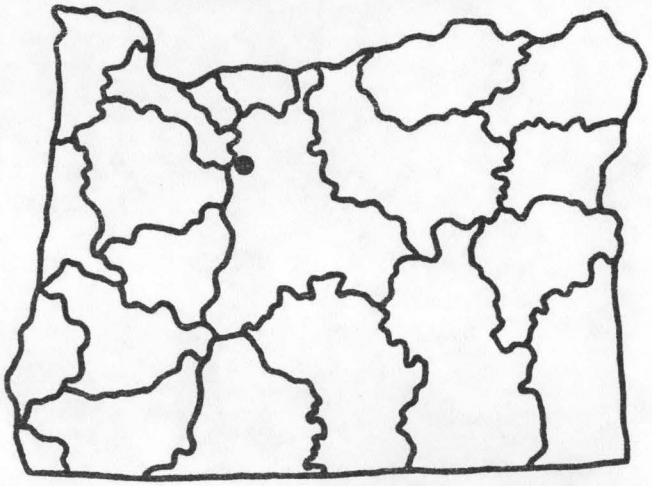
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	26.5	.15	1.30	1.000
80	33.8	.19	1.61	.973
50	54.6	.31	2.27	.850
30	89.3	.50	2.95	.675
10	173.9	.97	3.78	.444

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 88 CFS





U.S.G.S. TOPO. SERIES
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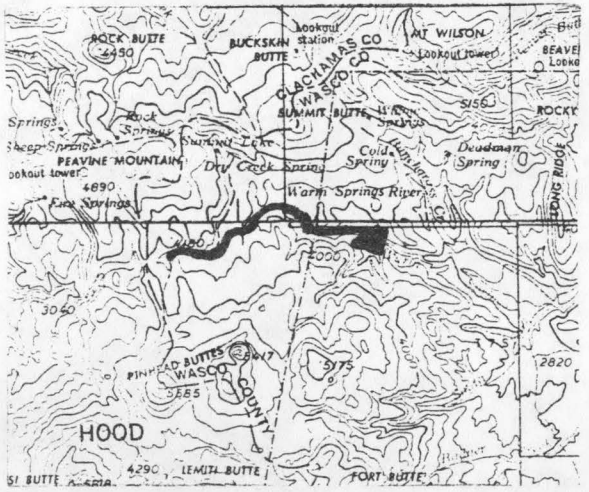
MAP NAME: BEND-THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0013

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.29, T8S, R14E
D.	Latitude, Longitude	44°50'N, 121°05'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	83.8 to 87.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

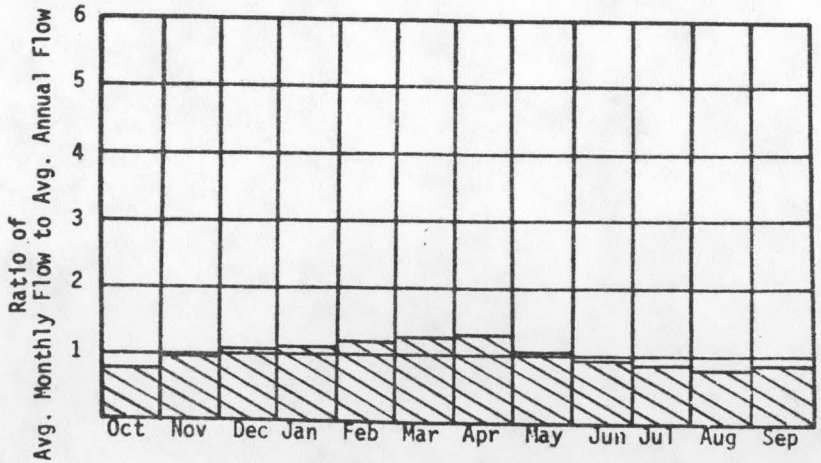
A.	Upstream Elevation of Reach	1271	Ft. MSL
B.	Downstream Elevation of Reach	1232	Ft. MSL
C.	Total Available Head in Reach	39	Ft.
D.	Average Slope in Reach	11.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	6609.8	Sq.Mi.
F.	Inflow Classification	Regulated	

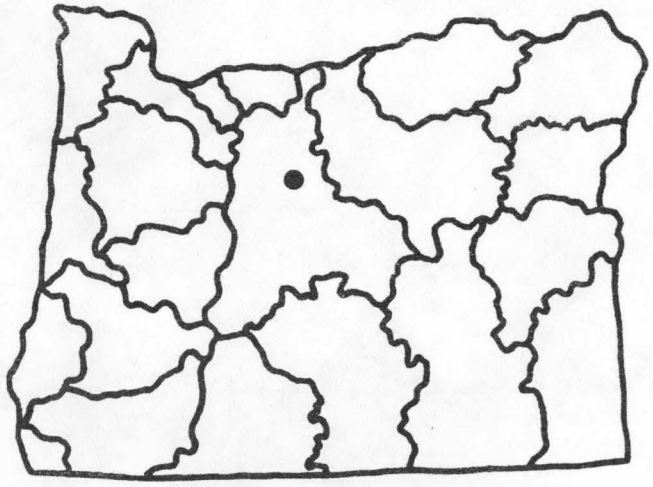
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3460.8	11.44	100.20	1.000
80	3994.6	13.20	113.72	.983
50	4487.5	14.83	123.00	.947
30	5024.9	16.61	129.22	.888
10	6381.9	21.09	137.08	.742

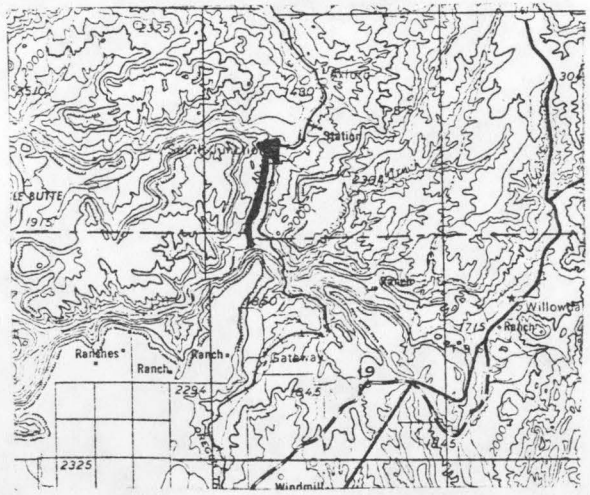
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 4684 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

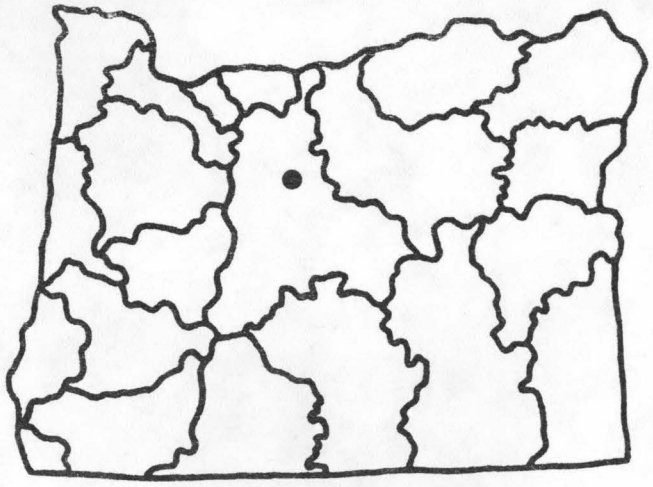


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-021-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.5, T9S, R14E
D.	Latitude, Longitude	44°48'N, 121°05'W
E.	Stream Name	Trout Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 2.6



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1:250,000 SCALE
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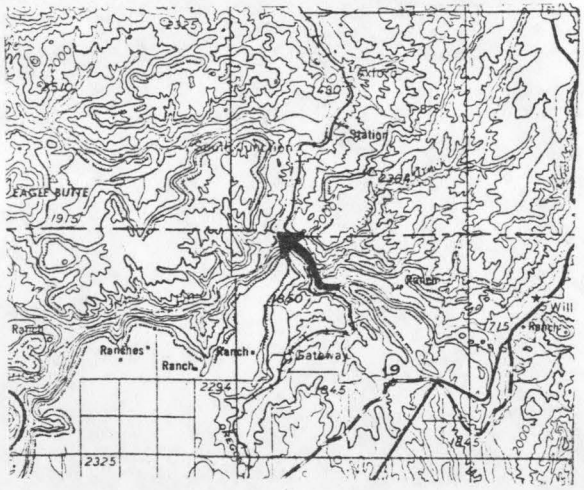


II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

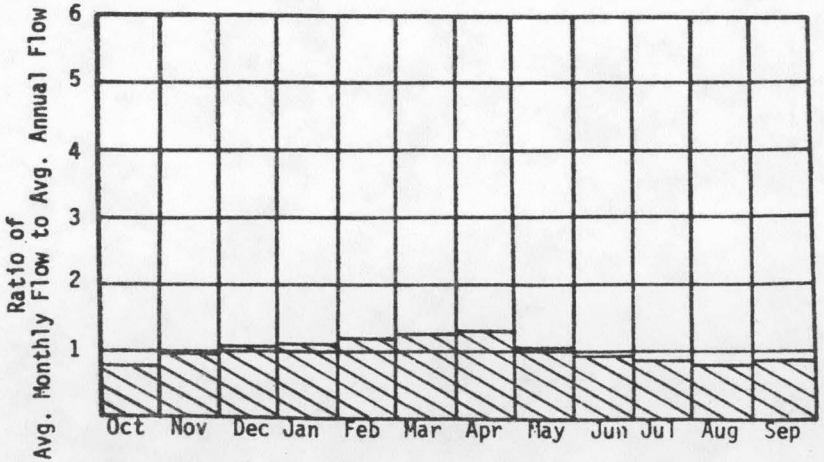
A.	Upstream Elevation of Reach	1397	Ft. MSL
B.	Downstream Elevation of Reach	1271	Ft. MSL
C.	Total Available Head in Reach	126	Ft.
D.	Average Slope in Reach	48.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	677.5	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	67.6	.72	6.33	1.000
80	86.5	.92	7.87	.973
50	140.1	1.50	11.13	.849
30	228.0	2.43	14.42	.676
10	410.0	4.38	17.82	.465

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 207 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-021-000-R0002

I. LOCATION

A. State	Oregon	
B. County	Jefferson	
C. Township, Range	Sec.11, T9S, R14E	
D. Latitude, Longitude	44°48'N, 121°01'W	
E. Stream Name	Trout Creek	
F. Major Basin Name	Deschutes	
G. River Mile	2.6 to 9.1	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

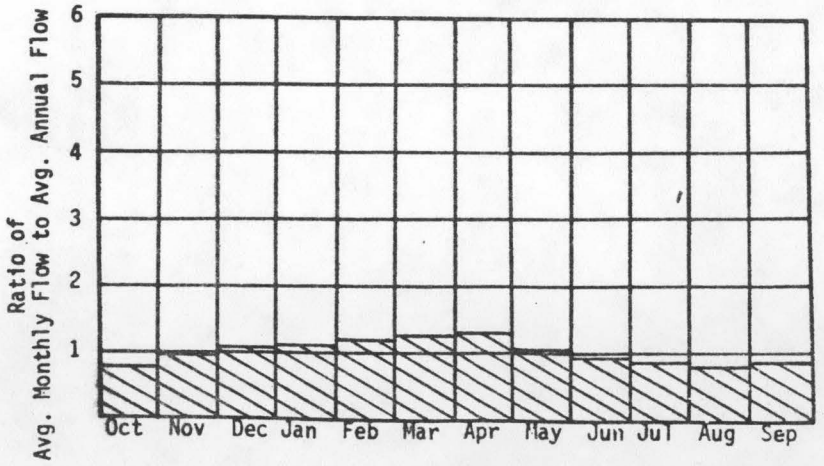
A. Upstream Elevation of Reach	1675	Ft. MSL
B. Downstream Elevation of Reach	1397	Ft. MSL
C. Total Available Head in Reach	278	Ft.
D. Average Slope in Reach	42.8	Ft./Mi.
E. Drainage Area above Reach Mouth	561.7	Sq.Mi.
F. Inflow Classification	Natural	

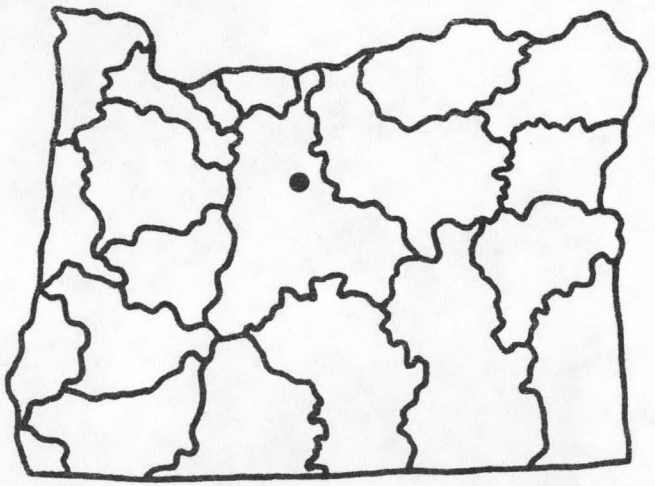
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	61.1	1.44	12.61	1.000
80	78.1	1.84	15.67	.973
50	126.4	2.98	22.16	.849
30	205.8	4.85	28.71	.676
10	373.4	8.80	35.63	.462

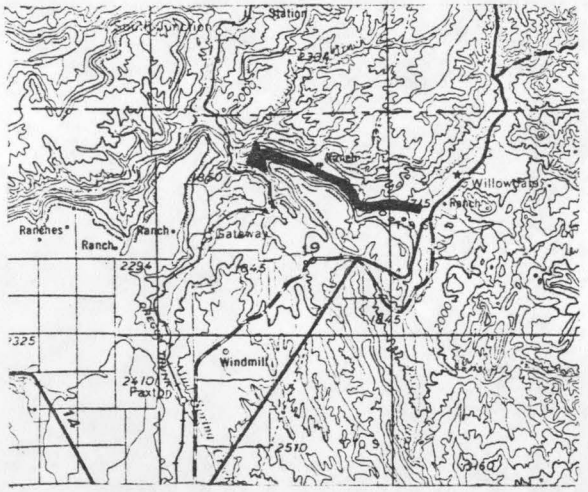
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 189 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-021-009-R0001

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.11, T10S, R15E
D.	Latitude, Longitude	44°43'N, 120°55'W
E.	Stream Name	Wilson Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

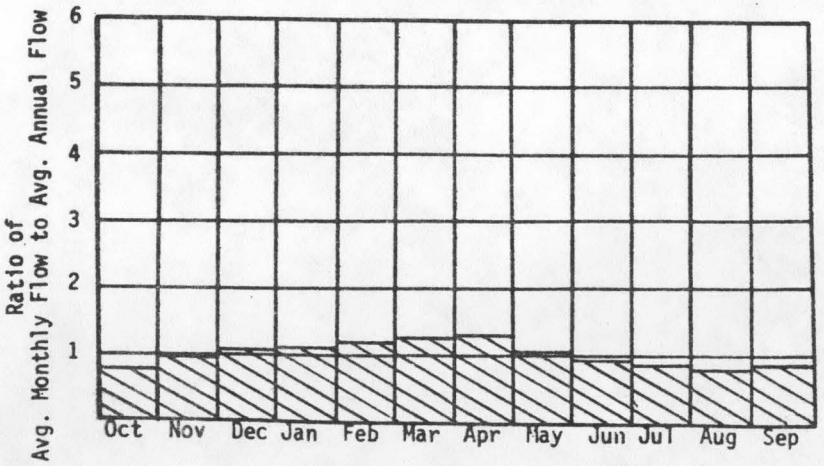
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	146	Sq.Mi.
F.	Inflow Classification	Natural	

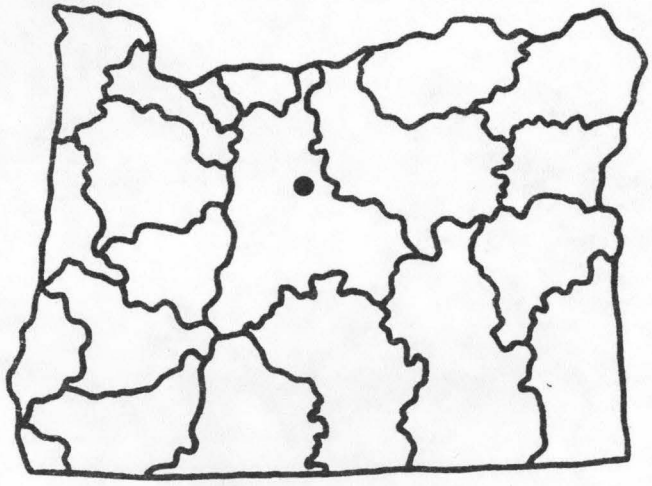
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	16.7	.09	.82	1.000
80	21.3	.12	1.01	.973
50	34.2	.19	1.43	.851
30	56.2	.31	1.86	.674
10	113.7	.64	2.42	.434

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 57 CFS





U.S.G.S. TOPO. SERIES
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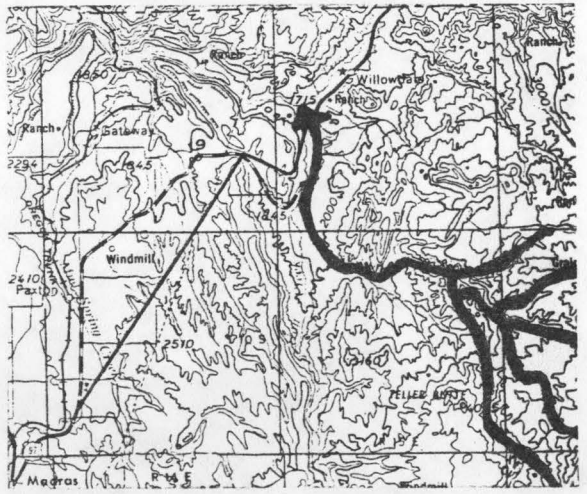
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-021-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.9, T9S, R15E
D.	Latitude, Longitude	44°48'N, 120°57'W
E.	Stream Name	Trout Creek
F.	Major Basin Name	Deschutes
G.	River Mile	9.1 to 13.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

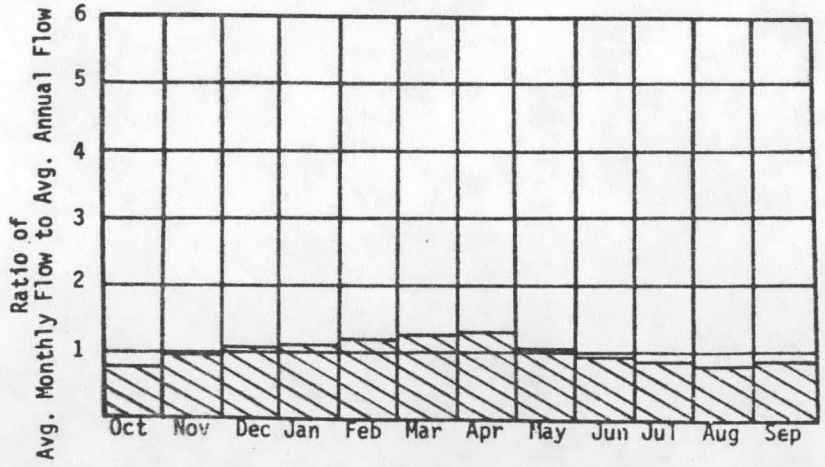
A.	Upstream Elevation of Reach	1813	Ft. MSL
B.	Downstream Elevation of Reach	1675	Ft. MSL
C.	Total Available Head in Reach	138	Ft.
D.	Average Slope in Reach	33.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	404.4	Sq.Mi.
F.	Inflow Classification	Natural	

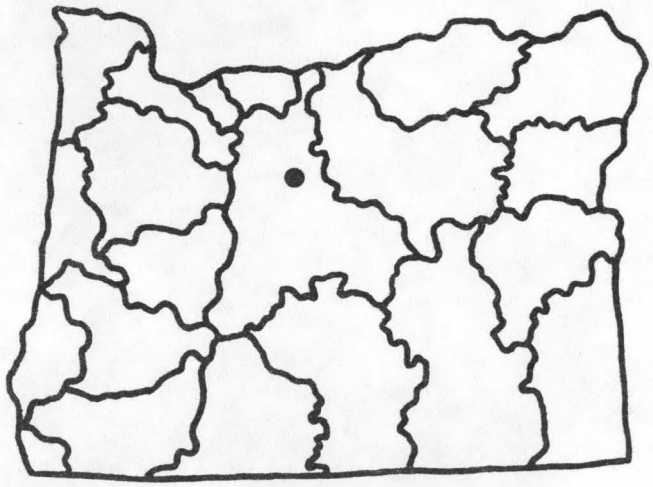
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	50.1	.59	5.13	1.000
80	64.0	.75	6.38	.973
50	103.5	1.21	9.01	.850
30	168.8	1.97	11.69	.676
10	311.4	3.64	14.61	.458

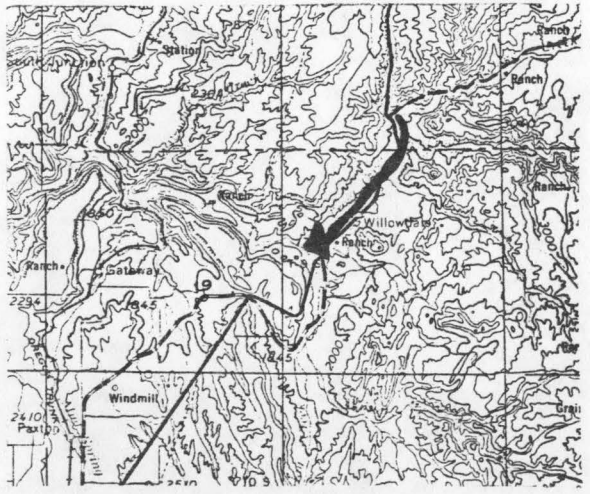
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 158 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-021-010-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wasco
C.	Township, Range	Sec.34, T8S, R15E
D.	Latitude, Longitude	44°49'N, 120°55'W
E.	Stream Name	Antelope Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

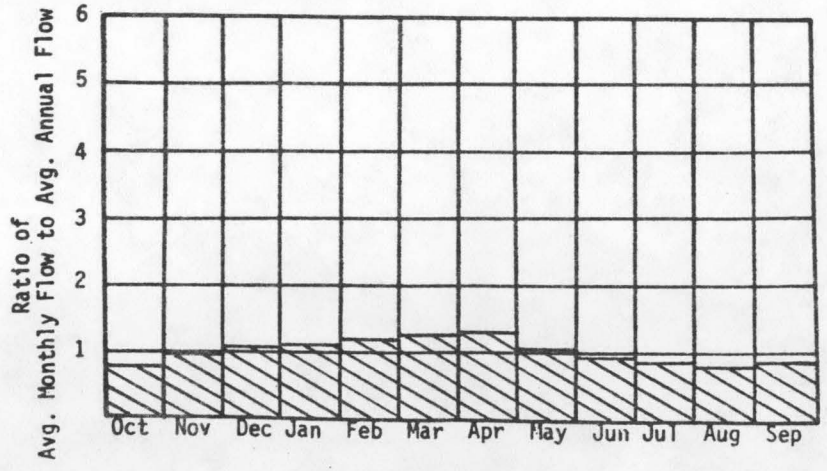
A.	Upstream Elevation of Reach	---	Ft. MSL
B.	Downstream Elevation of Reach	---	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	---	Ft./Mi.
E.	Drainage Area above Reach Mouth	158.7	Sq.Mi.
F.	Inflow Classification	Natural	

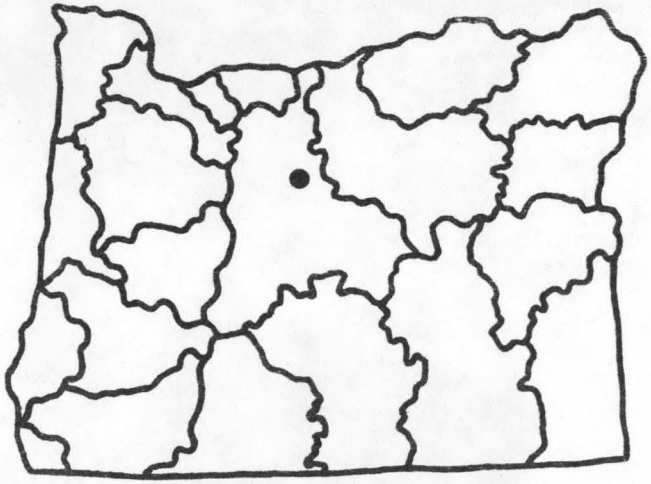
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.3	.11	.95	1.000
80	24.7	.14	1.18	.973
50	39.7	.22	1.65	.851
30	65.1	.36	2.15	.675
10	130.2	.73	2.79	.437

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 66 CFS





U.S.G.S. TOPO. SERIES
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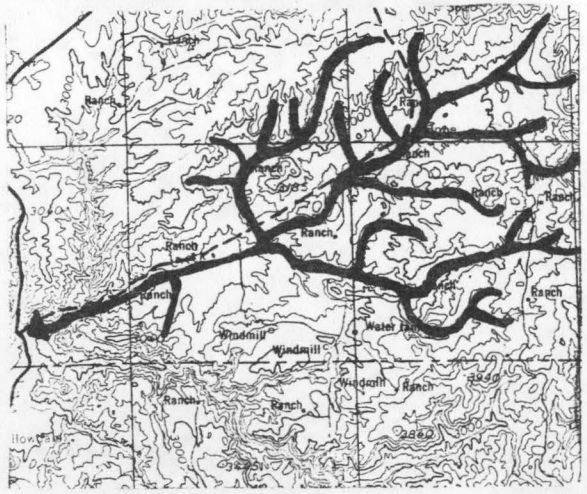
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-021-000-R0004

I. LOCATION

A. State	Oregon	
B. County	Jefferson	
C. Township, Range	Sec.4, T9S, R16E	
D. Latitude, Longitude	44°48'N, 120°50'W	
E. Stream Name	Trout Creek	
F. Major Basin Name	Deschutes	
G. River Mile	13.2 to 26.3	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

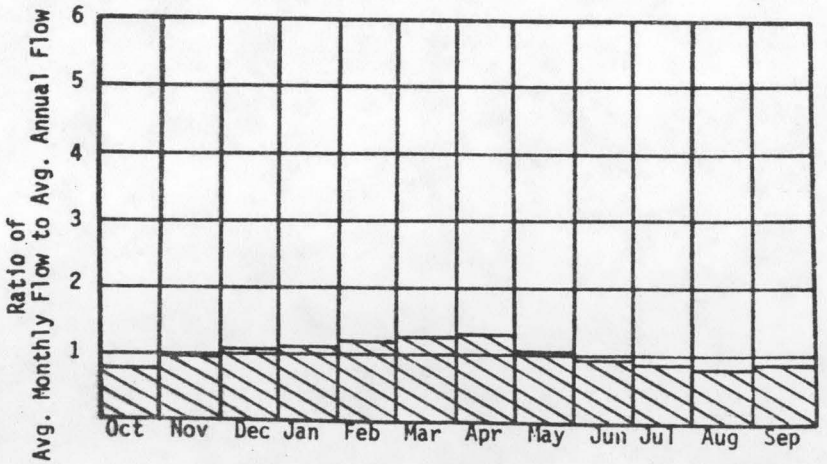
A. Upstream Elevation of Reach	2380	Ft. MSL
B. Downstream Elevation of Reach	1813	Ft. MSL
C. Total Available Head in Reach	567	Ft.
D. Average Slope in Reach	43.3	Ft./Mi.
E. Drainage Area above Reach Mouth	241	Sq.Mi.
F. Inflow Classification	Natural	

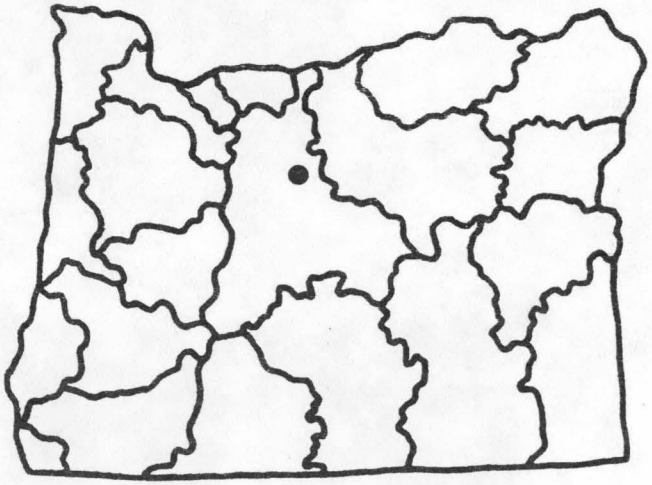
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	35.3	1.69	14.84	1.000
80	45.0	2.16	18.44	.973
50	72.7	3.49	26.01	.850
30	118.8	5.71	33.77	.675
10	225.7	10.85	42.77	.450

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 114 CFS





U.S.G.S. TOPO. SERIES
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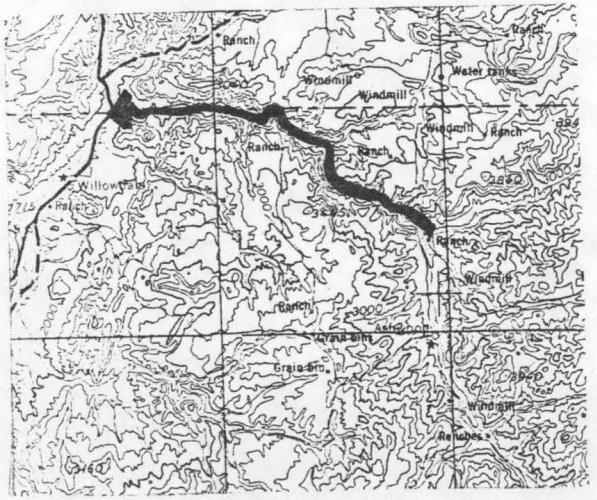
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-021-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.18, T10S, R17E
D.	Latitude, Longitude	44°42'N, 120°44'W
E.	Stream Name	Trout Creek
F.	Major Basin Name	Deschutes
G.	River Mile	26.3 to 38.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

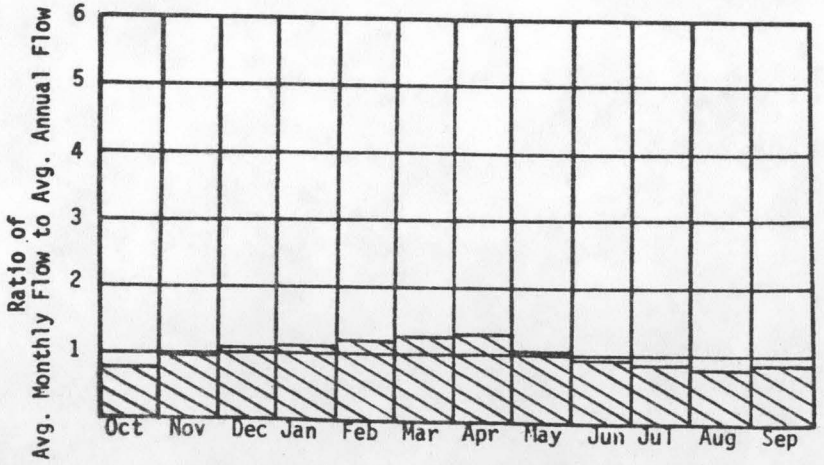
A.	Upstream Elevation of Reach	2855	Ft. MSL
B.	Downstream Elevation of Reach	2380	Ft. MSL
C.	Total Available Head in Reach	475	Ft.
D.	Average Slope in Reach	39.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	190	Sq.Mi.
F.	Inflow Classification	Natural	

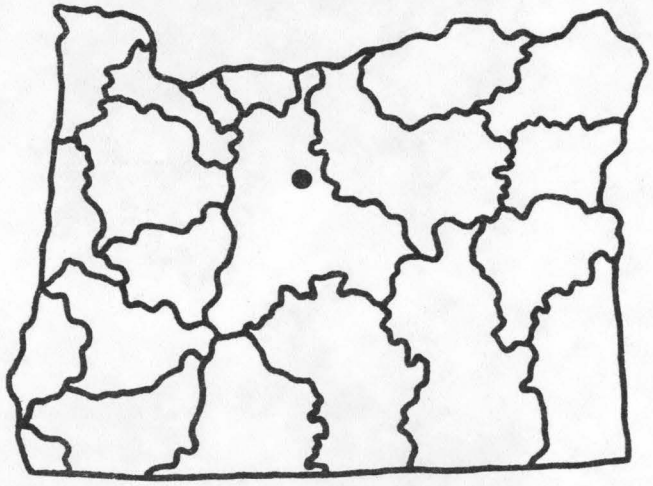
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	27.3	1.10	9.64	1.000
80	34.9	1.40	11.97	.973
50	56.3	2.27	16.87	.850
30	92.1	3.71	21.92	.675
10	178.8	7.20	28.04	.445

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 90 CFS





U.S.G.S. TOPO. SERIES
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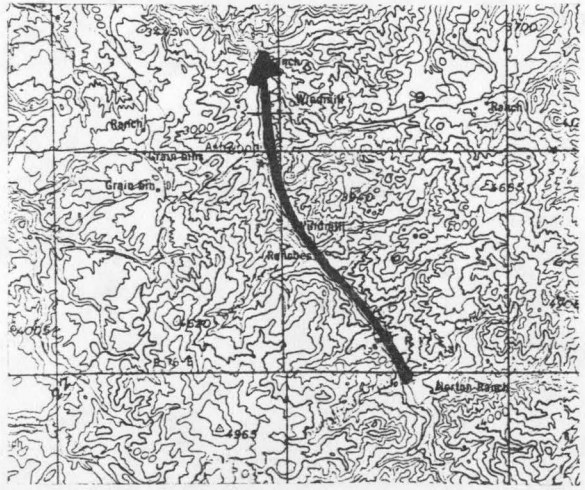
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-021-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.25, T11S, R17E
D.	Latitude, Longitude	44°43'N, 120°38'W
E.	Stream Name	Trout Creek
F.	Major Basin Name	Deschutes
G.	River Mile	38.2 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

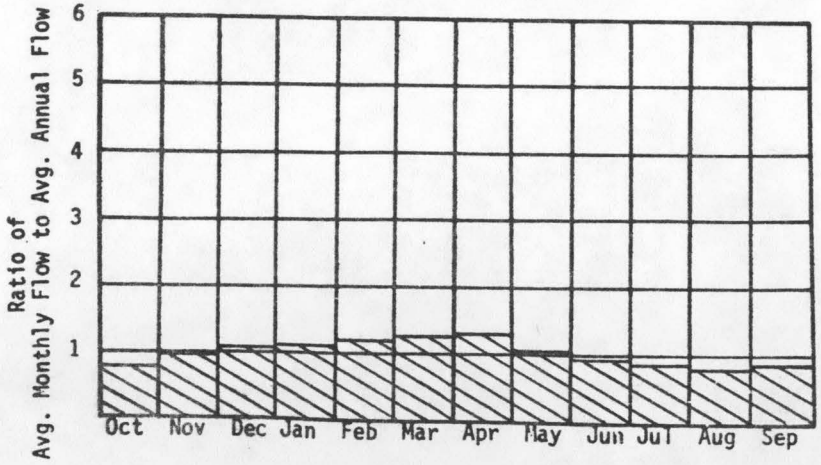
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	98	Sq.Mi.
F.	Inflow Classification	Natural	

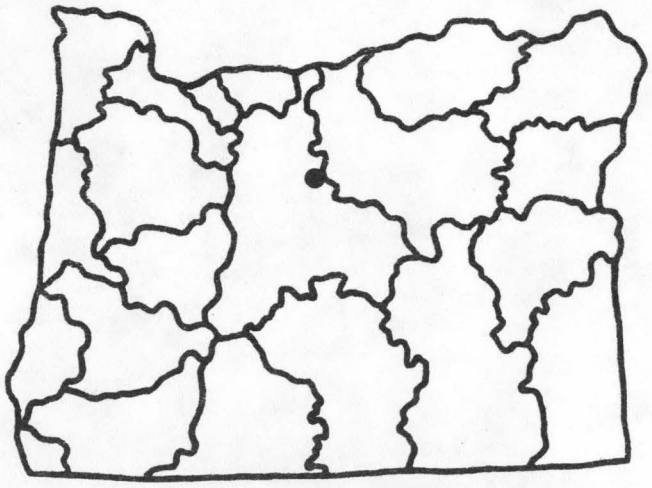
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	20.3	.11	.99	1.000
80	25.8	.14	1.23	.973
50	41.6	.23	1.73	.851
30	68.3	.38	2.26	.675
10	135.9	.76	2.92	.438

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 69 CFS





U.S.G.S. TOPO. SERIES
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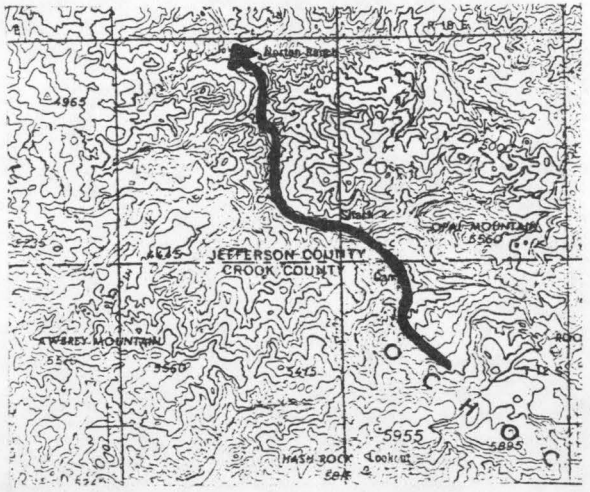


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0015

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.15, T9S, R13E
D.	Latitude, Longitude	44°47'N, 121°09'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	87.2 to 96.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

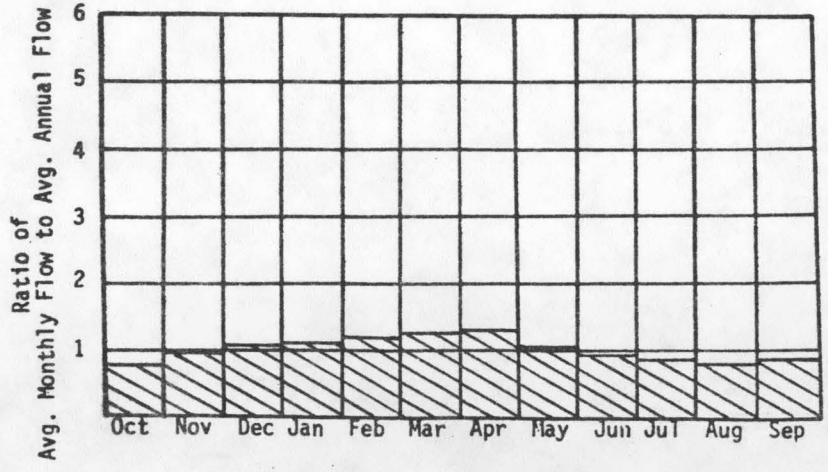
A.	Upstream Elevation of Reach	1360	Ft. MSL
B.	Downstream Elevation of Reach	1271	Ft. MSL
C.	Total Available Head in Reach	89	Ft.
D.	Average Slope in Reach	9.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	5926.5	Sq.Mi.
F.	Inflow Classification	Regulated	

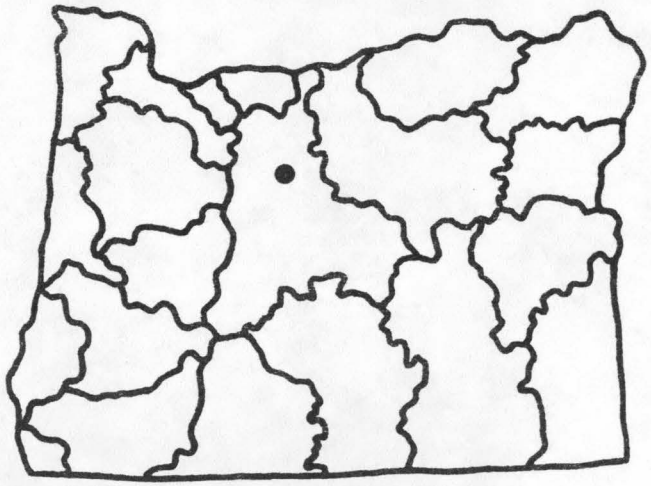
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3414.0	25.75	225.57	1.000
80	3941.2	29.73	256.05	.983
50	4390.5	33.12	275.34	.949
30	4886.9	36.86	288.46	.893
10	6165.6	46.50	305.36	.750

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 4552 CFS





U.S.G.S. TOPO. SERIES
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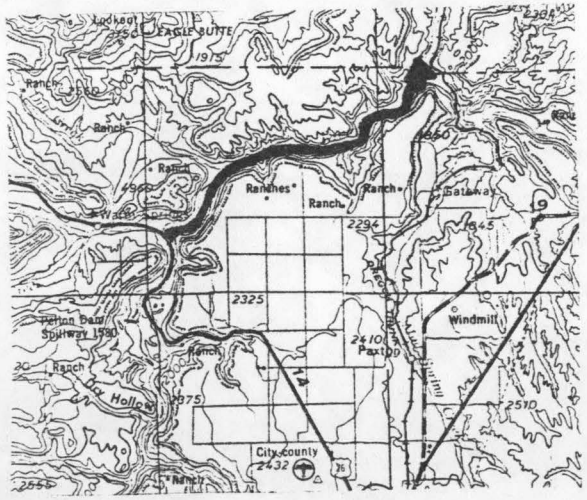


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-023-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.25, T9S, R12E
D.	Latitude, Longitude	44°46'N, 121°15'W
E.	Stream Name	Shitike Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 2.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

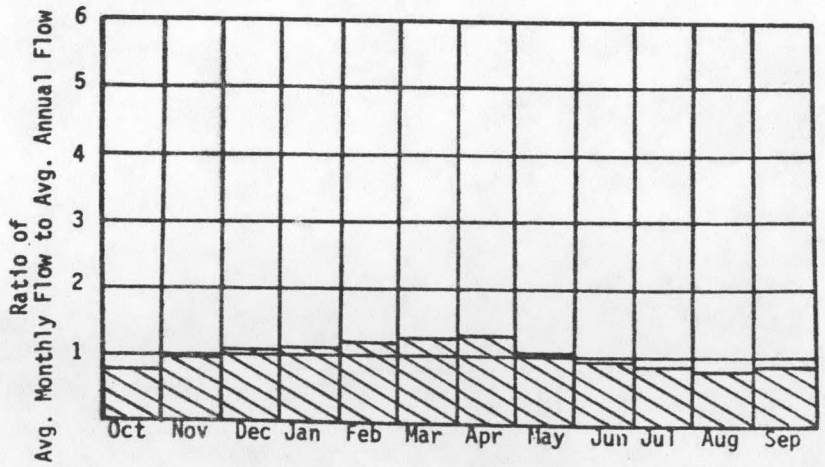
A.	Upstream Elevation of Reach	1488	Ft. MSL
B.	Downstream Elevation of Reach	1357	Ft. MSL
C.	Total Available Head in Reach	131	Ft.
D.	Average Slope in Reach	54.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	104	Sq.Mi.
F.	Inflow Classification	Natural	

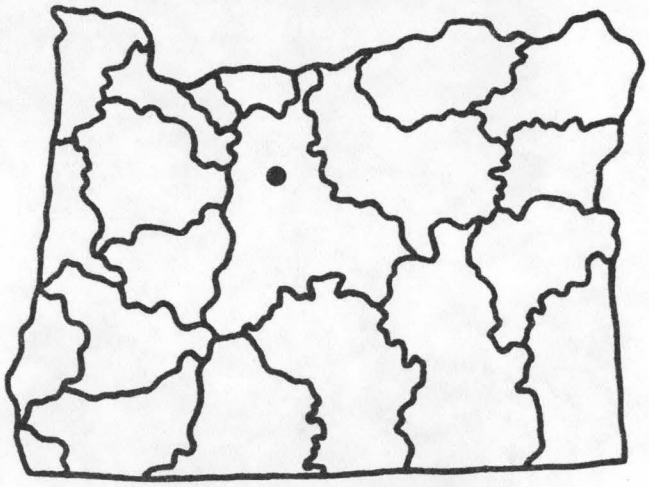
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	34.5	.38	3.35	1.000
80	44.0	.49	4.16	.973
50	71.1	.79	5.87	.850
30	116.2	1.29	7.63	.675
10	221.1	2.45	9.67	.450

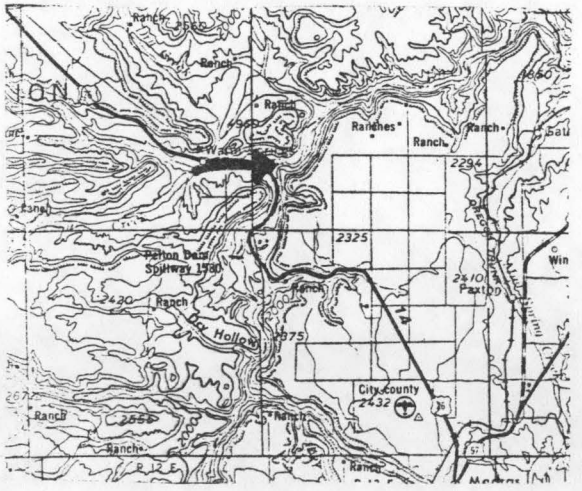
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 112 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

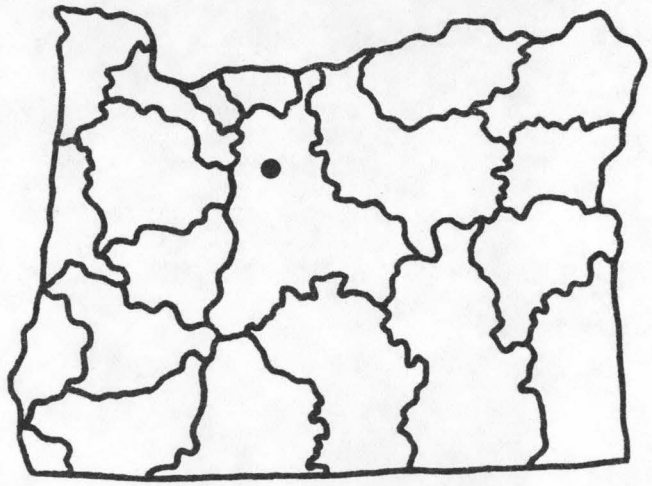


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-023-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.18, T9S, R12E
D.	Latitude, Longitude	44°47'N, 121°21'W
E.	Stream Name	Shitike Creek
F.	Major Basin Name	Deschutes
G.	River Mile	2.4 to 12.0



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

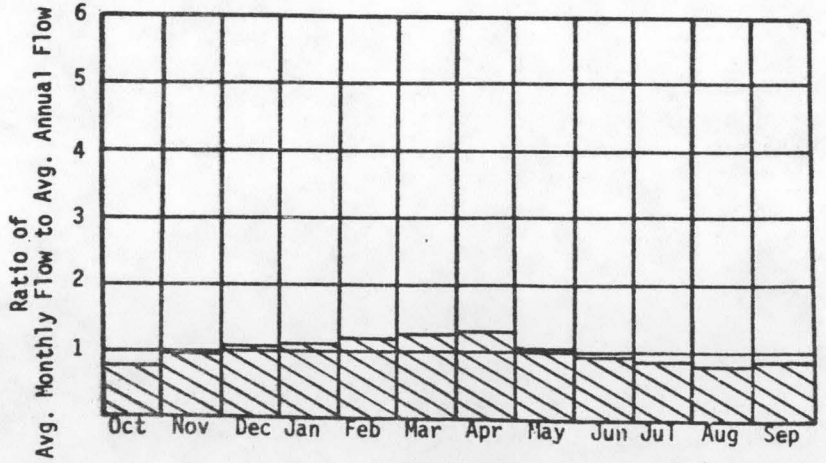
A.	Upstream Elevation of Reach	2319	Ft. MSL
B.	Downstream Elevation of Reach	1357	Ft. MSL
C.	Total Available Head in Reach	831	Ft.
D.	Average Slope in Reach	86.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	82	Sq.Mi.
F.	Inflow Classification	Natural	

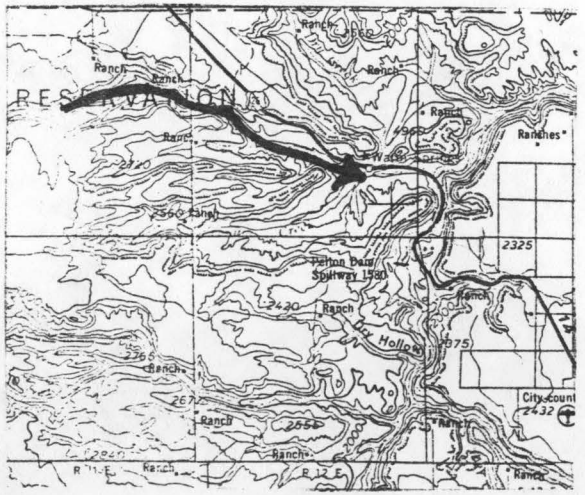
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	28.8	2.03	17.75	1.000
80	36.7	2.59	22.04	.973
50	59.2	4.17	31.07	.850
30	96.9	6.83	40.38	.675
10	187.4	13.20	51.54	.446

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 94 CFS



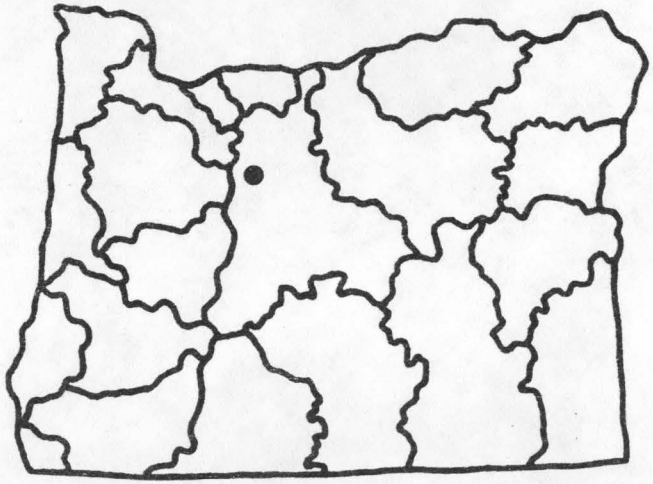


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-023-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.28, T9S, R10E
D.	Latitude, Longitude	44°46'N, 121°33'W
E.	Stream Name	Shitike Creek
F.	Major Basin Name	Deschutes
G.	River Mile	12.0 to 25.2



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

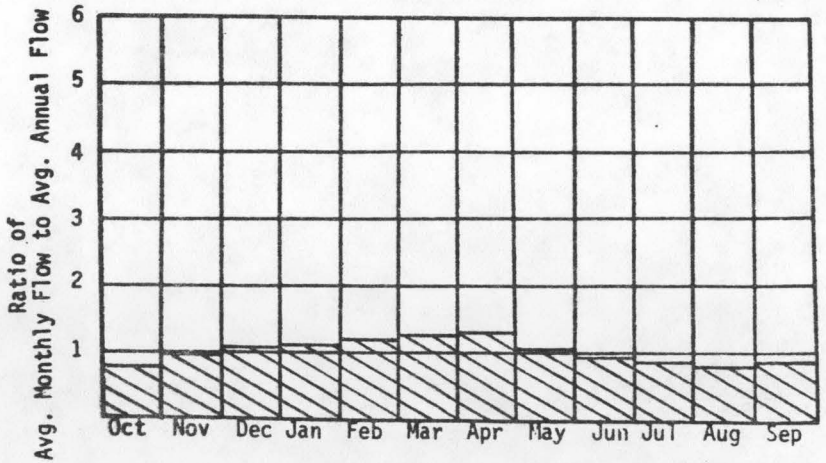
A.	Upstream Elevation of Reach	3676	Ft. MSL
B.	Downstream Elevation of Reach	2319	Ft. MSL
C.	Total Available Head in Reach	1357	Ft.
D.	Average Slope in Reach	102.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	48	Sq.Mi.
F.	Inflow Classification	Natural	

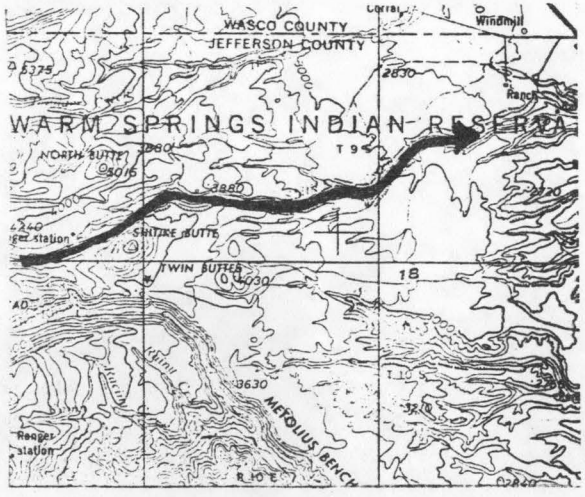
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	21.5	2.47	21.64	1.000
80	27.4	3.15	26.86	.973
50	44.2	5.08	37.83	.850
30	72.4	8.33	49.21	.675
10	143.4	16.49	63.52	.440

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 74 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-1S0-023-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.31, T9S, R8E
D.	Latitude, Longitude	44°45'N, 121°44'W
E.	Stream Name	Shitike Creek
F.	Major Basin Name	Deschutes
G.	River Mile	25.2 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

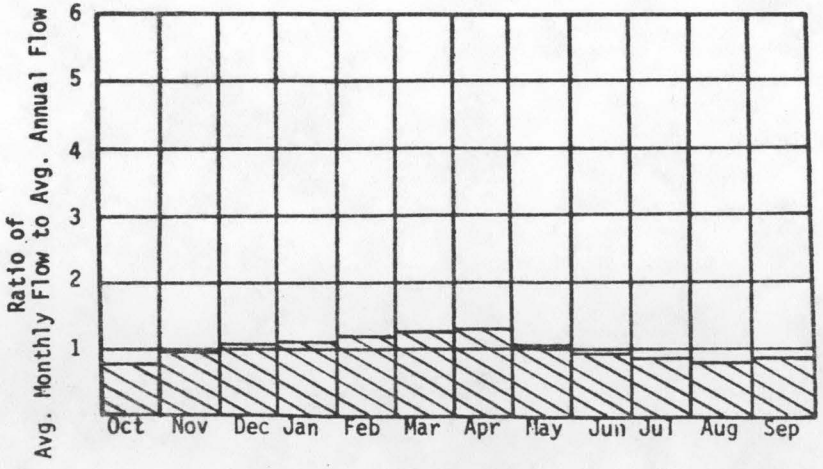
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	19	Sq.Mi.
F.	Inflow Classification	Natural	

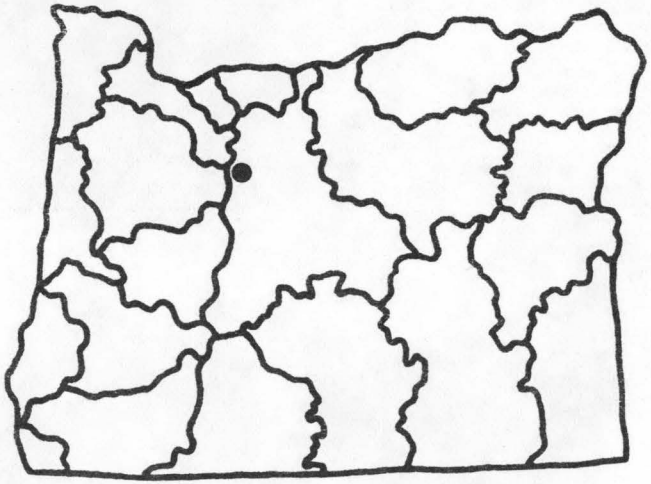
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	17.0	.10	.83	1.000
80	21.7	.12	1.03	.973
50	34.9	.20	1.45	.851
30	57.3	.32	1.89	.675
10	115.7	.65	2.47	.435

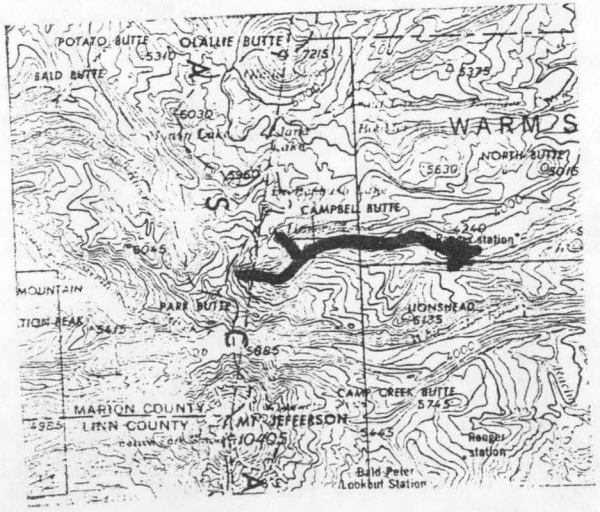
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 58 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

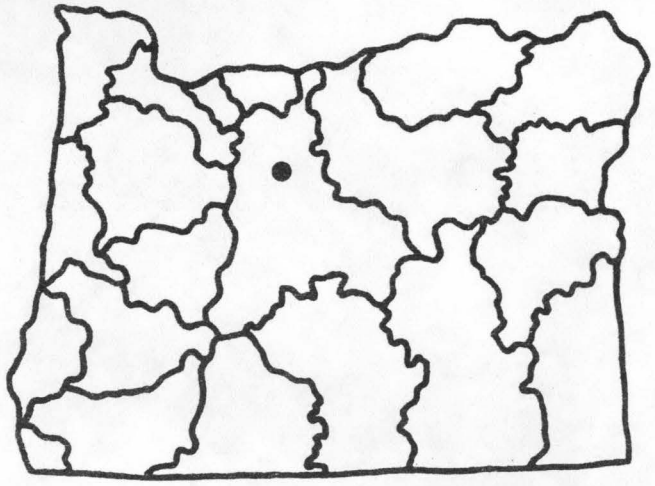


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0017

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.31, T9S, R13E
D.	Latitude, Longitude	44°45'N, 121°14'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	96.8 to 100.0



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

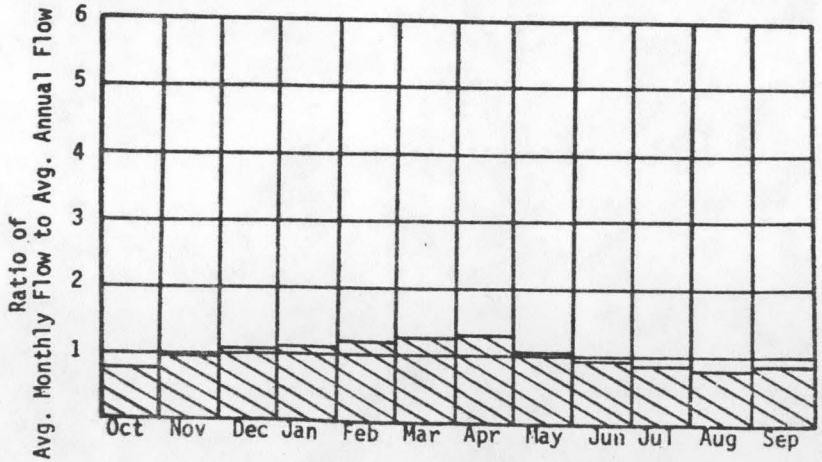
A.	Upstream Elevation of Reach	1393	Ft. MSL
B.	Downstream Elevation of Reach	1360	Ft. MSL
C.	Total Available Head in Reach	33	Ft.
D.	Average Slope in Reach	10.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	5752.3	Sq.Mi.
F.	Inflow Classification	Regulated	

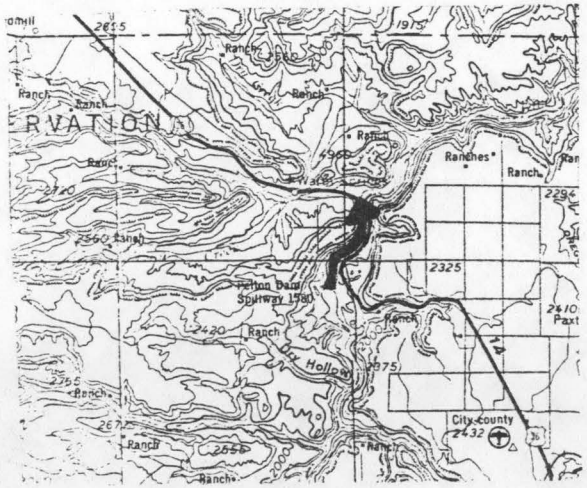
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3304.2	9.24	80.95	1.000
80	3816.0	10.67	91.92	.983
50	4166.1	11.65	97.49	.955
30	4570.6	12.78	101.46	.906
10	5675.4	15.87	106.87	.769

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 4252 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.2, T11S, R10E
D.	Latitude, Longitude	44°38'N, 121°30'W
E.	Stream Name	Metolius River
F.	Major Basin Name	Deschutes
G.	River Mile	12.0 to 18.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

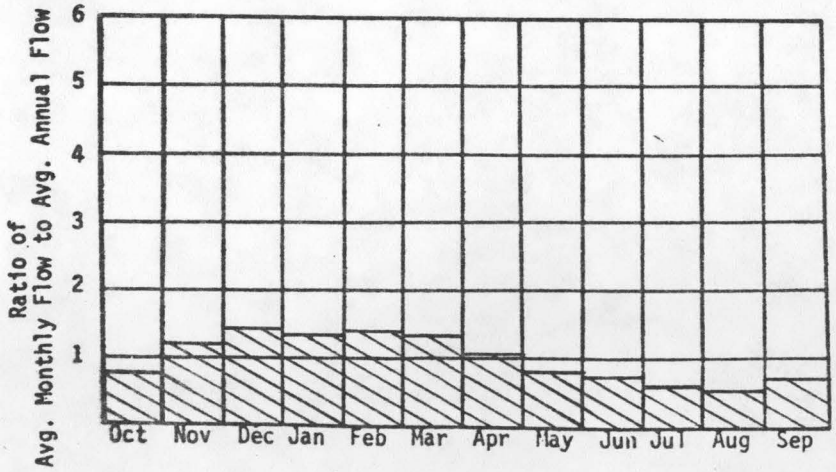
A.	Upstream Elevation of Reach	2205	Ft. MSL
B.	Downstream Elevation of Reach	1922	Ft. MSL
C.	Total Available Head in Reach	283	Ft.
D.	Average Slope in Reach	44.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	322	Sq.Mi.
F.	Inflow Classification	Natural	

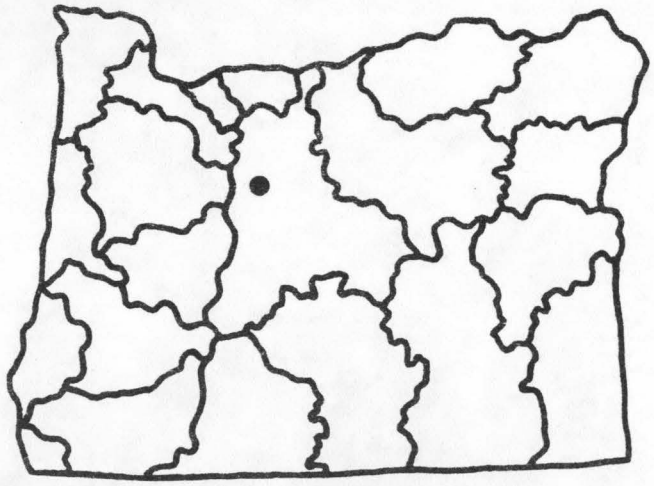
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	1158.8	27.79	243.44	1.000
80	1270.9	30.48	264.05	.989
50	1459.6	35.00	289.82	.945
30	1553.6	37.26	297.72	.912
10	1763.0	42.28	306.52	.828

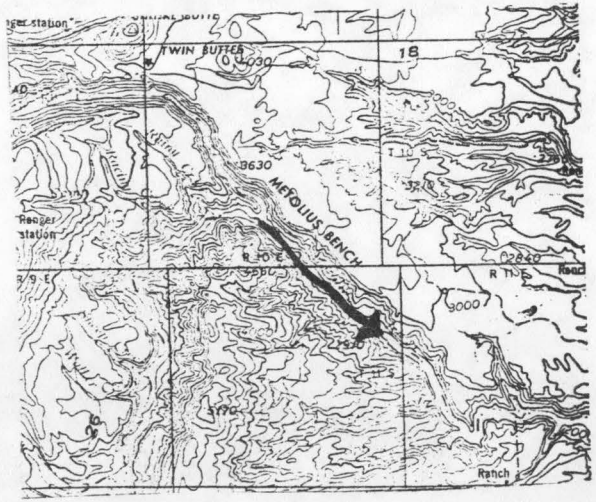
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1455 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

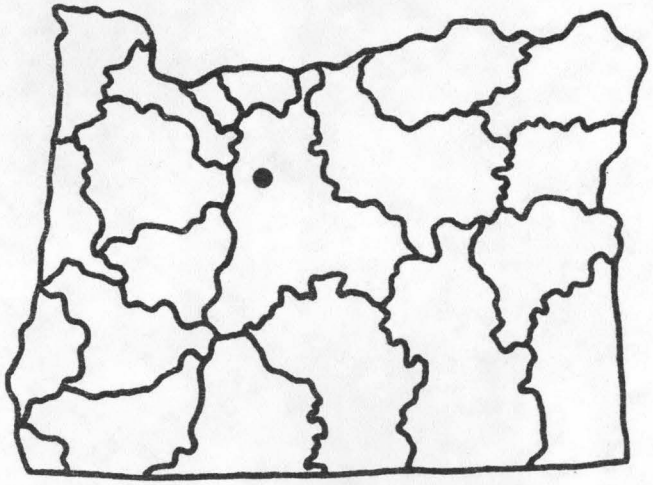


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-002-R0001

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.12, T10S, R9E
D.	Latitude, Longitude	44°43'N, 121°37'W
E.	Stream Name	Whitewater River
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 11.0



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

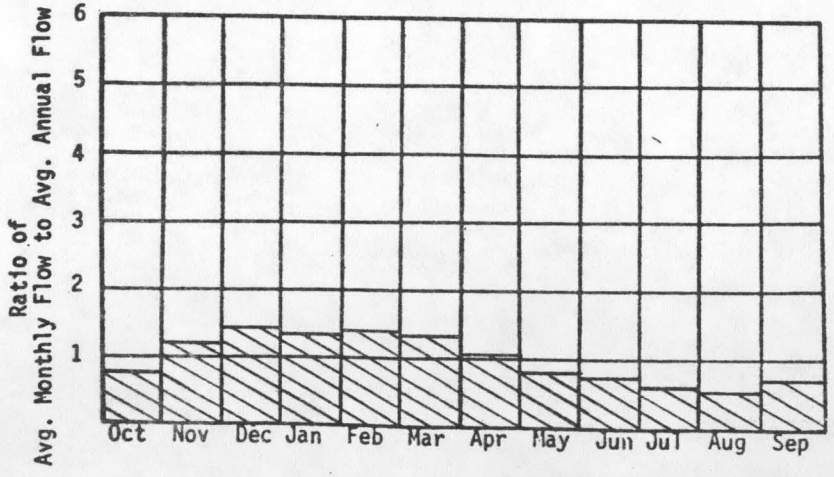
A.	Upstream Elevation of Reach	3720	Ft. MSL
B.	Downstream Elevation of Reach	2205	Ft. MSL
C.	Total Available Head in Reach	1515	Ft.
D.	Average Slope in Reach	137.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	33	Sq.Mi.
F.	Inflow Classification	Natural	

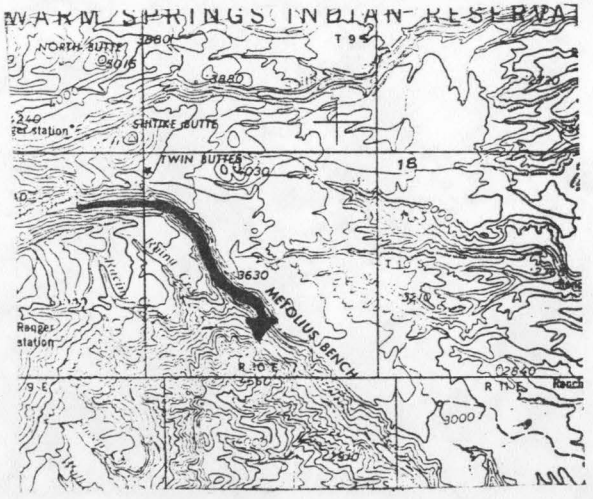
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	38.5	4.94	43.30	1.000
80	46.9	6.02	51.53	.978
50	63.4	8.14	63.60	.892
30	81.6	10.48	71.80	.782
10	122.8	15.77	81.07	.587

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 74 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-002-R0002

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	T10S, R8E
D.	Latitude, Longitude	44°43'N, 121°45'W
E.	Stream Name	Whitewater River
F.	Major Basin Name	Deschutes
G.	River Mile	11.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

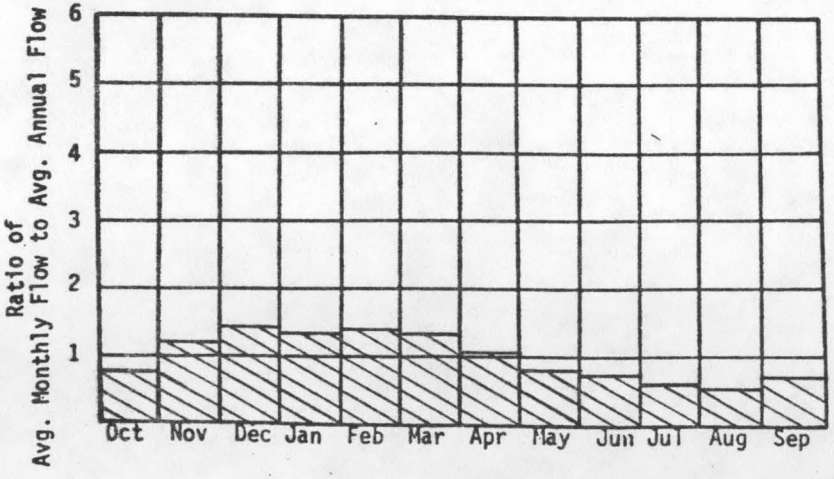
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	19	Sq.Mi.
F.	Inflow Classification	Natural	

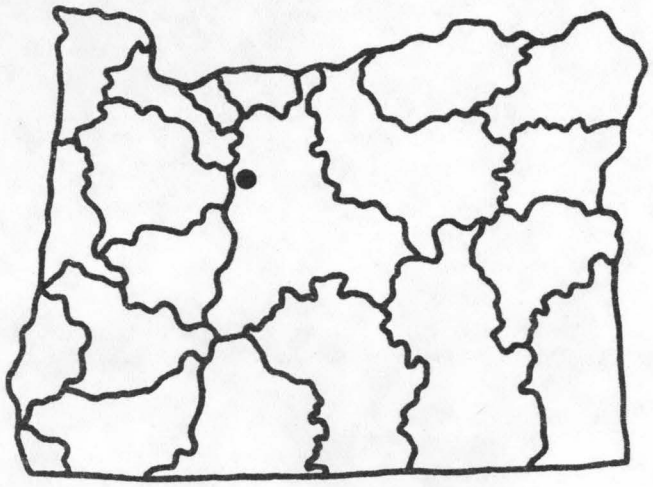
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWh	PLANT FACTOR
95	27.9	.16	1.37	1.000
80	34.3	.19	1.64	.977
50	47.2	.26	2.05	.888
30	61.8	.35	2.34	.772
10	95.6	.53	2.67	.570

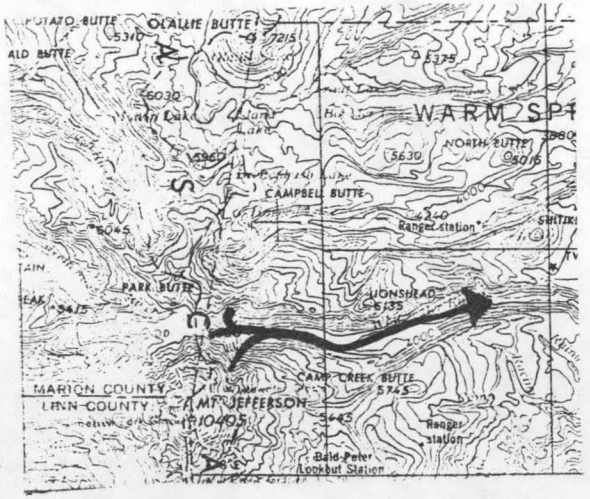
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 56 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.31, T10S, R10E
D.	Latitude, Longitude	44°39'N, 121°36'W
E.	Stream Name	Metolius River
F.	Major Basin Name	Deschutes
G.	River Mile	18.4 to 25.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

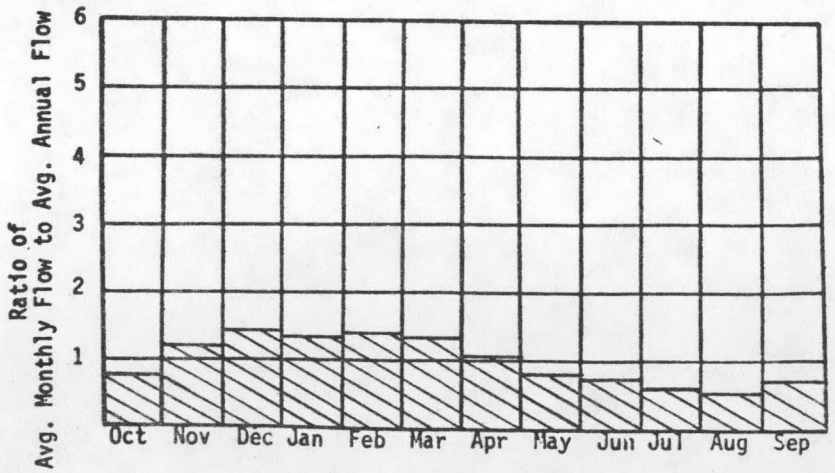
A.	Upstream Elevation of Reach	2439	Ft. MSL
B.	Downstream Elevation of Reach	2205	Ft. MSL
C.	Total Available Head in Reach	234	Ft.
D.	Average Slope in Reach	35.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	272	Sq.Mi.
F.	Inflow Classification	Natural	

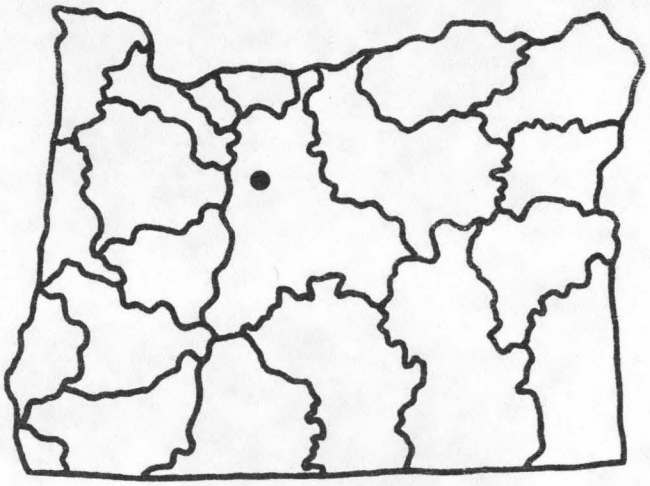
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	831.1	16.48	144.38	1.000
80	920.8	18.26	158.01	.988
50	1074.6	21.31	175.37	.939
30	1165.2	23.11	181.67	.898
10	1359.3	26.95	188.41	.798

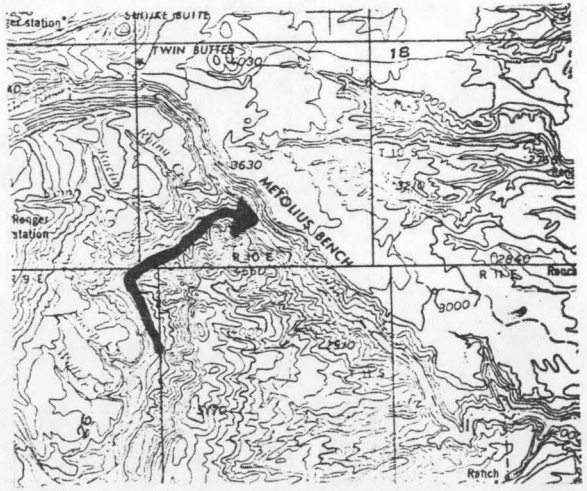
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1088 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

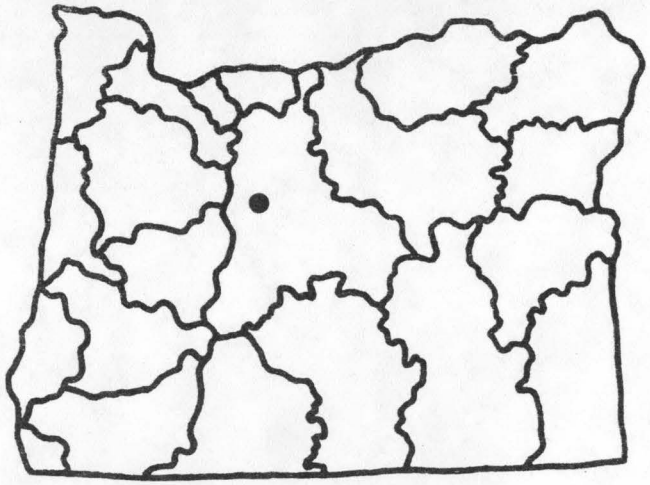


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.24, T11S, R9E
D.	Latitude, Longitude	44°36'N, 121°36'W
E.	Stream Name	Metolius River
F.	Major Basin Name	Deschutes
G.	River Mile	25.0 to 28.8



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

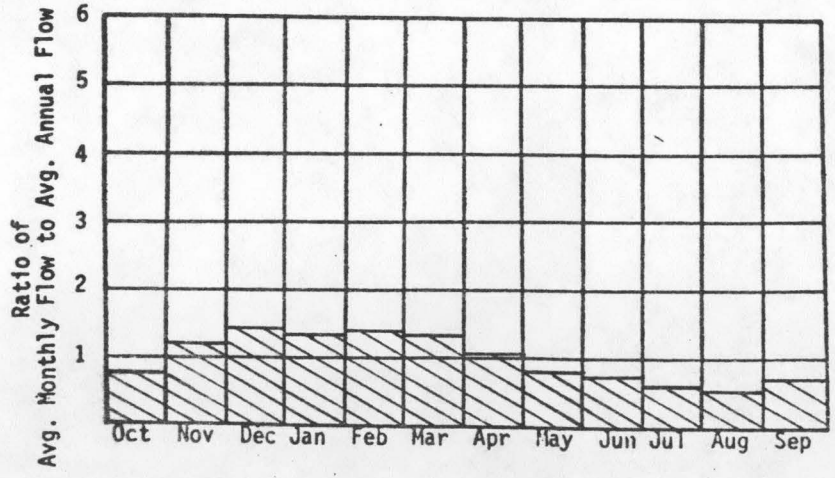
A.	Upstream Elevation of Reach	2592	Ft. MSL
B.	Downstream Elevation of Reach	2439	Ft. MSL
C.	Total Available Head in Reach	153	Ft.
D.	Average Slope in Reach	40.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	241	Sq.Mi.
F.	Inflow Classification	Natural	

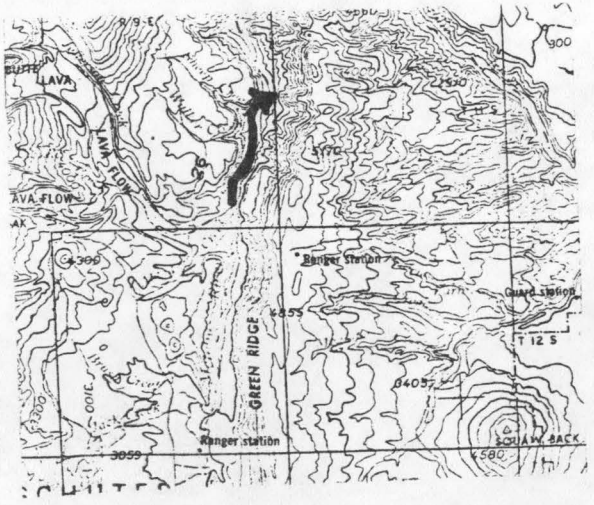
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	727.7	9.44	82.65	1.000
80	809.5	10.50	90.79	.987
50	950.7	12.33	101.21	.937
30	1038.6	13.47	105.21	.892
10	1225.0	15.88	109.44	.787

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 969 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-004-R0001

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	T11S, R9E
D.	Latitude, Longitude	44°34'N, 121°40'W
E.	Stream Name	Jefferson Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 5.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

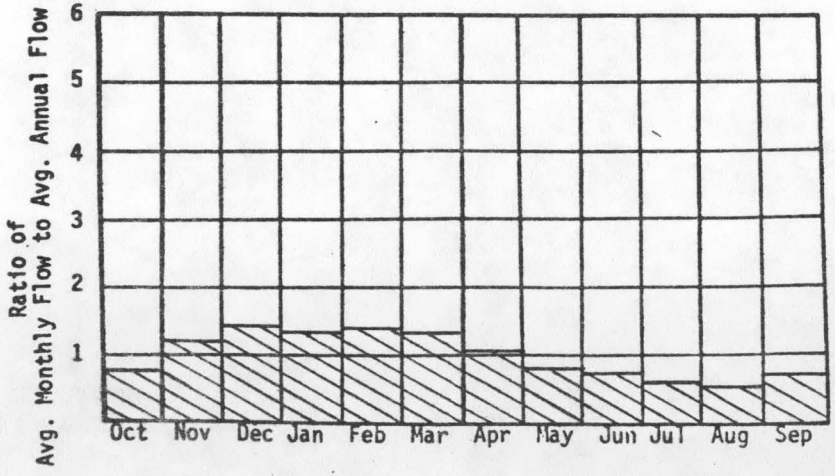
A.	Upstream Elevation of Reach	3440	Ft. MSL
B.	Downstream Elevation of Reach	2640	Ft. MSL
C.	Total Available Head in Reach	800	Ft.
D.	Average Slope in Reach	145.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	21	Sq.Mi.
F.	Inflow Classification	Natural	

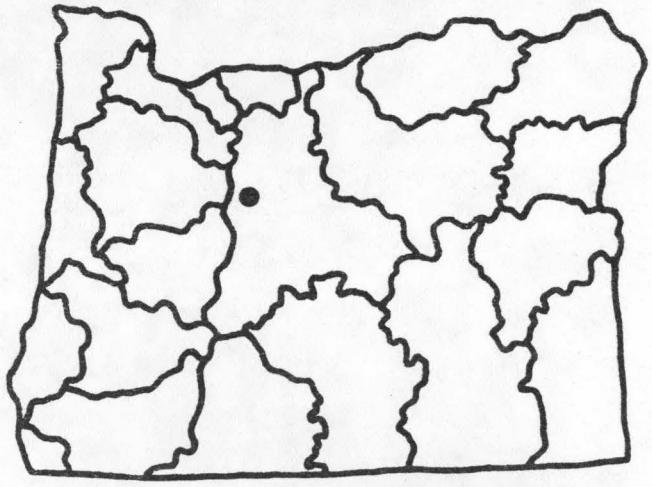
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	22.9	1.55	13.59	1.000
80	28.3	1.92	16.41	.976
50	39.2	2.66	20.63	.885
30	52.0	3.53	23.67	.766
10	81.8	5.54	27.20	.560

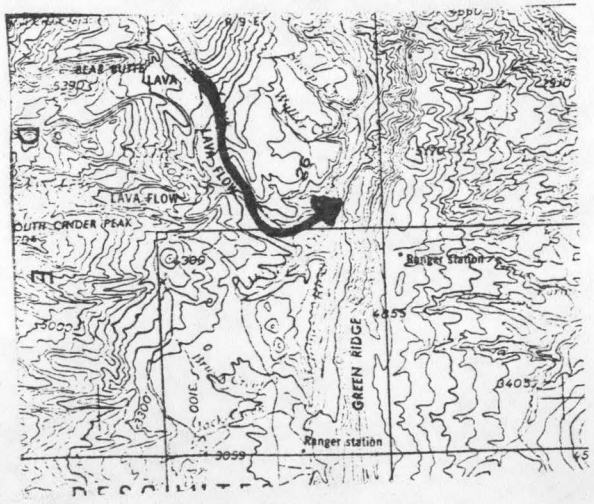
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 47 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-004-R0002

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	T11S. R8E
D.	Latitude, Longitude	44°38'N. 121°44'W
E.	Stream Name	Jefferson Creek
F.	Major Basin Name	Deschutes
G.	River Mile	5.5 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

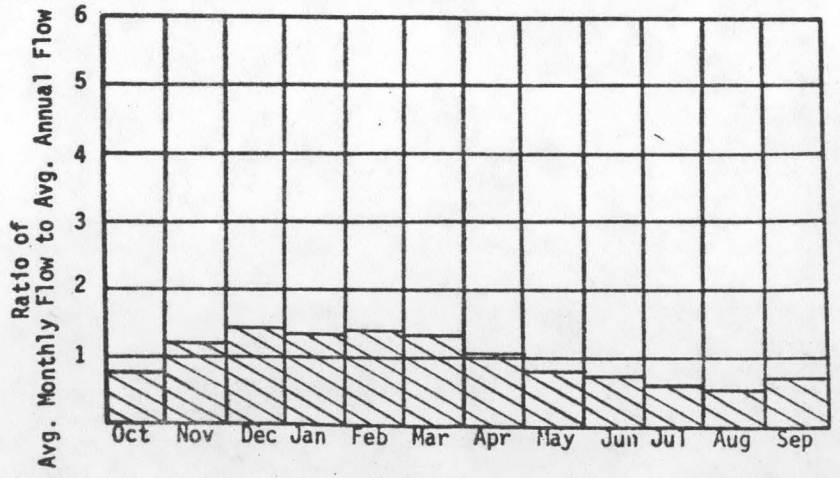
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	18	Sq.Mi.
F.	Inflow Classification	Natural	

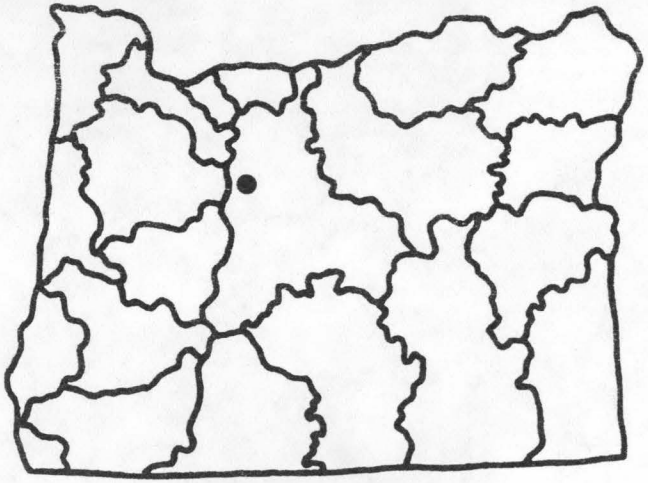
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	20.8	.12	1.02	1.000
80	25.8	.14	1.23	.976
50	35.9	.20	1.56	.884
30	47.9	.27	1.79	.763
10	75.8	.42	2.06	.555

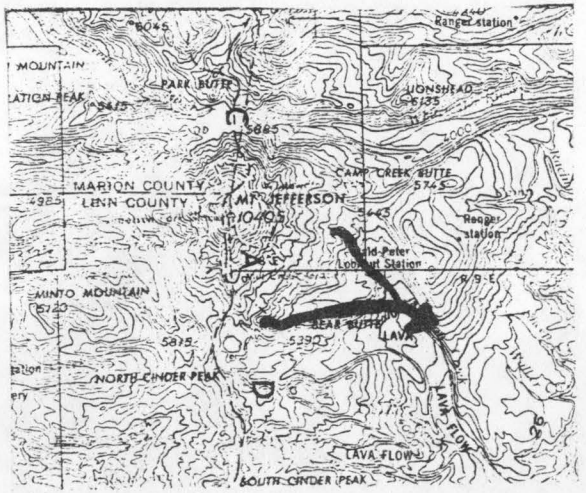
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 43 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

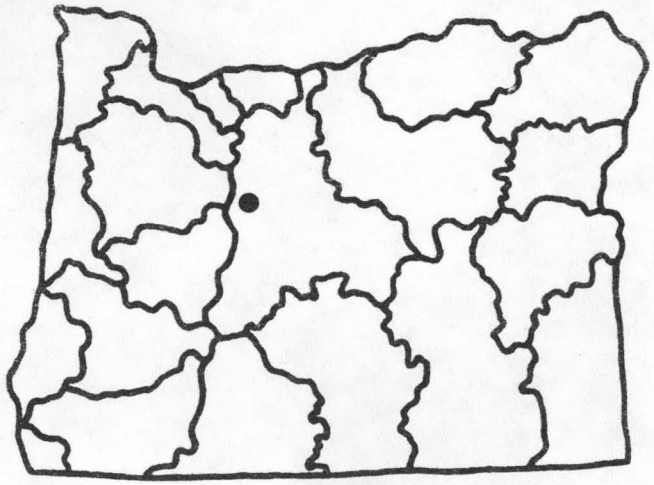


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.35, T11S, R9E
D.	Latitude, Longitude	44°35'N, 121°37'W
E.	Stream Name	Metolius River
F.	Major Basin Name	Deschutes
G.	River Mile	28.8 to 28.9



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2596	Ft. MSL
B.	Downstream Elevation of Reach	2592	Ft. MSL
C.	Total Available Head in Reach	4	Ft.
D.	Average Slope in Reach	40	Ft./Mi.
E.	Drainage Area above Reach Mouth	202	Sq.Mi.
F.	Inflow Classification	Natural	

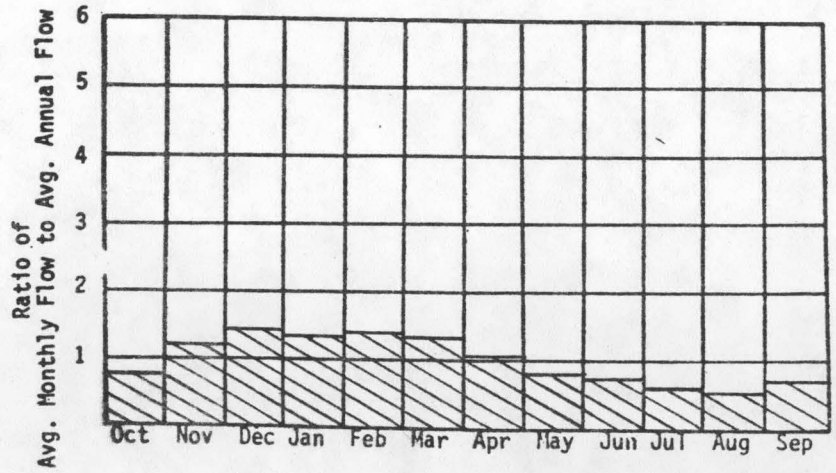
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

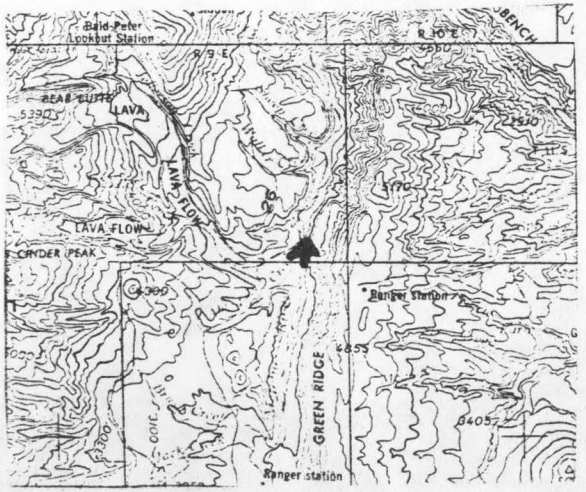
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	566.3	.19	1.68	1.000
80	634.9	.22	1.86	.987
50	754.7	.26	2.09	.933
30	836.1	.28	2.19	.881
10	1006.8	.34	2.29	.766

U.S.G.S TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 779 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-006-R0001

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.34, T11S, R9E
D.	Latitude, Longitude	44°34'N, 121°39'W
E.	Stream Name	Candle Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 4.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

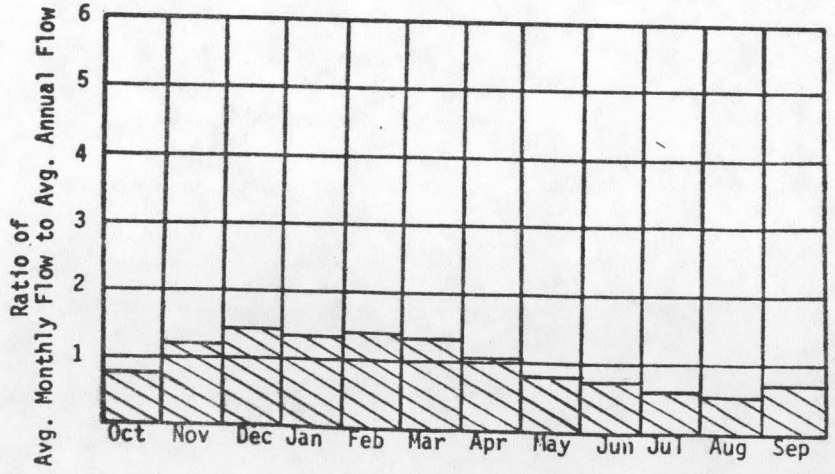
A.	Upstream Elevation of Reach	3120	Ft. MSL
B.	Downstream Elevation of Reach	2640	Ft. MSL
C.	Total Available Head in Reach	480	Ft.
D.	Average Slope in Reach	120	Ft./Mi.
E.	Drainage Area above Reach Mouth	25	Sq.Mi.
F.	Inflow Classification	Natural	

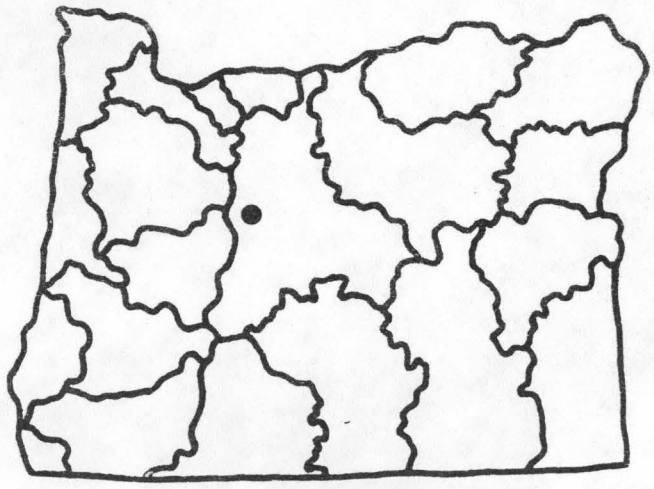
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	29.4	1.19	10.46	1.000
80	36.0	1.47	12.54	.977
50	49.4	2.01	15.63	.889
30	64.5	2.62	17.79	.774
10	99.3	4.04	20.27	.573

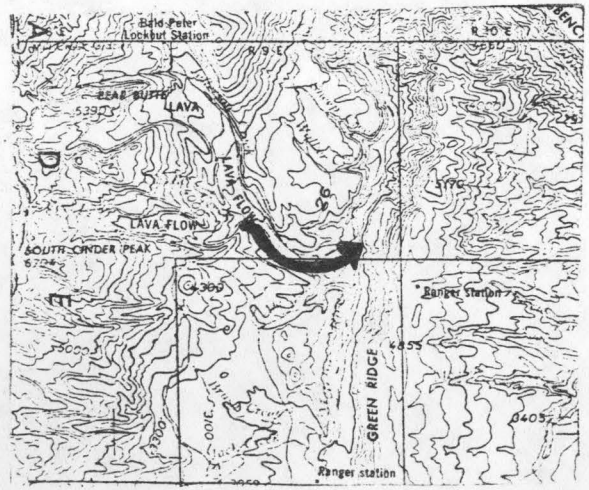
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 58 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-006-R0002

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	T11S, R8E
D.	Latitude, Longitude	44°31'N, 121°42'W
E.	Stream Name	Candle Creek
F.	Major Basin Name	Deschutes
G.	River Mile	4.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

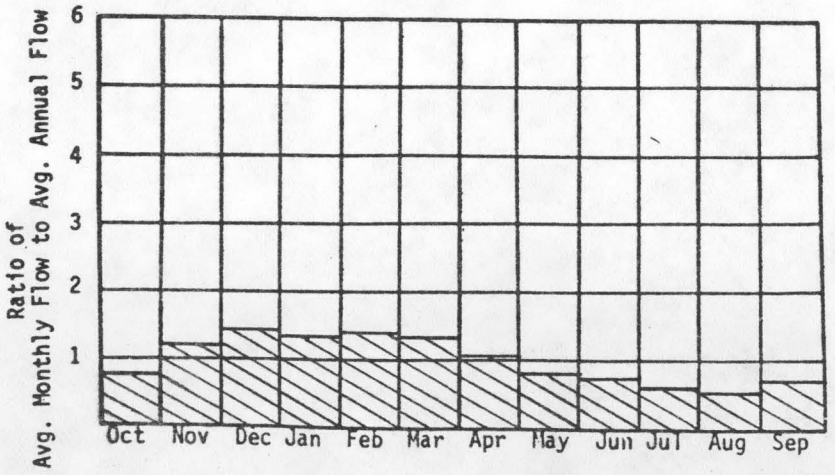
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	3120	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	23	Sq.Mi.
F.	Inflow Classification	Natural	

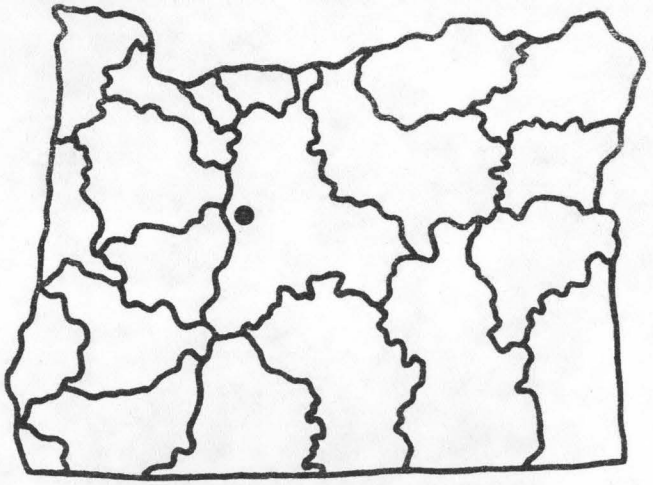
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	28.1	.16	1.37	1.000
80	34.5	.19	1.65	.977
50	47.3	.26	2.06	.888
30	62.0	.35	2.35	.772
10	95.9	.54	2.68	.570

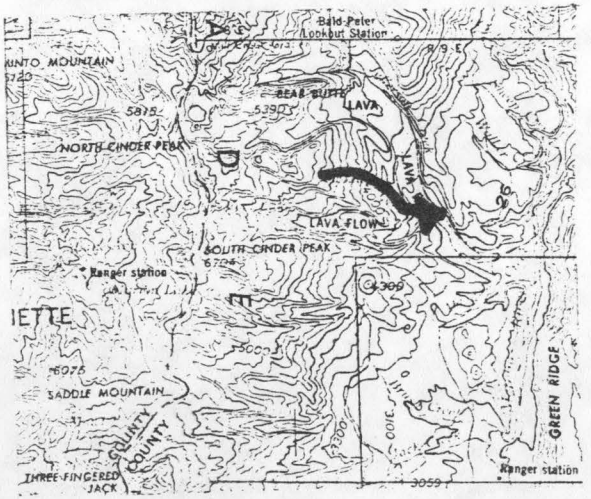
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 56 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.14, T12S, R9E
D.	Latitude, Longitude	44°32'N, 121°37'W
E.	Stream Name	Metolius River
F.	Major Basin Name	Deschutes
G.	River Mile	28.9 to 35.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

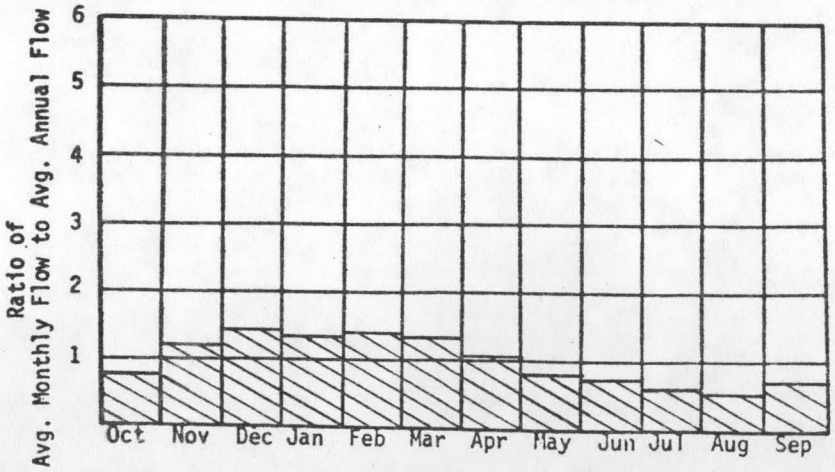
A.	Upstream Elevation of Reach	2843	Ft. MSL
B.	Downstream Elevation of Reach	2596	Ft. MSL
C.	Total Available Head in Reach	247	Ft.
D.	Average Slope in Reach	35.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	177	Sq.Mi.
F.	Inflow Classification	Natural	

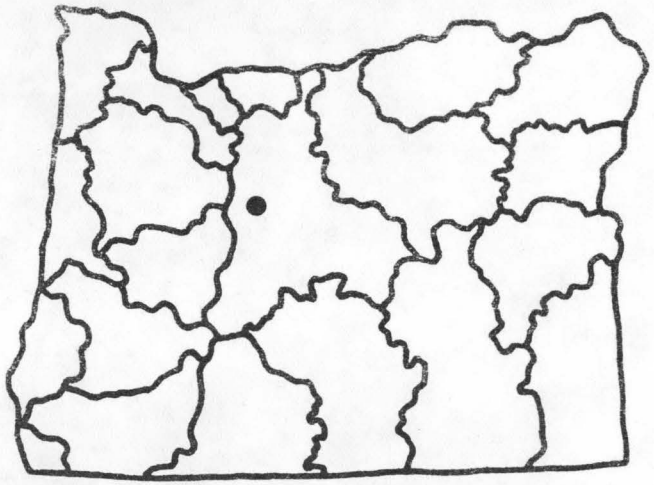
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	400.6	8.39	73.47	1.000
80	453.9	9.50	82.01	.985
50	548.6	11.48	93.30	.927
30	619.6	12.97	98.51	.867
10	767.9	16.07	103.94	.738

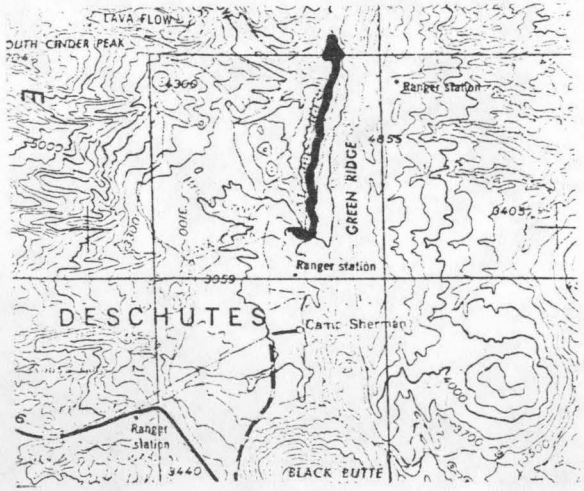
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 576 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-008-R0001

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	T12S, R8E
D.	Latitude, Longitude	44°30'N, 121°45'W
E.	Stream Name	Canyon Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

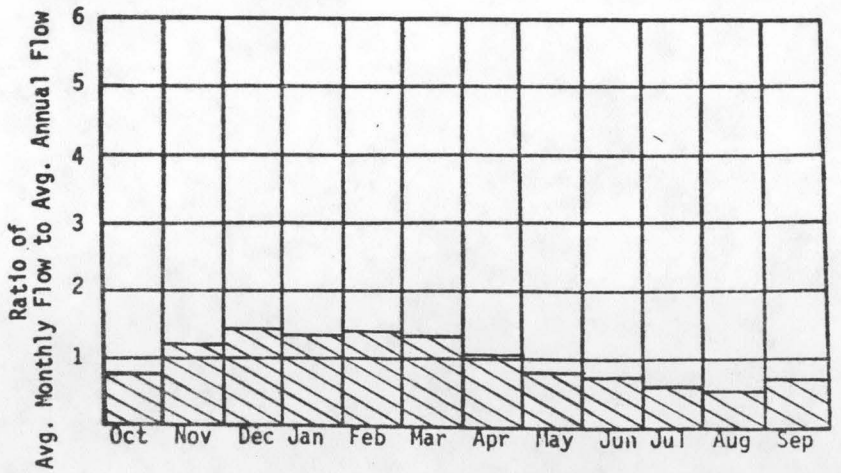
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	30	Sq.Mi.
F.	Inflow Classification	Natural	

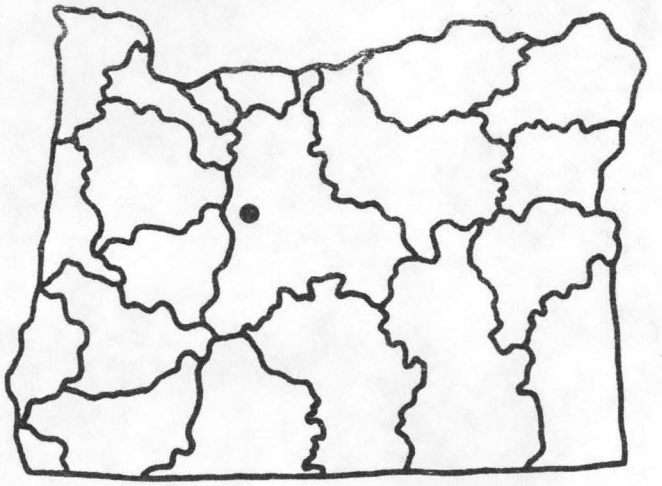
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	36.0	.20	1.77	1.000
80	43.9	.25	2.10	.978
50	59.6	.33	2.60	.891
30	77.0	.43	2.94	.780
10	116.6	.65	3.33	.583

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 70 CFS





U.S.G.S. TOPO. SERIES
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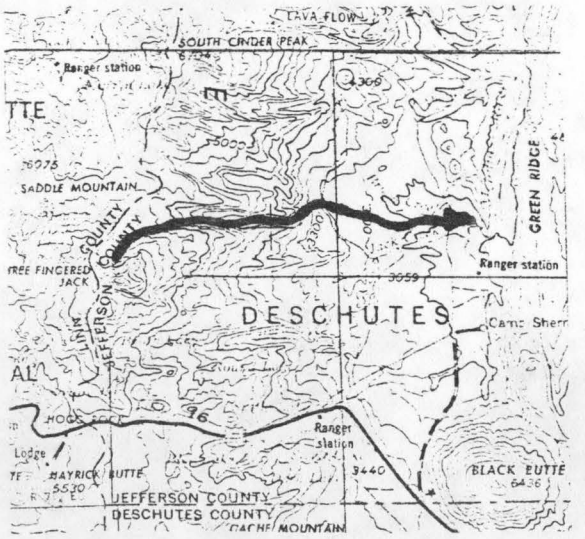
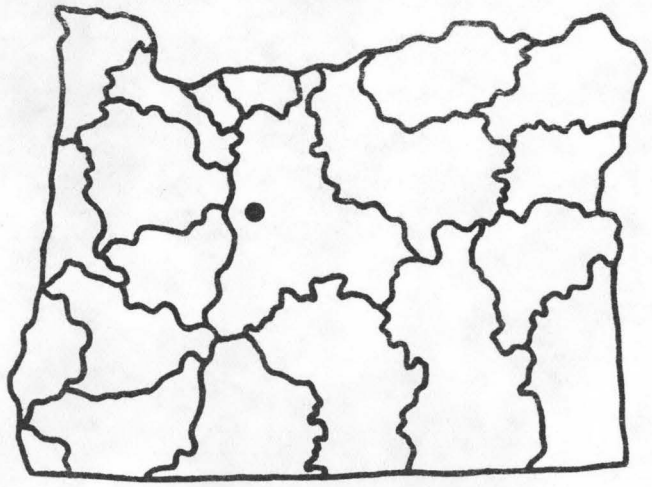


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.34, T12S, R9E
D.	Latitude, Longitude	44°29'N, 121°38'W
E.	Stream Name	Metolius River
F.	Major Basin Name	Deschutes
G.	River Mile	35.8 to 37.2



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2885	Ft. MSL
B.	Downstream Elevation of Reach	2843	Ft. MSL
C.	Total Available Head in Reach	42	Ft.
D.	Average Slope in Reach	30	Ft./Mi.
E.	Drainage Area above Reach Mouth	125	Sq.Mi.
F.	Inflow Classification	Natural	

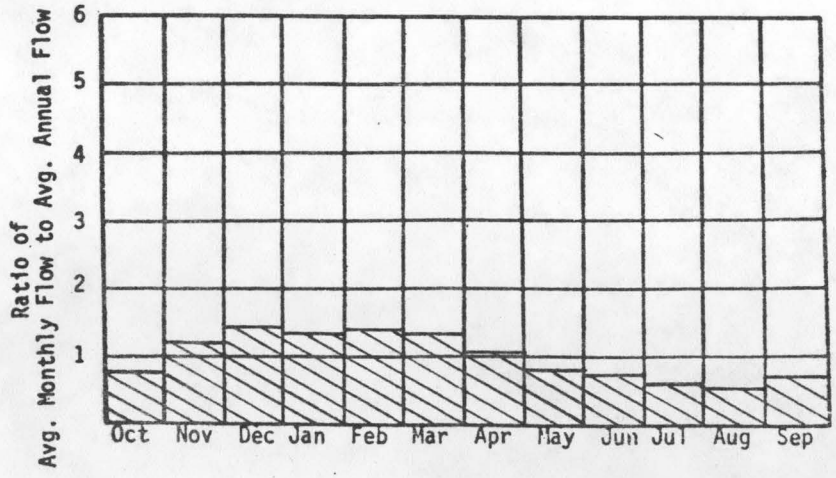
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

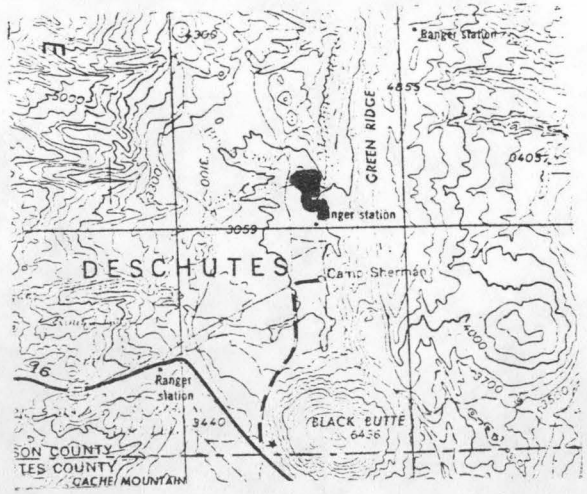
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	210.1	.75	6.55	1.000
80	242.8	.86	7.44	.983
50	302.7	1.08	8.66	.917
30	354.4	1.26	9.30	.842
10	463.4	1.65	9.98	.691

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 328 CFS



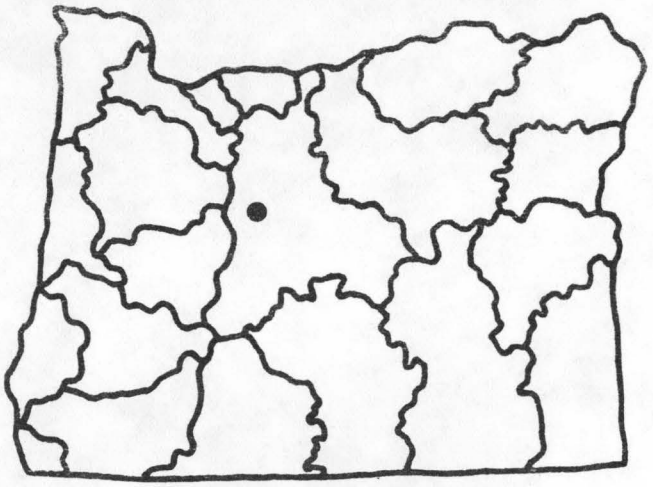


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.3, T13S, R9E
D.	Latitude, Longitude	44°28'N, 121°38'W
E.	Stream Name	Metolius River
F.	Major Basin Name	Deschutes
G.	River Mile	37.2 to 39.4



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

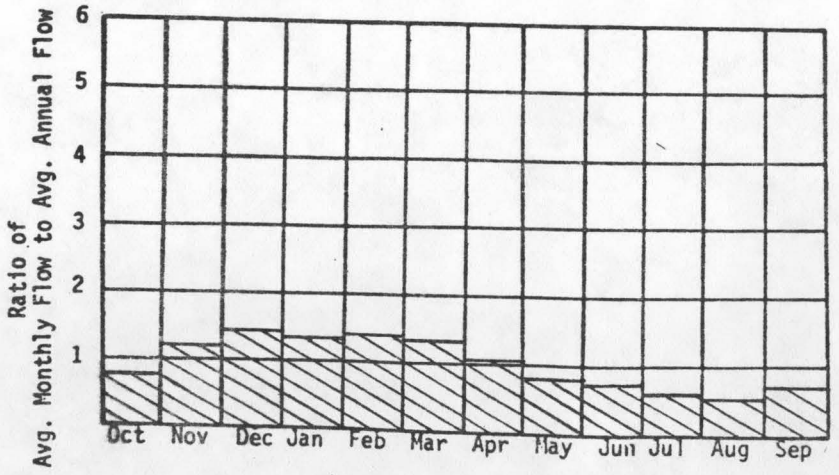
A.	Upstream Elevation of Reach	2940	Ft. MSL
B.	Downstream Elevation of Reach	2885	Ft. MSL
C.	Total Available Head in Reach	55	Ft.
D.	Average Slope in Reach	25	Ft./Mi.
E.	Drainage Area above Reach Mouth	107	Sq.Mi.
F.	Inflow Classification	Natural	

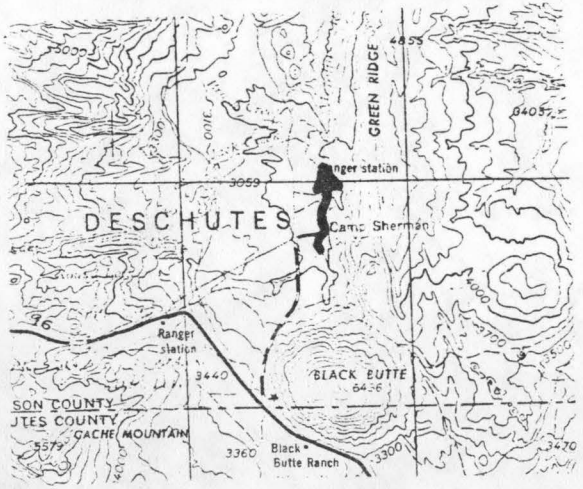
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	139.3	.65	5.69	1.000
80	163.0	.76	6.53	.982
50	207.3	.97	7.71	.911
30	248.3	1.16	8.38	.826
10	336.0	1.57	9.10	.663

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 228 CFS



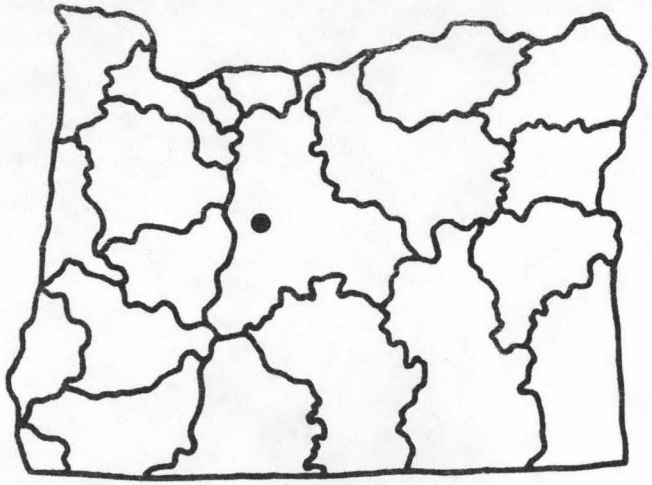


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-010-R0001

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.15, T13S, R9E
D.	Latitude, Longitude	44°26'N, 121°39'W
E.	Stream Name	Lake Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 1.5



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

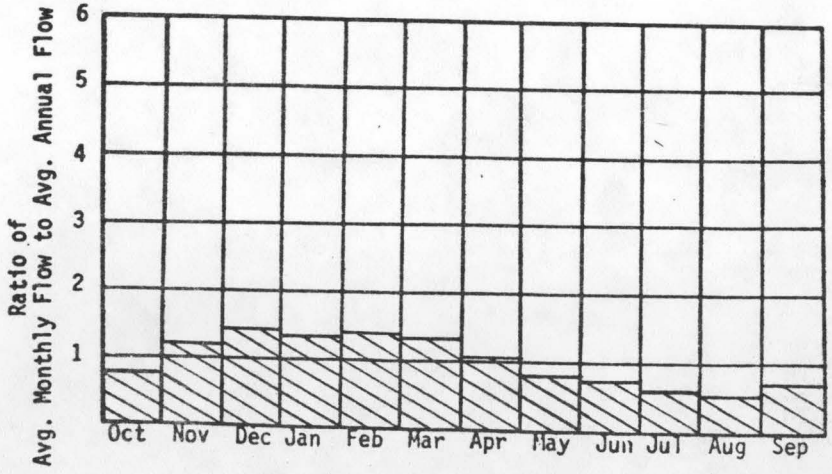
A.	Upstream Elevation of Reach	2973	Ft. MSL
B.	Downstream Elevation of Reach	2919	Ft. MSL
C.	Total Available Head in Reach	54	Ft.
D.	Average Slope in Reach	36	Ft./Mi.
E.	Drainage Area above Reach Mouth	74	Sq.Mi.
F.	Inflow Classification	Natural	

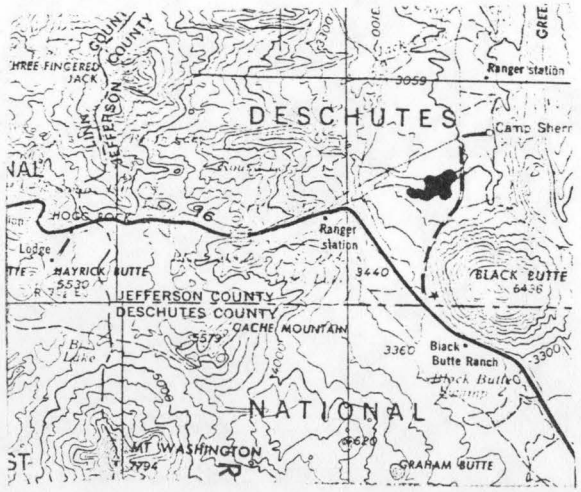
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	96.4	.44	3.86	1.000
80	114.0	.52	4.48	.981
50	147.6	.68	5.36	.905
30	180.5	.83	5.88	.813
10	251.8	1.15	6.46	.640

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 166 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-010-R0002

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.28, T13S, R8E
D.	Latitude, Longitude	44°25'N, 121°40'W
E.	Stream Name	Cache Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 4.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

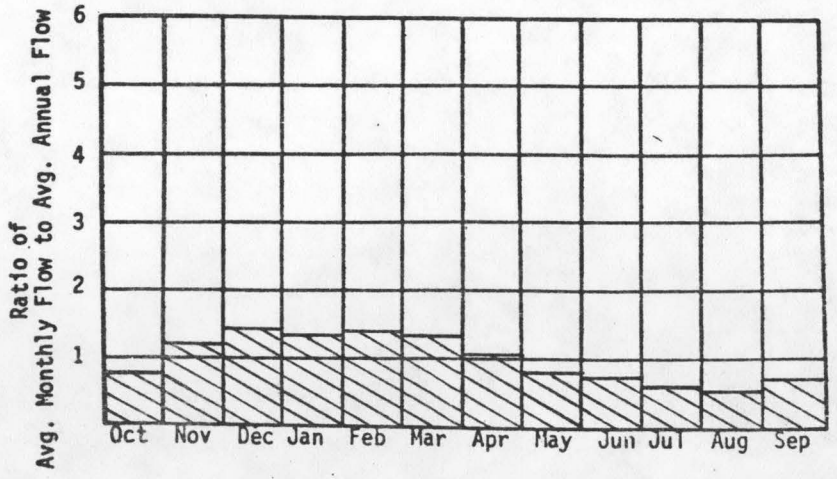
A.	Upstream Elevation of Reach	3335	Ft. MSL
B.	Downstream Elevation of Reach	3020	Ft. MSL
C.	Total Available Head in Reach	115	Ft.
D.	Average Slope in Reach	28.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	46	Sq.Mi.
F.	Inflow Classification	Natural	

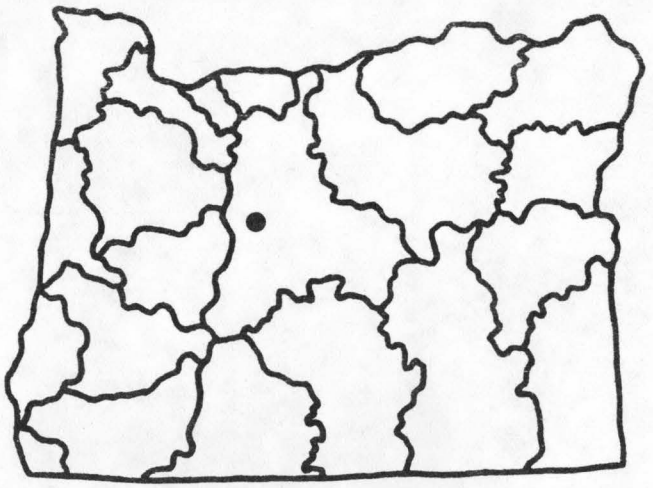
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	36.0	.35	3.07	1.000
80	43.9	.43	3.66	.977
50	59.6	.58	4.53	.891
30	77.0	.75	5.13	.780
10	116.5	1.14	5.80	.583

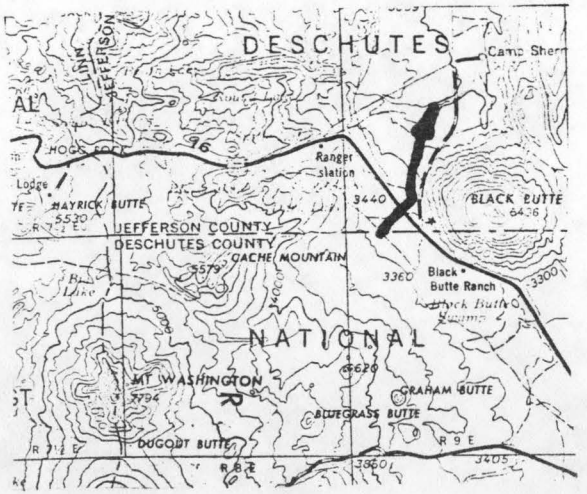
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 70 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-010-R0003

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.11, T14S, R8E
D.	Latitude, Longitude	44°24'N, 121°42'W
E.	Stream Name	Cache Creek
F.	Major Basin Name	Deschutes
G.	River Mile	4.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

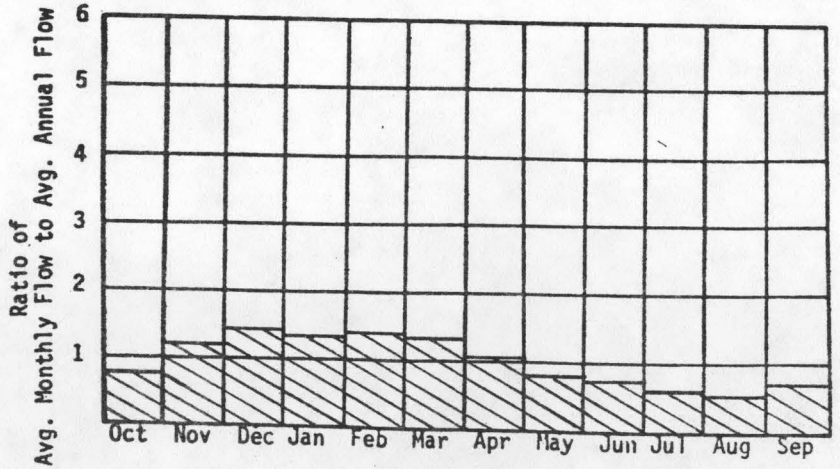
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	37	Sq.Mi.
F.	Inflow Classification	Natural	

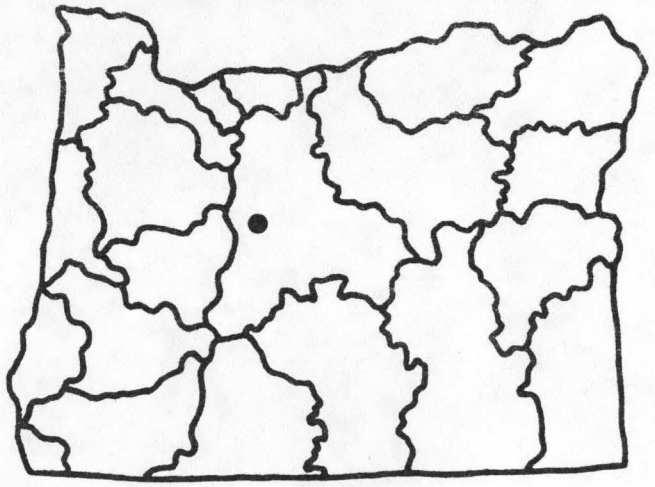
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	31.5	.18	1.55	1.000
80	38.6	.22	1.85	.977
50	52.8	.30	2.30	.890
30	68.7	.38	2.61	.776
10	105.1	.59	2.97	.576

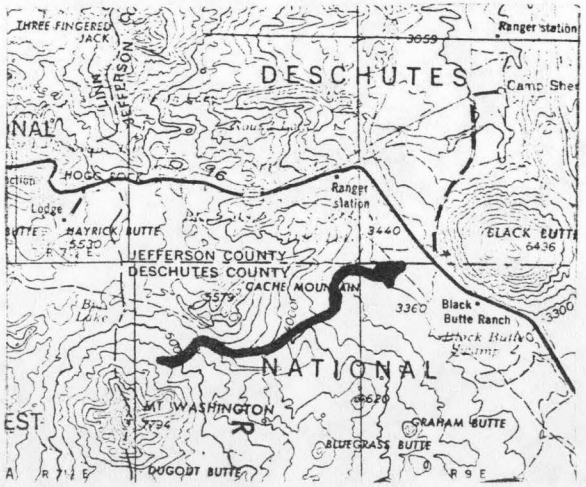
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 63 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # C2-500-180-025-010-R0004

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.18, T13S, R8E
D.	Latitude, Longitude	44°26'N, 121°43'W
E.	Stream Name	Lake Creek
F.	Major Basin Name	Deschutes
G.	River Mile	1.5 to 5.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

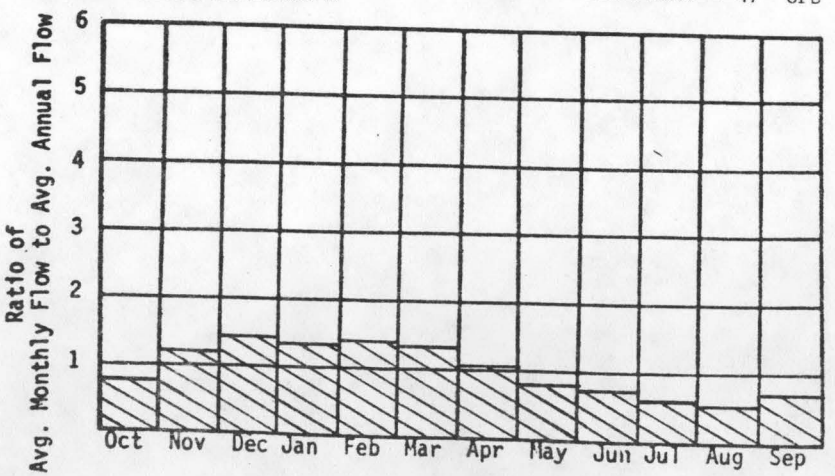
A.	Upstream Elevation of Reach	3256	Ft. MSL
B.	Downstream Elevation of Reach	2973	Ft. MSL
C.	Total Available Head in Reach	283	Ft.
D.	Average Slope in Reach	81	Ft./Mi.
E.	Drainage Area above Reach Mouth	27	Sq.Mi.
F.	Inflow Classification	Natural	

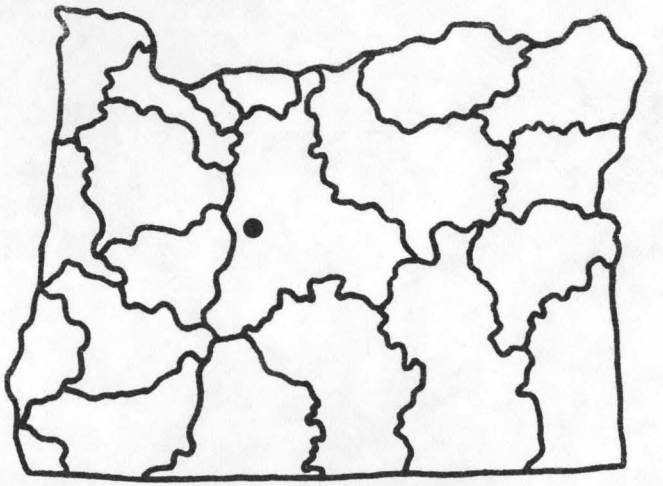
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	22.8	.55	4.79	1.000
80	28.2	.68	5.79	.976
50	39.1	.94	7.28	.885
30	51.9	1.24	8.35	.766
10	81.5	1.96	9.59	.560

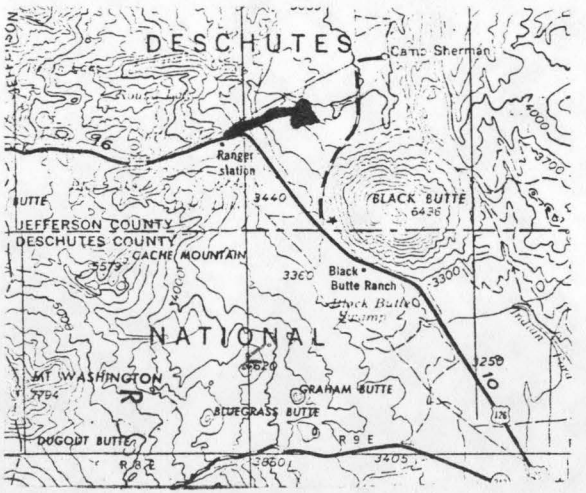
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 47 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

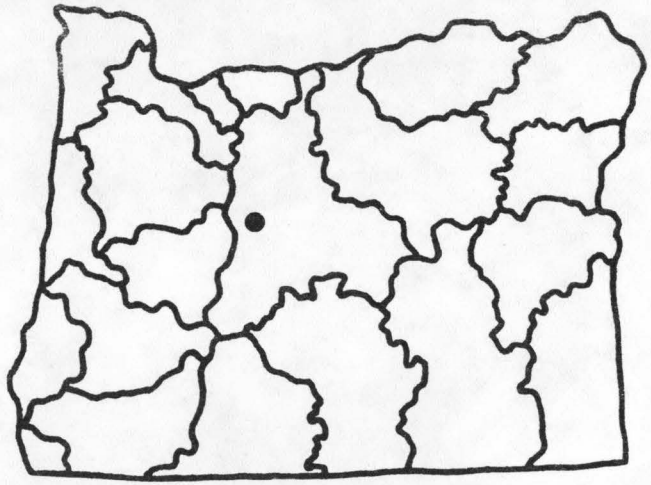


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-025-010-R0005

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.27, T13S, R8E
D.	Latitude, Longitude	44°24'N, 121°47'W
E.	Stream Name	Lake Creek
F.	Major Basin Name	Deschutes
G.	River Mile	5.0 to H.W.



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

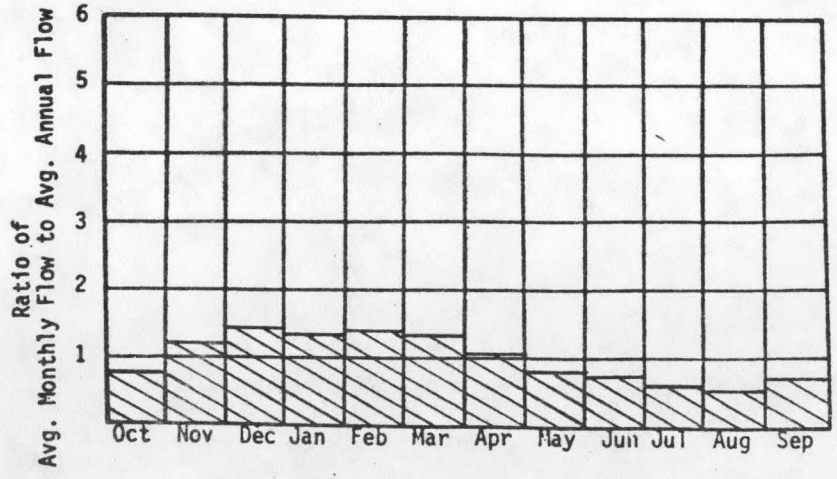
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	23	Sq.Mi.
F.	Inflow Classification	Natural	

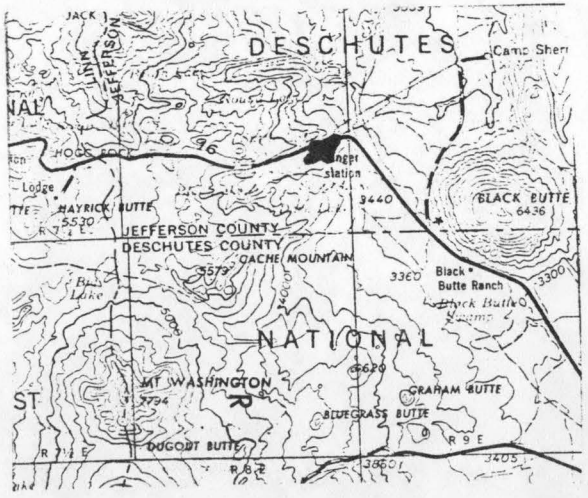
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	21.0	.12	1.03	1.000
80	26.1	.15	1.25	.976
50	36.3	.20	1.57	.884
30	48.3	.27	1.81	.763
10	76.5	.43	2.08	.556

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 44 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-000-R0011

I. LOCATION

A. State	Oregon	
B. County	Crook	
C. Township, Range	Sec.10, T17S, R21E	
D. Latitude, Longitude	44°07'N, 120°11'W	
E. Stream Name	Crooked River	
F. Major Basin Name	Deschutes	
G. River Mile	111.0 to 117.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

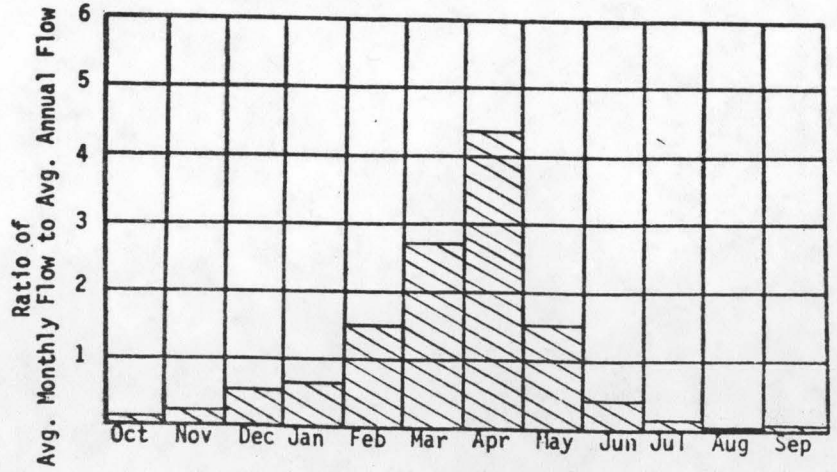
A. Upstream Elevation of Reach	3479	Ft. MSL
B. Downstream Elevation of Reach	3420	Ft. MSL
C. Total Available Head in Reach	59	Ft.
D. Average Slope in Reach	9.8	Ft./Mi.
E. Drainage Area above Reach Mouth	1261.2	Sq.Mi.
F. Inflow Classification	Natural	

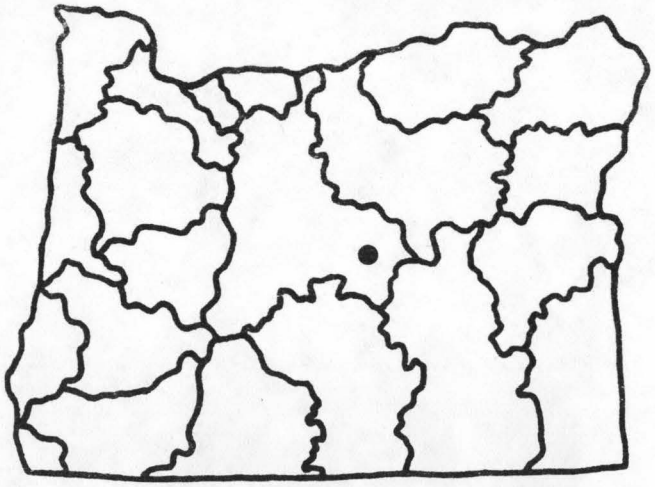
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	1.9	.01	.08	1.000
80	8.5	.04	.34	.902
50	48.7	.24	1.48	.694
30	151.0	.75	3.27	.495
10	566.5	2.83	6.91	.279

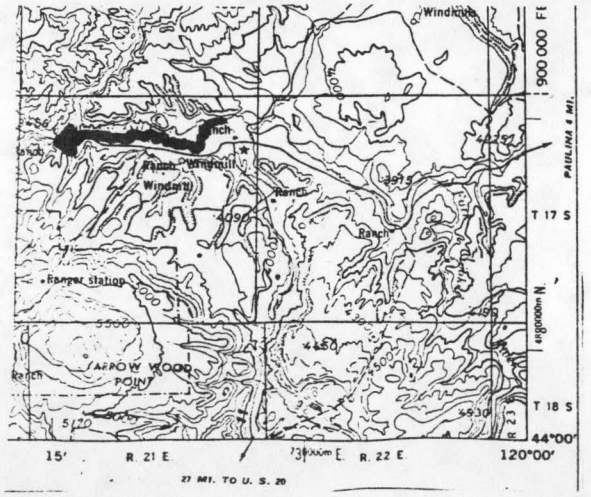
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 206 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.31, T13S, R13E
D.	Latitude, Longitude	44°23'N, 121°14'W
E.	Stream Name	Crooked River
F.	Major Basin Name	Deschutes
G.	River Mile	5.0 to 28.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

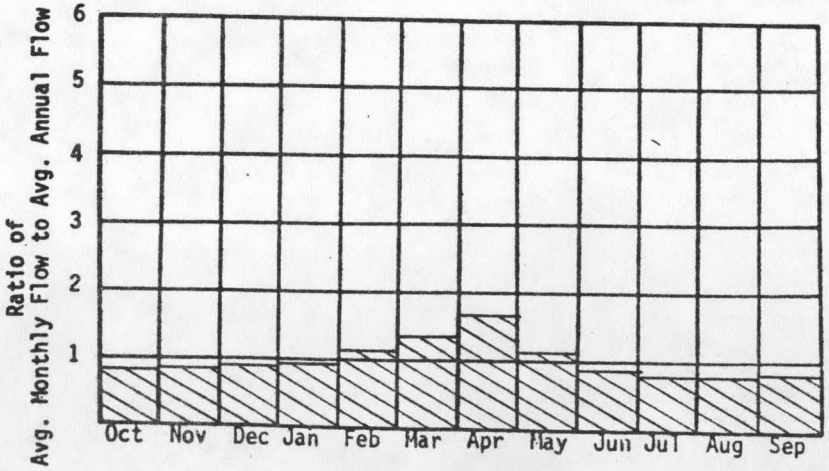
A.	Upstream Elevation of Reach	2747	Ft. MSL
B.	Downstream Elevation of Reach	1945	Ft. MSL
C.	Total Available Head in Reach	802	Ft.
D.	Average Slope in Reach	34.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	2860.1	Sq.Mi.
F.	Inflow Classification	Regulated	

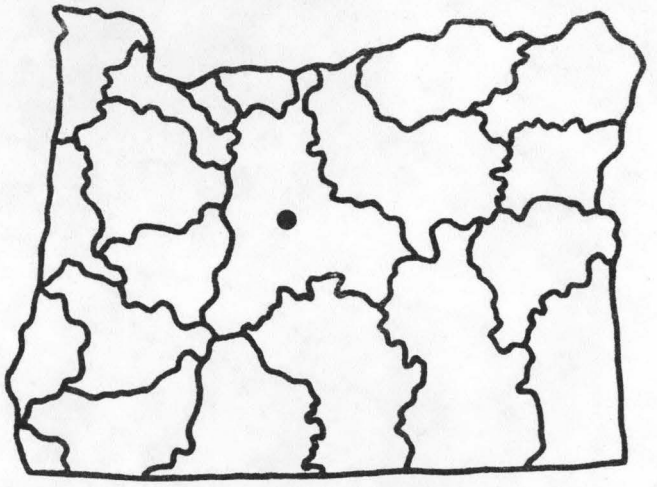
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.8	.33	2.86	1.000
80	32.7	2.22	17.41	.893
50	172.5	11.73	71.51	.696
30	338.0	22.97	110.92	.551
10	1172.5	79.69	210.29	.301

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 446 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
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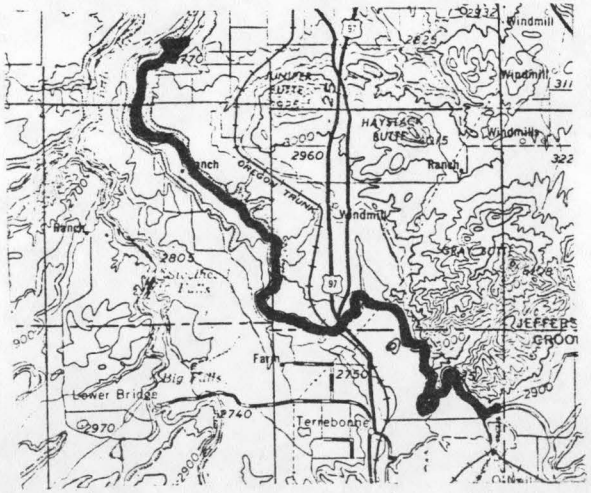


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Crook
C.	Township, Range	Sec.22, T14S, R14E
D.	Latitude, Longitude	44°20'N, 121°03'W
E.	Stream Name	Crooked River
F.	Major Basin Name	Deschutes
G.	River Mile	28.0 to 40.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

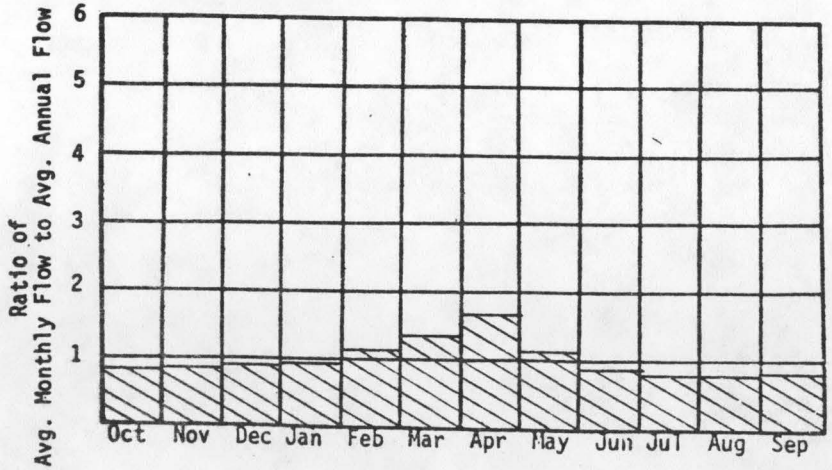
A.	Upstream Elevation of Reach	2804	Ft. MSL
B.	Downstream Elevation of Reach	2747	Ft. MSL
C.	Total Available Head in Reach	57	Ft.
D.	Average Slope in Reach	4.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	2827.3	Sq.Mi.
F.	Inflow Classification	Regulated	

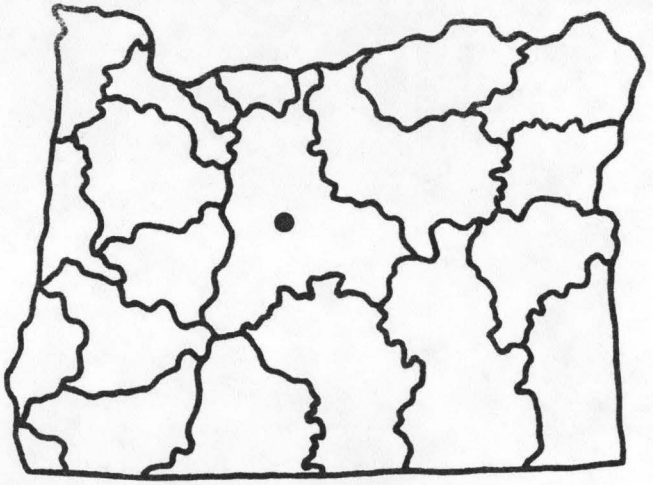
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.8	.02	.20	1.000
80	32.4	.16	1.23	.893
50	171.0	.83	5.04	.696
30	336.1	1.62	7.83	.551
10	1166.7	5.64	14.86	.301

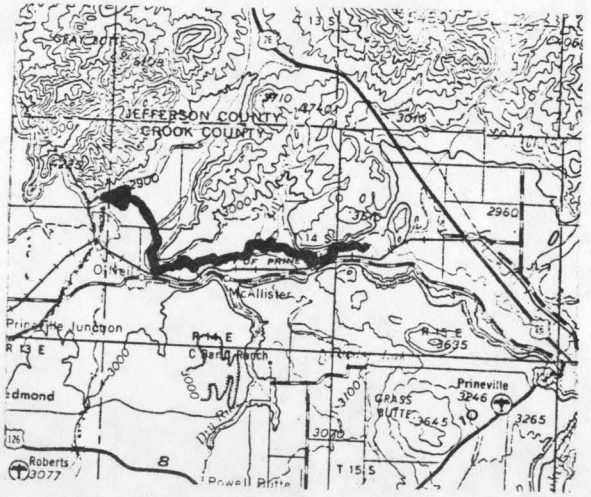
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 444 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

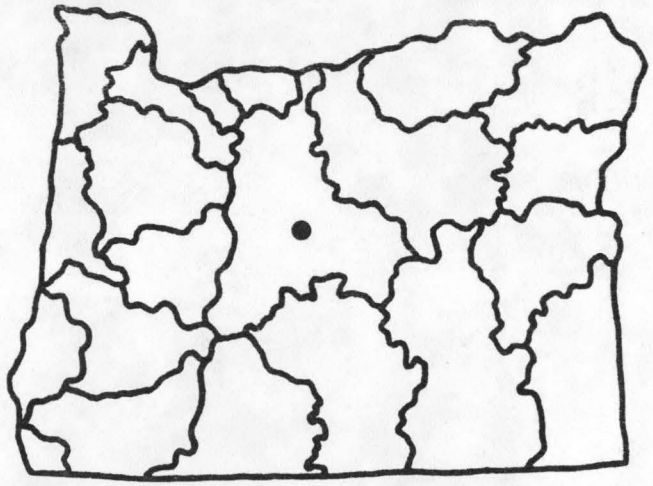


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Crook
C.	Township, Range	Sec.21, T14S, R15E
D.	Latitude, Longitude	44°20'N, 120°55'W
E.	Stream Name	Crooked River
F.	Major Basin Name	Deschutes
G.	River Mile	40.0 to 45.8



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2825	Ft. MSL
B.	Downstream Elevation of Reach	2804	Ft. MSL
C.	Total Available Head in Reach	21	Ft.
D.	Average Slope in Reach	3.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	2774.2	Sq.Mi.
F.	Inflow Classification	Regulated	

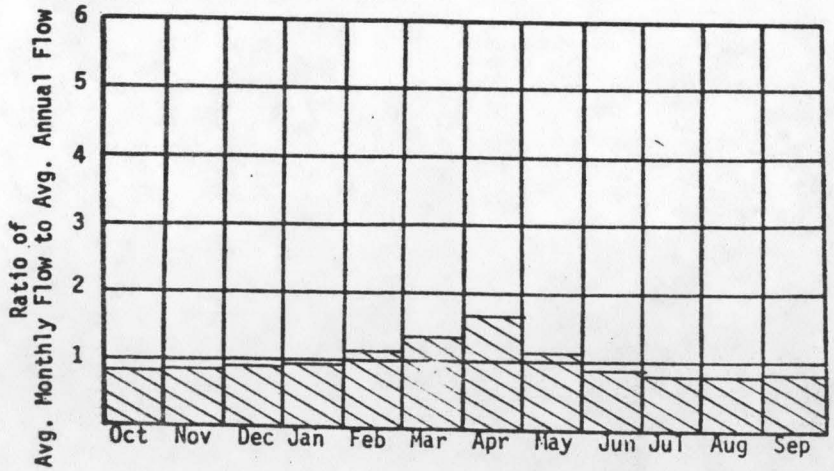
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

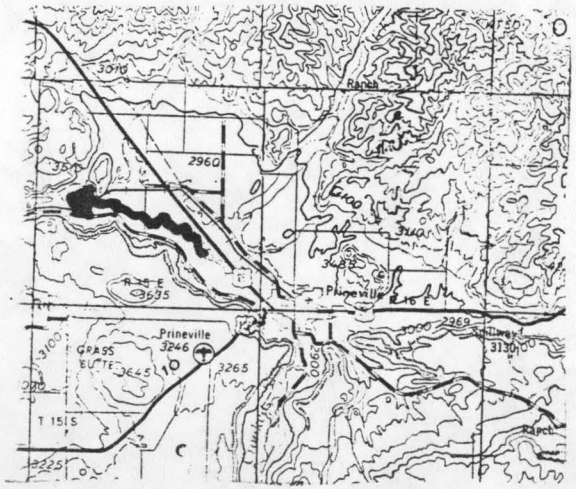
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.7	.01	.07	1.000
80	31.3	.06	.44	.894
50	165.5	.29	1.80	.696
30	329.2	.59	2.82	.549
10	1144.9	2.04	5.36	.300

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW= 434 CFS



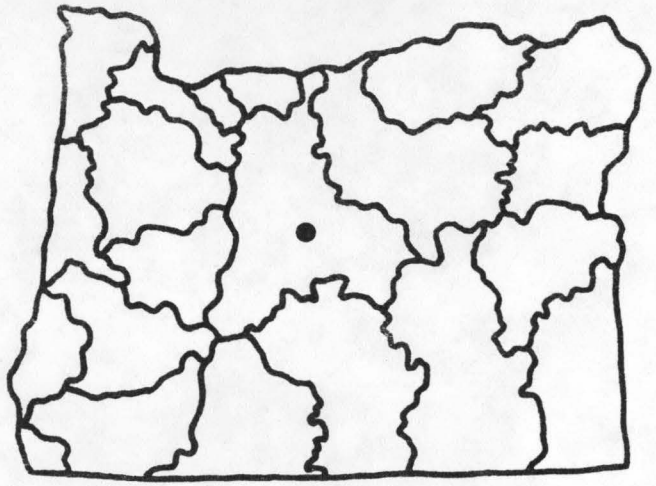


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Crook
C.	Township, Range	Sec.7, T15S, R16E
D.	Latitude, Longitude	44°17'N, 120°50'W
E.	Stream Name	Crooked River
F.	Major Basin Name	Deschutes
G.	River Mile	45.8 to 55.0



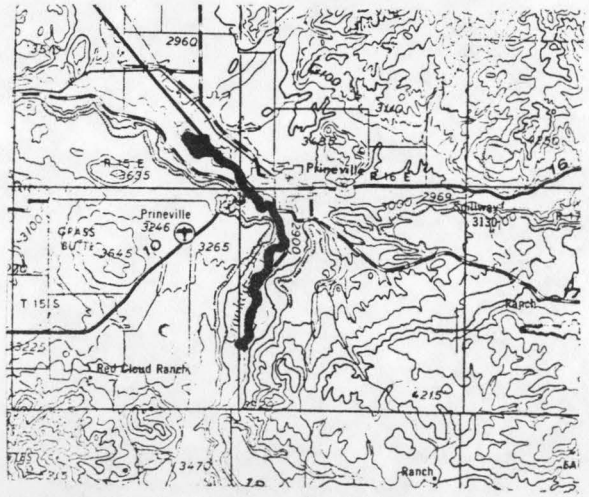
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2898	Ft. MSL
B.	Downstream Elevation of Reach	2825	Ft. MSL
C.	Total Available Head in Reach	73	Ft.
D.	Average Slope in Reach	7.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	2263	Sq.Mi.
F.	Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

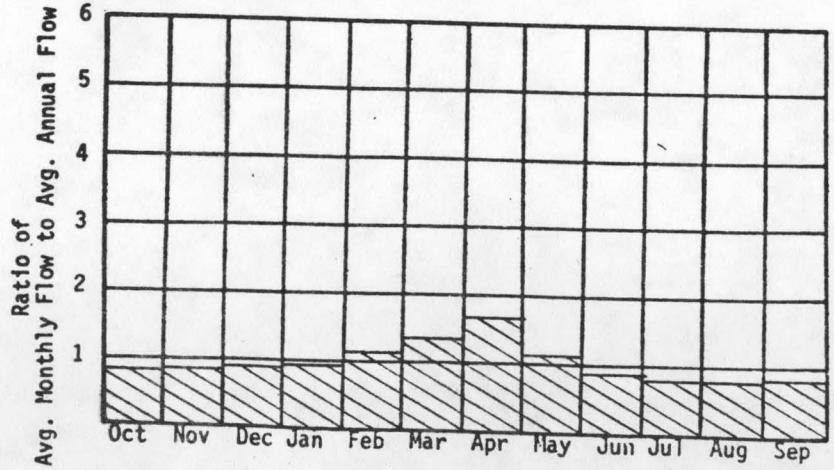
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.0	.02	.22	1.000
80	25.6	.16	1.24	.895
50	137.1	.85	5.17	.696
30	292.0	1.81	8.53	.539
10	1027.3	6.36	16.50	.296

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 387 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-000-R0008

I. LOCATION

A.	State	Oregon
B.	County	Crook
C.	Township, Range	Sec. 20, T16S, R16E
D.	Latitude, Longitude	44°10'N, 120°49'W
E.	Stream Name	Crooked River
F.	Major Basin Name	Deschutes
G.	River Mile	55.0 to 70.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

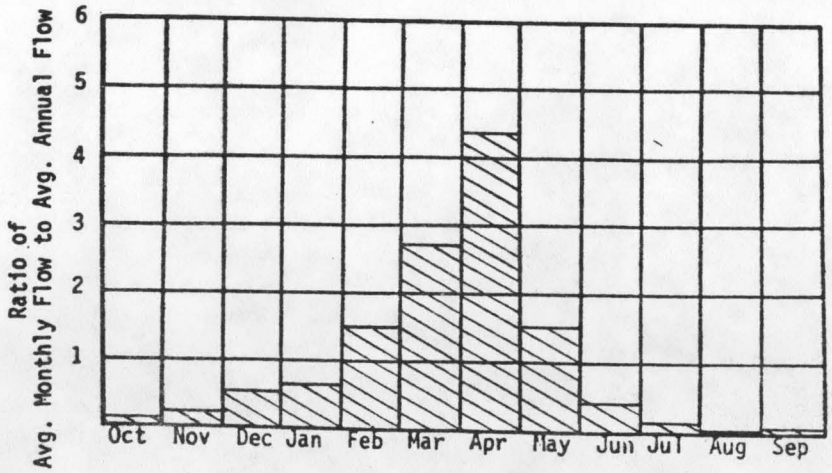
A.	Upstream Elevation of Reach	3235	Ft. MSL
B.	Downstream Elevation of Reach	2898	Ft. MSL
C.	Total Available Head in Reach	337	Ft.
D.	Average Slope in Reach	21.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	2238.1	Sq.Mi.
F.	Inflow Classification	Regulated	

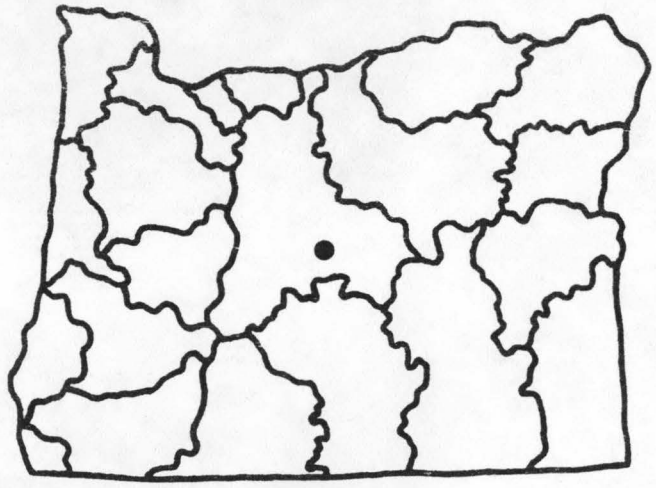
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.0	.11	1.00	1.000
80	25.1	.72	5.61	.895
50	134.3	3.84	23.37	.696
30	288.2	8.23	38.77	.538
10	1015.3	29.00	75.16	.296

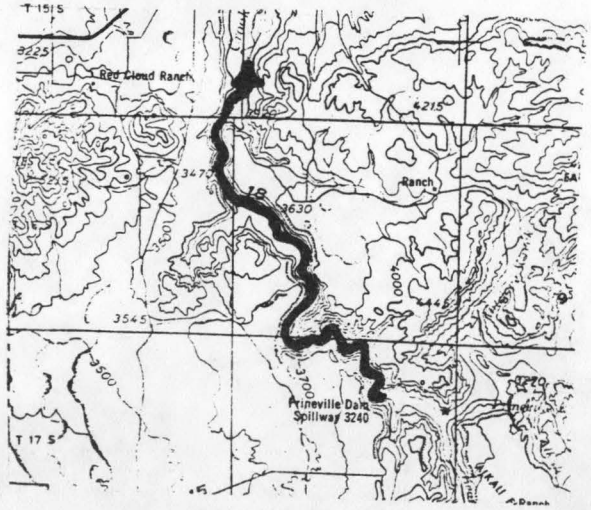
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 382 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-000-R0009

I. LOCATION

A.	State	Oregon
B.	County	Crook
C.	Township, Range	Sec.24, T16S, R18E
D.	Latitude, Longitude	44°19'N, 120°31'W
E.	Stream Name	Crooked River
F.	Major Basin Name	Deschutes
G.	River Mile	85.7 to 100.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

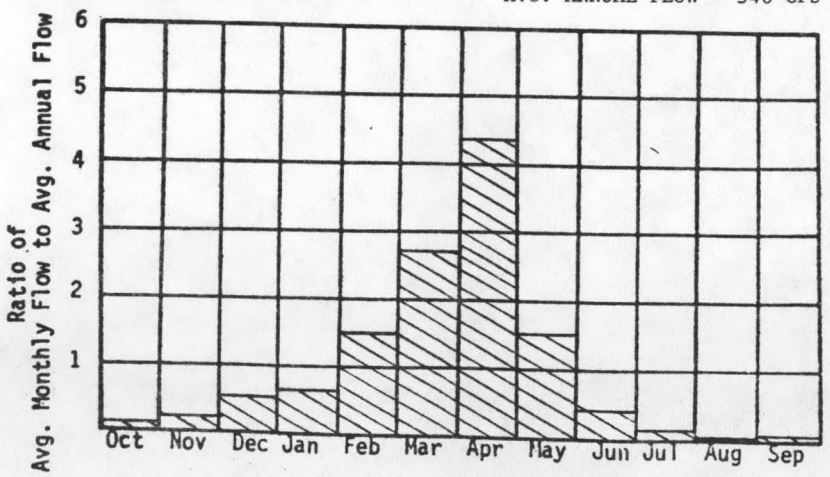
A.	Upstream Elevation of Reach	3314	Ft. MSL
B.	Downstream Elevation of Reach	3250	Ft. MSL
C.	Total Available Head in Reach	64	Ft.
D.	Average Slope in Reach	4.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	1870.1	Sq.Mi.
F.	Inflow Classification	Natural	

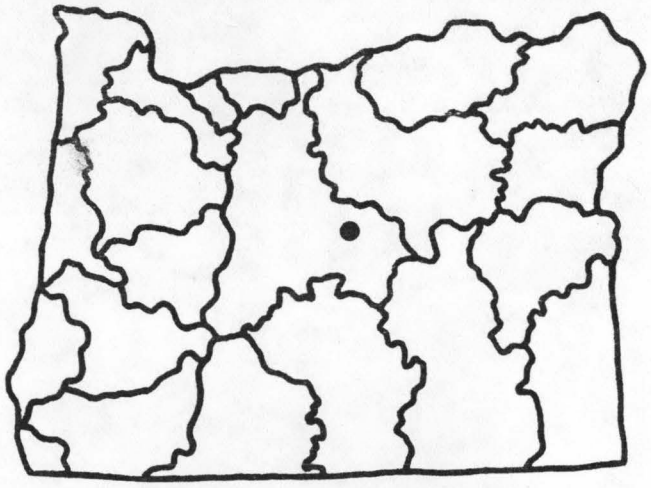
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3.4	.02	.16	1.000
80	20.4	.11	.87	.896
50	110.7	.60	3.66	.695
30	254.9	1.38	6.40	.528
10	908.8	4.93	12.61	.292

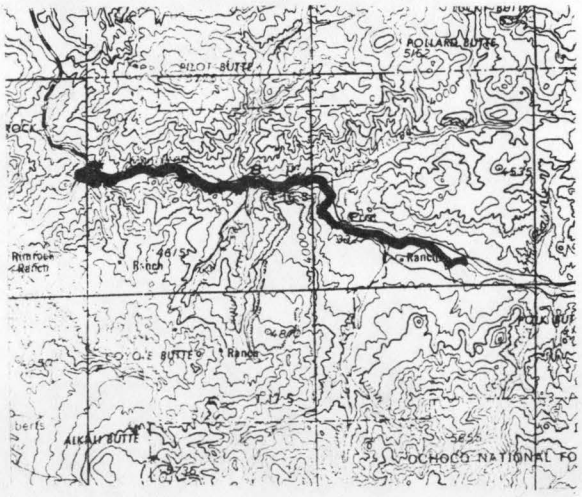
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 340 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-000-R0010

I. LOCATION

A. State	Oregon	
B. County	Crook	
C. Township, Range	Sec.4, T17S, R20E	
D. Latitude, Longitude	44°08'N, 120°20'W	
E. Stream Name	Crooked River	
F. Major Basin Name	Deschutes	
G. River Mile	100.00 to 111.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

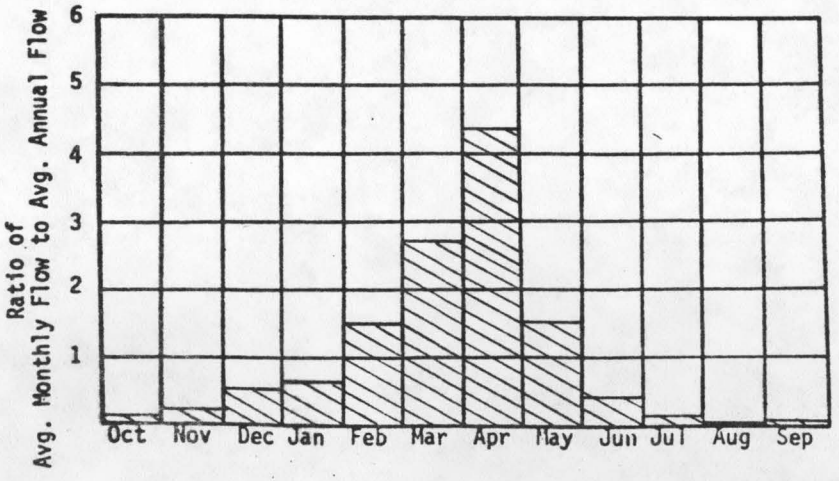
A. Upstream Elevation of Reach	3420	Ft. MSL
B. Downstream Elevation of Reach	3314	Ft. MSL
C. Total Available Head in Reach	106	Ft.
D. Average Slope in Reach	9.6	Ft./Mi.
E. Drainage Area above Reach Mouth	1700.2	Sq.Mi.
F. Inflow Classification	Natural	

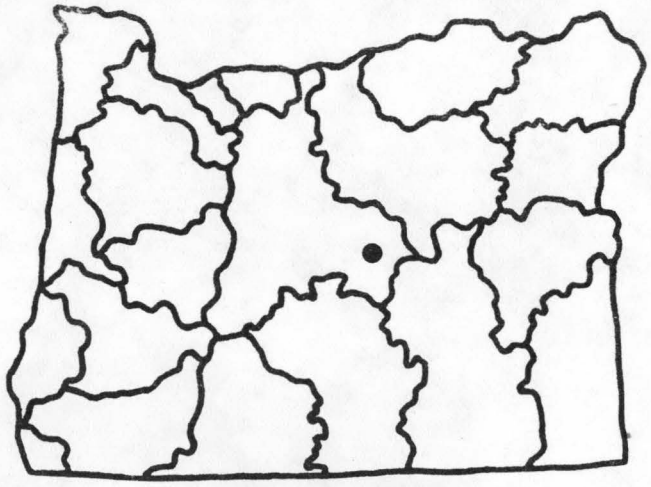
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3.3	.03	.26	1.000
80	18.8	.17	1.33	.897
50	102.8	.92	5.62	.695
30	243.1	2.18	10.04	.525
10	870.7	7.82	19.92	.291

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 324 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-001-R0001

I. LOCATION

A.	State	Oregon
B.	County	Crook
C.	Township, Range	Sec.10, T15S, R22E
D.	Latitude, Longitude	44°17'N, 120°04'W
E.	Stream Name	North Fork Crooked River
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

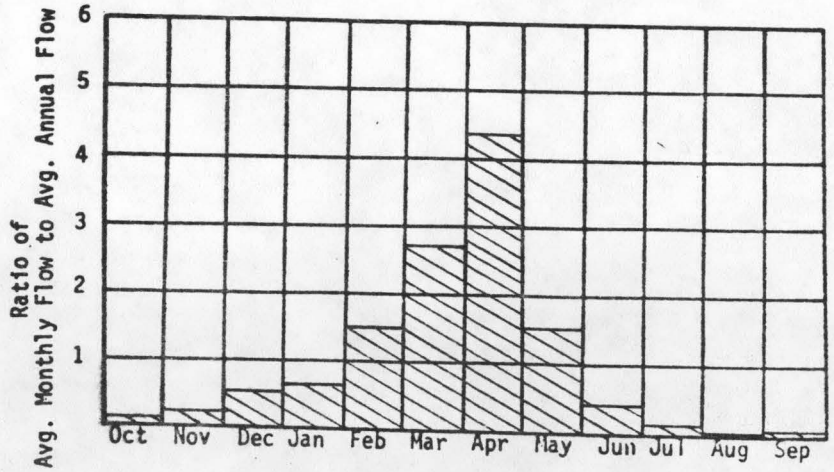
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	3347.5	Sq.Mi.
F.	Inflow Classification	Natural	

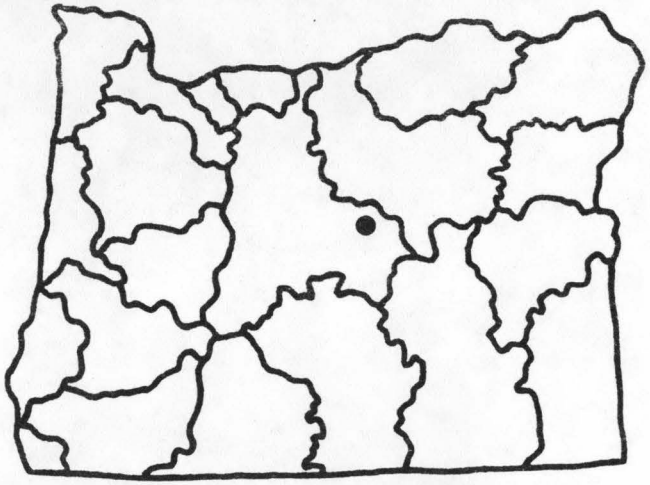
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	1.4	.01	.07	1.000
80	6.0	.03	.26	.905
50	34.9	.20	1.19	.694
30	122.1	.68	2.90	.484
10	467.8	2.62	6.28	.274

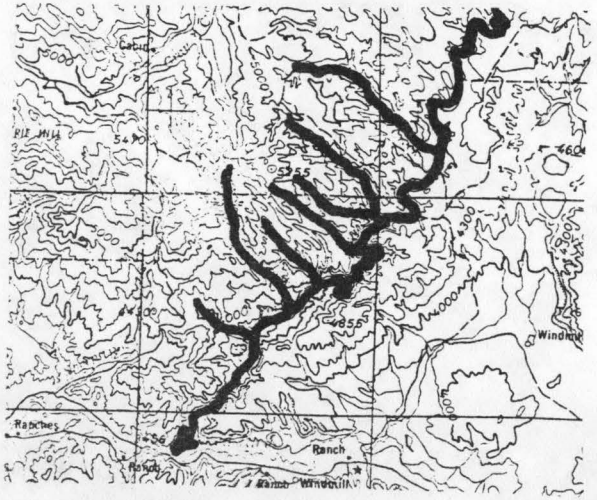
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 167 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-000-R0012

I. LOCATION

A.	State	Oregon
B.	County	Crook
C.	Township, Range	Sec.8, T17S, R22E
D.	Latitude, Longitude	44°07'N, 120°06'W
E.	Stream Name	Crooked River
F.	Major Basin Name	Deschutes
G.	River Mile	117.0 to 125.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

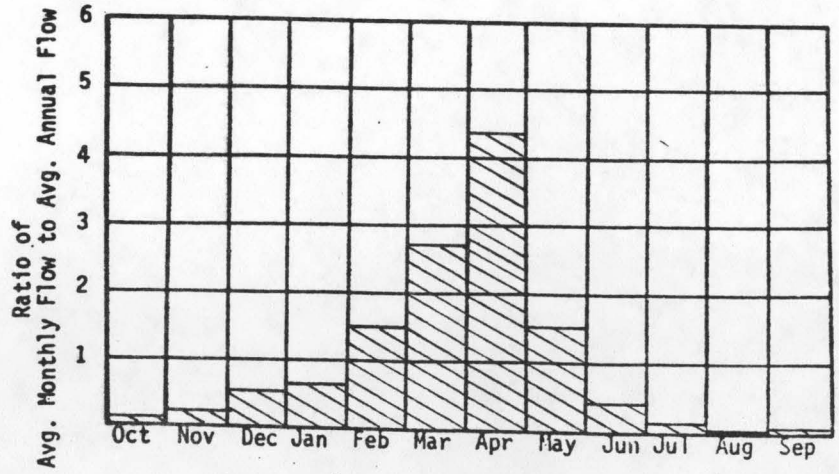
A.	Upstream Elevation of Reach	3552	Ft. MSL
B.	Downstream Elevation of Reach	3479	Ft. MSL
C.	Total Available Head in Reach	73	Ft.
D.	Average Slope in Reach	9.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	1058.1	Sq.Mi.
F.	Inflow Classification	Natural	

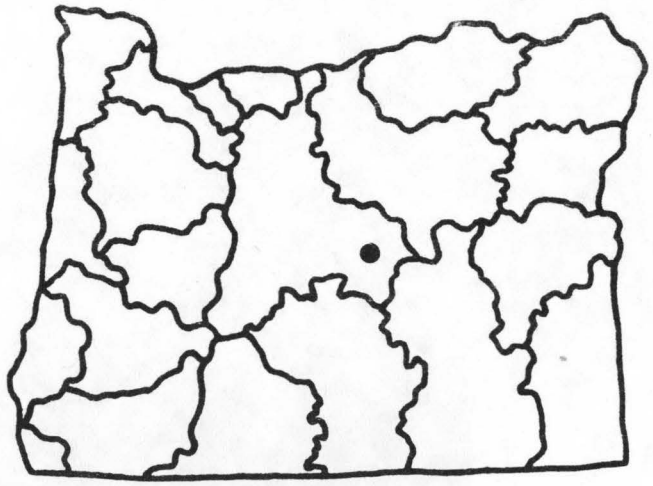
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	1.6	.01	.09	1.000
80	6.8	.04	.33	.904
50	39.3	.24	1.48	.694
30	131.8	.82	3.48	.488
10	500.9	3.10	7.48	.276

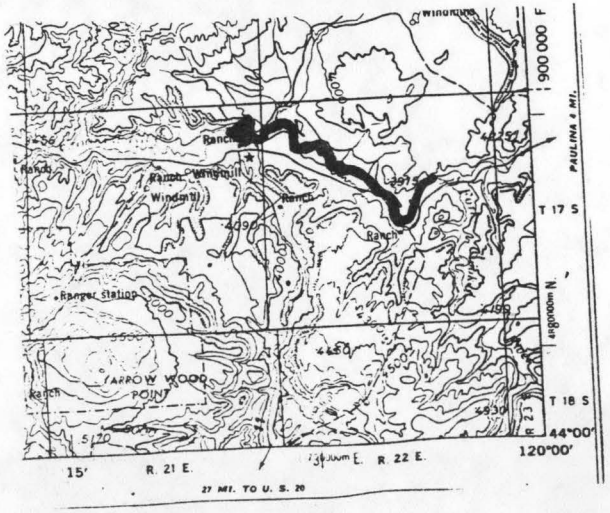
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 180 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-002-R0001

I. LOCATION

A.	State	Oregon
B.	County	Crook
C.	Township, Range	Sec.14, T17S, R22E
D.	Latitude, Longitude	44°06'N, 120°03'W
E.	Stream Name	Beaver Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

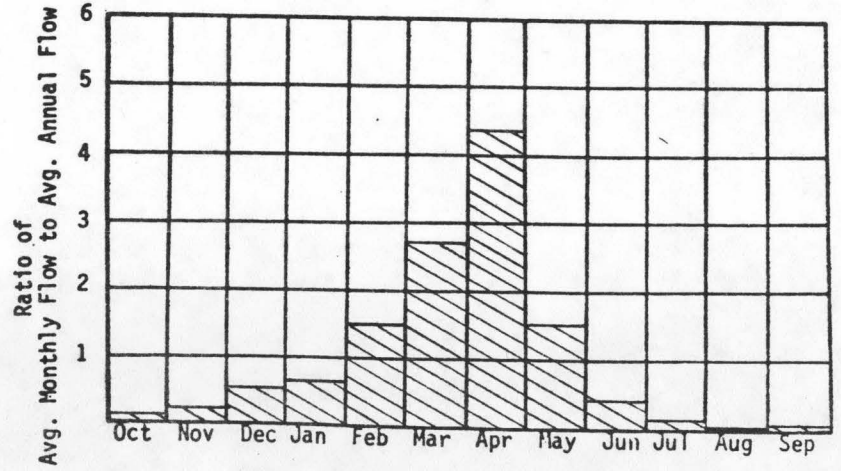
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	527.6	Sq.Mi.
F.	Inflow Classification	Natural	

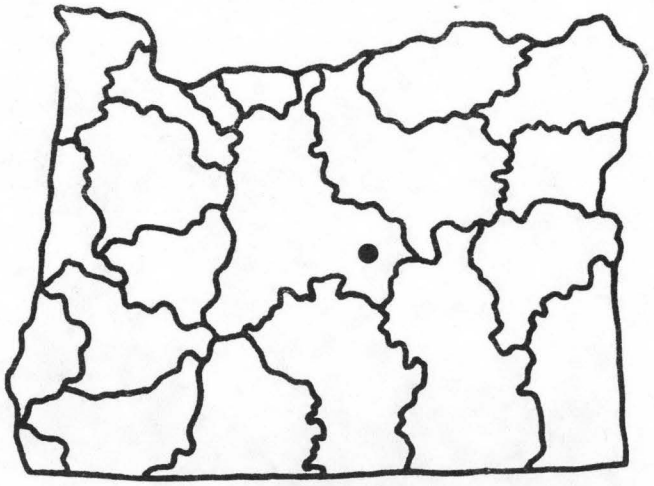
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	.9	.00	.04	1.000
80	2.9	.02	.13	.913
50	17.6	.10	.60	.693
30	79.1	.44	1.80	.465
10	316.0	1.77	4.12	.266

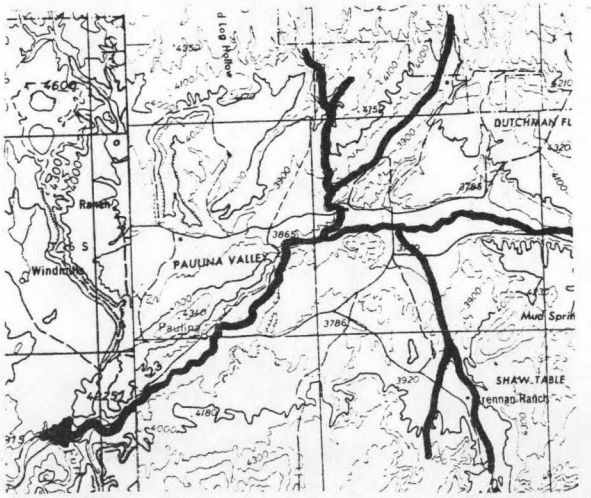
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 110 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

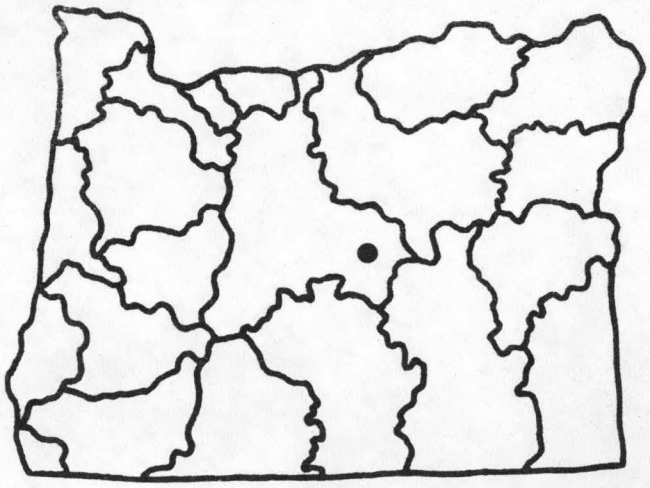


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-030-003-R0001

I. LOCATION

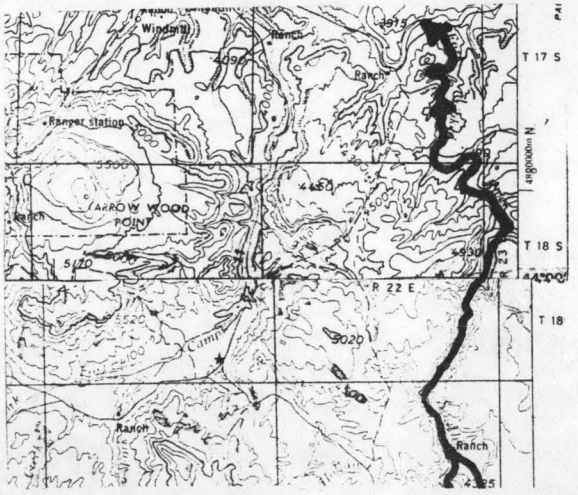
A.	State	Oregon
B.	County	Crook
C.	Township, Range	Sec.14, T17S, R22E
D.	Latitude, Longitude	44°06'N, 120°03'W
E.	Stream Name	South Fork Crooked River
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	467.7	Sq.Mi.
F.	Inflow Classification	Natural	

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND-CRESCENT

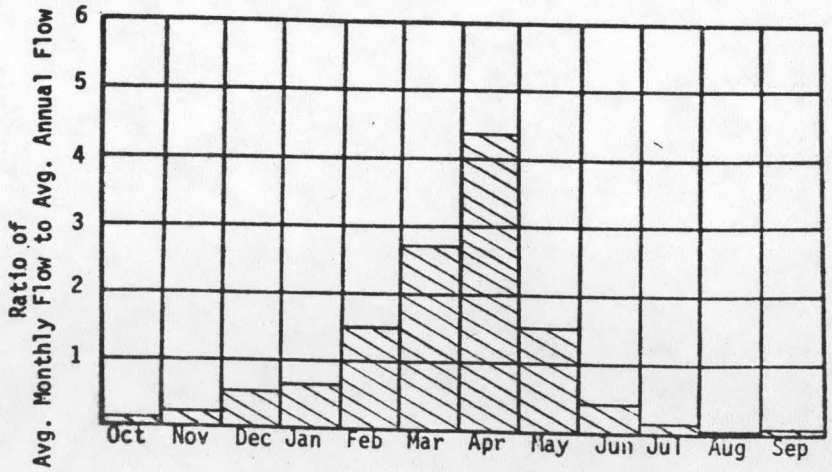


III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	.7	.00	.04	1.000
80	2.3	.01	.10	.915
50	14.3	.08	.49	.693
30	69.4	.39	1.57	.461
10	280.8	1.57	3.64	.264

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 97 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0018

I. LOCATION

A. State	Oregon	
B. County	Jefferson	
C. Township, Range	Sec.32, T12S, R12E	
D. Latitude, Longitude	44°29'N, 121°19'W	
E. Stream Name	Deschutes River	
F. Major Basin Name	Deschutes	
G. River Mile	119.5 to 123.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

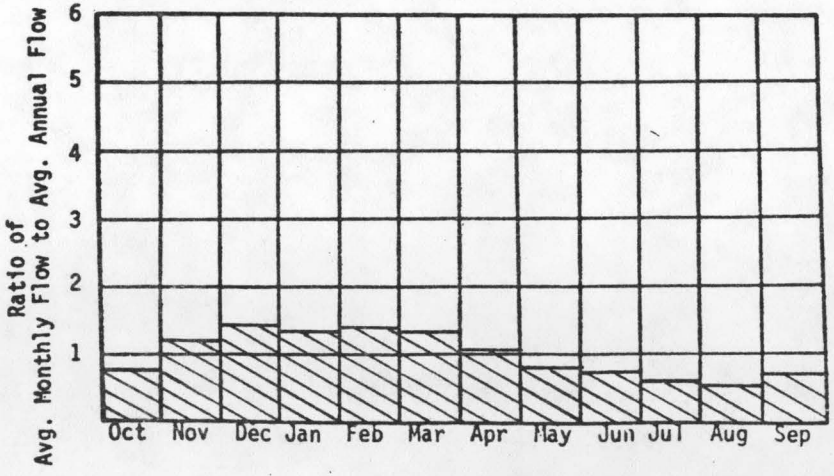
A. Upstream Elevation of Reach	2092	Ft. MSL
B. Downstream Elevation of Reach	1940	Ft. MSL
C. Total Available Head in Reach	152	Ft.
D. Average Slope in Reach	43.5	Ft./Mi.
E. Drainage Area above Reach Mouth	2213.4	Sq.Mi.
F. Inflow Classification	Regulated	

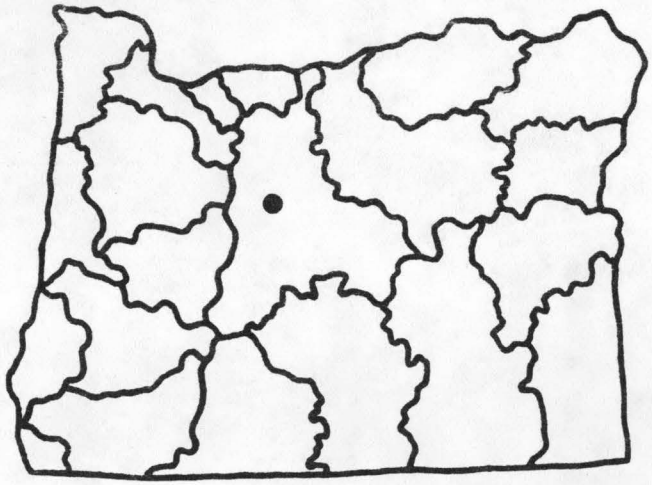
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	121.6	1.57	13.72	1.000
80	253.0	3.26	26.69	.935
50	790.0	10.18	66.08	.741
30	1217.0	15.68	85.35	.622
10	1699.5	21.89	96.24	.502

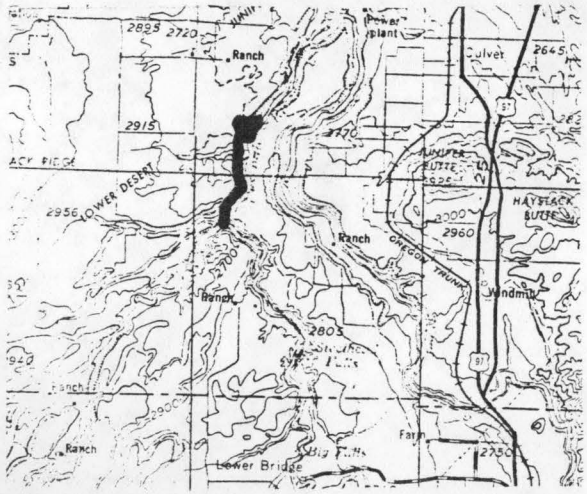
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 904 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-040-000-R0001

I. LOCATION

A. State	Oregon	
B. County	Jefferson	
C. Township, Range	Sec.24, T13S, R11E	
D. Latitude, Longitude	44°26'N, 121°21'W	
E. Stream Name	Squaw Creek	
F. Major Basin Name	Deschutes	
G. River Mile	0.0 to 6.6	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

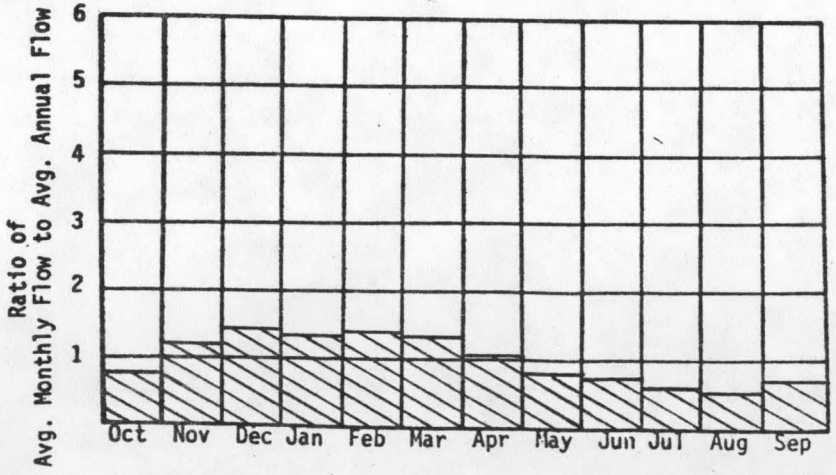
A. Upstream Elevation of Reach	2504	Ft. MSL
B. Downstream Elevation of Reach	2092	Ft. MSL
C. Total Available Head in Reach	412	Ft.
D. Average Slope in Reach	62.4	Ft./Mi.
E. Drainage Area above Reach Mouth	126.4	Sq.Mi.
F. Inflow Classification	Natural	

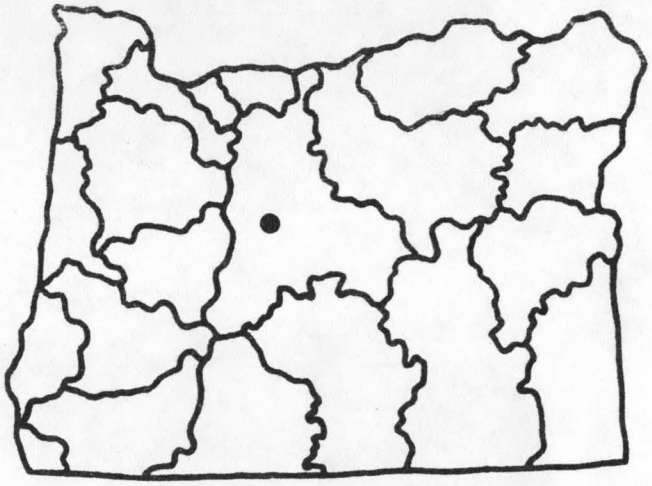
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.9	.11	.98	1.000
80	25.4	.14	1.21	.973
50	40.9	.23	1.71	.851
30	67.1	.38	2.22	.675
10	133.9	.75	2.87	.438

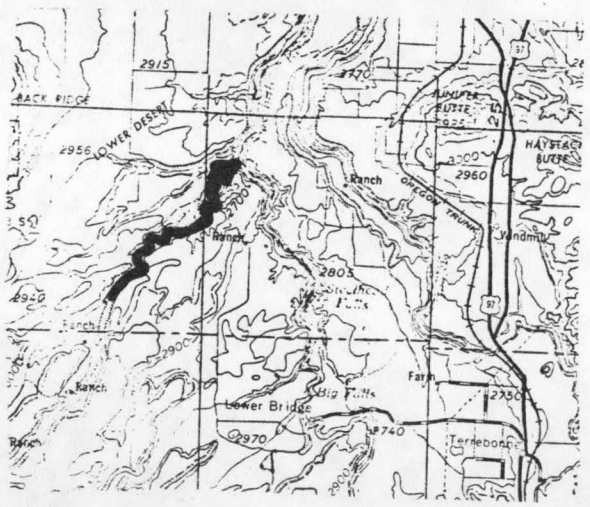
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 624 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

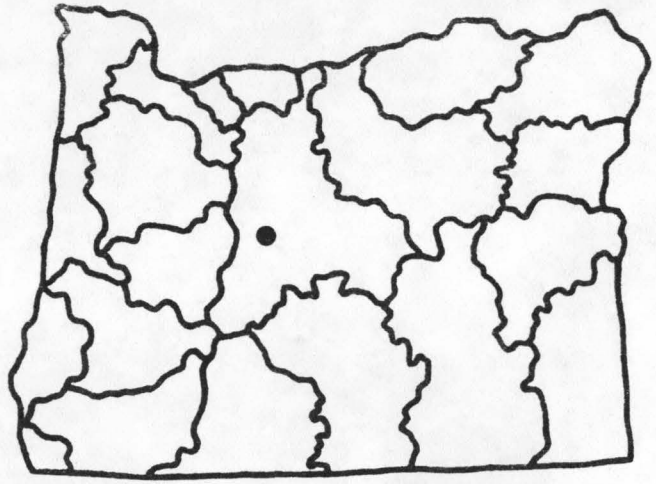


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-040-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.13, T14S, R11E
D.	Latitude, Longitude	44°17'N, 121°25'W
E.	Stream Name	Squaw Creek
F.	Major Basin Name	Deschutes
G.	River Mile	6.6 to 15.0



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2926	Ft. MSL
B.	Downstream Elevation of Reach	2504	Ft. MSL
C.	Total Available Head in Reach	422	Ft.
D.	Average Slope in Reach	50.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	107.6	Sq.Mi.
F.	Inflow Classification	Natural	

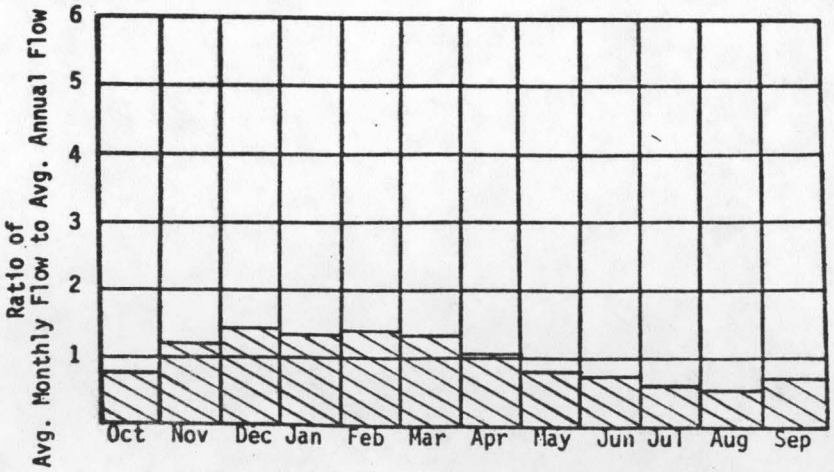
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

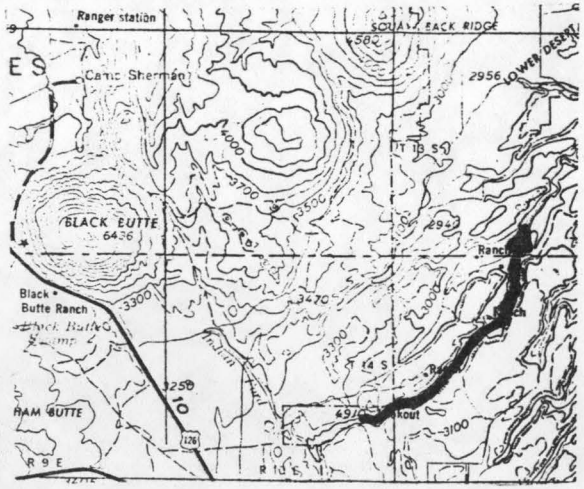
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	246.6	8.82	77.26	1.000
80	317.4	11.35	96.66	.972
50	421.3	15.07	117.81	.893
30	634.8	22.70	144.57	.727
10	1149.5	41.11	176.82	.491

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 580 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-040-000-R0003

I. LOCATION

A. State	Oregon	
B. County	Deschutes	
C. Township, Range	Sec.10, T15S, R10E	
D. Latitude, Longitude	44°17'N, 121°30'W	
E. Stream Name	Squaw Creek	
F. Major Basin Name	Deschutes	
G. River Mile	15.0 to 25.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

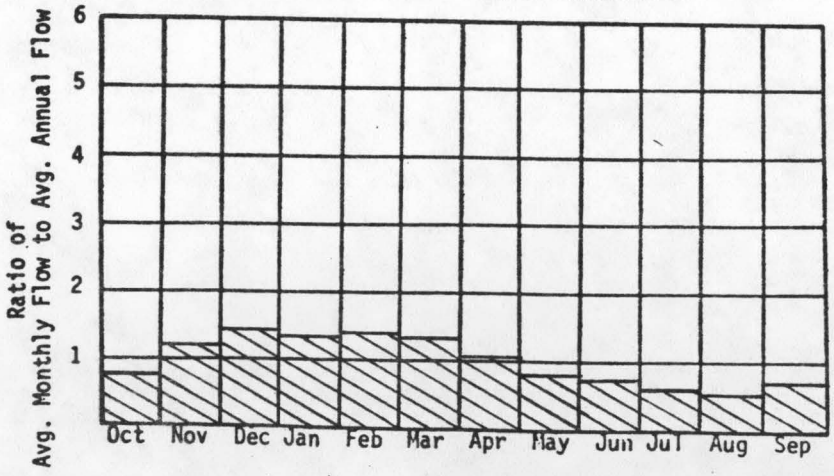
A. Upstream Elevation of Reach	3474	Ft. MSL
B. Downstream Elevation of Reach	2926	Ft. MSL
C. Total Available Head in Reach	548	Ft.
D. Average Slope in Reach	54.8	Ft./Mi.
E. Drainage Area above Reach Mouth	94.8	Sq.Mi.
F. Inflow Classification	Natural	

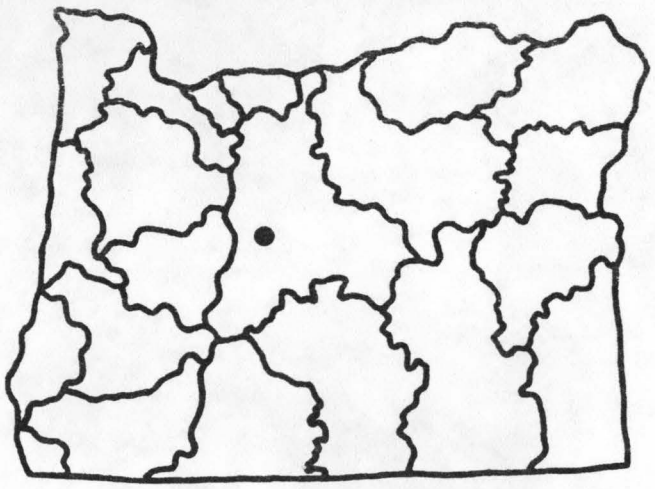
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	204.6	9.50	83.23	1.000
80	263.3	12.23	104.14	.972
50	349.5	16.23	126.92	.893
30	526.6	24.46	155.75	.727
10	953.6	44.29	190.49	.491

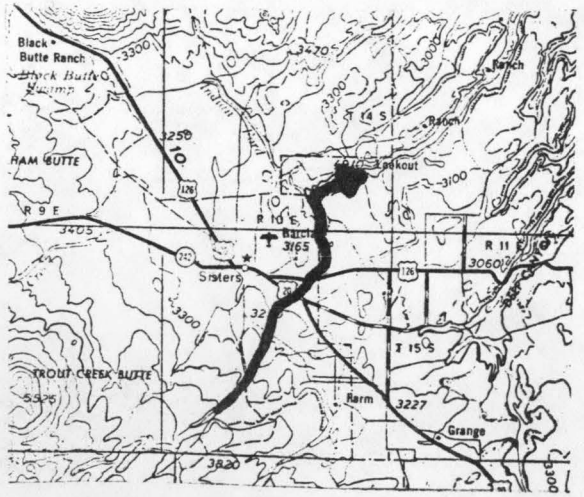
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 482 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

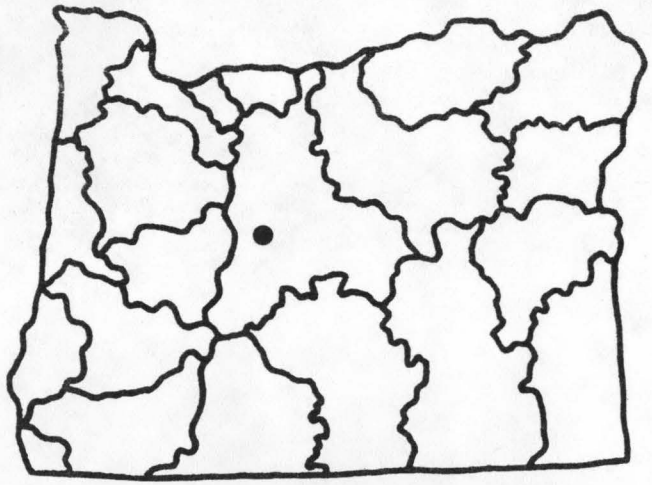


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-040-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.36, T15S, R 15E
D.	Latitude, Longitude	44°13'N, 121°35'W
E.	Stream Name	Squaw Creek
F.	Major Basin Name	Deschutes
G.	River Mile	25.0 to 31.2



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	4059	Ft. MSL
B.	Downstream Elevation of Reach	3474	Ft. MSL
C.	Total Available Head in Reach	585	Ft.
D.	Average Slope in Reach	94.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	52.6	Sq.Mi.
F.	Inflow Classification	Natural	

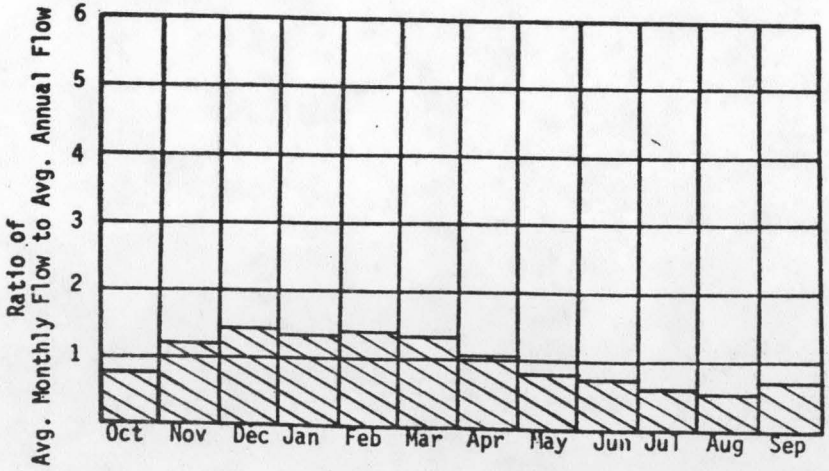
U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

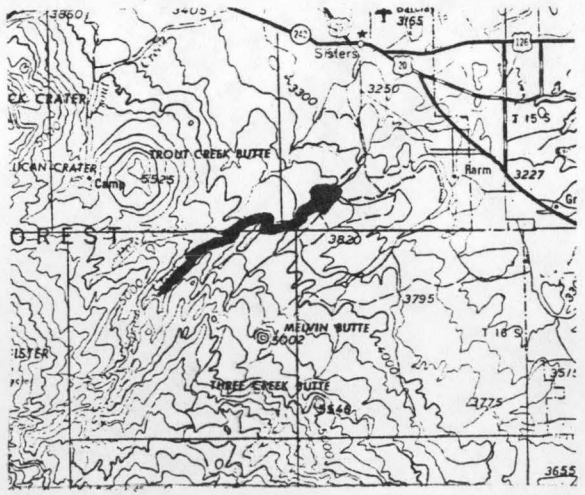
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	159.7	7.92	69.34	1.000
80	205.5	10.19	86.76	.972
50	272.8	13.52	105.74	.893
30	411.0	20.38	129.76	.727
10	744.3	36.90	158.71	.491

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 376 CFS



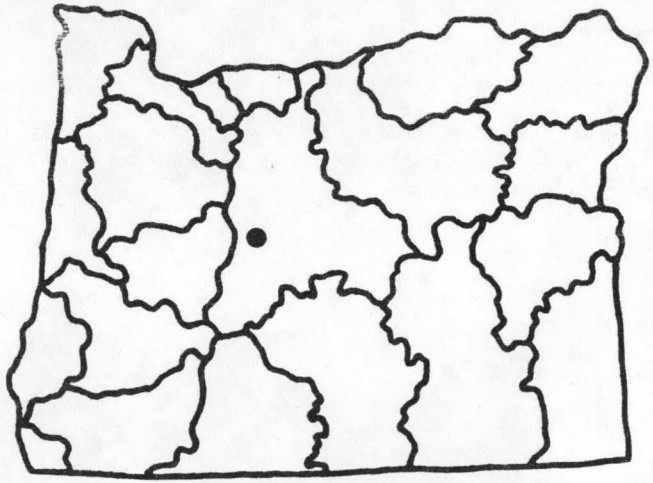


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-040-001-R0001

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.9, T16S, R9E
D.	Latitude, Longitude	44°11'N, 121°38'W
E.	Stream Name	Snow Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

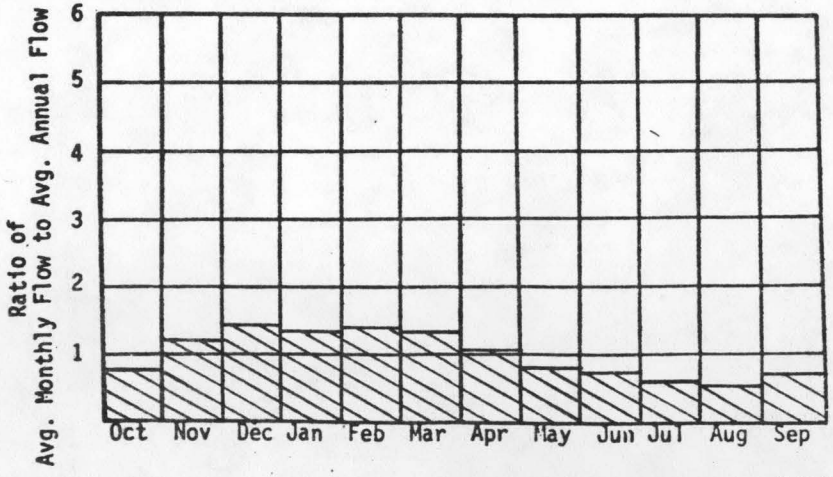
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	15.1	Sq.Mi.
F.	Inflow Classification	Natural	

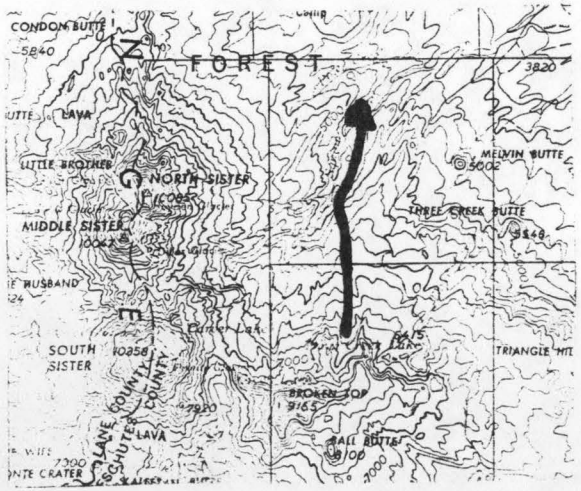
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	38.2	.21	1.87	1.000
80	49.2	.27	2.34	.972
50	65.2	.36	2.85	.893
30	98.3	.55	3.50	.727
10	178.0	1.00	4.28	.491

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 90 CFS



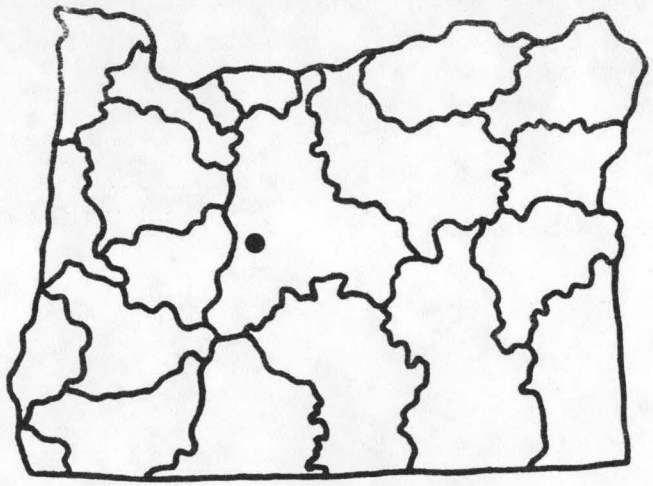


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-040-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.21, T16S, R9E
D.	Latitude, Longitude	44°10'N, 121°40'W
E.	Stream Name	Squaw Creek
F.	Major Basin Name	Deschutes
G.	River Mile	31.2 to 34.0



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

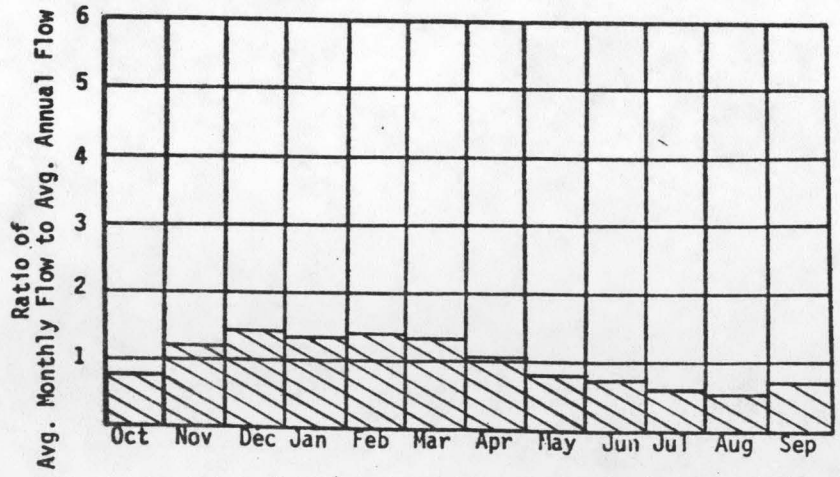
A.	Upstream Elevation of Reach	4375	Ft. MSL
B.	Downstream Elevation of Reach	4059	Ft. MSL
C.	Total Available Head in Reach	316	Ft.
D.	Average Slope in Reach	112.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	28.2	Sq.Mi.
F.	Inflow Classification	Natural	

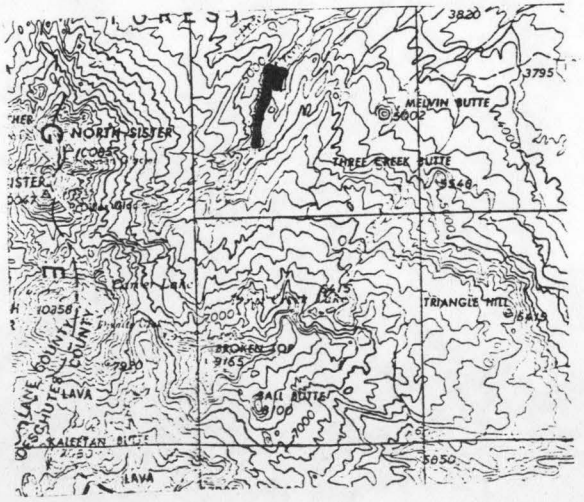
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	108.4	2.90	25.44	1.000
80	139.6	3.74	31.83	.972
50	185.3	4.96	38.80	.893
30	279.2	7.48	47.61	.727
10	505.5	13.54	58.23	.491

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 255 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-040-002-R0001

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.29, T16S, R9E
D.	Latitude, Longitude	44°09'N, 121°40'W
E.	Stream Name	North Fork Squaw Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

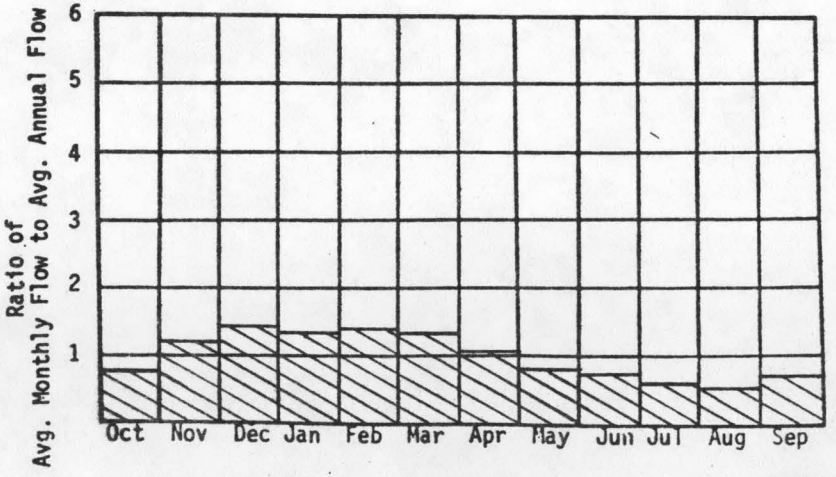
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	9.2	Sq.Mi.
F.	Inflow Classification	Natural	

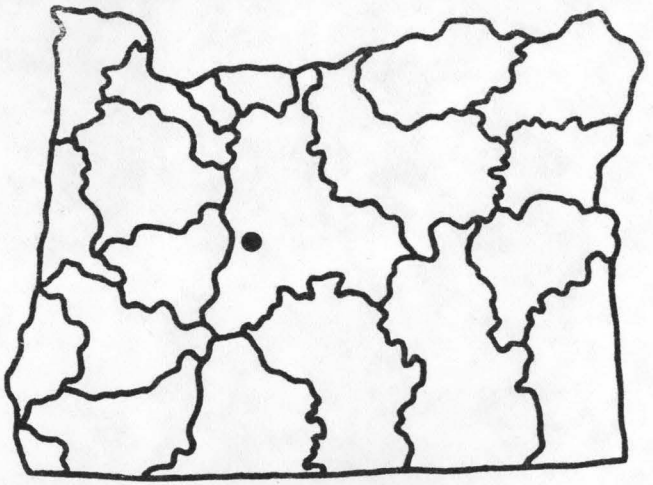
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	40.4	.23	1.98	1.000
80	52.0	.29	2.48	.972
50	69.0	.39	3.02	.893
30	104.0	.58	3.70	.727
10	188.3	1.05	4.53	.491

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 95 CFS





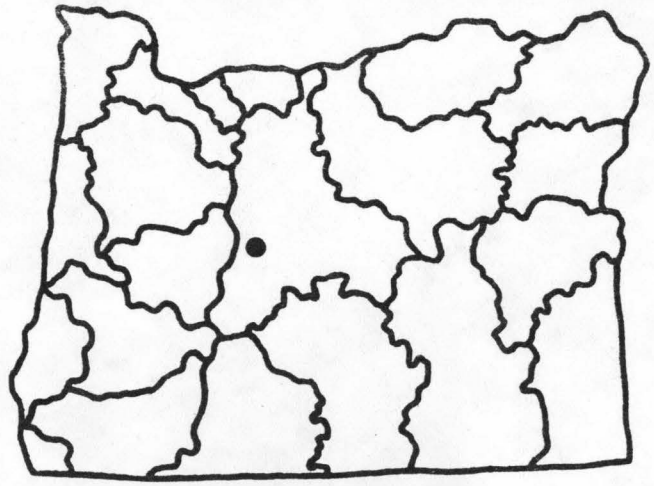
U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-040-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.29, T16S, R9E
D.	Latitude, Longitude	44°09'N, 121°39'W
E.	Stream Name	Squaw Creek
F.	Major Basin Name	Deschutes
G.	River Mile	34.0 to 35.4



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

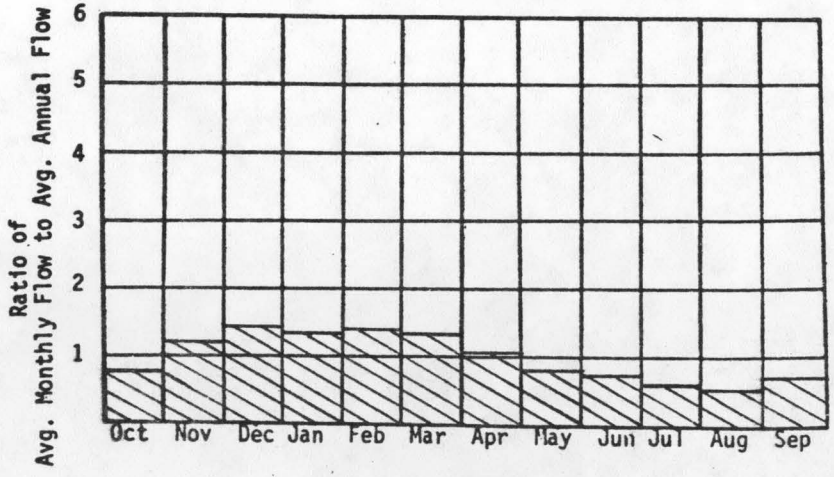
A.	Upstream Elevation of Reach	4546	Ft. MSL
B.	Downstream Elevation of Reach	4375	Ft. MSL
C.	Total Available Head in Reach	171	Ft.
D.	Average Slope in Reach	122.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	15.6	Sq.Mi.
F.	Inflow Classification	Natural	

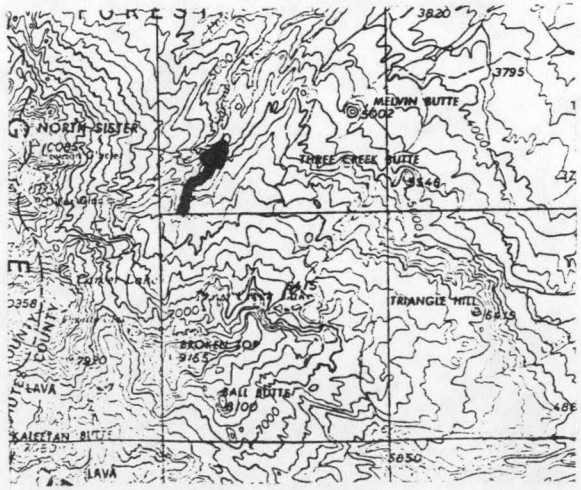
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	50.8	.74	6.44	1.000
80	65.3	.95	8.06	.972
50	86.7	1.26	9.83	.893
30	130.7	1.89	12.06	.727
10	236.6	3.43	14.75	.491

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 120 CFS



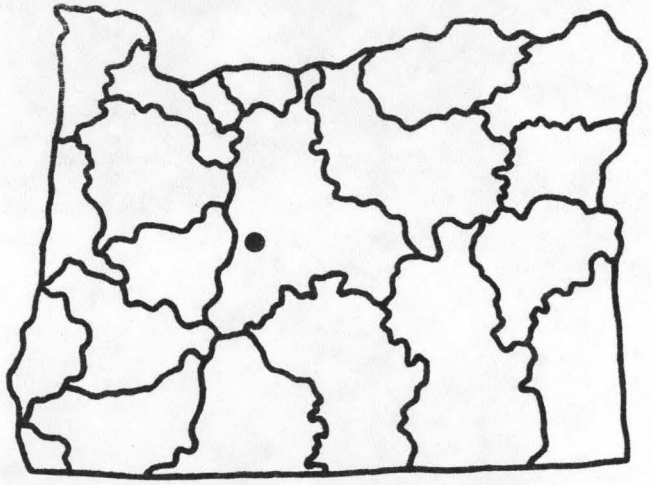


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-040-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.32, T16S, R9E
D.	Latitude, Longitude	44°09'N, 121°41'W
E.	Stream Name	Squaw Creek
F.	Major Basin Name	Deschutes
G.	River Mile	35.4 to H.W.



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

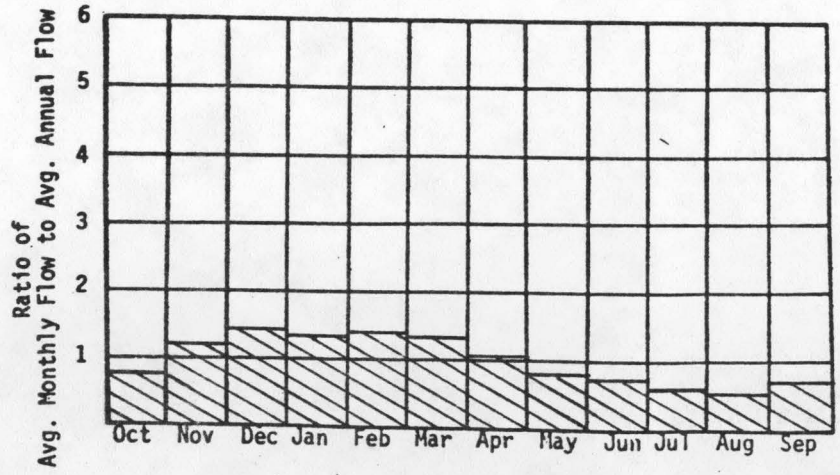
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	9.9	Sq.Mi.
F.	Inflow Classification	Natural	

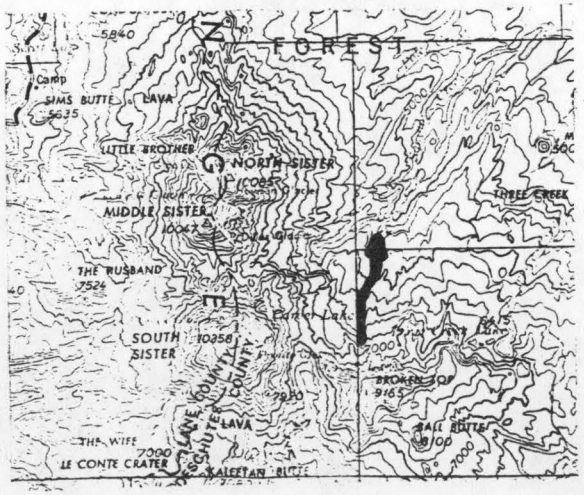
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	38.1	.21	1.87	1.000
80	49.0	.27	2.33	.972
50	65.0	.36	2.84	.893
30	98.0	.55	3.49	.727
10	177.4	.99	4.27	.491

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 90 CFS



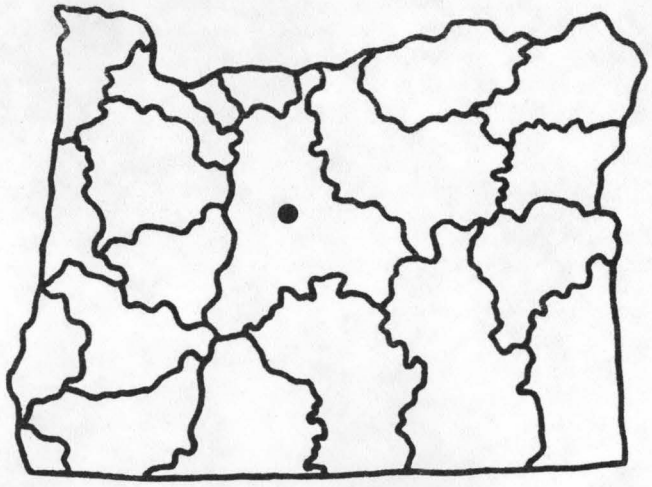


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0019

I. LOCATION

A.	State	Oregon
B.	County	Jefferson
C.	Township, Range	Sec.33, T13S, R12E
D.	Latitude, Longitude	44°24'N, 121°18'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	123.0 to 135.0



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2558	Ft. MSL
B.	Downstream Elevation of Reach	2092	Ft. MSL
C.	Total Available Head in Reach	466	Ft.
D.	Average Slope in Reach	38.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	2059.8	Sq.Mi.
F.	Inflow Classification	Regulated	

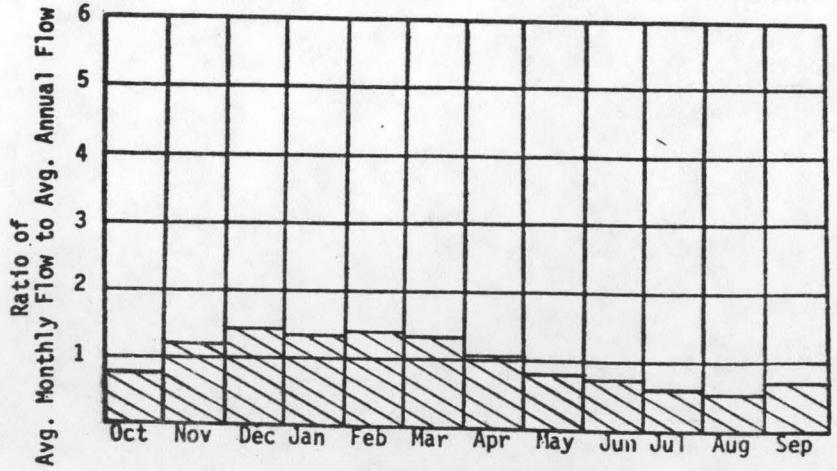
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

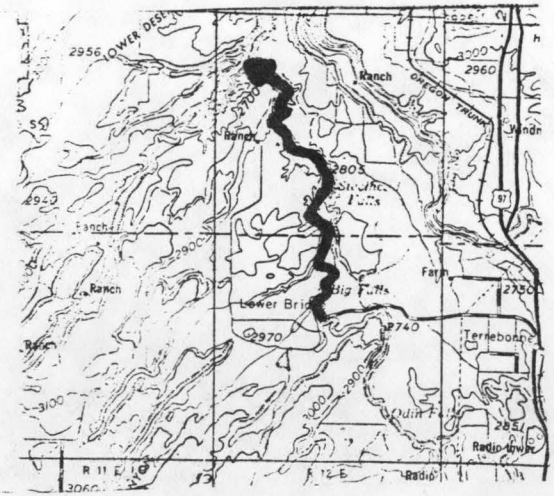
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	110.0	4.34	38.05	1.000
80	225.0	8.89	72.87	.936
50	672.3	26.55	173.44	.746
30	1022.7	40.39	221.93	.627
10	1425.7	56.30	249.81	.506

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 762 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0020

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.36, T14S, R12E
D.	Latitude, Longitude	44°18'N, 121°14'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	135.0 to 148.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

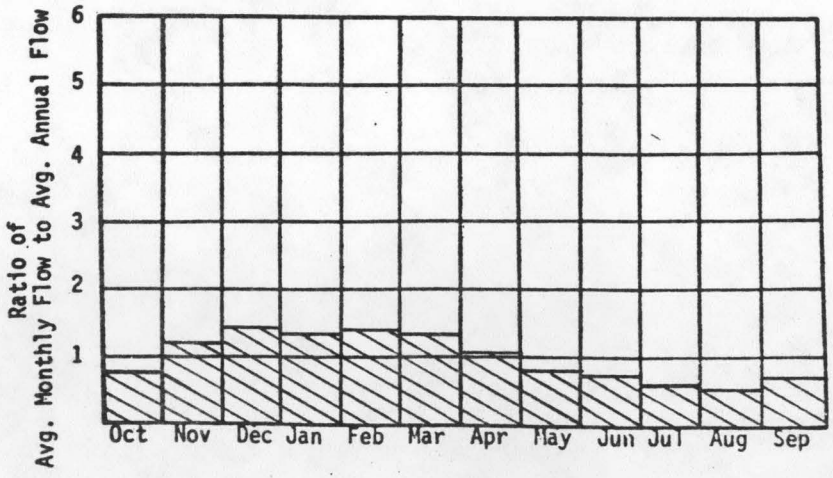
A.	Upstream Elevation of Reach	2892	Ft. MSL
B.	Downstream Elevation of Reach	2558	Ft. MSL
C.	Total Available Head in Reach	334	Ft.
D.	Average Slope in Reach	25.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	1844.6	Sq.Mi.
F.	Inflow Classification	Regulated	

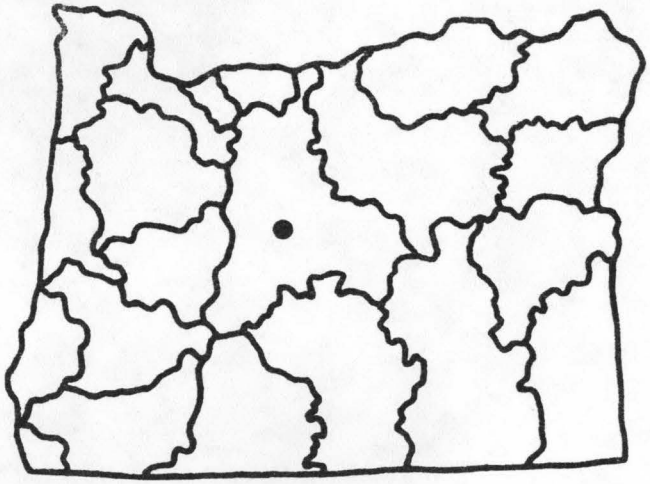
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	106.8	3.02	26.47	1.000
80	217.3	6.15	50.46	.936
50	640.9	18.14	118.72	.747
30	971.3	27.49	151.49	.629
10	1353.4	38.31	170.44	.508

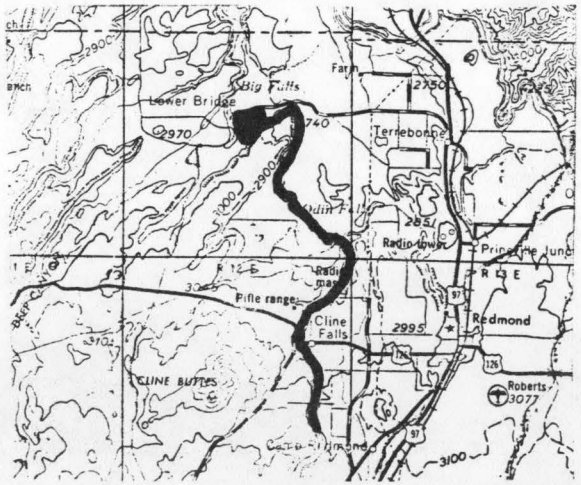
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 725 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0021

I. LOCATION

A. State	Oregon	
B. County	Deschutes	
C. Township, Range	Sec.10, T16S, R12E	
D. Latitude, Longitude	44°13'N, 121°18'W	
E. Stream Name	Deschutes River	
F. Major Basin Name	Deschutes	
G. River Mile	148.0 to 160.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

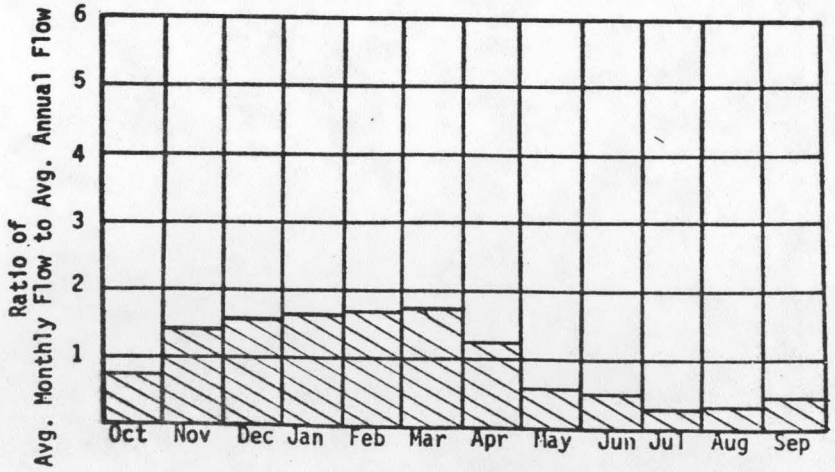
A. Upstream Elevation of Reach	3236	Ft. MSL
B. Downstream Elevation of Reach	2892	Ft. MSL
C. Total Available Head in Reach	344	Ft.
D. Average Slope in Reach	28.7	Ft./Mi.
E. Drainage Area above Reach Mouth	1746.4	Sq.Mi.
F. Inflow Classification	Regulated	

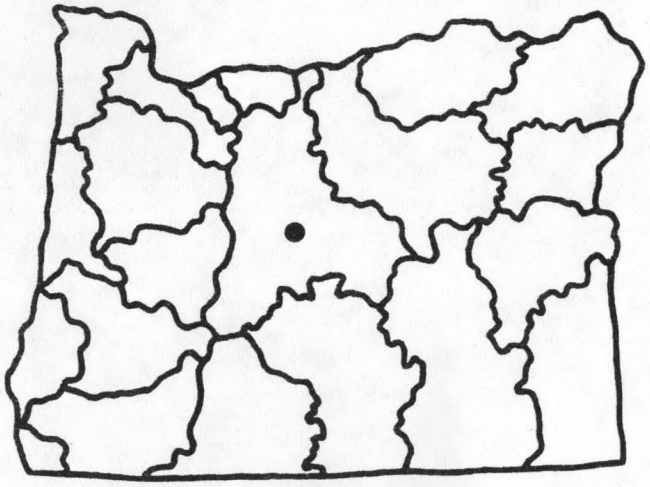
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	101.7	2.96	25.97	1.000
80	205.3	5.99	49.13	.937
50	592.6	17.28	113.41	.749
30	892.6	26.02	144.06	.632
10	1242.8	36.23	161.94	.510

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 668 CFS





U.S.G.S. TOPO. SERIES
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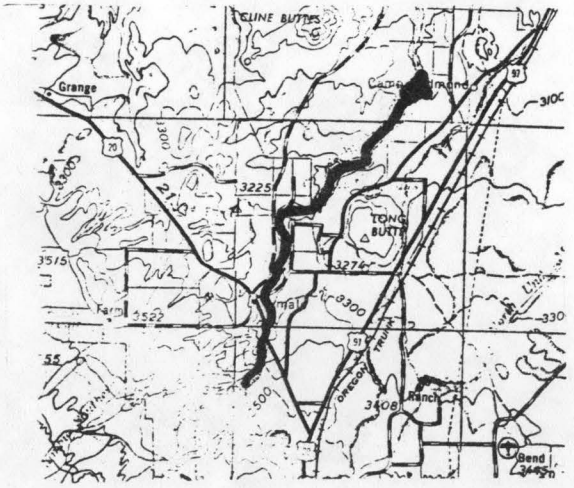
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-050-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.29, T17S, R11E
D.	Latitude, Longitude	44°04'N, 121°23'W
E.	Stream Name	Tumalo Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 7.9

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

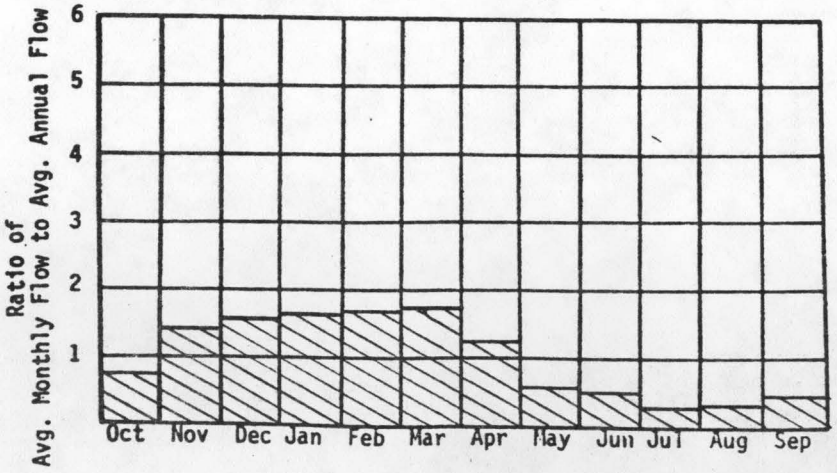
A.	Upstream Elevation of Reach	3640	Ft. MSL
B.	Downstream Elevation of Reach	3236	Ft. MSL
C.	Total Available Head in Reach	404	Ft.
D.	Average Slope in Reach	51.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	59.3	Sq.Mi.
F.	Inflow Classification	Natural	

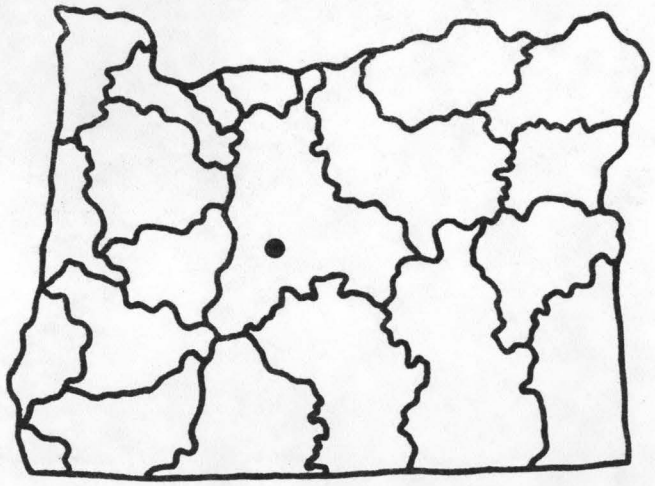
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	149.3	5.11	44.78	1.000
80	192.2	6.58	56.02	.972
50	255.0	8.73	68.28	.893
30	384.3	13.16	83.79	.727
10	695.9	23.83	102.48	.491

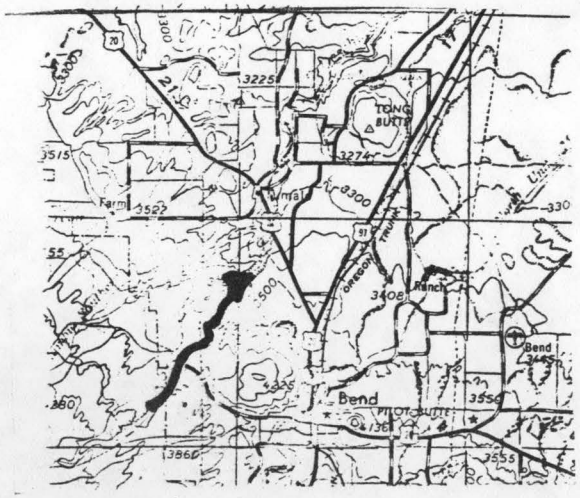
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 351 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

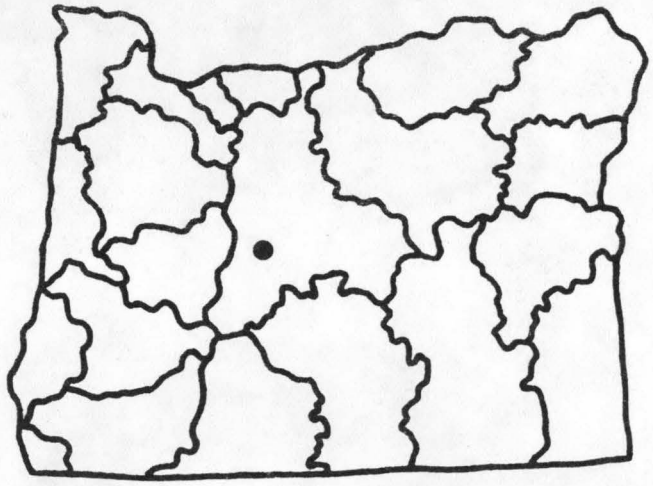


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-050-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.2, T18S, R10E
D.	Latitude, Longitude	44°02'N, 121°30'W
E.	Stream Name	Tumalo Creek
F.	Major Basin Name	Deschutes
G.	River Mile	7.9 to 15.3



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

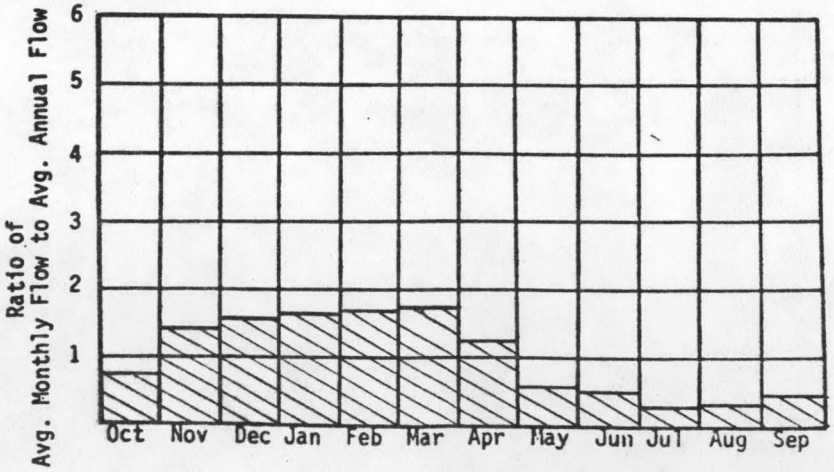
A.	Upstream Elevation of Reach	4580	Ft. MSL
B.	Downstream Elevation of Reach	3640	Ft. MSL
C.	Total Available Head in Reach	940	Ft.
D.	Average Slope in Reach	127	Ft./Mi.
E.	Drainage Area above Reach Mouth	39.5	Sq.Mi.
F.	Inflow Classification	Natural	

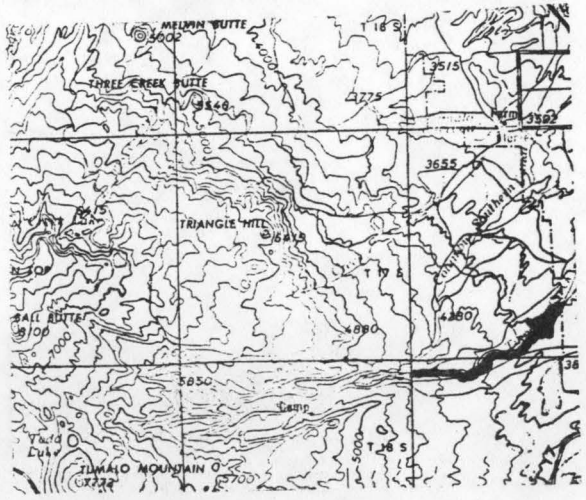
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	130.4	10.39	90.99	1.000
80	167.8	13.37	113.84	.972
50	222.7	17.74	138.75	.893
30	335.6	26.74	170.26	.727
10	607.8	48.41	208.24	.491

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 306 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-050-000-R0003

I. LOCATION

A. State	Oregon	
B. County	Deschutes	
C. Township, Range	Sec.8, T18S, R10E	
D. Latitude, Longitude	44°02'N, 121°33'W	
E. Stream Name	Tumalo Creek	
F. Major Basin Name	Deschutes	
G. River Mile	15.3 to H.W.	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

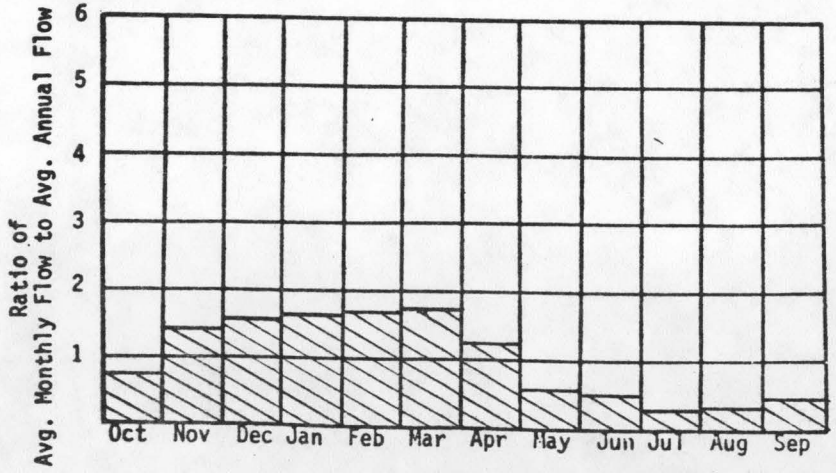
A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	24.7	Sq.Mi.
F. Inflow Classification	Natural	

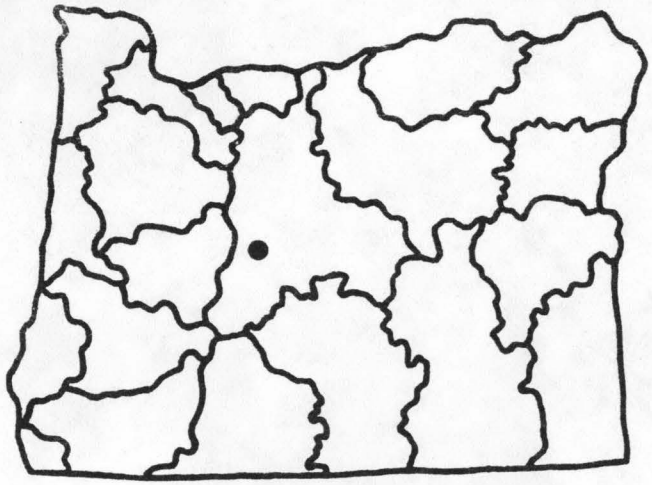
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	120.0	.67	5.88	1.000
80	154.4	.86	7.35	.972
50	204.9	1.15	8.96	.893
30	308.8	1.73	11.00	.727
10	559.1	3.13	13.45	.491

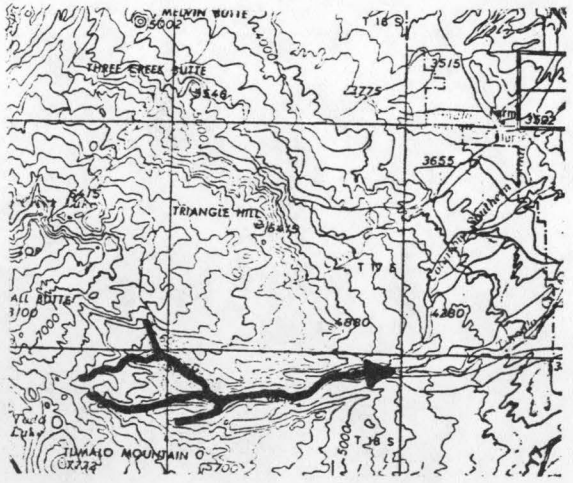
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 282 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0022

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.7, T18S, R12E
D.	Latitude, Longitude	44°01'N, 121°20'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	160.0 to 175.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

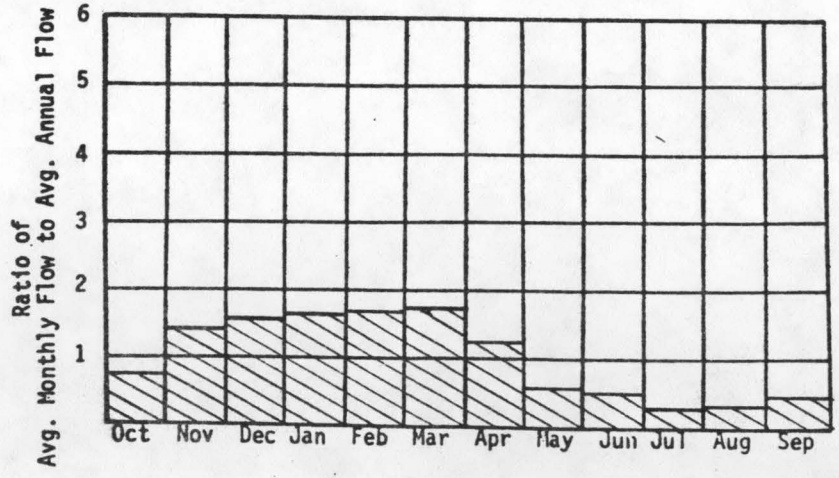
A.	Upstream Elevation of Reach	3932	Ft. MSL
B.	Downstream Elevation of Reach	3236	Ft. MSL
C.	Total Available Head in Reach	696	Ft.
D.	Average Slope in Reach	46.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	1422.8	Sq.Mi.
F.	Inflow Classification	Regulated	

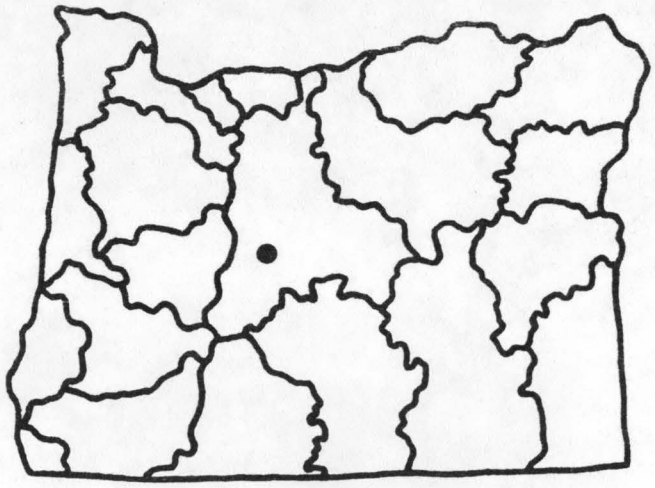
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	125.0	7.37	64.60	1.000
80	261.3	15.41	126.20	.935
50	826.0	48.72	315.85	.740
30	1276.9	75.31	409.04	.620
10	1783.9	105.22	461.44	.501

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 948 CFS





U.S.G.S. TOPO. SERIES
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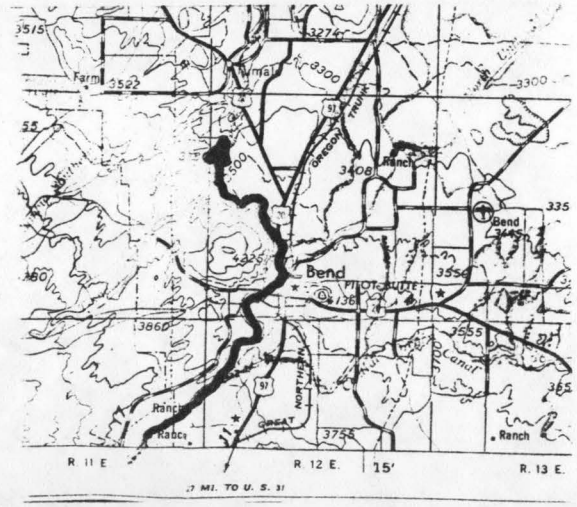
MAP NAME: BEND-CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0023

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.9, T19S, R11E
D.	Latitude, Longitude	43°57'N, 121°25'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	175.0 to 185.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

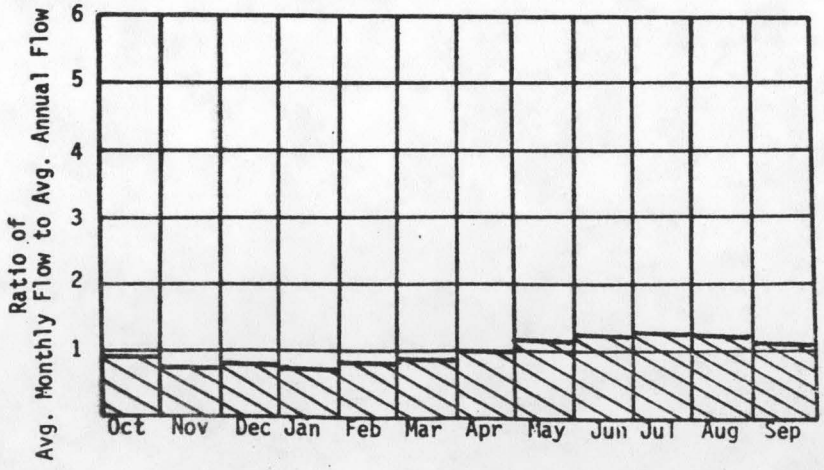
A.	Upstream Elevation of Reach	4145	Ft. MSL
B.	Downstream Elevation of Reach	3932	Ft. MSL
C.	Total Available Head in Reach	213	Ft.
D.	Average Slope in Reach	21.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	1059.8	Sq.Mi.
F.	Inflow Classification	Regulated	

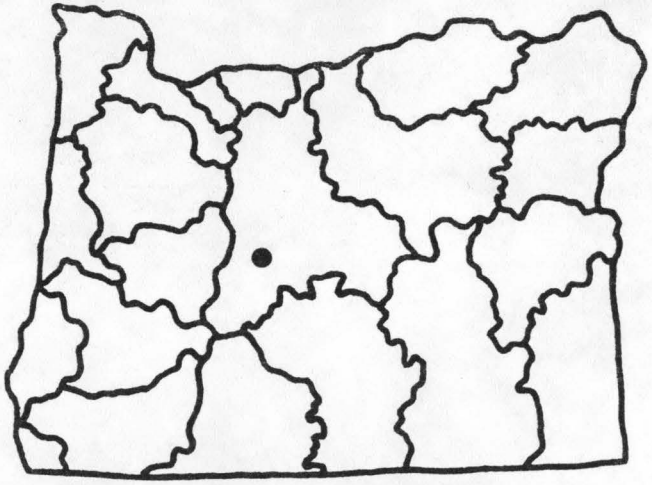
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	153.6	2.77	24.28	1.000
80	332.1	5.99	48.98	.933
50	1149.3	20.75	132.98	.732
30	1823.1	32.91	175.59	.609
10	2556.0	46.14	198.77	.492

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1342 CFS





U.S.G.S. TOPO. SERIES
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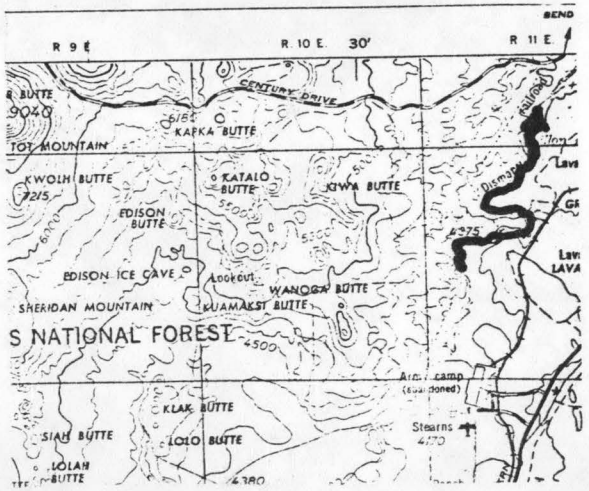
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0024

I. LOCATION

A. State	Oregon	
B. County	Deschutes	
C. Township, Range	Sec.31, T19S, R11E	
D. Latitude, Longitude	43°53'N, 121°28'W	
E. Stream Name	Deschutes River	
F. Major Basin Name	Deschutes	
G. River Mile	185.0 to 193.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

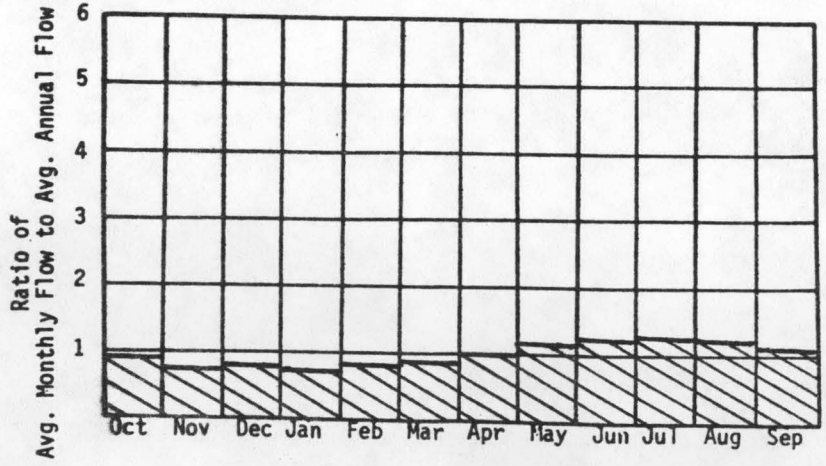
A. Upstream Elevation of Reach	4151	Ft. MSL
B. Downstream Elevation of Reach	4145	Ft. MSL
C. Total Available Head in Reach	6	Ft.
D. Average Slope in Reach	0.7	Ft./Mi.
E. Drainage Area above Reach Mouth	1005.2	Sq.Mi.
F. Inflow Classification	Regulated	

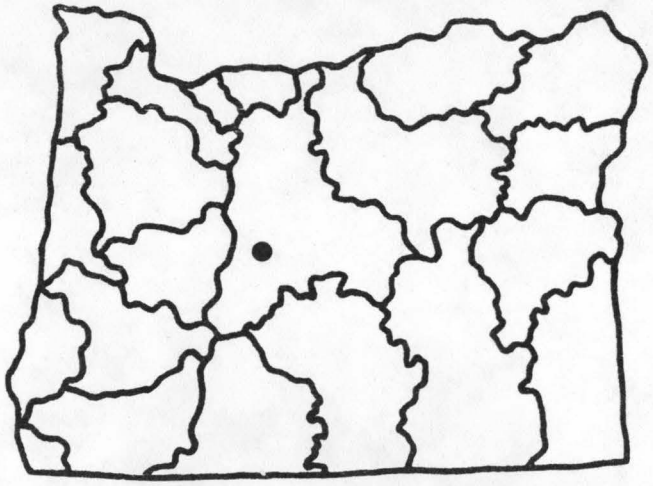
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	149.7	.08	.67	1.000
80	322.2	.16	1.34	.933
50	1102.6	.56	3.60	.733
30	1743.3	.89	4.74	.610
10	2443.1	1.24	5.36	.493

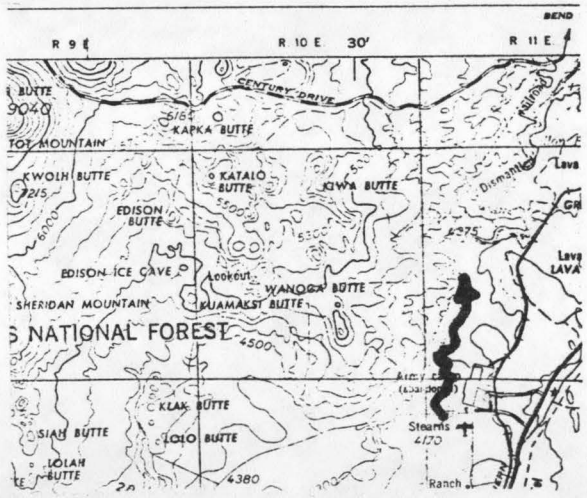
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1285 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.31, T20S, R11E
D.	Latitude, Longitude	43°58'N, 121°27'W
E.	Stream Name	Little Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 15.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

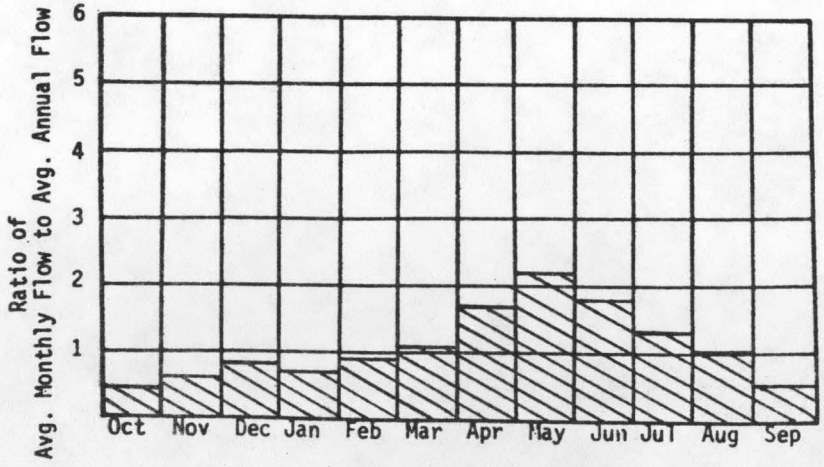
A.	Upstream Elevation of Reach	4176	Ft. MSL
B.	Downstream Elevation of Reach	4150	Ft. MSL
C.	Total Available Head in Reach	26	Ft.
D.	Average Slope in Reach	1.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	574.2	Sq.Mi.
F.	Inflow Classification	Regulated	

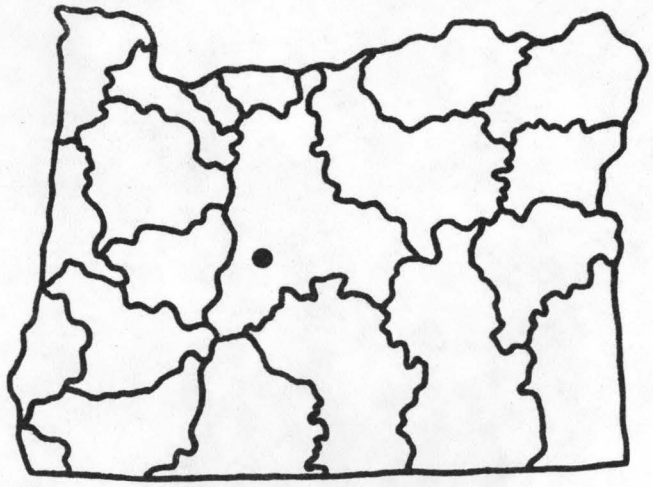
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	59.7	.13	1.15	1.000
80	110.3	.24	2.01	.943
50	251.7	.55	3.78	.778
30	354.6	.78	4.58	.668
10	489.3	1.08	5.10	.540

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 270 CFS





U.S.G.S. TOPO. SERIES
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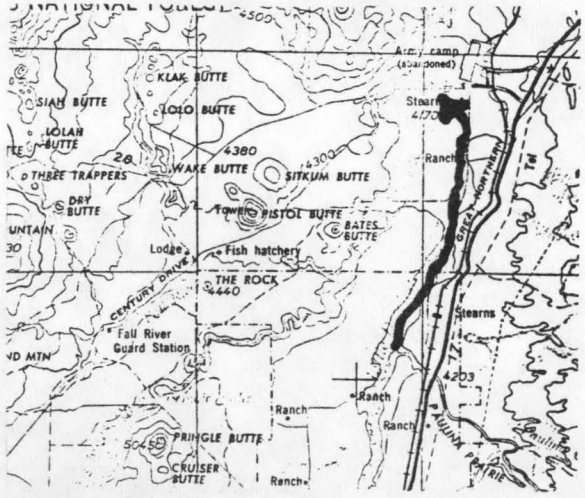
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-010-R0001

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.12, T21S, R10E
D.	Latitude, Longitude	43°45'N, 121°28'W
E.	Stream Name	Paulina Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

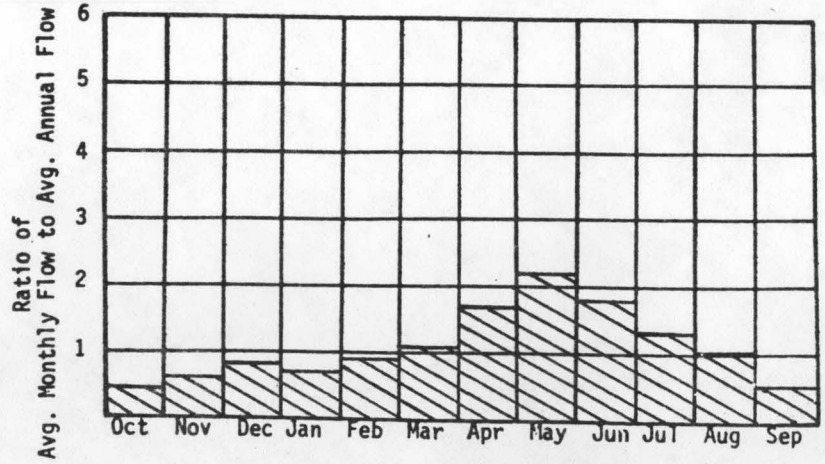
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	68.1	Sq.Mi.
F.	Inflow Classification	Natural	

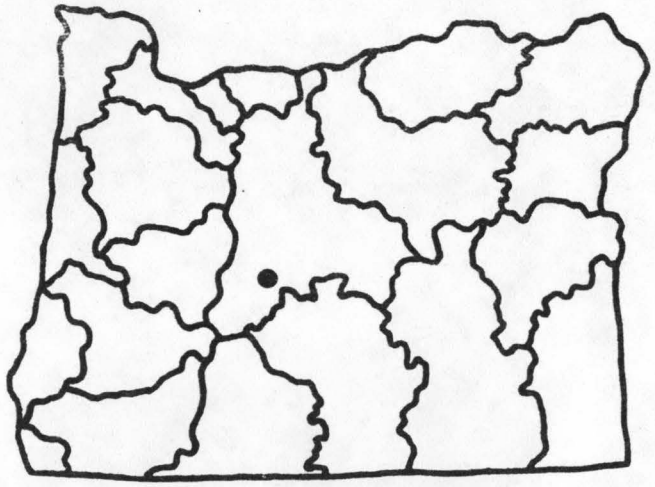
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	16.4	.09	.81	1.000
80	24.5	.14	1.15	.959
50	31.7	.18	1.38	.889
30	38.0	.21	1.50	.808
10	51.3	.29	1.63	.650

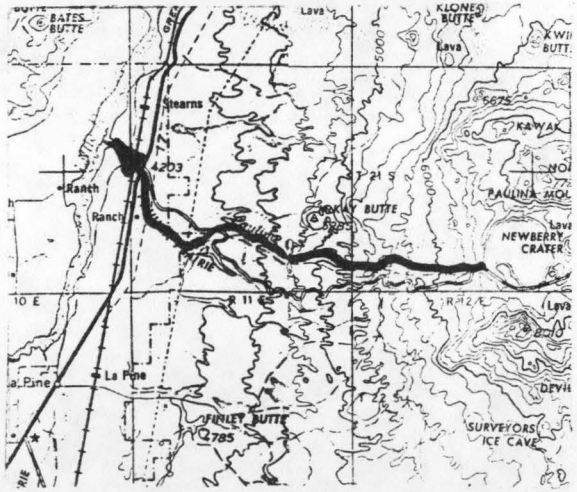
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 30 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.26, T21S, R10E
D.	Latitude, Longitude	43°43'N, 121°29'W
E.	Stream Name	Little Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	15.0 to 29.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

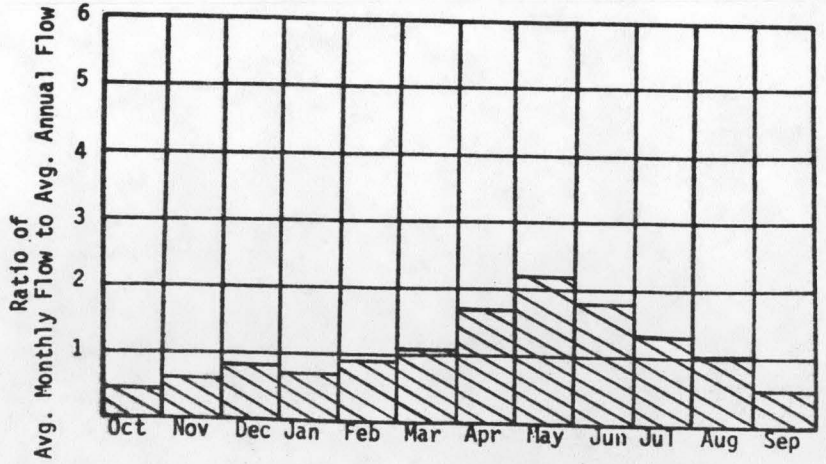
A.	Upstream Elevation of Reach	4203	Ft. MSL
B.	Downstream Elevation of Reach	4176	Ft. MSL
C.	Total Available Head in Reach	27	Ft.
D.	Average Slope in Reach	1.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	443.3	Sq.Mi.
F.	Inflow Classification	Regulated	

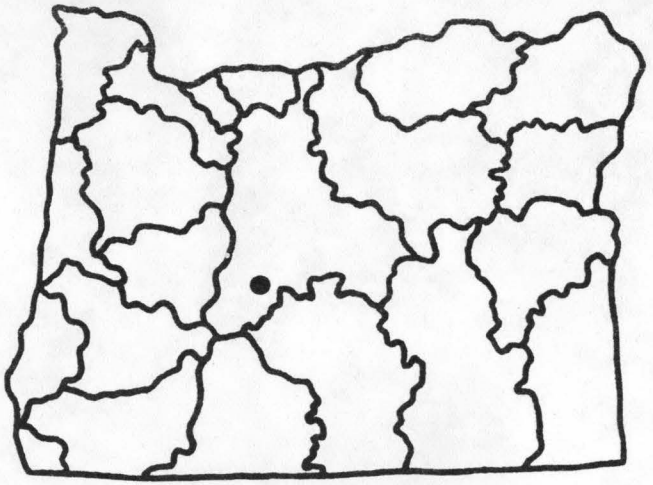
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	52.6	.12	1.05	1.000
80	95.2	.22	1.80	.944
50	205.6	.47	3.24	.786
30	285.1	.65	3.88	.678
10	392.5	.90	4.31	.548

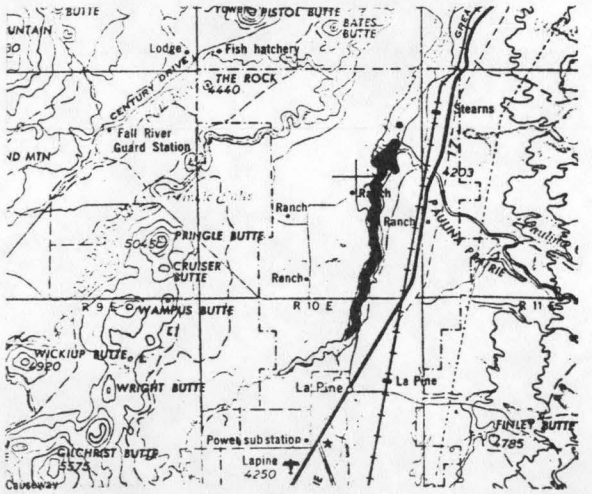
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 218 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.18, T22S, R10E
D.	Latitude, Longitude	43°40'N, 121°34'W
E.	Stream Name	Little Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	29.0 to 43.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

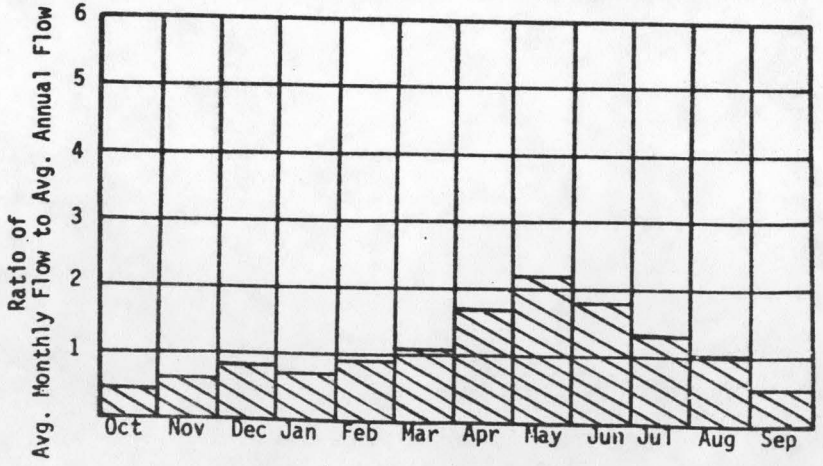
A.	Upstream Elevation of Reach	4269	Ft. MSL
B.	Downstream Elevation of Reach	4203	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	4.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	396.7	Sq.Mi.
F.	Inflow Classification	Regulated	

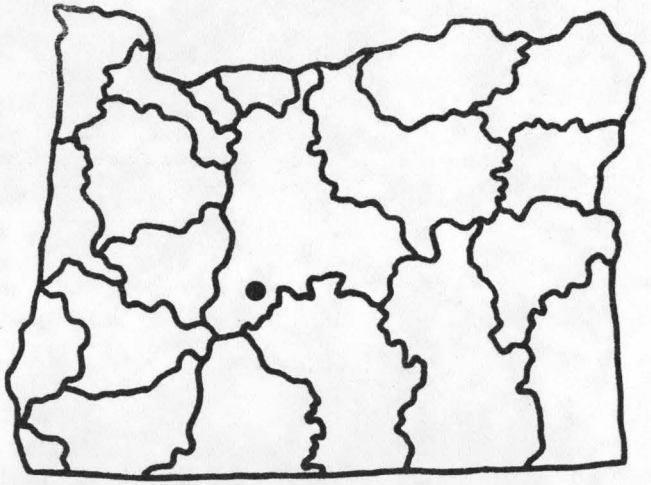
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	49.1	.27	2.40	1.000
80	87.8	.49	4.06	.945
50	183.8	1.03	7.12	.791
30	252.7	1.41	8.47	.684
10	347.5	1.94	9.40	.552

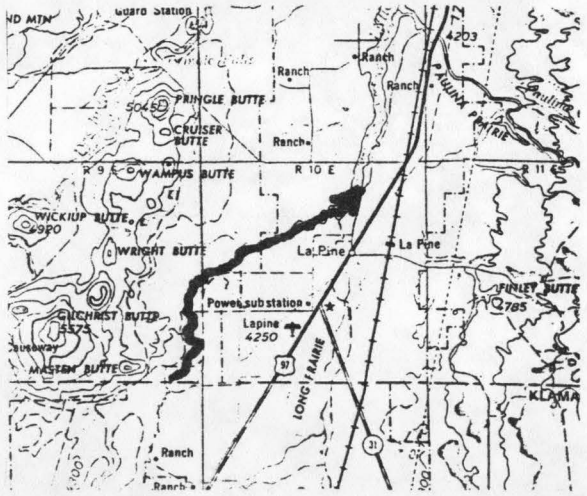
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 194 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Klamath
C.	Township, Range	Sec.23, T23S, R9E
D.	Latitude, Longitude	43°34'N, 121°36'W
E.	Stream Name	Little Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	43.0 to 57.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

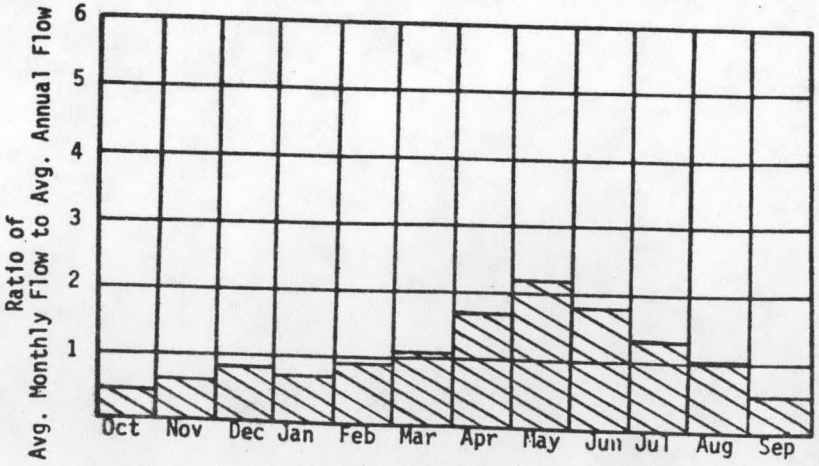
A.	Upstream Elevation of Reach	4346	Ft. MSL
B.	Downstream Elevation of Reach	4269	Ft. MSL
C.	Total Available Head in Reach	77	Ft.
D.	Average Slope in Reach	5.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	319.3	Sq.Mi.
F.	Inflow Classification	Regulated	

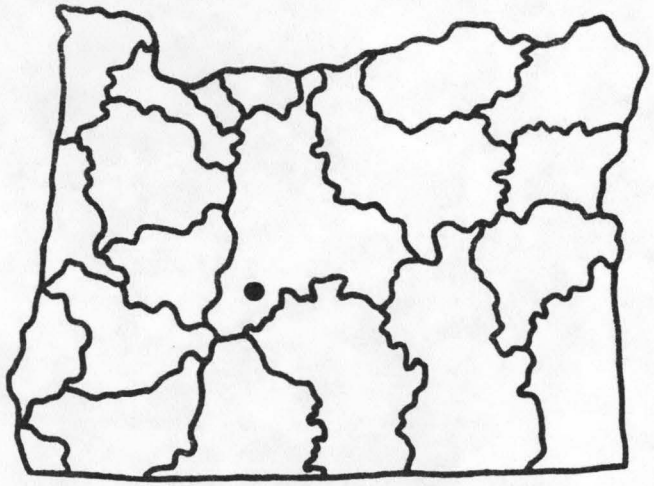
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	46.5	.30	2.66	1.000
80	82.4	.54	4.45	.946
50	168.3	1.10	7.65	.795
30	229.8	1.50	9.05	.689
10	315.7	2.06	10.03	.556

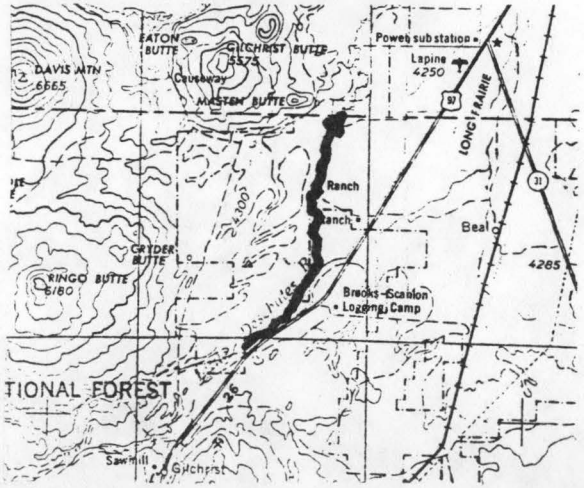
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 177 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-020-R0001

I. LOCATION

A. State	Oregon	
B. County	Klamath	
C. Township, Range	Sec.12, T24S, R8E	
D. Latitude, Longitude	43°30'N, 121°43'W	
E. Stream Name	Crescent Creek	
F. Major Basin Name	Deschutes	
G. River Mile	0.0 to 12.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

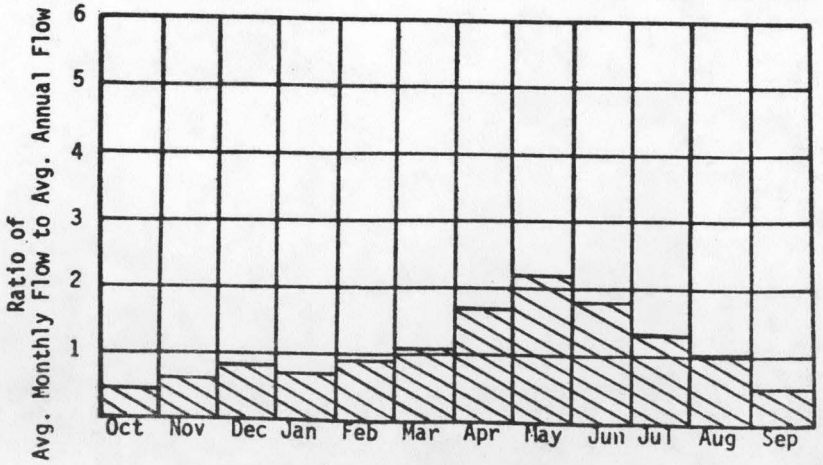
A. Upstream Elevation of Reach	4409	Ft. MSL
B. Downstream Elevation of Reach	4351	Ft. MSL
C. Total Available Head in Reach	58	Ft.
D. Average Slope in Reach	4.8	Ft./Mi.
E. Drainage Area above Reach Mouth	166.1	Sq.Mi.
F. Inflow Classification	Regulated	

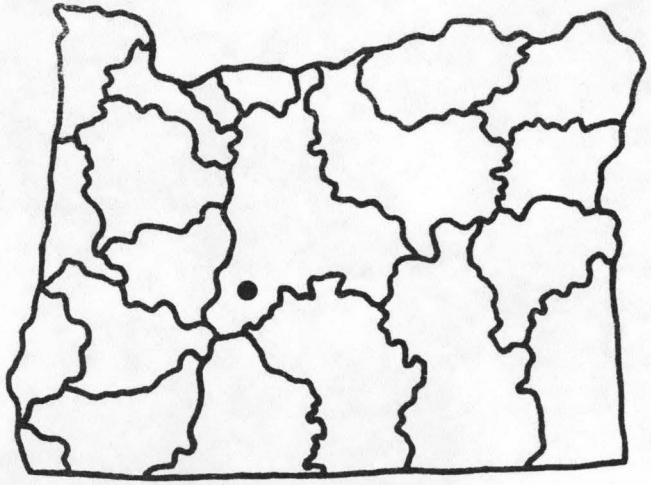
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	36.0	.18	1.55	1.000
80	61.2	.30	2.50	.949
50	111.8	.55	3.92	.813
30	147.8	.73	4.54	.713
10	202.2	.99	5.00	.575

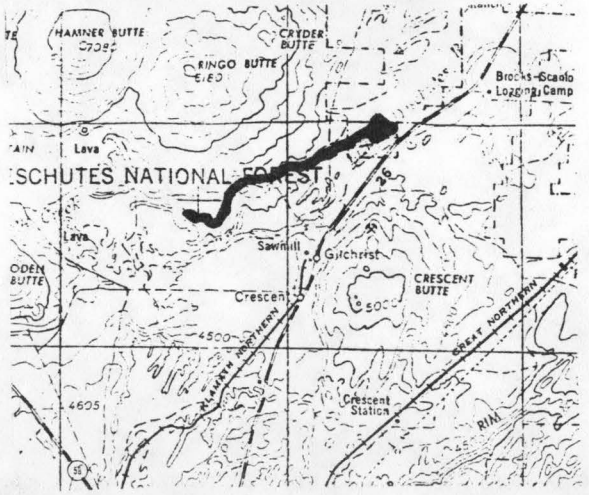
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 115 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT

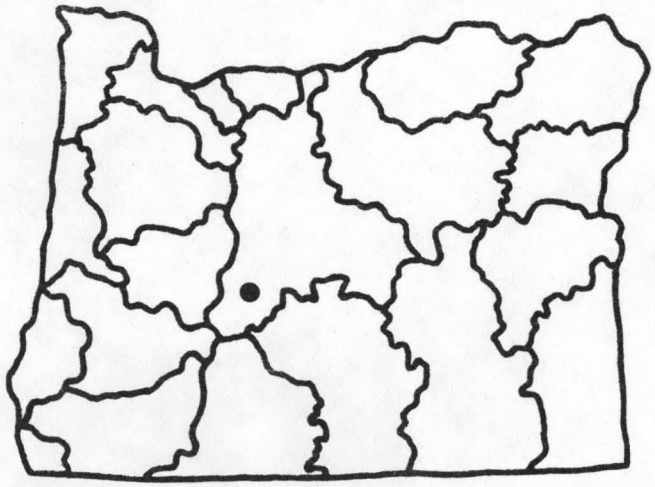


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-020-R0002

I. LOCATION

A.	State	Oregon
B.	County	Klamath
C.	Township, Range	Sec.13, T24S, R7E
D.	Latitude, Longitude	43°30'N, 121°49'W
E.	Stream Name	Crescent Creek
F.	Major Basin Name	Deschutes
G.	River Mile	12.0 to 23.0



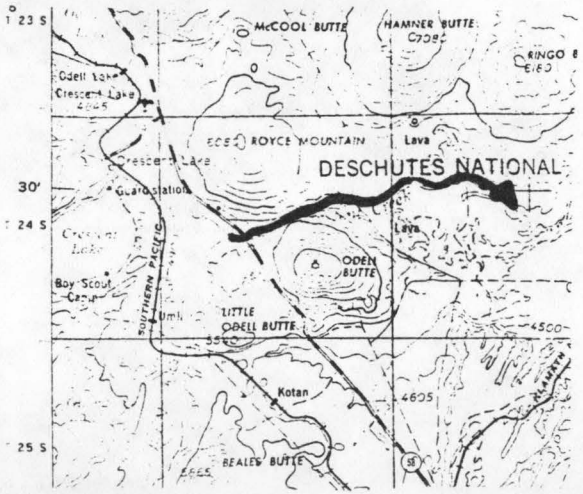
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	4618	Ft. MSL
B.	Downstream Elevation of Reach	4409	Ft. MSL
C.	Total Available Head in Reach	209	Ft.
D.	Average Slope in Reach	19	Ft./Mi.
E.	Drainage Area above Reach Mouth	156.0	Sq.Mi.
F.	Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

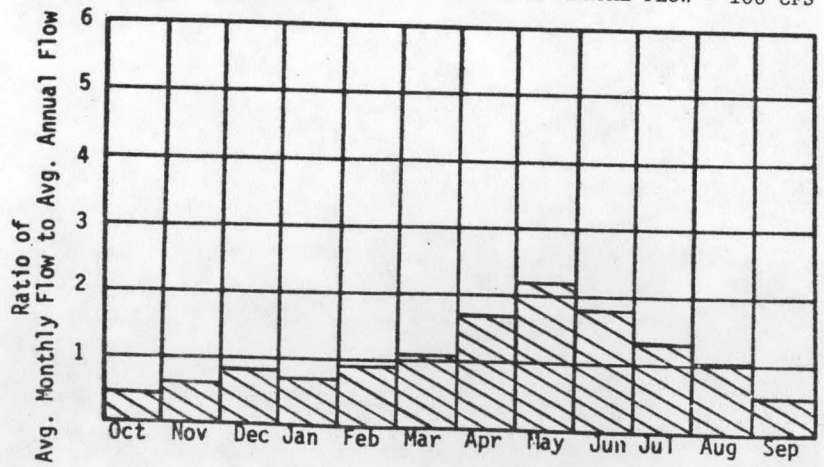
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	34.4	.61	5.34	1.000
80	58.1	1.03	8.56	.949
50	104.1	1.84	13.19	.817
30	136.9	2.42	15.23	.717
10	187.1	3.31	16.79	.578

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 106 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-020-R0003

I. LOCATION

A.	State	Oregon
B.	County	Klamath
C.	Township, Range	Sec.20, T24S, R7E
D.	Latitude, Longitude	43°29'N, 121°54'W
E.	Stream Name	Big Marsh Creek
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

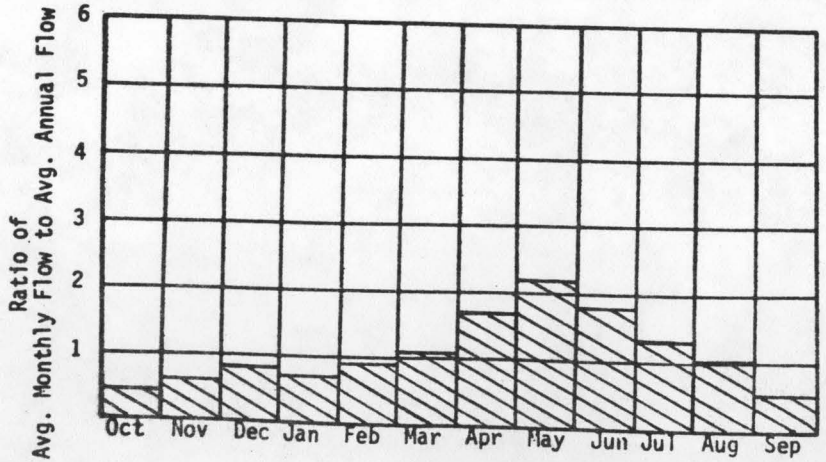
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	46.7	Sq.Mi.
F.	Inflow Classification	Natural	

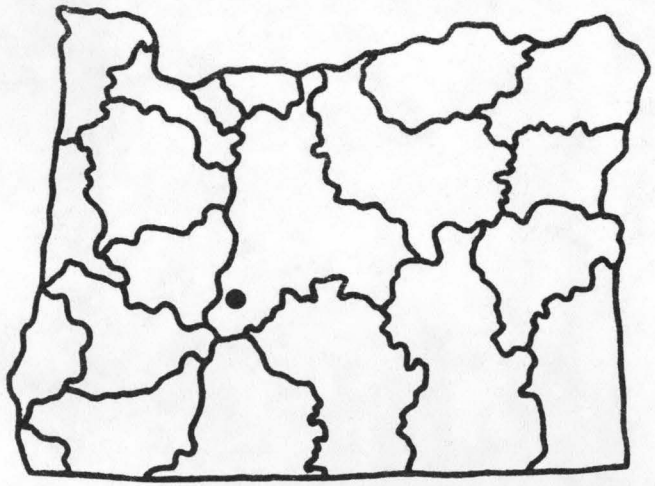
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	17.6	.10	.86	1.000
80	26.6	.15	1.25	.958
50	35.4	.20	1.53	.881
30	42.8	.24	1.67	.798
10	57.8	.32	1.82	.642

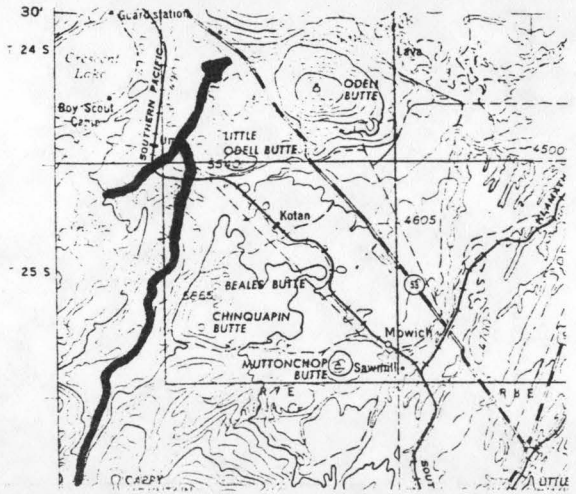
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 34 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT

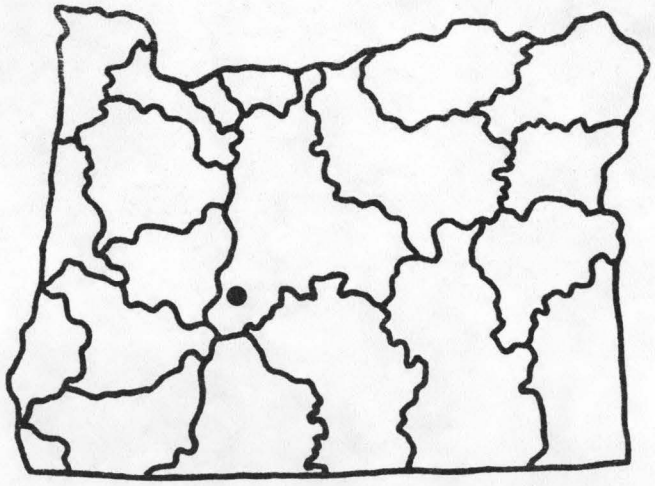


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-020-R000%

I. LOCATION

A.	State	Oregon
B.	County	Klamath
C.	Township, Range	Sec.7, T24S, R7E
D.	Latitude, Longitude	43°30'N, 121°55'W
E.	Stream Name	Crescent Creek
F.	Major Basin Name	Deschutes
G.	River Mile	23.0 to 30.0



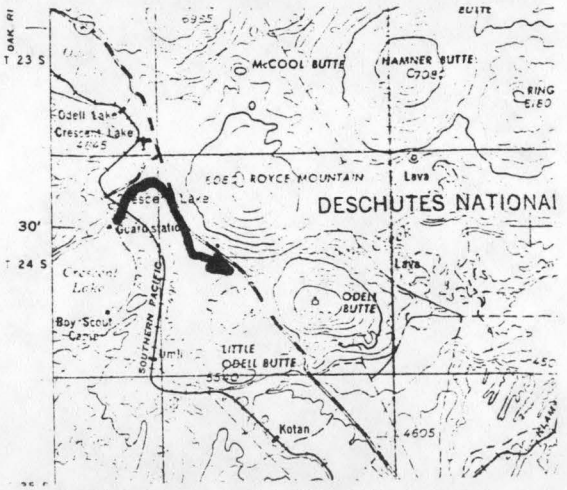
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	4809	Ft. MSL
B.	Downstream Elevation of Reach	4618	Ft. MSL
C.	Total Available Head in Reach	191	Ft.
D.	Average Slope in Reach	27.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	79.9	Sq.Mi.
F.	Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

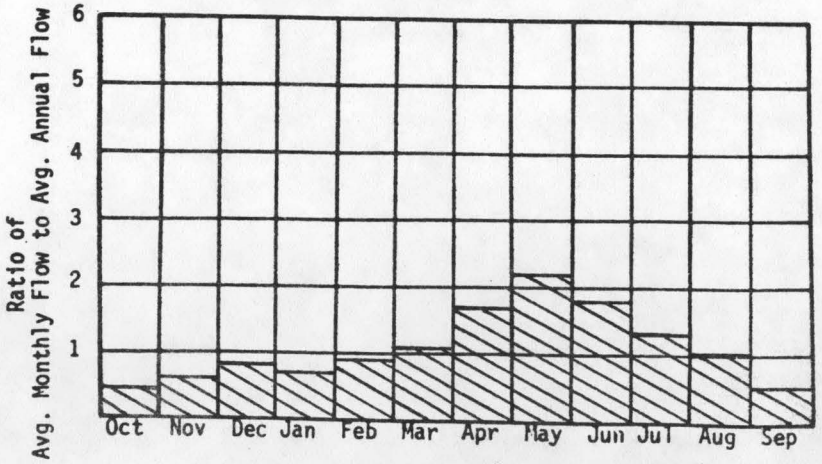
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	24.5	.40	3.47	1.000
80	39.0	.63	5.27	.953
50	60.0	.97	7.21	.847
30	75.7	1.22	8.10	.755
10	102.8	1.66	8.87	.608

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 60 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-020-R0005

I. LOCATION

A.	State	Oregon
B.	County	Klamath
C.	Township, Range	Sec.11, T24S, R6E
D.	Latitude, Longitude	43°30'N, 121°57'W
E.	Stream Name	Crescent Creek
F.	Major Basin Name	Deschutes
G.	River Mile	30.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

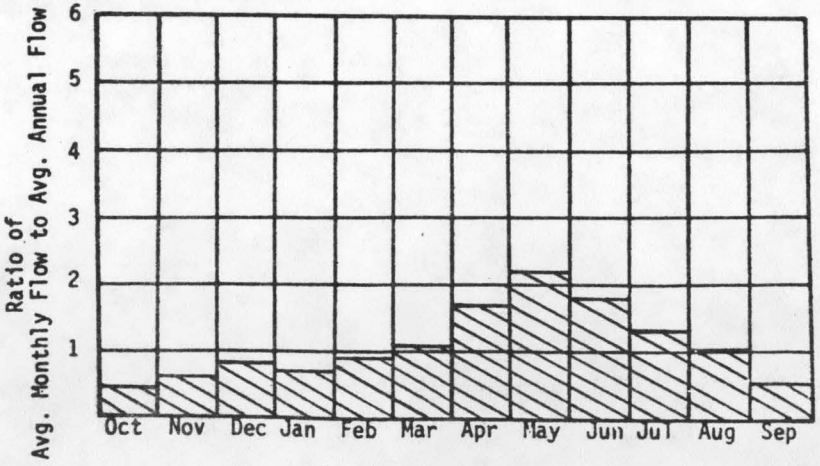
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	62.7	Sq.Mi.
F.	Inflow Classification	Regulated	

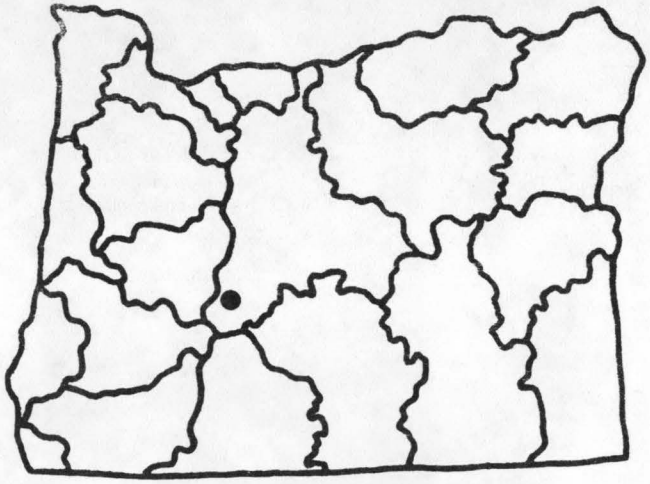
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	22.9	.13	1.12	1.000
80	36.2	.20	1.69	.954
50	54.2	.30	2.26	.853
30	67.7	.38	2.53	.763
10	91.9	.51	2.77	.614

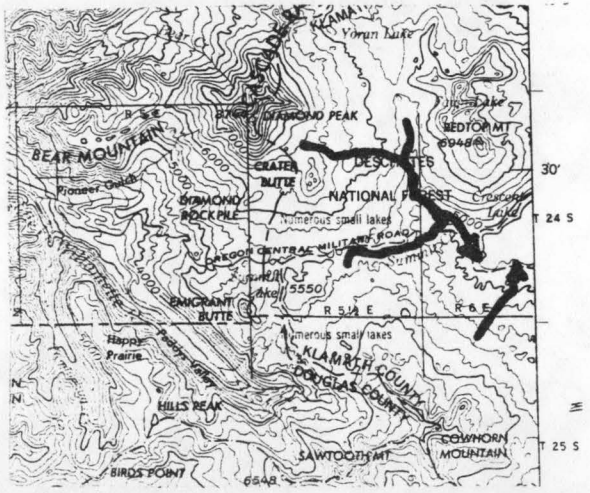
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 54 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT

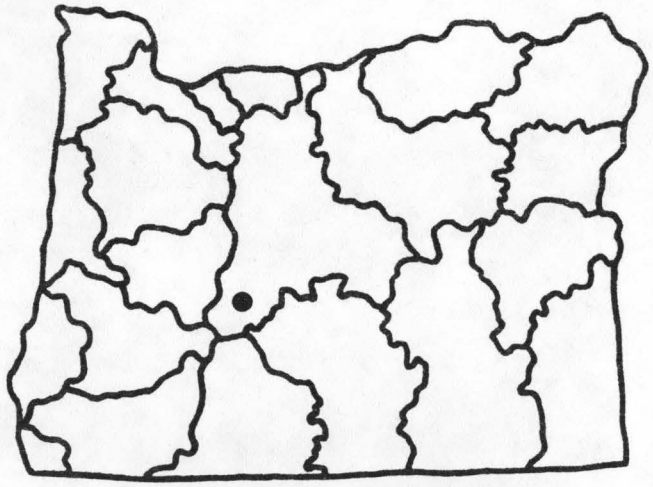


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Klamath
C.	Township, Range	Sec.17, T24S, R9E
D.	Latitude, Longitude	43°30'N, 121°40'W
E.	Stream Name	Little Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	57.3 to 71.0



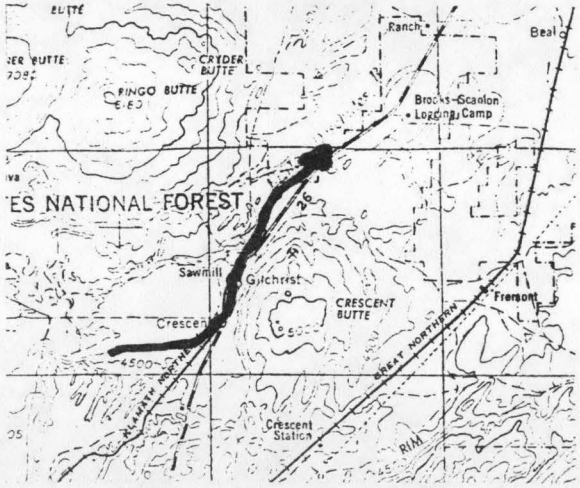
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	4507	Ft. MSL
B.	Downstream Elevation of Reach	4346	Ft. MSL
C.	Total Available Head in Reach	161	Ft.
D.	Average Slope in Reach	11.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	128.8	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

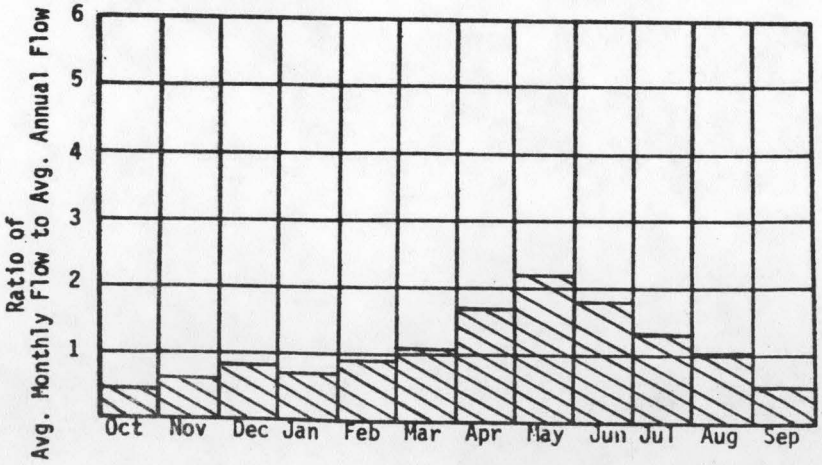
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	21.8	.30	2.60	1.000
80	34.1	.46	3.89	.955
50	49.9	.68	5.12	.858
30	61.9	.84	5.69	.769
10	84.0	1.15	6.22	.620

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 49 CFS

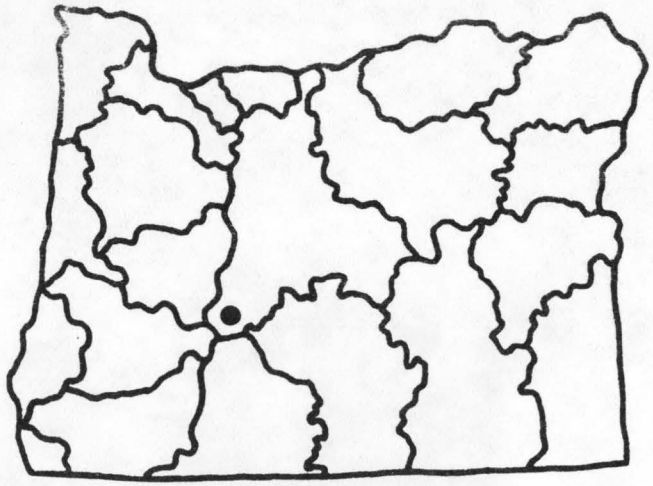


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Klamath
C.	Township, Range	Sec.17, T25S, R8E
D.	Latitude, Longitude	43°25'N, 121°47'W
E.	Stream Name	Little Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	71.0 to 82.0



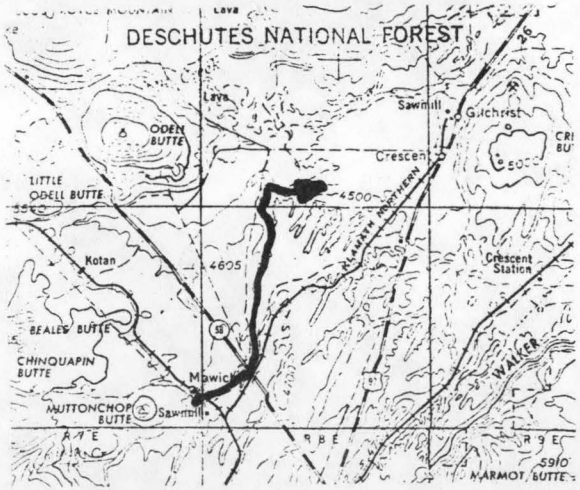
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	4735	Ft. MSL
B.	Downstream Elevation of Reach	4507	Ft. MSL
C.	Total Available Head in Reach	228	Ft.
D.	Average Slope in Reach	20.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	86.4	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

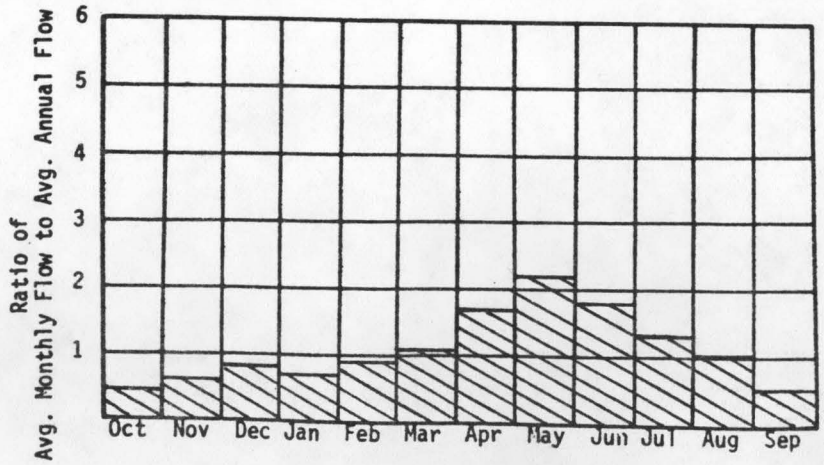
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	17.4	.34	2.95	1.000
80	26.2	.51	4.25	.958
50	34.8	.67	5.20	.882
30	42.0	.81	5.69	.799
10	56.8	1.10	6.18	.644

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 34 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-060-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Klamath
C.	Township, Range	Sec.36, T25S, R7E
D.	Latitude, Longitude	43°22'N, 121°49'W
E.	Stream Name	Little Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	82.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

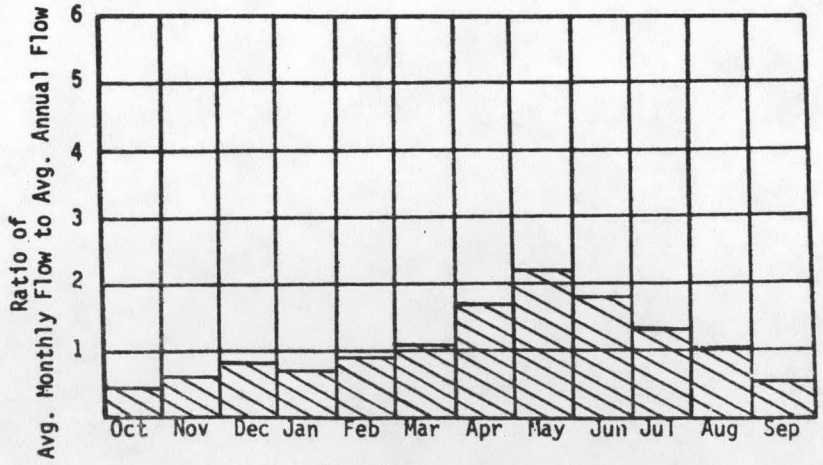
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	48.3	Sq.Mi.
F.	Inflow Classification	Natural	

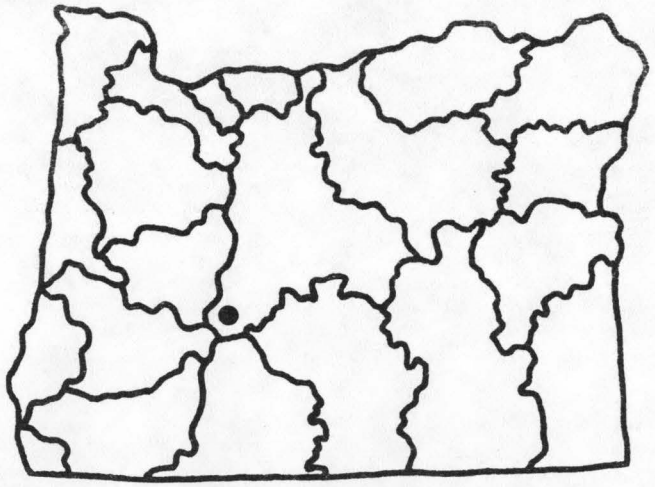
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.7	.08	.72	1.000
80	21.6	.12	1.01	.960
50	26.6	.15	1.17	.902
30	31.4	.18	1.27	.825
10	42.3	.24	1.38	.664

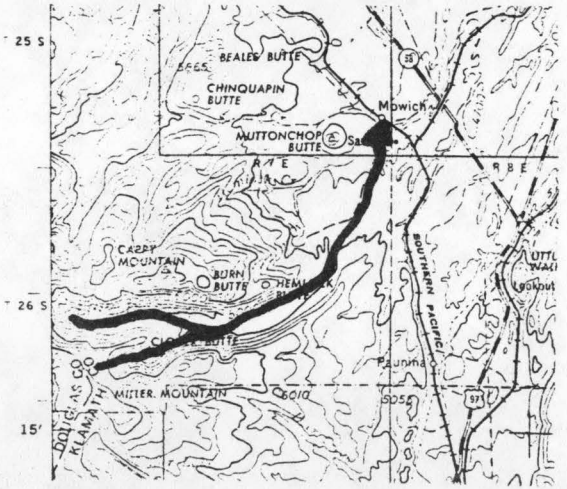
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 25 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0025

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.26, T20S, R10E
D.	Latitude, Longitude	43°49'N, 121°29'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	193.0 to 205.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

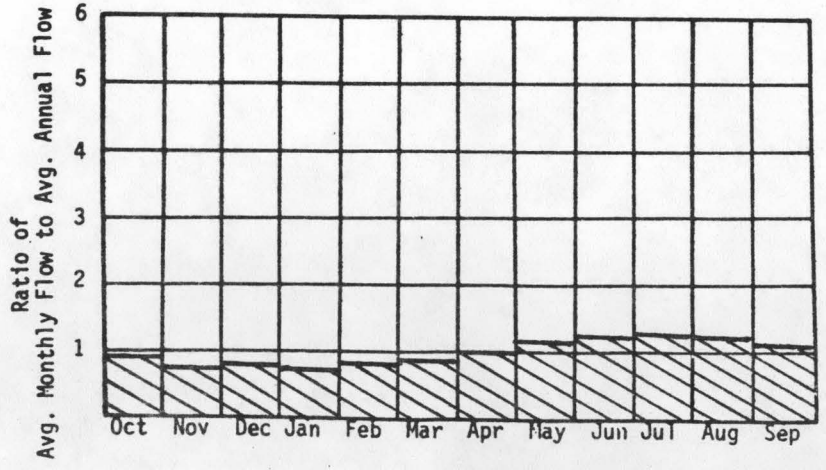
A.	Upstream Elevation of Reach	4169	Ft. MSL
B.	Downstream Elevation of Reach	4151	Ft. MSL
C.	Total Available Head in Reach	18	Ft.
D.	Average Slope in Reach	1.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	347.5	Sq.Mi.
F.	Inflow Classification	Regulated	

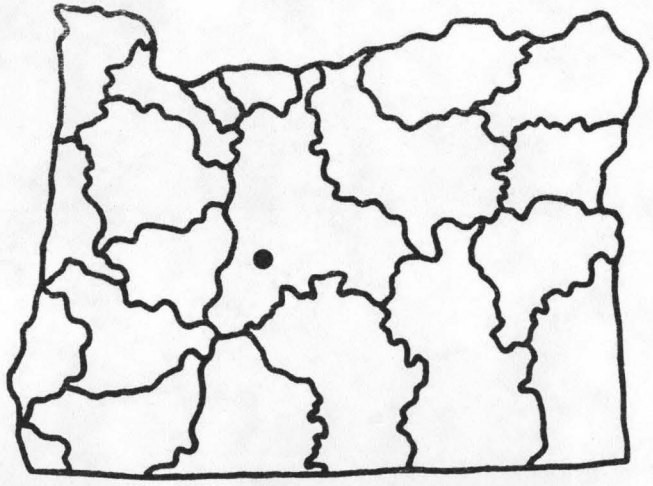
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	126.2	.19	1.69	1.000
80	264.0	.40	3.30	.935
50	838.0	1.28	8.28	.740
30	1296.8	1.98	10.74	.620
10	1812.1	2.76	12.11	.500

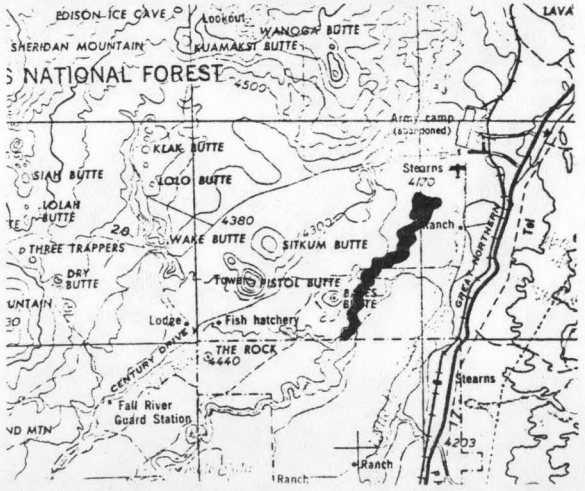
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 962 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-080-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.33, T20S, R10E
D.	Latitude, Longitude	43°48'N, 121°32'W
E.	Stream Name	Fall River
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 4.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

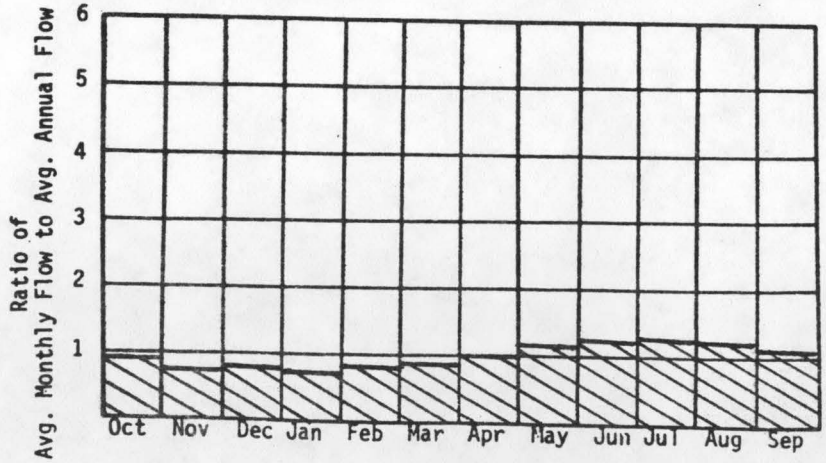
A.	Upstream Elevation of Reach	4197	Ft. MSL
B.	Downstream Elevation of Reach	4169	Ft. MSL
C.	Total Available Head in Reach	28	Ft.
D.	Average Slope in Reach	6.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	39.21	Sq.Mi.
F.	Inflow Classification	Natural	

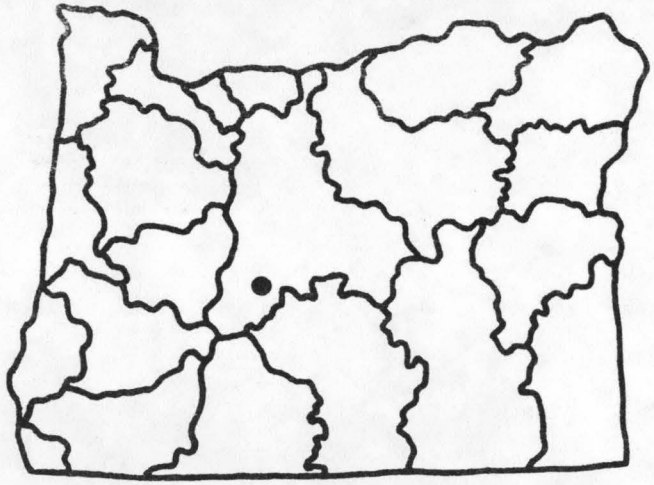
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	43.1	.10	.90	1.000
80	75.5	.18	1.49	.946
50	149.4	.35	2.48	.800
30	202.0	.48	2.92	.696
10	277.2	.66	3.23	.561

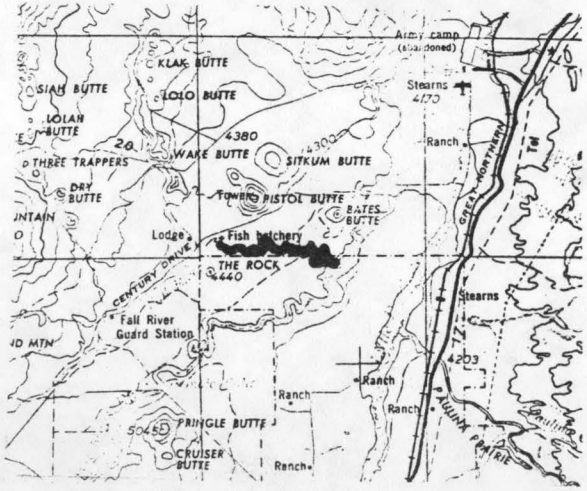
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 156 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-080-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.31, T20S, R10E
D.	Latitude, Longitude	43°48'N, 121°34'W
E.	Stream Name	Fall River
F.	Major Basin Name	Deschutes
G.	River Mile	4.3 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

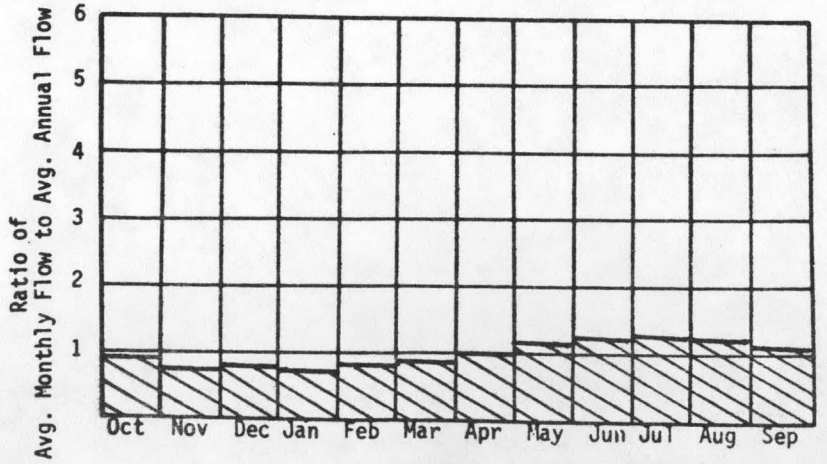
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	26.9	Sq.Mi.
F.	Inflow Classification	Natural	

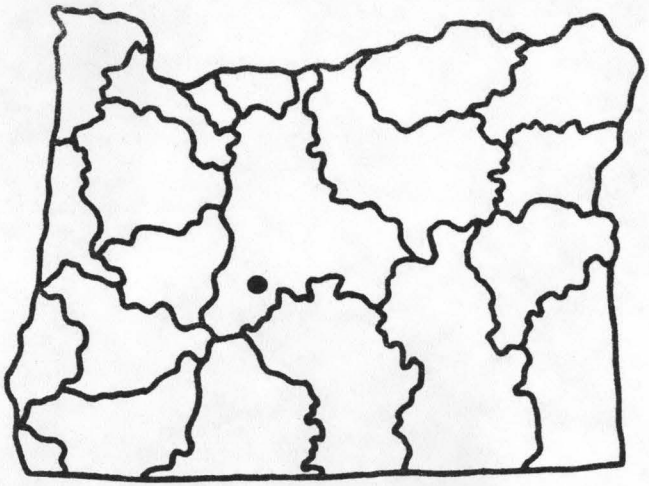
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	41.6	.23	2.04	1.000
80	72.5	.41	3.36	.947
50	141.2	.79	5.55	.802
30	190.1	1.06	6.51	.699
10	260.7	1.46	7.20	.564

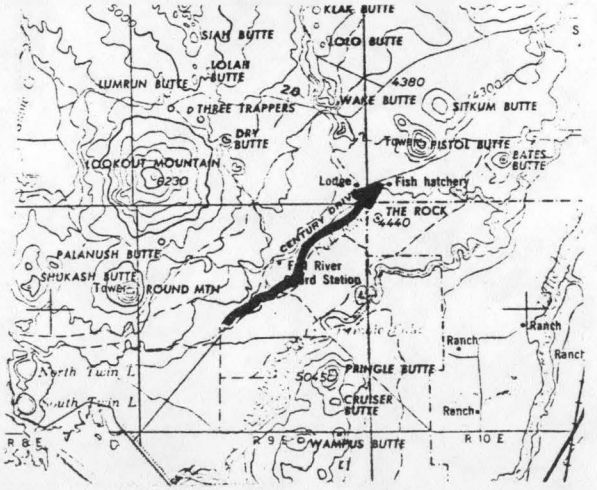
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 147 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0026

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	Sec.14, T21S, R9E
D.	Latitude, Longitude	43°45'N, 121°36'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	205.0 to 226.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

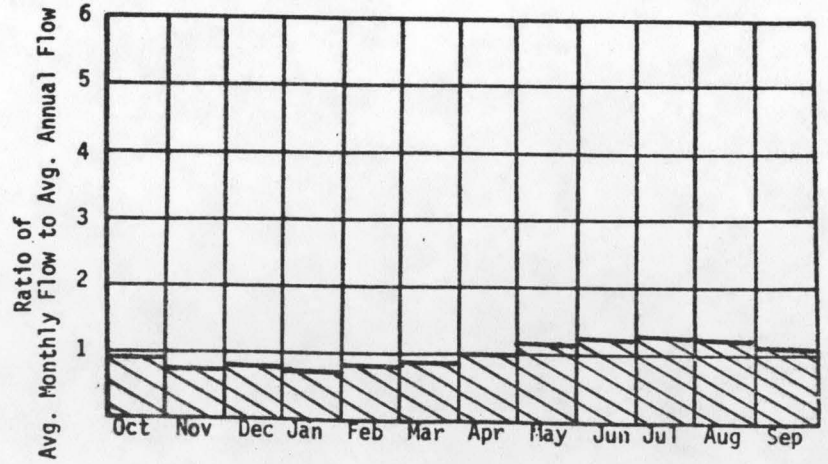
A.	Upstream Elevation of Reach	4261	Ft. MSL
B.	Downstream Elevation of Reach	4169	Ft. MSL
C.	Total Available Head in Reach	92	Ft.
D.	Average Slope in Reach	4.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	294.6	Sq.Mi.
F.	Inflow Classification	Regulated	

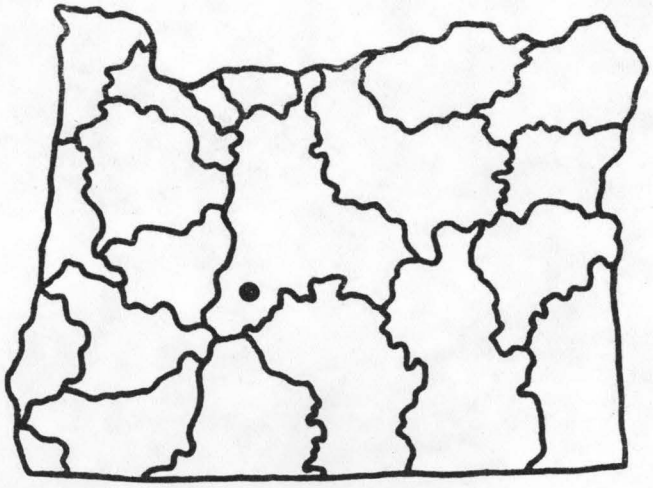
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	109.4	.85	7.47	1.000
80	223.7	1.74	14.30	.936
50	666.8	5.20	33.97	.746
30	1013.8	7.90	43.45	.628
10	1413.1	11.02	48.91	.507

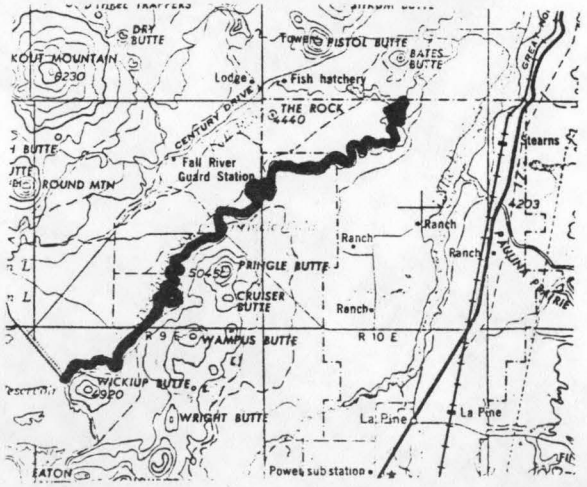
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 756 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-090-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	T20S, R8E
D.	Latitude, Longitude	43°50'N, 121°47'W
E.	Stream Name	Cultus River
F.	Major Basin Name	Deschutes
G.	River Mile	0.0 to 5.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

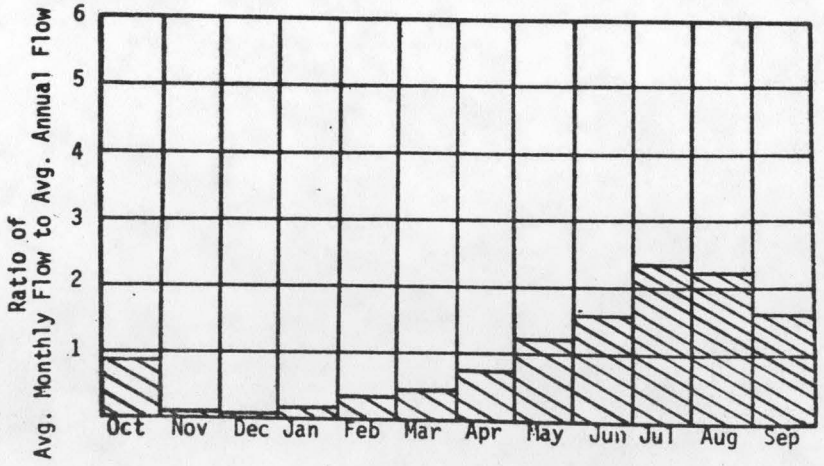
A.	Upstream Elevation of Reach	4500	Ft. MSL
B.	Downstream Elevation of Reach	4435	Ft. MSL
C.	Total Available Head in Reach	65	Ft.
D.	Average Slope in Reach	11.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	18.4	Sq.Mi.
F.	Inflow Classification	Natural	

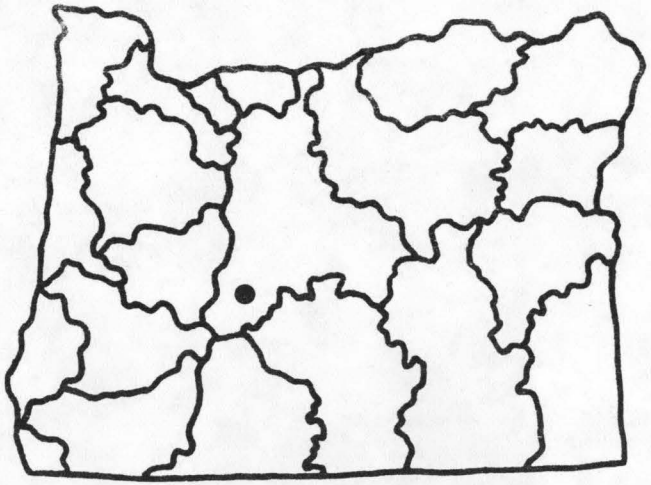
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	22.0	.12	1.06	1.000
80	34.5	.19	1.59	.955
50	50.8	.28	2.10	.857
30	63.2	.35	2.34	.768
10	85.7	.47	2.56	.618

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 50 CFS





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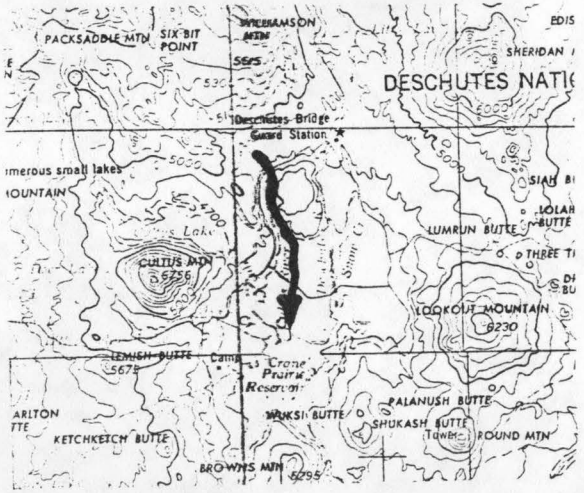
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-090-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	T20S, R8E
D.	Latitude, Longitude	43°52'N, 121°48'W
E.	Stream Name	Cultus River
F.	Major Basin Name	Deschutes
G.	River Mile	5.5 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

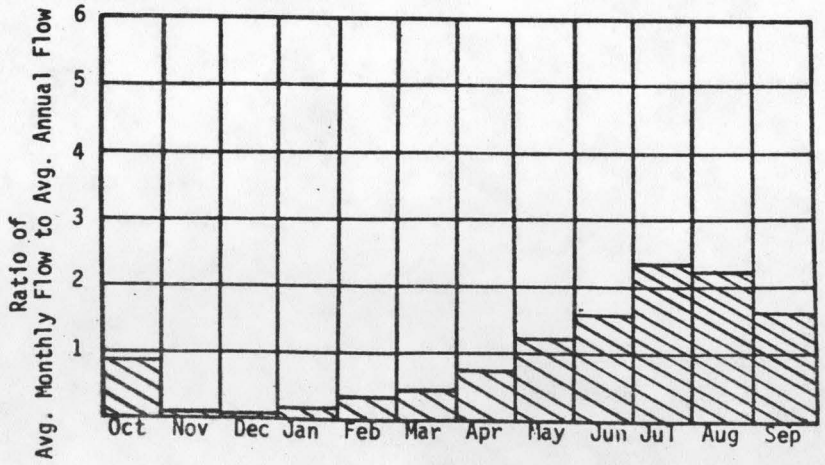
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	12.3	Sq.Mi.
F.	Inflow Classification	Natural	

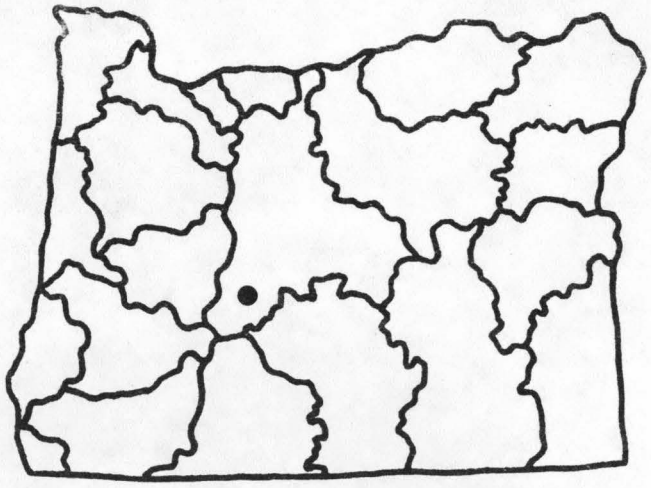
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	17.9	.10	.87	1.000
80	27.0	.15	1.27	.958
50	36.2	.20	1.56	.879
30	43.9	.25	1.71	.796
10	59.3	.33	1.86	.641

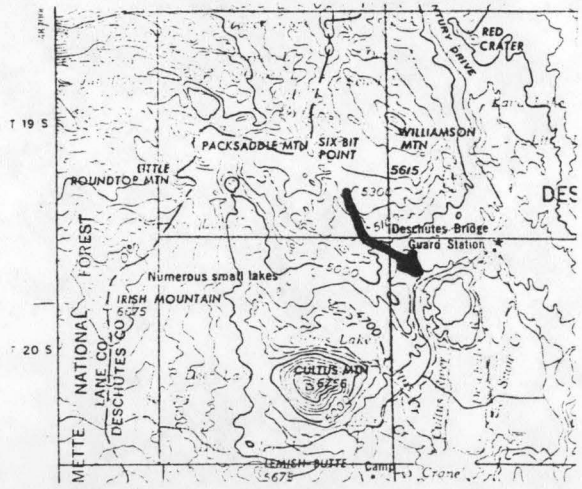
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 35 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-180-000-000-R0027

I. LOCATION

A.	State	Oregon
B.	County	Deschutes
C.	Township, Range	T20S, R8E
D.	Latitude, Longitude	43°52'N, 121°46'W
E.	Stream Name	Deschutes River
F.	Major Basin Name	Deschutes
G.	River Mile	244.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

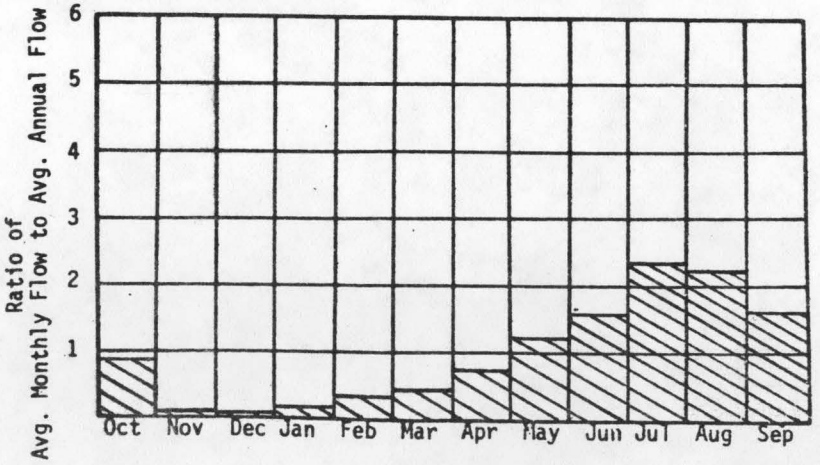
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	34.0	Sq.Mi.
F.	Inflow Classification	Natural	

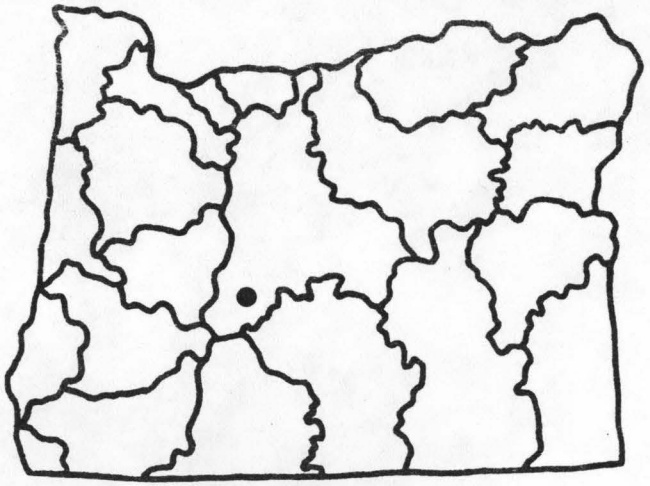
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	41.3	.23	2.02	1.000
80	71.8	.40	3.33	.947
50	139.4	.78	5.48	.803
30	187.5	1.05	6.43	.700
10	257.1	1.44	7.11	.564

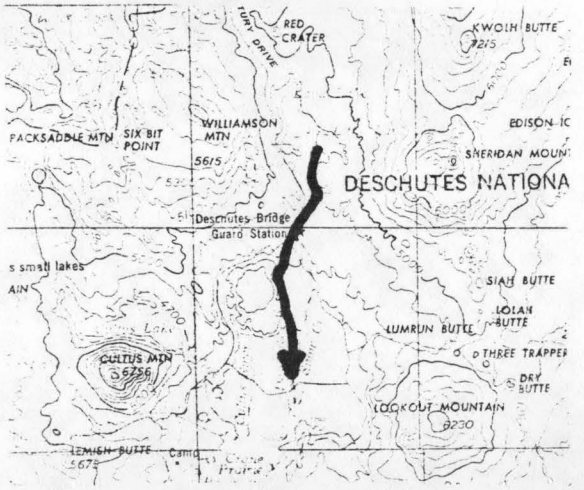
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 145 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CRESCENT



FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-180-								
000-000-R0001	X	-	-	X	1.6	115-B	1	12.0
000-000-R0003	X	-	-	X	2.7	2-500-B	-	20.4
000-000-R0005	X	-	-	X	0.6	800 DC-B	-	24.2
013-000-R0001	X	-	-	X	0.5	69-PPL	-	24.5
013-002-R0001	-	-	-	X	2.0	500-B	-	24.5
013-002-R0002	-	-	-	X	3.0	69W-C	-	24.6
013-002-R0003	-	-	-	X	4.6	69W-C	-	25.0
013-002-R0004	-	-	-	X	3.0	500-B	-	24.0
013-000-R0002	-	-	-	X	0.8	500-B	-	25.5
013-000-R0003	-	-	-	X	0.5	500-B	-	27.7
013-004-R0001	-	-	-	-	0.8	500-B	-	27.8
013-000-R0004	-	-	-	X	0.8	500-B	-	33.9

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-180								
013-000-R0005	-	-	-	X	4.4	500-B	-	36.5
013-006-R0001	-	-	-	X	4.5	500-B	-	36.9
013-000-R0006	-	-	-	X	6.3	500-B	-	36.4
013-000-R0007	-	-	-	-	8.3	500-B	-	36.2
000-000-R0007	X	-	-	X	0.1	2-230/287-B	-	28.7
017-000-R0001	X	-	-	-	0.7	2-230/287-B	-	31.9
017-000-R0002	-	-	-	-	0.6	2-230/287-B	-	32.5
000-000-R0009	X	X	X	X	6.4	2-230/287-B	-	27.7
000-000-R0011	X	X	X	X	6.5	800 DC-B	-	19.5
019-000-R0001	X	-	X	X	7.8	800 DC-B	-	15.2
019-000-R0002	X	-	-	X	5.6	23-PPL	-	16.0
019-006-R0001	X	-	-	X	2.4	2-230/287-B	-	22.2
019-006-R0002	X	-	-	X	2.8	2-230/287-B	-	28.2

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-180-								
019-006-R0003	X	-	-	-	4.9	2-230/287-B	-	30.4
019-000-R0003	X	-	-	X	5.5	2-230/287-B	-	19.6
019-010-R0001	X	-	-	X	4.7	2-230/287-B	-	21.0
019-010-R0002	X	-	-	X	4.1	230-P	-	21.9
019-000-R0004	X	-	-	X	4.5	2-230/287-B	-	20.6
019-000-R0005	X	-	-	X	2.2	2-230/287-B	-	22.8
019-020-R0001	X	-	-	X	0.1	2-230/287-B	-	25.4
019-000-R0006	X	-	-	X	4.4	2-230/287-B	-	29.9
019-000-R0007	X	-	-	X	5.5	2-230/287-B	-	32.6
019-000-R0008	X	-	-	X	5.3	500-B	-	35.6
000-000-R0013	X	X	-	X	4.9	800 DC-B	-	14.4
021-000-R0001	X	-	-	X	3.6	800 DC-B	-	12.6
021-000-R0002	-	X	-	X	0.8	800 DC-B	-	12.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-180-								
021-009-R0001	-	-	-	-	0.8	230-B	-	13.0
021-000-R0003	-	-	-	X	1.3	2-500-B	-	14.5
021-010-R0001	-	-	-	X	0.5	2-500-B	-	16.2
021-000-R0004	X	-	-	X	3.8	2-500-B	-	18.9
021-000-R0005	-	-	-	X	11.5	800 DC-B	-	19.8
021-000-R0006	-	-	-	X	14.8	800 DC-B	-	22.0
000-000-R0015	X	X	-	X	2.9	23-PPL	-	10.9
023-000-R0001	-	X	X	X	8.4	230-P	-	10.8
023-000-R0002	-	-	-	X	5.2	230-P	-	14.7
023-000-R0003	-	-	-	X	3.6	230-P	-	21.9
023-000-R0004	-	-	-	X	7.6	2-230/287-B	-	26.4
000-000-R0017	X	X	-	X	1.3	23-PPL	-	9.1
025-000-R0001	-	-	-	X	6.6	230-P	-	18.8

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-180-								
025-002-R0001	-	-	-	X	7.2	230-P	-	23.3
025-002-R0002	-	-	-	X	7.9	230-P	-	26.7
025-000-R0002	-	-	-	X	10.0	230-P	-	23.0
025-000-R0003	-	-	-	X	12.4	230-P	-	21.3
025-004-R0001	-	-	-	-	15.2	230-P	-	20.1
025-004-R0002	-	-	-	-	15.3	230-P	-	21.2
025-000-R0004	-	-	-	X	14.2	230-P	-	19.6
025-006-R0001	-	-	-	-	14.2	69-C-C	-	19.3
025-006-R0002	-	-	-	-	14.9	69-C-C	-	20.2
025-000-R0005	-	-	X	X	12.3	69-C-C	-	17.4
025-008-R0001	-	-	-	-	10.0	69-C-C	-	15.4
025-000-R0006	-	-	X	X	9.5	69-C-C	-	14.8
025-000-R0007	-	-	X	X	7.5	69-C-C	-	13.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-180-								
025-010-R0001	-	-	X	X	6.2	69-C-C	-	11.7
025-010-R0002	-	-	-	X	5.0	69-C-C	-	10.6
025-010-R0003	-	-	-	X	3.9	69-C-C	-	9.8
025-010-R0004	-	-	-	X	6.2	69-C-C	-	11.9
025-010-R0005	-	-	-	X	6.4	69-C-C	-	12.3
030-000-R0001	-	-	-	X	0.1	230-P	1	8.7
030-000-R0005	-	-	-	X	1.6	69-PPL	-	7.3
030-000-R0006	-	-	-	X	0.1	23-PPL	1	5.0
030-000-R0007	-	-	-	X	0.5	24.9-C-C	1	1.7
030-000-R0008	-	-	-	X	3.5	750-B	-	9.9
030-000-R0009	-	-	-	-	0.4	24.9-C-C	-	18.9
030-000-R0010	-	-	-	-	0.8	24.9-C-C	-	28.6
030-001-R0001	-	-	-	-	0.8	24.9-C-C	-	32.7

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-180-								
030-000-R0011	-	-	-	-	1.1	24.9-C-C	-	34.9
030-000-R0012	-	-	-	-	1.2	24.9-C-C	-	38.3
030-002-R0001	-	-	-	-	0.6	24.9-C-C	-	42.1
030-003-R0001	-	-	-	X	0.6	24.9-C-C	-	42.1
000-000-R0018	-	X	-	X	3.7	69-PPL	-	14.7
040-000-R0001	-	-	-	X	5.6	69-PPL	-	13.0
040-000-R0002	-	-	-	X	5.2	69-PPL	-	7.1
040-000-R0003	-	-	-	X	1.4	69-PPL	1	1.1
040-000-R0004	-	-	-	X	3.8	69-PPL	-	5.9
040-001-R0001	-	-	-	X	6.8	69-PPL	-	8.8
040-000-R0005	-	-	-	X	8.0	69-PPL	-	9.8
040-002-R0001	-	-	-	X	9.0	69-PPL	-	11.0
040-000-R0006	-	-	-	X	9.7	69-PPL	-	11.7

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

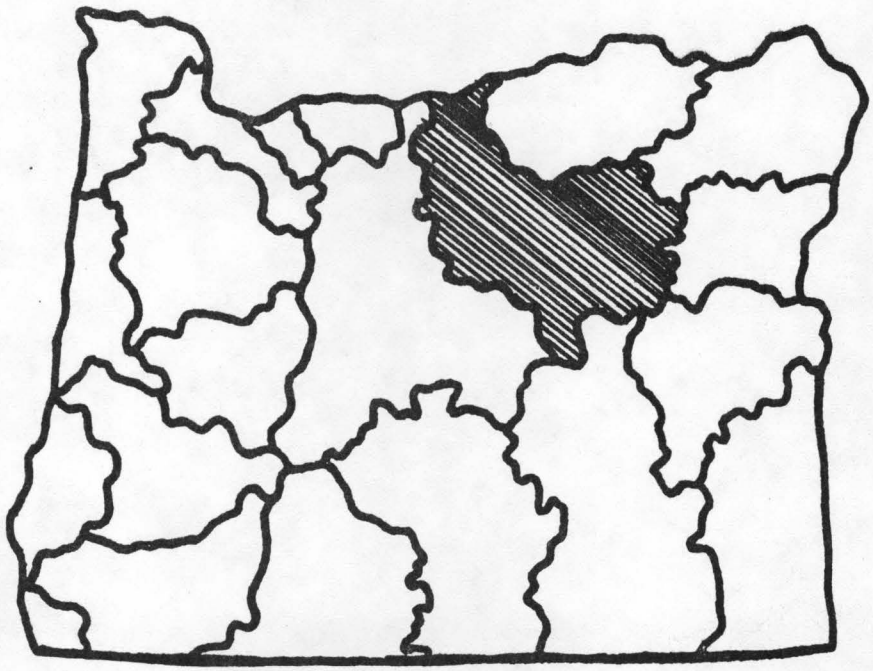
REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-180-								
040-000-R0007	-	-	-	X	10.1	69-PPL	-	12.0
000-000-R0019	-	X	-	X	2.2	69-PPL	-	10.7
000-000-R0020	-	X	-	X	0.8	230-P	-	3.8
000-000-R0021	-	X	-	X	0.1	69-M-C	-	8.2
050-000-R0001	-	-	-	X	0.1	69-M-C	1	3.4
050-000-R0002	-	-	-	X	5.2	69-M-C	-	8.9
050-000-R0003	-	-	-	X	6.8	69-M-C	-	11.4
000-000-R0022	-	X	-	X	0.1	69-PPL	1	1.6
000-000-R0023	-	X	-	X	0.5	69-M-C	-	10.3
000-000-R0024	-	X	-	X	1.4	69-M-C	-	19.0
060-000-R0001	X	-	-	-	0.5	69-M-C	-	22.0
060-010-R0001	X	-	-	X	1.0	69-M-C	-	22.2
060-000-R0002	X	-	-	X	0.3	69-M-C	-	25.5

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-180-								
060-000-R0003	-	-	-	X	1.3	69-M-C	-	30.9
060-000-R0004	-	-	-	X	1.1	69-M-C	-	37.8
060-020-R0001	-	-	-	X	1.7	69-M-C	-	46.6
060-020-R0002	-	-	-	X	5.2	23-M-C	-	47.2
060-020-R0003	-	-	-	X	1.3	23-M-C	-	50.3
060-020-R0004	-	-	-	X	0.1	23-M-C	-	50.3
060-020-R0005	-	-	-	X	0.1	23-M-C	-	51.6
060-000-R0005	-	-	-	X	0.6	69-M-C	-	45.6
060-000-R0006	-	-	-	X	2.1	69-M-C	-	50.8
060-000-R0007	-	-	-	X	0.9	23-M-C	-	51.1
000-000-R0025	-	X	-	X	2.2	69-M-C	-	19.0
080-000-R0001	X	-	-	X	4.2	69-M-C	-	21.5
080-000-R0002	X	X	-	X	5.2	69-M-C	-	22.1

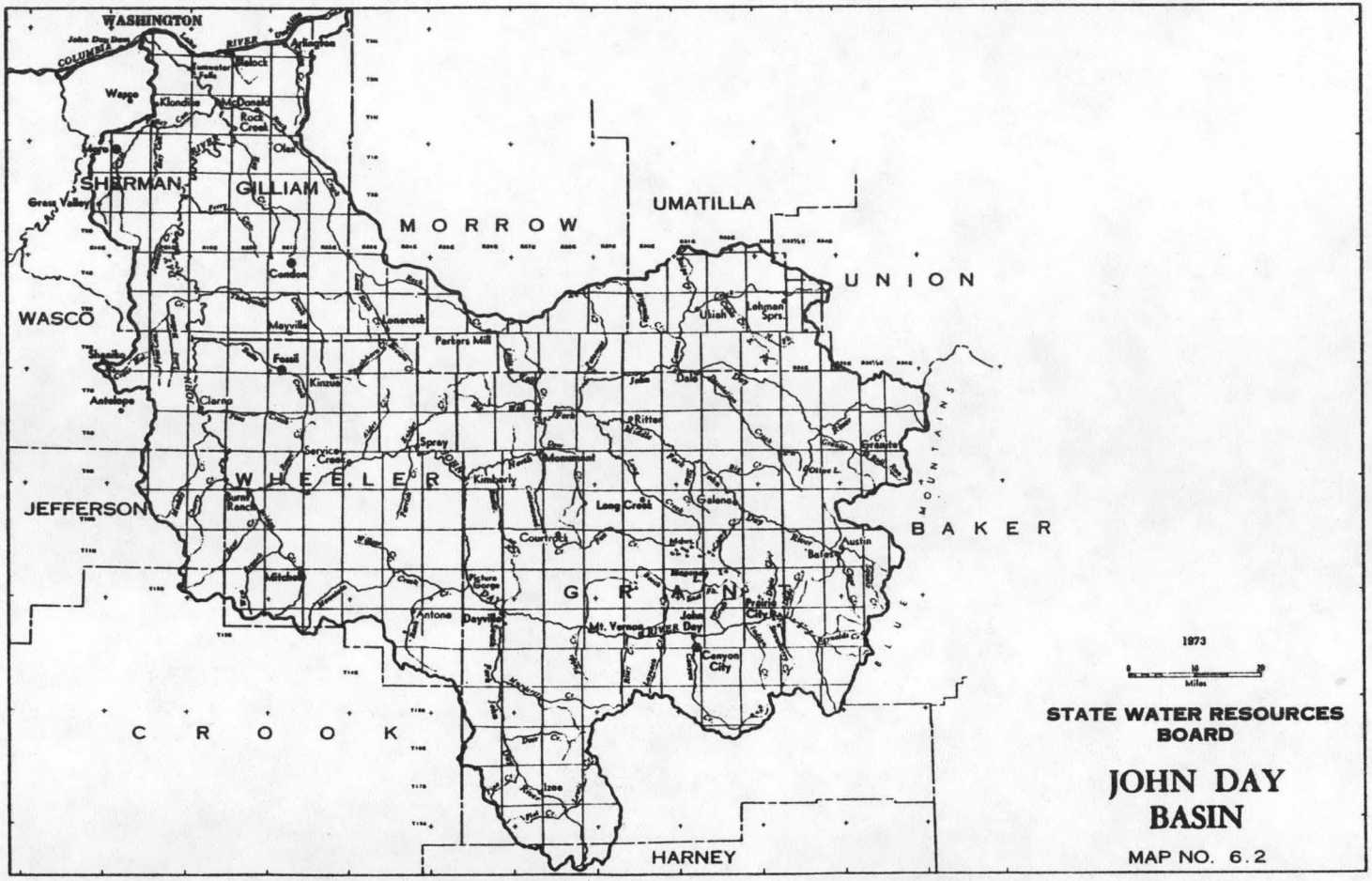
FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-180-								
000-000-R0026	-	X	-	X	6.5	69-M-C	-	26.6
090-000-R0001	-	-	-	X	17.4	69-M-C	-	29.0
090-000-R0002	-	-	-	X	17.8	69-M-C	-	28.8
000-000-R0027	-	X	-	X	12.8	69-M-C	-	32.5



APPENDIX 6

JOHN DAY BASIN


WASHINGTON
COLUMBIA RIVER
SHERMAN
GILLIAM
MORROW
UMATILLA
UNION
WASCO
WHEELER
JEFFERSON
BAKER
GRANT
CROOK
HARNEY
BLUE MOUNTAINS
1973
STATE WATER RESOURCES BOARD
JOHN DAY BASIN
MAP NO. 6.2

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Sherman-Gilliam
C.	Township, Range	Sec.33, T3N, R18E
D.	Latitude, Longitude	45°41'N,120°34'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	0.0 to 10.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

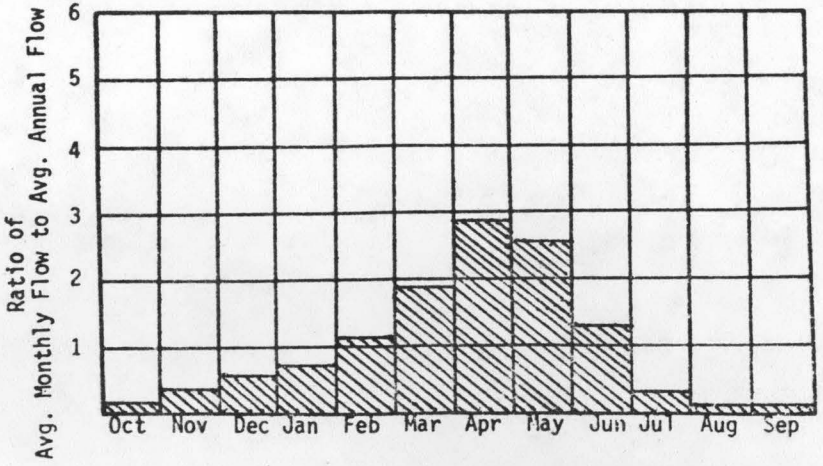
A.	Upstream Elevation of Reach	270	Ft. MSL
B.	Downstream Elevation of Reach	147	Ft. MSL
C.	Total Available Head in Reach	123	Ft.
D.	Average Slope in Reach	11.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	7133	Sq.Mi.
F.	Inflow Classification	Natural	

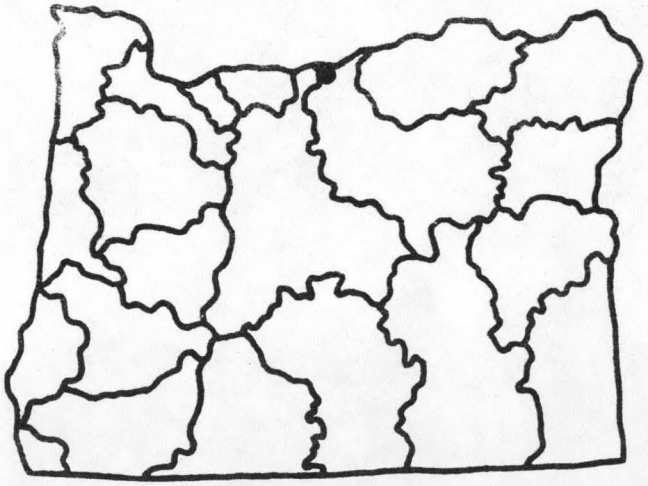
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	230.9	2.41	21.08	1.000
80	532.2	5.55	45.16	.929
50	1165.7	12.15	82.76	.777
30	2720.4	28.36	139.54	.562
10	6168.3	64.30	202.51	.360

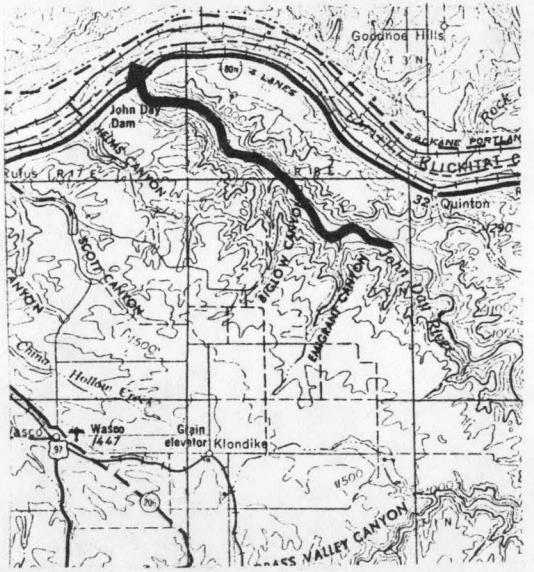
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2236 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Sherman-Gilliam
C.	Township, Range	Sec.4, T2N, R19E
D.	Latitude, Longitude	45°37'N,120°27'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	10.5 to 21.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

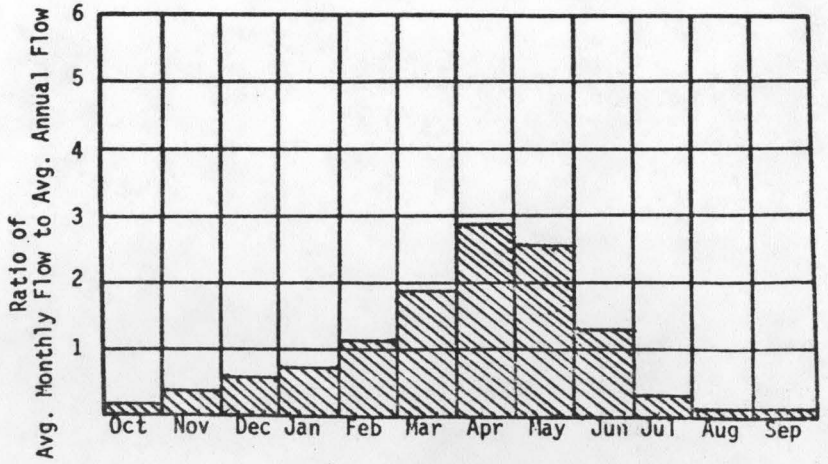
A.	Upstream Elevation of Reach	396	Ft. MSL
B.	Downstream Elevation of Reach	270	Ft. MSL
C.	Total Available Head in Reach	126	Ft.
D.	Average Slope in Reach	11.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	7075.6	Sq.Mi.
F.	Inflow Classification	Natural	

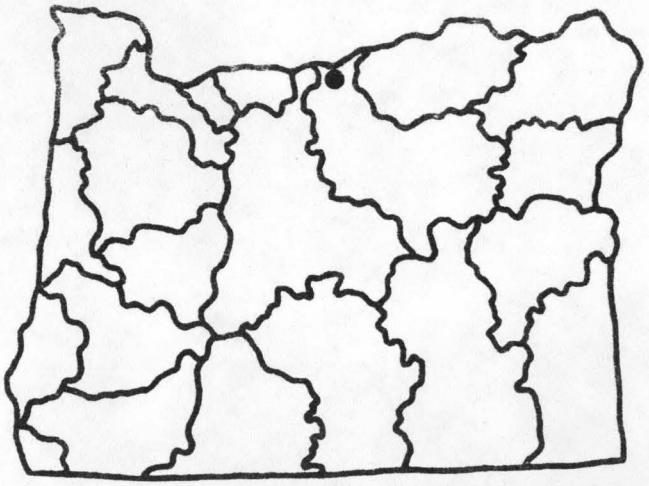
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	228.5	2.13	18.66	1.000
80	527.3	4.92	40.01	.929
50	1156.6	10.78	73.41	.777
30	2700.4	25.17	123.84	.562
10	6128.2	57.13	179.82	.359

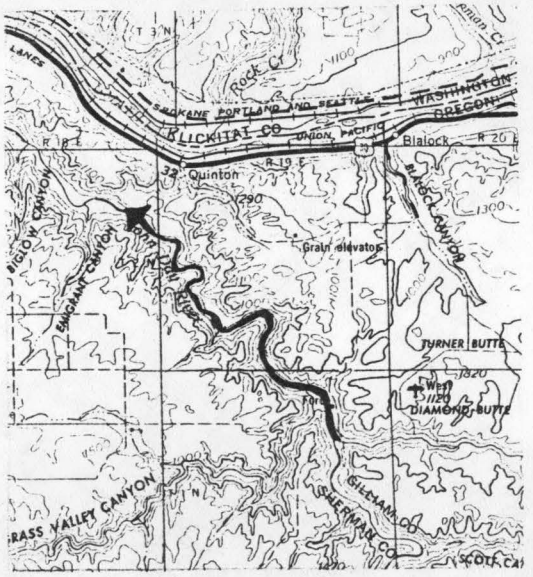
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2222 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-020-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Gilliam
C.	Township, Range	Sec.16, T1N, R1OE
D.	Latitude, Longitude	45°34'N,120°17'W
E.	Stream Name	Rock Creek
F.	Major Basin Name	John Day
G.	River Mile	0.0 to 10.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

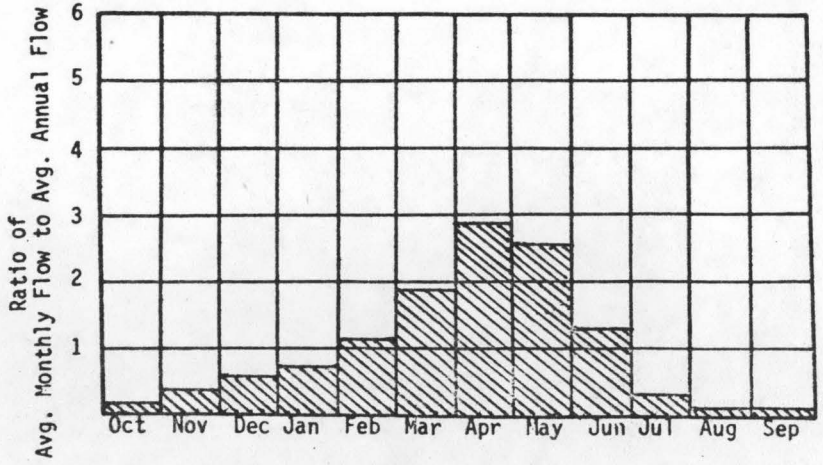
A.	Upstream Elevation of Reach	782	Ft. MSL
B.	Downstream Elevation of Reach	396	Ft. MSL
C.	Total Available Head in Reach	386	Ft.
D.	Average Slope in Reach	36.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	506.7	Sq.Mi.
F.	Inflow Classification	Natural	

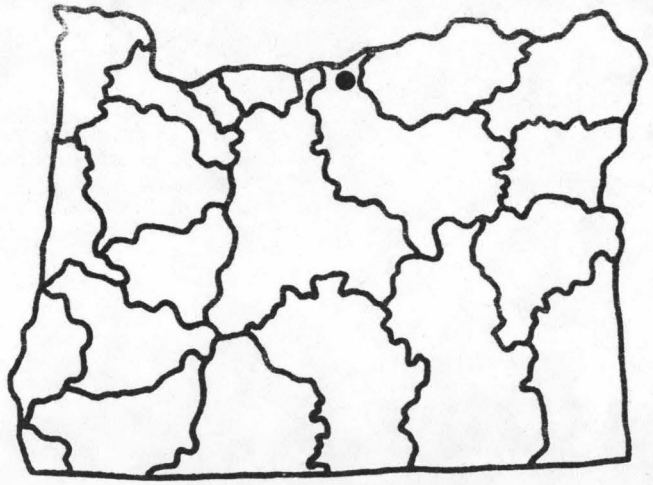
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3.0	.10	.85	1.000
80	10.5	.34	2.75	.910
50	41.4	1.35	8.49	.716
30	117.9	3.86	17.26	.511
10	386.7	12.65	32.67	.295

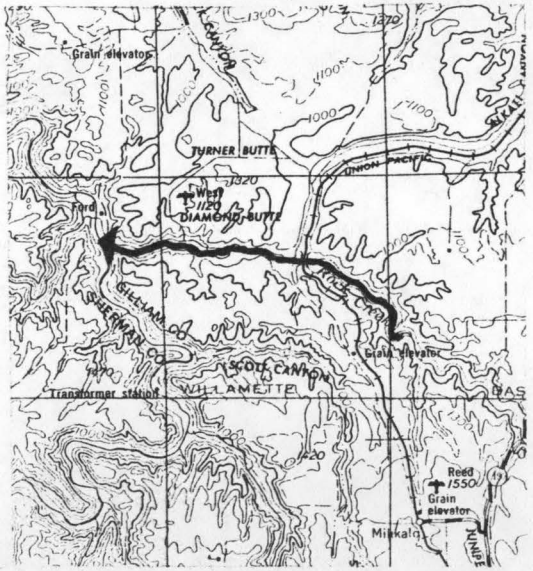
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 140 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-020-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Gilliam
C.	Township, Range	Sec.10, T1S, R21E
D.	Latitude, Longitude	45°30'N,120°10'W
E.	Stream Name	Rock Creek
F.	Major Basin Name	John Day
G.	River Mile	10.5 to 22.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

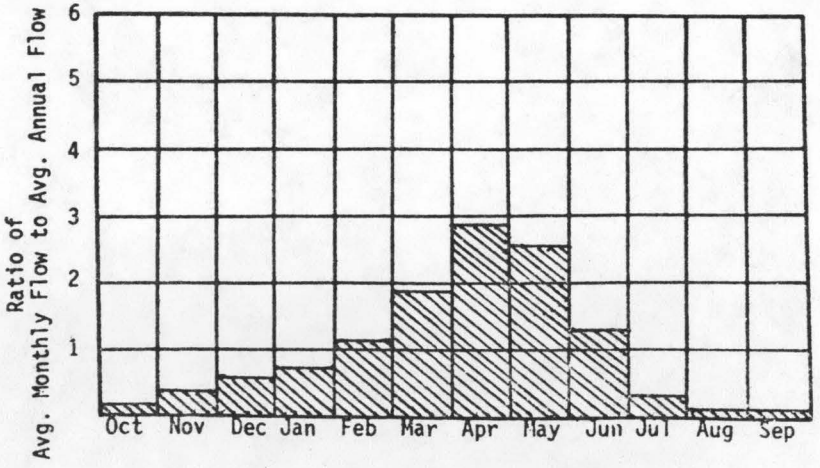
A.	Upstream Elevation of Reach	1126	Ft. MSL
B.	Downstream Elevation of Reach	782	Ft. MSL
C.	Total Available Head in Reach	344	Ft.
D.	Average Slope in Reach	29.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	469.5	Sq.Mi.
F.	Inflow Classification	Natural	

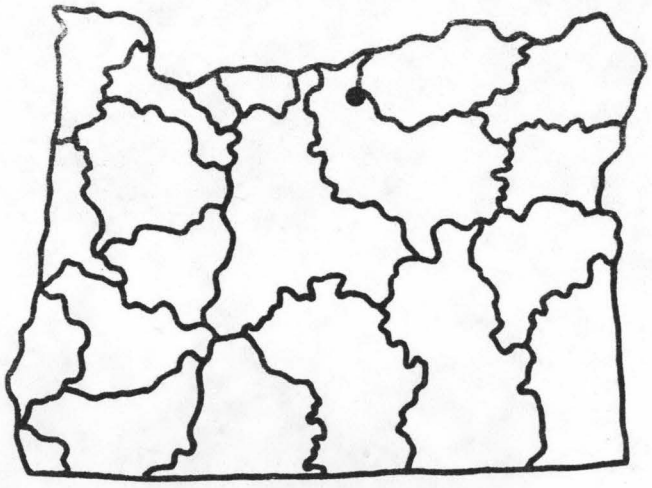
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	2.8	.08	.71	1.000
80	9.8	.29	2.29	.910
50	39.0	1.14	7.13	.716
30	111.6	3.25	14.55	.510
10	368.5	10.74	27.67	.294

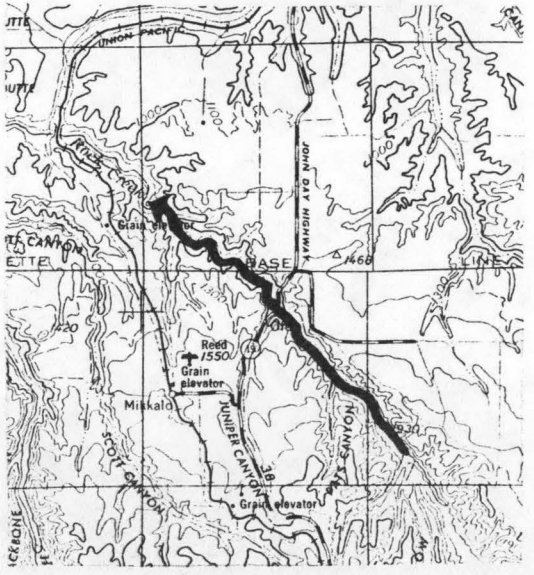
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 134 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-020-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Gilliam
C.	Township, Range	Sec.26, T4S, R23E
D.	Latitude, Longitude	45°28'N.120°06'W
E.	Stream Name	Rock Creek
F.	Major Basin Name	John Day
G.	River Mile	22.2 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

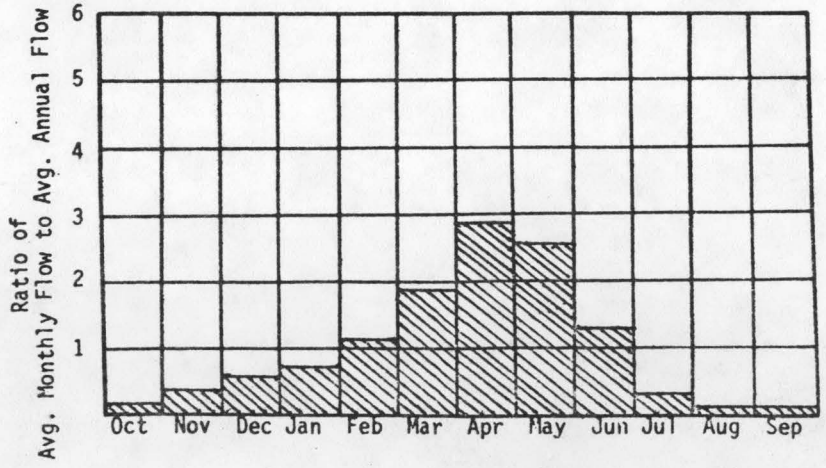
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	428.8	Sq.Mi.
F.	Inflow Classification	Natural	

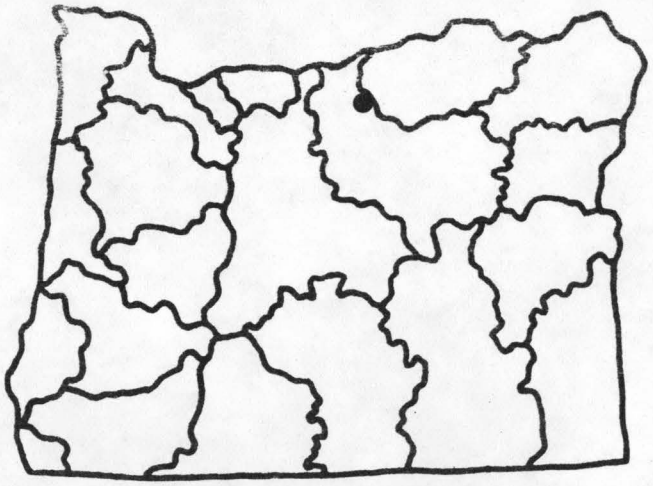
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	2.6	.01	.13	1.000
80	9.5	.05	.42	.910
50	37.8	.21	1.32	.715
30	108.2	.61	2.70	.510
10	358.5	2.01	5.16	.294

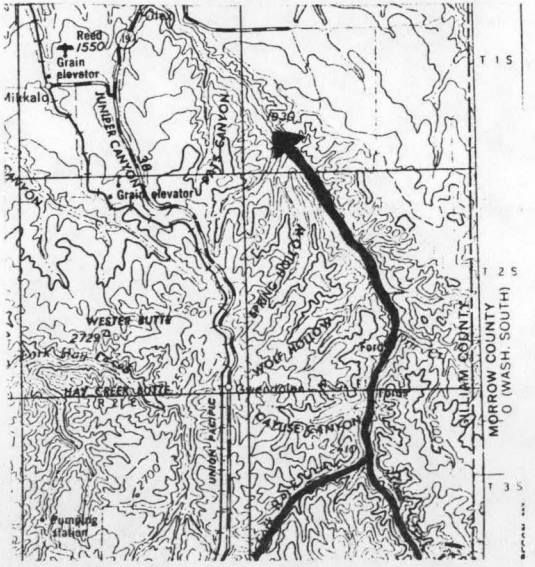
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 130 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Sherman-Gilliam
C.	Township, Range	Sec.24, T1N, R19E
D.	Latitude, Longitude	45°32'N,120°23'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	21.6 to 30.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

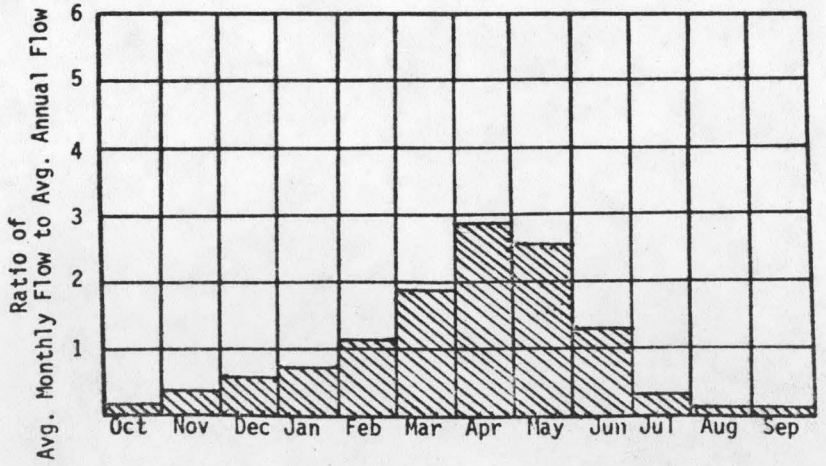
A.	Upstream Elevation of Reach	470	Ft. MSL
B.	Downstream Elevation of Reach	396	Ft. MSL
C.	Total Available Head in Reach	74	Ft.
D.	Average Slope in Reach	8.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	6408.6	Sq.Mi.
F.	Inflow Classification	Natural	

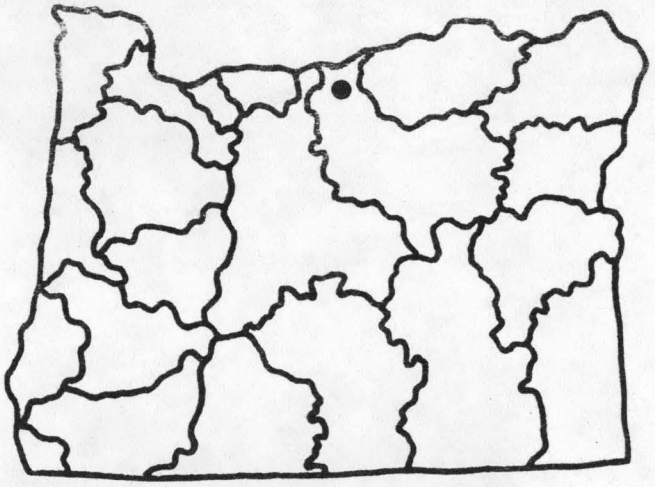
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	204.2	1.28	11.22	1.000
80	476.4	2.99	24.30	.929
50	1060.7	6.65	45.17	.775
30	2489.3	15.61	76.56	.560
10	5703.7	35.77	111.87	.357

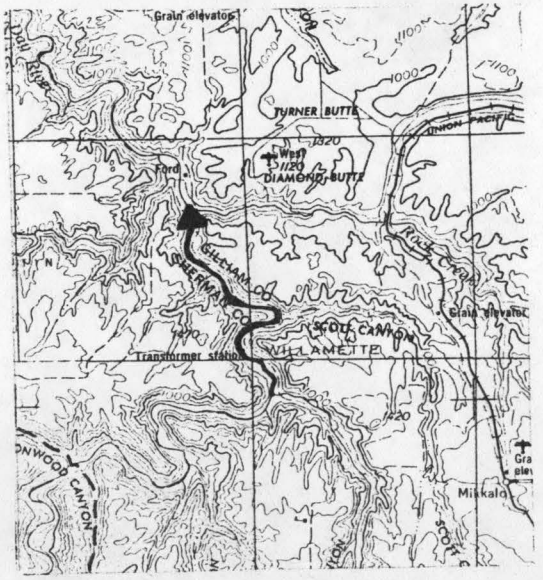
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2068 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Sherman-Gilliam
C.	Township, Range	Sec.11, T1S, R19E
D.	Latitude, Longitude	45°29'N,120°25'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	30.0 to 40.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

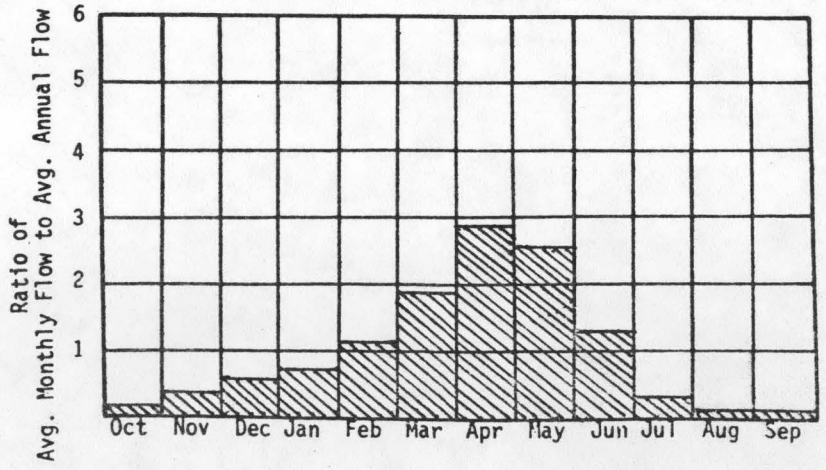
A.	Upstream Elevation of Reach	540	Ft. MSL
B.	Downstream Elevation of Reach	470	Ft. MSL
C.	Total Available Head in Reach	70	Ft.
D.	Average Slope in Reach	7.0	Ft./Mi.
E.	Drainage Area above Reach Mouth	6034	Sq.Mi.
F.	Inflow Classification	Natural	

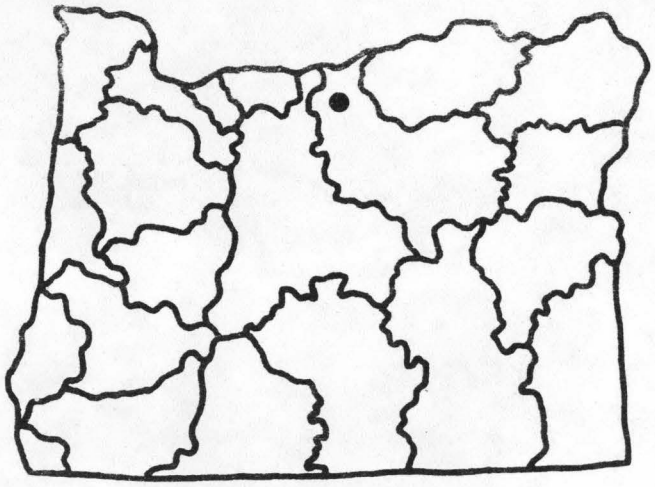
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	198.3	1.18	10.31	1.000
80	464.0	2.75	22.39	.928
50	1037.3	6.15	41.75	.775
30	2437.7	14.46	70.86	.559
10	5599.2	33.22	103.72	.356

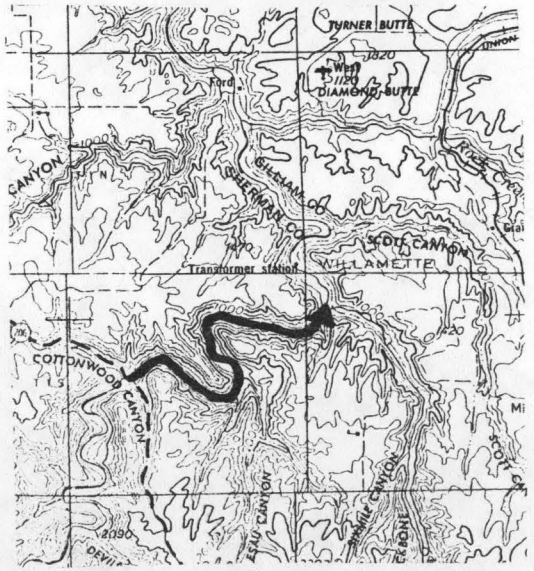
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2030 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Sherman-Gilliam
C.	Township, Range	Sec.6, T2S, R19E
D.	Latitude, Longitude	45°25'N,120°30'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	40.0 to 54.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

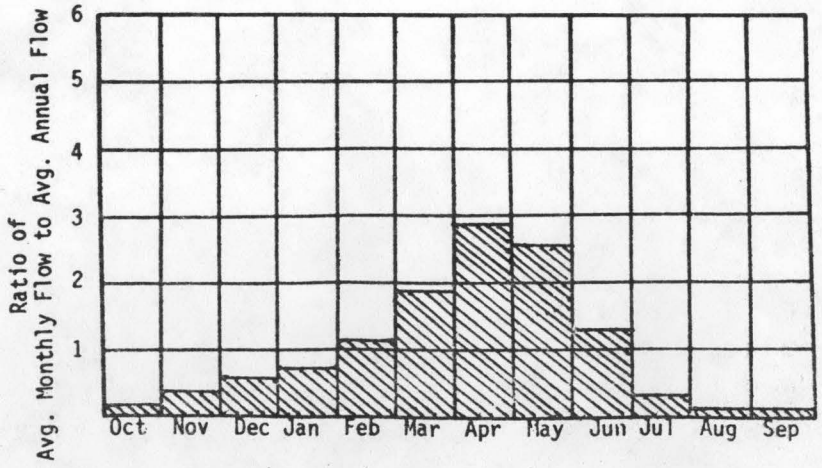
A.	Upstream Elevation of Reach	660	Ft. MSL
B.	Downstream Elevation of Reach	540	Ft. MSL
C.	Total Available Head in Reach	120	Ft.
D.	Average Slope in Reach	8.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	5974	Sq.Mi.
F.	Inflow Classification	Natural	

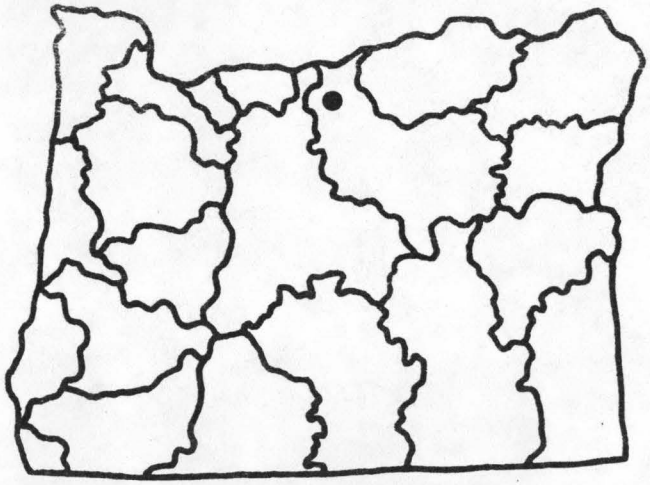
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	197.4	2.01	17.58	1.000
80	462.1	4.70	38.22	.928
50	1033.6	10.51	71.31	.774
30	2429.5	24.71	121.05	.559
10	5582.5	56.77	177.23	.356

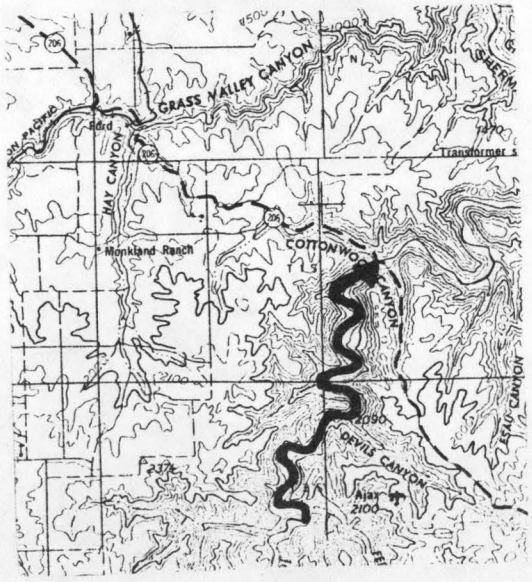
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2024 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0006

I. LOCATION

A. State	Oregon	
B. County	Sherman-Gilliam	
C. Township, Range	Sec.11, T3S, R18E	
D. Latitude, Longitude	45°18'N,120°31'W	
E. Stream Name	John Day River	
F. Major Basin Name	John Day	
G. River Mile	54.0 to 68.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

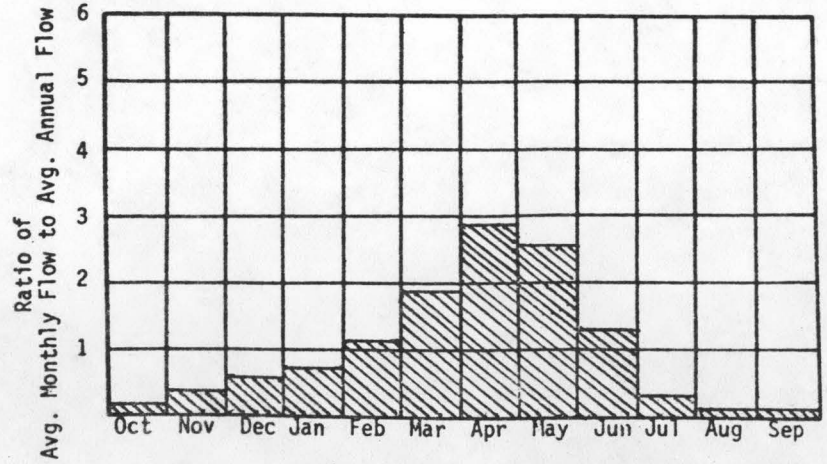
A. Upstream Elevation of Reach	814	Ft. MSL
B. Downstream Elevation of Reach	660	Ft. MSL
C. Total Available Head in Reach	154	Ft.
D. Average Slope in Reach	11.0	Ft./Mi.
E. Drainage Area above Reach Mouth	5944	Sq.Mi.
F. Inflow Classification	Natural	

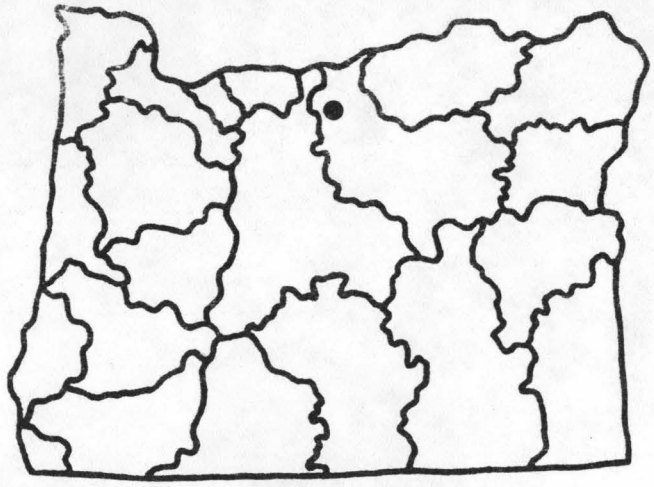
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	195.0	2.54	22.29	1.000
80	457.0	5.96	48.50	.928
50	1023.9	13.36	90.63	.774
30	2408.0	31.43	153.92	.559
10	5538.9	72.29	225.51	.356

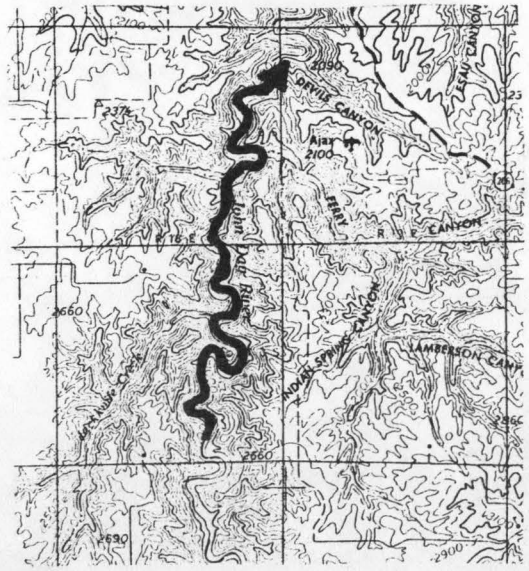
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2008 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Sherman-Gilliam
C.	Township, Range	Sec.24, T4S, R18W
D.	Latitude, Longitude	45°13'N,120°31'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	68.0 to 84.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

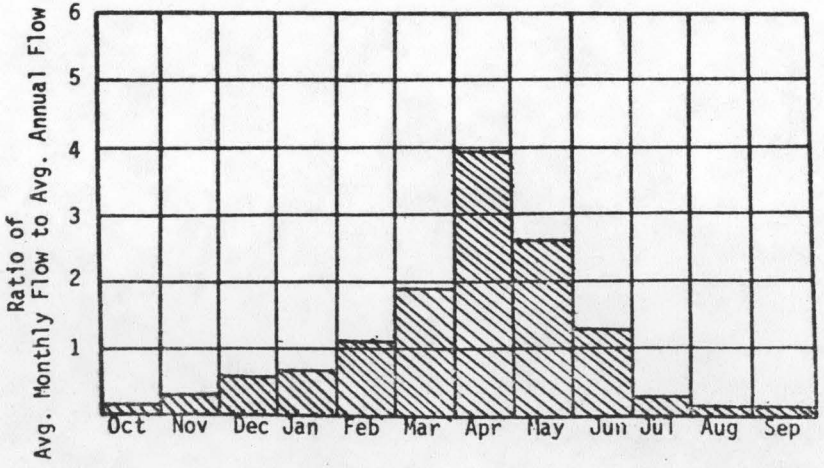
A.	Upstream Elevation of Reach	985	Ft. MSL
B.	Downstream Elevation of Reach	814	Ft. MSL
C.	Total Available Head in Reach	171	Ft.
D.	Average Slope in Reach	10.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	5769.9	Sq.Mi.
F.	Inflow Classification	Natural	

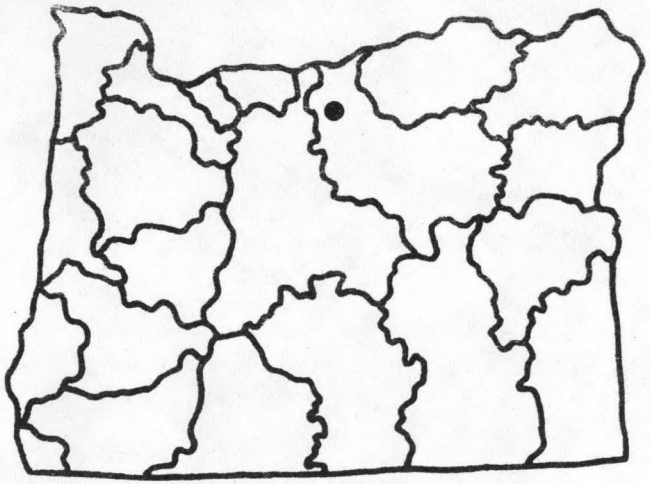
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	187.9	2.72	23.86	1.000
80	442.1	6.41	52.09	.928
50	995.4	14.43	97.75	.774
30	2345.1	33.98	166.28	.559
10	5411.0	78.41	244.12	.355

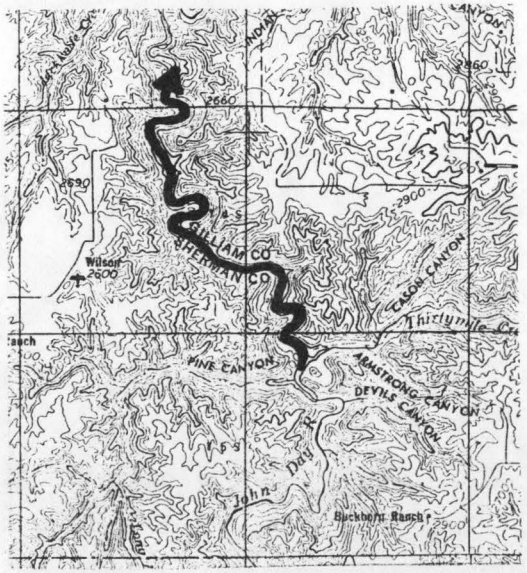
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1962 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0008

I. LOCATION

A.	State	Oregon
B.	County	Sherman-Gilliam
C.	Township, Range	Sec.29, T5S, R19E
D.	Latitude, Longitude	45°06'N,120°28'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	84.0 to 97.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

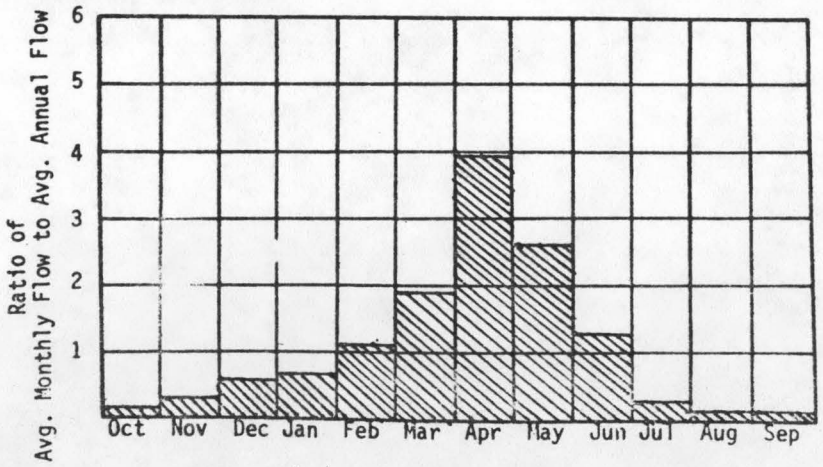
A.	Upstream Elevation of Reach	1160	Ft. MSL
B.	Downstream Elevation of Reach	985	Ft. MSL
C.	Total Available Head in Reach	175	Ft.
D.	Average Slope in Reach	13.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	5472.3	Sq.Mi.
F.	Inflow Classification	Natural	

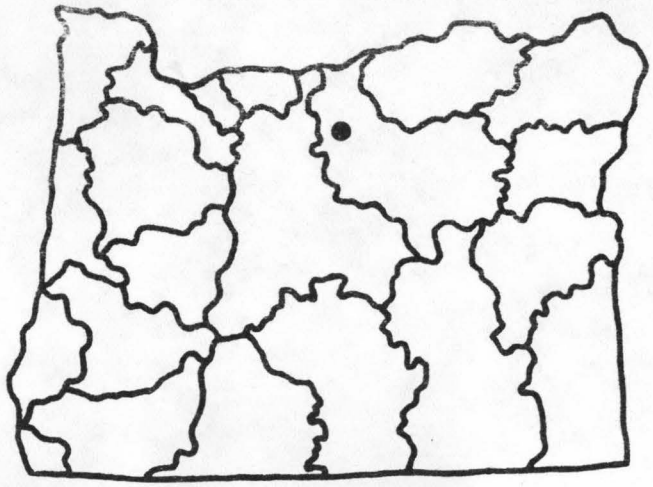
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	176.7	2.62	22.95	1.000
80	418.1	6.20	50.40	.928
50	949.3	14.08	95.26	.772
30	2242.8	33.26	162.47	.558
10	5202.2	77.15	239.37	.354

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1886 CFS





U.S.G.S. TOPO. SERIES
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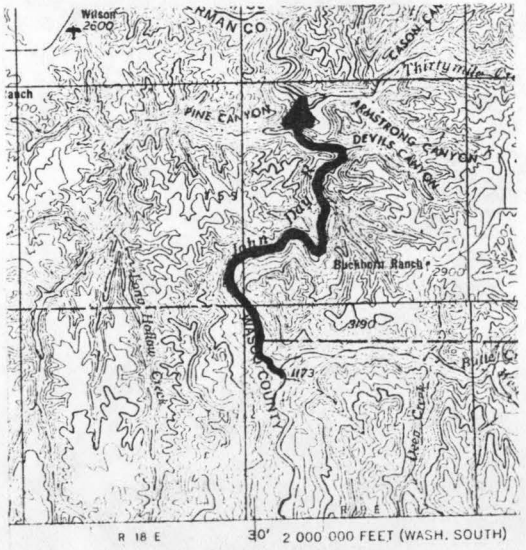
MAP NAME: THE DALLES



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0009

I. LOCATION

A. State	Oregon	
B. County	Wasco-Wheeler	
C. Township, Range	Sec.8, T7S, R19E	
D. Latitude, Longitude	44°58'N,128°28'W	
E. Stream Name	John Day River	
F. Major Basin Name	John Day	
G. River Mile	97.3 to 111.7	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

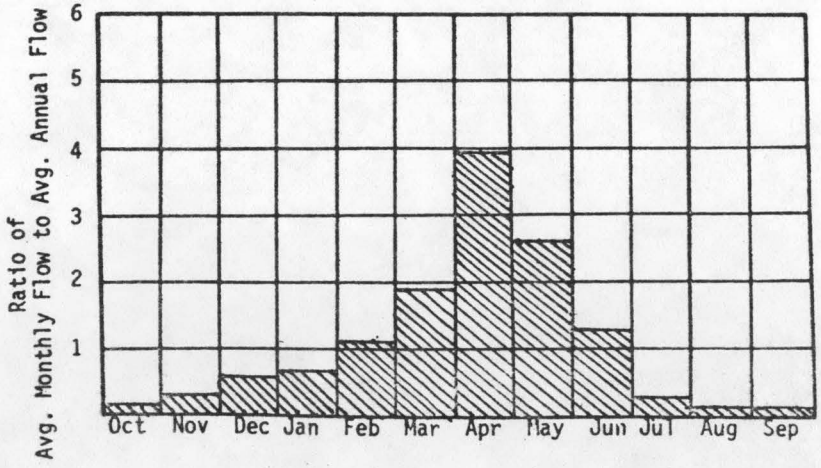
A. Upstream Elevation of Reach	1298	Ft. MSL
B. Downstream Elevation of Reach	1160	Ft. MSL
C. Total Available Head in Reach	138	Ft.
D. Average Slope in Reach	9.6	Ft./Mi.
E. Drainage Area above Reach Mouth	5117.1	Sq.Mi.
F. Inflow Classification	Natural	

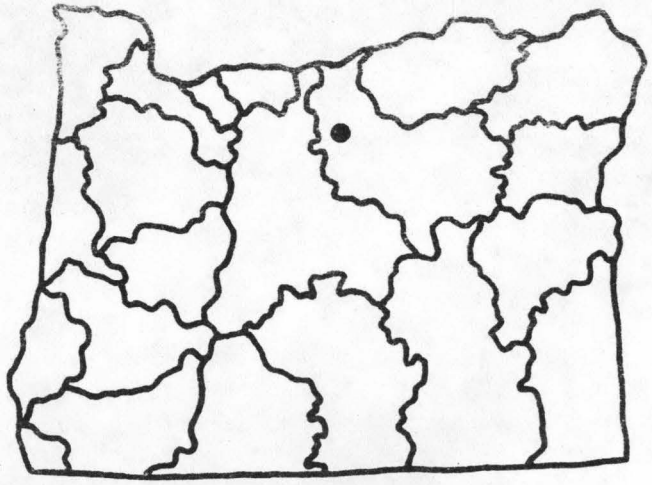
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	169.6	1.98	17.37	1.000
80	402.9	4.71	38.29	.928
50	919.8	10.76	72.71	.772
30	2177.2	25.46	124.24	.557
10	5067.7	59.27	183.46	.353

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1837 CFS





U.S.G.S. TOPO. SERIES
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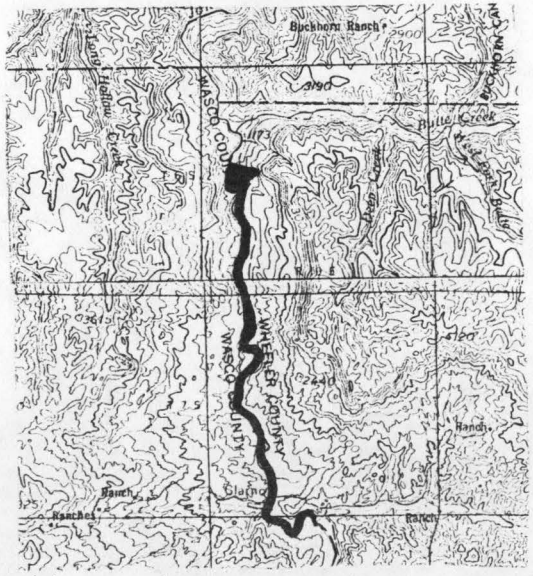
MAP NAME: THE DALLES-BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0010

I. LOCATION

A.	State	Oregon
B.	County	Wasco-Wheeler
C.	Township, Range	Sec.21, T8S, R19E
D.	Latitude, Longitude	44°52'N,120°25'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	111.7 to 120.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

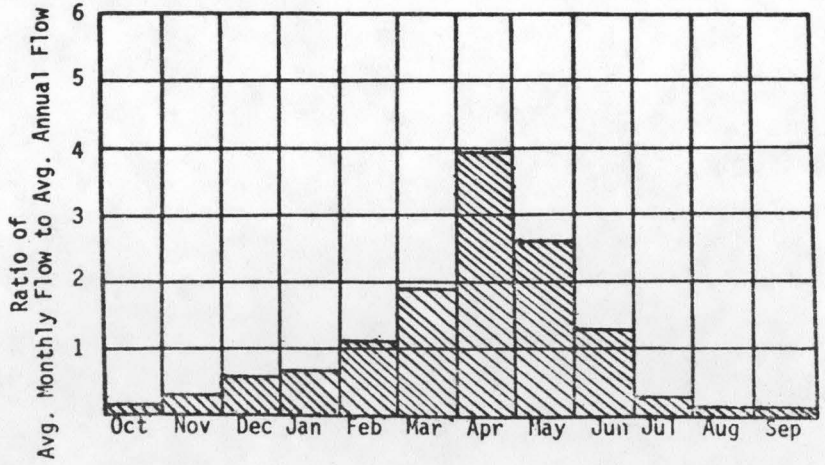
A.	Upstream Elevation of Reach	1338	Ft. MSL
B.	Downstream Elevation of Reach	1298	Ft. MSL
C.	Total Available Head in Reach	40	Ft.
D.	Average Slope in Reach	4.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	5044.5	Sq.Mi.
F.	Inflow Classification	Natural	

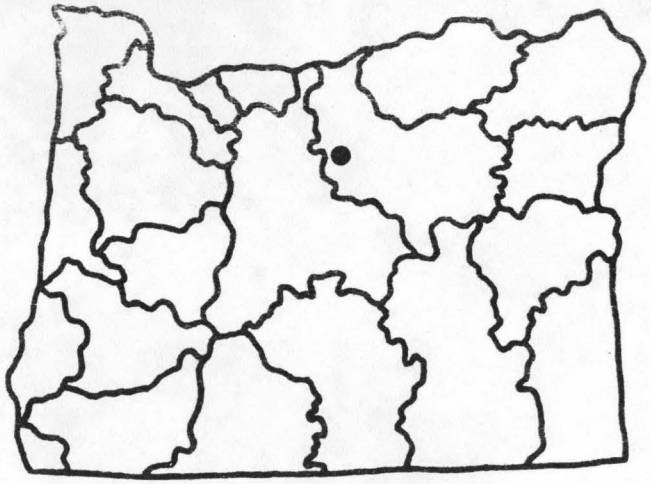
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	164.9	.56	4.90	1.000
80	392.9	1.33	10.82	.927
50	900.3	3.05	20.61	.771
30	2133.7	7.23	35.27	.557
10	4978.4	16.88	52.16	.353

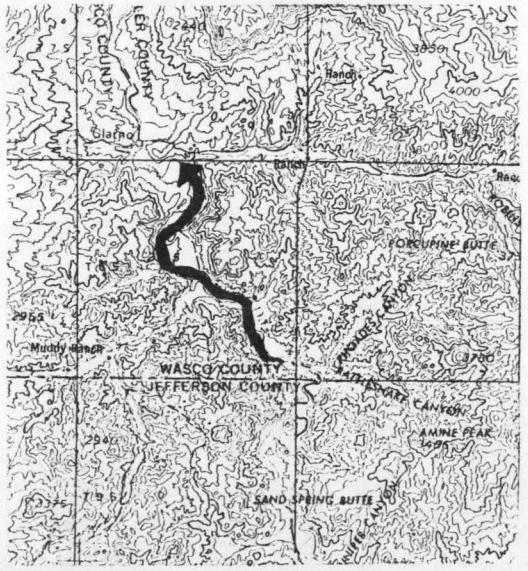
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1804 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0011

I. LOCATION

A.	State	Oregon
B.	County	Jefferson-Wheeler
C.	Township, Range	Sec.24, T9S, R19E
D.	Latitude, Longitude	44°46'N,120°24'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	120.0 to 135.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

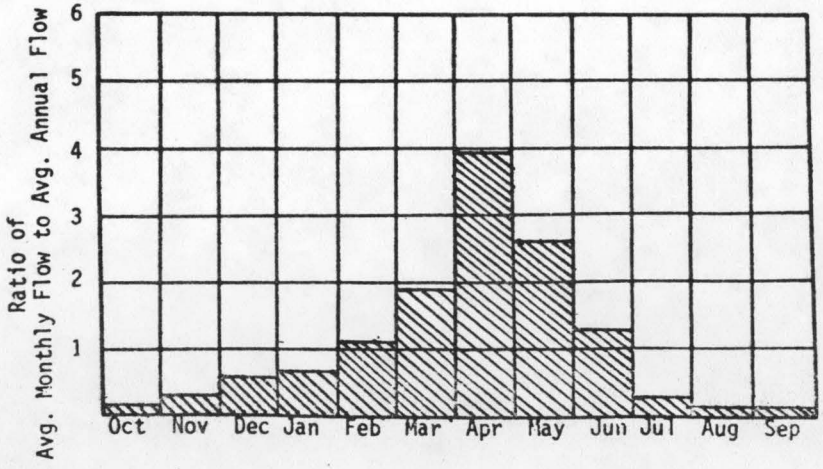
A.	Upstream Elevation of Reach	1474	Ft. MSL
B.	Downstream Elevation of Reach	1338	Ft. MSL
C.	Total Available Head in Reach	136	Ft.
D.	Average Slope in Reach	8.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	4843.3	Sq.Mi.
F.	Inflow Classification	Natural	

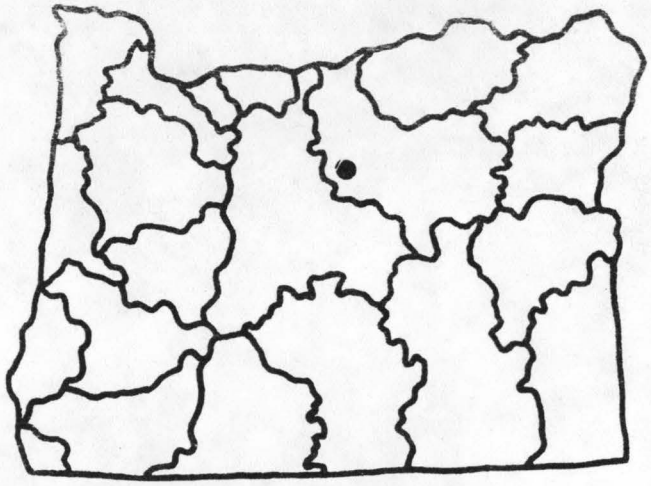
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	153.9	1.77	15.54	1.000
80	369.3	4.26	34.57	.927
50	854.1	9.84	66.38	.770
30	2030.6	23.40	113.90	.556
10	4765.5	54.92	169.12	.352

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1728 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0012

I. LOCATION

A.	State	Oregon
B.	County	Wheeler
C.	Township, Range	Sec.32, T9S, R21E
D.	Latitude, Longitude	44°45'N,120°13'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	135.3 to 145.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

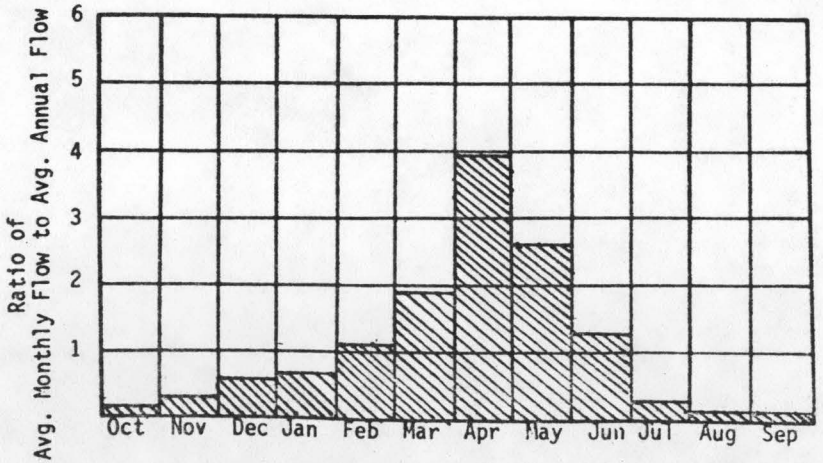
A.	Upstream Elevation of Reach	1549	Ft. MSL
B.	Downstream Elevation of Reach	1474	Ft. MSL
C.	Total Available Head in Reach	75	Ft.
D.	Average Slope in Reach	7.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	4435.9	Sq.Mi.
F.	Inflow Classification	Natural	

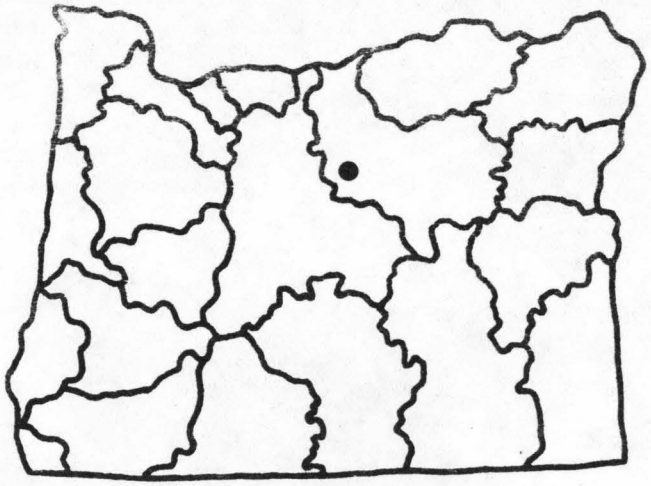
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	145.1	.92	8.08	1.000
80	350.0	2.22	18.06	.927
50	816.0	5.19	34.93	.769
30	1945.4	12.36	60.08	.555
10	4588.6	29.16	89.51	.350

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1664 CFS





U.S.G.S. TOPO. SERIES
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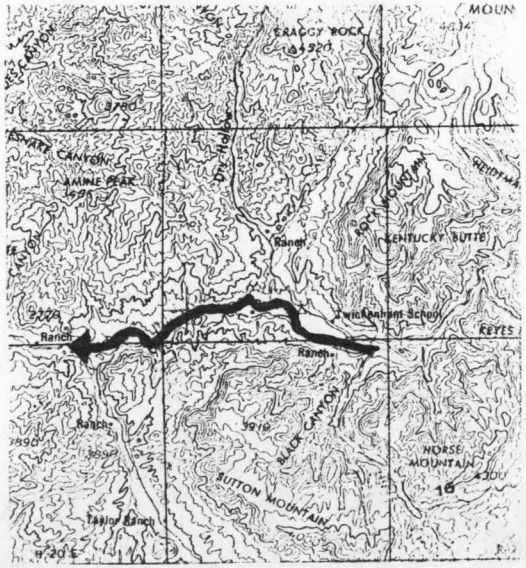
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0013

I. LOCATION

A.	State	Oregon
B.	County	Wheeler
C.	Township, Range	Sec.28, T9S, R22E
D.	Latitude, Longitude	44°47'N,120°05'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	145.2 to 156.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

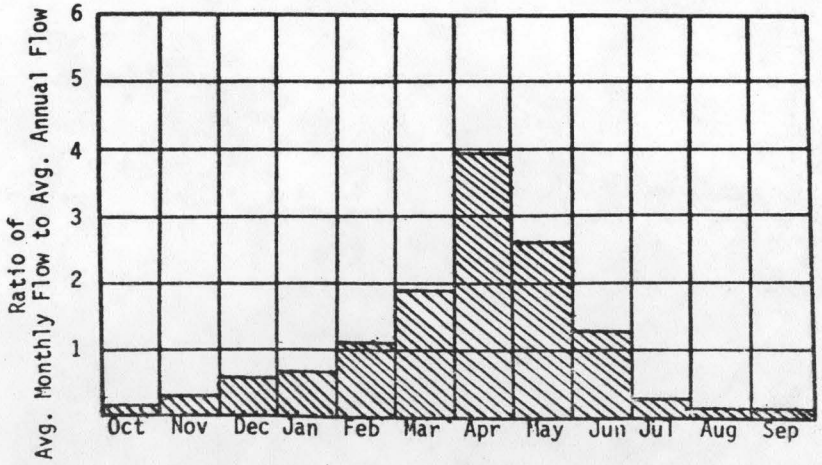
A.	Upstream Elevation of Reach	1637	Ft. MSL
B.	Downstream Elevation of Reach	1549	Ft. MSL
C.	Total Available Head in Reach	88	Ft.
D.	Average Slope in Reach	7.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	4311.8	Sq.Mi.
F.	Inflow Classification	Natural	

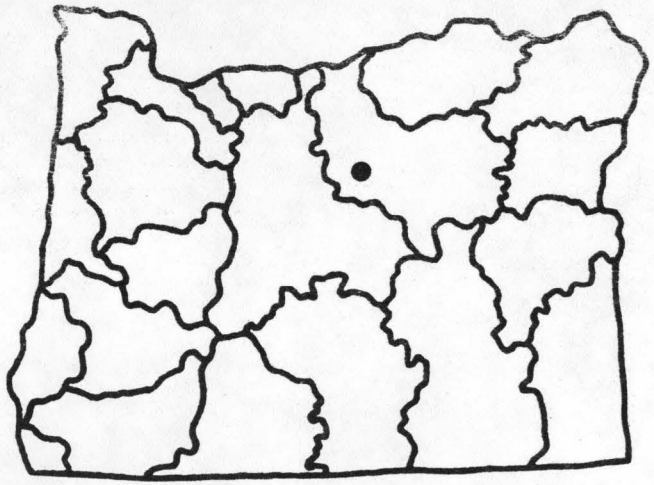
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	141.6	1.06	9.25	1.000
80	342.5	2.55	20.74	.927
50	801.1	5.97	40.21	.768
30	1911.9	14.26	69.23	.554
10	4518.8	33.70	103.30	.350

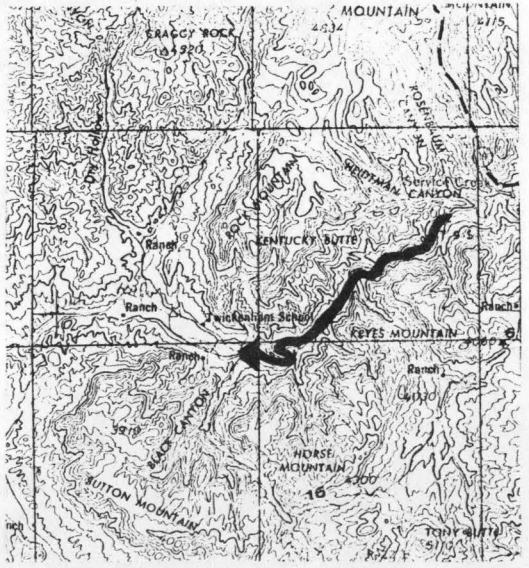
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1638 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0014

I. LOCATION

A.	State	Oregon
B.	County	Wheeler
C.	Township, Range	Sec.6, T9S, R24E
D.	Latitude, Longitude	44°48'N, 119°53'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	156.7 to 170.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

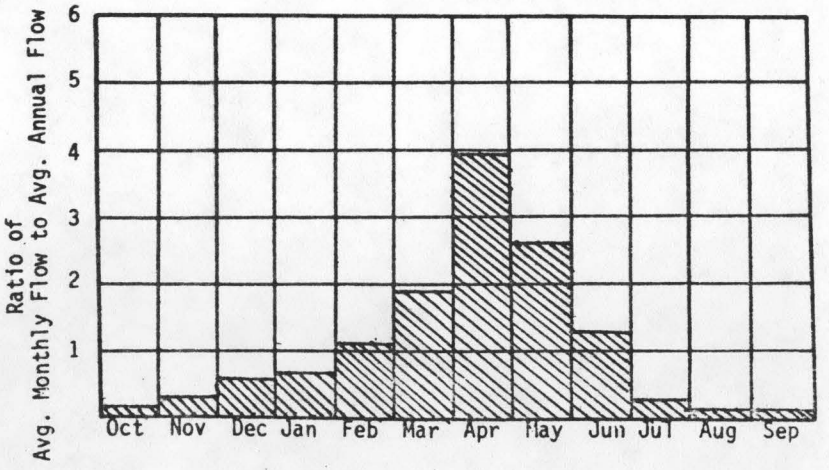
A.	Upstream Elevation of Reach	1760	Ft. MSL
B.	Downstream Elevation of Reach	1637	Ft. MSL
C.	Total Available Head in Reach	123	Ft.
D.	Average Slope in Reach	8.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	4213.4	Sq.Mi.
F.	Inflow Classification	Regulated	

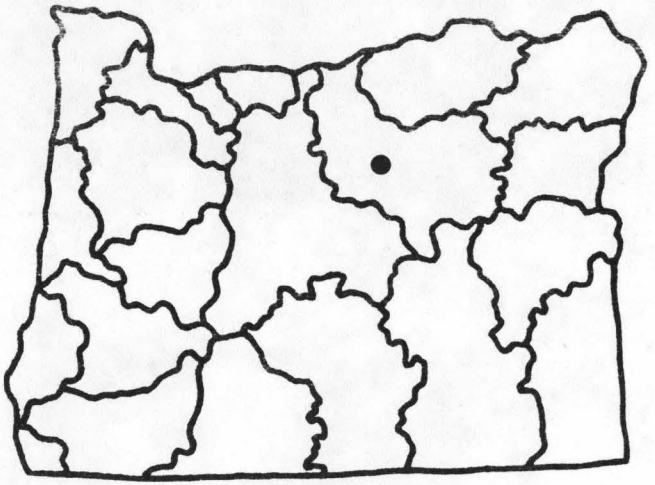
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	135.3	1.41	12.35	1.000
80	328.7	3.43	27.80	.926
50	773.4	8.06	54.20	.767
30	1849.7	19.28	93.51	.554
10	4388.9	45.75	139.88	.349

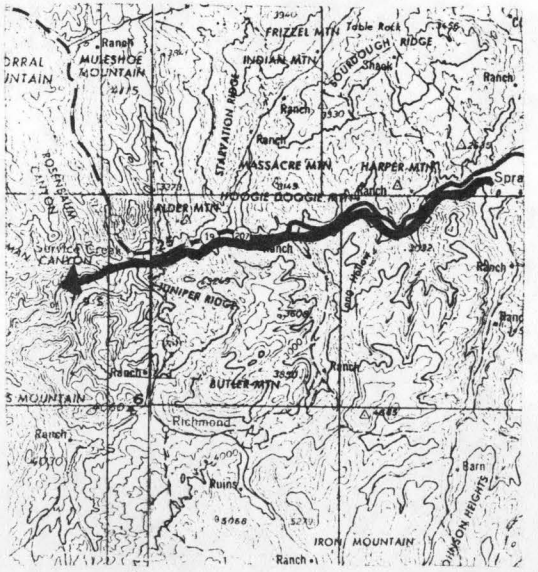
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1590 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BEND-CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0015

I. LOCATION

A.	State	Oregon
B.	County	Wheeler
C.	Township, Range	Sec.9, T9S, R25E
D.	Latitude, Longitude	44°48'N, 119°43'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	170.7 to 184.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

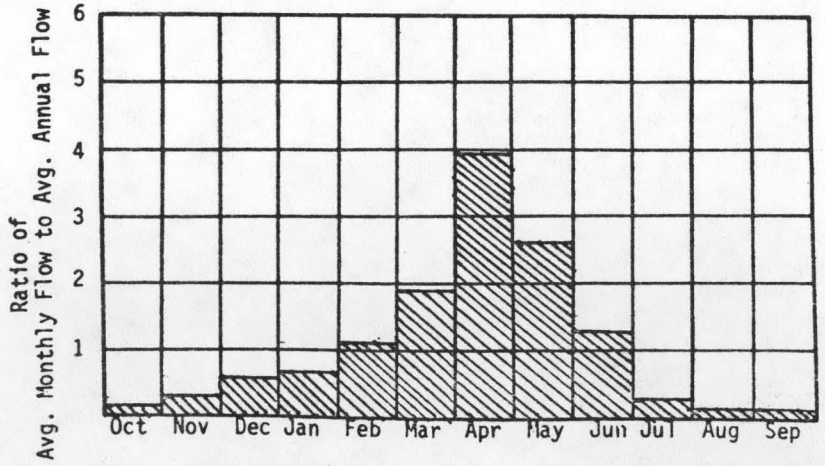
A.	Upstream Elevation of Reach	1839	Ft. MSL
B.	Downstream Elevation of Reach	1760	Ft. MSL
C.	Total Available Head in Reach	79	Ft.
D.	Average Slope in Reach	5.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	3939	Sq.Mi.
F.	Inflow Classification	Regulated	

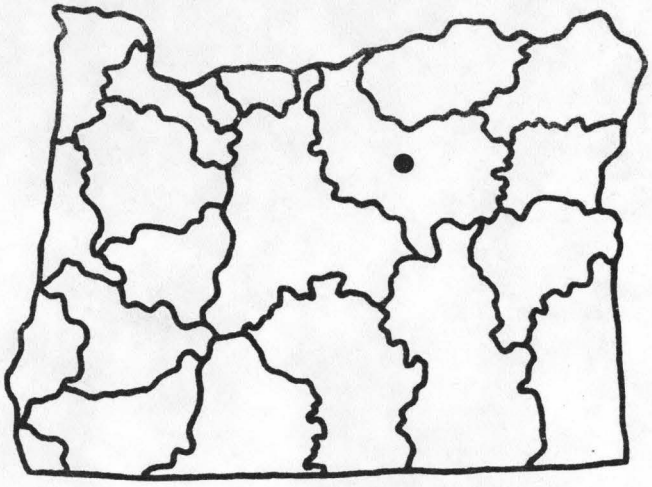
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	129.7	.87	7.61	1.000
80	316.5	2.12	17.19	.926
50	748.9	5.01	33.68	.767
30	1794.6	12.01	58.21	.553
10	4273.3	28.61	87.28	.348

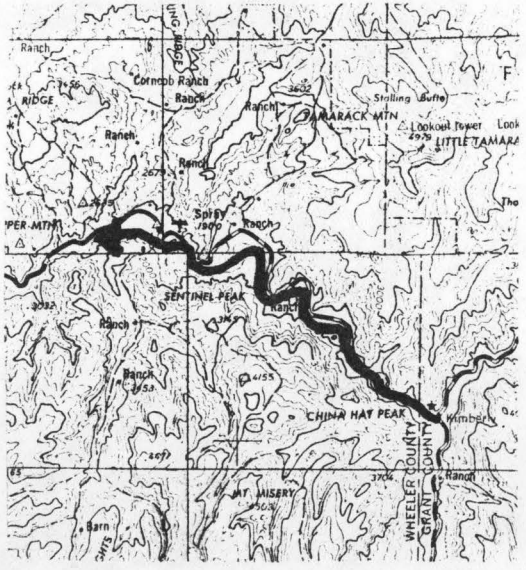
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1548 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.13, T9S, R26E
D.	Latitude, Longitude	44°47'N,119°32'W
E.	Stream Name	North Fork John Day River
F.	Major Basin Name	John Day
G.	River Mile	0.0 to 16.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

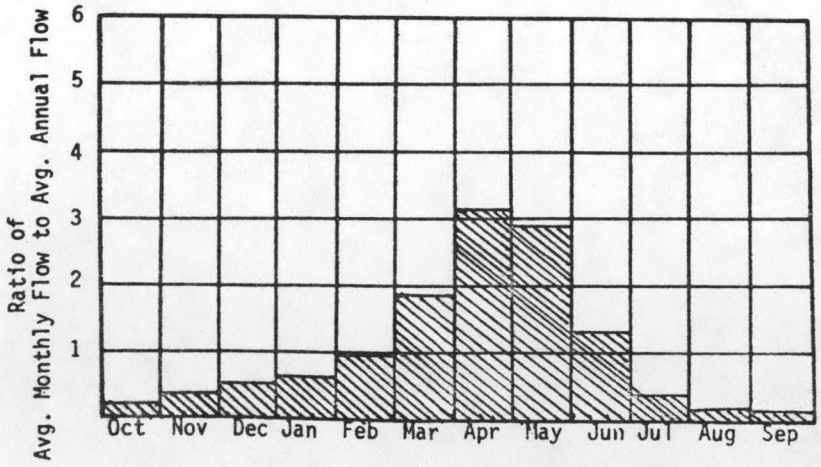
A.	Upstream Elevation of Reach	1964	Ft. MSL
B.	Downstream Elevation of Reach	1839	Ft. MSL
C.	Total Available Head in Reach	125	Ft.
D.	Average Slope in Reach	7.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	1721	Sq.Mi.
F.	Inflow Classification	Regulated	

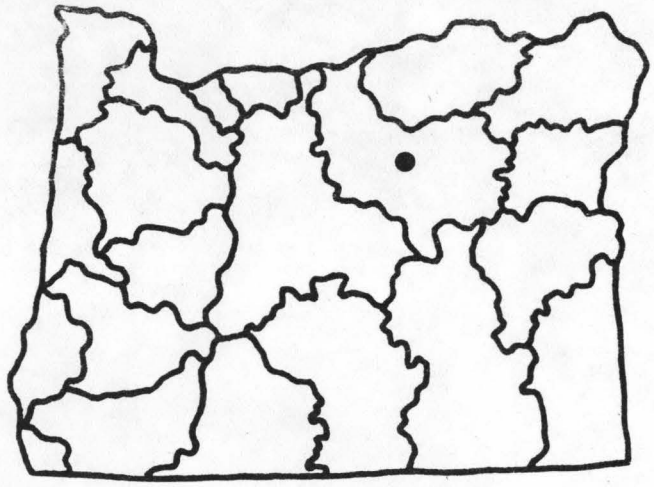
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	57.6	.61	5.35	1.000
80	152.3	1.61	13.03	.922
50	401.8	4.26	28.08	.753
30	999.4	10.59	50.26	.542
10	2549.4	27.01	79.03	.334

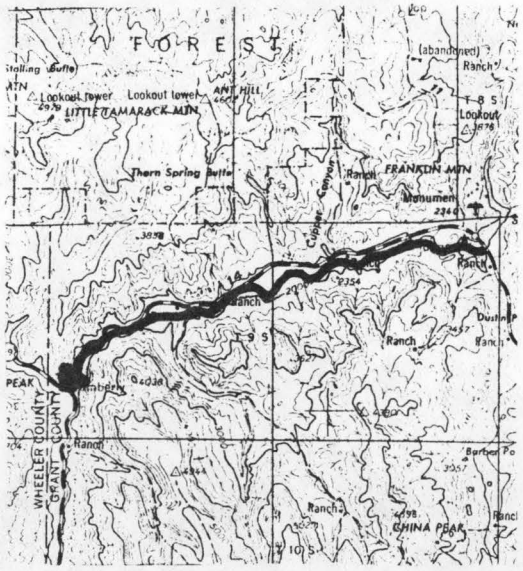
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 924 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.8, T8S, R28E
D.	Latitude, Longitude	44°53'N, 119°23'W
E.	Stream Name	North Fork John Day River
F.	Major Basin Name	John Day
G.	River Mile	16.0 to 32.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

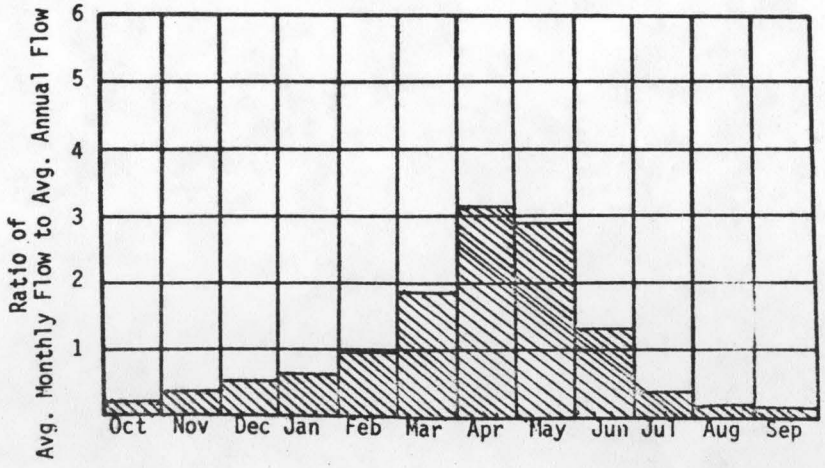
A.	Upstream Elevation of Reach	2190	Ft. MSL
B.	Downstream Elevation of Reach	1964	Ft. MSL
C.	Total Available Head in Reach	226	Ft.
D.	Average Slope in Reach	13.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	1381.5	Sq.Mi.
F.	Inflow Classification	Regulated	

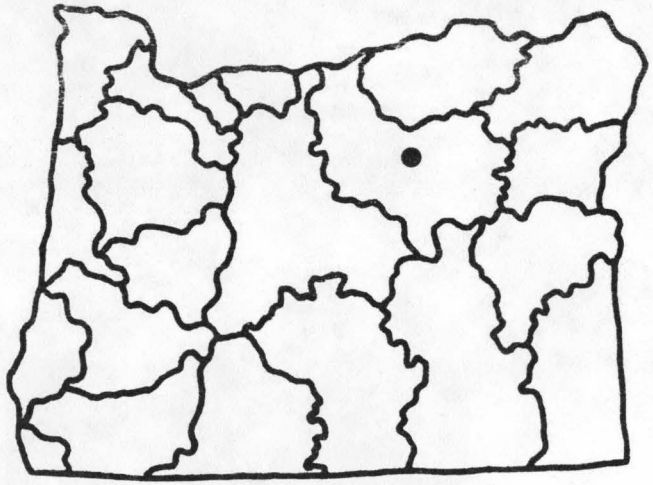
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	49.6	.95	8.32	1.000
80	133.0	2.55	20.57	.922
50	358.2	6.86	45.12	.751
30	897.0	17.18	81.28	.540
10	2317.5	44.39	128.95	.332

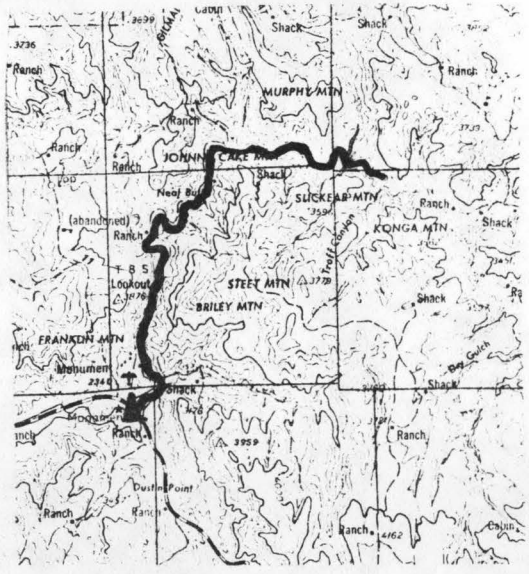
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 839 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-010-R0001

I. LOCATION

A. State	Oregon	
B. County	Grant	
C. Township, Range	Sec.5, T8S, R29E	
D. Latitude, Longitude	44°54'N, 119°16'W	
E. Stream Name	Middle Fork John Day River	
F. Major Basin Name	John Day	
G. River Mile	0.0 to 5.7	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

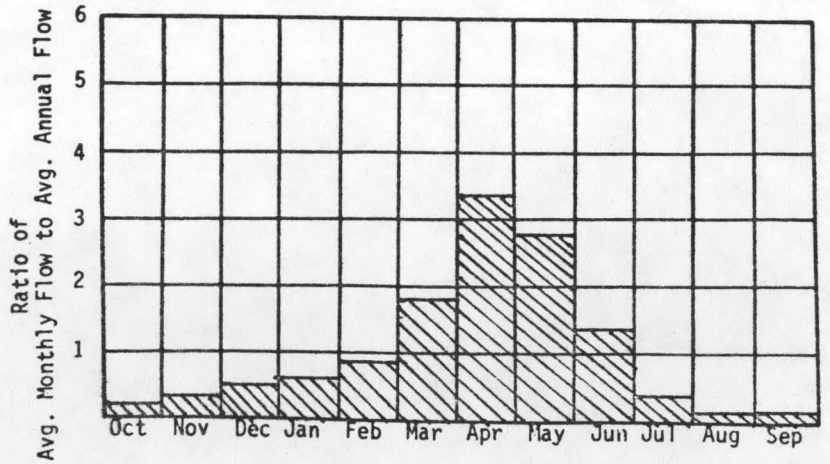
A. Upstream Elevation of Reach	2310	Ft. MSL
B. Downstream Elevation of Reach	2190	Ft. MSL
C. Total Available Head in Reach	120	Ft.
D. Average Slope in Reach	21	Ft./Mi.
E. Drainage Area above Reach Mouth	775.2	Sq.Mi.
F. Inflow Classification	Natural	

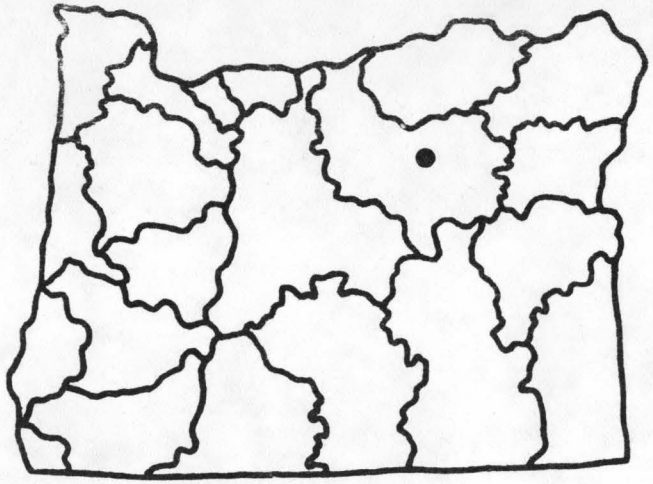
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	9.0	.09	.80	1.000
80	28.5	.29	2.32	.914
50	96.4	.98	6.25	.728
30	261.2	2.66	12.13	.521
10	780.3	7.94	21.38	.307

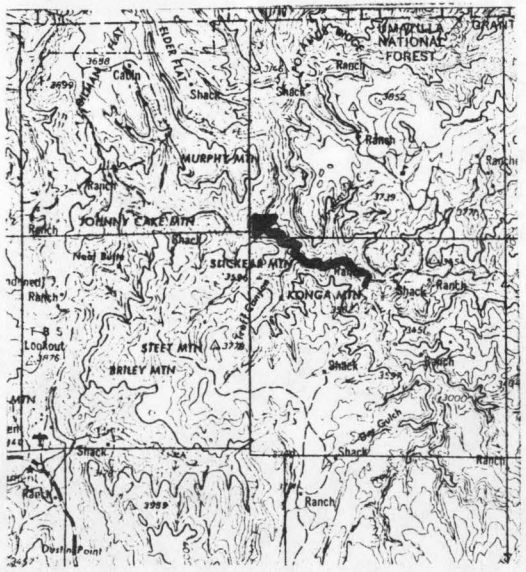
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 282 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-010-R0002

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.7, T8S, R30E
D.	Latitude, Longitude	44°53'N, 119°10'W
E.	Stream Name	Middle Fork John Day River
F.	Major Basin Name	John Day
G.	River Mile	5.7 to 20.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

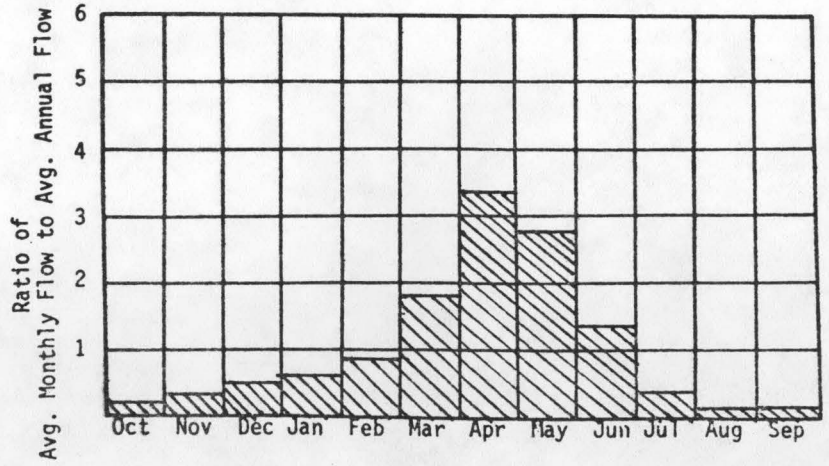
A.	Upstream Elevation of Reach	2681	Ft. MSL
B.	Downstream Elevation of Reach	2310	Ft. MSL
C.	Total Available Head in Reach	371	Ft.
D.	Average Slope in Reach	25.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	554	Sq.Mi.
F.	Inflow Classification	Natural	

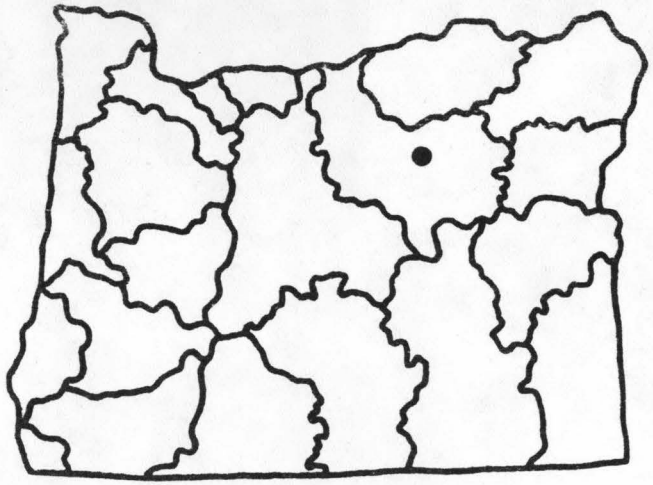
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	6.6	.21	1.82	1.000
80	21.6	.68	5.43	.913
50	76.2	2.40	15.20	.725
30	209.3	6.58	29.87	.518
10	641.9	20.18	53.70	.304

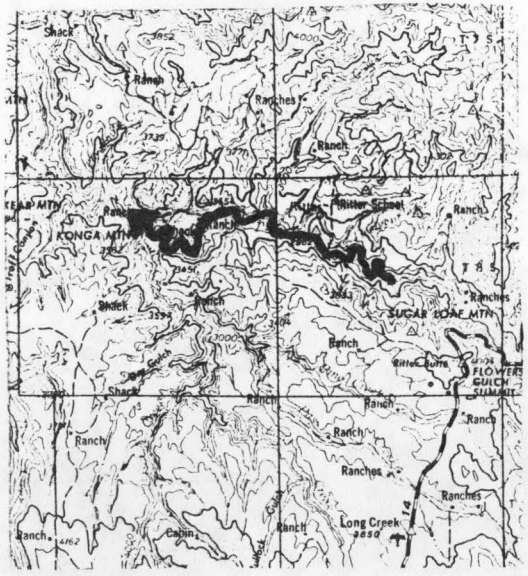
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 232 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-010-R0003

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.5, T9S, R31E
D.	Latitude, Longitude	44°49'N, 119°01'W
E.	Stream Name	Middle Fork John Day River
F.	Major Basin Name	John Day
G.	River Mile	20.0 to 32.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

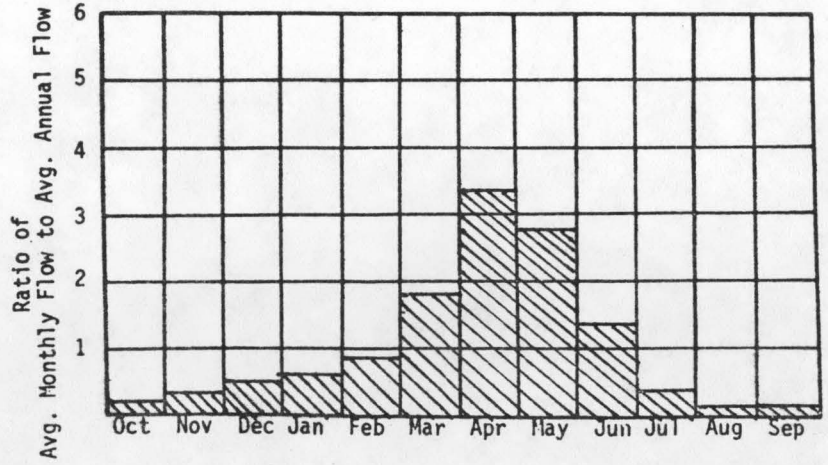
A.	Upstream Elevation of Reach	3056	Ft. MSL
B.	Downstream Elevation of Reach	2681	Ft. MSL
C.	Total Available Head in Reach	375	Ft.
D.	Average Slope in Reach	30.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	499.4	Sq.Mi.
F.	Inflow Classification	Natural	

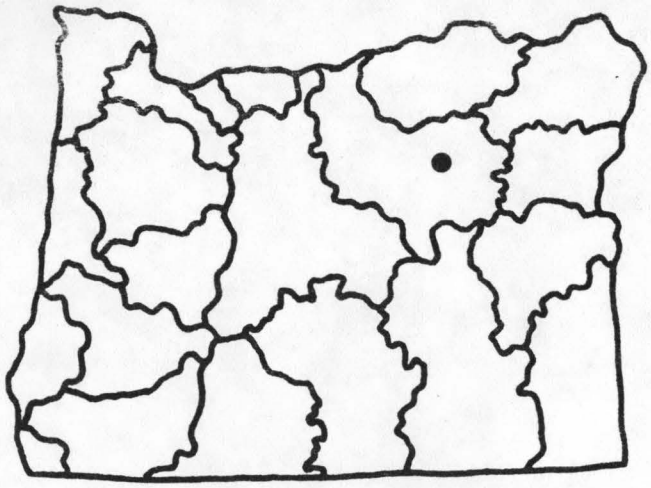
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	5.2	.16	1.44	1.000
80	17.3	.55	4.39	.912
50	63.0	2.00	12.67	.722
30	175.2	5.57	25.16	.516
10	548.6	17.43	45.95	.301

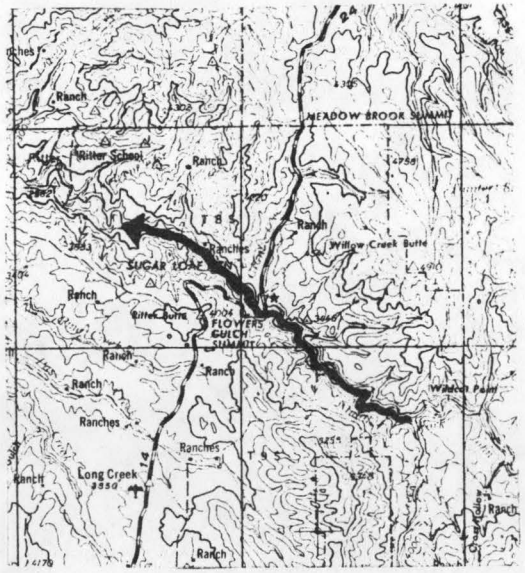
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 198 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-010-R0004

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.17, T9S, R32E
D.	Latitude, Longitude	44°47'N, 118°55'W
E.	Stream Name	Middle Fork John Day River
F.	Major Basin Name	John Day
G.	River Mile	32.3 to 39.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

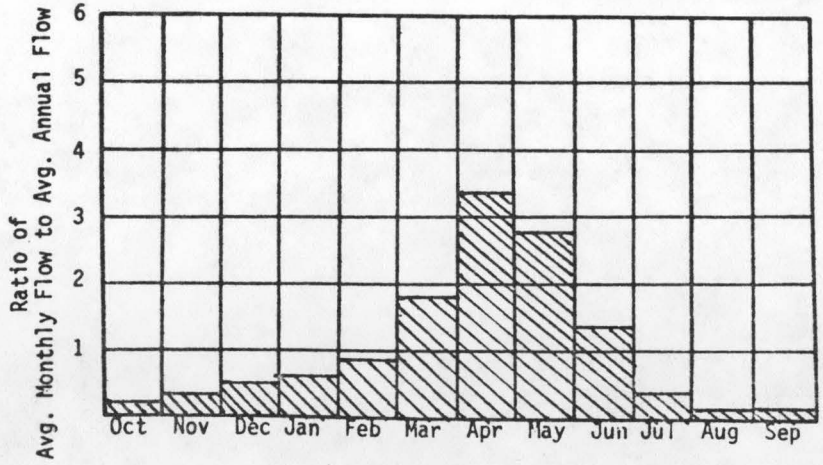
A.	Upstream Elevation of Reach	3253	Ft. MSL
B.	Downstream Elevation of Reach	3056	Ft. MSL
C.	Total Available Head in Reach	197	Ft.
D.	Average Slope in Reach	29.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	423.7	Sq.Mi.
F.	Inflow Classification	Natural	

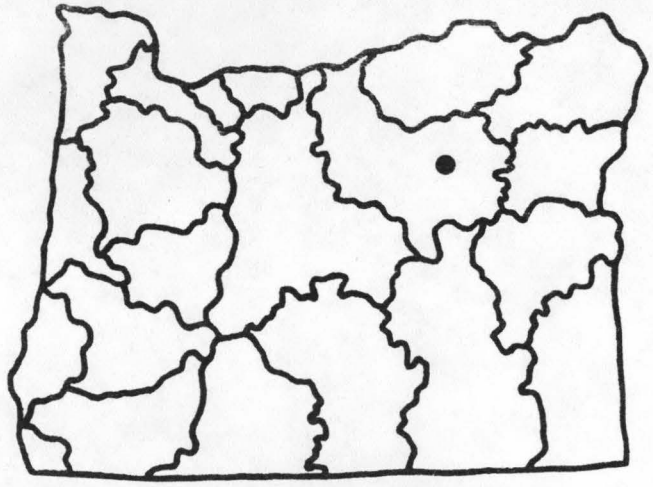
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.0	.07	.59	1.000
80	13.7	.23	1.83	.911
50	51.9	.87	5.46	.719
30	145.9	2.44	10.96	.514
10	466.7	7.79	20.34	.298

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 169 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY

Ranch
Willow Creek Butte
Ranches
LOAF MTN
FLOWERS GULCH SUMMIT
Window Point
Ranches
Ranch
Ranch
Ranches
Ranch
Ranches
Ranches
Ranch
Kohler Butte
Ranches
Ranch
Ranch
Ranch

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-010-R0005

I. LOCATION

A. State	Oregon	
B. County	Grant	
C. Township, Range	Sec.11, T10S, R32E	
D. Latitude, Longitude	44°43'N, 118°50'W	
E. Stream Name	Middle Fork John Day River	
F. Major Basin Name	John Day	
G. River Mile	39.0 to 49.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

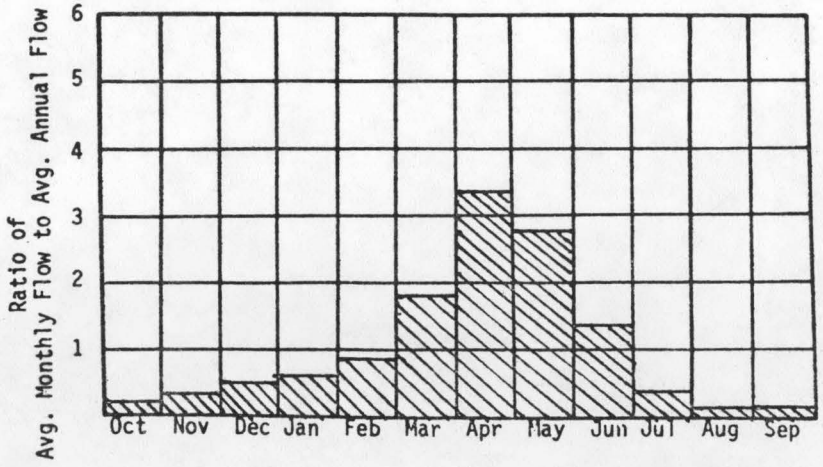
A. Upstream Elevation of Reach	3477	Ft. MSL
B. Downstream Elevation of Reach	3253	Ft. MSL
C. Total Available Head in Reach	224	Ft.
D. Average Slope in Reach	22.4	Ft./Mi.
E. Drainage Area above Reach Mouth	328.2	Sq.Mi.
F. Inflow Classification	Natural	

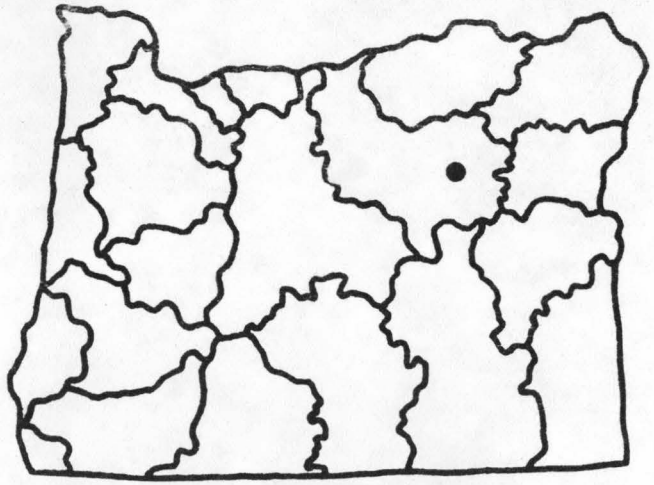
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	2.9	.05	.48	1.000
80	10.2	.19	1.55	.910
50	40.4	.77	4.80	.716
30	115.2	2.19	9.78	.511
10	378.9	7.19	18.55	.294

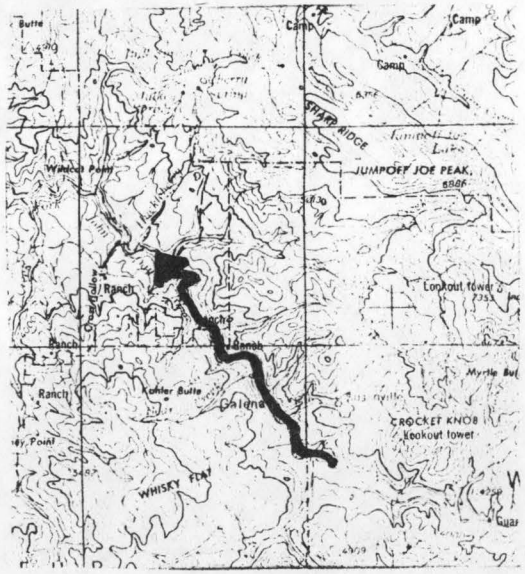
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 137 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-010-R0006

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.10, T11S, R33E
D.	Latitude, Longitude	44°37'N, 118°37'W
E.	Stream Name	Middle Fork John Day River
F.	Major Basin Name	John Day
G.	River Mile	49.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

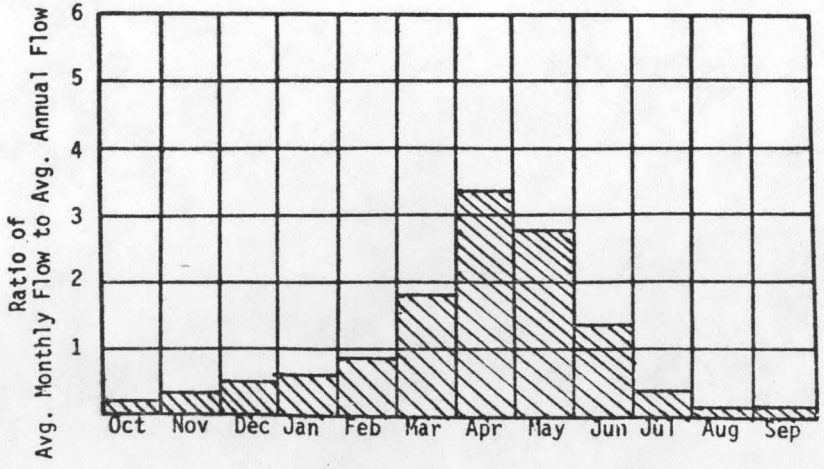
A.	Upstream Elevation of Reach	---	Ft. MSL
B.	Downstream Elevation of Reach	---	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	---	Ft./Mi.
E.	Drainage Area above Reach Mouth	252.7	Sq.Mi.
F.	Inflow Classification	Natural	

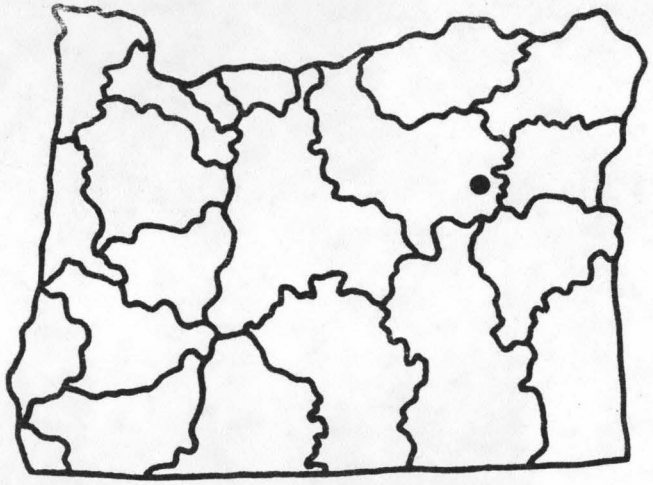
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	2.5	.01	.12	1.000
80	8.9	.05	.40	.910
50	35.8	.20	1.25	.714
30	103.1	.58	2.57	.509
10	343.4	1.92	4.93	.293

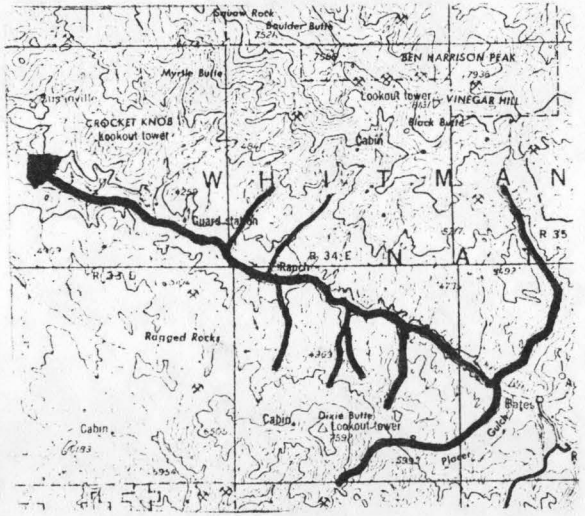
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 124 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-000-R0003

I. LOCATION

A. State	Oregon	
B. County	Grant	
C. Township, Range	Sec.19, T7S, R29E	
D. Latitude, Longitude	44°57'N, 119°18'W	
E. Stream Name	North Fork John Day River	
F. Major Basin Name	John Day	
G. River Mile	32.3 to 39.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

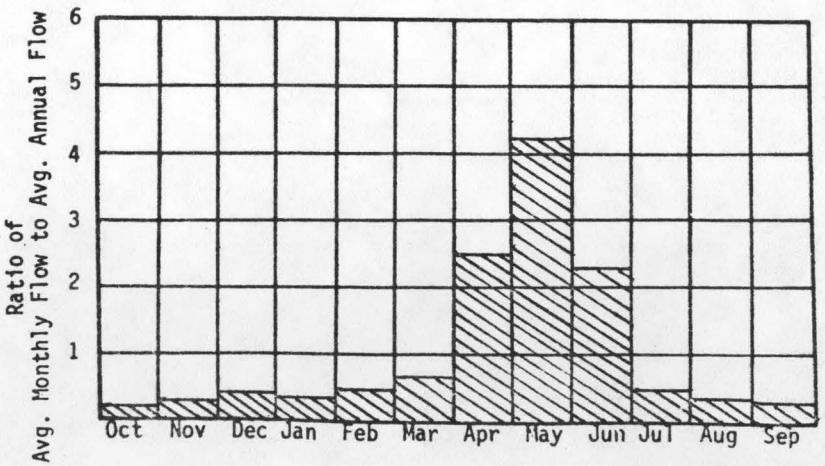
A. Upstream Elevation of Reach	2298	Ft. MSL
B. Downstream Elevation of Reach	2190	Ft. MSL
C. Total Available Head in Reach	108	Ft.
D. Average Slope in Reach	16.1	Ft./Mi.
E. Drainage Area above Reach Mouth	310.5	Sq.Mi.
F. Inflow Classification	Regulated	

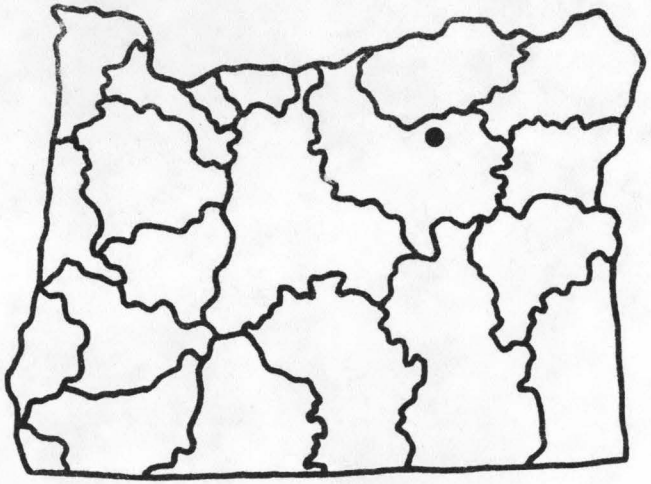
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	21.7	.20	1.74	1.000
80	63.1	.58	4.65	.918
50	189.9	1.74	11.25	.739
30	494.1	4.52	21.01	.530
10	1369.3	12.53	35.04	.319

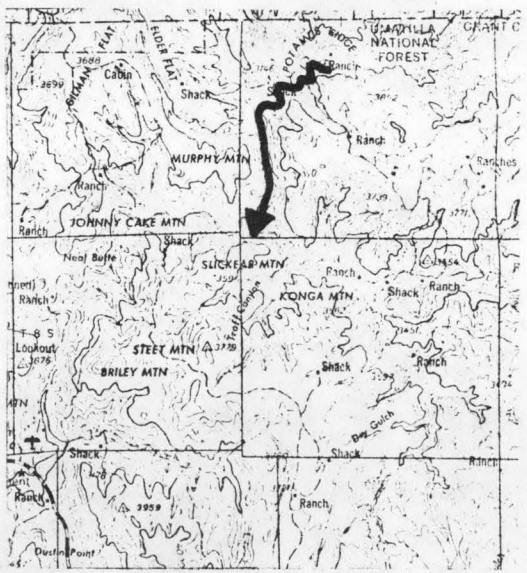
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 496 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-000-R0004

I. LOCATION

A. State	Oregon	
B. County	Grant	
C. Township, Range	Sec.4, T7S, R30E	
D. Latitude, Longitude	45°00'N, 119°07'W	
E. Stream Name	North Fork John Day	River
F. Major Basin Name	John Day	
G. River Mile	39.0 to 56.9	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

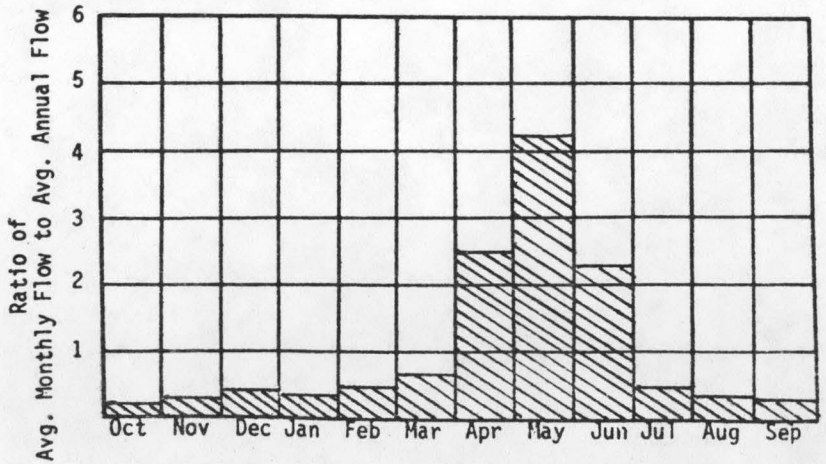
A. Upstream Elevation of Reach	2700	Ft. MSL
B. Downstream Elevation of Reach	2298	Ft. MSL
C. Total Available Head in Reach	402	Ft.
D. Average Slope in Reach	22.5	Ft./Mi.
E. Drainage Area above Reach Mouth	1087.2	Sq.Mi.
F. Inflow Classification	Regulated	

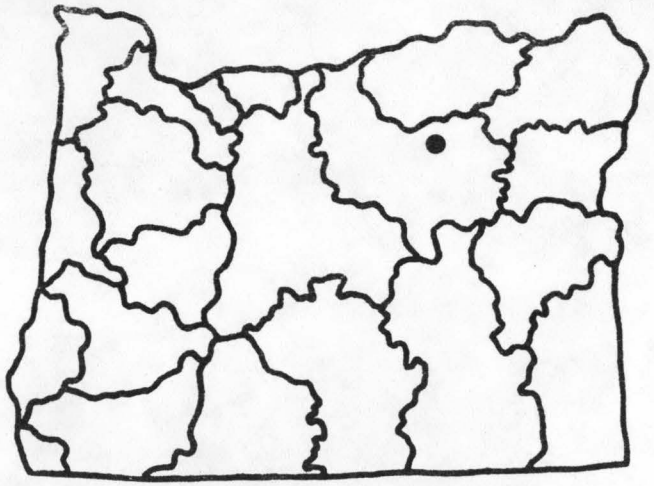
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.2	.66	5.74	1.000
80	56.6	1.93	15.50	.917
50	173.1	5.90	38.10	.737
30	452.9	15.43	71.50	.529
10	1268.1	43.20	120.16	.318

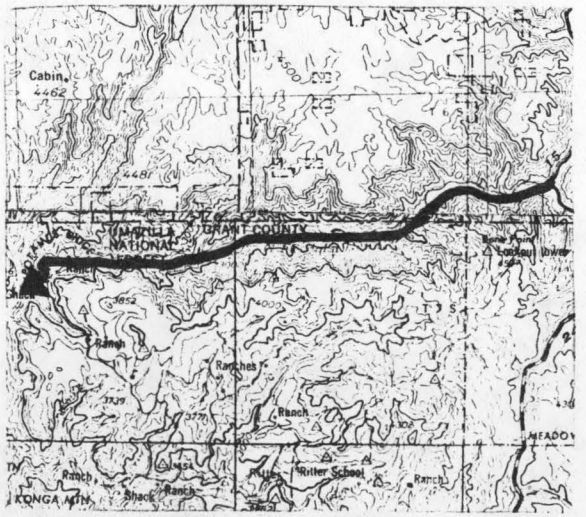
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 459 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY-PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-020-R0001

I. LOCATION

A. State	Oregon	
B. County	Grant	
C. Township, Range	Sec.15, T6S, R31E	
D. Latitude, Longitude	45°03'N, 119°00'W	
E. Stream Name	Camas Creek	
F. Major Basin Name	John Day	
G. River Mile	0.0 to 8.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

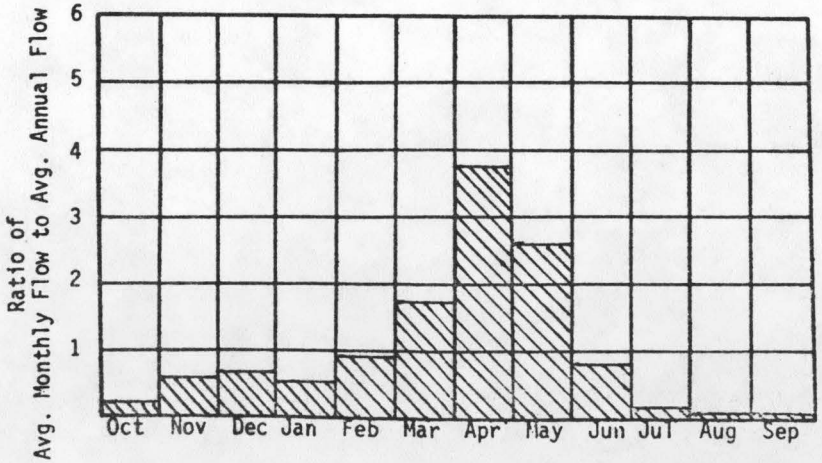
A. Upstream Elevation of Reach	3126	Ft. MSL
B. Downstream Elevation of Reach	2700	Ft. MSL
C. Total Available Head in Reach	426	Ft.
D. Average Slope in Reach	53.2	Ft./Mi.
E. Drainage Area above Reach Mouth	407.2	Sq.Mi.
F. Inflow Classification	Natural	

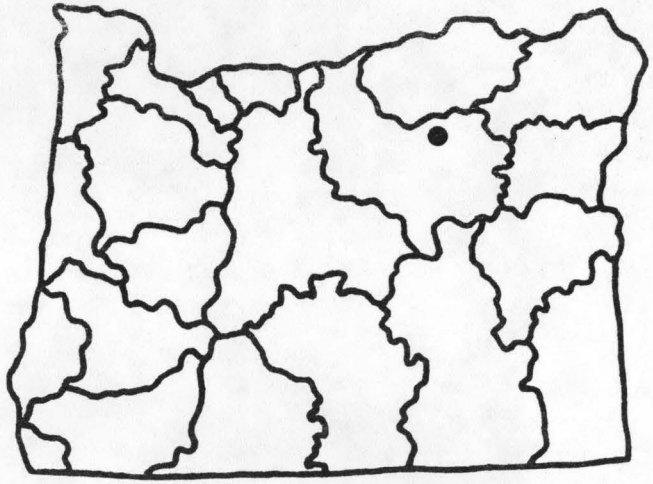
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3.9	.14	1.25	1.000
80	13.6	.49	3.91	.911
50	51.3	1.85	11.67	.719
30	144.4	5.21	23.44	.513
10	462.4	16.69	43.56	.298

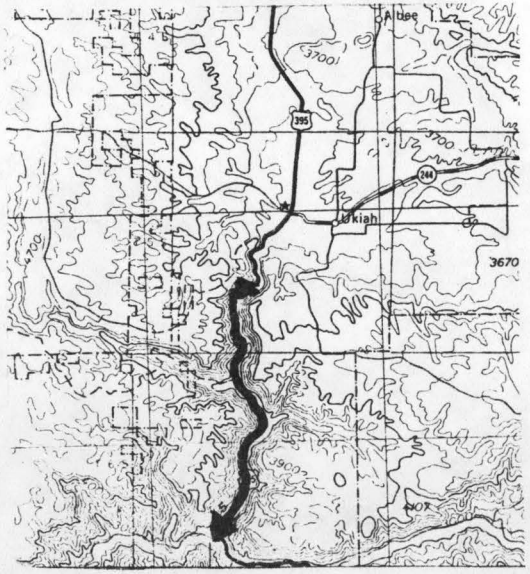
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 167 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-020-R0002

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.3, T5S, R32E
D.	Latitude, Longitude	45°10'N, 118°51'W
E.	Stream Name	Camas Creek
F.	Major Basin Name	John Day
G.	River Mile	8.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

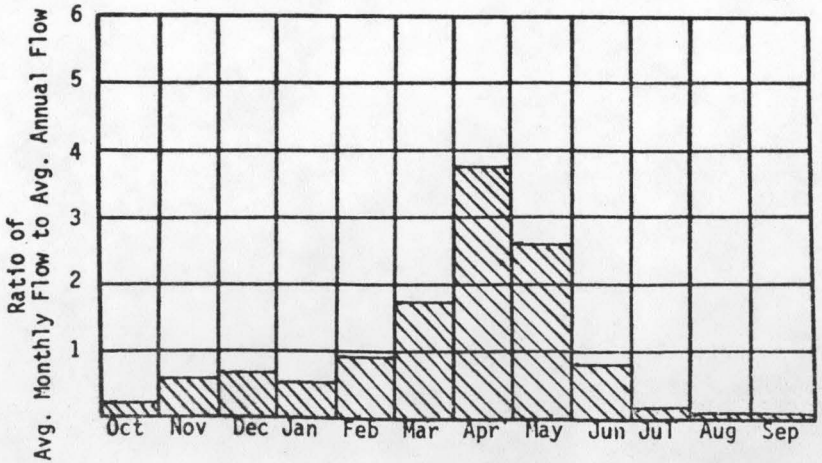
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	32.5	Sq.Mi.
F.	Inflow Classification	Natural	

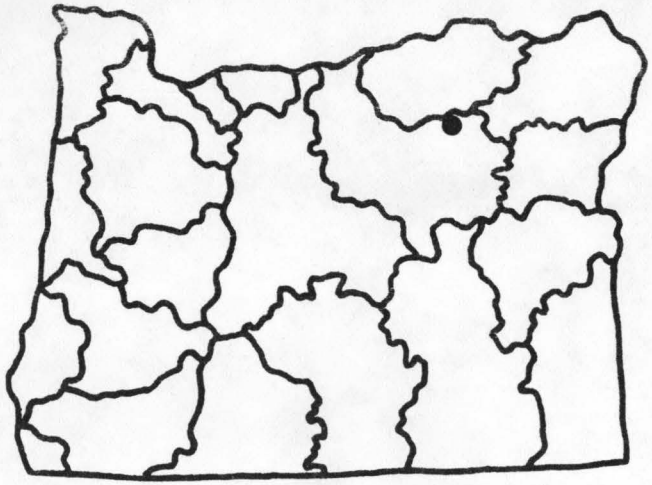
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3.4	.02	.16	1.000
80	11.7	.07	.52	.911
50	45.4	.25	1.60	.717
30	128.7	.72	3.23	.512
10	417.8	2.34	6.06	.296

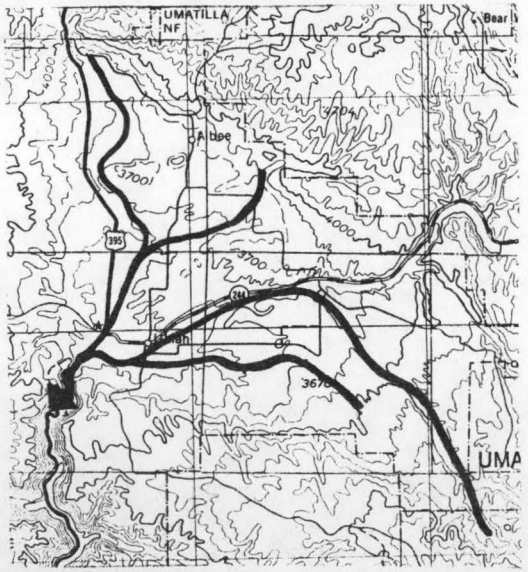
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 151 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-000-R0005

I. LOCATION

A. State	Oregon	
B. County	Grant	
C. Township, Range	Sec.35, T6S, R31E	
D. Latitude, Longitude	44°59'N, 118°58'W	
E. Stream Name	North Fork John Day	River
F. Major Basin Name	John Day	
G. River Mile	56.9 to 60.4	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

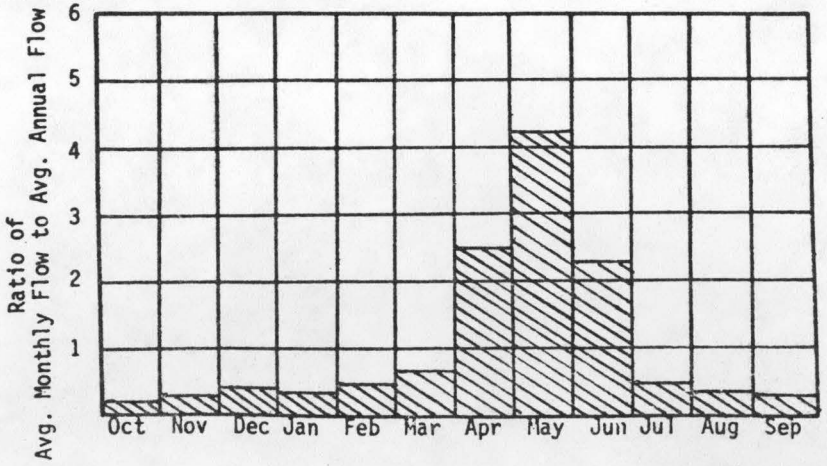
A. Upstream Elevation of Reach	2790	Ft. MSL
B. Downstream Elevation of Reach	2700	Ft. MSL
C. Total Available Head in Reach	90	Ft.
D. Average Slope in Reach	25.7	Ft./Mi.
E. Drainage Area above Reach Mouth	583.6	Sq.Mi.
F. Inflow Classification	Natural	

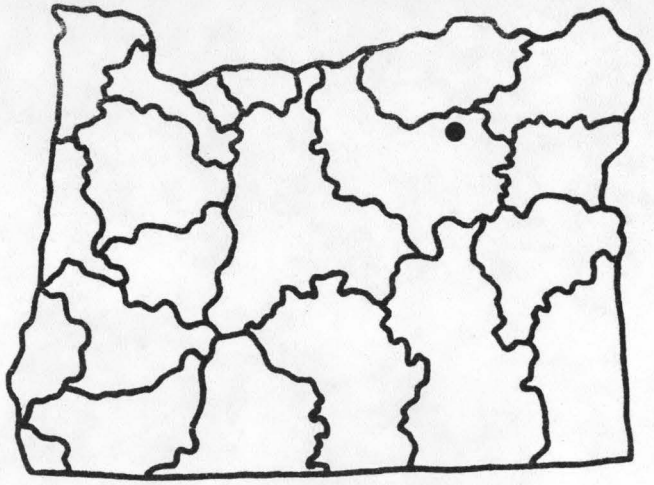
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	7.3	.06	.49	1.000
80	23.7	.18	1.44	.914
50	82.4	.63	3.99	.726
30	225.3	1.72	7.81	.519
10	684.8	5.22	13.95	.305

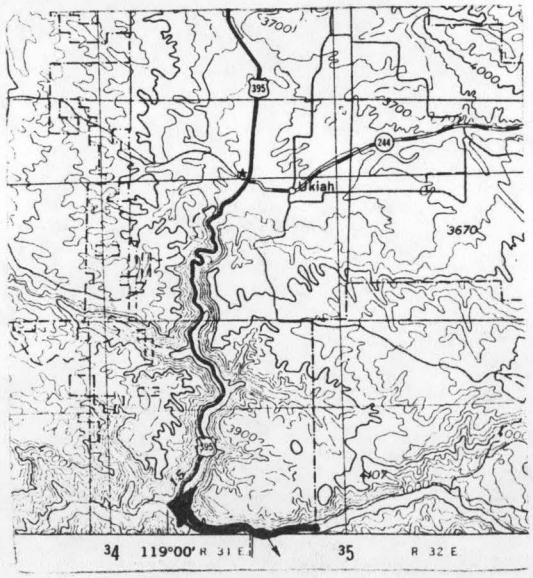
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 248 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON-CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-000-R0006

I. LOCATION

A. State	Oregon	
B. County	Grant	
C. Township, Range	Sec.34, T6S, R32E	
D. Latitude, Longitude	45°00'N, 118°51'W	
E. Stream Name	North Fork John Day	River
F. Major Basin Name	John Day	
G. River Mile	60.4 to 70.4	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

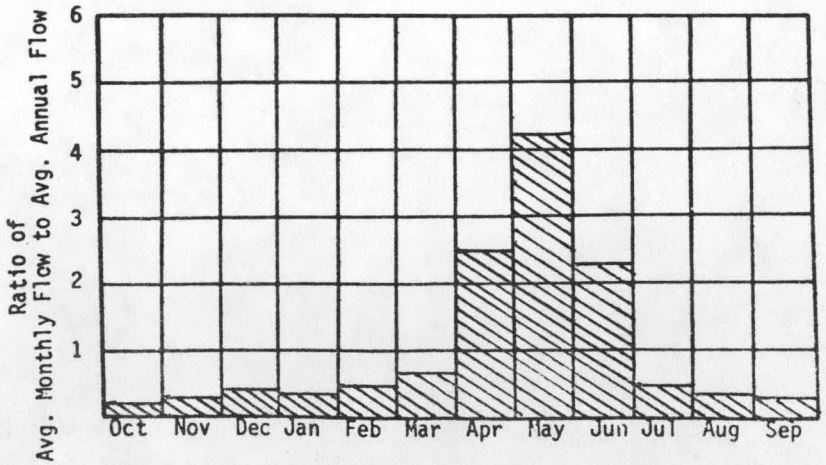
A. Upstream Elevation of Reach	3119	Ft. MSL
B. Downstream Elevation of Reach	2790	Ft. MSL
C. Total Available Head in Reach	329	Ft.
D. Average Slope in Reach	32.9	Ft./Mi.
E. Drainage Area above Reach Mouth	424.4	Sq.Mi.
F. Inflow Classification	Natural	

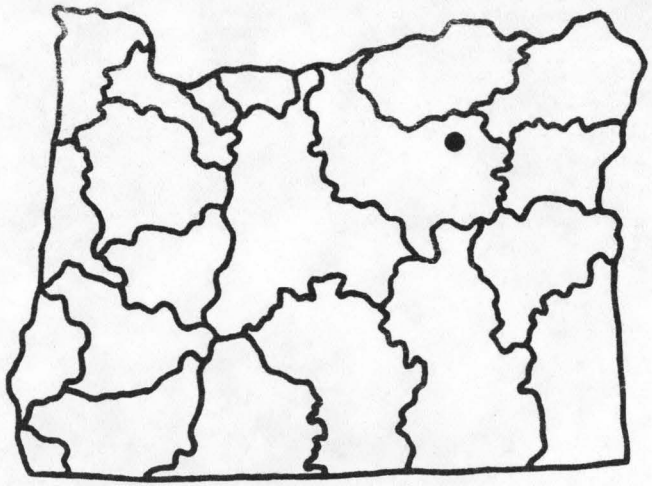
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	5.5	.15	1.33	1.000
80	18.2	.51	4.05	.913
50	65.8	1.84	11.61	.722
30	182.4	5.09	23.01	.516
10	568.5	15.85	41.87	.302

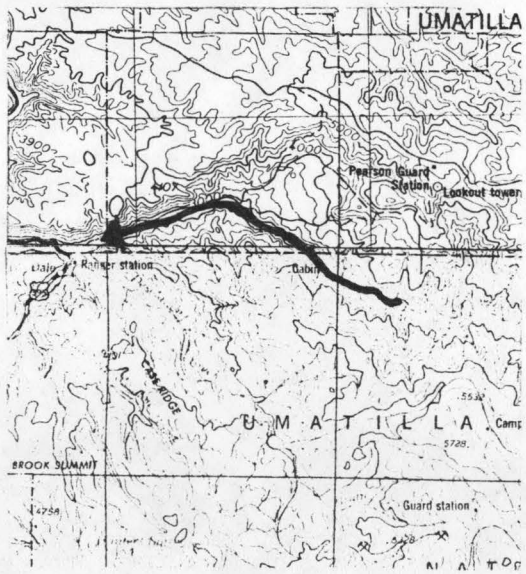
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 206 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.20, T7S, R33E
D.	Latitude, Longitude	44°57'N, 118°40'W
E.	Stream Name	North Fork John Day River
F.	Major Basin Name	John Day
G.	River Mile	70.4 to 87.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

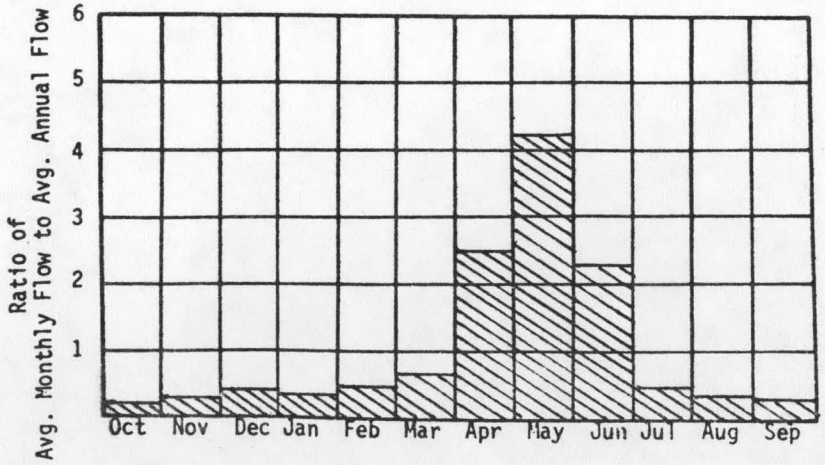
A.	Upstream Elevation of Reach	3940	Ft. MSL
B.	Downstream Elevation of Reach	3119	Ft. MSL
C.	Total Available Head in Reach	821	Ft.
D.	Average Slope in Reach	49.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	386.1	Sq.Mi.
F.	Inflow Classification	Natural	

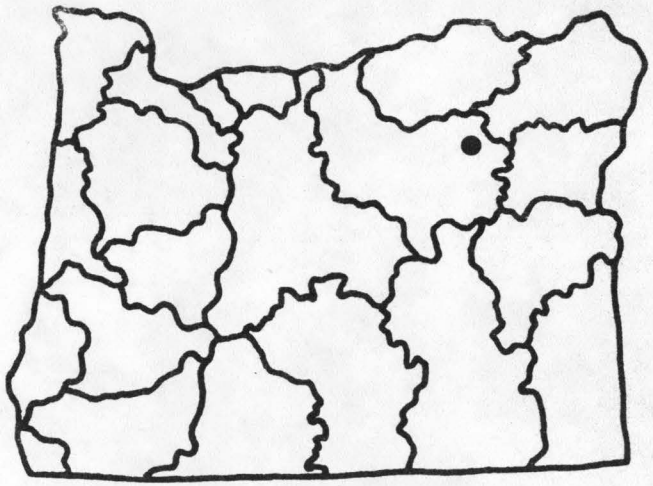
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.0	.28	2.43	1.000
80	13.7	.95	7.61	.911
50	51.7	3.60	22.67	.719
30	145.5	10.12	45.53	.514
10	465.5	32.39	84.54	.298

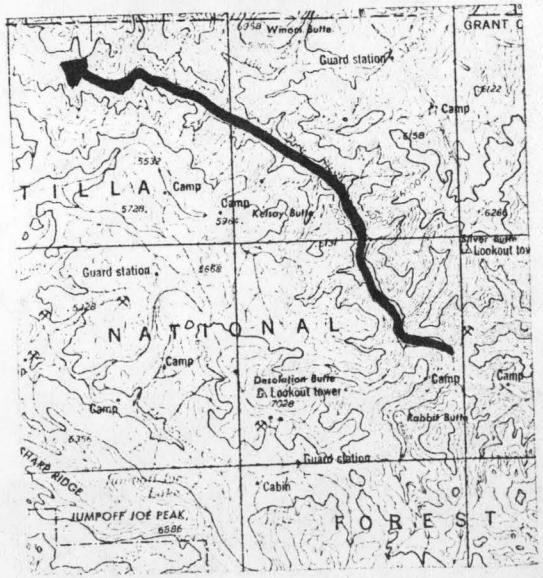
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 168 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-040-000-R0008

I. LOCATION

A. State	Oregon	
B. County	Grant	
C. Township, Range	Sec.1, T9S, R35E	
D. Latitude, Longitude	44°48'N, 118°28'W	
E. Stream Name	North Fork John Day	River
F. Major Basin Name	John Day	
G. River Mile	87.0 to H.W.	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

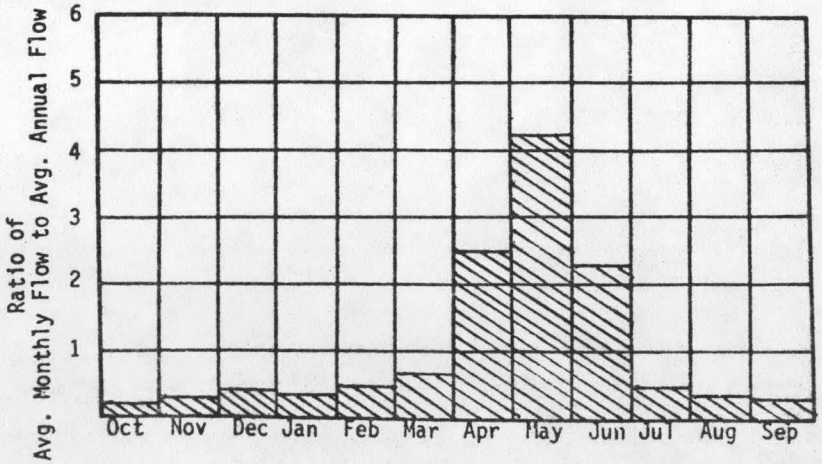
A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	257.	Sq.Mi.
F. Inflow Classification	Natural	

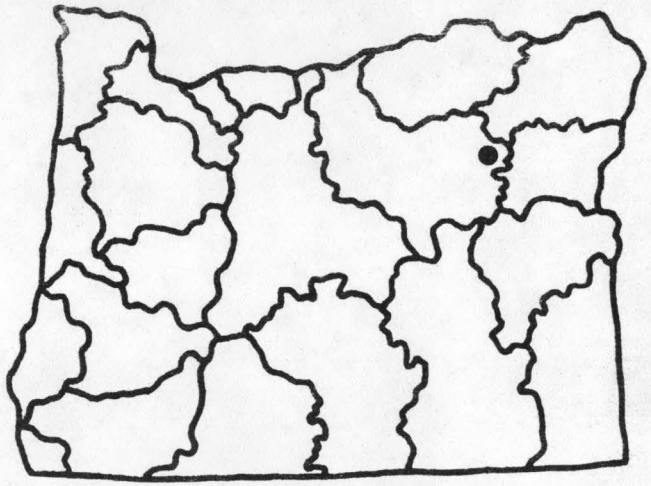
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	2.9	.02	.14	1.000
80	10.3	.06	.46	.910
50	40.7	.23	1.43	.716
30	116.2	.65	2.91	.511
10	381.9	2.14	5.51	.295

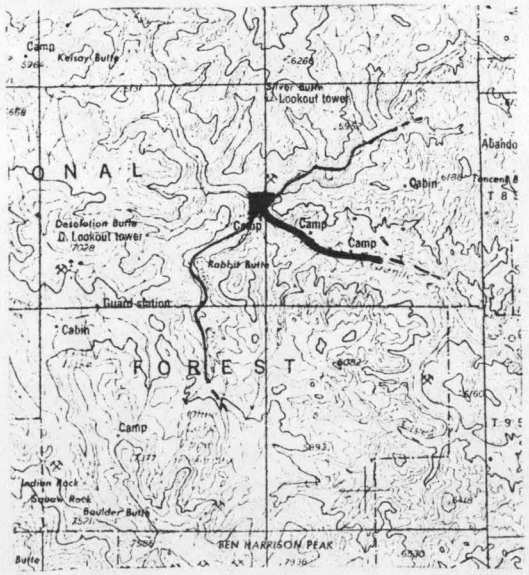
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 138 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0016

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.19, T10S, R26E
D.	Latitude, Longitude	44°42'N, 119°39'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	184.7 to 195.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

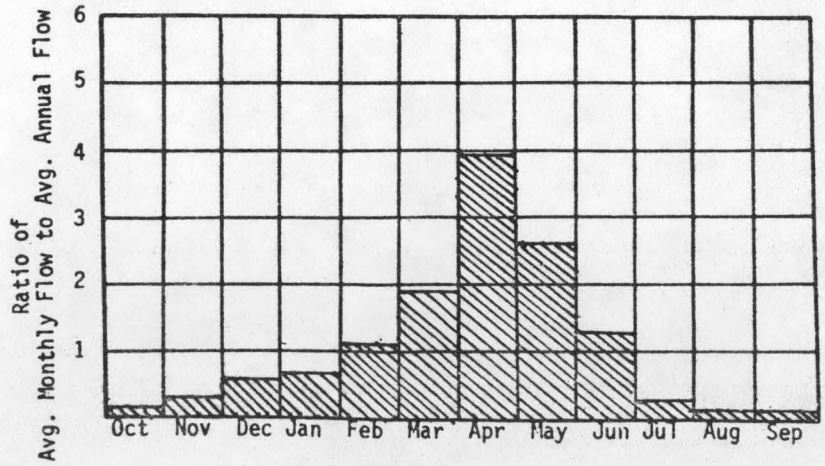
A.	Upstream Elevation of Reach	2012	Ft. MSL
B.	Downstream Elevation of Reach	1839	Ft. MSL
C.	Total Available Head in Reach	173	Ft.
D.	Average Slope in Reach	16.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	2147.2	Sq.Mi.
F.	Inflow Classification	Natural	

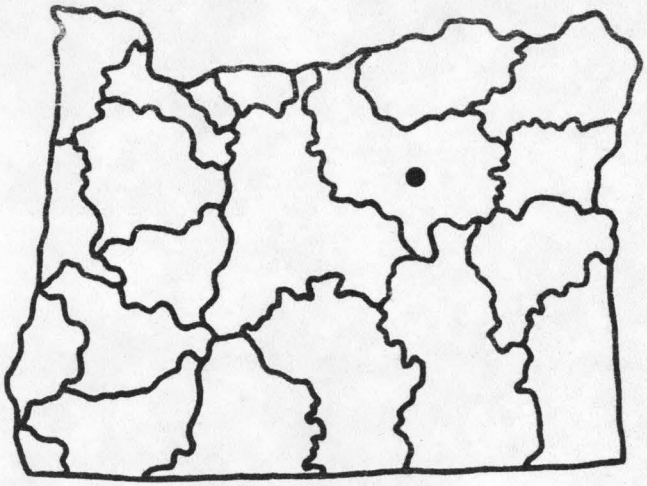
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	32.7	.48	4.20	1.000
80	91.4	1.34	10.80	.920
50	260.3	3.82	24.90	.745
30	664.5	9.74	45.66	.535
10	1778.5	26.07	74.28	.325

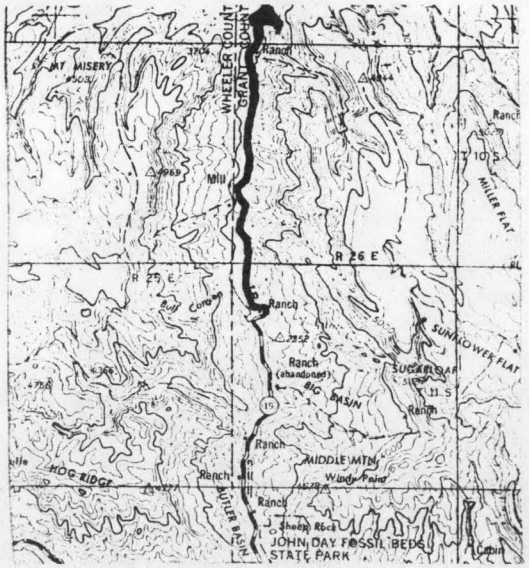
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 644 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0017

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.31, T11S, R26E
D.	Latitude, Longitude	44°34'N, 119°34'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	195.0 to 204.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

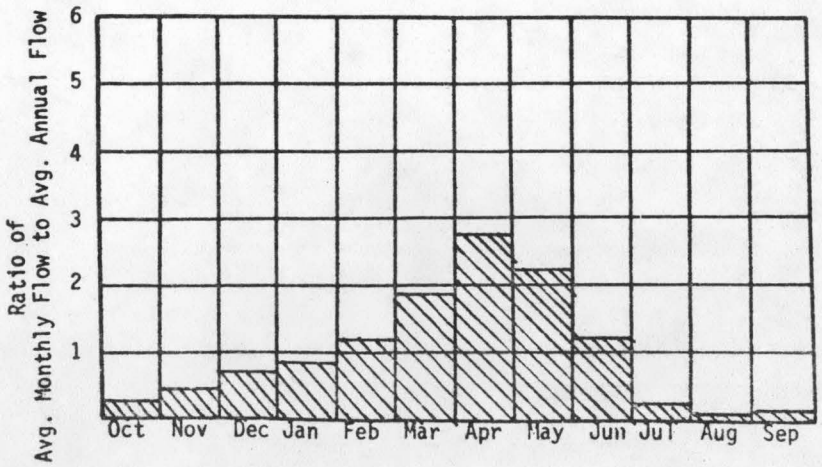
A.	Upstream Elevation of Reach	2225	Ft. MSL
B.	Downstream Elevation of Reach	2012	Ft. MSL
C.	Total Available Head in Reach	213	Ft.
D.	Average Slope in Reach	22.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	2070.2	Sq.Mi.
F.	Inflow Classification	Natural	

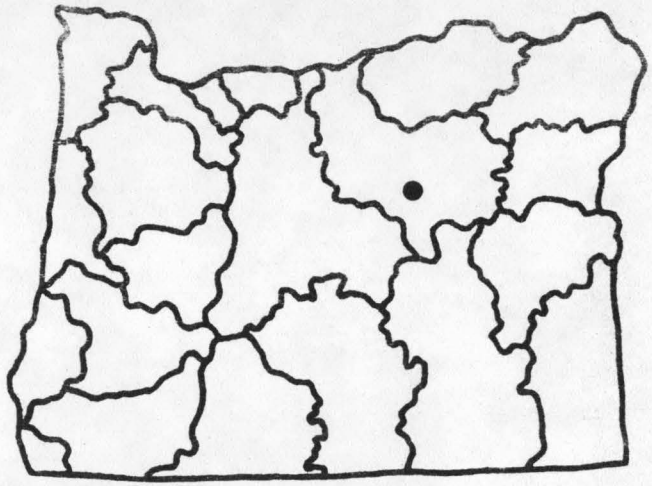
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	31.5	.57	4.99	1.000
80	88.4	1.60	12.86	.920
50	253.0	4.57	29.77	.744
30	647.0	11.68	54.69	.535
10	1737.0	31.35	89.16	.325

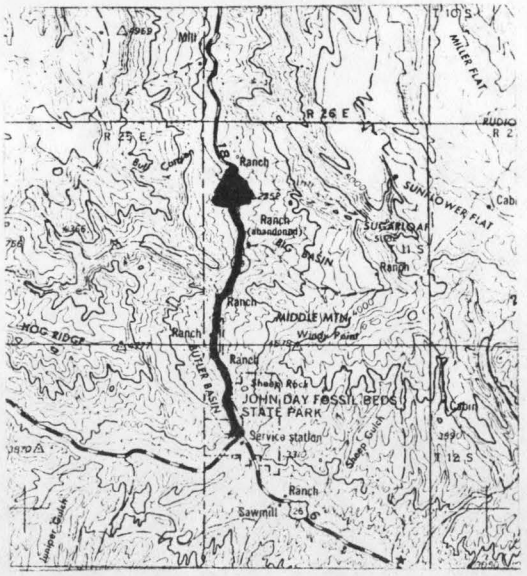
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 629 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0018

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.34, T12S, R26E
D.	Latitude, Longitude	44°29'N, 119°34'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	204.4 to 211.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

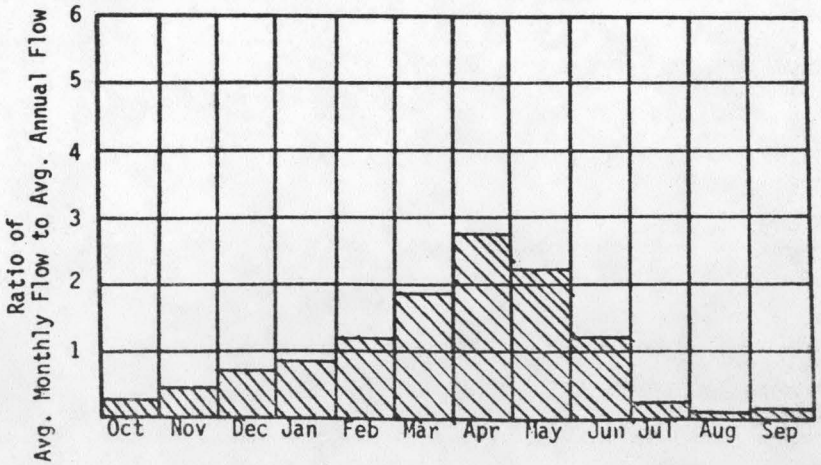
A.	Upstream Elevation of Reach	2330	Ft. MSL
B.	Downstream Elevation of Reach	2225	Ft. MSL
C.	Total Available Head in Reach	105	Ft.
D.	Average Slope in Reach	14.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	1706.8	Sq.Mi.
F.	Inflow Classification	Natural	

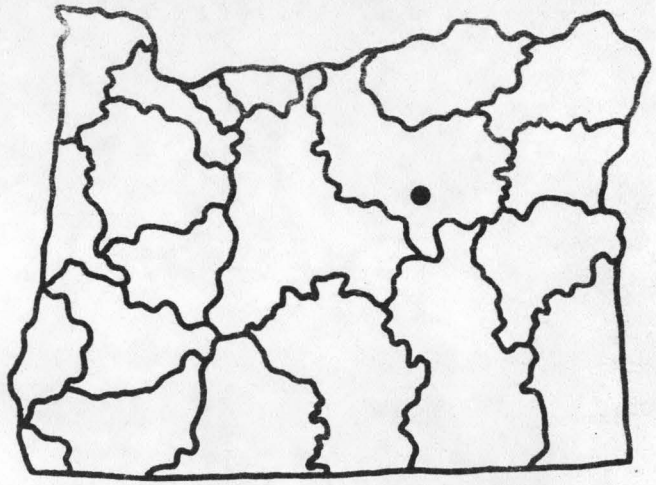
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	22.9	.20	1.78	1.000
80	66.2	.59	4.74	.918
50	197.8	1.76	11.41	.740
30	513.4	4.57	21.25	.531
10	1416.5	12.60	35.33	.320

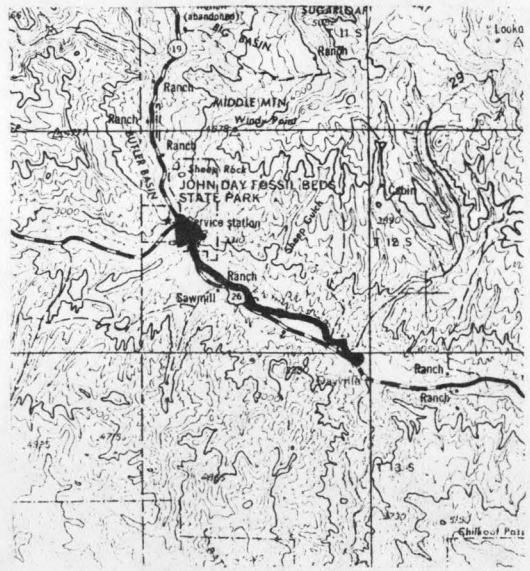
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 513 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-060-000-R0001

I. LOCATION

A. State	Oregon	
B. County	Grant	
C. Township, Range	Sec.12, T14S, R26E	
D. Latitude, Longitude	44°22'N, 119°33W	
E. Stream Name	South Fork John Day	River
F. Major Basin Name	John Day	
G. River Mile	0.0 to 17.2	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

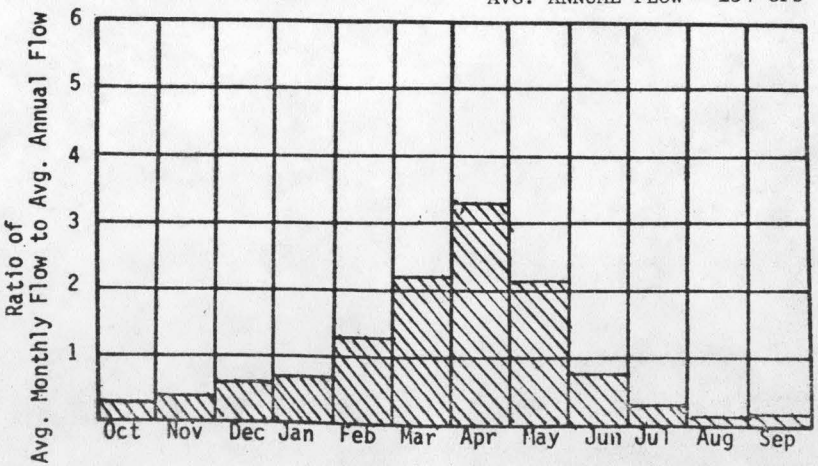
A. Upstream Elevation of Reach	2926	Ft. MSL
B. Downstream Elevation of Reach	2330	Ft. MSL
C. Total Available Head in Reach	596	Ft.
D. Average Slope in Reach	33.9	Ft./Mi.
E. Drainage Area above Reach Mouth	632.6	Sq.Mi.
F. Inflow Classification	Natural	

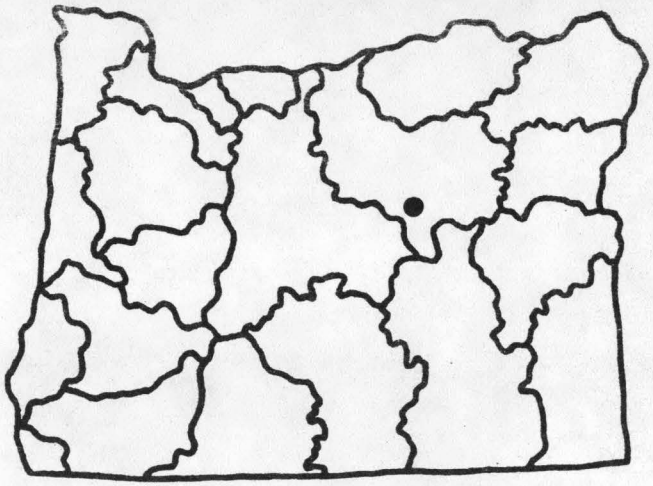
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	2.8	.14	1.23	1.000
80	9.9	.50	3.97	.910
50	39.1	1.98	12.40	.716
30	111.9	5.65	25.28	.510
10	369.5	18.66	48.07	.294

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 134 CFS





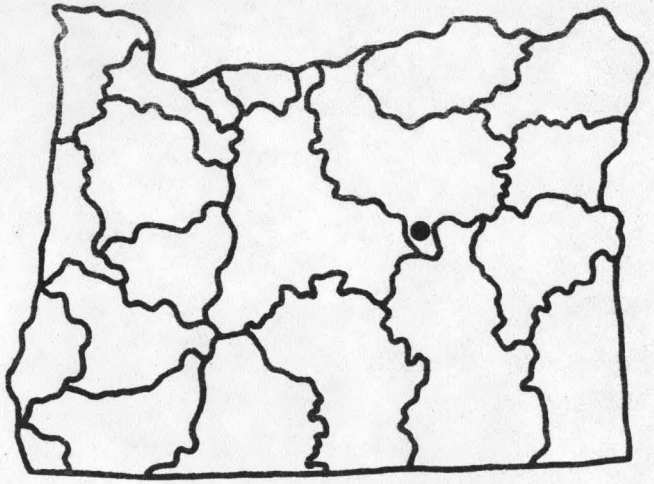
U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-060-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.23, T17S, R27E
D.	Latitude, Longitude	44°05'N, 119°27'W
E.	Stream Name	South Fork John Day River
F.	Major Basin Name	John Day
G.	River Mile	17.2 to H.W.



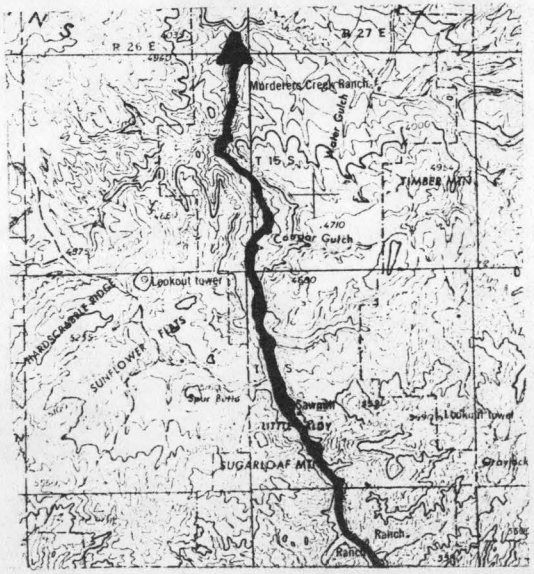
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	---	Ft. MSL
B.	Downstream Elevation of Reach	---	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	---	Ft./Mi.
E.	Drainage Area above Reach Mouth	549.4	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

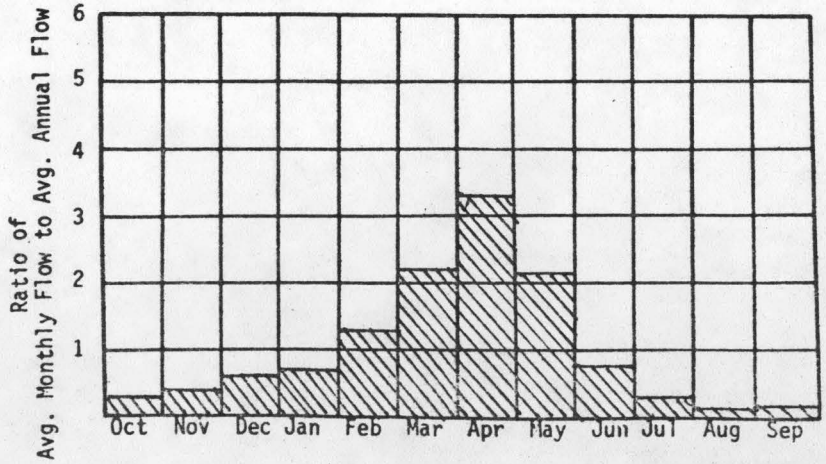
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	2.3	.01	.11	1.000
80	8.4	.05	.37	.909
50	34.1	.19	1.19	.714
30	98.2	.55	2.45	.509
10	329.1	1.84	4.71	.292

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 119 CFS

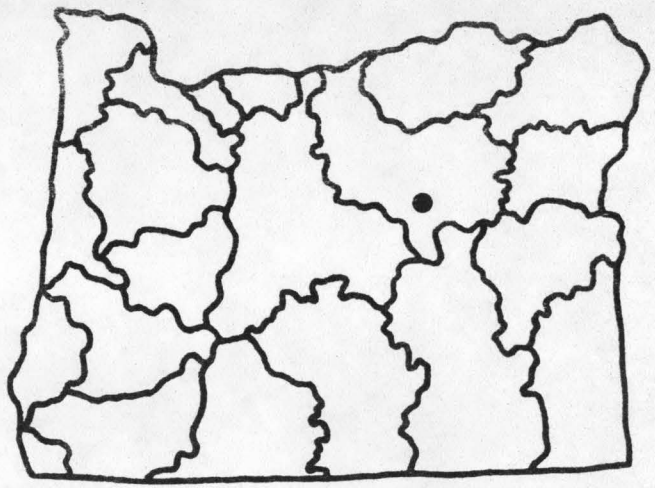


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0019

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.11, T13S, R27E
D.	Latitude, Longitude	44°27'N, 119°26'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	211.8 to 222.5



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

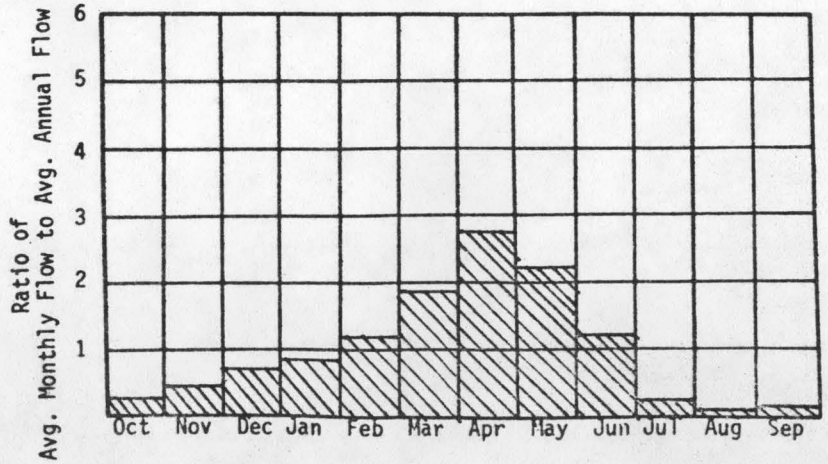
A.	Upstream Elevation of Reach	2542	Ft. MSL
B.	Downstream Elevation of Reach	2330	Ft. MSL
C.	Total Available Head in Reach	212	Ft.
D.	Average Slope in Reach	19.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	963.7	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

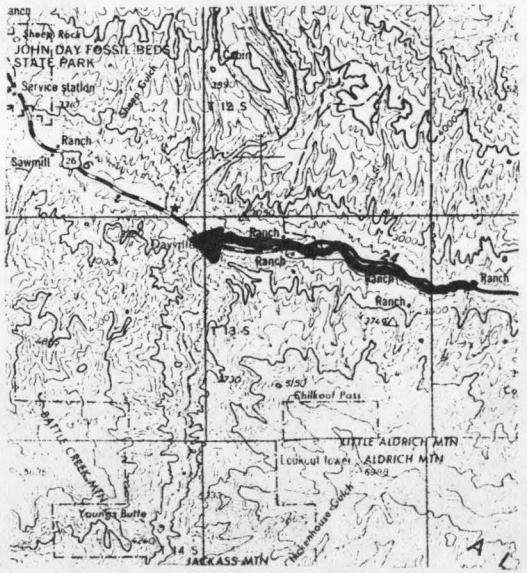
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	13.2	.24	2.08	1.000
80	40.3	.72	5.82	.916
50	129.8	2.33	14.96	.733
30	345.4	6.20	28.54	.525
10	998.3	17.94	49.09	.312

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 362 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY


JOHN DAY FOSSIL BEDS
STATE PARK
Service station
Ranch
Sawmill
Chimney Rock
Ranch
Ranch
Ranch
Ranch
Chimney Rock
Chimney Rock
Chimney Rock

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0020

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.19, T13S, R29E
D.	Latitude, Longitude	44°26'N, 119°16'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	222.5 to 232.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

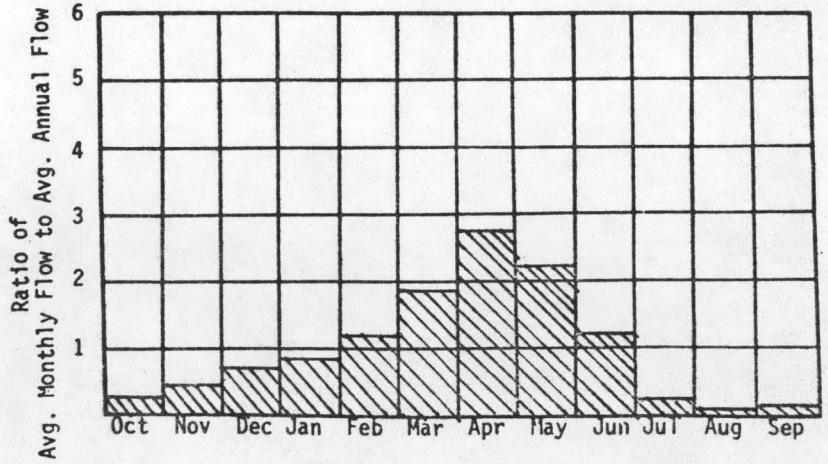
A.	Upstream Elevation of Reach	2709	Ft. MSL
B.	Downstream Elevation of Reach	2542	Ft. MSL
C.	Total Available Head in Reach	167	Ft.
D.	Average Slope in Reach	17.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	901.2	Sq.Mi.
F.	Inflow Classification	Natural	

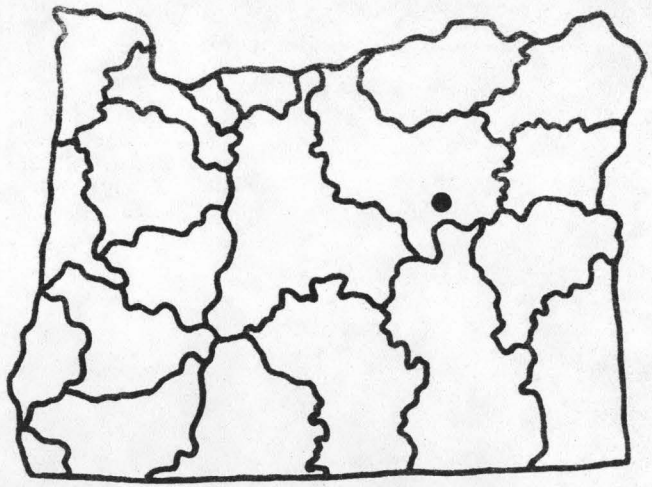
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	11.6	.16	1.44	1.000
80	35.9	.51	4.08	.915
50	117.6	1.66	10.65	.731
30	314.7	4.45	20.43	.524
10	919.7	13.02	35.43	.311

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 333 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0021

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.26, T13S, R30E
D.	Latitude, Longitude	44°25'N, 119°05'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	232.0 to 247.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

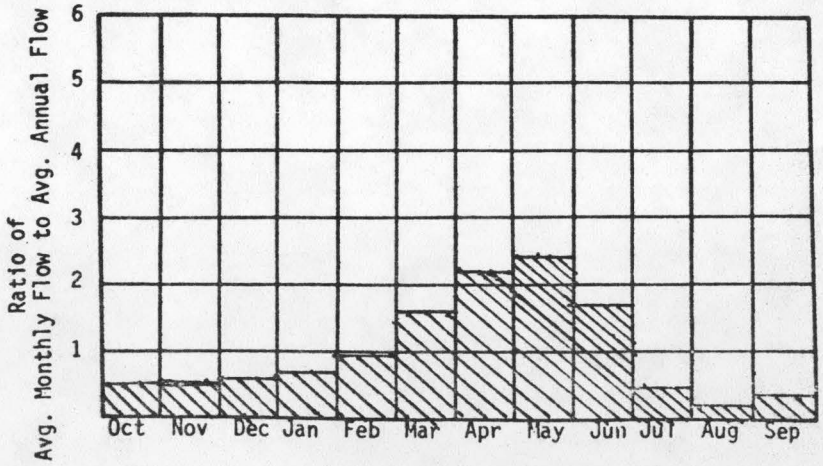
A.	Upstream Elevation of Reach	3060	Ft. MSL
B.	Downstream Elevation of Reach	2709	Ft. MSL
C.	Total Available Head in Reach	351	Ft.
D.	Average Slope in Reach	23.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	764.3	Sq.Mi.
F.	Inflow Classification	Natural	

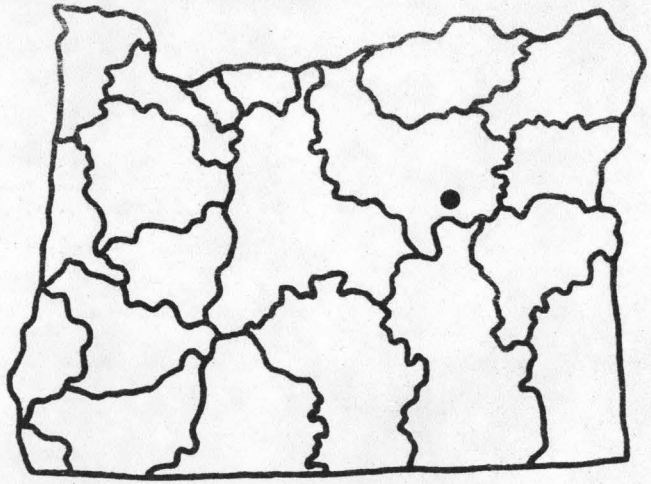
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	8.5	.25	2.22	1.000
80	27.2	.81	6.48	.914
50	92.8	2.76	17.59	.727
30	251.9	7.49	34.17	.521
10	755.8	22.48	60.43	.307

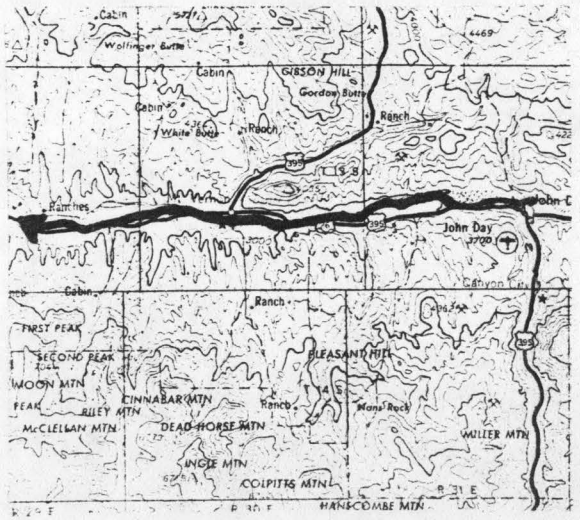
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 274 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0022

I. LOCATION

A. State	Oregon	
B. County	Grant	
C. Township, Range	Sec.14, T13S, R32E	
D. Latitude, Longitude	44°27'N, 118°50'W	
E. Stream Name	John Day River	
F. Major Basin Name	John Day	
G. River Mile	247.8 to 262.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

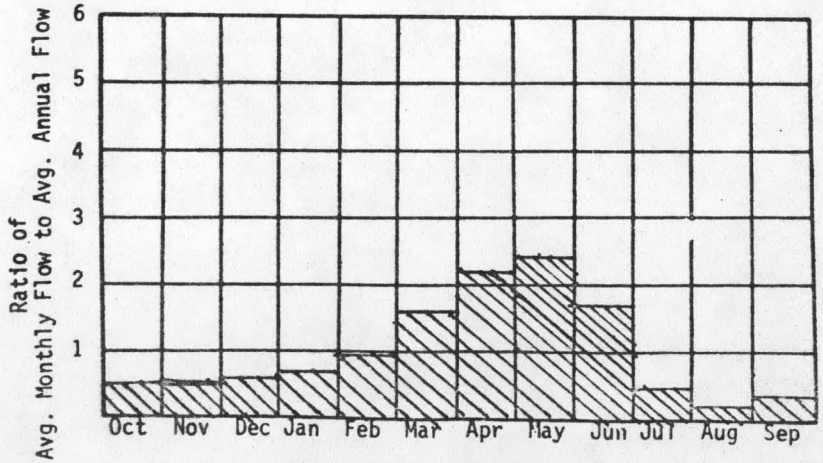
A. Upstream Elevation of Reach	3498	Ft. MSL
B. Downstream Elevation of Reach	3060	Ft. MSL
C. Total Available Head in Reach	438	Ft.
D. Average Slope in Reach	30.8	Ft./Mi.
E. Drainage Area above Reach Mouth	400.3	Sq.Mi.
F. Inflow Classification	Natural	

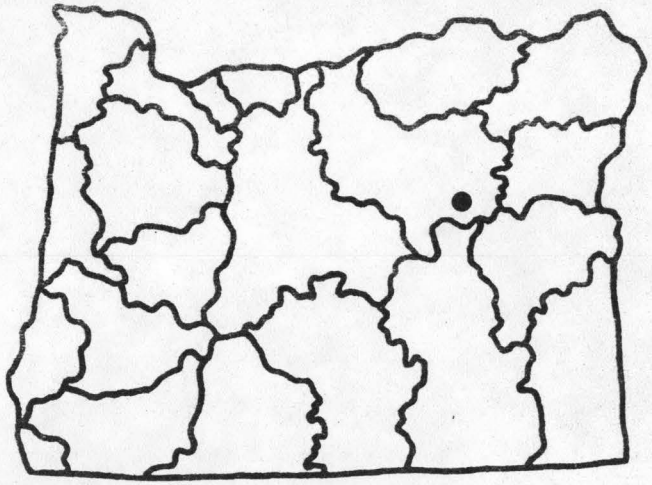
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3.2	.12	1.05	1.000
80	11.3	.42	3.35	.911
50	43.9	1.63	10.24	.717
30	124.7	4.63	20.75	.512
10	406.4	15.09	39.07	.296

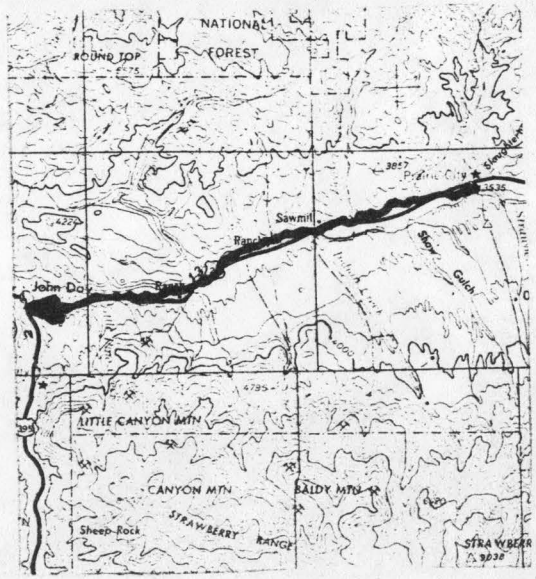
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 147 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-200-000-000-R0023

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.35, T13S, R34E
D.	Latitude, Longitude	44°37'N, 118°37'W
E.	Stream Name	John Day River
F.	Major Basin Name	John Day
G.	River Mile	262.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

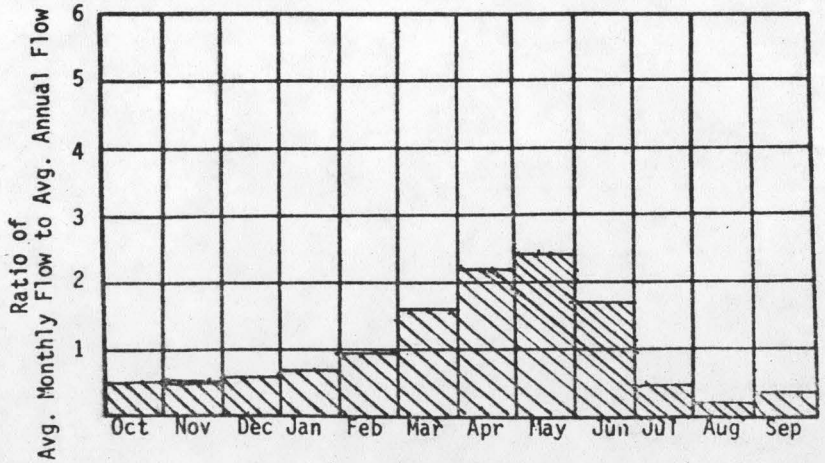
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	230.7	Sq.Mi.
F.	Inflow Classification	Natural	

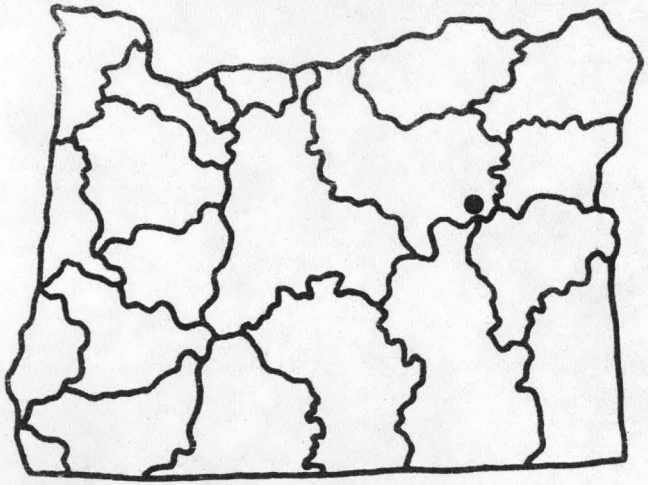
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	2.2	.01	.11	1.000
80	7.9	.04	.35	.909
50	32.5	.18	1.13	.713
30	93.9	.53	2.34	.508
10	316.4	1.77	4.52	.292

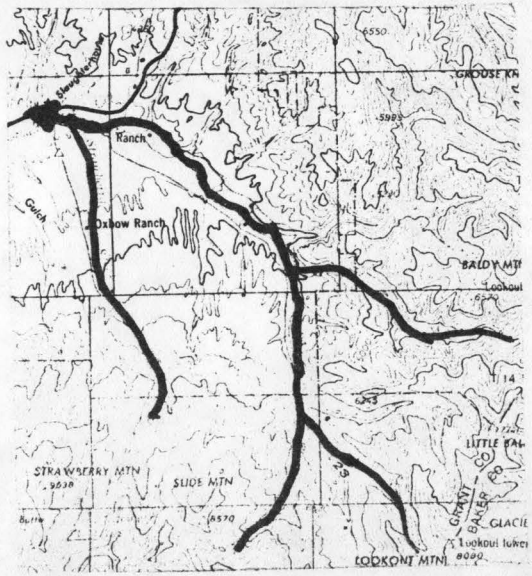
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 114 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-200-								
000-000-R0001	X	-	-	X	1.0	500-B	-	28.0
000-000-R0002	X	-	-	X	2.0	69-PPL	-	33.0
020-000-R0001	X	X	X	X	1.5	2-230/287B	-	40.0
020-000-R0002	-	-	-	X	0.6	23-CB-C	-	51.0
020-000-R0003	X	-	-	X	3.8	23-CB-C	-	53.0
000-000-R0003	X	X	-	X	1.0	230-B	-	40.0
000-000-R0004	X	-	-	X	1.5	230-B	-	39.0
000-000-R0005	X	-	-	X	1.0	230-B	-	36.0
000-000-R0006	X	-	-	X	6.8	230-B	-	38.0
000-000-R0007	X	-	-	X	10.2	230-B	-	47.0
000-000-R0008	X	X	-	X	13.0	23-CB-C	-	55.0
000-000-R0009	X	-	-	X	5.0	69-CP	-	57.0
000-000-R0010	X	-	-	X	2.7	69-CP	-	64.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

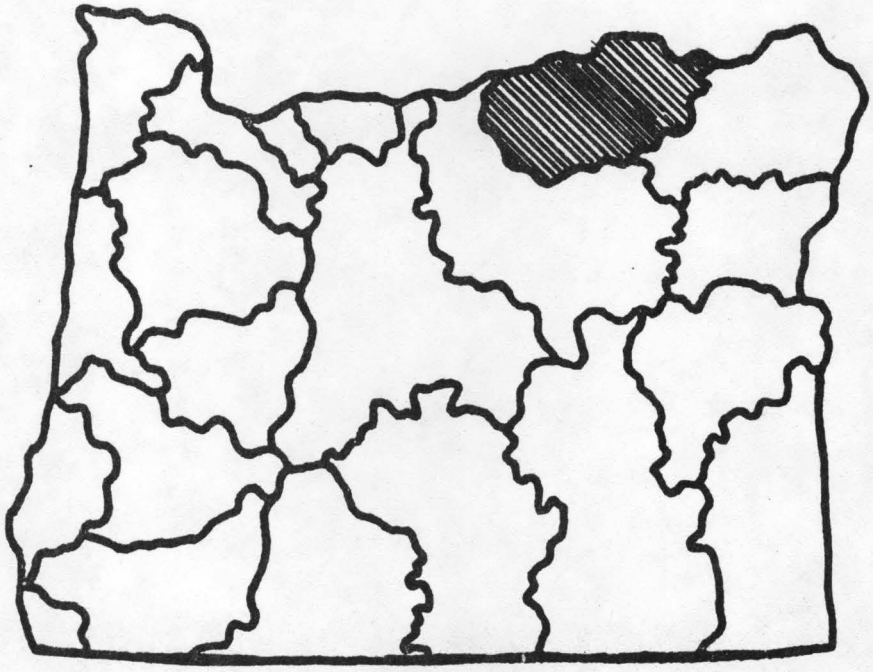
REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-200-								
000-000-R0011	X	-	-	X	8.0	69-CP	-	37.7
000-000-R0012	X	-	-	X	13.2	69-CP	-	45.6
000-000-R0013	X	-	-	X	8.6	69-CP	-	37.6
000-000-R0014	X	X	-	X	2.6	69-CP	-	40.2
000-000-R0015	-	X	-	X	10.7	69-CP	-	38.1
040-000-R0001	-	X	-	X	18.5	69-CP	-	37.0
040-000-R0002	-	-	-	X	25.2	69-CP	-	32.6
040-010-R0001	-	-	-	X	24.2	69-CP	-	33.5
040-010-R0002	-	-	X	X	21.6	69-CP	-	33.5
040-010-R0003	-	X	-	X	22.5	69-CP	-	28.3
040-010-R0004	-	-	-	X	20.2	23-CPU	-	25.7
040-010-R0005	-	-	-	X	17.8	23-CPU	-	22.9
040-010-R0006	-	-	-	X	15.5	69-CPU	-	21.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-200-								
040-000-R0003	-	-	-	X	22.4	69-CP	-	30.5
040-000-R0004	-	-	-	X	16.0	69-CP	-	31.5
040-020-R0001	X	X	-	-	8.2	69-CP	-	36.1
040-020-R0002	-	X	X	-	6.2	69-CP	-	36.0
040-000-R0005	-	X	X	X	10.3	69-CP	-	37.0
040-000-R0006	-	X	X	X	9.8	69-CP	-	41.4
040-000-R0007	-	-	-	X	12.1	23-CPU	-	40.2
040-000-R0008	-	-	-	X	5.3	23-CPU	-	35.9
000-000-R0016	-	X	-	X	15.3	69-CP	-	38.2
000-000-R0017	X	X	-	X	20.9	69-CP	-	35.0
000-000-R0018	-	X	X	X	20.0	24.9-C-C	-	29.9
060-000-R0001	-	-	X	X	14.5	24.9-C-C	-	28.7
060-000-R0002	-	-	-	-	10.7	24.9-C-C	-	29.6

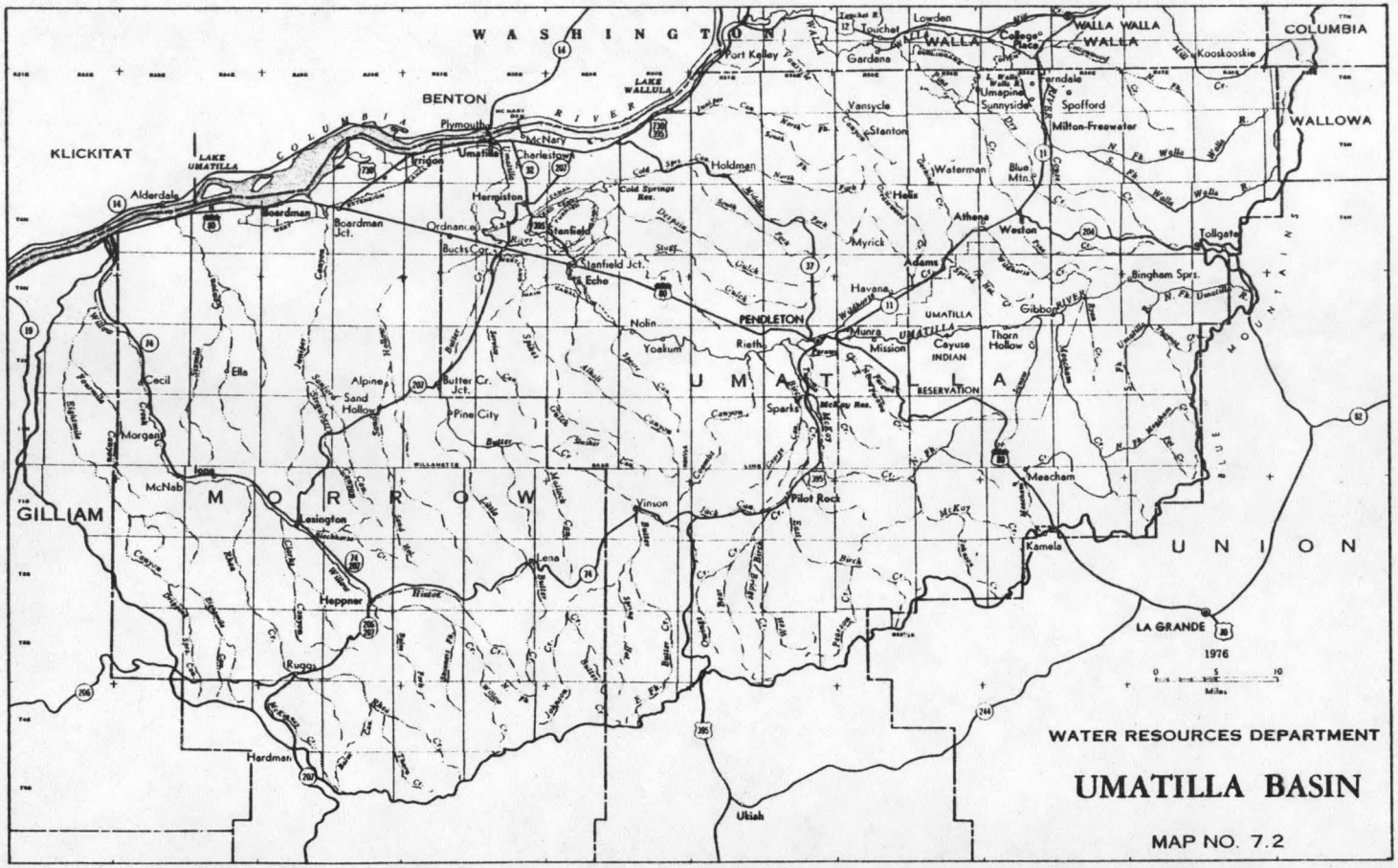
FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-200-								
000-000-R0019	-	X	X	X	17.5	69-CPU	-	24.4
000-000-R0020	-	X	X	X	10.0	69-CPU	-	16.8
000-000-R0021	-	X	X	X	0.5	69-CPU	1	6.7
000-000-R0022	-	X	X	X	1.0	69-CPU	1	6.0
000-000-R0023	X	X	X	X	0.3	69-CPU	-	12.0



APPENDIX 7

UMATILLA BASIN


WASHINGTON
BENTON
KLICKITAT
GILLIAM
MORROW
UMATILLA
UNION
WALLOWA
COLUMBIA
WALLA WALLA
Columbia River
Lake Umatilla
Lake Wallula
Umatilla River
Willow Creek
Butter Creek
Blue Mountains
Alderdale
Boardman
Boardman Jct.
Irrigon
Plymouth
McNary
Umatilla
Charleston
Hermiston
Ordnance
Stanfield
Stanfield Jct.
Bucks Cor.
Echo
Holdman
Cold Springs Res.
Vansycle
Stanton
Port Kelley
Touchet
Lowden
Gardena
College Place
Kooskooskie
Pierndale
Unapined
Sunnyside
Spofford
Milton-Freewater
Waterman
Blue Mtn.
Hees
Athena
Weston
Myrick
Adams
Tollgate
Bingham Sprs.
Havana
Gibbon
PENDLETON
Nolin
Yoakum
Rieth
Mission
Cayuse INDIAN RESERVATION
Thorn Hollow
Cecil
Ella
Alpine
Sand Hollow
Butter Cr. Jct.
Pine City
Sparks
McKay Res.
Meacham
Morgan
McNab
Ione
Lexington
Heppner
Rugg
Hardman
Vinson
Lena
Pilot Rock
Kamela
LA GRANDE
Ukiah
1976
0 5 10
Miles
WATER RESOURCES DEPARTMENT
UMATILLA BASIN
MAP NO. 7.2

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-000-000-R0001

I. LOCATION

A. State	Oregon	
B. County	Umatilla	
C. Township, Range	Sec.9, T4N, R28E	
D. Latitude, Longitude	45°50'N,119°19'W	
E. Stream Name	Umatilla River	
F. Major Basin Name	Umatilla	
G. River Mile	0.0 to 15.2	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

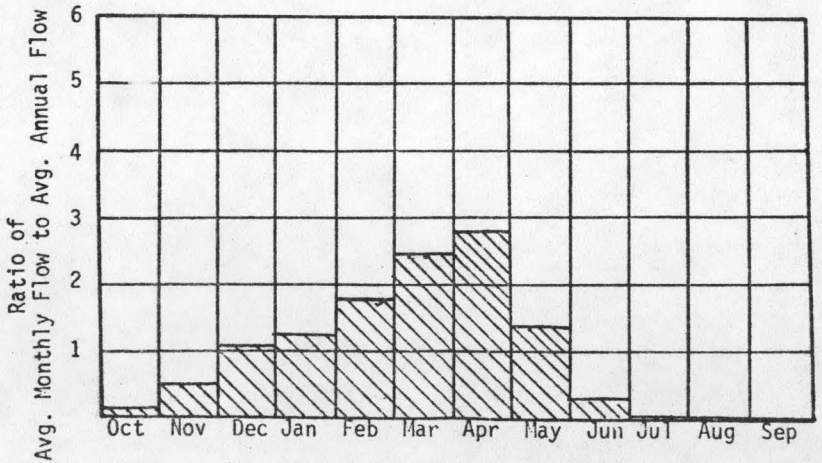
A. Upstream Elevation of Reach	525	Ft. MSL
B. Downstream Elevation of Reach	240	Ft. MSL
C. Total Available Head in Reach	285	Ft.
D. Average Slope in Reach	18.7	Ft./Mi.
E. Drainage Area above Reach Mouth	2130.5	Sq.Mi.
F. Inflow Classification	Natural	

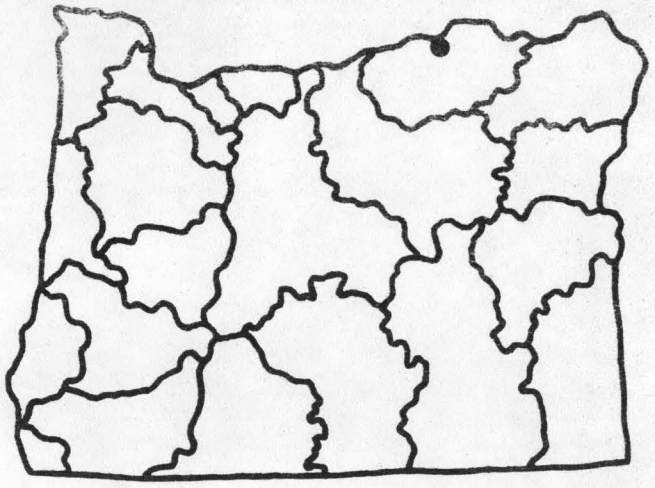
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	29.1	.70	6.15	1.000
80	265.2	6.41	49.86	.889
50	757.0	18.28	117.51	.734
30	1699.2	41.04	197.24	.549
10	3324.9	80.30	266.03	.378

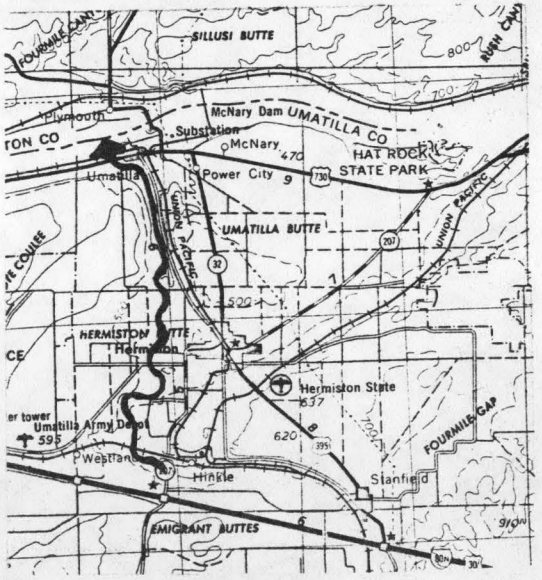
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1636 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-000-000-R0002

I. LOCATION

A. State	Oregon	
B. County	Umatilla	
C. Township, Range	Sec.31, T4N, R29E	
D. Latitude, Longitude	45°47'N, 119°14'W	
E. Stream Name	Umatilla River	
F. Major Basin Name	Umatilla	
G. River Mile	15.2 to 26.0	

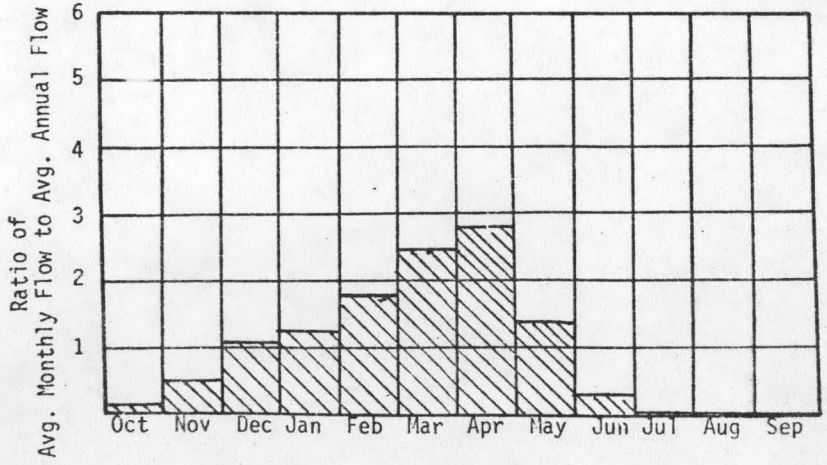
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

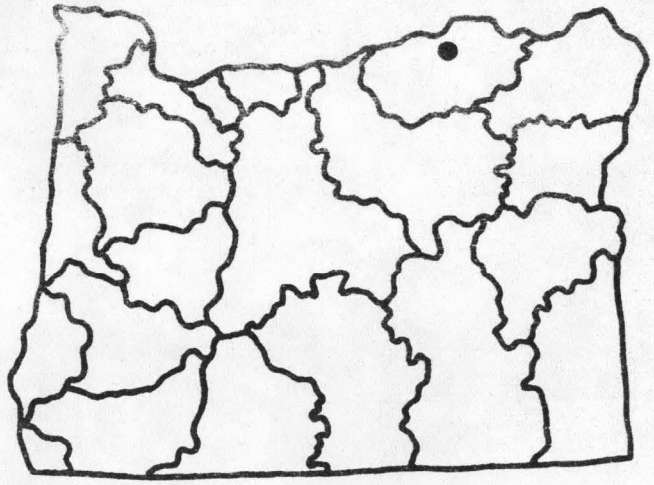
A. Upstream Elevation of Reach	620	Ft. MSL
B. Downstream Elevation of Reach	525	Ft. MSL
C. Total Available Head in Reach	95	Ft.
D. Average Slope in Reach	8.8	Ft./Mi.
E. Drainage Area above Reach Mouth	1632.1	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	20.3	.16	1.43	1.000
80	192.0	1.55	12.03	.888
50	591.4	4.76	30.34	.727
30	1369.9	11.03	52.30	.541
10	2733.5	22.01	71.53	.371

IV. TYPICAL ANNUAL HYDROGRAPH AVG. ANNUAL FLOW = 1326 CFS





U.S.G.S. TOPO. SERIES
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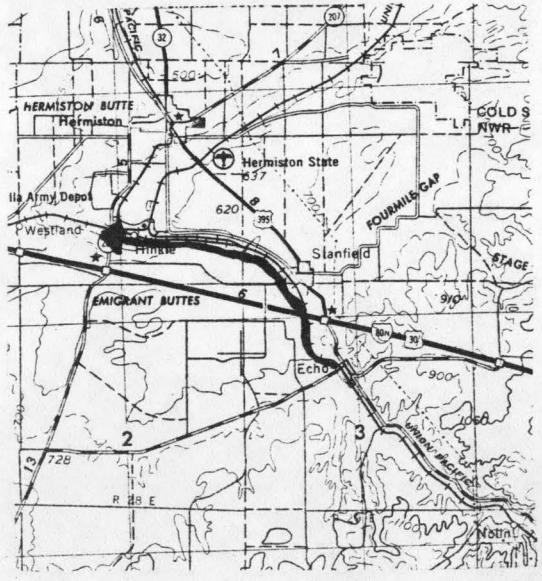


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-000-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Umatilla
C.	Township, Range	Sec.36, T3N, R29E
D.	Latitude, Longitude	44°42'N, 119°08'W
E.	Stream Name	Umatilla River
F.	Major Basin Name	Umatilla
G.	River Mile	26.0 to 37.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

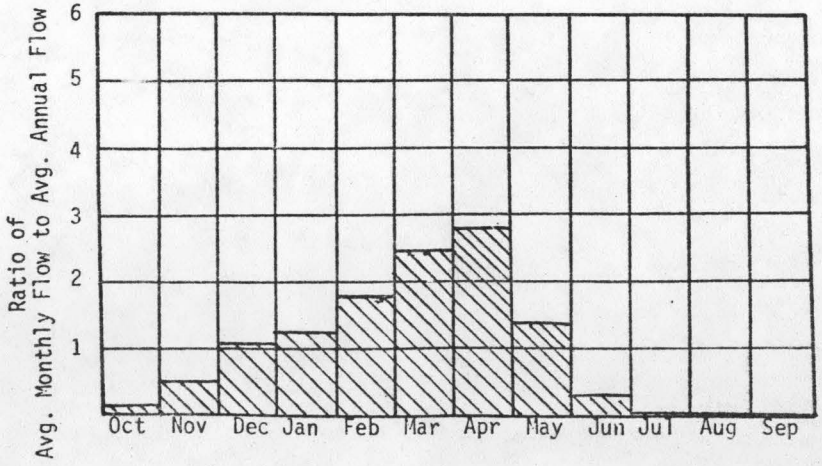
A.	Upstream Elevation of Reach	771	Ft. MSL
B.	Downstream Elevation of Reach	620	Ft. MSL
C.	Total Available Head in Reach	151	Ft.
D.	Average Slope in Reach	12.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	1487.0	Sq.Mi.
F.	Inflow Classification	Natural	

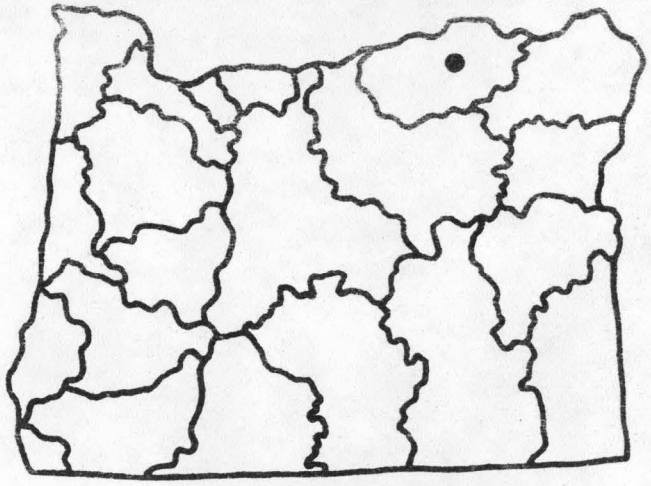
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	17.5	.22	1.96	1.000
80	167.6	2.14	16.68	.888
50	533.0	6.82	43.31	.725
30	1251.1	16.01	75.51	.538
10	2517.1	32.21	103.89	.368

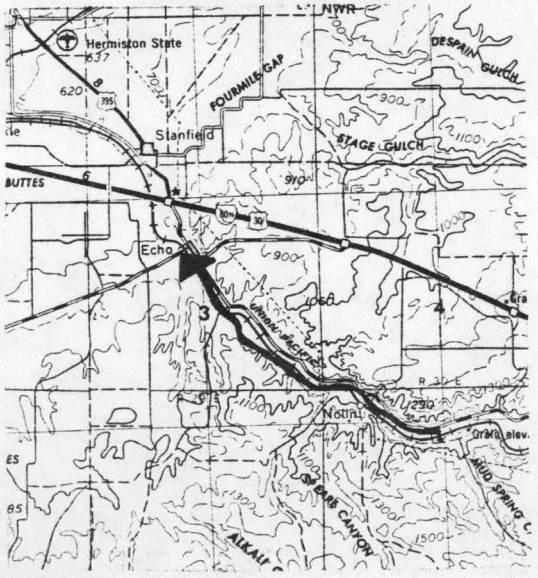
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1213 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-000-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Umatilla
C.	Township, Range	Sec.8, T2N, R31E
D.	Latitude, Longitude	45°40'N, 118°58'W
E.	Stream Name	Umatilla River
F.	Major Basin Name	Umatilla
G.	River Mile	37.7 to 49.7

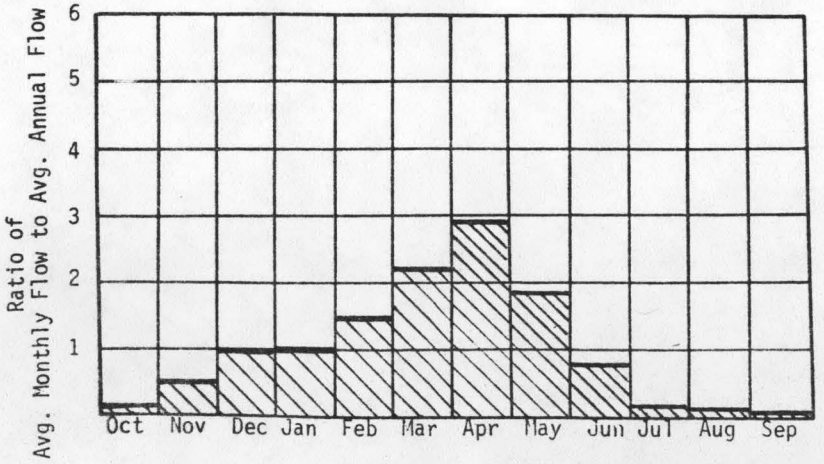
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

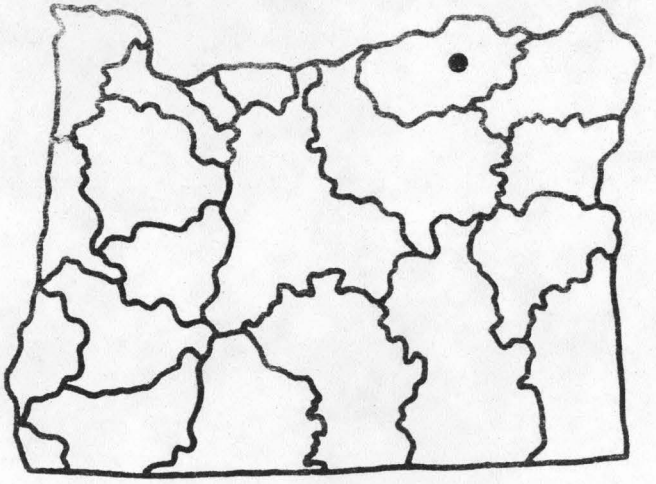
A.	Upstream Elevation of Reach	952	Ft. MSL
B.	Downstream Elevation of Reach	771	Ft. MSL
C.	Total Available Head in Reach	181	Ft.
D.	Average Slope in Reach	15	Ft./Mi.
E.	Drainage Area above Reach Mouth	1261.9	Sq.Mi.
F.	Inflow Classification	Slightly Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	15.6	.24	2.10	1.000
80	151.2	2.32	18.04	.888
50	492.7	7.56	47.86	.723
30	1168.2	17.92	84.17	.536
10	2365.0	36.28	116.34	.366

IV. TYPICAL ANNUAL HYDROGRAPH AVG. ANNUAL FLOW = 1134 CFS





U.S.G.S. TOPO. SERIES
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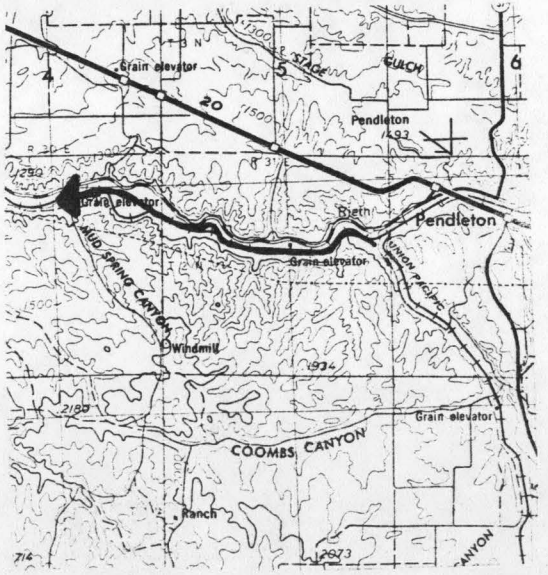
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-000-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Umatilla
C.	Township, Range	Sec.7, T2N, R32E
D.	Latitude, Longitude	45°39'N, 118°52'W
E.	Stream Name	Umatilla River
F.	Major Basin Name	Umatilla
G.	River Mile	49.7 to 52.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

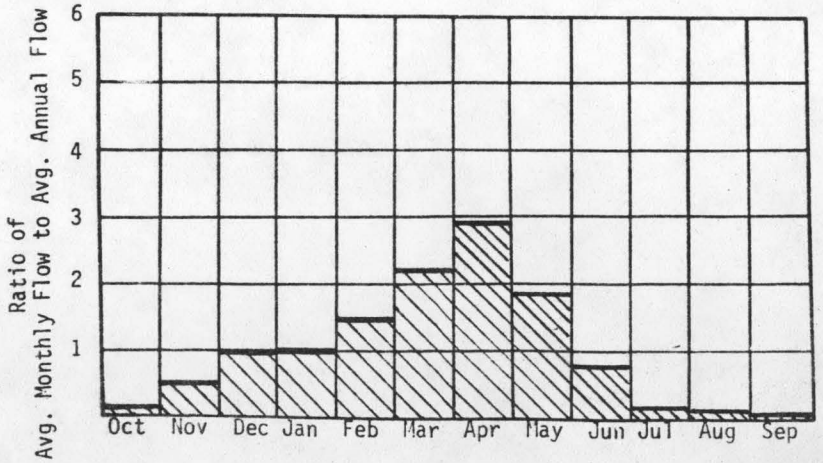
A.	Upstream Elevation of Reach	1000	Ft. MSL
B.	Downstream Elevation of Reach	952	Ft. MSL
C.	Total Available Head in Reach	48	Ft.
D.	Average Slope in Reach	21	Ft./Mi.
E.	Drainage Area above Reach Mouth	900.3	Sq.Mi.
F.	Inflow Classification	Regulated	

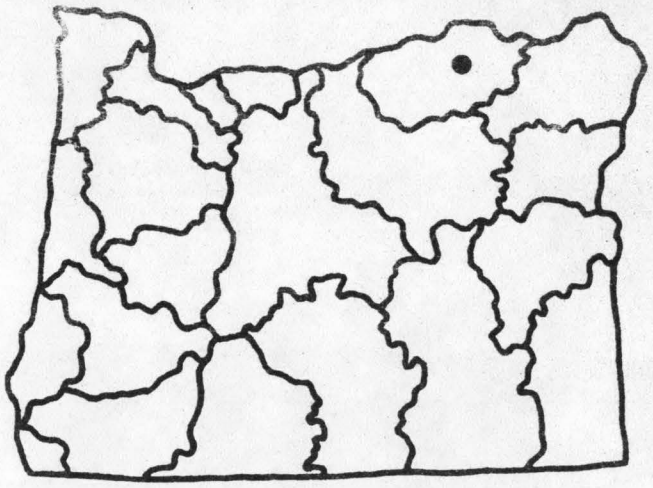
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	10.0	.04	.36	1.000
80	101.1	.41	3.20	.887
50	362.1	1.47	9.24	.716
30	893.1	3.63	16.81	.528
10	1852.8	7.54	23.65	.358

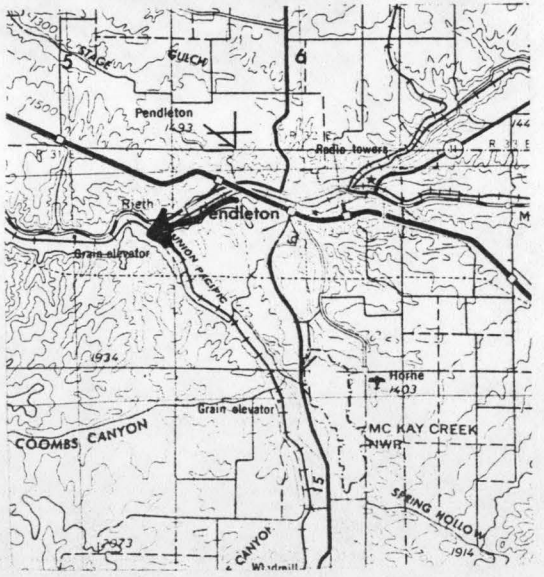
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 873 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-000-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Umatilla
C.	Township, Range	Sec.10, T2N, R32E
D.	Latitude, Longitude	45°40'N, 118°48'W
E.	Stream Name	Umatilla River
F.	Major Basin Name	Umatilla
G.	River Mile	52.0 to 56.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

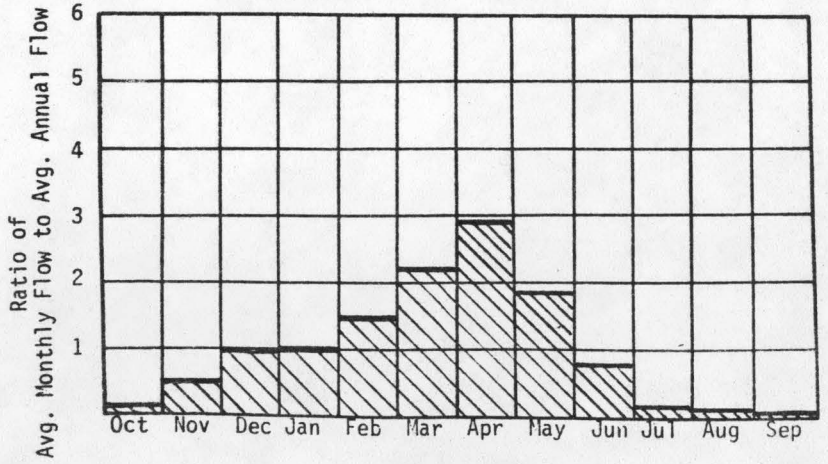
A.	Upstream Elevation of Reach	1080	Ft. MSL
B.	Downstream Elevation of Reach	1000	Ft. MSL
C.	Total Available Head in Reach	80	Ft.
D.	Average Slope in Reach	17.0	Ft./Mi.
E.	Drainage Area above Reach Mouth	696.2	Sq.Mi.
F.	Inflow Classification	Slightly Regulated	

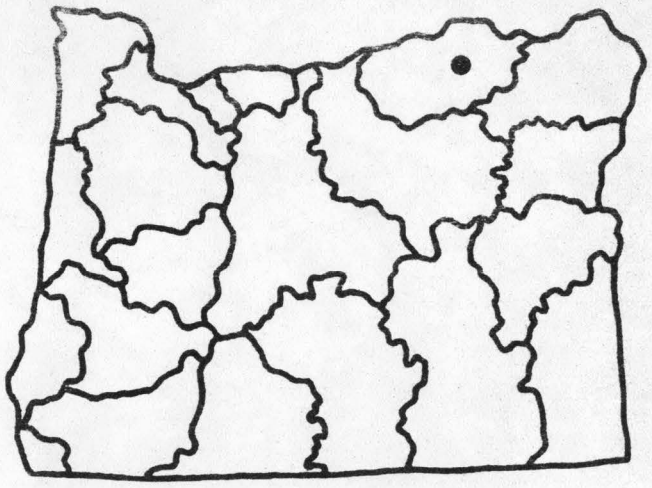
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	6.4	.04	.38	1.000
80	67.5	.46	3.55	.887
50	265.7	1.80	11.21	.710
30	681.8	4.62	21.09	.521
10	1449.5	9.83	30.21	.351

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 670 CFS





U.S.G.S. TOPO. SERIES
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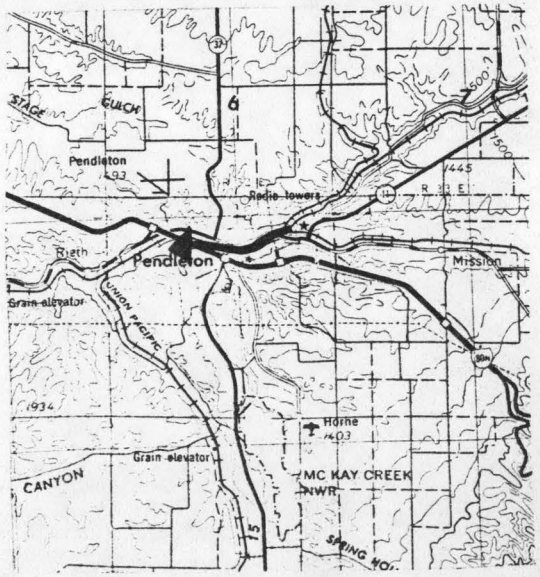


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-010-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Umatilla
C.	Township, Range	Sec.7, T3N, R34E
D.	Latitude, Longitude	45°45'N, 118°40'W
E.	Stream Name	Wildhorse Creek
F.	Major Basin Name	Umatilla
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

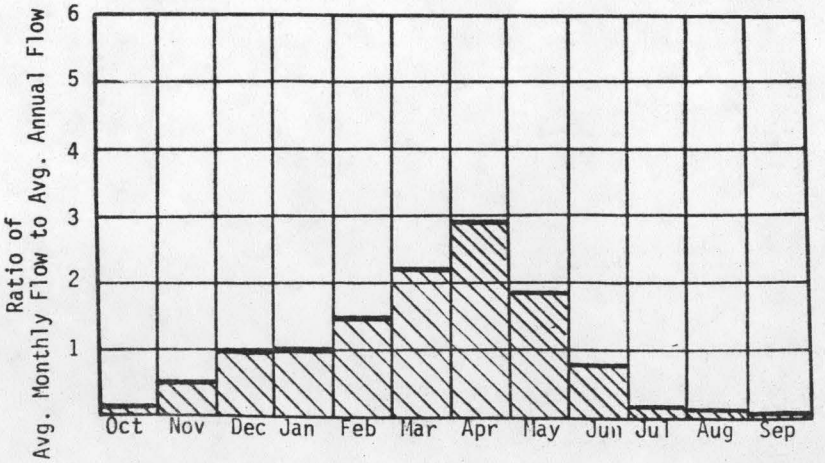
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	187.3	Sq.Mi.
F.	Inflow Classification	Natural	

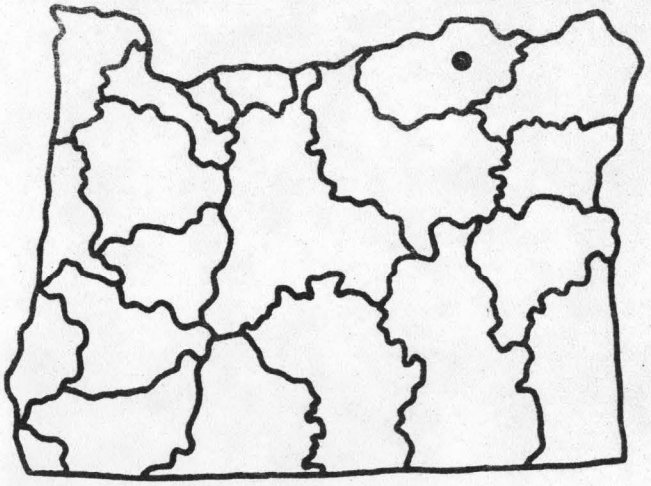
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	.5	.00	.03	1.000
80	7.2	.04	.31	.884
50	48.2	.27	1.62	.685
30	153.9	.86	3.69	.489
10	374.6	2.10	5.85	.319

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 157 CFS





U.S.G.S. TOPO. SERIES
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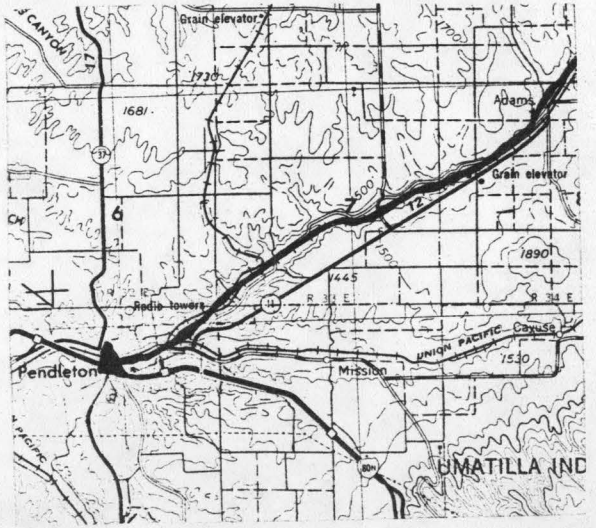


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-000-000-R0007

I. LOCATION

A. State	Oregon	
B. County	Umatilla	
C. Township, Range	Sec.11, T2N, R33E	
D. Latitude, Longitude	44°40'N, 118°40'W	
E. Stream Name	Umatilla River	
F. Major Basin Name	Umatilla	
G. River Mile	56.7 to 67.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

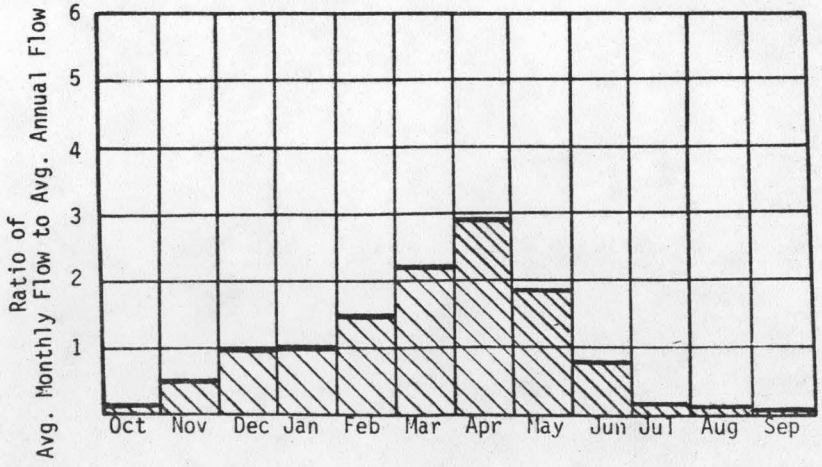
A. Upstream Elevation of Reach	1350	Ft. MSL
B. Downstream Elevation of Reach	1080	Ft. MSL
C. Total Available Head in Reach	270	Ft.
D. Average Slope in Reach	26.2	Ft./Mi.
E. Drainage Area above Reach Mouth	437.5	Sq.Mi.
F. Inflow Classification	Natural	

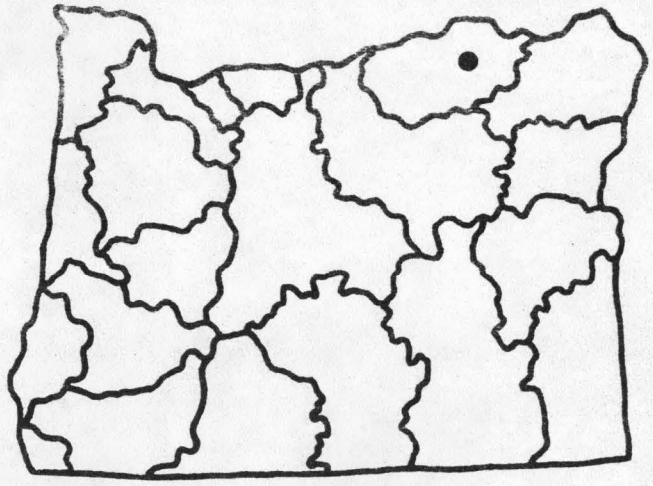
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.0	.09	.81	1.000
80	44.4	1.02	7.90	.886
50	193.1	4.42	27.27	.704
30	516.1	11.81	53.17	.514
10	1125.5	25.75	77.59	.344

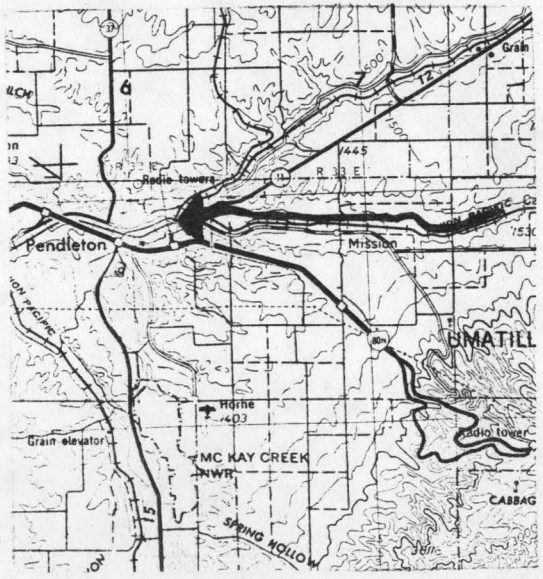
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 510 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-000-000-R0008

I. LOCATION

A. State	Oregon	
B. County	Umatilla	
C. Township, Range	Sec.1, T2N, R34E	
D. Latitude, Longitude	45°41'N, 118°31'W	
E. Stream Name	Umatilla River	
F. Major Basin Name	Umatilla	
G. River Mile	67.0 to 76.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

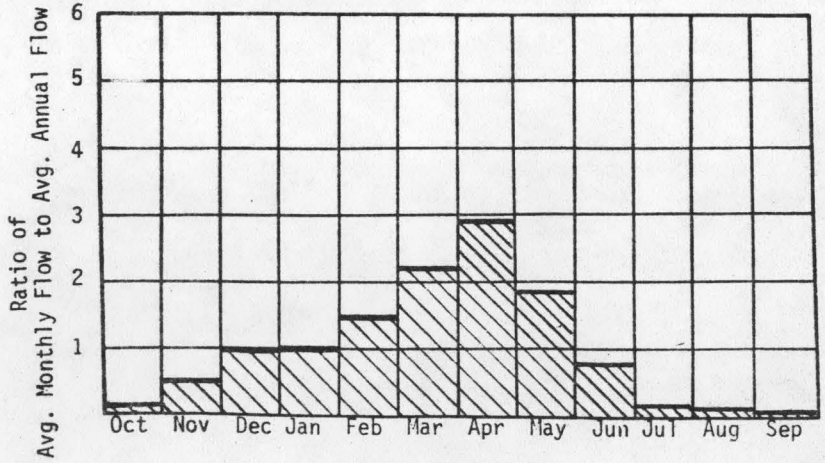
A. Upstream Elevation of Reach	1600	Ft. MSL
B. Downstream Elevation of Reach	1350	Ft. MSL
C. Total Available Head in Reach	250	Ft.
D. Average Slope in Reach	27.8	Ft./Mi.
E. Drainage Area above Reach Mouth	402.7	Sq.Mi.
F. Inflow Classification	Natural	

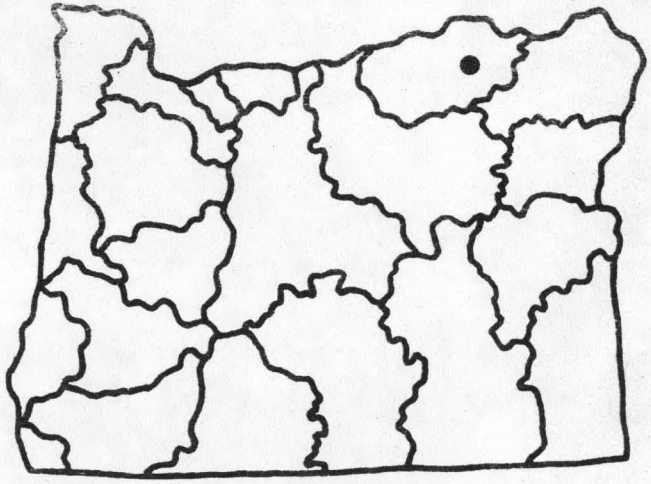
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3.6	.08	.67	1.000
80	40.5	.86	6.66	.886
50	180.0	3.81	23.48	.703
30	485.3	10.28	46.15	.512
10	1064.1	22.54	67.64	.342

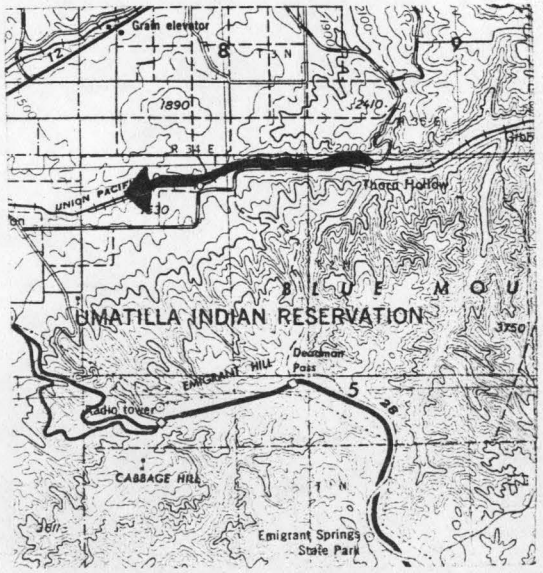
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 481 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-000-000-R0009

I. LOCATION

A.	State	Oregon
B.	County	Umatilla
C.	Township, Range	Sec.5, T3N, R36E
D.	Latitude, Longitude	45°42'N, 118°24'W
E.	Stream Name	Umatilla River
F.	Major Basin Name	Umatilla
G.	River Mile	76.0 to 80.9

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

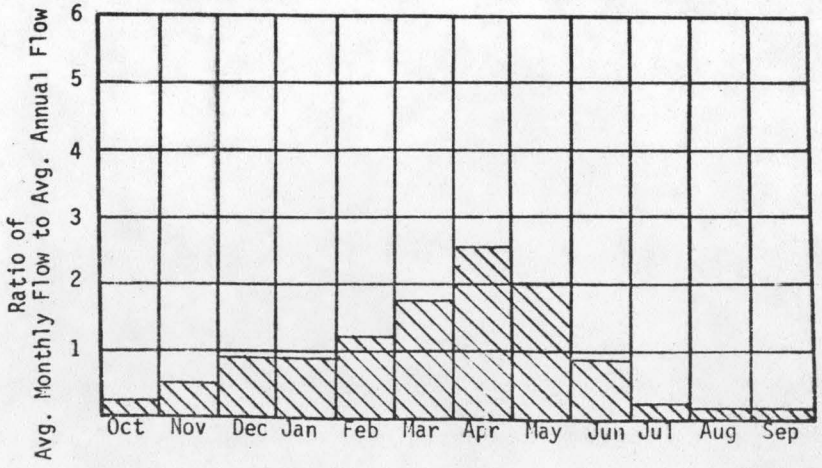
A.	Upstream Elevation of Reach	1760	Ft. MSL
B.	Downstream Elevation of Reach	1600	Ft. MSL
C.	Total Available Head in Reach	160	Ft.
D.	Average Slope in Reach	32.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	347.7	Sq.Mi.
F.	Inflow Classification	Natural	

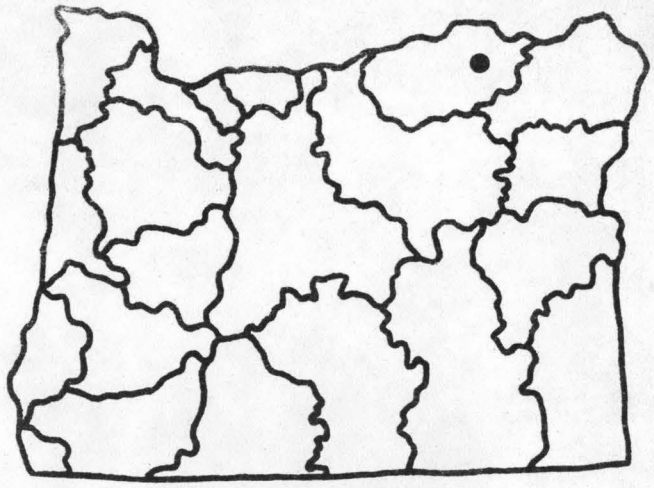
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3.2	.04	.38	1.000
80	35.9	.49	3.77	.886
50	163.9	2.22	13.66	.702
30	447.4	6.07	27.13	.511
10	988.2	13.40	39.98	.341

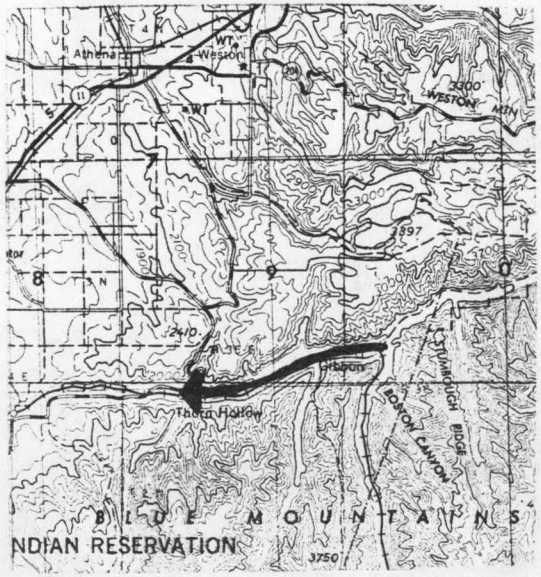
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 444 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-015-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Umatilla
C.	Township, Range	Sec.19, T2N, R36E
D.	Latitude, Longitude	45°38'N, 118°22'W
E.	Stream Name	Meacham Creek
F.	Major Basin Name	Umatilla
G.	River Mile	0.0 to 11.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

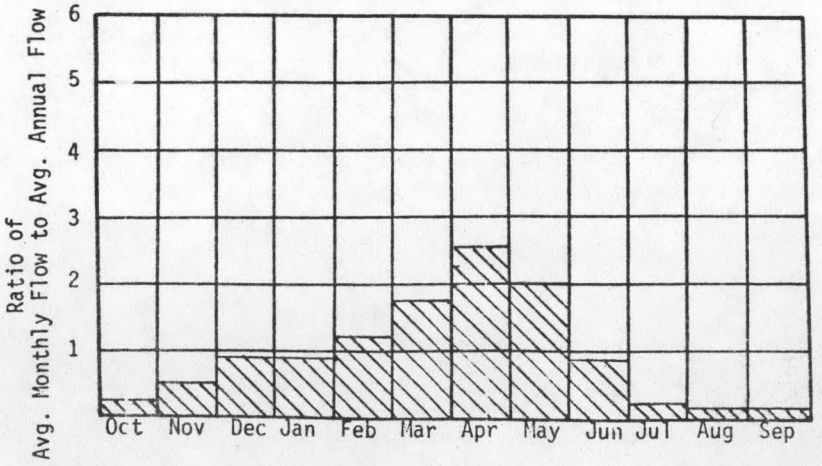
A.	Upstream Elevation of Reach	1800	Ft. MSL
B.	Downstream Elevation of Reach	1760	Ft. MSL
C.	Total Available Head in Reach	40	Ft.
D.	Average Slope in Reach	3.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	177.3	Sq.Mi.
F.	Inflow Classification	Natural	

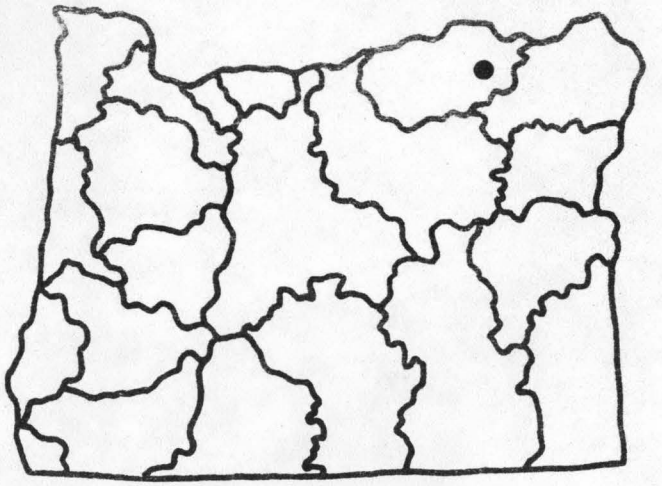
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	1.0	.00	.03	1.000
80	13.0	.04	.34	.885
50	75.4	.26	1.55	.690
30	227.2	.77	3.35	.496
10	533.7	1.81	5.17	.326

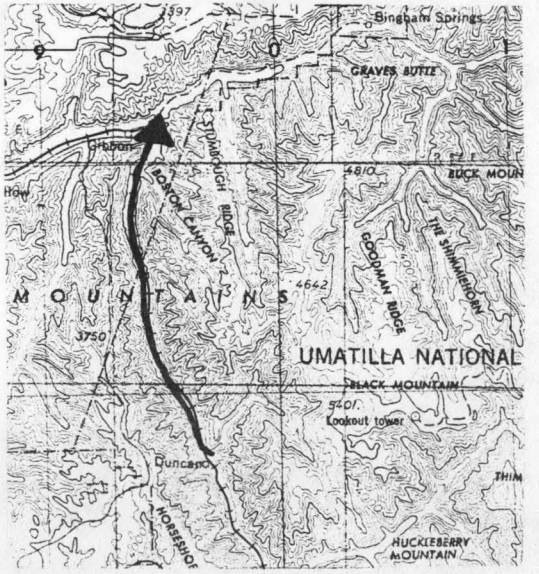
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 229 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-015-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Umatilla
C.	Township, Range	Sec.35, T1N, R36E
D.	Latitude, Longitude	46°31'N, 118°17'W
E.	Stream Name	Meacham Creek
F.	Major Basin Name	Umatilla
G.	River Mile	11.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

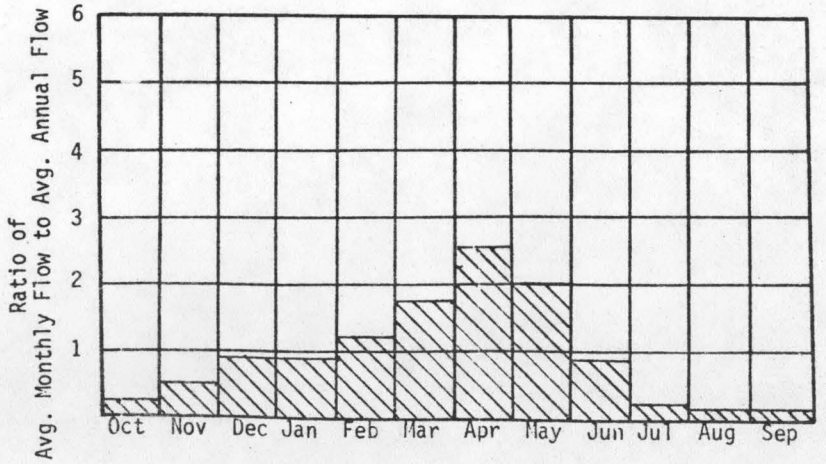
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	140.6	Sq.Mi.
F.	Inflow Classification	Natural	

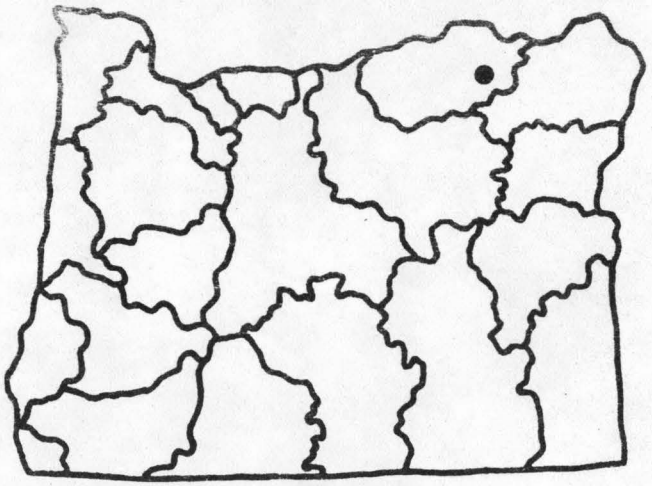
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	.9	.01	.04	1.000
80	11.5	.06	.50	.885
50	68.6	.38	2.32	.689
30	209.3	1.17	5.07	.495
10	495.4	2.77	7.88	.325

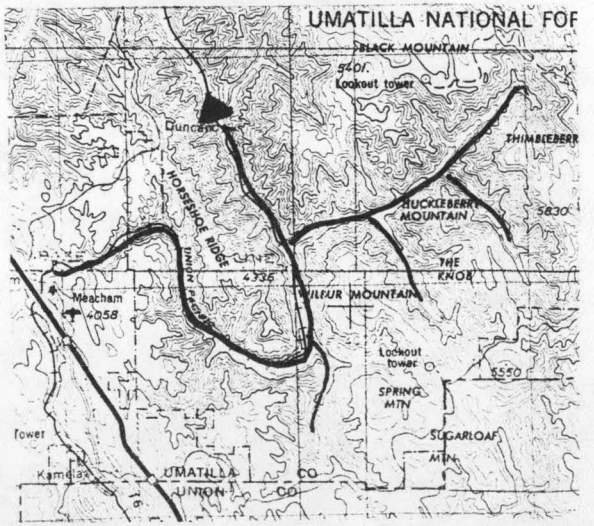
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 211 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-000-000-R0010

I. LOCATION

A.	State	Oregon
B.	County	Umatilla
C.	Township, Range	Sec.22, T3N, R36E
D.	Latitude, Longitude	45°43'N, 118°17'W
E.	Stream Name	Umatilla River
F.	Major Basin Name	Umatilla
G.	River Mile	80.9 to 87.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

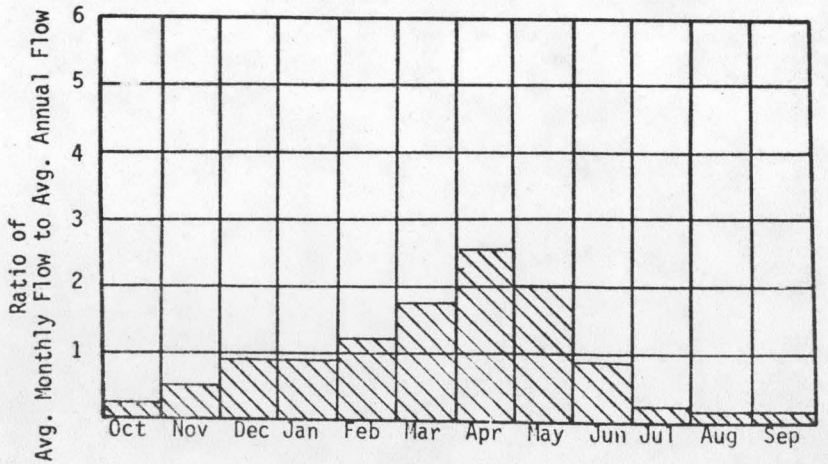
A.	Upstream Elevation of Reach	2160	Ft. MSL
B.	Downstream Elevation of Reach	1760	Ft. MSL
C.	Total Available Head in Reach	400	Ft.
D.	Average Slope in Reach	65.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	134.3	Sq.Mi.
F.	Inflow Classification	Natural	

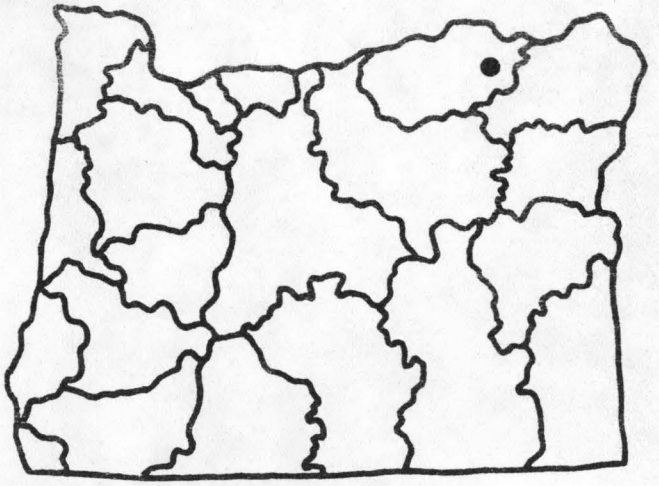
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	.8	.03	.23	1.000
80	10.0	.34	2.61	.885
50	61.5	2.08	12.56	.688
30	190.2	6.45	27.85	.493
10	454.1	15.39	43.53	.323

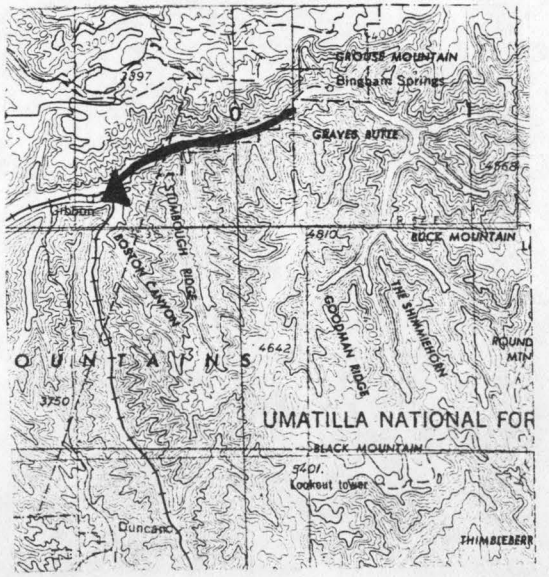
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 192 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-220-000-000-R0011

I. LOCATION

A.	State	Oregon
B.	County	Umatilla
C.	Township, Range	Sec.13, T3N, R37E
D.	Latitude, Longitude	45°44'N, 118°09'W
E.	Stream Name	Umatilla River
F.	Major Basin Name	Umatilla
G.	River Mile	87.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

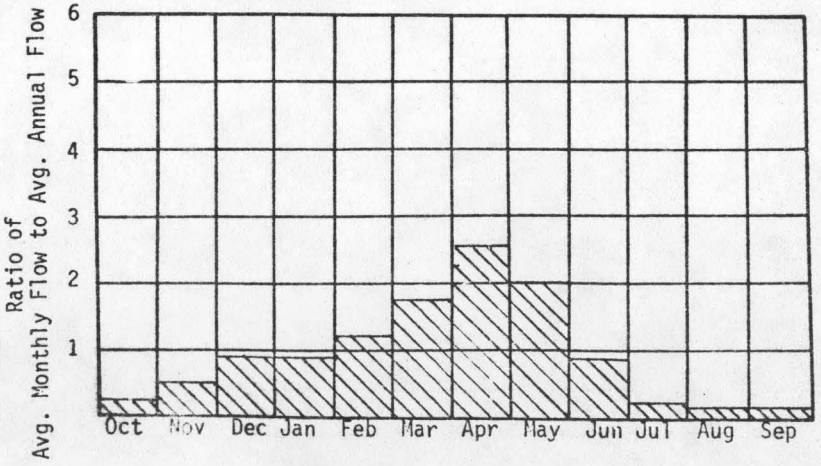
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	104.7	Sq.Mi.
F.	Inflow Classification	Natural	

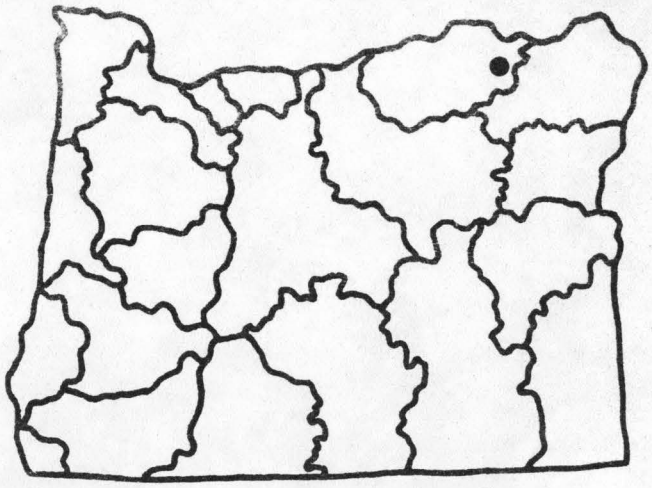
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	.7	.00	.03	1.000
80	8.8	.05	.38	.884
50	56.0	.31	1.88	.687
30	175.3	.98	4.22	.492
10	421.6	2.36	6.64	.321

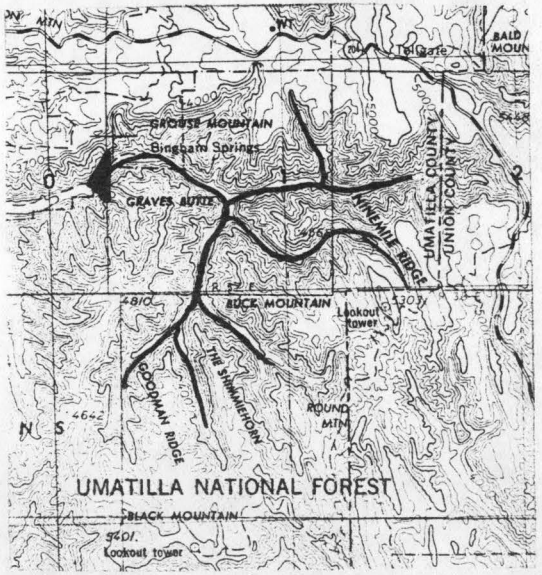
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 178 CFS



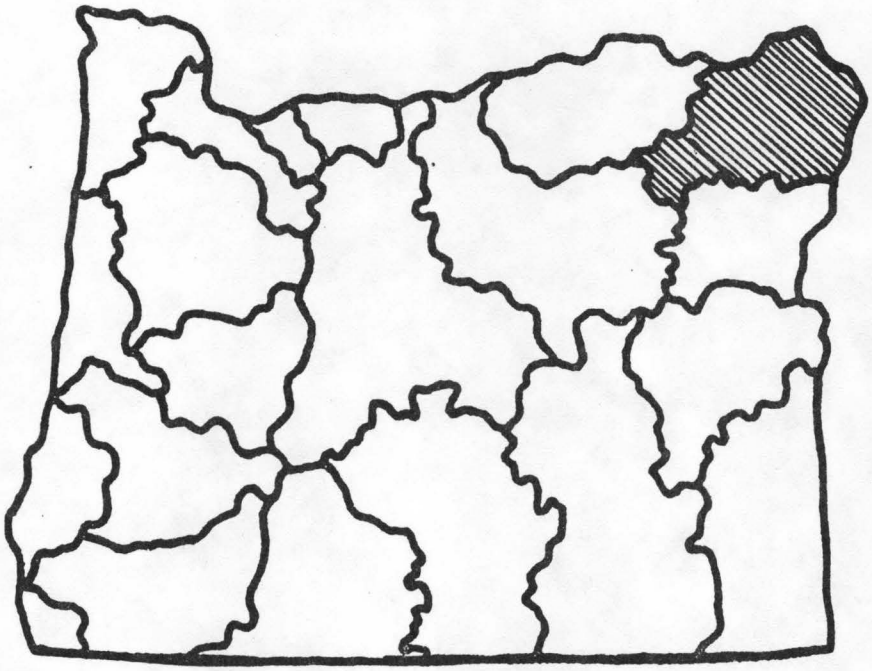


U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



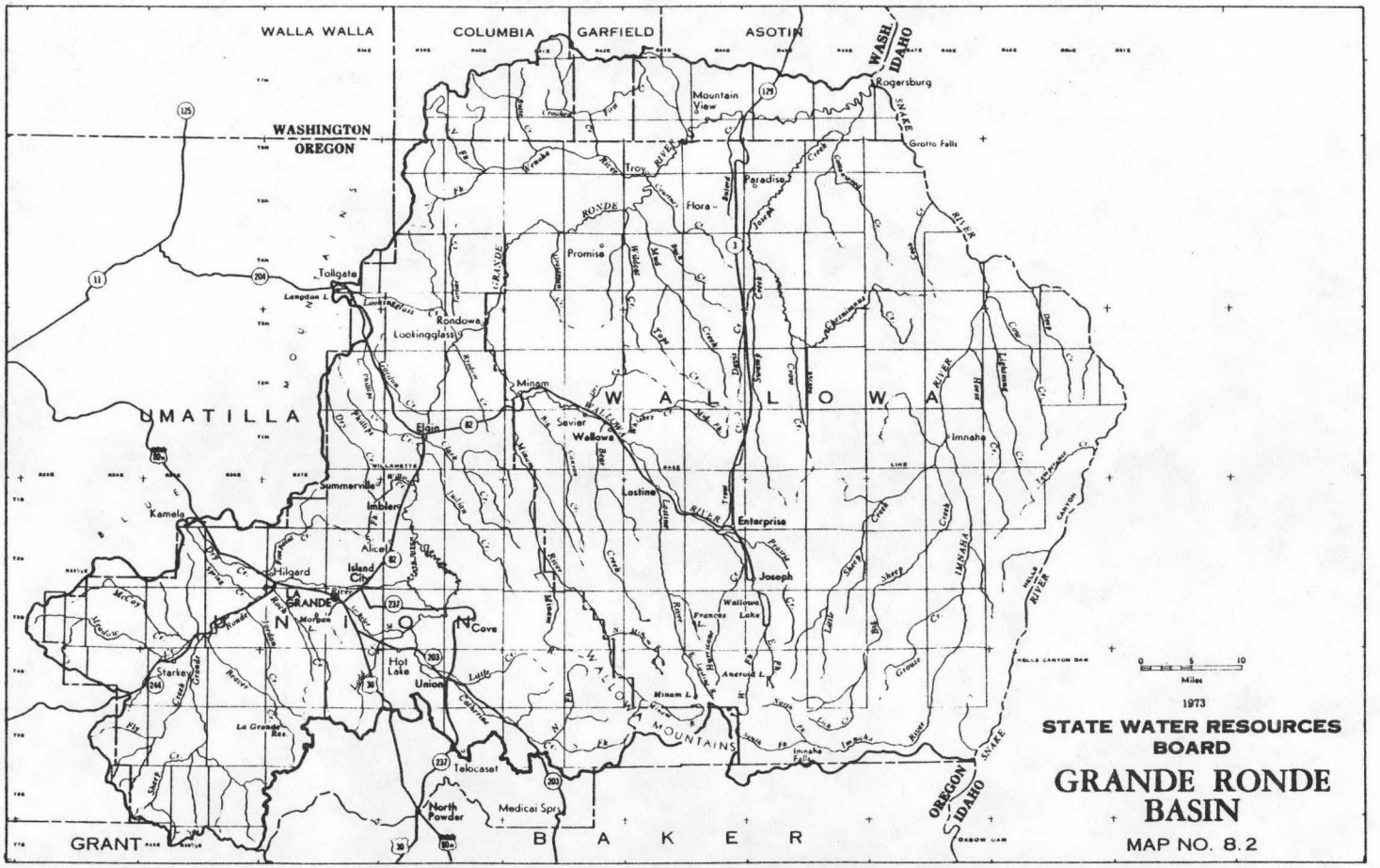
FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-220-								
000-000-R0001	X	X	X	X	0.8	69-U-C	-	27
000-000-R0002	-	X	X	X	2.8	230-B	-	23.5
000-000-R0003	-	X	-	X	1.0	230-B	-	18.0
000-000-R0004	-	X	-	X	1.0	230-B	-	9.2
000-000-R0005	-	X	X	X	1.2	230-B	1,2	6.0
000-000-R0006	-	X	X	X	0.2	69-PPL	1,2	1.0
010-000-R0001	-	X	X	-	1.0	69-PPL	1,2	3.6
000-000-R0007	X	X	X	X	3.2	69-PPL	1,2	9.0
000-000-R0008	X	X	X	X	8.0	230-B	-	20.0
000-000-R0009	X	X	X	X	10.0	230-B	-	22.8
015-000-R0001	-	X	-	X	10.8	230-B	-	27.0
015-000-R0002	-	X	-	X	10.9	230-B	-	31.0
000-000-R0010	X	-	X	X	14.5	230-B	-	28.0
000-000-R0011	X	-	X	X	16.8	230-B	-	31.0



APPENDIX 8

GRANDE RONDE BASIN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COLUMBIA
GARFIELD
ASOTIN
WASH.
IDAHO
WASHINGTON
OREGON
Rogersburg
Mountain View
Grotta Falls
Troy
Paradise
Flora
Promise
Tollgate
Rondowa
Lookingglass
Minam
UMATILLA
Elgin
Wallowa
Imnaha
Summerville
Kamela
Imbler
Lostine
Enterprise
Alicel
Hilgard
Island City
Joseph
GRANDE RONDE
Cove
Wallowa Lake
Starkey
Hot Lake
Union
Aneroid L.
Minam L.
WALLOWA MOUNTAINS
La Grande
Telocaset
North Powder
Medical Spr.
GRANT
B A K E R
OREGON
IDAHO
SNAKE
0 5 10
Miles
1973
STATE WATER RESOURCES BOARD
GRANDE RONDE BASIN
MAP NO. 8.2

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-004-R0004

I. LOCATION

A. State	Oregon	
B. County	Wallowa	
C. Township, Range	Sec.19, T6N, R46E	
D. Latitude, Longitude	45°58'N.117°06'W	
E. Stream Name	Joseph Creek	
F. Major Basin Name	Grande Ronde	
G. River Mile	8.3 to 13.7	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

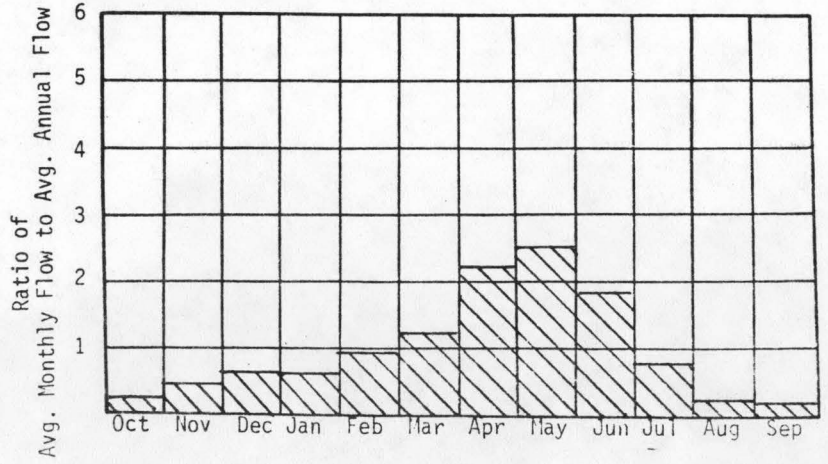
A. Upstream Elevation of Reach	1672	Ft. MSL
B. Downstream Elevation of Reach	1405	Ft. MSL
C. Total Available Head in Reach	267	Ft.
D. Average Slope in Reach	49	Ft./Mi.
E. Drainage Area above Reach Mouth	445.4	Sq.Mi.
F. Inflow Classification	Natural	

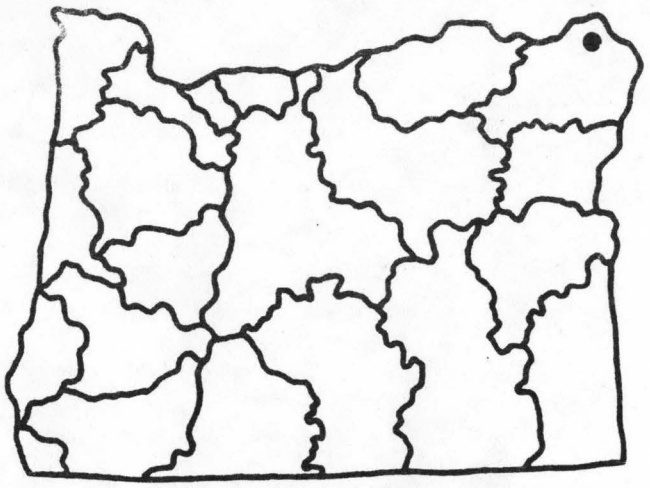
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	41.0	.93	8.12	1.000
80	58.9	1.33	11.23	.962
50	106.7	2.41	17.39	.822
30	232.3	5.26	27.35	.594
10	786.2	17.79	49.31	.316

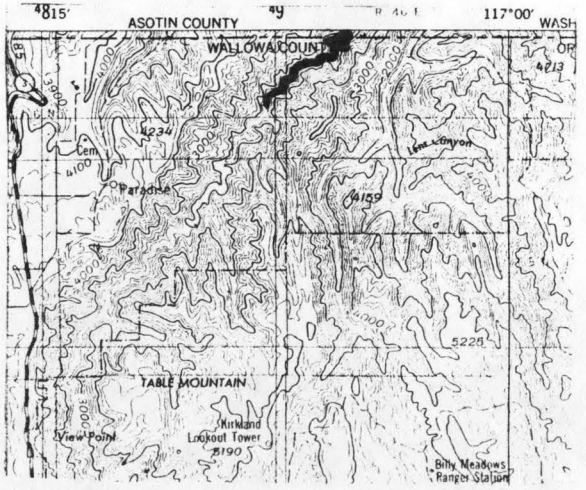
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 264 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-004-R0005

I. LOCATION

A. State	Oregon	
B. County	Wallowa	
C. Township, Range	Sec.15, T5N, R45E	
D. Latitude, Longitude	45°45'N,117°10'W	
E. Stream Name	Joseph Creek	
F. Major Basin Name	Grande Ronde	
G. River Mile	13.7 to 26.4	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

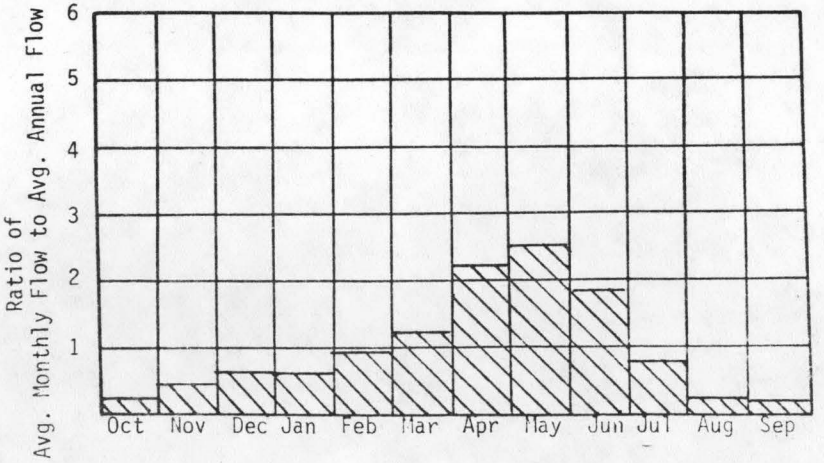
A. Upstream Elevation of Reach	2275	Ft. MSL
B. Downstream Elevation of Reach	1672	Ft. MSL
C. Total Available Head in Reach	603	Ft.
D. Average Slope in Reach	47	Ft./Mi.
E. Drainage Area above Reach Mouth	430.6	Sq.Mi.
F. Inflow Classification	Natural	

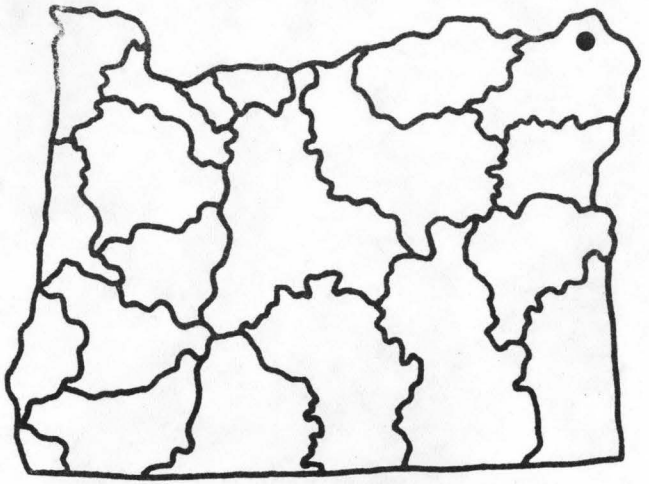
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	36.9	1.89	16.53	1.000
80	53.6	2.74	23.06	.961
50	97.2	4.97	35.75	.822
30	211.5	10.81	56.21	.594
10	717.5	36.67	101.52	.316

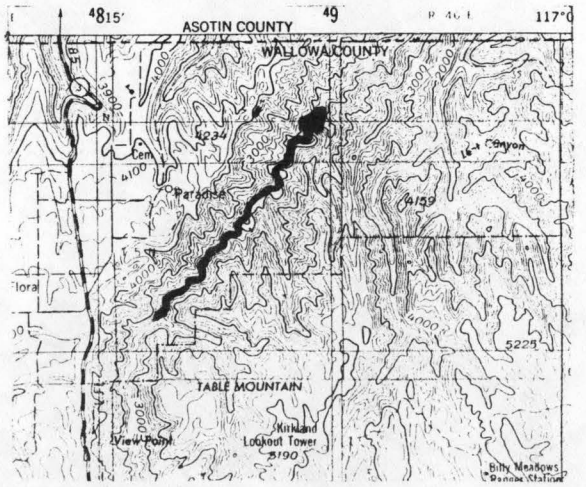
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 244 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE

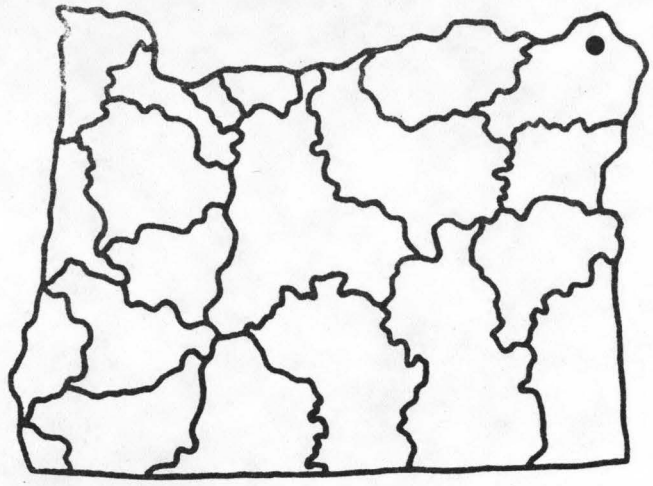


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-004-R0006

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.6, T4N, R45E
D.	Latitude, Longitude	45°51'N,117°14'W
E.	Stream Name	Joseph Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	26.4 to 34.0



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2600	Ft. MSL
B.	Downstream Elevation of Reach	2275	Ft. MSL
C.	Total Available Head in Reach	325	Ft.
D.	Average Slope in Reach	43	Ft./Mi.
E.	Drainage Area above Reach Mouth	392.8	Sq.Mi.
F.	Inflow Classification	Natural	

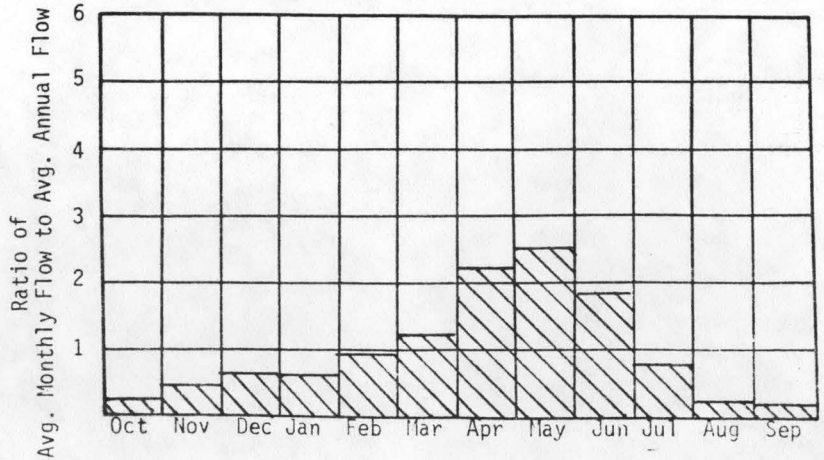
U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE

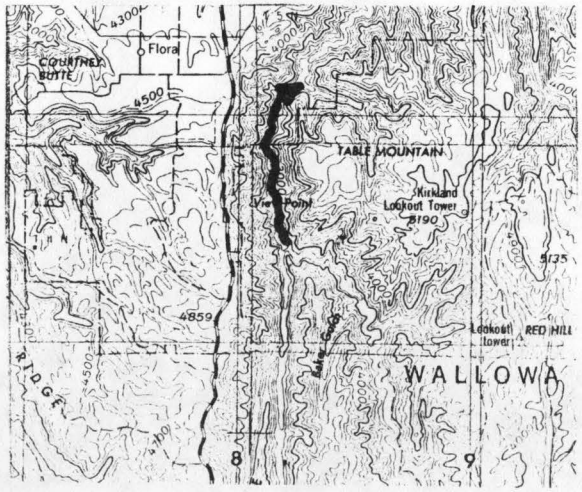
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	33.3	.92	8.04	1.000
80	48.8	1.34	11.31	.960
50	88.6	2.44	17.55	.821
30	192.7	5.31	27.60	.594
10	655.5	18.05	49.93	.316

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 225 CFS





REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-004-R0008

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.28, T4N, R45E
D.	Latitude, Longitude	45°48'N,117°11'W
E.	Stream Name	Joseph Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	34.0 to 42.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

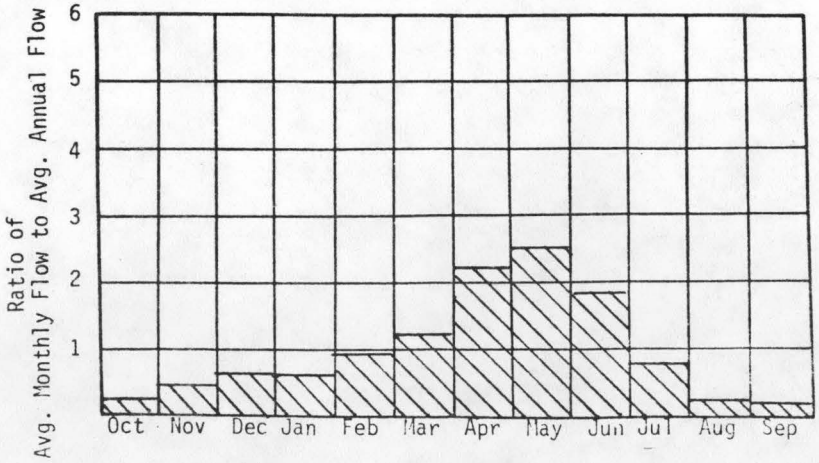
A.	Upstream Elevation of Reach	3040	Ft. MSL
B.	Downstream Elevation of Reach	2600	Ft. MSL
C.	Total Available Head in Reach	440	Ft.
D.	Average Slope in Reach	55.0	Ft./Mi.
E.	Drainage Area above Reach Mouth	303.4	Sq.Mi.
F.	Inflow Classification	Natural	

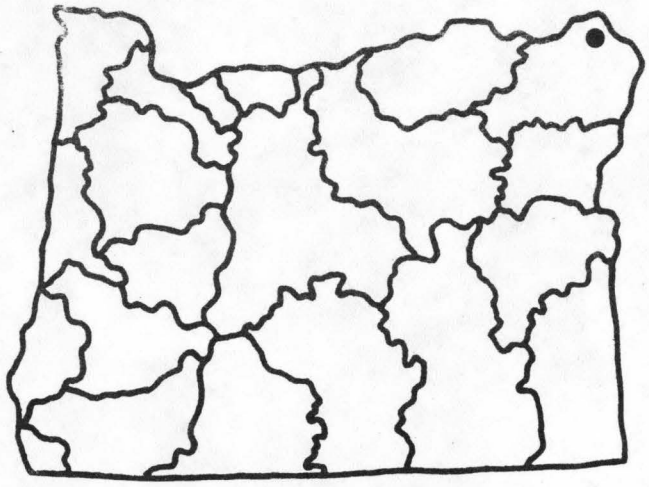
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	23.3	.87	7.60	1.000
80	35.1	1.31	10.99	.958
50	64.1	2.39	17.14	.819
30	139.1	5.19	26.94	.593
10	477.2	17.79	49.03	.315

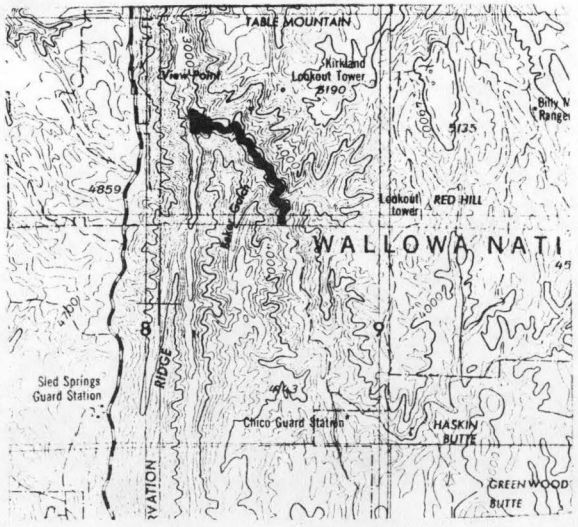
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 170 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-004-R0009

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.11, T3N, R45E
D.	Latitude, Longitude	45°44'N.117°10'W
E.	Stream Name	Joseph Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	42.0 to 49.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

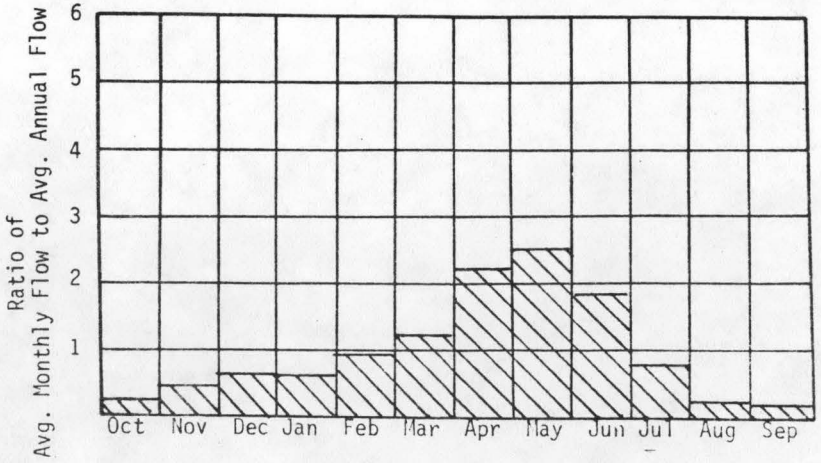
A.	Upstream Elevation of Reach	3190	Ft. MSL
B.	Downstream Elevation of Reach	3040	Ft. MSL
C.	Total Available Head in Reach	150	Ft.
D.	Average Slope in Reach	21.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	281.9	Sq.Mi.
F.	Inflow Classification	Natural	

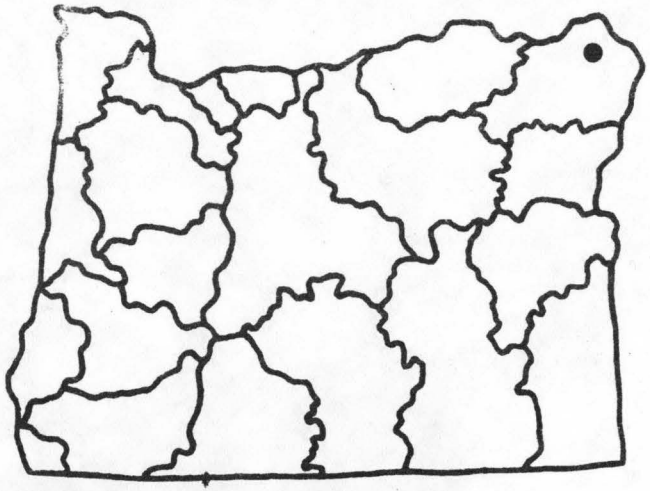
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	21.3	.27	2.38	1.000
80	32.5	.41	3.46	.957
50	59.3	.75	5.40	.818
30	128.6	1.63	8.49	.593
10	442.1	5.62	15.47	.314

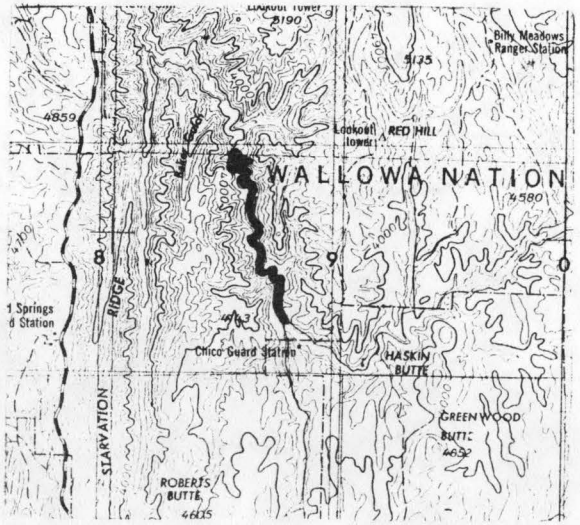
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 160 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-004-R0010

I. LOCATION

A. State	Oregon	
B. County	Wallowa	
C. Township, Range	Sec.31, T3N, R46E	
D. Latitude, Longitude	45°42'N,117°06'W	
E. Stream Name	Chesnimnus Creek	
F. Major Basin Name	Grande Ronde	
G. River Mile	0.0 to 7.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

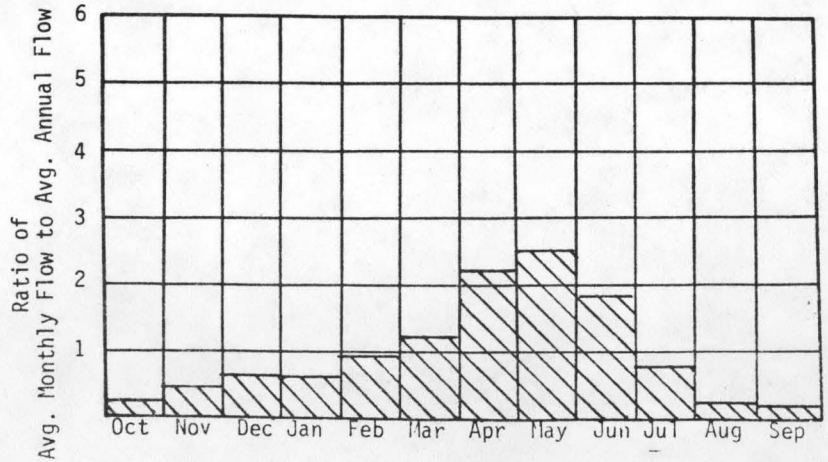
A. Upstream Elevation of Reach	3470	Ft. MSL
B. Downstream Elevation of Reach	3190	Ft. MSL
C. Total Available Head in Reach	280	Ft.
D. Average Slope in Reach	40	Ft./Mi.
E. Drainage Area above Reach Mouth	185.8	Sq.Mi.
F. Inflow Classification	Natural	

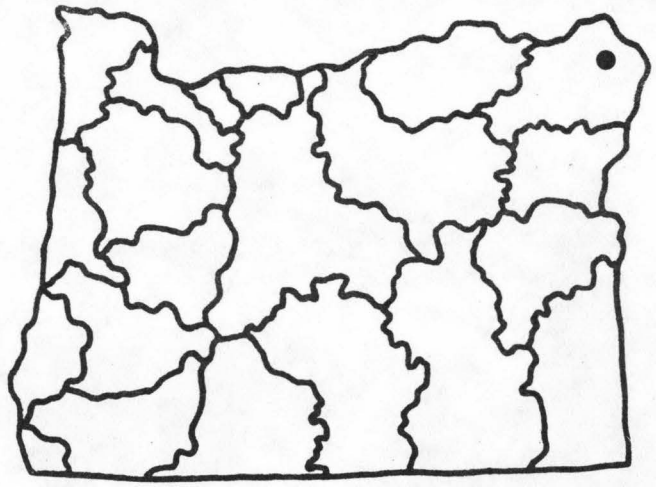
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.9	.31	2.68	1.000
80	20.5	.49	4.07	.954
50	37.7	.90	6.39	.815
30	81.6	1.94	10.04	.592
10	284.0	6.74	18.45	.313

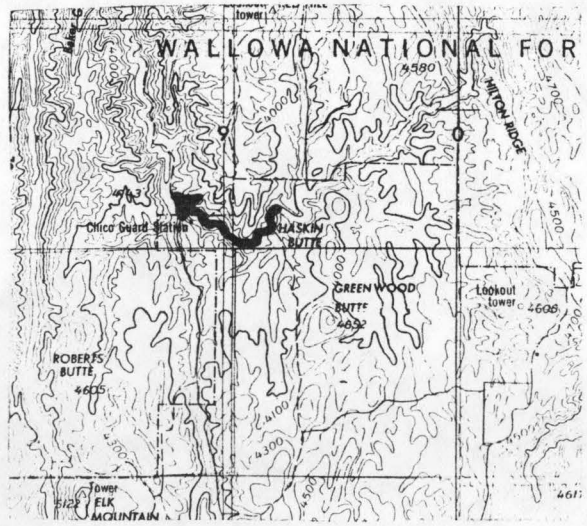
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 108 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-004-R0011

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.28, T3N, R46E
D.	Latitude, Longitude	45°43'N,117°05'W
E.	Stream Name	Chesnimnus Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	7.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

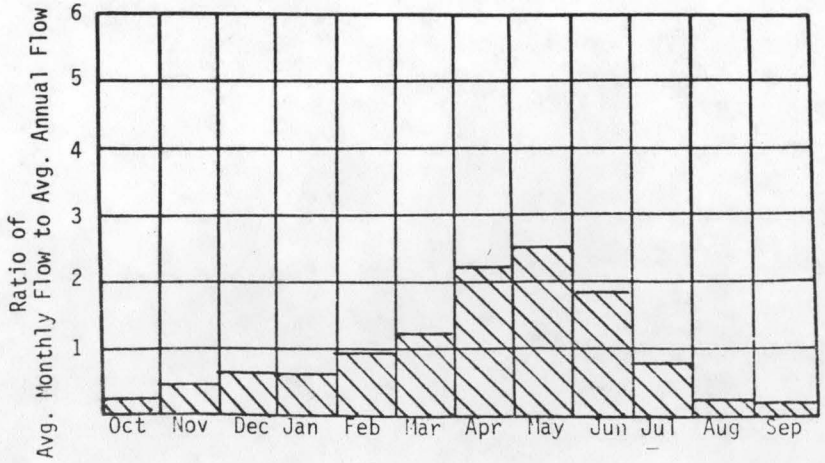
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	168.6	Sq.Mi.
F.	Inflow Classification	Natural	

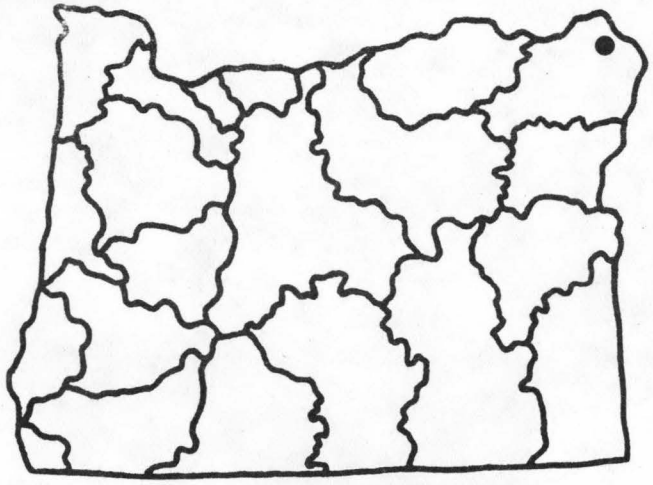
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.2	.07	.60	1.000
80	19.6	.11	.91	.953
50	36.0	.20	1.44	.815
30	77.7	.43	2.25	.592
10	271.0	1.52	4.15	.312

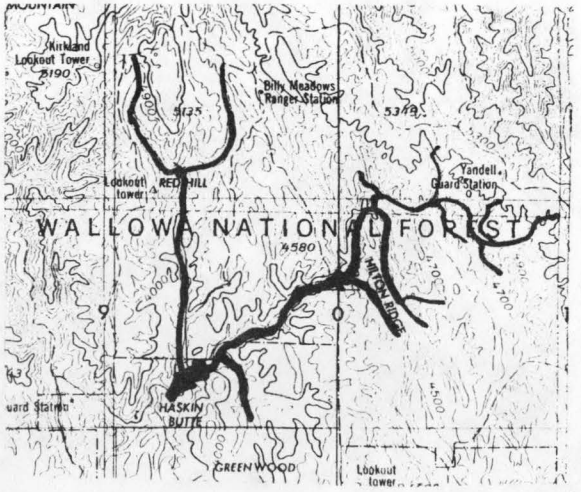
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 104 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.26, T6N, R43E
D.	Latitude, Longitude	45°57'N,117°25'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	39.0 to 46.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

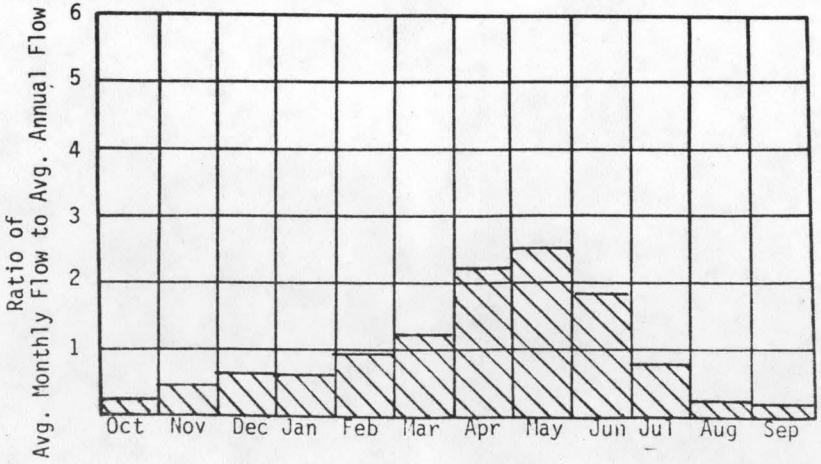
A.	Upstream Elevation of Reach	1603	Ft. MSL
B.	Downstream Elevation of Reach	1476	Ft. MSL
C.	Total Available Head in Reach	127	Ft.
D.	Average Slope in Reach	18	Ft./Mi.
E.	Drainage Area above Reach Mouth	3288.5	Sq.Mi.
F.	Inflow Classification	Slightly Regulated	

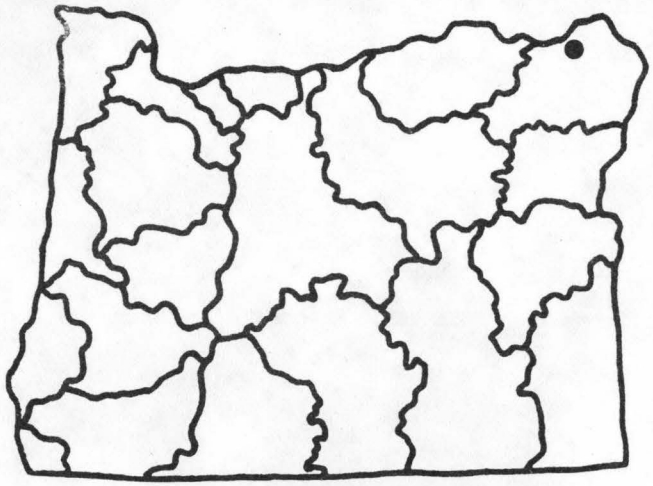
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	581.0	6.25	54.78	1.000
80	773.0	8.32	70.62	.969
50	1621.8	17.46	122.64	.802
30	3461.3	37.25	192.01	.588
10	7217.1	77.68	262.83	.386

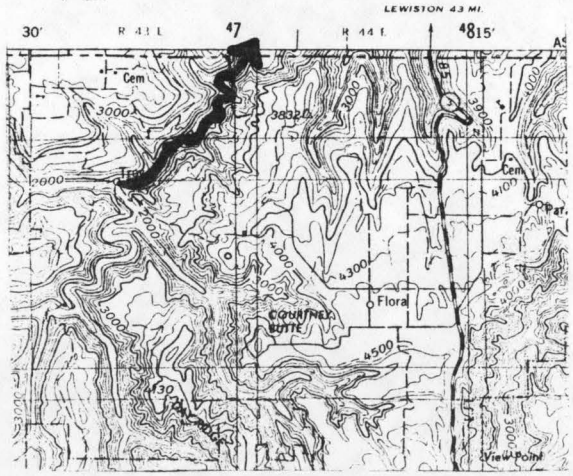
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2902 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-047-R0001

I. LOCATION

A. State	Oregon	
B. County	Wallowa	
C. Township, Range	Sec.36, T6N, R42E	
D. Latitude, Longitude	45°57'N,117°31'W	
E. Stream Name	Wenaha River	
F. Major Basin Name	Grande Ronde	
G. River Mile	0.0 to 6.8	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

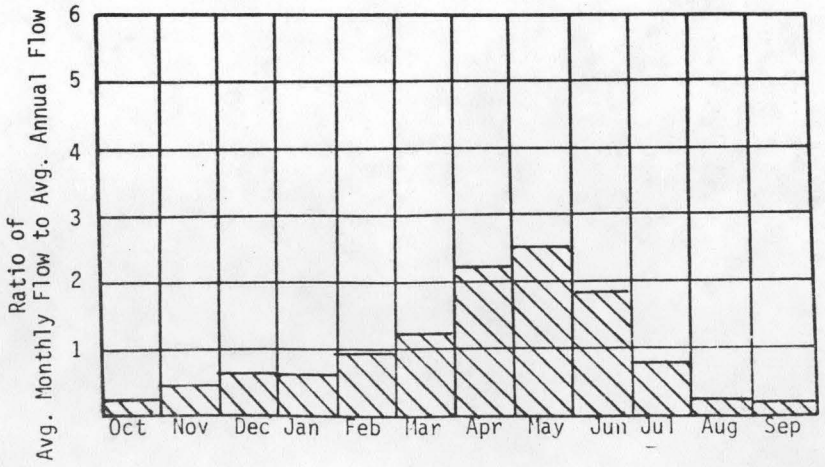
A. Upstream Elevation of Reach	1932	Ft. MSL
B. Downstream Elevation of Reach	1603	Ft. MSL
C. Total Available Head in Reach	329	Ft.
D. Average Slope in Reach	48.4	Ft./Mi.
E. Drainage Area above Reach Mouth	291.4	Sq.Mi.
F. Inflow Classification	Regulated	

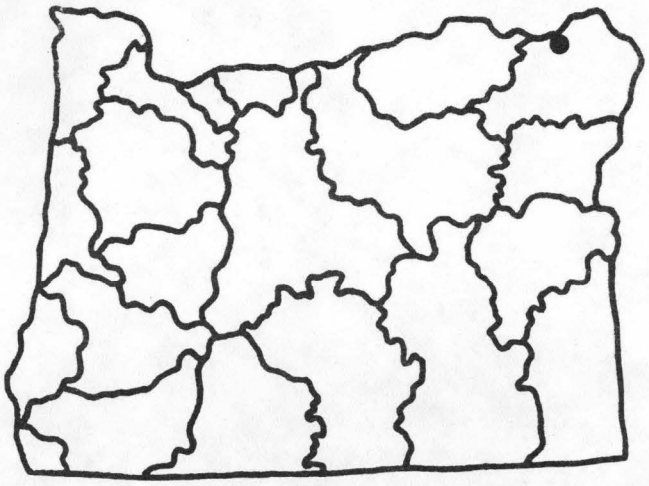
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	103.8	2.89	25.35	1.000
80	137.6	3.84	32.58	.969
50	246.4	6.87	49.85	.828
30	539.6	15.04	78.49	.596
10	1784.4	49.75	139.30	.320

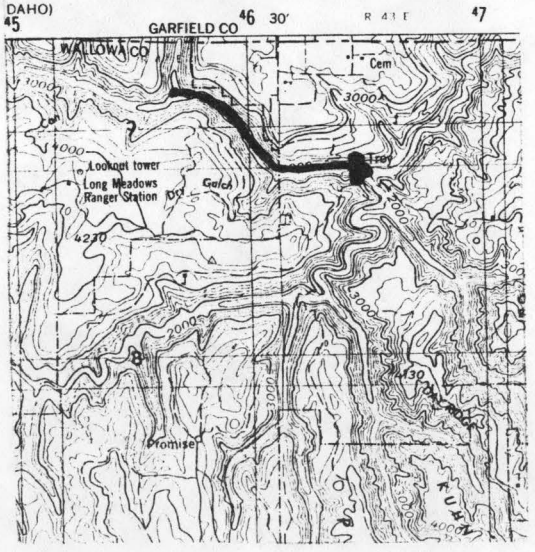
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 540 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-047-R0006

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.19, T6N, R42E
D.	Latitude, Longitude	45°58'N,117°37'W
E.	Stream Name	Wenaha River
F.	Major Basin Name	Grande Ronde
G.	River Mile	6.8 to 14.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

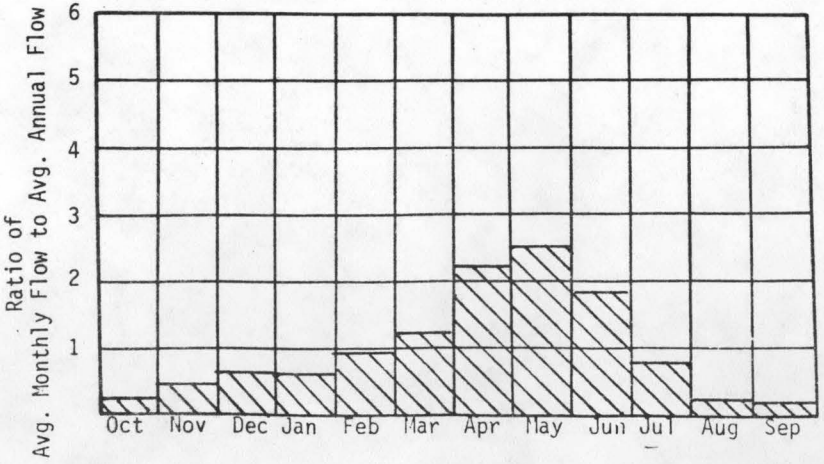
A.	Upstream Elevation of Reach	2340	Ft. MSL
B.	Downstream Elevation of Reach	1932	Ft. MSL
C.	Total Available Head in Reach	412	Ft.
D.	Average Slope in Reach	51.50	Ft./Mi.
E.	Drainage Area above Reach Mouth	196.4	Sq.Mi.
F.	Inflow Classification	Slightly Regulated	

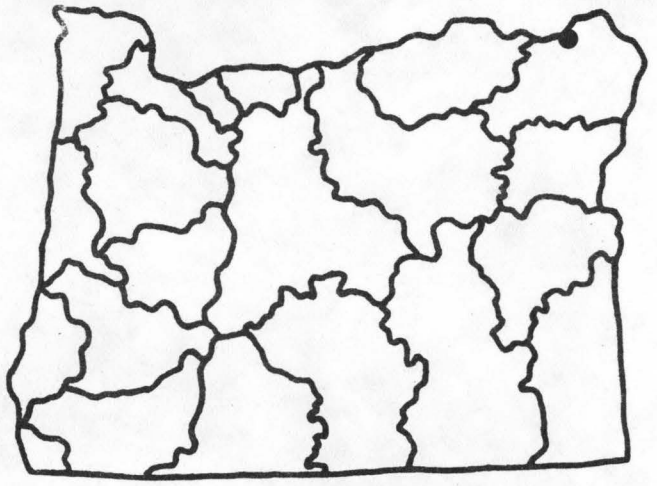
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	66.6	2.33	20.38	1.000
80	91.9	3.21	27.13	.966
50	165.4	5.77	41.75	.825
30	361.2	12.61	65.70	.595
10	1207.5	42.16	117.47	.318

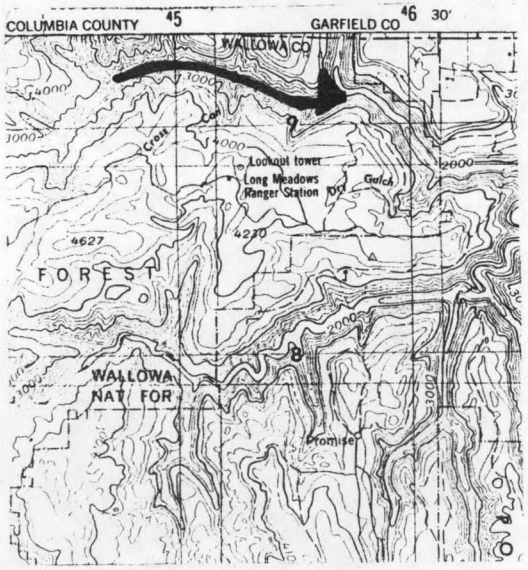
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 384 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-047-R0009

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.19, T6N, R41E
D.	Latitude, Longitude	45°57'N,117°45'W
E.	Stream Name	Wenaha River
F.	Major Basin Name	Grande Ronde
G.	River Mile	14.8 to 22.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

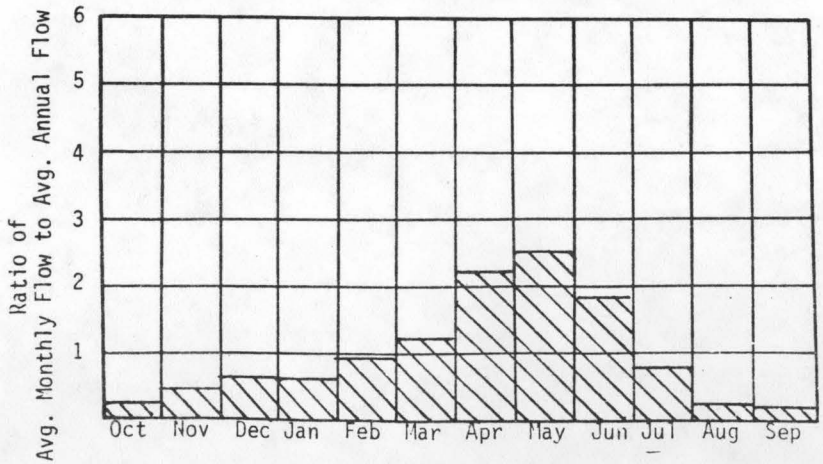
A.	Upstream Elevation of Reach	2810	Ft. MSL
B.	Downstream Elevation of Reach	2340	Ft. MSL
C.	Total Available Head in Reach	470	Ft.
D.	Average Slope in Reach	65.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	122.1	Sq.Mi.
F.	Inflow Classification	Natural	

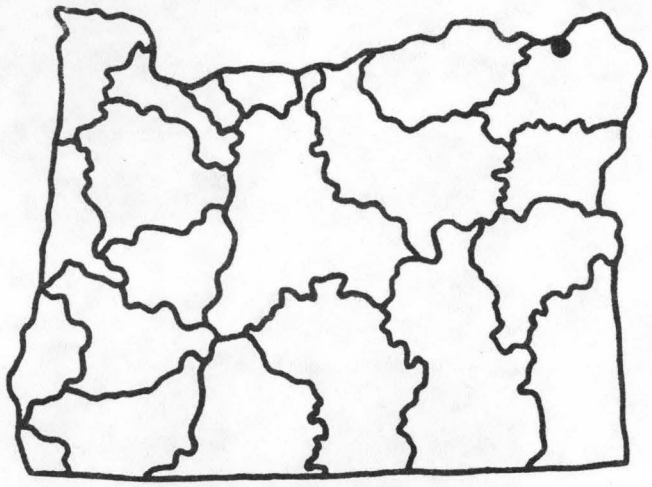
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	35.0	1.40	12.22	1.000
80	51.1	2.03	17.12	.961
50	92.7	3.69	26.56	.821
30	201.6	8.03	41.76	.594
10	684.8	27.28	75.48	.316

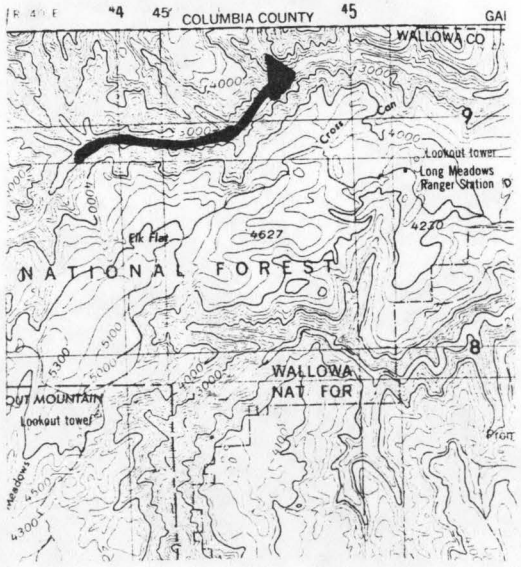
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 234 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-047-R0010

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.9, T5N, R40E
D.	Latitude, Longitude	45°45'N,117°49'W
E.	Stream Name	South Fork Wenaha River
F.	Major Basin Name	Grande Ronde
G.	River Mile	0.0 to 3.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

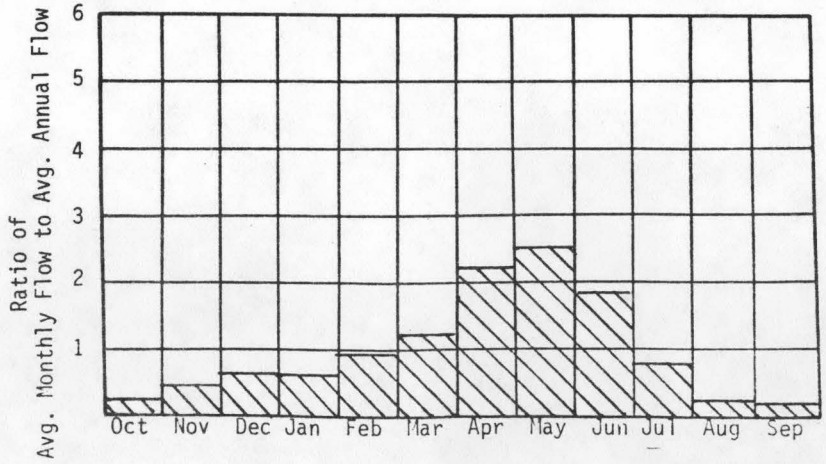
A.	Upstream Elevation of Reach	2980	Ft. MSL
B.	Downstream Elevation of Reach	2810	Ft. MSL
C.	Total Available Head in Reach	170	Ft.
D.	Average Slope in Reach	57	Ft./Mi.
E.	Drainage Area above Reach Mouth	53.9	Sq.Mi.
F.	Inflow Classification	Natural	

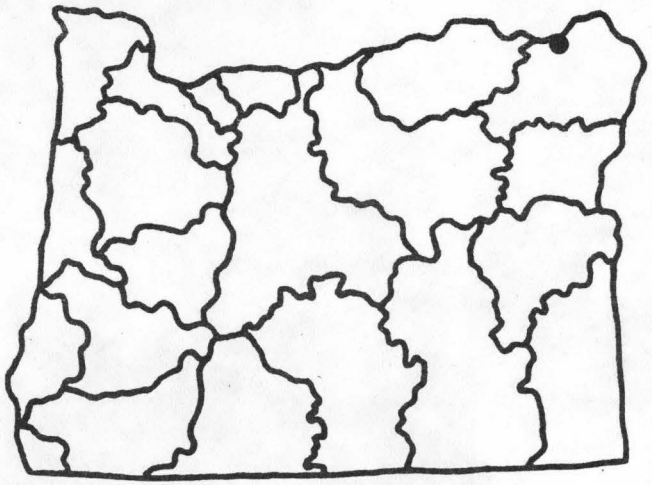
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.2	.20	1.79	1.000
80	22.4	.32	2.70	.954
50	41.1	.59	4.23	.816
30	88.9	1.28	6.64	.592
10	308.7	4.45	12.19	.313

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 116 CFS





U.S.G.S. TOPO. SERIES
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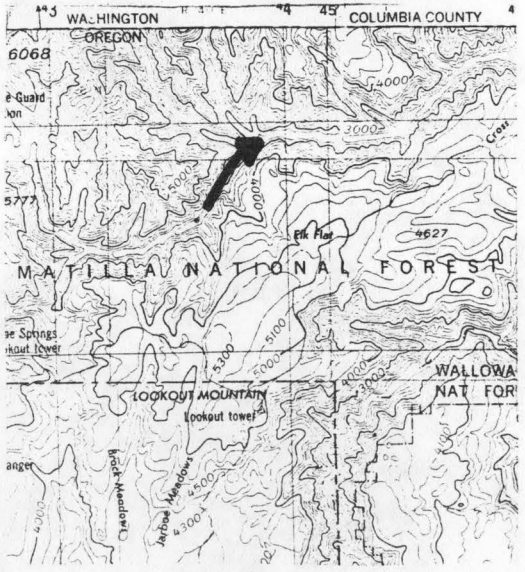
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-047-R0011

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.13, T5N, R39E
D.	Latitude, Longitude	45°54'N,117°53'W
E.	Stream Name	South Fork Wenaha River
F.	Major Basin Name	Grande Ronde
G.	River Mile	3.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

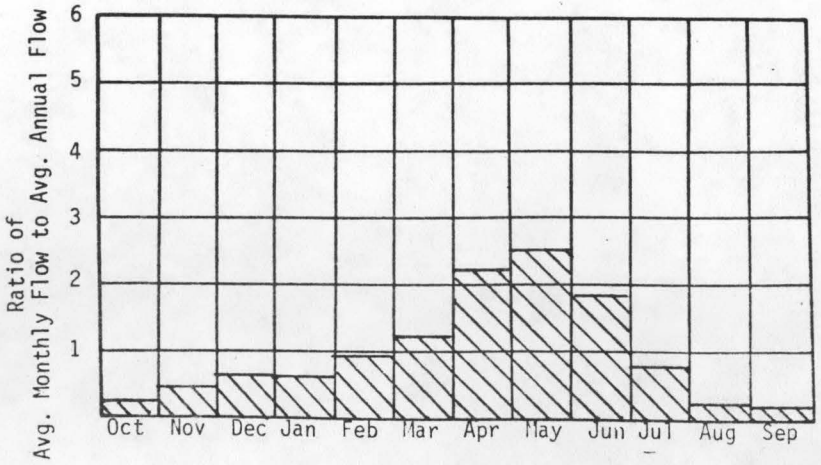
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	39.6	Sq.Mi.
F.	Inflow Classification	Natural	

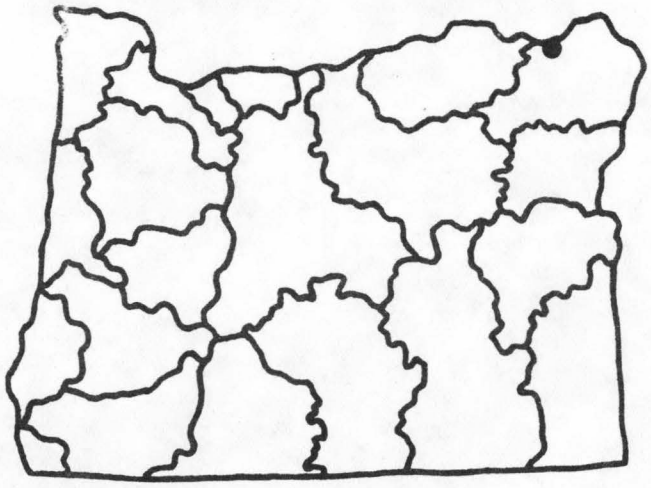
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	11.8	.07	.58	1.000
80	18.9	.11	.88	.953
50	34.7	.19	1.39	.815
30	75.0	.42	2.17	.592
10	261.7	1.46	4.00	.312

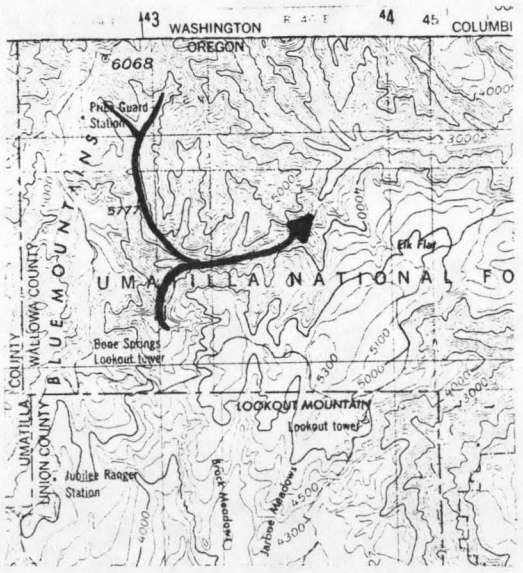
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 101 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.16, T5N, R45E
D.	Latitude, Longitude	45°45'N,117°26'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	46.0 to 52.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

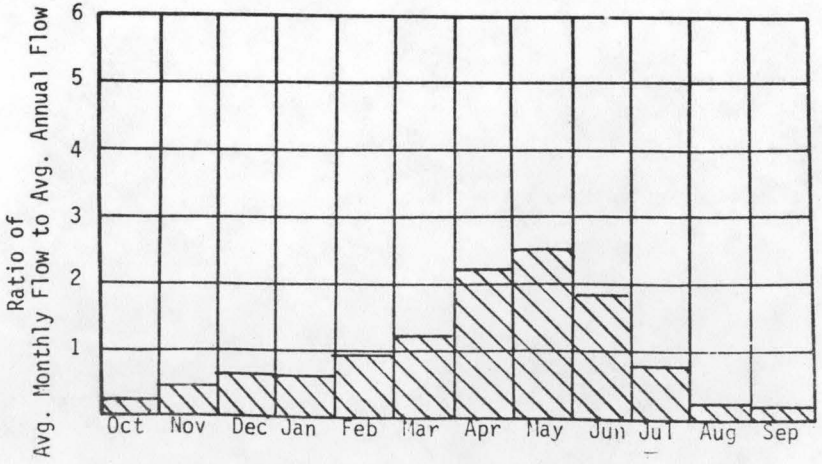
A.	Upstream Elevation of Reach	1716	Ft. MSL
B.	Downstream Elevation of Reach	1603	Ft. MSL
C.	Total Available Head in Reach	113	Ft.
D.	Average Slope in Reach	17	Ft./Mi.
E.	Drainage Area above Reach Mouth	2944.8	Sq.Mi.
F.	Inflow Classification	Natural	

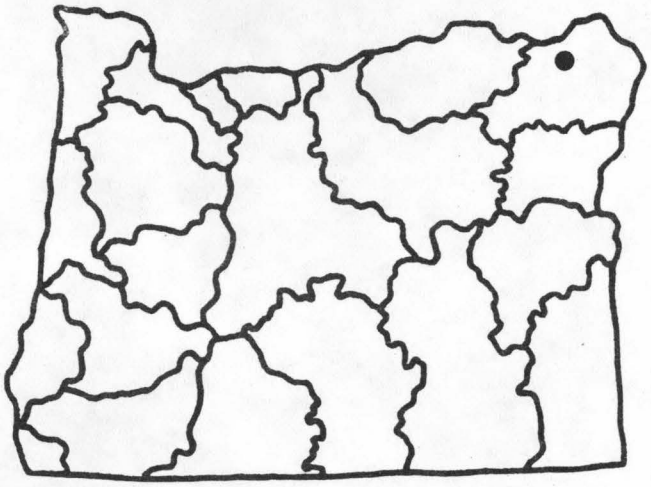
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	467.3	4.48	39.20	1.000
80	641.9	6.15	52.02	.966
50	1306.2	12.51	88.24	.805
30	2902.4	27.79	141.80	.582
10	6190.5	59.28	196.97	.379

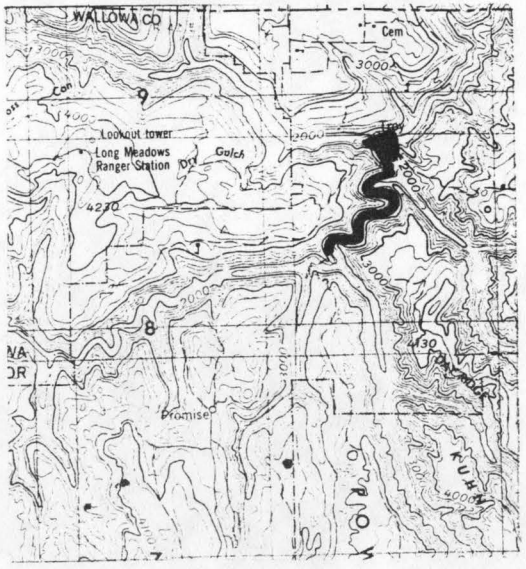
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2447 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.27, T5N, R42E
D.	Latitude, Longitude	45°53'N,117°33'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	52.7 to 63.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

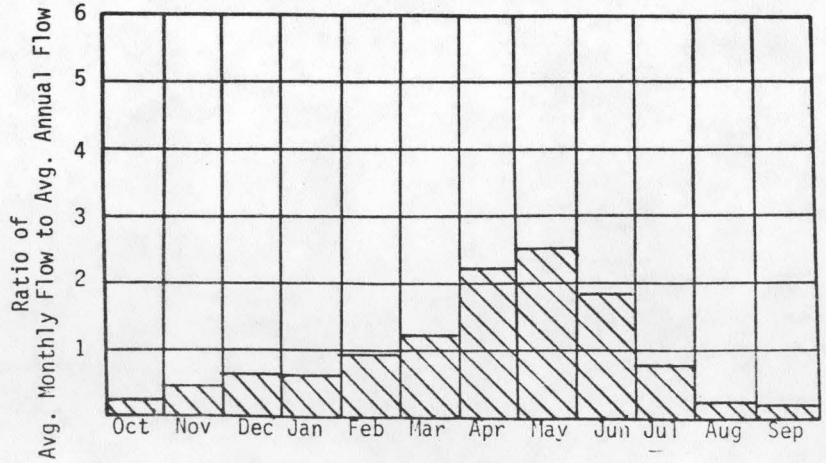
A.	Upstream Elevation of Reach	1943	Ft. MSL
B.	Downstream Elevation of Reach	1716	Ft. MSL
C.	Total Available Head in Reach	227	Ft.
D.	Average Slope in Reach	20	Ft./Mi.
E.	Drainage Area above Reach Mouth	2770	Sq.Mi.
F.	Inflow Classification	Natural	

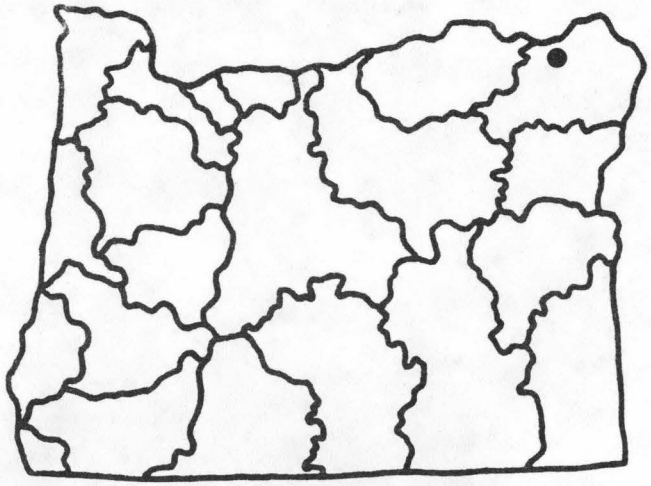
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	435.8	8.38	73.45	1.000
80	604.8	11.64	98.36	.965
50	1218.7	23.45	165.61	.806
30	2743.2	52.77	268.37	.581
10	5893.6	113.38	374.55	.377

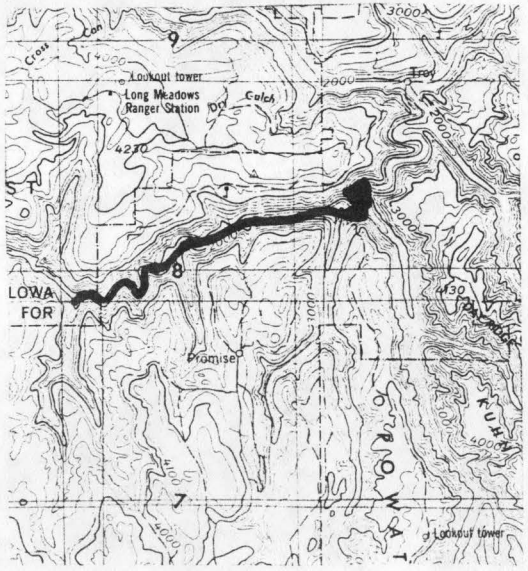
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2316 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0008

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.33, T5N, R41E
D.	Latitude, Longitude	45°52'N,117°41'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	63.8 to 73.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

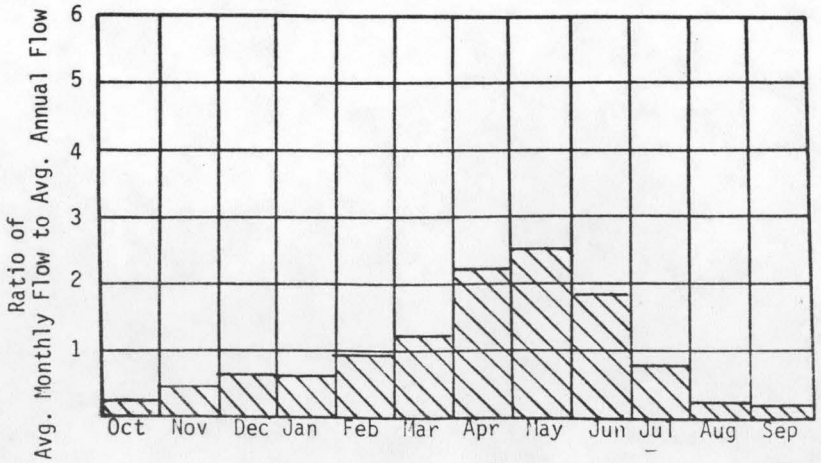
A.	Upstream Elevation of Reach	2143	Ft. MSL
B.	Downstream Elevation of Reach	1943	Ft. MSL
C.	Total Available Head in Reach	200	Ft.
D.	Average Slope in Reach	22	Ft./Mi.
E.	Drainage Area above Reach Mouth	2625.6	Sq.Mi.
F.	Inflow Classification	Natural	

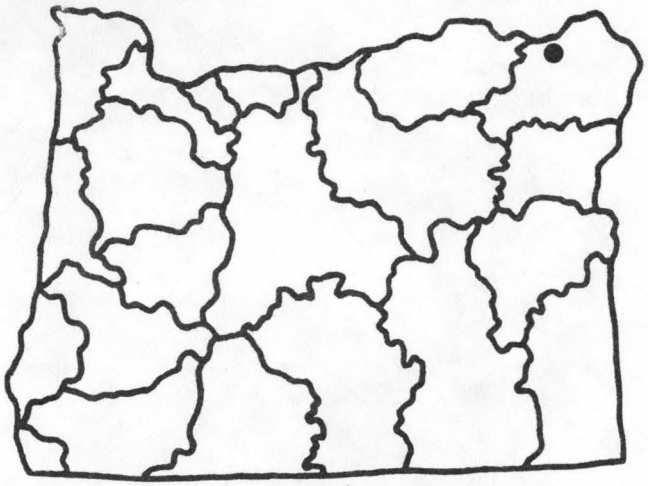
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	405.9	6.88	60.27	1.000
80	569.2	9.65	81.48	.964
50	1135.5	19.25	136.13	.807
30	2589.7	43.89	222.50	.579
10	5605.3	95.00	312.05	.375

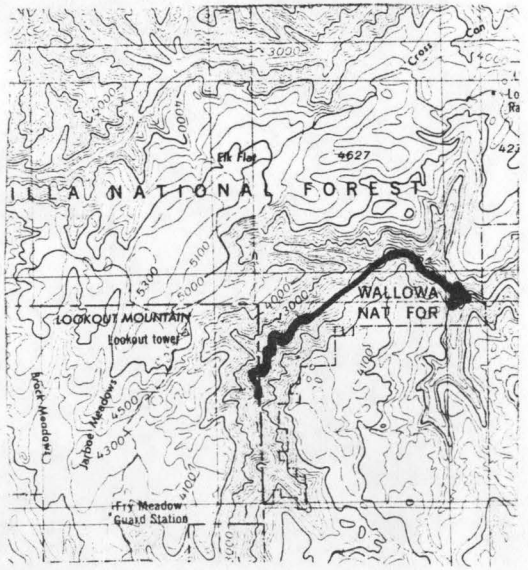
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2191 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0009

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.36, T4N, R40E
D.	Latitude, Longitude	45°47'N,117°45'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	73.0 to 82.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

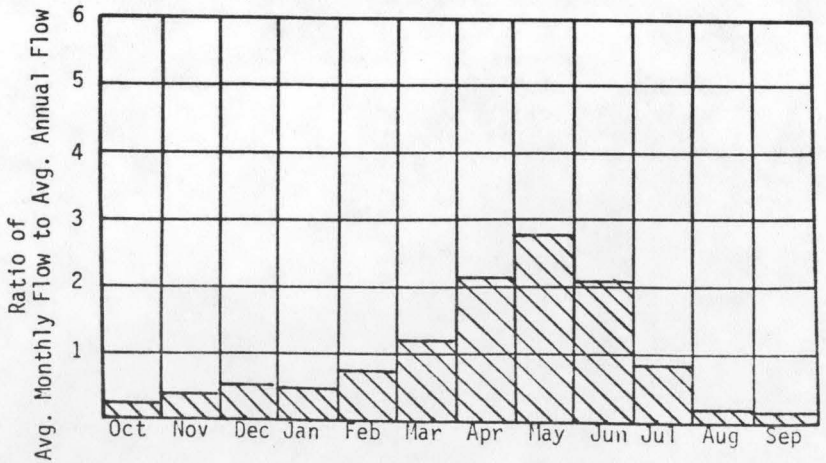
A.	Upstream Elevation of Reach	2288	Ft. MSL
B.	Downstream Elevation of Reach	2143	Ft. MSL
C.	Total Available Head in Reach	145	Ft.
D.	Average Slope in Reach	16	Ft./Mi.
E.	Drainage Area above Reach Mouth	2574.6	Sq.Mi.
F.	Inflow Classification	Natural	

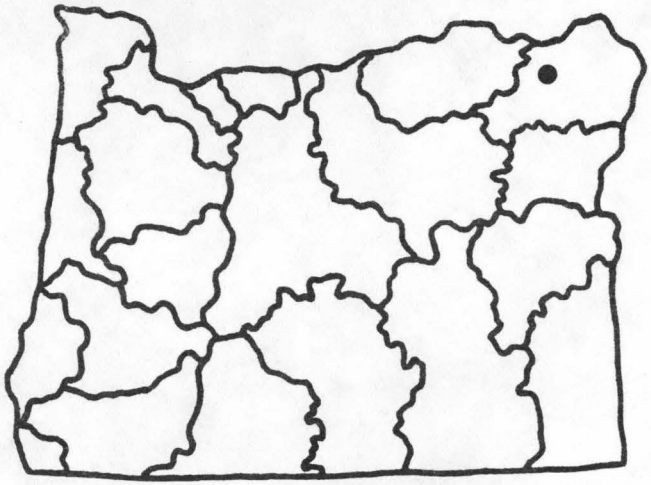
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	391.4	4.81	42.13	1.000
80	551.7	6.78	57.23	.964
50	1095.0	13.46	95.25	.808
30	2514.4	30.90	156.36	.578
10	5462.9	67.13	219.84	.374

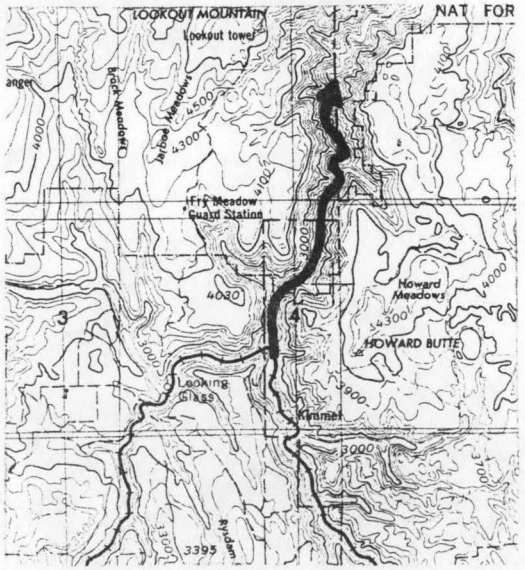
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2160 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE

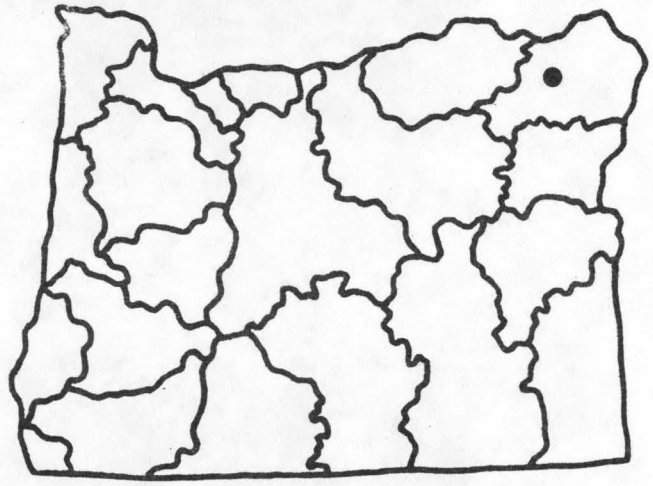


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.12, T2N, R40E
D.	Latitude, Longitude	45°30'N,117°46'W
E.	Stream Name	Wallowa River
F.	Major Basin Name	Grande Ronde
G.	River Mile	0.0 to 9.9



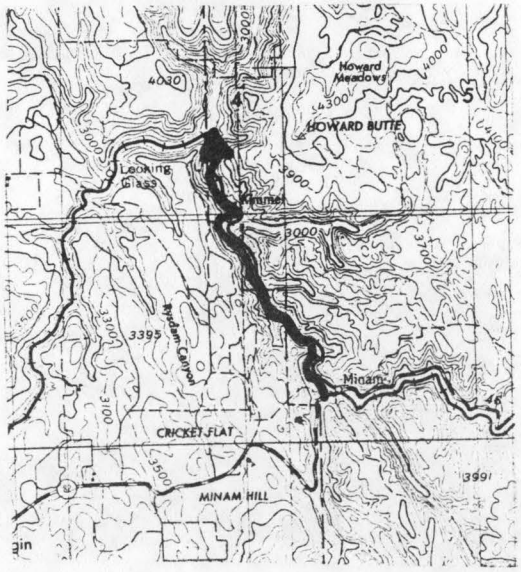
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2530	Ft. MSL
B.	Downstream Elevation of Reach	2288	Ft. MSL
C.	Total Available Head in Reach	242	Ft.
D.	Average Slope in Reach	24.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	924.7	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

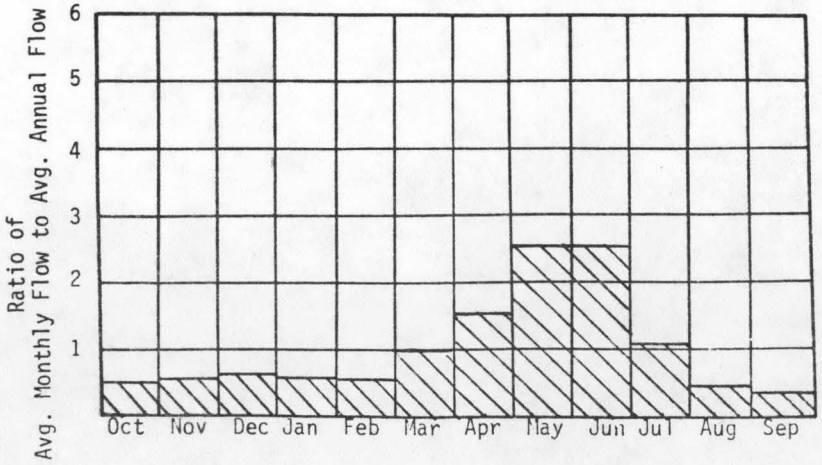
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	279.7	5.74	50.25	1.000
80	340.2	6.98	59.76	.978
50	601.7	12.34	90.29	.835
30	1325.7	27.19	142.32	.598
10	4278.1	87.74	248.41	.323

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1162 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0002

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.17, T1S, R41E
D.	Latitude, Longitude	45°33'N,117°43'W
E.	Stream Name	Minam River
F.	Major Basin Name	Grande Ronde
G.	River Mile	0.0 to 10.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

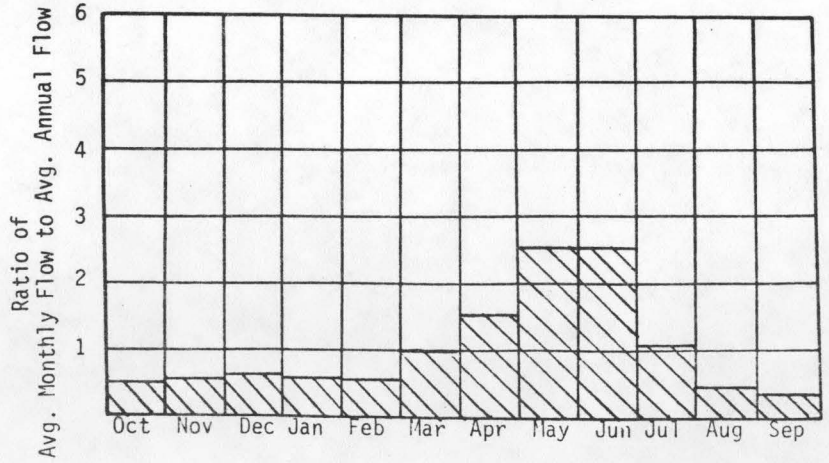
A.	Upstream Elevation of Reach	2995	Ft. MSL
B.	Downstream Elevation of Reach	2530	Ft. MSL
C.	Total Available Head in Reach	465	Ft.
D.	Average Slope in Reach	45.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	232.2	Sq.Mi.
F.	Inflow Classification	Natural	

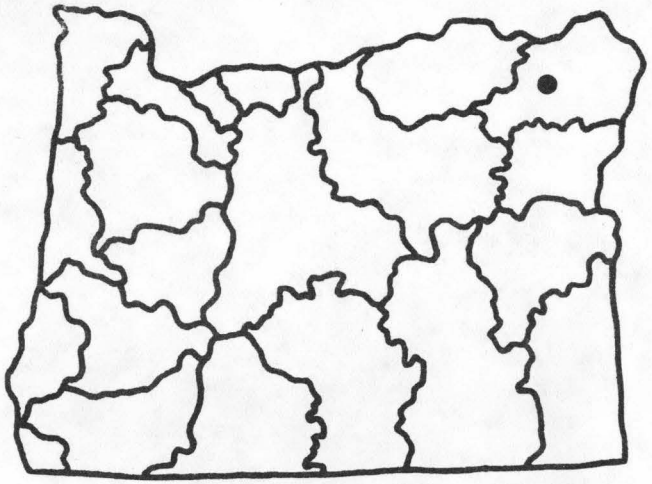
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	78.2	3.08	27.00	1.000
80	106.3	4.19	35.48	.967
50	191.0	7.53	54.49	.826
30	417.5	16.45	85.77	.595
10	1390.6	54.80	152.95	.319

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 434 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0003

I. LOCATION

A. State	Oregon	
B. County	Union	
C. Township, Range	Sec.28, T1S, R41E	
D. Latitude, Longitude	45°27'N,117°42'W	
E. Stream Name	Minam River	
F. Major Basin Name	Grande Ronde	
G. River Mile	10.2 to 18.7	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

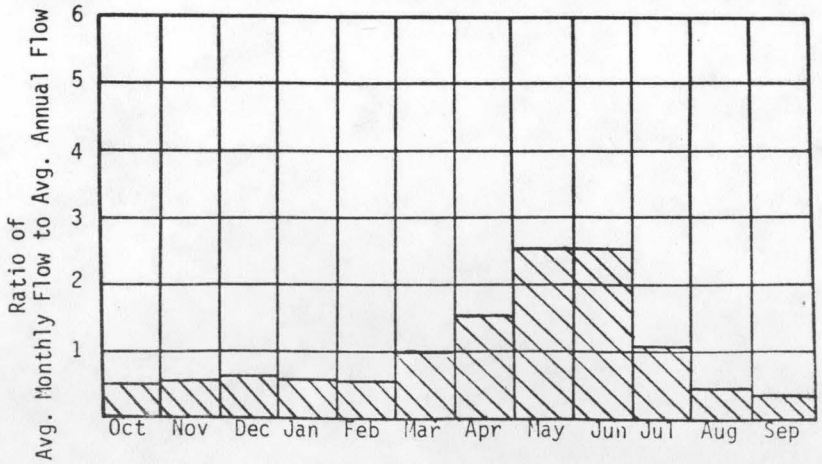
A. Upstream Elevation of Reach	3588	Ft. MSL
B. Downstream Elevation of Reach	2995	Ft. MSL
C. Total Available Head in Reach	593	Ft.
D. Average Slope in Reach	69.7	Ft./Mi.
E. Drainage Area above Reach Mouth	189.9	Sq.Mi.
F. Inflow Classification	Natural	

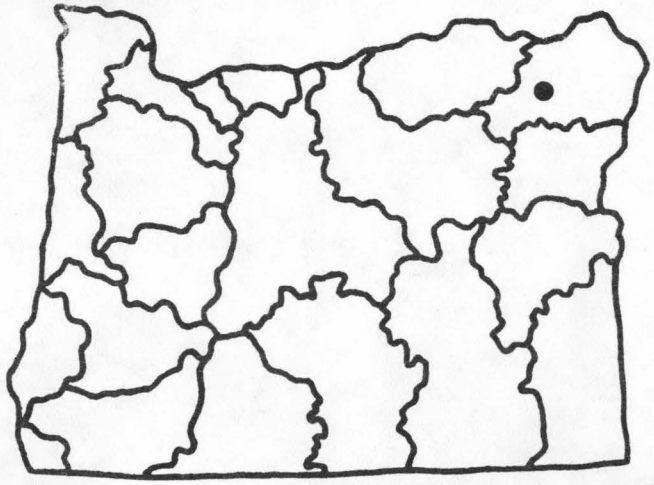
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	67.2	3.38	29.58	1.000
80	92.5	4.65	39.35	.966
50	166.6	8.37	60.54	.825
30	363.8	18.28	95.27	.595
10	1216.3	61.12	170.33	.318

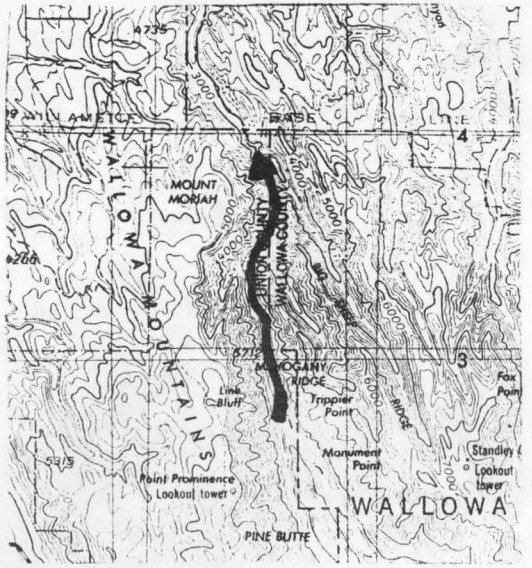
IV. TYPICAL ANNUAL HYDROGRAPH.

AVG. ANNUAL FLOW = 386 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0006

I. LOCATION

A. State	Oregon	
B. County	Wallowa	
C. Township, Range	Sec.25, T2S, R41E	
D. Latitude, Longitude	45°21'N,117°37'W	
E. Stream Name	Minam River	
F. Major Basin Name	Grande Ronde	
G. River Mile	18.7 to 25.7	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

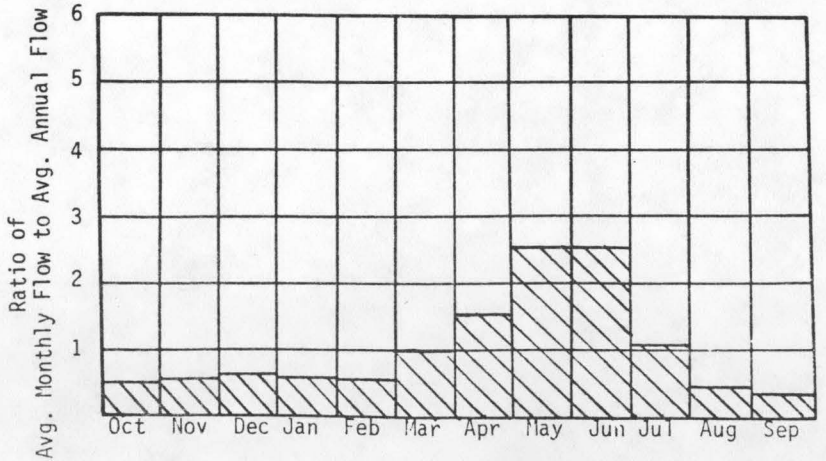
A. Upstream Elevation of Reach	4077	Ft. MSL
B. Downstream Elevation of Reach	3588	Ft. MSL
C. Total Available Head in Reach	489	Ft.
D. Average Slope in Reach	69.9	Ft./Mi.
E. Drainage Area above Reach Mouth	123.6	Sq.Mi.
F. Inflow Classification	Natural	

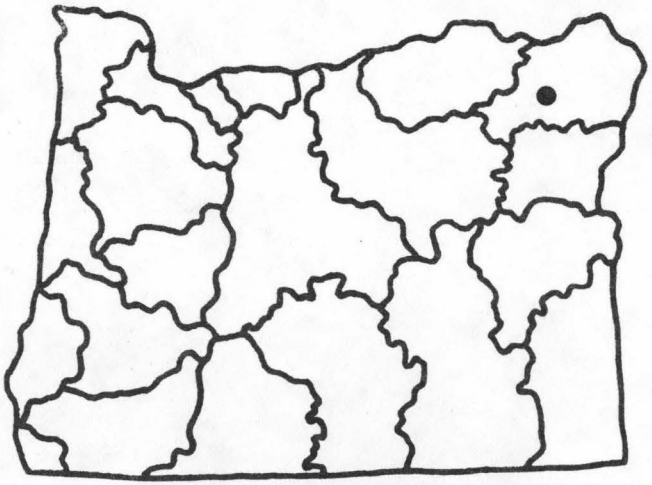
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	43.1	1.79	15.65	1.000
80	61.7	2.56	21.56	.962
50	111.7	4.63	33.35	.823
30	243.3	10.08	52.46	.594
10	822.2	34.07	94.50	.317

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 274 CFS





U.S.G.S. TOPO. SERIES
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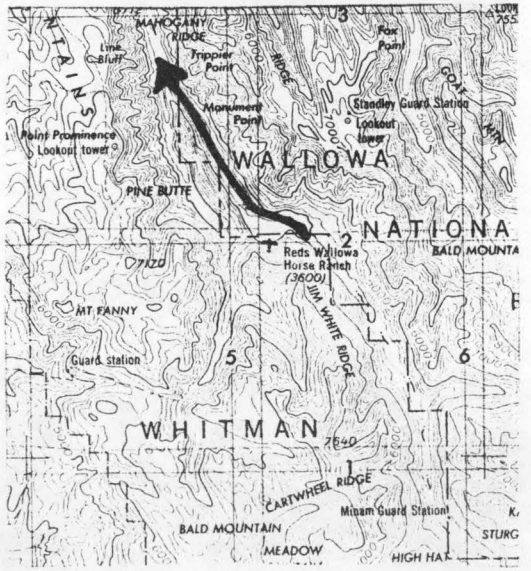
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0007

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.15, T3S, R42E
D.	Latitude, Longitude	45°18'N,117°33'W
E.	Stream Name	Minam River
F.	Major Basin Name	Grande Ronde
G.	River Mile	25.7 to 32.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

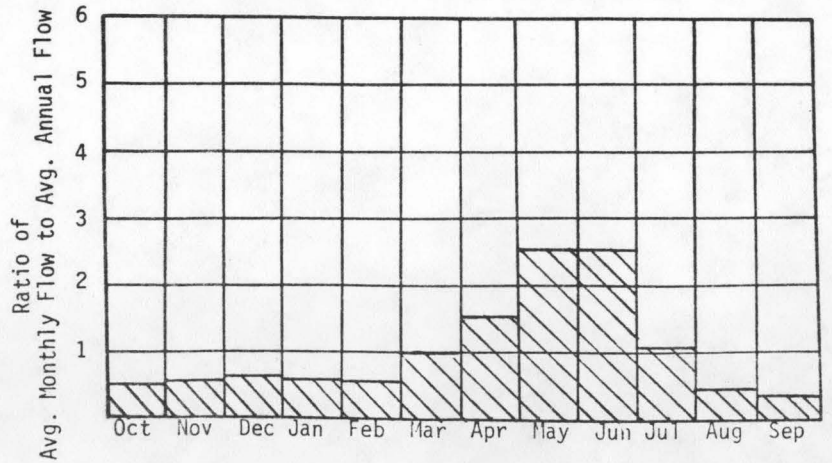
A.	Upstream Elevation of Reach	4782	Ft. MSL
B.	Downstream Elevation of Reach	4077	Ft. MSL
C.	Total Available Head in Reach	705	Ft.
D.	Average Slope in Reach	112	Ft./Mi.
E.	Drainage Area above Reach Mouth	106.5	Sq.Mi.
F.	Inflow Classification	Natural	

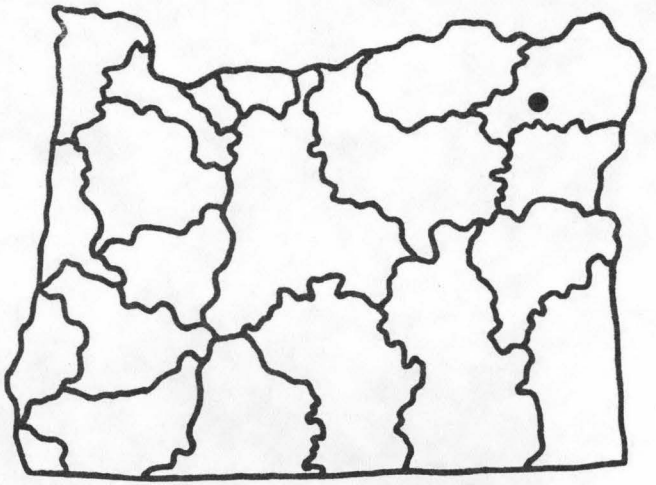
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	32.7	1.95	17.10	1.000
80	47.9	2.86	24.09	.960
50	87.1	5.20	37.40	.821
30	189.3	11.31	58.80	.594
10	644.2	38.49	106.41	.316

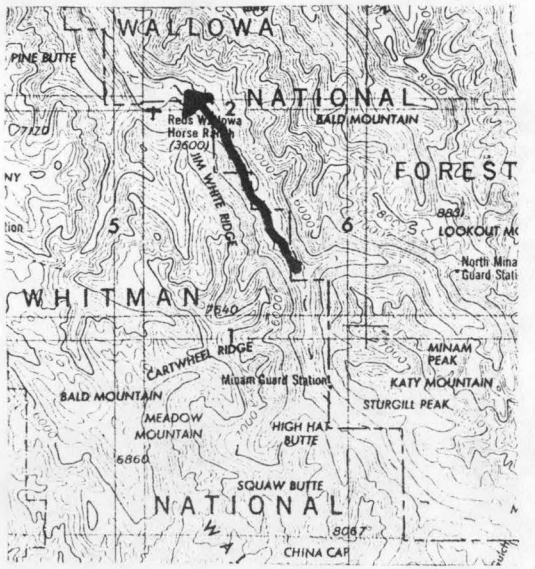
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 222 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0009

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.33, T4S, R43E
D.	Latitude, Longitude	45°10'N,117°26'W
E.	Stream Name	Minam River
F.	Major Basin Name	Grande Ronde
G.	River Mile	32.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

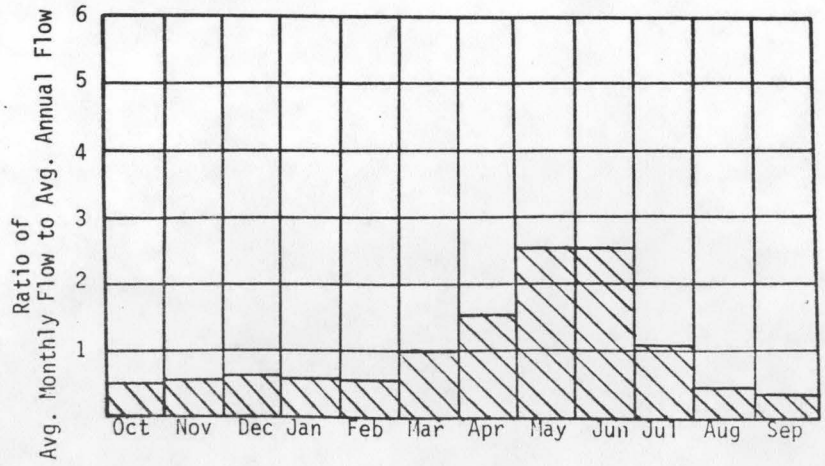
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	70.3	Sq.Mi.
F.	Inflow Classification	Natural	

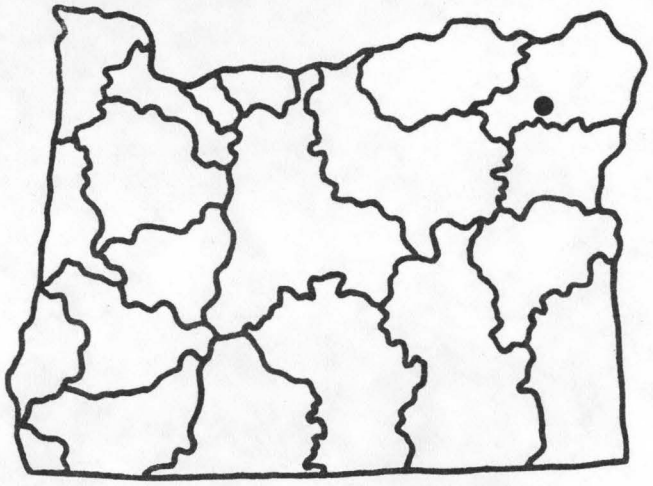
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	25.8	.14	1.27	1.000
80	38.7	.22	1.82	.958
50	70.4	.39	2.83	.819
30	152.9	.86	4.44	.593
10	523.3	2.93	8.07	.315

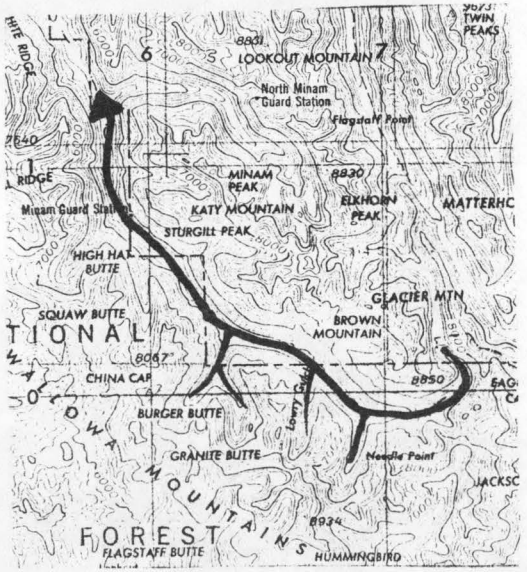
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 185 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE

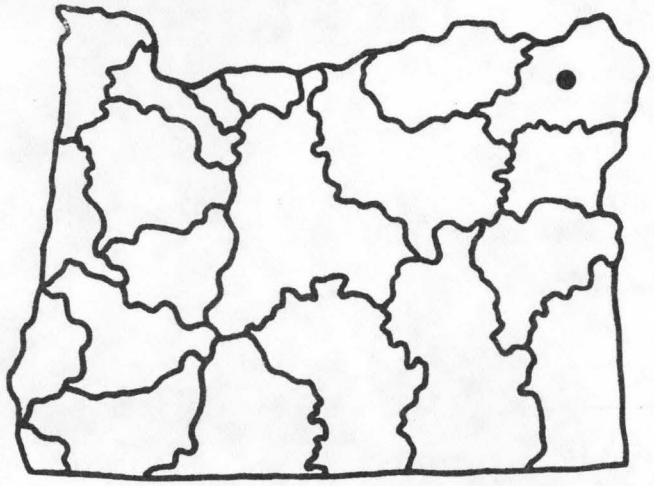


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0010

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.29, T2N, R41E
D.	Latitude, Longitude	45°37'N,117°43'W
E.	Stream Name	Wallowa River
F.	Major Basin Name	Grande Ronde
G.	River Mile	9.9 to 11.5



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

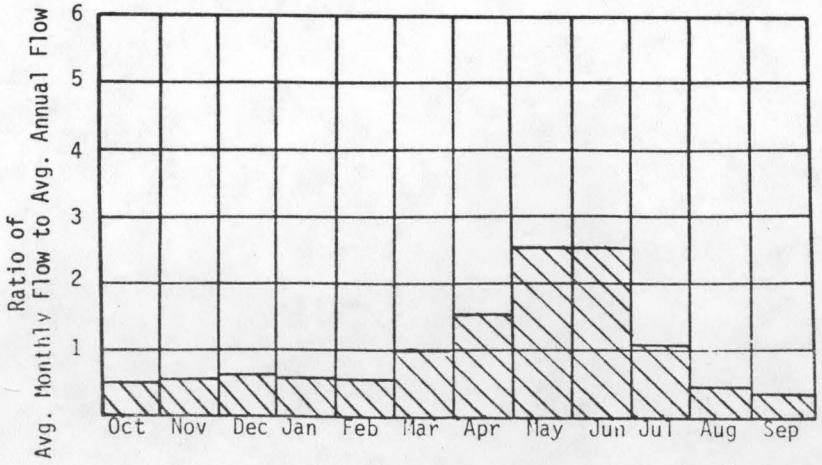
A.	Upstream Elevation of Reach	2572	Ft. MSL
B.	Downstream Elevation of Reach	2530	Ft. MSL
C.	Total Available Head in Reach	42	Ft.
D.	Average Slope in Reach	26.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	643.6	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

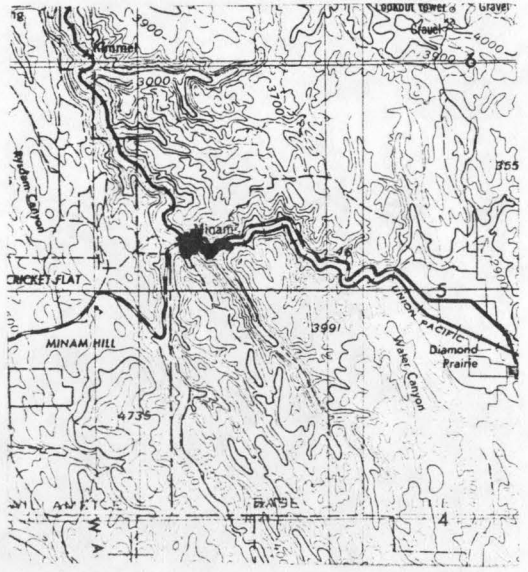
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	145.3	.52	4.53	1.000
80	187.1	.67	5.67	.972
50	333.6	1.19	8.64	.831
30	732.1	2.61	13.61	.596
10	2401.2	8.55	24.02	.321

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 700 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0011

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.36, T2N, R41E
D.	Latitude, Longitude	45°36'N,117°37'W
E.	Stream Name	Wallowa River
F.	Major Basin Name	Grande Ronde
G.	River Mile	11.5 to 22.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

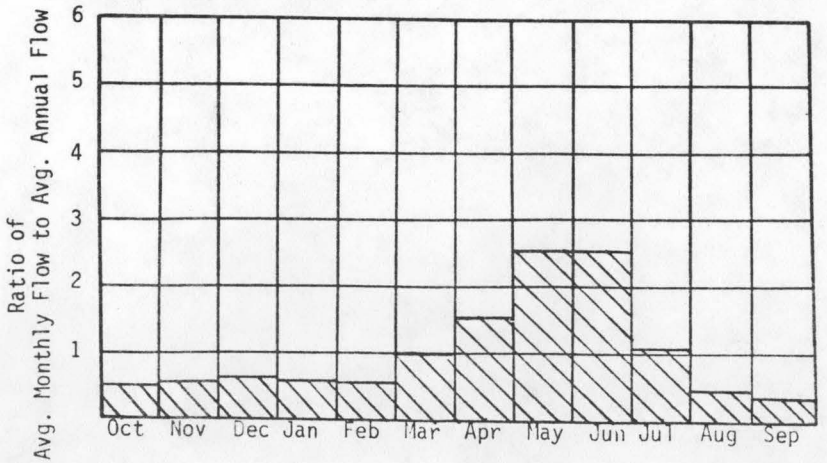
A.	Upstream Elevation of Reach	2837	Ft. MSL
B.	Downstream Elevation of Reach	2572	Ft. MSL
C.	Total Available Head in Reach	265	Ft.
D.	Average Slope in Reach	24.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	611.7	Sq.Mi.
F.	Inflow Classification	Natural	

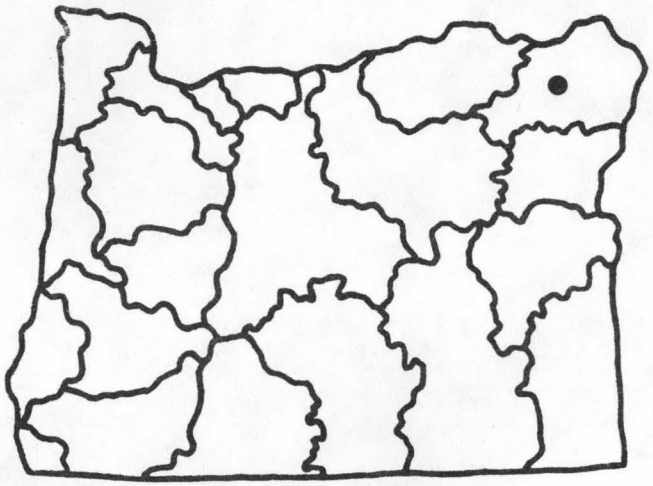
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	129.5	2.91	25.48	1.000
80	168.5	3.78	32.18	.971
50	300.8	6.76	49.11	.830
30	659.7	14.81	77.35	.596
10	2169.7	48.73	136.76	.320

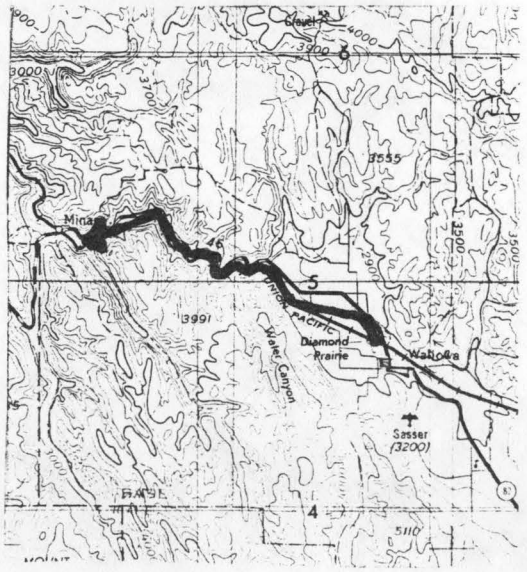
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 641 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0014

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.12, T1N, R42E
D.	Latitude, Longitude	45°33'N,117°31'W
E.	Stream Name	Wallowa River
F.	Major Basin Name	Grande Ronde
G.	River Mile	22.4 to 26.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

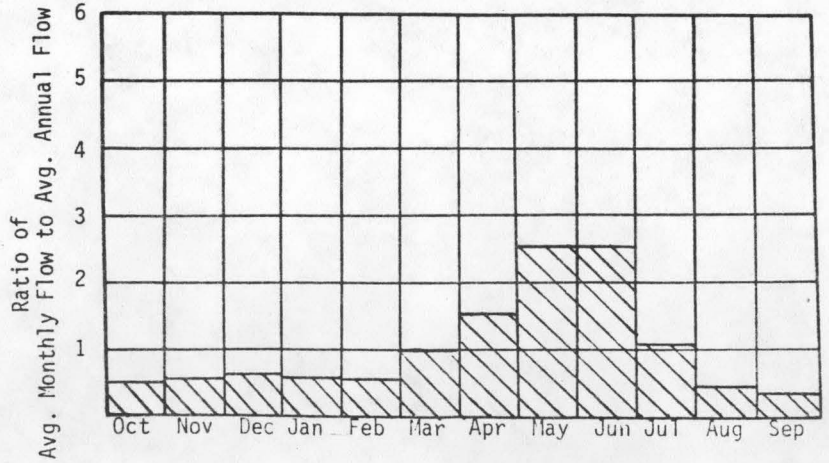
A.	Upstream Elevation of Reach	2979	Ft. MSL
B.	Downstream Elevation of Reach	2837	Ft. MSL
C.	Total Available Head in Reach	142	Ft.
D.	Average Slope in Reach	39.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	452.6	Sq.Mi.
F.	Inflow Classification	Natural	

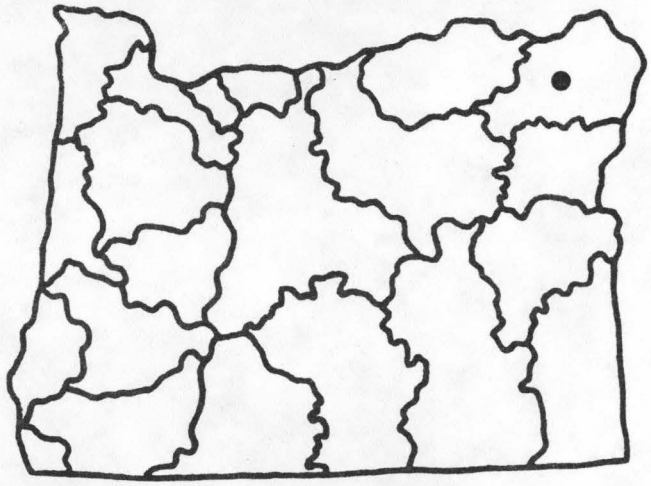
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	88.7	1.07	9.35	1.000
80	119.3	1.44	12.17	.968
50	213.9	2.57	18.66	.827
30	468.0	5.63	29.37	.595
10	1553.9	18.70	52.27	.319

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 479 CFS





U.S.G.S. TOPO. SERIES
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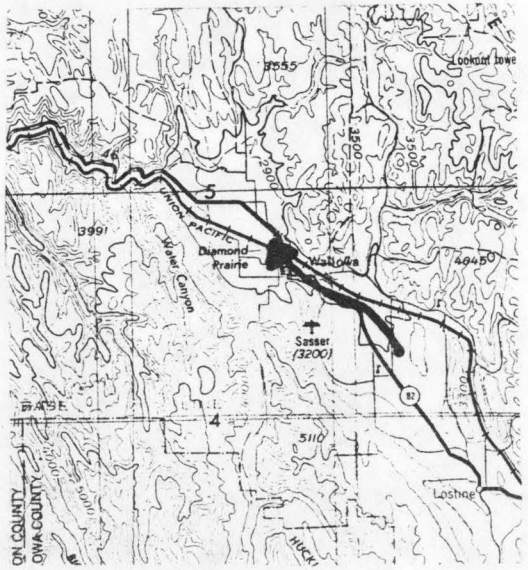


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0018

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.34, T1N, R43E
D.	Latitude, Longitude	45°31'N,117°26'W
E.	Stream Name	Wallowa River
F.	Major Basin Name	Grande Ronde
G.	River Mile	26.0 to 35.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

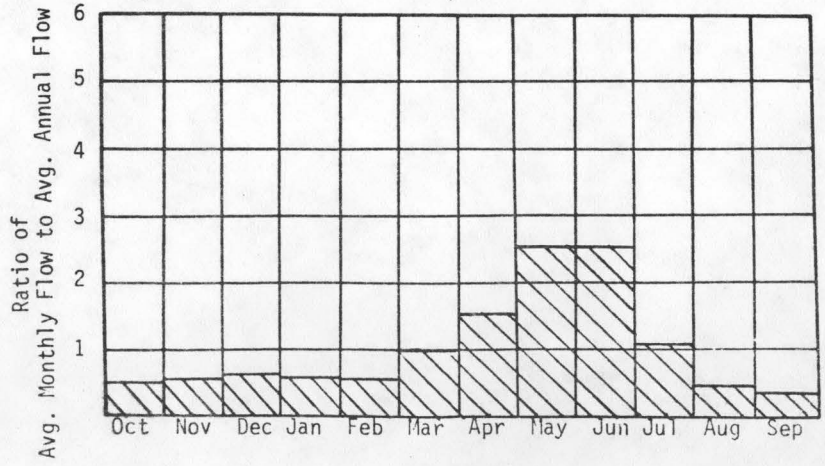
A.	Upstream Elevation of Reach	3367	Ft. MSL
B.	Downstream Elevation of Reach	2979	Ft. MSL
C.	Total Available Head in Reach	388	Ft.
D.	Average Slope in Reach	43.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	300	Sq.Mi.
F.	Inflow Classification	Regulated	

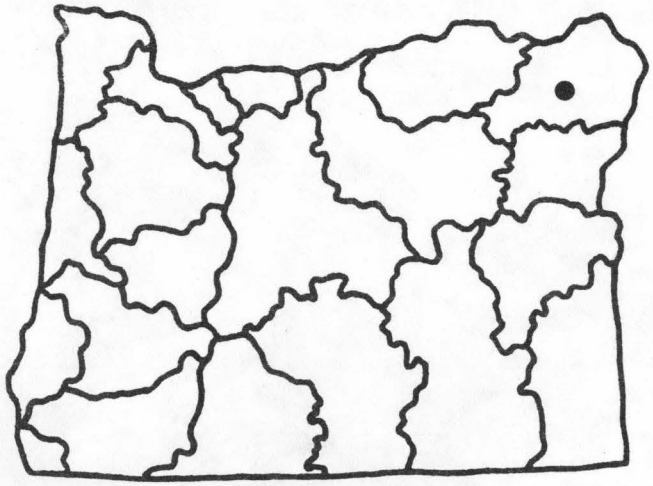
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	49.9	1.64	14.37	1.000
80	70.5	2.32	19.57	.963
50	127.4	4.19	30.22	.823
30	277.8	9.13	47.54	.594
10	935.4	30.76	85.43	.317

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 307 CFS





U.S.G.S. TOPO. SERIES
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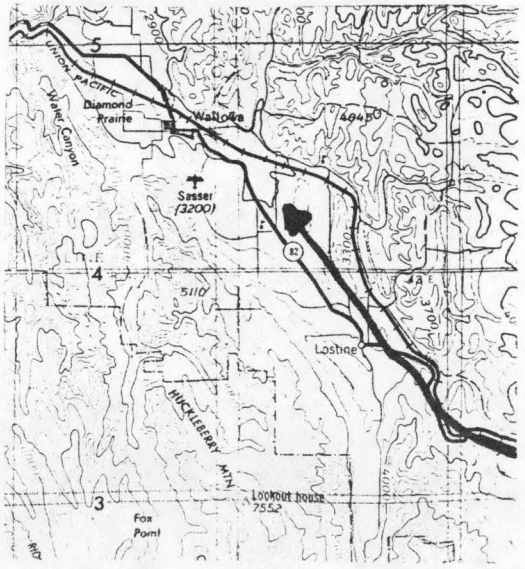
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0019

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.34, T1S, R44E
D.	Latitude, Longitude	45°26'N,117°20'W
E.	Stream Name	Wallowa River
F.	Major Basin Name	Grande Ronde
G.	River Mile	35.0 to 42.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

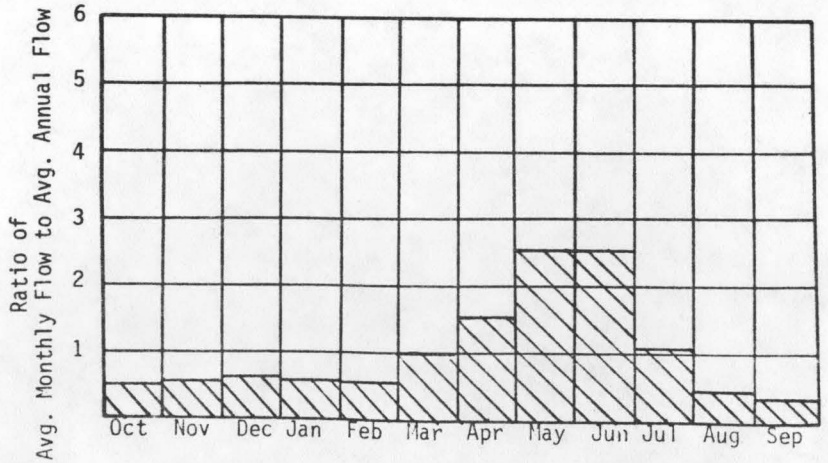
A.	Upstream Elevation of Reach	3714	Ft. MSL
B.	Downstream Elevation of Reach	3367	Ft. MSL
C.	Total Available Head in Reach	347	Ft.
D.	Average Slope in Reach	49.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	251.4	Sq.Mi.
F.	Inflow Classification	Regulated	

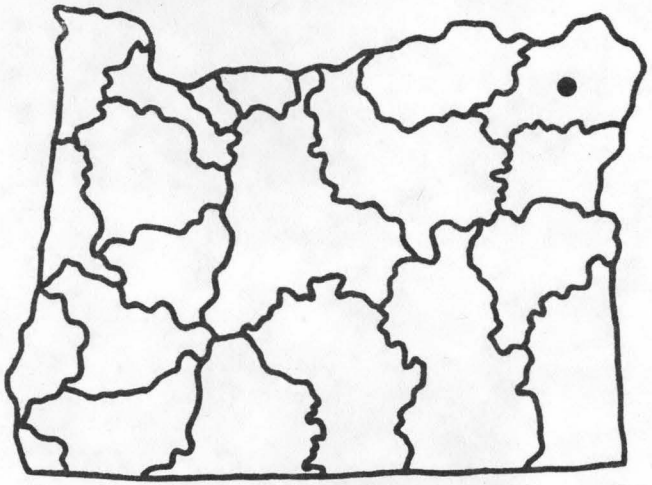
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	34.4	1.01	8.85	1.000
80	50.2	1.48	12.42	.961
50	91.1	2.68	19.27	.821
30	198.1	5.83	30.29	.594
10	673.3	19.80	54.78	.316

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 230 CFS





U.S.G.S. TOPO. SERIES
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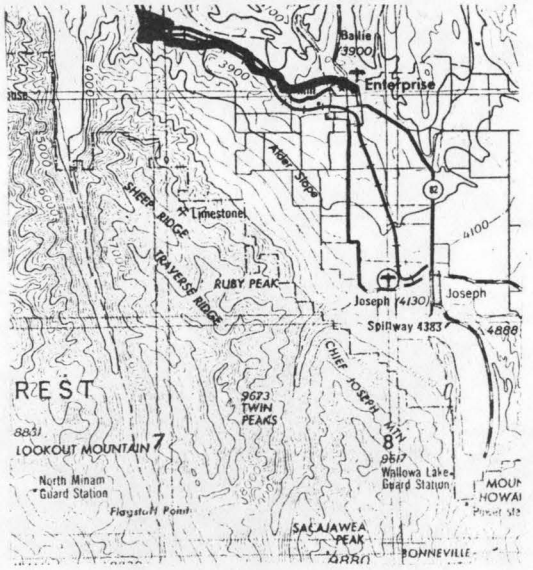
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-082-R0020

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.19, T2S, R45E
D.	Latitude, Longitude	45°22'N,117°14'W
E.	Stream Name	Wallowa River
F.	Major Basin Name	Grande Ronde
G.	River Mile	42.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

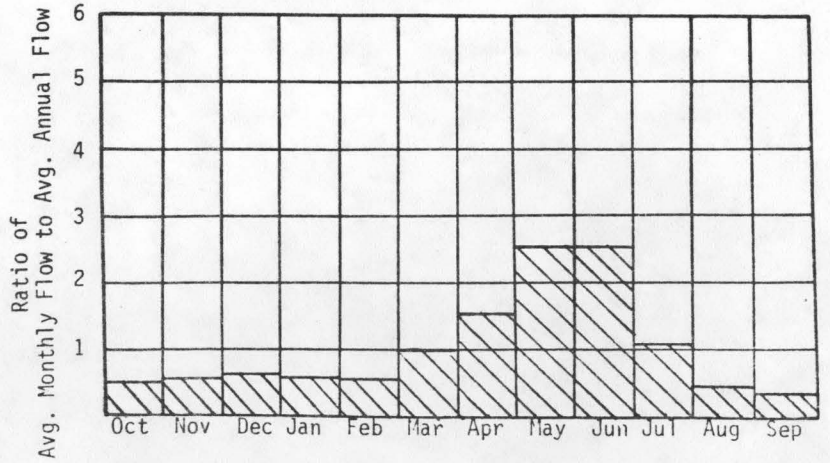
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	71.2	Sq.Mi.
F.	Inflow Classification	Regulated	

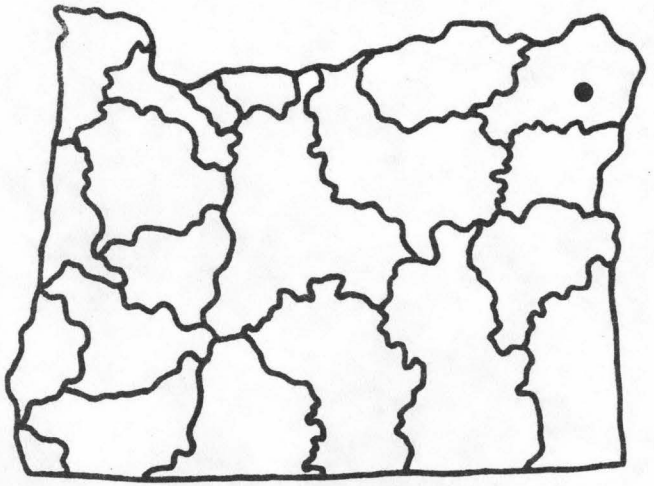
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	13.8	.08	.68	1.000
80	21.8	.12	1.02	.954
50	40.0	.22	1.60	.816
30	86.6	.48	2.51	.592
10	301.0	1.68	4.61	.313

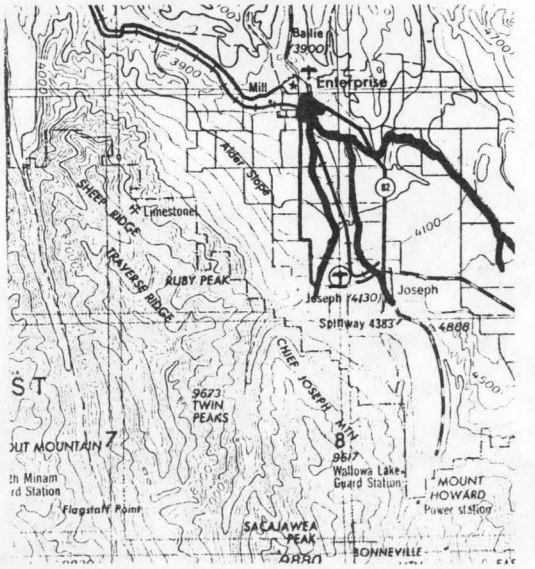
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 114 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0011

I. LOCATION

A. State	Oregon	
B. County	Union	
C. Township, Range	Sec.21, T3N, R40E	
D. Latitude, Longitude	45°43'N,117°49'W	
E. Stream Name	Grande Ronde River	
F. Major Basin Name	Grande Ronde	
G. River Mile	82.2 to 85.6	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

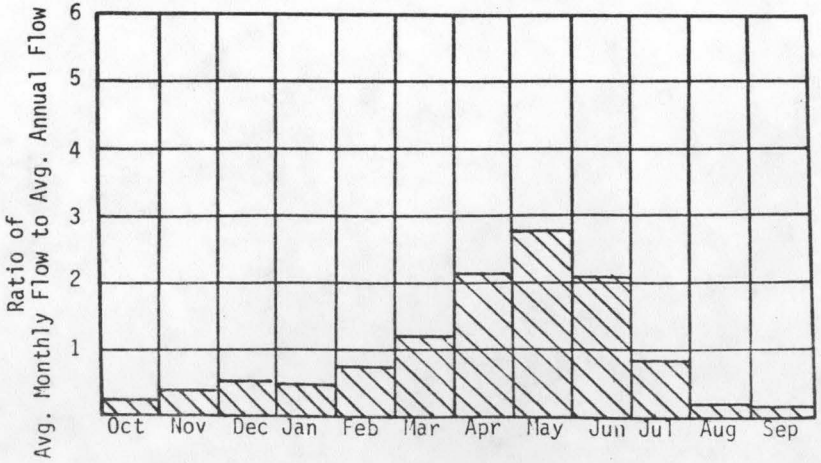
A. Upstream Elevation of Reach	2376	Ft. MSL
B. Downstream Elevation of Reach	2288	Ft. MSL
C. Total Available Head in Reach	88	Ft.
D. Average Slope in Reach	26	Ft./Mi.
E. Drainage Area above Reach Mouth	1605.3	Sq.Mi.
F. Inflow Classification	Natural	

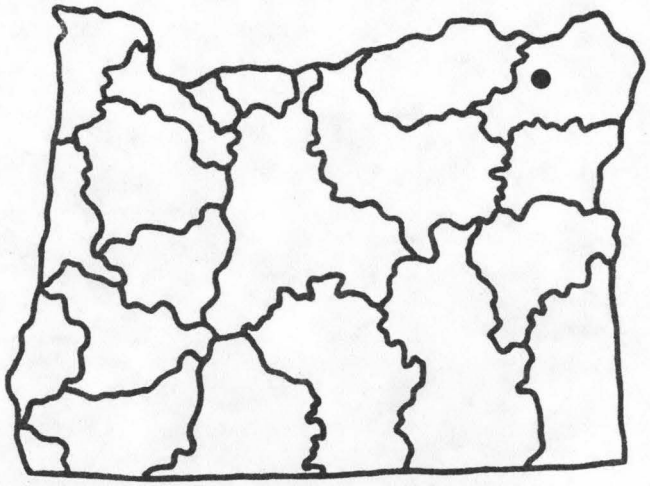
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	27.1	.20	1.77	1.000
80	65.9	.49	3.99	.926
50	273.0	2.04	12.78	.717
30	825.0	6.15	27.21	.505
10	2061.4	15.37	43.36	.322

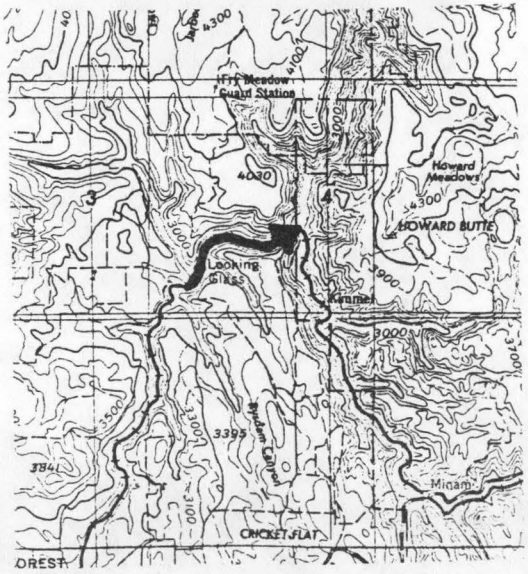
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 682 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-085-R0001

I. LOCATION

A. State	Oregon	
B. County	Union	
C. Township, Range	Sec.19, T3N, R40E	
D. Latitude, Longitude	45°42'N,117°49'W	
E. Stream Name	Looking Glass Creek	
F. Major Basin Name	Grande Ronde	
G. River Mile	0.0 to 2.3	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

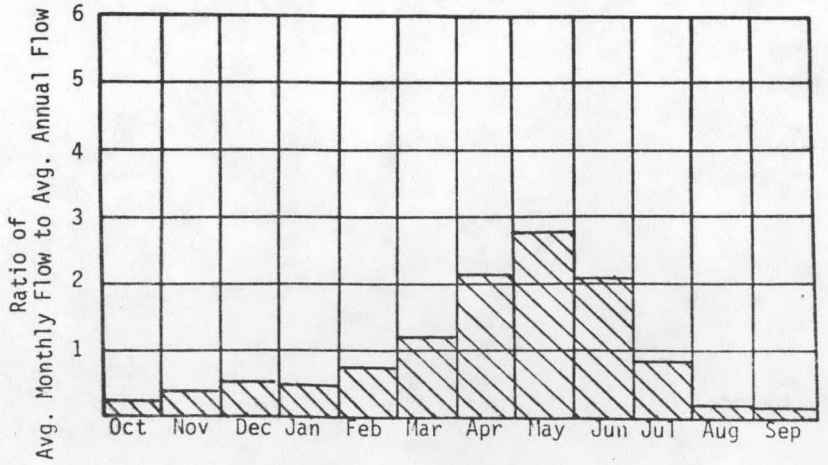
A. Upstream Elevation of Reach	2506	Ft. MSL
B. Downstream Elevation of Reach	2376	Ft. MSL
C. Total Available Head in Reach	130	Ft.
D. Average Slope in Reach	56	Ft./Mi.
E. Drainage Area above Reach Mouth	84.5	Sq.Mi.
F. Inflow Classification	Natural	

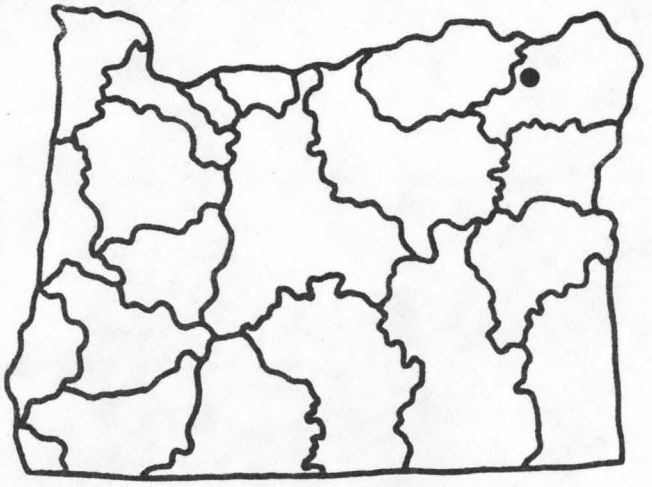
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	10.2	.11	.98	1.000
80	16.5	.18	1.52	.952
50	40.7	.45	3.03	.772
30	111.1	1.22	5.75	.537
10	396.7	4.37	11.26	.294

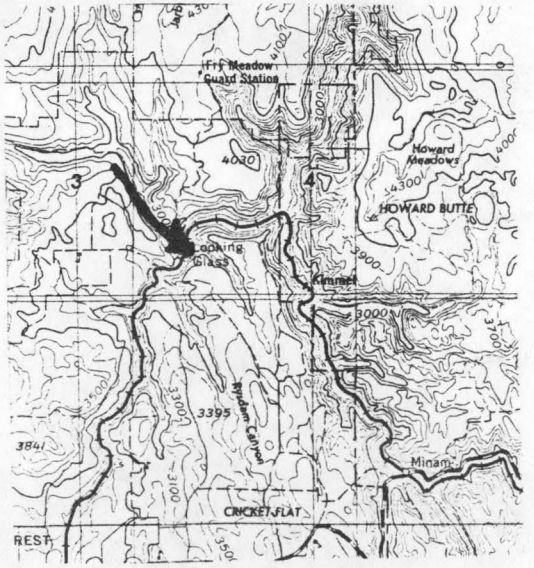
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 130 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-085-R0002

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.12, T3N, R39E
D.	Latitude, Longitude	45°45'N,117°51'W
E.	Stream Name	Looking Glass Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	2.3 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

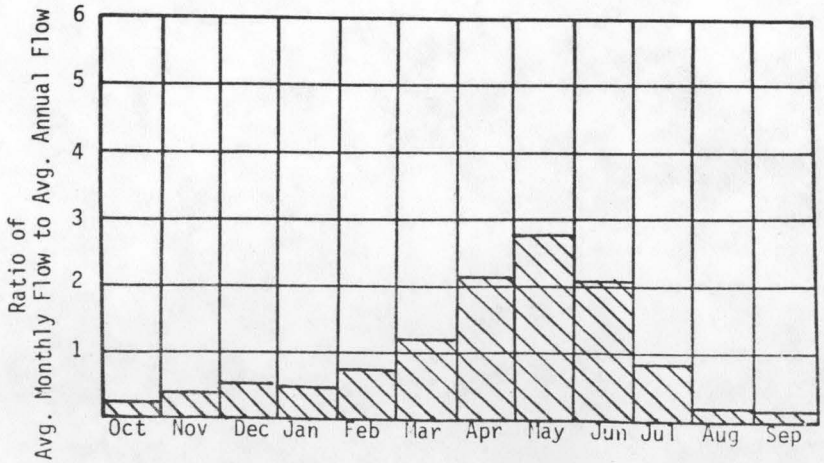
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	76.3	Sq.Mi.
F.	Inflow Classification	Natural	

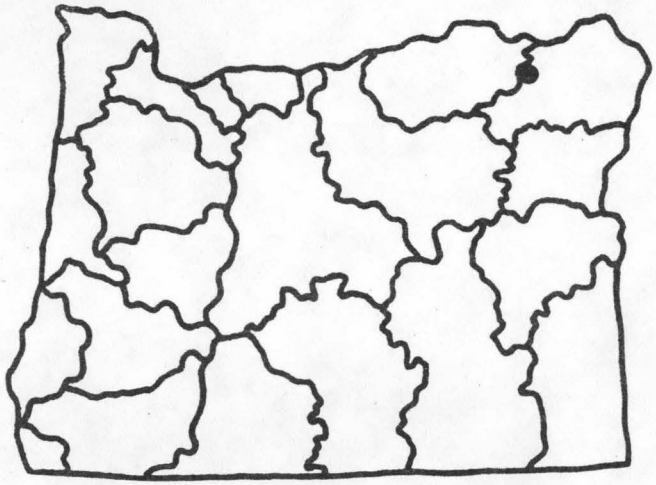
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	9.4	.05	.46	1.000
80	14.7	.08	.69	.954
50	34.8	.19	1.33	.779
30	94.2	.53	2.49	.540
10	346.6	1.94	4.97	.292

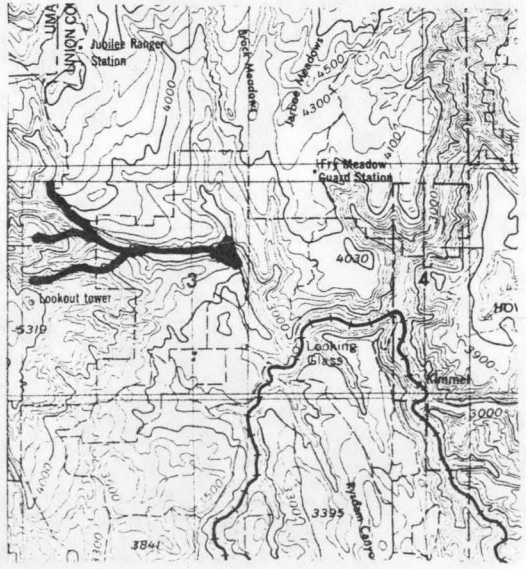
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 114 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0012

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.24, T2N, R39E
D.	Latitude, Longitude	45°38'N,117°53'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	85.6 to 99.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

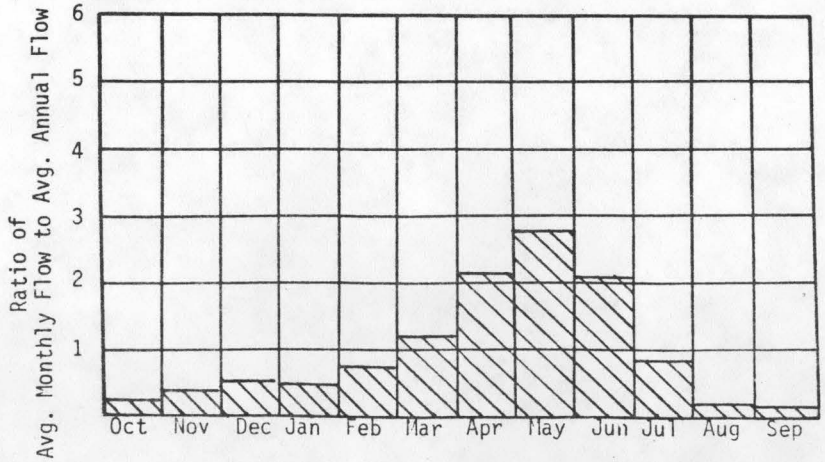
A.	Upstream Elevation of Reach	2642	Ft. MSL
B.	Downstream Elevation of Reach	2376	Ft. MSL
C.	Total Available Head in Reach	266	Ft.
D.	Average Slope in Reach	19.0	Ft./Mi.
E.	Drainage Area above Reach Mouth	1507.6	Sq.Mi.
F.	Inflow Classification	Natural	

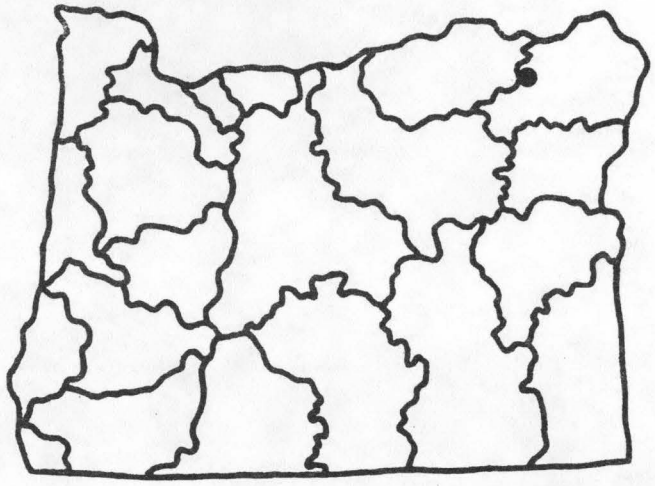
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	25.3	.57	5.00	1.000
80	60.0	1.35	10.99	.928
50	239.7	5.40	34.05	.719
30	719.2	16.21	71.93	.506
10	1841.6	41.51	116.26	.320

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 609 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0013

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.22, T1N, R39E
D.	Latitude, Longitude	45°32'N,117°45'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	99.6 to 102.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

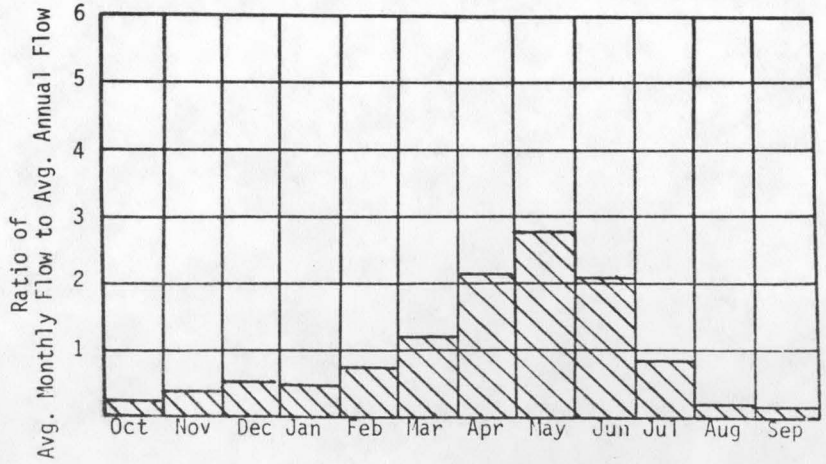
A.	Upstream Elevation of Reach	2652	Ft. MSL
B.	Downstream Elevation of Reach	2642	Ft. MSL
C.	Total Available Head in Reach	10	Ft.
D.	Average Slope in Reach	3.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	1296.9	Sq.Mi.
F.	Inflow Classification	Natural	

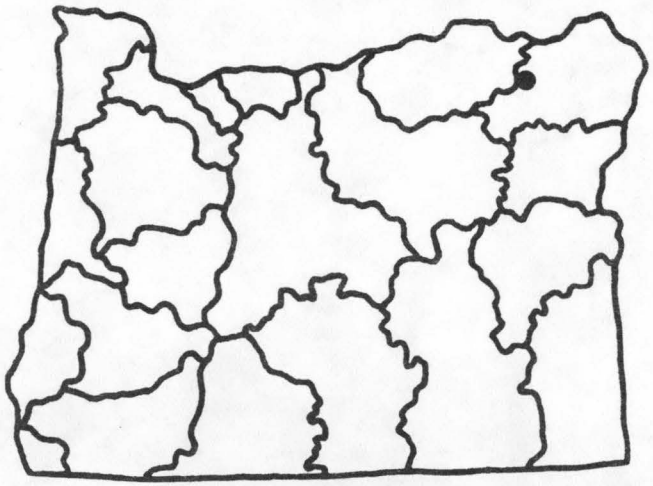
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	23.9	.02	.18	1.000
80	55.2	.05	.38	.929
50	214.1	.18	1.15	.722
30	638.4	.54	2.41	.508
10	1669.8	1.42	3.94	.318

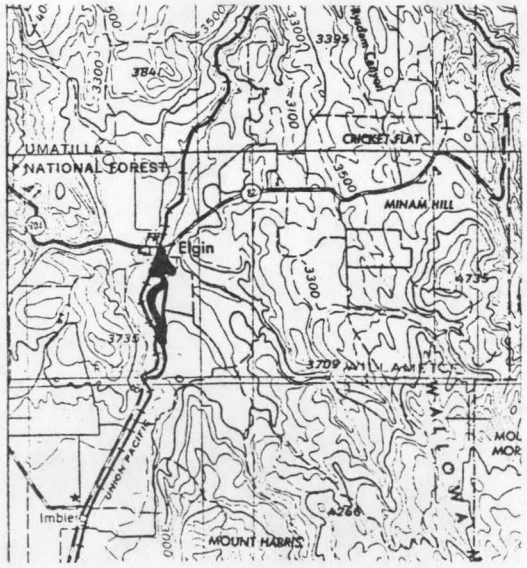
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 552 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0014

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.3, T1S, R39E
D.	Latitude, Longitude	45°30'N,117°45'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	102.3 to 106.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

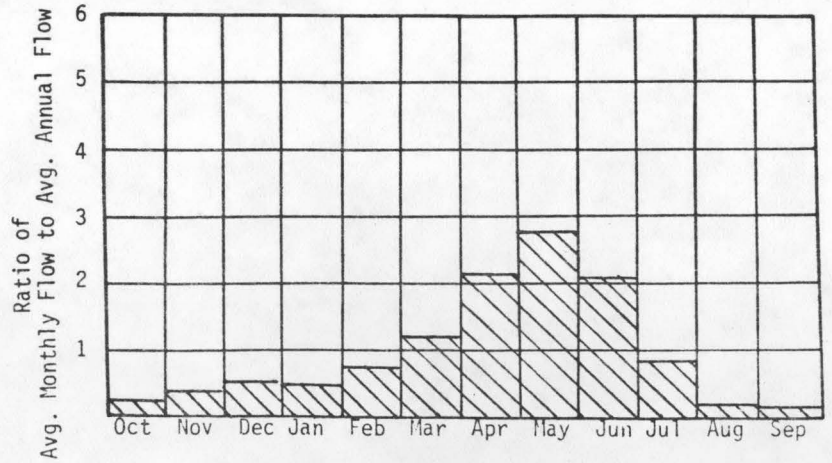
A.	Upstream Elevation of Reach	2676	Ft. MSL
B.	Downstream Elevation of Reach	2652	Ft. MSL
C.	Total Available Head in Reach	24	Ft.
D.	Average Slope in Reach	6	Ft./Mi.
E.	Drainage Area above Reach Mouth	1237.1	Sq.Mi.
F.	Inflow Classification	Natural	

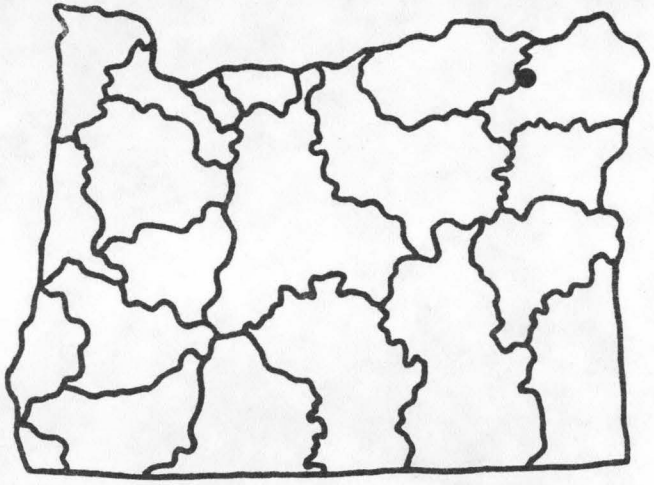
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	23.3	.05	.41	1.000
80	53.3	.11	.88	.930
50	204.0	.41	2.63	.723
30	606.9	1.23	5.50	.509
10	1601.7	3.26	9.04	.317

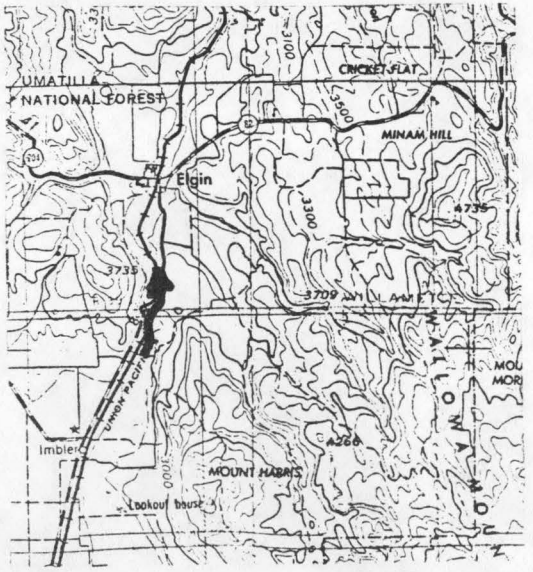
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 530 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0015

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.11, T2S, R39E
D.	Latitude, Longitude	45°23'N,117°55'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	106.4 to 140.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

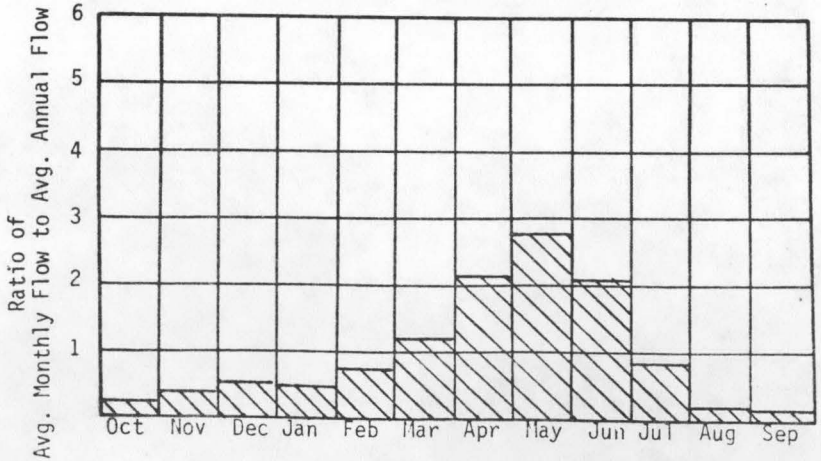
A.	Upstream Elevation of Reach	2690	Ft. MSL
B.	Downstream Elevation of Reach	2676	Ft. MSL
C.	Total Available Head in Reach	14	Ft.
D.	Average Slope in Reach	0.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	1151.8	Sq.Mi.
F.	Inflow Classification	Natural	

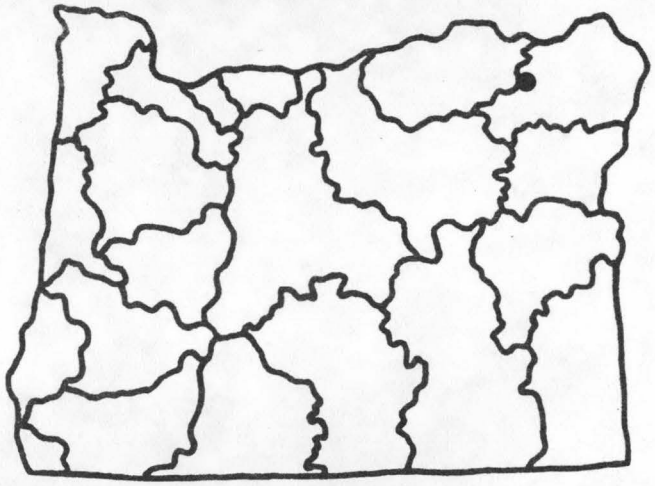
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	22.3	.03	.23	1.000
80	50.2	.06	.49	.931
50	187.6	.22	1.41	.725
30	555.4	.66	2.94	.510
10	1489.3	1.77	4.88	.316

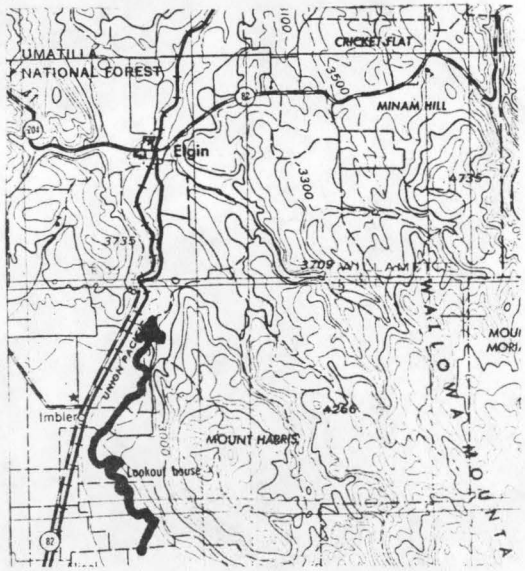
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 500 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-140-R0001

I. LOCATION

A. State	Oregon	
B. County	Union	
C. Township, Range	Sec.15, T3S, R39E	
D. Latitude, Longitude	45°18'N,117°55'W	
E. Stream Name	Catherine Creek	
F. Major Basin Name	Grande Ronde	
G. River Mile	0.0 to 13.6	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

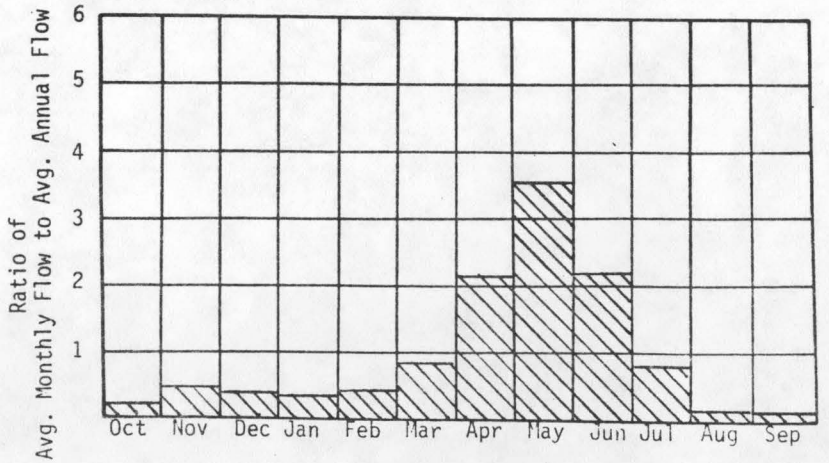
A. Upstream Elevation of Reach	2700	Ft. MSL
B. Downstream Elevation of Reach	2686	Ft. MSL
C. Total Available Head in Reach	14	Ft.
D. Average Slope in Reach	1	Ft./Mi.
E. Drainage Area above Reach Mouth	299.4	Sq.Mi.
F. Inflow Classification	Natural	

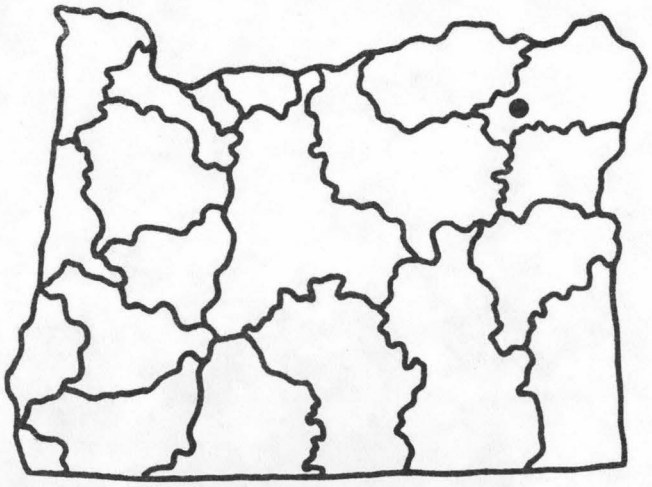
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	11.9	.01	.12	1.000
80	20.7	.02	.20	.947
50	55.4	.07	.44	.761
30	153.7	.18	.85	.530
10	518.2	.61	1.60	.298

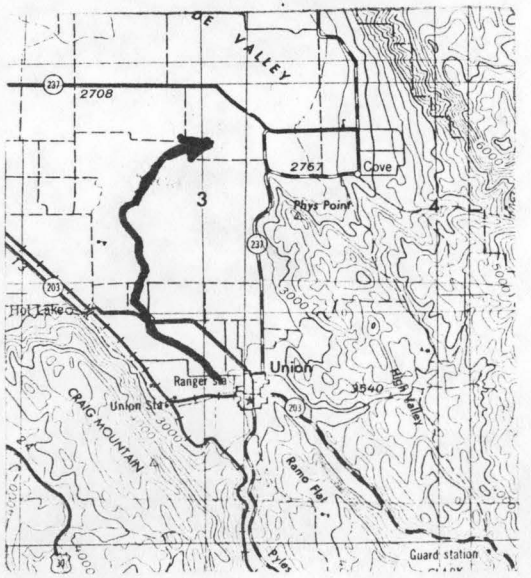
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 170 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-140-R0003

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.13, T4S, R39E
D.	Latitude, Longitude	43°12'N,117°53'W
E.	Stream Name	Catherine Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	13.6 to 20.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

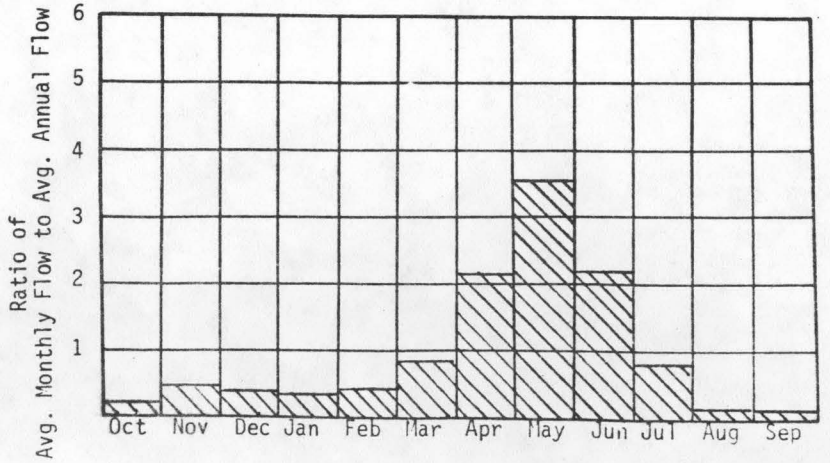
A.	Upstream Elevation of Reach	2749	Ft. MSL
B.	Downstream Elevation of Reach	2700	Ft. MSL
C.	Total Available Head in Reach	49	Ft.
D.	Average Slope in Reach	7.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	142.2	Sq.Mi.
F.	Inflow Classification	Natural	

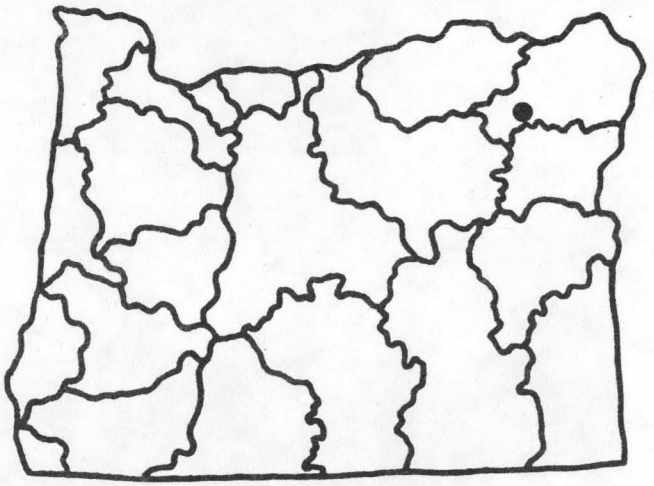
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	9.6	.04	.35	1.000
80	15.2	.06	.53	.954
50	36.3	.15	1.03	.777
30	98.4	.41	1.93	.539
10	359.3	1.49	3.83	.293

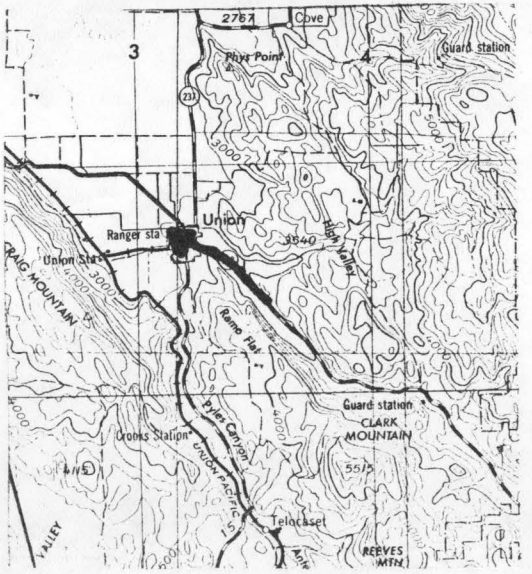
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 118 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-140-R0004

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.29, T4S, R40E
D.	Latitude, Longitude	45°11'N,117°50'W
E.	Stream Name	Catherine Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	20.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

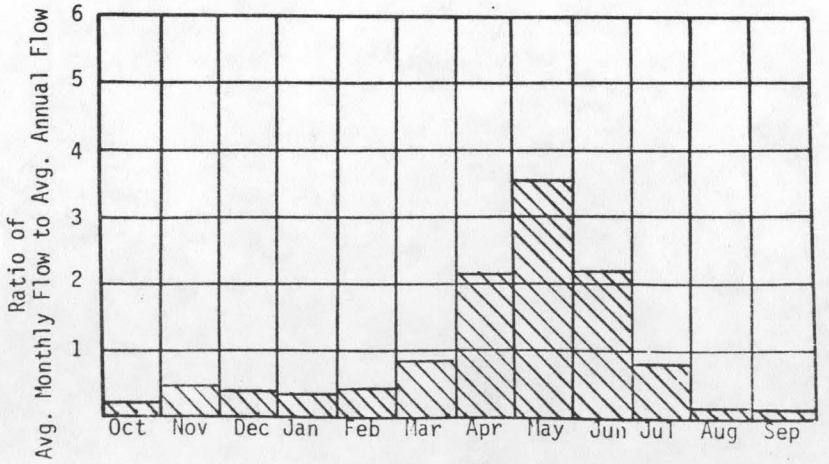
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	2749	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	108.2	Sq.Mi.
F.	Inflow Classification	Natural	

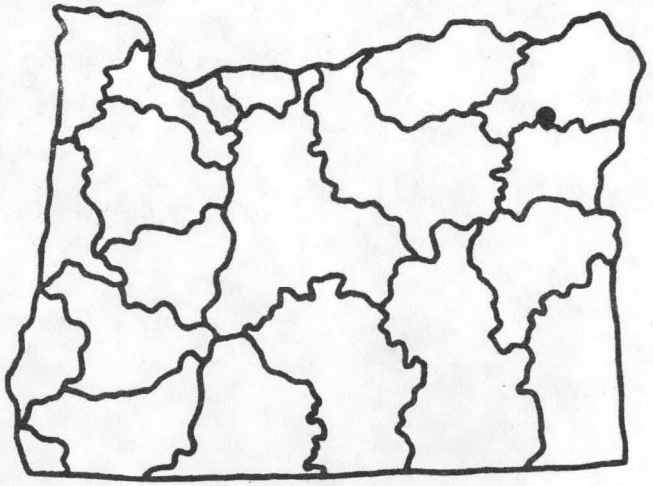
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	9.2	.05	.45	1.000
80	14.5	.08	.68	.955
50	33.9	.19	1.30	.780
30	91.6	.51	2.43	.541
10	338.7	1.89	4.85	.292

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 112 CFS





U.S.G.S. TOPO. SERIES
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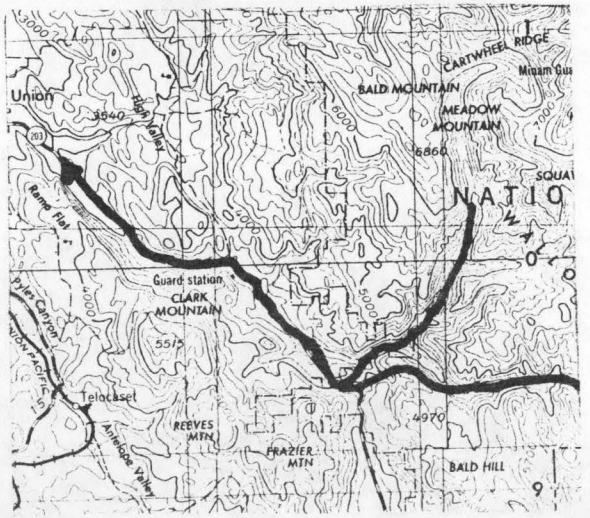
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0018

I. LOCATION

A. State	Oregon	
B. County	Union	
C. Township, Range	Sec.10, T3S, R39E	
D. Latitude, Longitude	45°19'N,117°56'W	
E. Stream Name	Grande Ronde River	
F. Major Basin Name	Grande Ronde	
G. River Mile	140.0 to 151.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

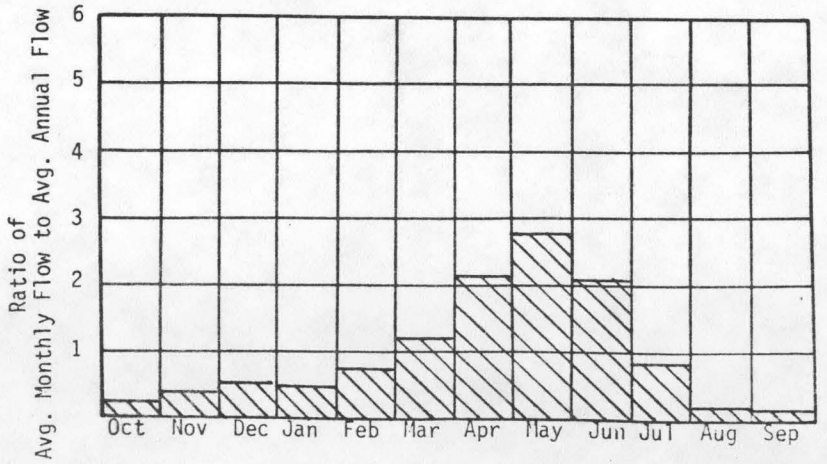
A. Upstream Elevation of Reach	2696	Ft. MSL
B. Downstream Elevation of Reach	2690	Ft. MSL
C. Total Available Head in Reach	6	Ft.
D. Average Slope in Reach	0.5	Ft./Mi.
E. Drainage Area above Reach Mouth	784.7	Sq.Mi.
F. Inflow Classification	Natural	

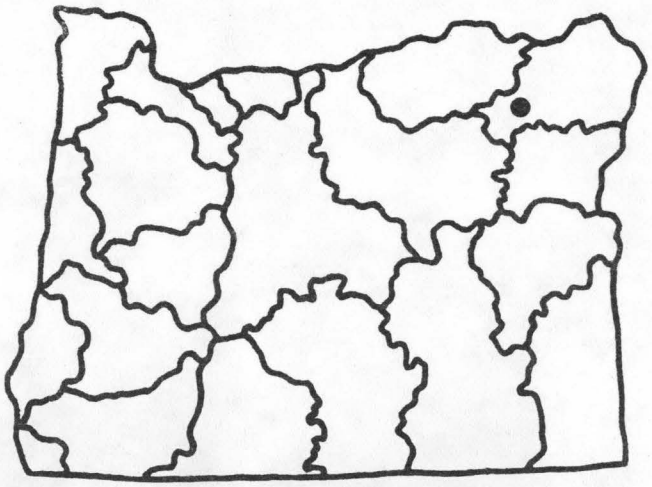
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.2	.01	.09	1.000
80	40.5	.02	.17	.934
50	139.6	.07	.46	.732
30	406.9	.21	.93	.514
10	1153.3	.59	1.60	.311

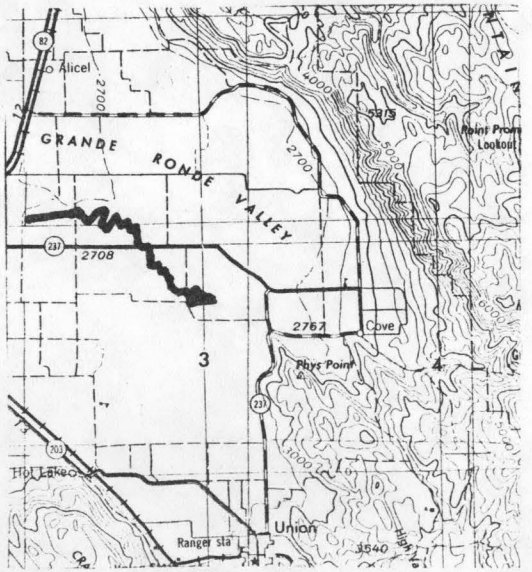
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 381 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0019

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.34, T2S, R38E
D.	Latitude, Longitude	45°20'N.118°02'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	151.0 to 160.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

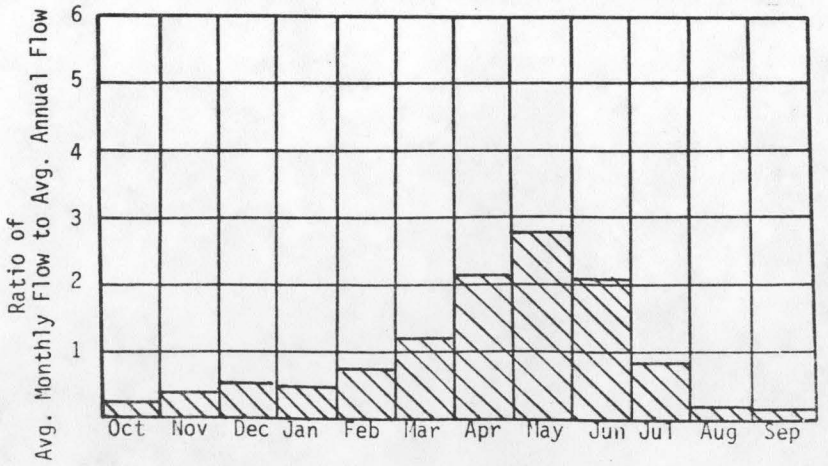
A.	Upstream Elevation of Reach	2741	Ft. MSL
B.	Downstream Elevation of Reach	2696	Ft. MSL
C.	Total Available Head in Reach	45	Ft.
D.	Average Slope in Reach	5.0	Ft./Mi.
E.	Drainage Area above Reach Mouth	770.2	Sq.Mi.
F.	Inflow Classification	Regulated	

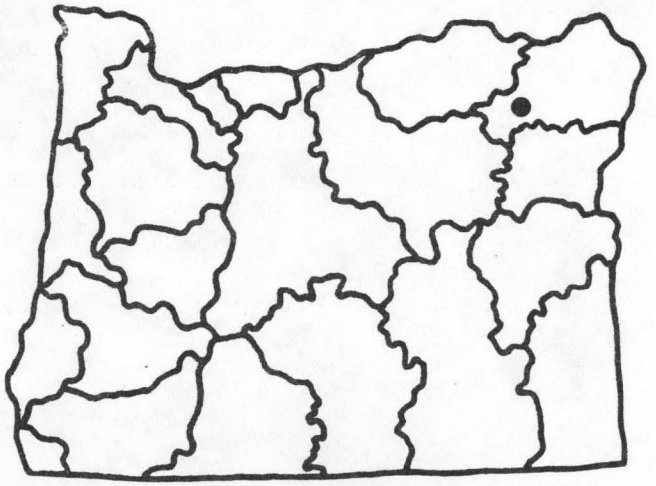
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	18.8	.07	.63	1.000
80	39.4	.15	1.23	.935
50	134.7	.51	3.30	.733
30	392.0	1.49	6.74	.515
10	1118.4	4.27	11.59	.310

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 370 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0020

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.32, T2S, R37E
D.	Latitude, Longitude	45°21'N,118°13'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	160.0 to 170.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

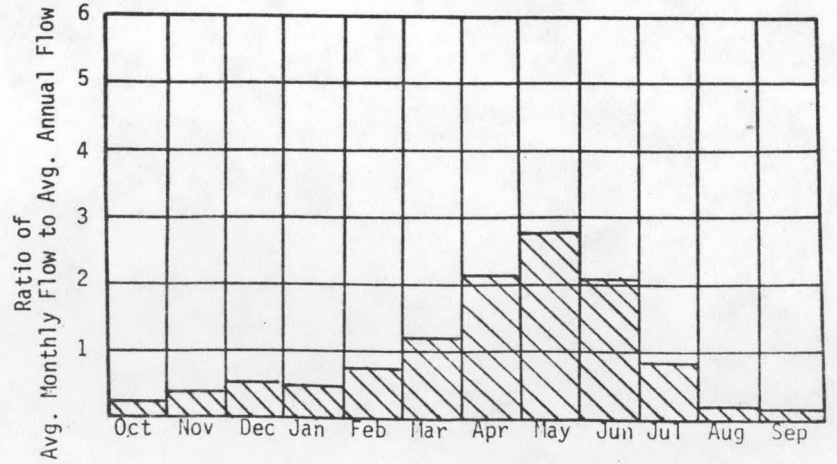
A.	Upstream Elevation of Reach	2892	Ft. MSL
B.	Downstream Elevation of Reach	2741	Ft. MSL
C.	Total Available Head in Reach	151	Ft.
D.	Average Slope in Reach	15.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	704.2	Sq.Mi.
F.	Inflow Classification	Regulated	

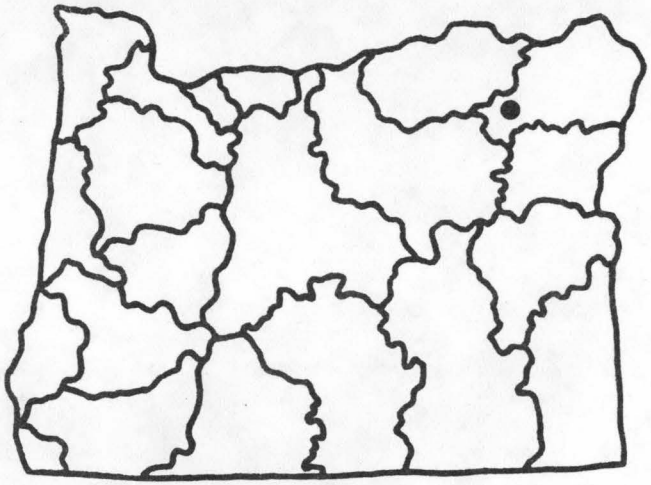
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	17.4	.22	1.95	1.000
80	35.3	.45	3.71	.937
50	115.9	1.48	9.58	.737
30	334.4	4.28	19.38	.517
10	981.5	12.56	33.88	.308

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 324 CFS





U.S.G.S. TOPO. SERIES
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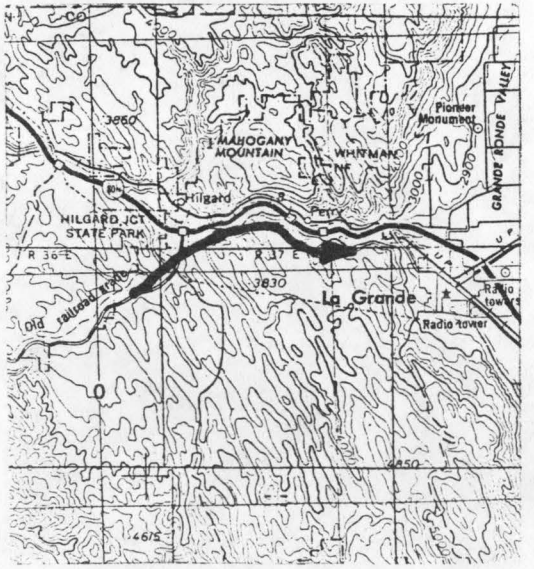
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0021

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.16, T3S, R36E
D.	Latitude, Longitude	45°17'N,118°18'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	170.0 to 178.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

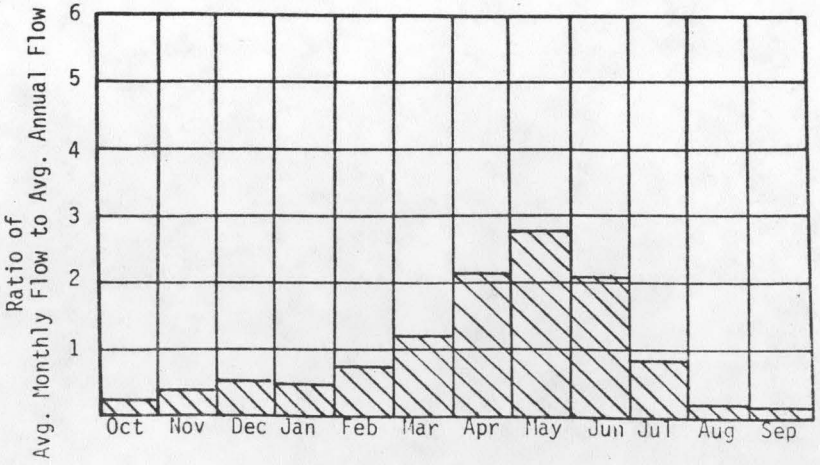
A.	Upstream Elevation of Reach	3173	Ft. MSL
B.	Downstream Elevation of Reach	2892	Ft. MSL
C.	Total Available Head in Reach	281	Ft.
D.	Average Slope in Reach	32.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	493.9	Sq.Mi.
F.	Inflow Classification	Regulated	

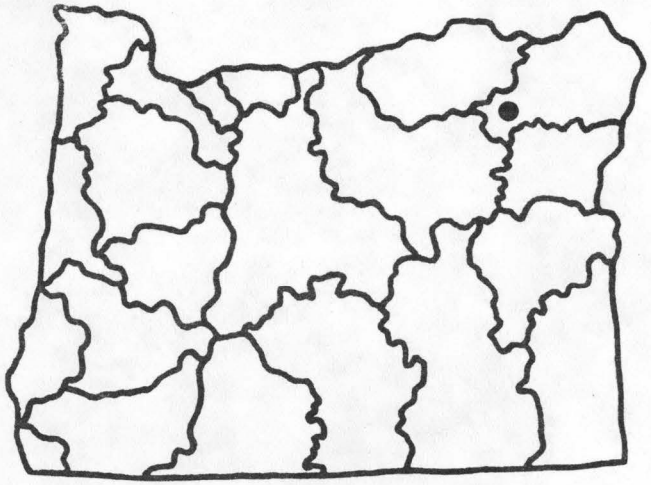
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	16.0	.38	3.33	1.000
80	31.3	.75	6.14	.939
50	98.2	2.34	15.20	.742
30	280.7	6.69	30.43	.520
10	850.1	20.24	54.19	.306

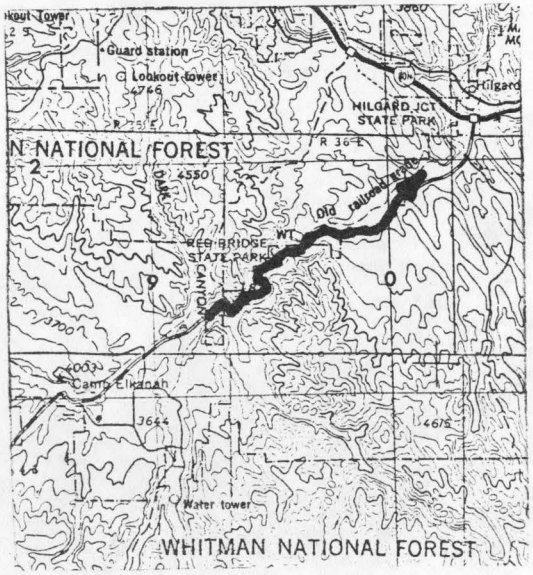
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 280 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0022

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.24, T3S, R35E
D.	Latitude, Longitude	43°16'N,118°23'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	178.7 to 180.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

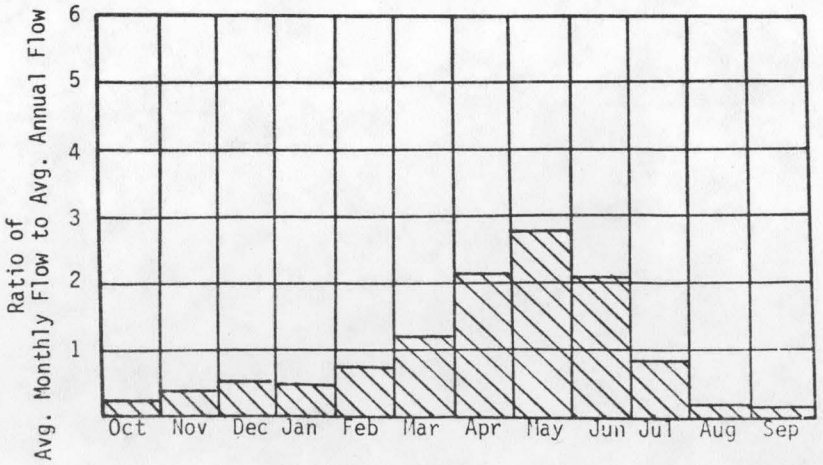
A.	Upstream Elevation of Reach	3200	Ft. MSL
B.	Downstream Elevation of Reach	3173	Ft. MSL
C.	Total Available Head in Reach	27	Ft.
D.	Average Slope in Reach	20.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	388.9	Sq.Mi.
F.	Inflow Classification	Natural	

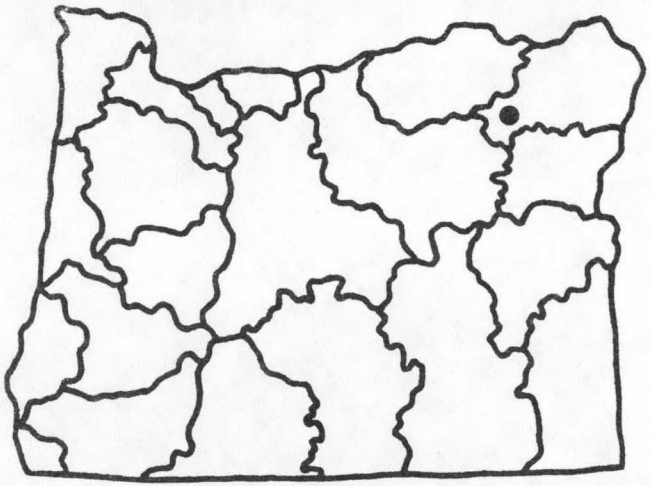
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.9	.03	.30	1.000
80	28.3	.06	.53	.941
50	85.5	.20	1.28	.746
30	242.8	.56	2.54	.522
10	754.5	1.73	4.59	.304

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 249 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-181-R0001

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.35, T3S, R35E
D.	Latitude, Longitude	45°16'N,118°15'W
E.	Stream Name	Meadow Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	0.0 to 2.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

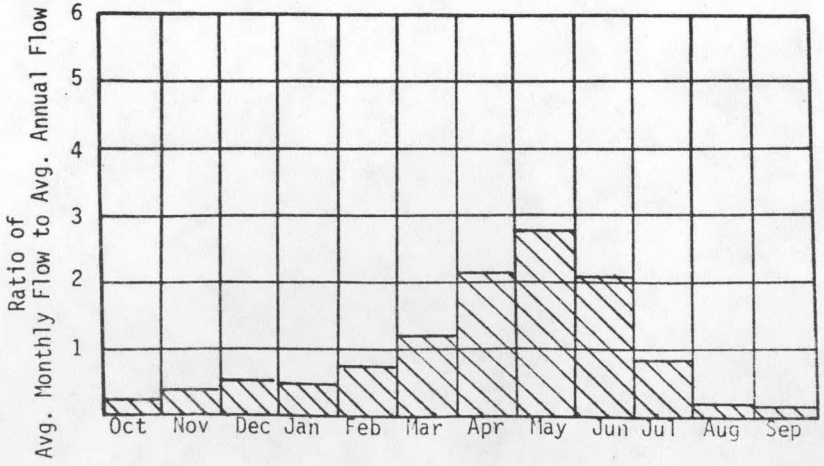
A.	Upstream Elevation of Reach	3280	Ft. MSL
B.	Downstream Elevation of Reach	3200	Ft. MSL
C.	Total Available Head in Reach	80	Ft.
D.	Average Slope in Reach	40	Ft./Mi.
E.	Drainage Area above Reach Mouth	177.5	Sq.Mi.
F.	Inflow Classification	Natural	

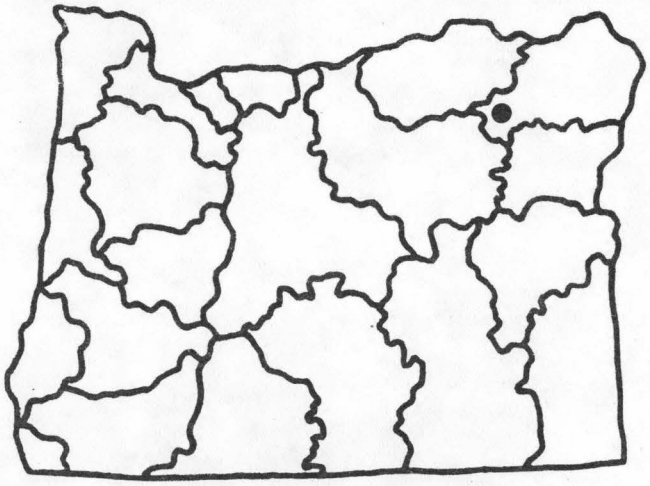
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	9.8	.07	.58	1.000
80	15.7	.11	.89	.953
50	38.1	.26	1.75	.775
30	103.5	.70	3.31	.538
10	374.3	2.54	6.52	.293

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 123 CFS





U.S.G.S. TOPO. SERIES
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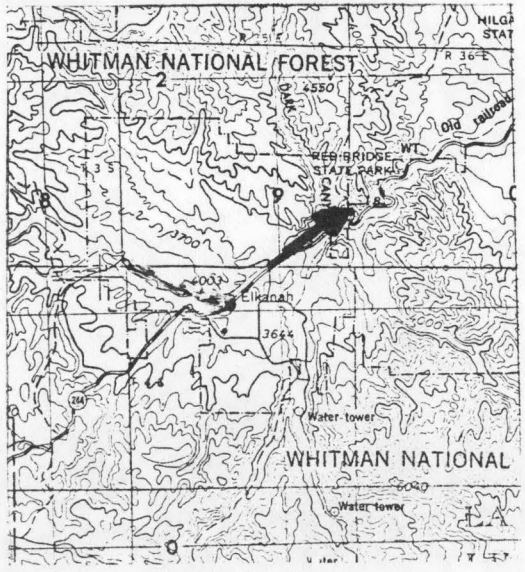
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-181-R0002

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.35, T3S, R35E
D.	Latitude, Longitude	45°15'N.118°15'W
E.	Stream Name	Meadow Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	2.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

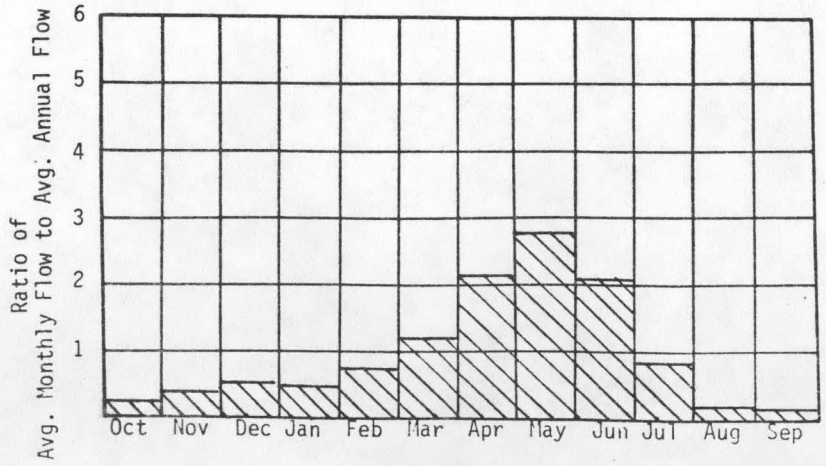
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	157.1	Sq.Mi.
F.	Inflow Classification	Natural	

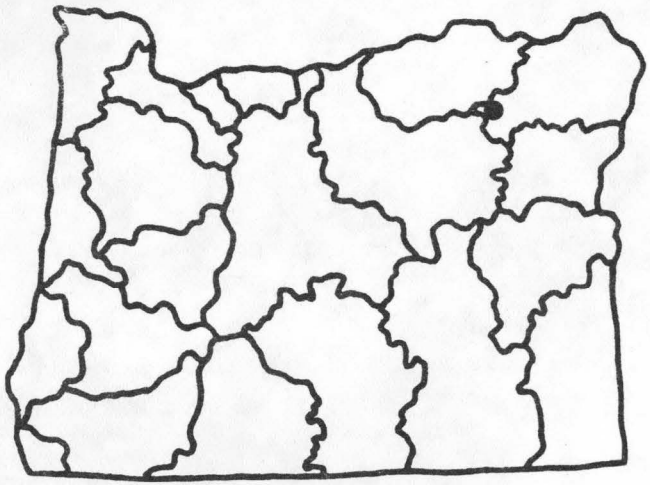
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	9.6	.05	.47	1.000
80	15.2	.08	.71	.954
50	36.3	.20	1.38	.777
30	98.4	.55	2.60	.539
10	359.2	2.01	5.16	.293

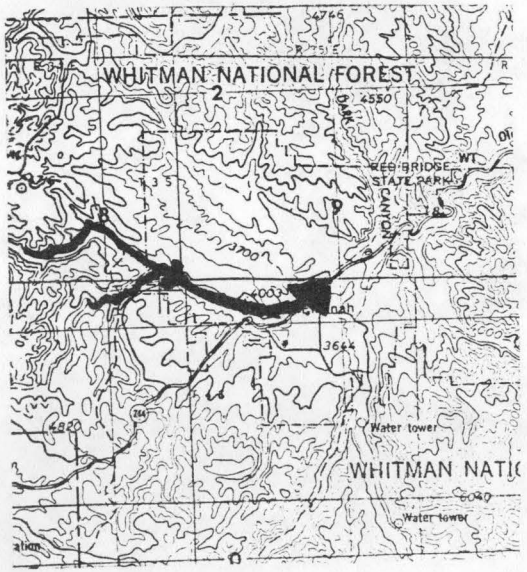
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 118 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0023

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.11, T4S, R35E
D.	Latitude, Longitude	45°14'N,118°24'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	180.0 to 184.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

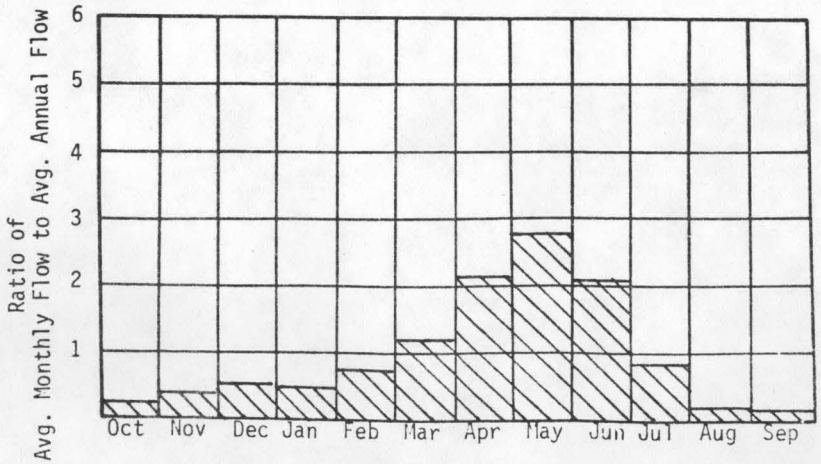
A.	Upstream Elevation of Reach	3470	Ft. MSL
B.	Downstream Elevation of Reach	3200	Ft. MSL
C.	Total Available Head in Reach	270	Ft.
D.	Average Slope in Reach	57.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	210.4	Sq.Mi.
F.	Inflow Classification	Natural	

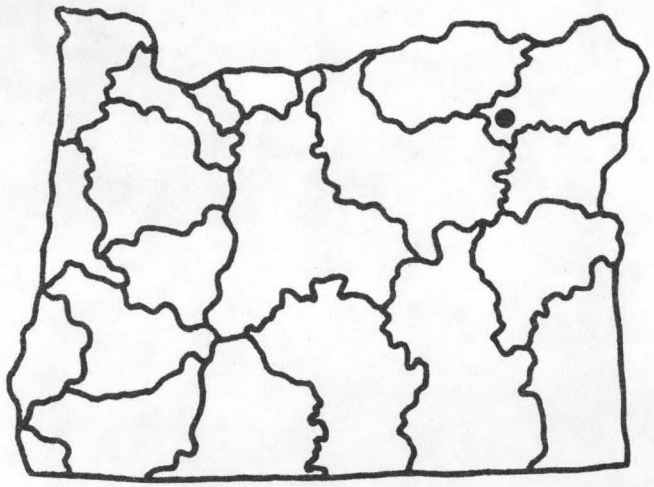
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	11.9	.27	2.39	1.000
80	20.8	.48	3.94	.947
50	55.8	1.28	8.50	.761
30	154.8	3.54	16.44	.530
10	521.2	11.93	31.13	.298

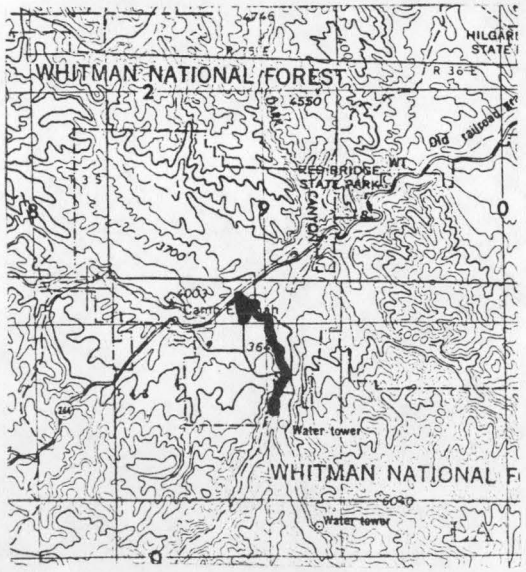
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 172 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0024

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.12, T5S, R35E
D.	Latitude, Longitude	45°09'N.118°22'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	184.7 to 194.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

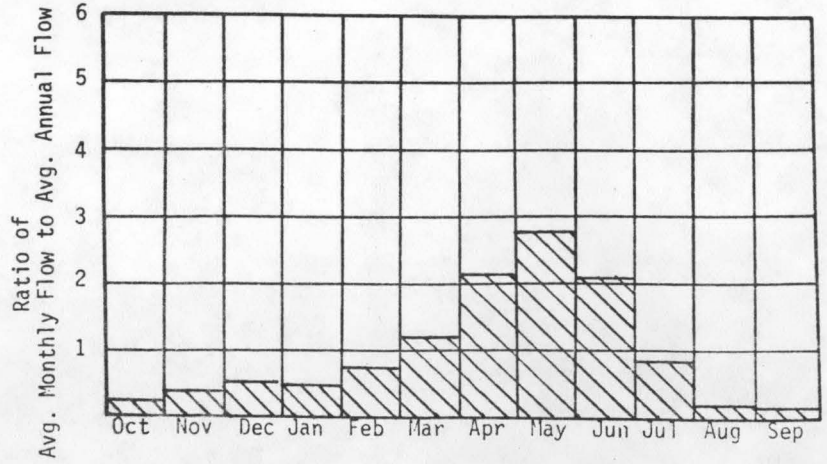
A.	Upstream Elevation of Reach	4090	Ft. MSL
B.	Downstream Elevation of Reach	3470	Ft. MSL
C.	Total Available Head in Reach	620	Ft.
D.	Average Slope in Reach	66.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	146.6	Sq.Mi.
F.	Inflow Classification	Natural	

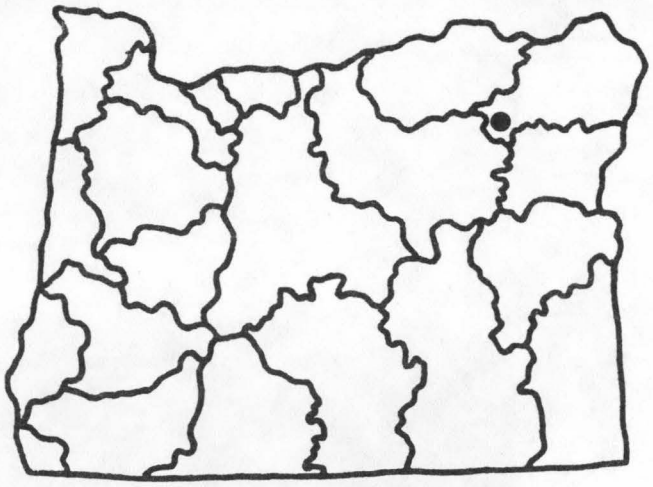
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	10.1	.53	4.64	1.000
80	16.4	.86	7.17	.952
50	40.2	2.11	14.29	.773
30	109.5	5.76	27.06	.537
10	392.2	20.61	53.09	.294

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 130 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-060-000-R0025

I. LOCATION

A.	State	Oregon
B.	County	Union
C.	Township, Range	Sec.25, T5S, R35E
D.	Latitude, Longitude	45°07'N,118°23'W
E.	Stream Name	Grande Ronde River
F.	Major Basin Name	Grande Ronde
G.	River Mile	194.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

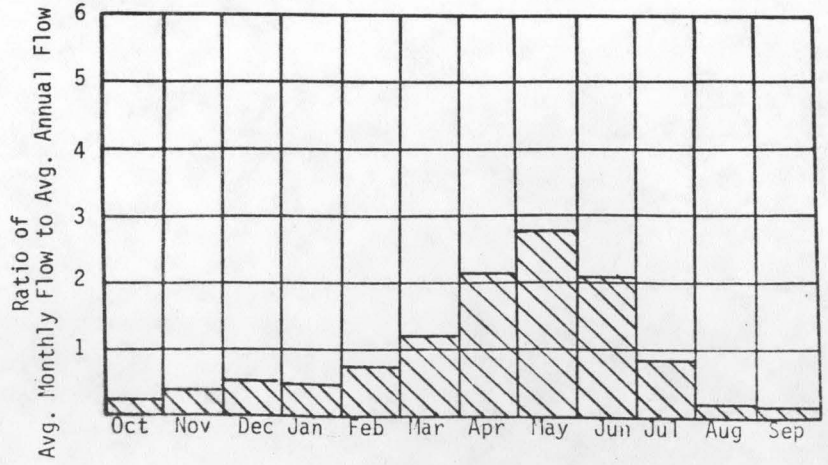
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	4090	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	124.2	Sq.Mi.
F.	Inflow Classification	Natural	

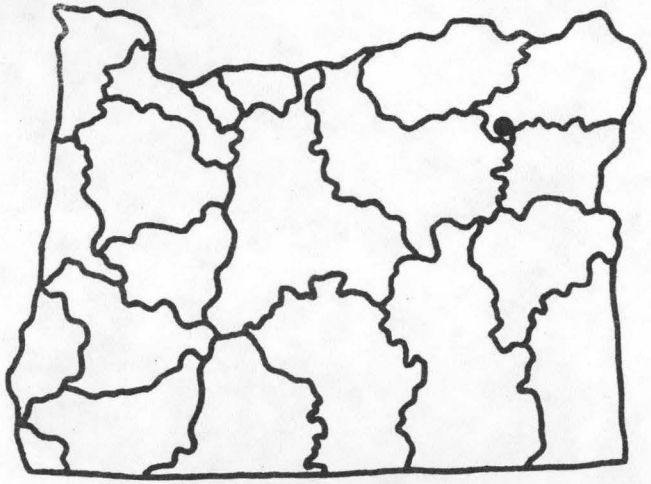
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	9.8	.05	.48	1.000
80	15.7	.09	.73	.953
50	37.8	.21	1.44	.775
30	102.8	.57	2.71	.538
10	372.2	2.08	5.35	.293

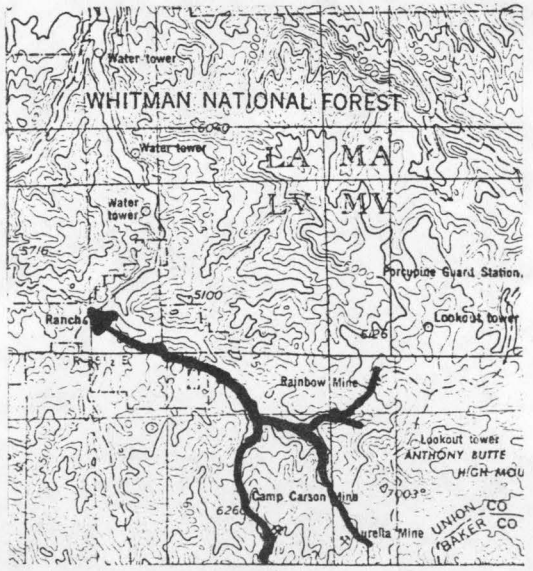
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 123 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: PENDLETON

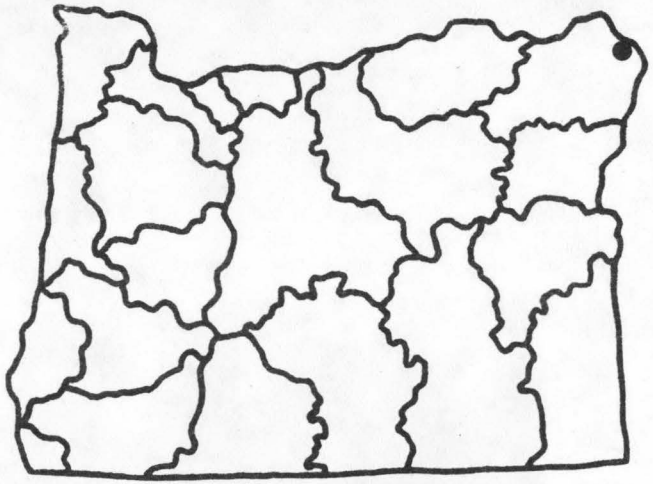


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.30, T4N, R49E
D.	Latitude, Longitude	45°47'N,116°44'W
E.	Stream Name	Imnaha River
F.	Major Basin Name	Grande Ronde
G.	River Mile	0.0 to 4.0



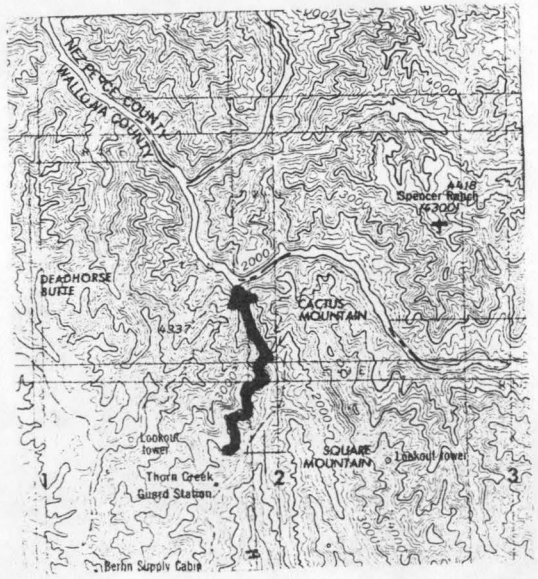
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	1150	Ft. MSL
B.	Downstream Elevation of Reach	945	Ft. MSL
C.	Total Available Head in Reach	205	Ft.
D.	Average Slope in Reach	51.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	850.9	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

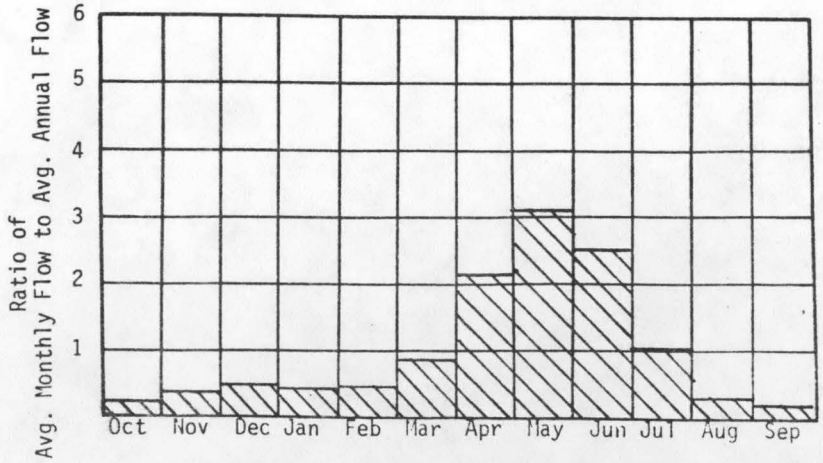
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	185.7	3.23	28.26	1.000
80	234.0	4.07	34.70	.974
50	416.1	7.23	52.71	.832
30	914.4	15.89	83.04	.597
10	2980.9	51.79	145.94	.322

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 848 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.7, T3N, R49E
D.	Latitude, Longitude	45°45'N,116°44'W
E.	Stream Name	Imnaha River
F.	Major Basin Name	Grande Ronde
G.	River Mile	4.0 to 5.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

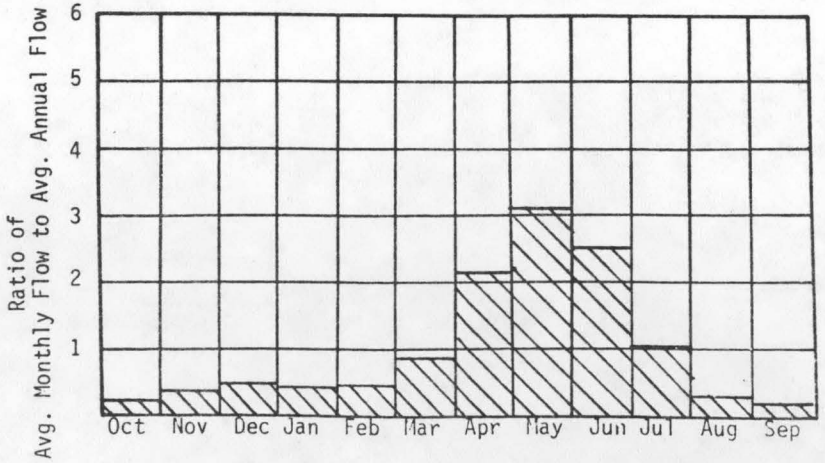
A.	Upstream Elevation of Reach	1211	Ft. MSL
B.	Downstream Elevation of Reach	1150	Ft. MSL
C.	Total Available Head in Reach	61	Ft.
D.	Average Slope in Reach	50.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	803	Sq.Mi.
F.	Inflow Classification	Natural	

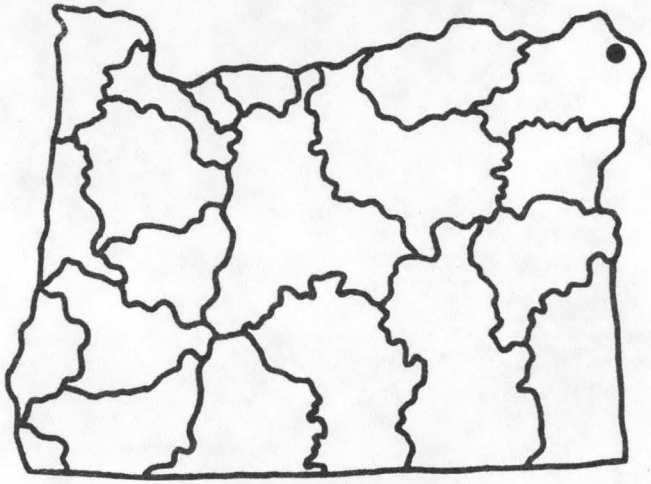
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	168.0	.87	7.61	1.000
80	213.6	1.10	9.42	.973
50	380.2	1.97	14.32	.832
30	835.1	4.32	22.56	.597
10	2729.2	14.11	39.71	.321

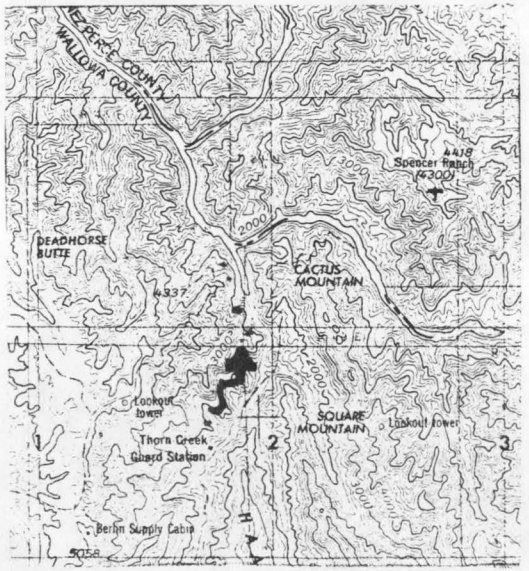
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 784 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-000-R0003

I. LOCATION

A. State	Oregon	
B. County	Wallowa	
C. Township, Range	Sec.23, T3N, R48E	
D. Latitude, Longitude	45°43'N,116°46'W	
E. Stream Name	Imnaha River	
F. Major Basin Name	Grande Ronde	
G. River Mile	5.2 to 11.3	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

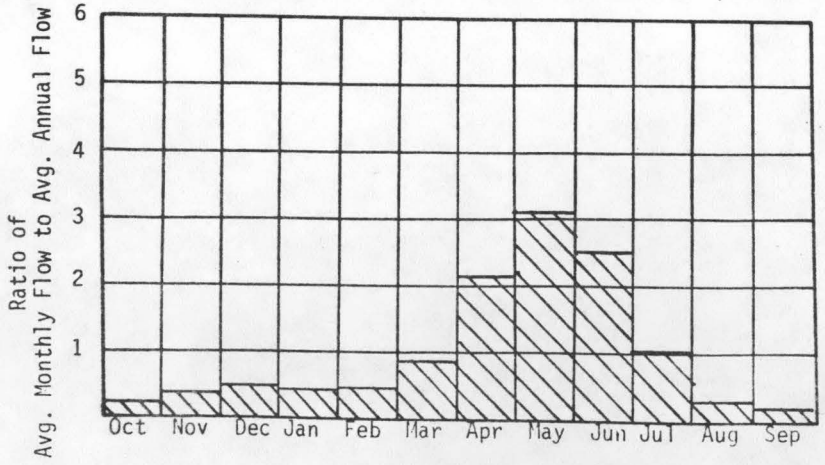
A. Upstream Elevation of Reach	1523	Ft. MSL
B. Downstream Elevation of Reach	1211	Ft. MSL
C. Total Available Head in Reach	312	Ft.
D. Average Slope in Reach	51.2	Ft./Mi.
E. Drainage Area above Reach Mouth	741.2	Sq.Mi.
F. Inflow Classification	Natural	

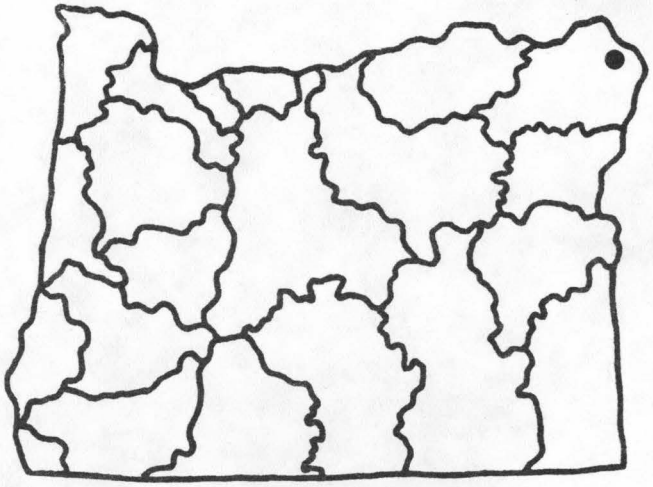
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	152.1	4.02	35.23	1.000
80	195.1	5.16	43.94	.972
50	347.6	9.19	66.91	.831
30	763.1	20.18	105.40	.596
10	2499.9	66.10	185.85	.321

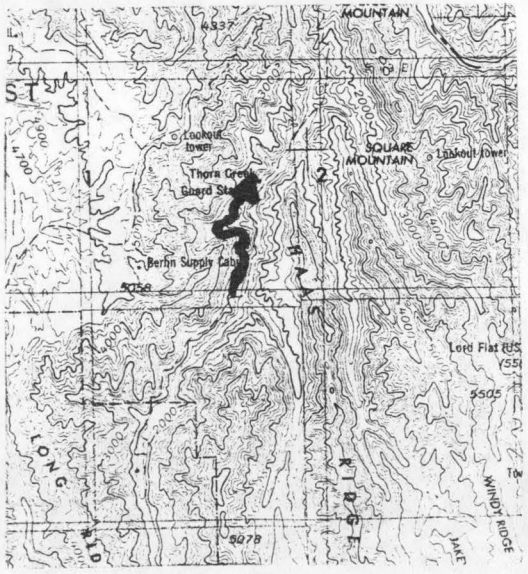
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 726 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE

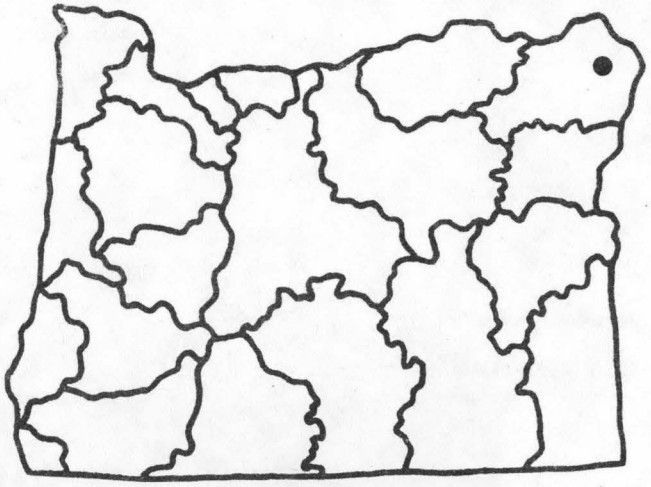


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-000-R0004

I. LOCATION

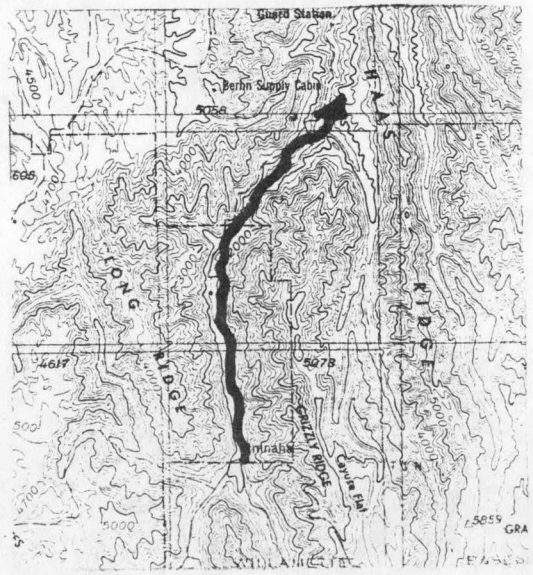
A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.29, T2N, R48E
D.	Latitude, Longitude	45°37'N,116°51'W
E.	Stream Name	Imnaha River
F.	Major Basin Name	Grande Ronde
G.	River Mile	11.3 to 23.0



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	1955	Ft. MSL
B.	Downstream Elevation of Reach	1523	Ft. MSL
C.	Total Available Head in Reach	432	Ft.
D.	Average Slope in Reach	36.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	660.2	Sq.Mi.
F.	Inflow Classification	Natural	

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE

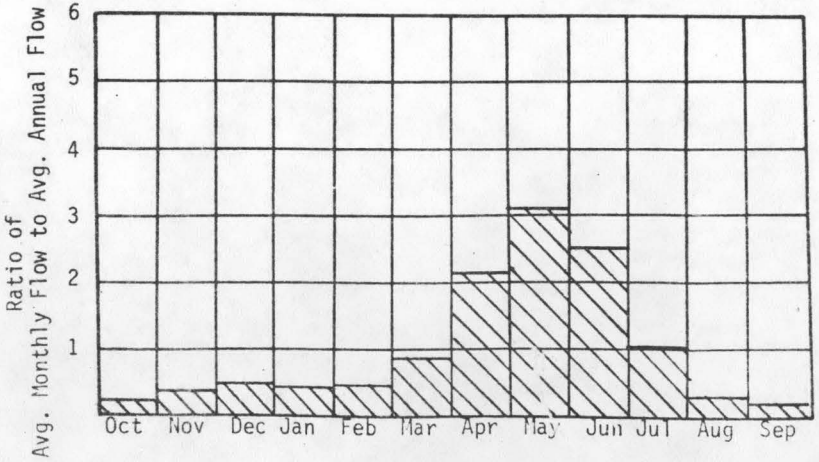


III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	140.0	5.13	44.90	1.000
80	180.9	6.62	56.37	.972
50	322.7	11.81	85.92	.830
30	707.9	25.91	135.34	.596
10	2323.8	85.07	238.98	.321

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 681 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-023-R0001

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.29, T1N, R48E
D.	Latitude, Longitude	45°32'N,116°32'W
E.	Stream Name	Big Sheep Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	0.0 to 3.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

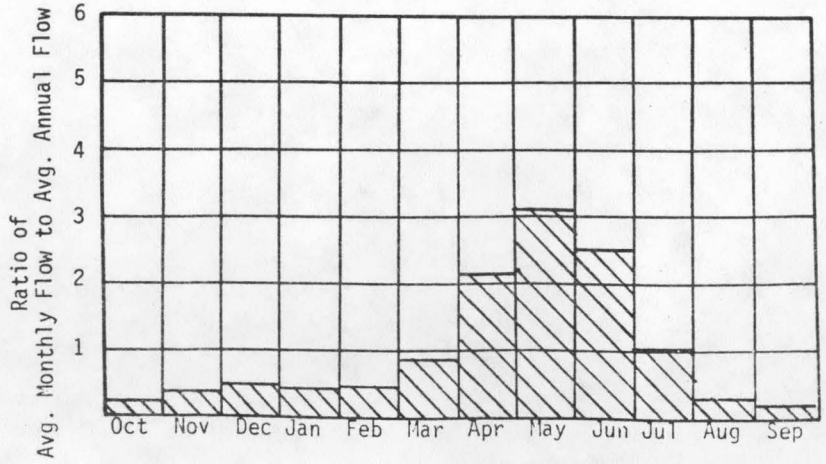
A.	Upstream Elevation of Reach	2191	Ft. MSL
B.	Downstream Elevation of Reach	1955	Ft. MSL
C.	Total Available Head in Reach	236	Ft.
D.	Average Slope in Reach	67.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	338.2	Sq.Mi.
F.	Inflow Classification	Natural	

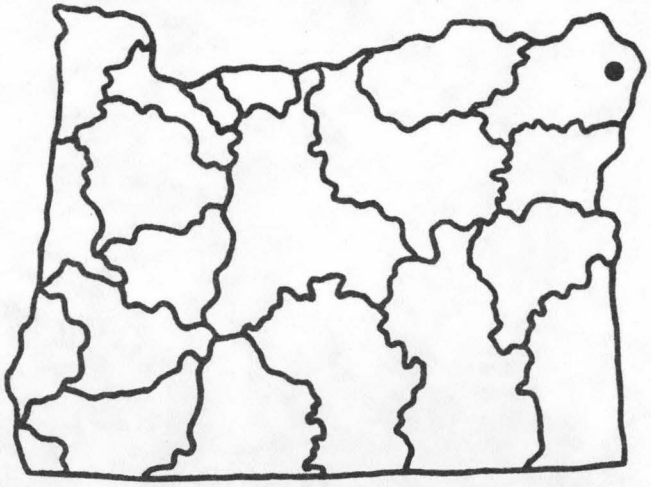
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	46.8	.94	8.20	1.000
80	66.5	1.33	11.22	.963
50	120.3	2.41	17.34	.823
30	262.0	5.24	27.28	.594
10	883.8	17.68	49.06	.317

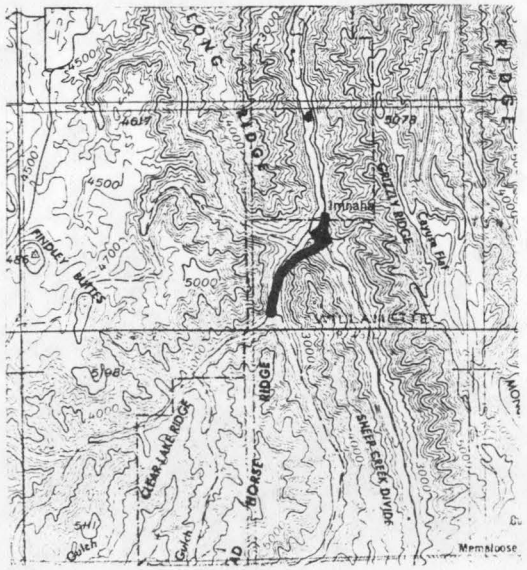
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 292 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-023-R0002

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.11, T1S, R47E
D.	Latitude, Longitude	45°29'N,116°43'W
E.	Stream Name	Little Sheep Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

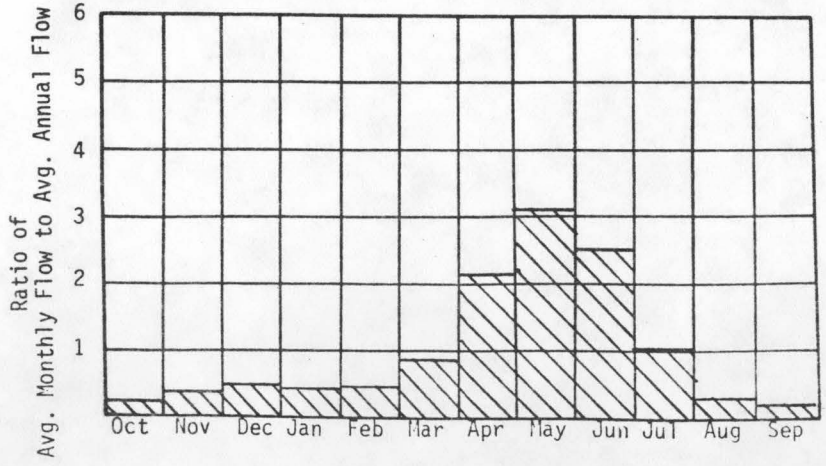
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	151	Sq.Mi.
F.	Inflow Classification	Natural	

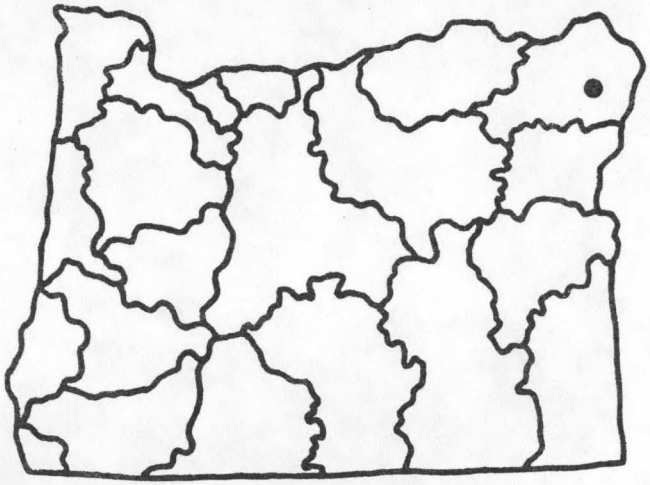
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	16.8	.09	.82	1.000
80	26.1	.15	1.22	.955
50	47.8	.27	1.91	.817
30	103.5	.58	3.00	.592
10	357.9	2.00	5.50	.313

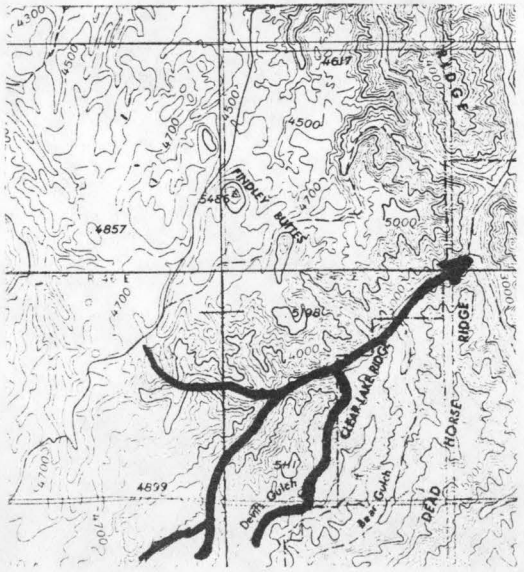
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 132 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-023-R0004

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.21, T1S, R48E
D.	Latitude, Longitude	45°27'N,116°48'W
E.	Stream Name	Big Sheep Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	3.5 to 13.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

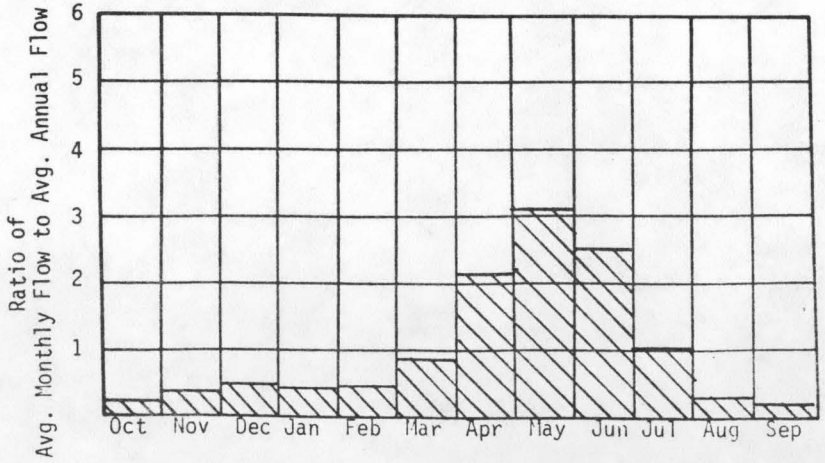
A.	Upstream Elevation of Reach	2986	Ft. MSL
B.	Downstream Elevation of Reach	2191	Ft. MSL
C.	Total Available Head in Reach	795	Ft.
D.	Average Slope in Reach	83.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	135.1	Sq.Mi.
F.	Inflow Classification	Natural	

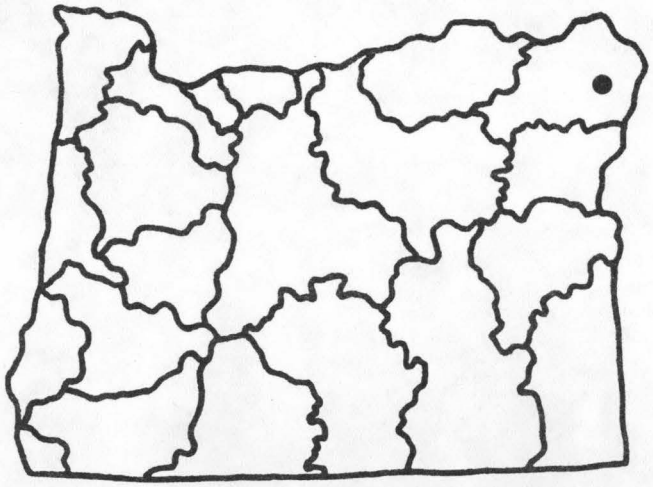
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.1	1.29	11.28	1.000
80	29.4	1.98	16.58	.956
50	53.7	3.62	25.92	.818
30	116.4	7.84	40.72	.593
10	401.5	27.05	74.37	.314

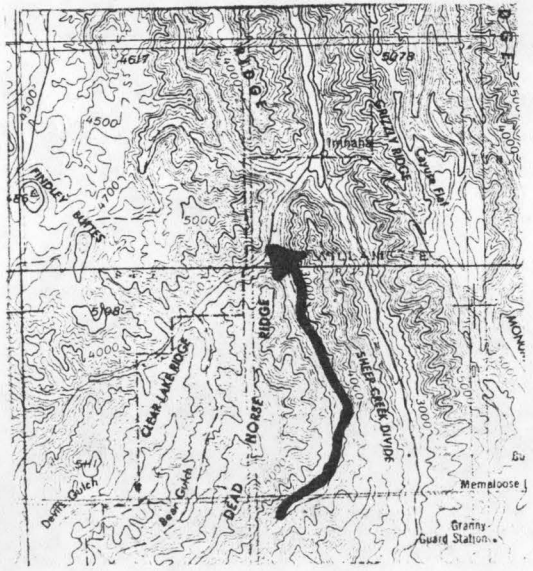
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 146 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-023-R0005

I. LOCATION

A. State	Oregon	
B. County	Wallowa	
C. Township, Range	Sec.23, T2S, R47E	
D. Latitude, Longitude	45°17'N,116°55'W	
E. Stream Name	Big Sheep Creek	
F. Major Basin Name	Grande Ronde	
G. River Mile	13.0 to 21.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

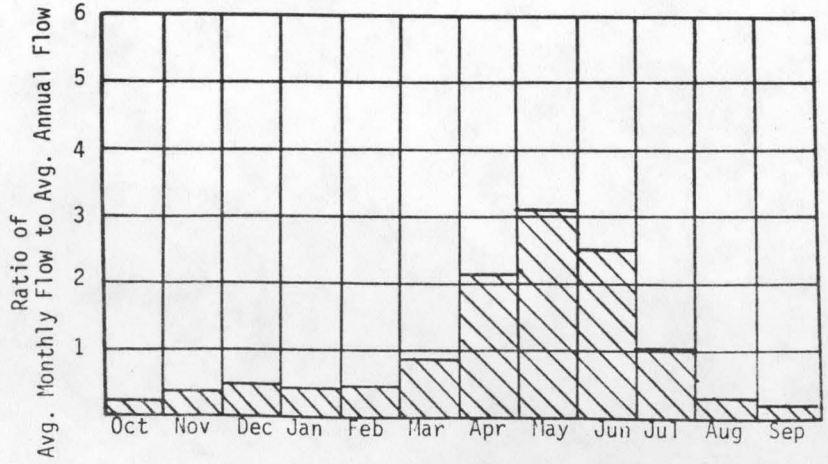
A. Upstream Elevation of Reach	3623	Ft. MSL
B. Downstream Elevation of Reach	2986	Ft. MSL
C. Total Available Head in Reach	637	Ft.
D. Average Slope in Reach	79.6	Ft./Mi.
E. Drainage Area above Reach Mouth	114.1	Sq.Mi.
F. Inflow Classification	Natural	

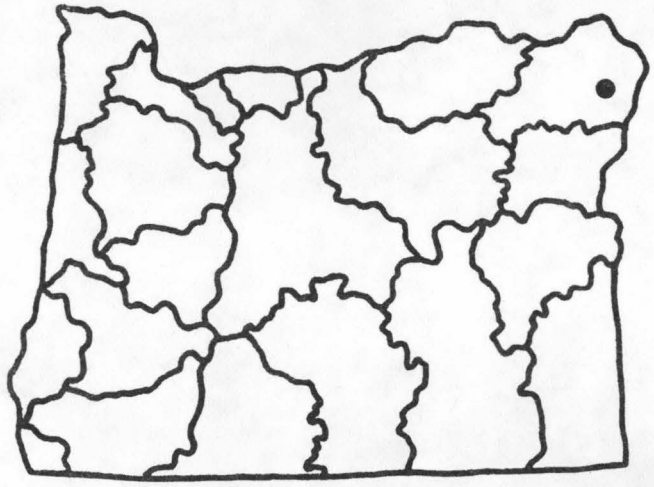
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.8	.80	7.01	1.000
80	23.3	1.26	10.52	.955
50	42.7	2.31	16.49	.816
30	92.5	4.99	25.90	.592
10	320.9	17.32	47.50	.313

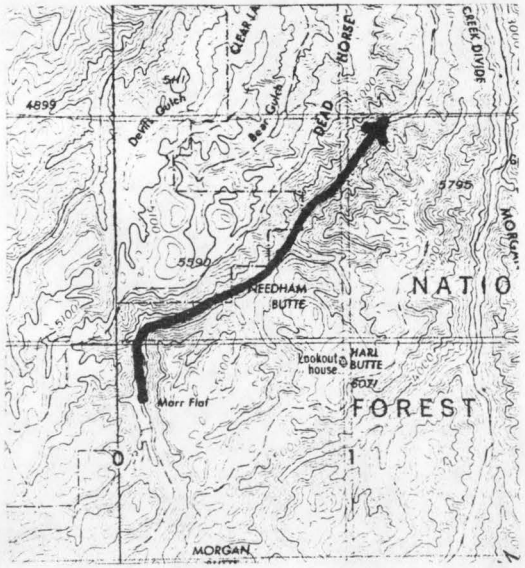
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 120 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE

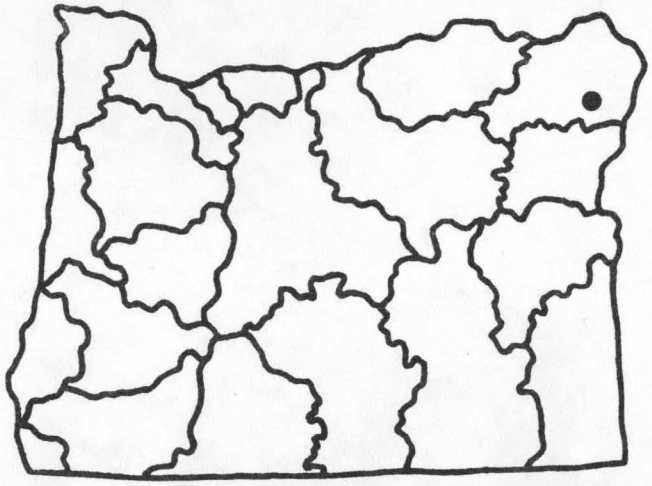


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-023-R0006

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.18, T3S, R47E
D.	Latitude, Longitude	45°17'N,116°59'W
E.	Stream Name	Big Sheep Creek
F.	Major Basin Name	Grande Ronde
G.	River Mile	21.0 to H.W.



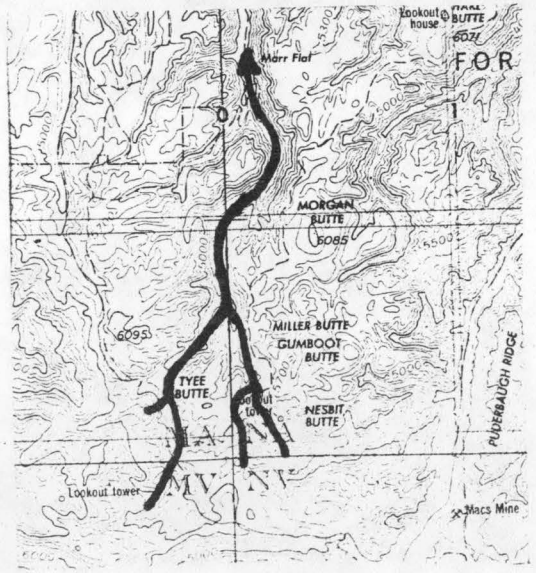
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	77.7	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

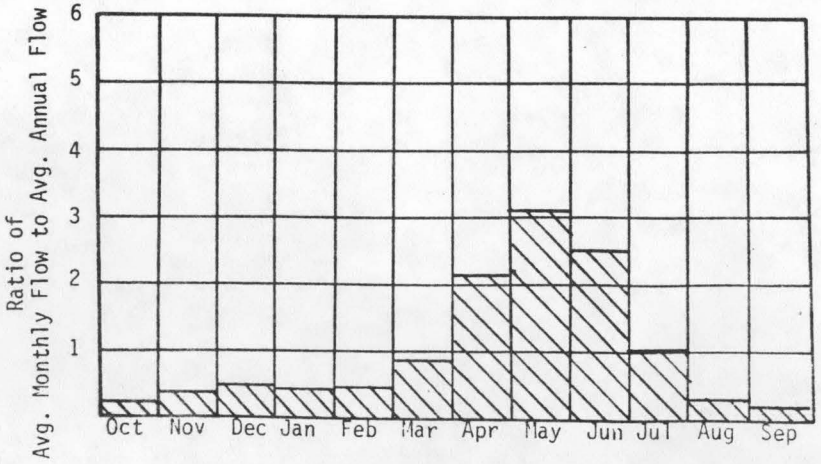
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.2	.07	.60	1.000
80	19.5	.11	.91	.953
50	35.8	.20	1.43	.815
30	77.4	.43	2.25	.592
10	269.9	1.51	4.13	.312

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 103 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.14, T1S, R48E
D.	Latitude, Longitude	45°28'N,116°45'W
E.	Stream Name	Imnaha River
F.	Major Basin Name	Grande Ronde
G.	River Mile	23.0 to 36.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

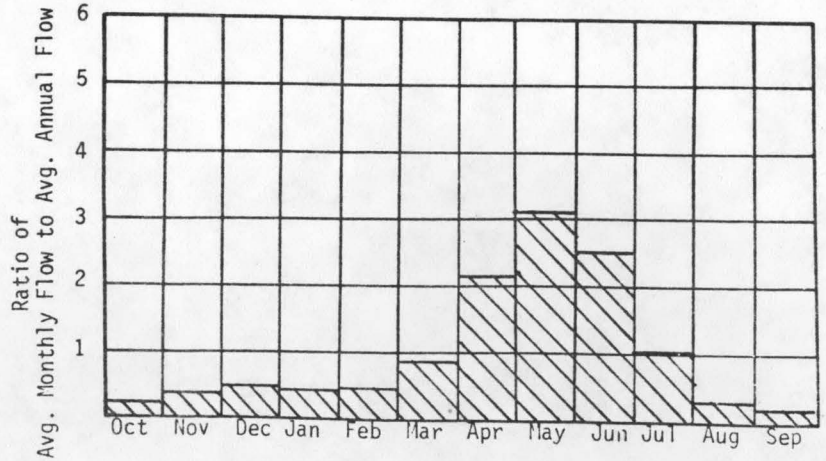
A.	Upstream Elevation of Reach	2686	Ft. MSL
B.	Downstream Elevation of Reach	1955	Ft. MSL
C.	Total Available Head in Reach	731	Ft.
D.	Average Slope in Reach	54.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	280	Sq.Mi.
F.	Inflow Classification	Natural	

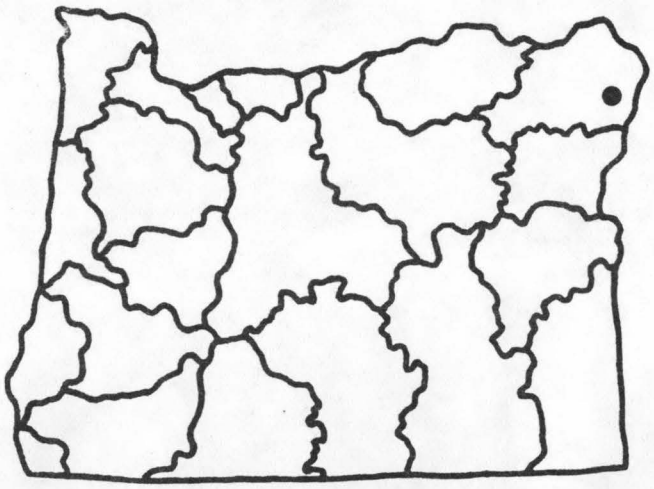
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	62.7	3.88	34.01	1.000
80	86.8	5.38	45.48	.965
50	156.5	9.69	70.04	.825
30	341.5	21.16	110.22	.595
10	1143.7	70.85	197.28	.318

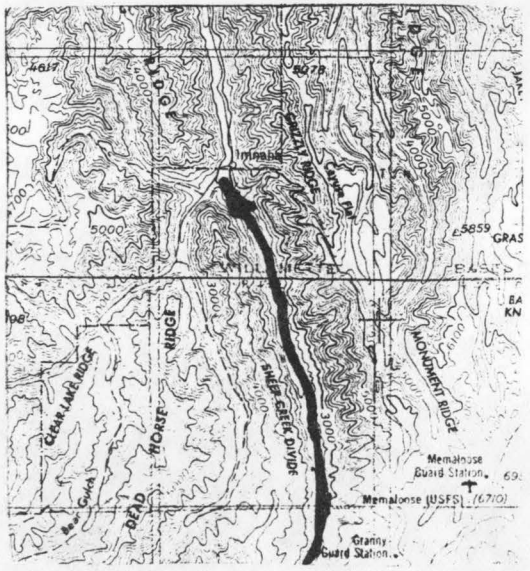
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 366 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.22, T2S, R48E
D.	Latitude, Longitude	45°22'N,116°48'W
E.	Stream Name	Imnaha River
F.	Major Basin Name	Grande Ronde
G.	River Mile	36.5 to 42.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

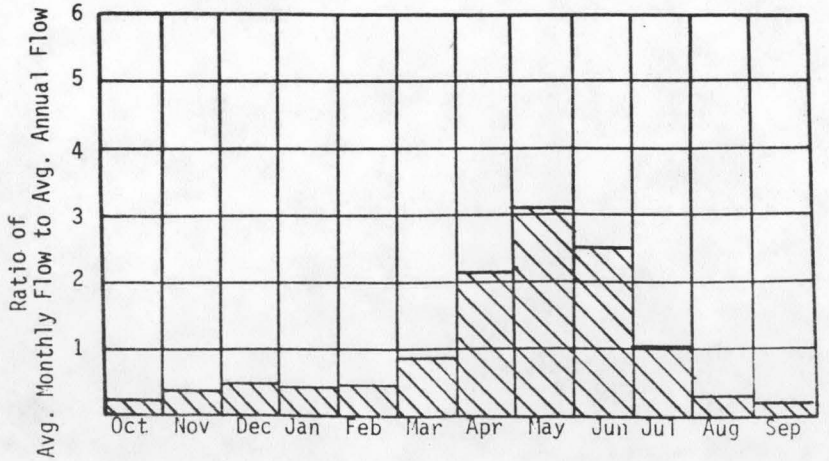
A.	Upstream Elevation of Reach	3040	Ft. MSL
B.	Downstream Elevation of Reach	2686	Ft. MSL
C.	Total Available Head in Reach	354	Ft.
D.	Average Slope in Reach	60.0	Ft./Mi.
E.	Drainage Area above Reach Mouth	230.4	Sq.Mi.
F.	Inflow Classification	Natural	

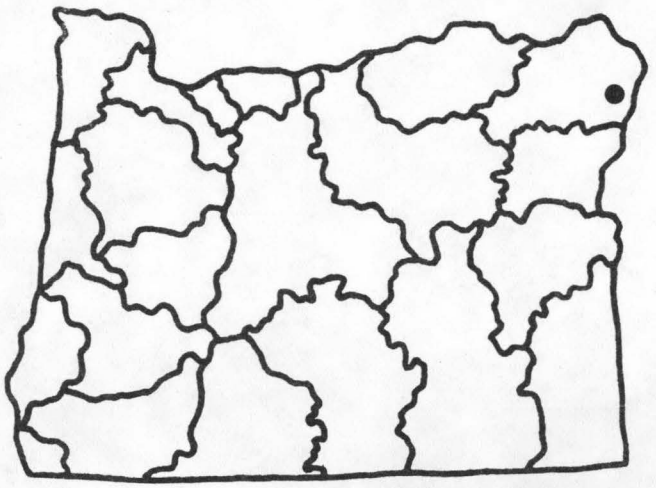
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	56.0	1.68	14.70	1.000
80	78.3	2.35	19.84	.964
50	141.3	4.24	30.60	.824
30	308.2	9.25	48.15	.594
10	1035.0	31.05	86.35	.317

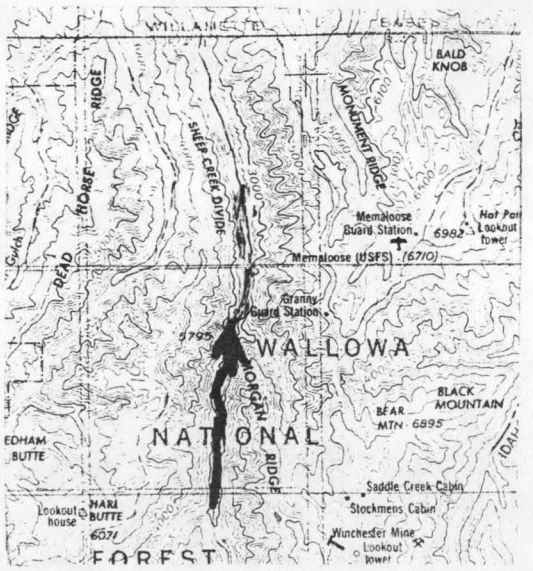
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 336 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-000-R0007

I. LOCATION

A. State	Oregon	
B. County	Wallowa	
C. Township, Range	Sec.34, T3S, R48E	
D. Latitude, Longitude	45°15'N,116°48'W	
E. Stream Name	Imnaha River	
F. Major Basin Name	Grande Ronde	
G. River Mile	42.4 to 53.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

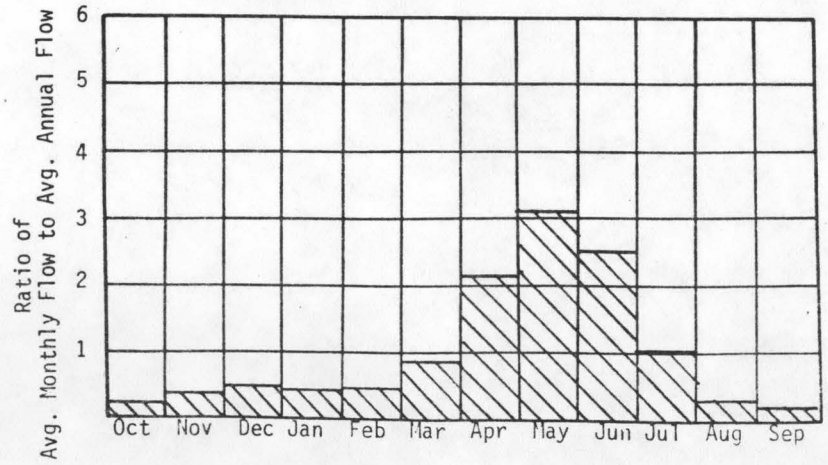
A. Upstream Elevation of Reach	3690	Ft. MSL
B. Downstream Elevation of Reach	3040	Ft. MSL
C. Total Available Head in Reach	650	Ft.
D. Average Slope in Reach	61.3	Ft./Mi.
E. Drainage Area above Reach Mouth	171.6	Sq.Mi.
F. Inflow Classification	Natural	

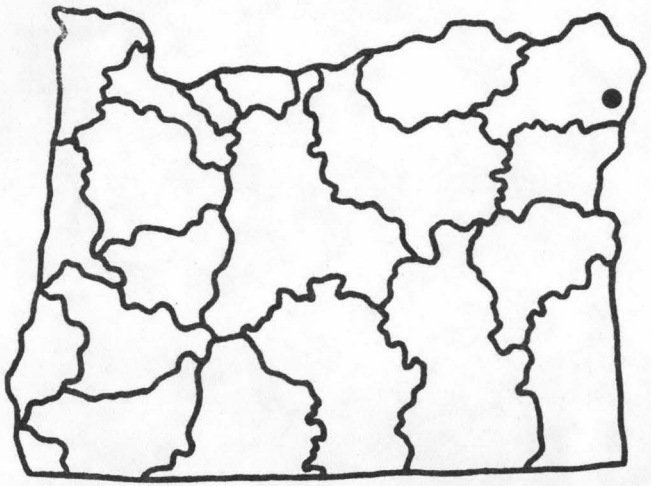
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	39.1	2.15	18.85	1.000
80	56.4	3.11	26.17	.962
50	102.2	5.63	40.54	.822
30	222.5	12.26	63.76	.594
10	753.8	41.52	115.04	.316

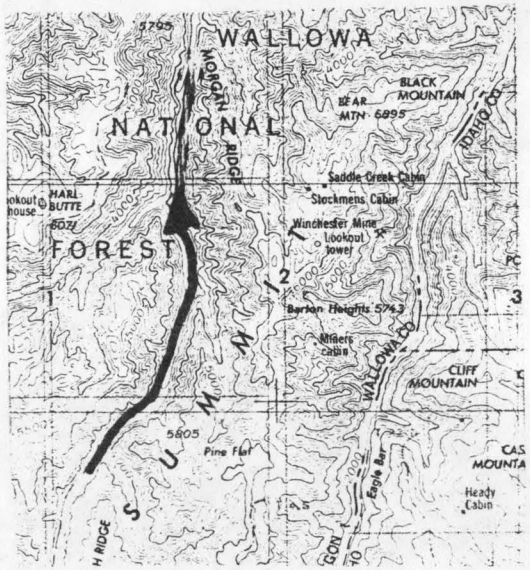
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 254 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-000-R0008

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.12, T5S, R47E
D.	Latitude, Longitude	45°08'N,116°52'W
E.	Stream Name	Imnaha River
F.	Major Basin Name	Grande Ronde
G.	River Mile	53.0 to 63.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

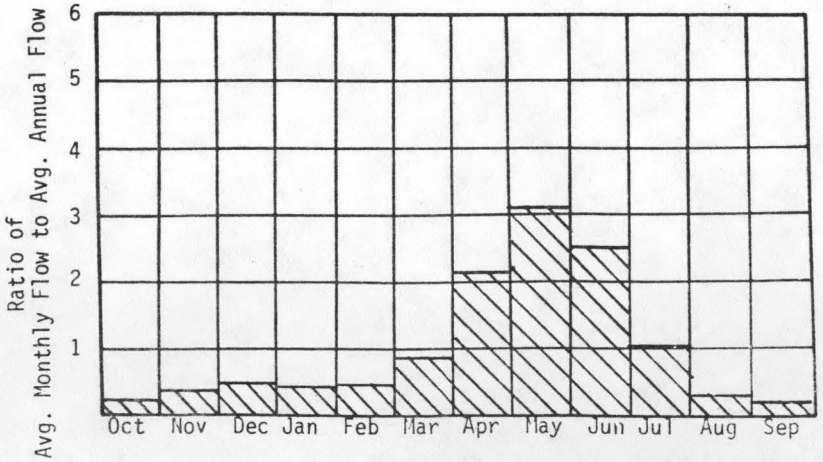
A.	Upstream Elevation of Reach	4266	Ft. MSL
B.	Downstream Elevation of Reach	3690	Ft. MSL
C.	Total Available Head in Reach	576	Ft.
D.	Average Slope in Reach	57.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	125.6	Sq.Mi.
F.	Inflow Classification	Natural	

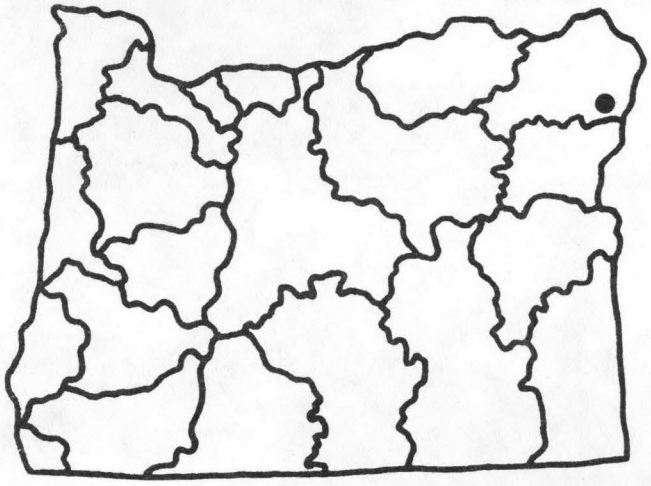
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	27.3	1.33	11.69	1.000
80	40.7	1.99	16.70	.959
50	74.1	3.62	25.98	.820
30	161.0	7.86	40.84	.593
10	550.3	26.86	74.13	.315

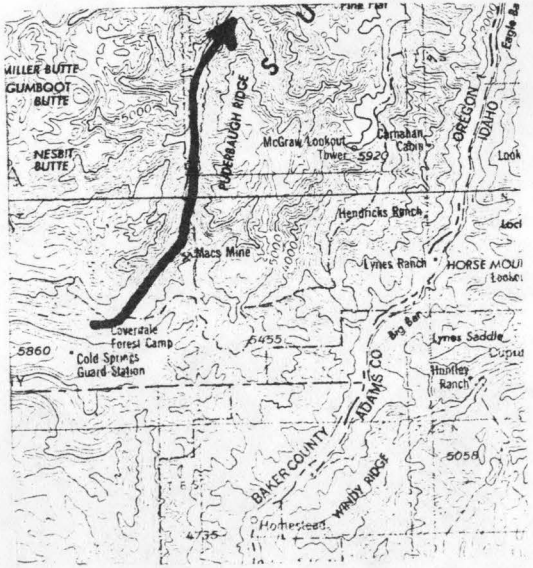
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 193 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-100-000-R0009

I. LOCATION

A.	State	Oregon
B.	County	Wallowa
C.	Township, Range	Sec.27, T5S, R46E
D.	Latitude, Longitude	45°06'N,117°02'W
E.	Stream Name	Imnaha River
F.	Major Basin Name	Grande Ronde
G.	River Mile	63.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

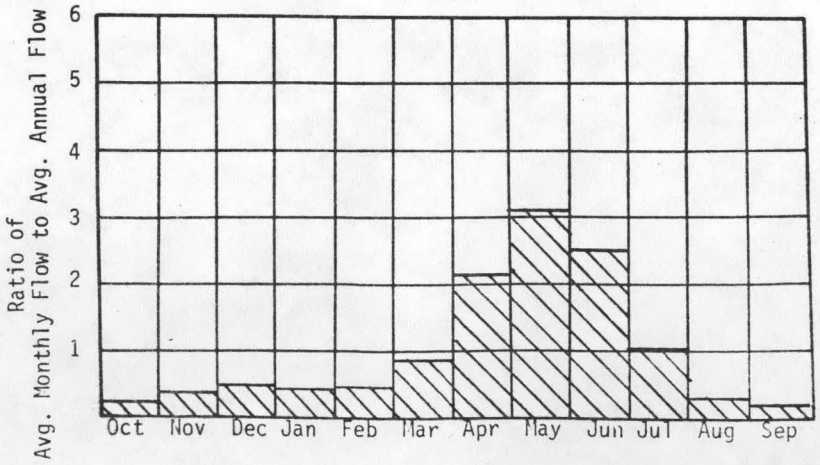
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	74.9	Sq.Mi.
F.	Inflow Classification	Natural	

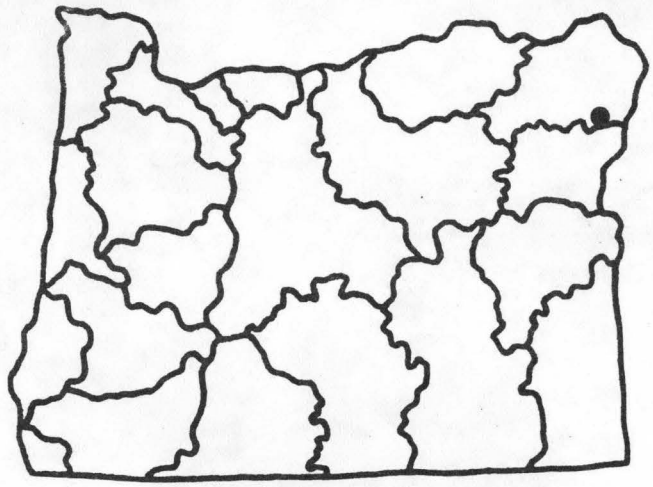
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	21.3	.12	1.04	1.000
80	32.4	.18	1.52	.957
50	59.2	.33	2.37	.818
30	128.4	.72	3.73	.593
10	441.5	2.47	6.80	.314

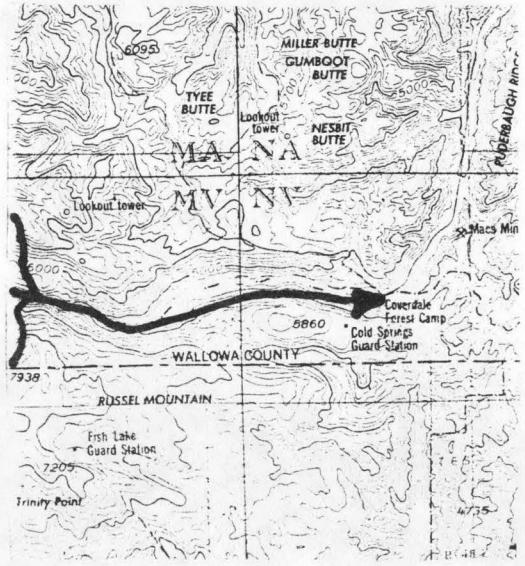
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 159 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-240-								
060-004-R0004	-	-	-	X	10.5	34.5 CW	-	35.0
060-004-R0005	-	-	-	X	15.5	34.5 CW	-	41.0
060-004-R0006	-	-	-	X	18.0	230-IP	-	28.0
060-004-R0008	-	-	-	X	12.8	230-IP	-	22.0
060-004-R0009	-	-	-	X	10.0	230-IP	-	20.0
060-004-R0010	-	-	-	X	10.1	230-IP	-	21.0
060-004-R0011	-	-	-	X	9.8	230-IP	-	22.0
060-000-R0005	-	-	-	X	0.4	34.5 CW	-	31.5
060-047-R0001	-	-	-	X	7.0	34.5 CW	-	38.0
060-047-R0006	-	-	-	X	11.5	34.5 CW	-	42.0
060-047-R0009	-	-	-	X	15.0	34.5 CW	-	45.0
060-047-R0010	-	-	-	X	15.8	230-PPL	-	49.0
060-047-R0011	-	-	-	X	13.8	230-PPL	-	50.5
060-000-R0006	-	-	X	X	6.7	34.5 CW	-	40.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-240-								
060-000-R0007	-	-	-	X	12.0	34.5 CW	-	44.0
060-000-R0008	-	-	-	X	8.0	230-PPL	-	39.0
060-000-R0009	-	-	-	X	9.8	230-PPL	-	34.0
060-082-R0001	-	X	-	X	0.2	230-PPL	-	28.0
060-082-R0002	X	X	-	X	2.0	230-PPL	-	28.2
060-082-R0003	X	-	-	X	9.0	230-PPL	-	23.0
060-082-R0006	X	X	-	X	10.0	23-CPU	-	21.0
060-082-R0007	X	-	-	X	12.0	23-CPU	-	26.0
060-082-R0009	X	-	-	X	17.0	23-CPU	-	29.8
060-082-R0010	-	X	-	X	0.2	69-PPL	-	30.0
060-082-R0011	-	X	-	X	0.3	230-PPL	-	16.0
060-082-R0014	-	X	-	X	0.6	69-PPL	-	9.2
060-082-R0018	-	X	X	X	0.2	69-PPL	1	2.5
060-082-R0019	-	X	X	X	0.1	69-PPL	1	1.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

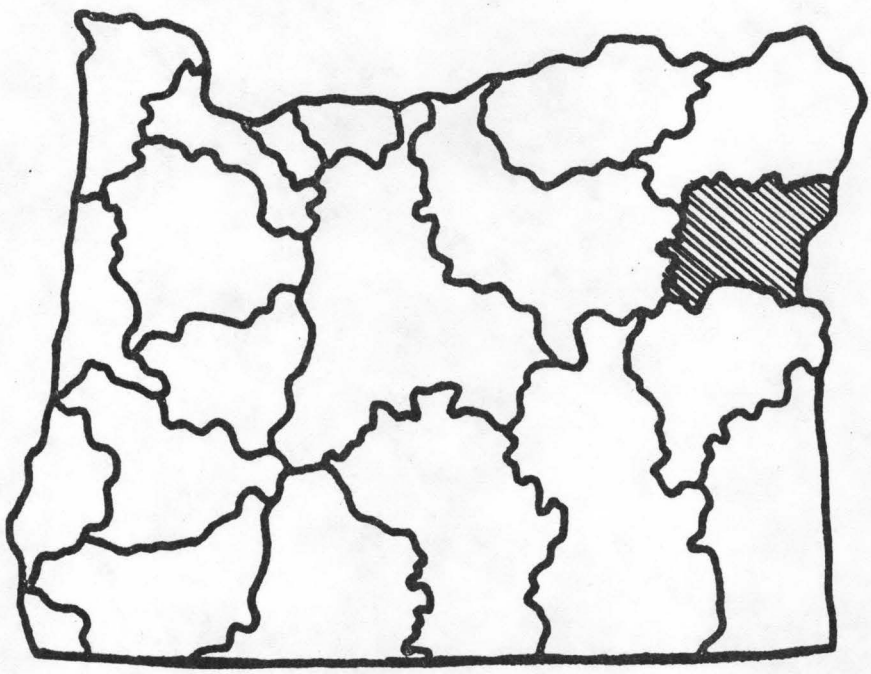
REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-240-								
060-082-R0020	-	X	X	X	0.2	69-PPL	1	5.0
060-000-R0011	-	X	X	X	1.8	230-PPL	-	30.0
060-085-R0001	-	-	-	X	1.0	230-PPL	-	29.0
060-085-R0002	-	-	-	X	1.2	230-PPL	-	29.5
060-000-R0012	-	X	-	X	3.0	69-PPL	-	23.0
060-000-R0013	-	X	-	X	0.4	69-CPU	-	17.2
060-000-R0014	-	X	-	X	1.0	23-CPU	-	14.0
060-000-R0015	-	X	X	X	2.0	23-CPU	-	10.0
060-140-R0001	X	X	-	X	0.2	23-CPU	-	11.0
060-140-R0003	-	X	X	X	0.3	23-CPU	-	13.5
060-140-R0004	X	X	X	X	3.0	23-CPU	-	16.8
060-000-R0018	X	-	-	X	1.0	23-CPU	-	8.5
060-000-R0019	X	X	X	X	1.0	69-CPU	-	4.0
060-000-R0020	X	X	X	X	2.0	230-B	1	6.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-240-								
060-000-R0021	X	X	-	X	4.8	230-B	1	11.0
060-000-R0022	-	X	-	X	6.8	230-B	-	13.5
060-181-R0001	-	-	-	X	6.9	230-B	-	14.0
060-181-R0002	-	X	X	X	6.8	230-B	-	14.0
060-000-R0023	-	X	-	X	8.0	230-B	-	15.0
060-000-R0024	-	-	-	X	13.5	230-B	-	18.0
060-000-R0025	-	-	-	X	15.8	230-B	-	20.0
100-000-R0001	-	-	-	X	0.1	230-IP	-	33.0
100-000-R0002	-	-	-	X	0.8	230-IP	-	33.5
100-000-R0003	-	-	-	X	0.2	230-IP	-	29.0
100-000-R0004	-	-	-	X	0.2	230-IP	-	25.0
100-023-R0001	-	-	-	X	0.2	230-IP	-	22.0
100-023-R0002	-	-	-	X	2.0	230-IP	-	21.5
100-023-R0004	-	-	-	X	2.2	230-IP	-	21.0

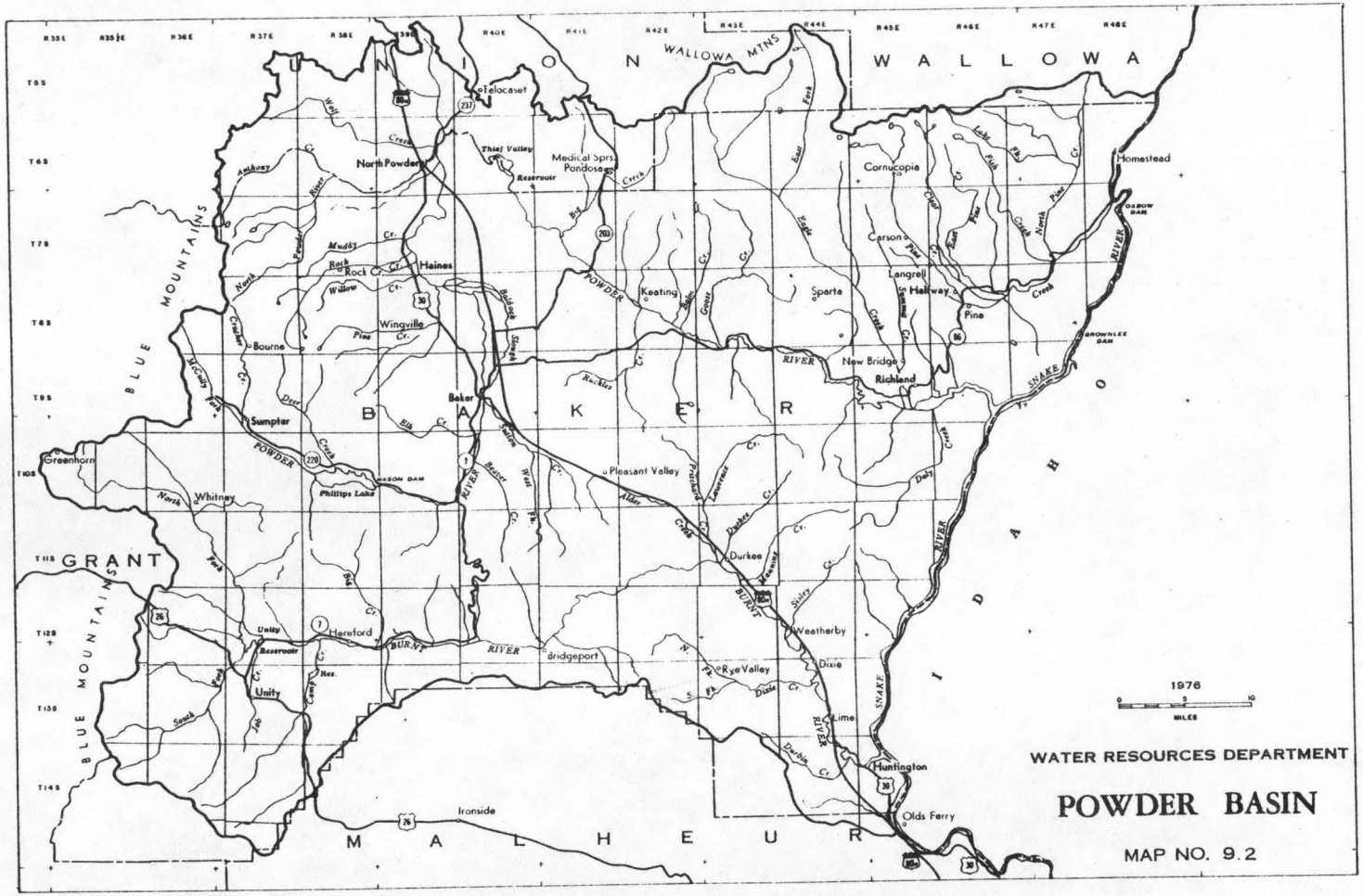
FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-240-								
100-023-R0005	-	-	-	X	4.0	230-IP	-	17.0
100-023-R0006	-	-	-	X	1.2	230-IP	-	15.0
100-000-R0005	-	-	-	X	0.1	230-IP	-	23.0
100-000-R0006	-	-	-	X	0.1	230-IP	-	23.0
100-000-R0007	-	-	-	X	0.1	230-IP	-	25.0
100-000-R0008	-	-	-	X	2.0	230-IP	-	28.0
100-000-R0009	-	-	-	X	5.0	230-IP	-	27.0



APPENDIX 9

POWDER BASIN


UNION
WALLOWA
BAKER
GRANT
MALHEUR
IDAHO
WALLOWA MTNS
BLUE MOUNTAINS
BLUE MOUNTAINS
North Powder
Telocaset
Medical Spgs
Pondosa
Cornucopia
Homestead
Haines
Wingville
Bourne
Keating
Sparta
Langrell Valley
Halfway
Pine
New Bridge
Richland
Baker
Sumpter
Greenhorn
Whitney
Phillips Lake
Pleasant Valley
Durkee
Weatherby
Dixie
Lime
Rye Valley
Huntington
Olds Ferry
Ironside
Hereford
Unity
Unity Reservoir
Bridgeport
Thief Valley Reservoir
POWDER RIVER
BURNT RIVER
SNAKE RIVER
BROWNLEE DAM
OXBOW DAM
MASON DAM
1976
WATER RESOURCES DEPARTMENT
POWDER BASIN
MAP NO. 9.2

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-117-000-R0001

I. LOCATION

A. State	Oregon	
B. County	Baker	
C. Township, Range	Sec.30, T7S, R48E	
D. Latitude, Longitude	44°56'N,116°54'W	
E. Stream Name	Pine Creek	
F. Major Basin Name	Powder	
G. River Mile	0.0 to 7.8	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

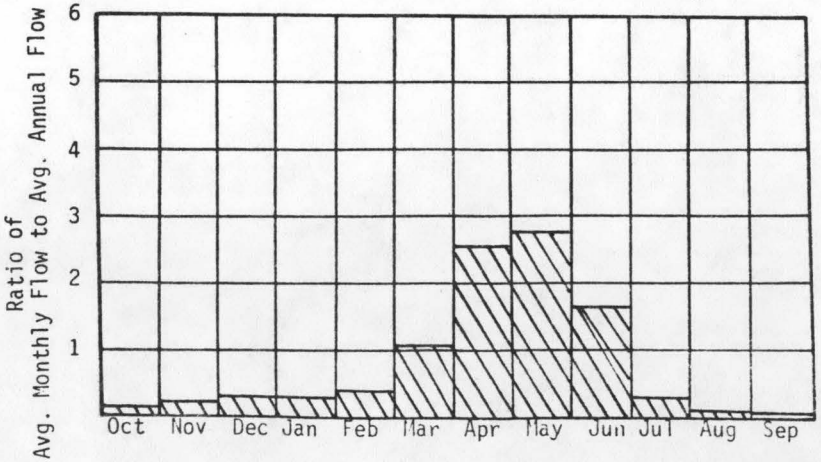
A. Upstream Elevation of Reach	2240	Ft. MSL
B. Downstream Elevation of Reach	1680	Ft. MSL
C. Total Available Head in Reach	560	Ft.
D. Average Slope in Reach	71.8	Ft./Mi.
E. Drainage Area above Reach Mouth	302.1	Sq.Mi.
F. Inflow Classification	Natural	

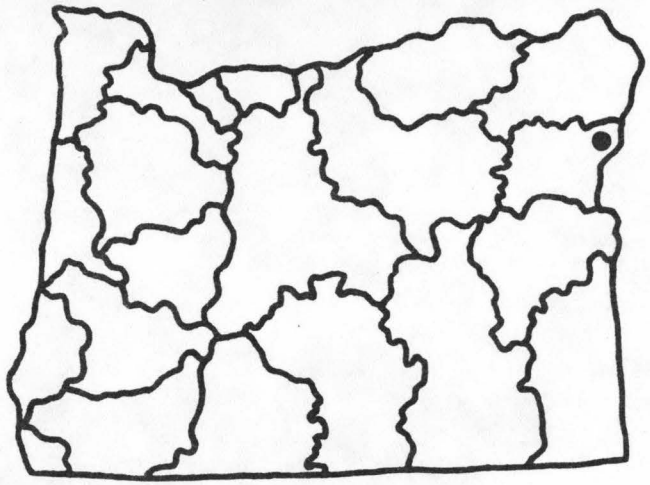
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	8.0	.38	3.33	1.000
80	17.5	.83	6.80	.932
50	47.9	2.28	15.01	.753
30	106.2	5.04	24.70	.559
10	287.0	13.62	39.73	.333

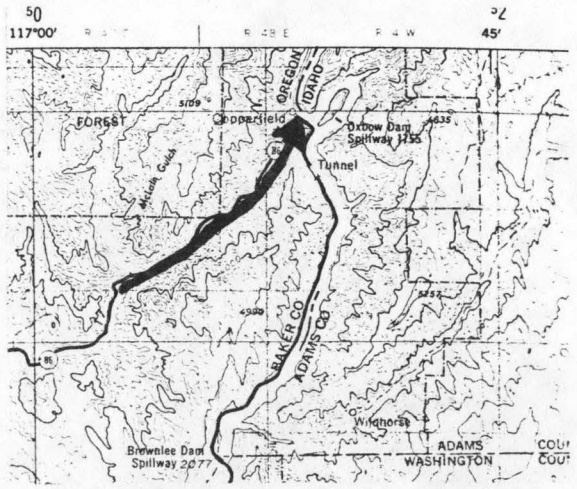
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 111 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-117-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.8, T8S, R47E
D.	Latitude, Longitude	44°52'N, 116°59'W
E.	Stream Name	Pine Creek
F.	Major Basin Name	Powder
G.	River Mile	7.8 to 14.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

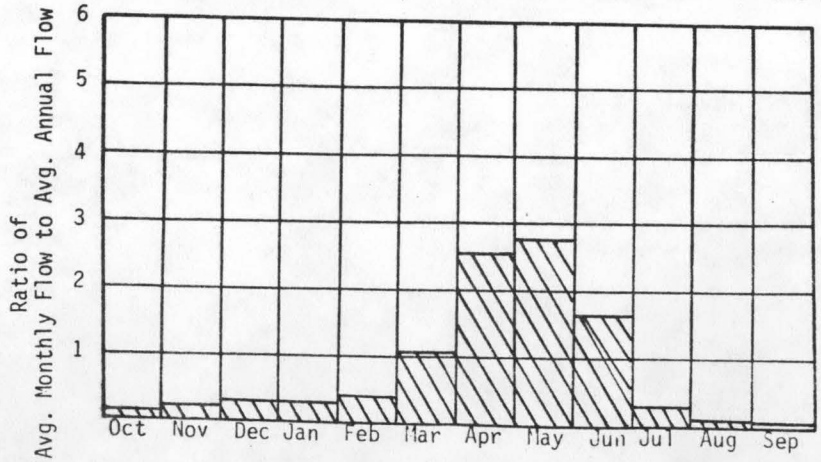
A.	Upstream Elevation of Reach	2430	Ft. MSL
B.	Downstream Elevation of Reach	2240	Ft. MSL
C.	Total Available Head in Reach	190	Ft.
D.	Average Slope in Reach	28.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	197.0	Sq.Mi.
F.	Inflow Classification	Natural	

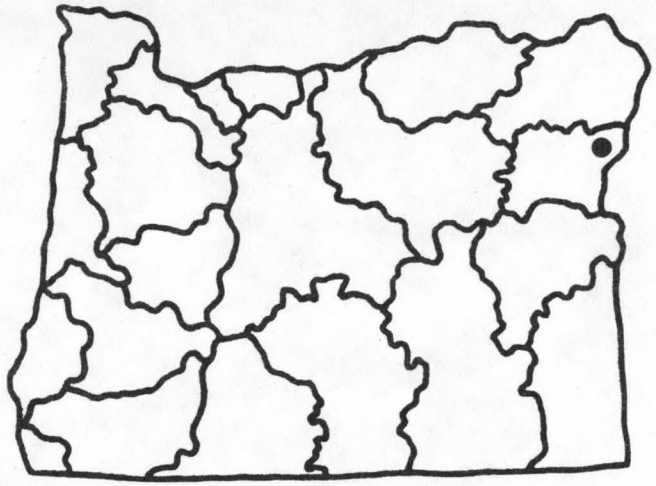
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	6.0	.10	.84	1.000
80	13.4	.22	1.76	.931
50	37.7	.61	3.99	.750
30	80.8	1.30	6.42	.563
10	209.1	3.37	10.04	.340

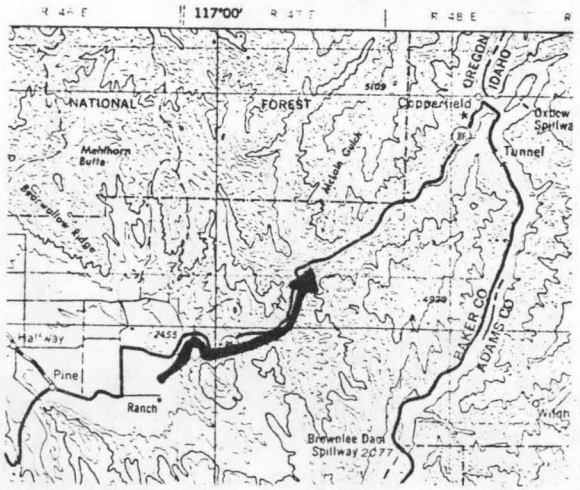
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 84 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-117-000-R0003

I. LOCATION

A. State	Oregon	
B. County	Baker	
C. Township, Range	Sec.18, T8S, R47E	
D. Latitude, Longitude	44°53'N, 117°02W	
E. Stream Name	Pine Creek	
F. Major Basin Name	Powder	
G. River Mile	14.4 to H.W.	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

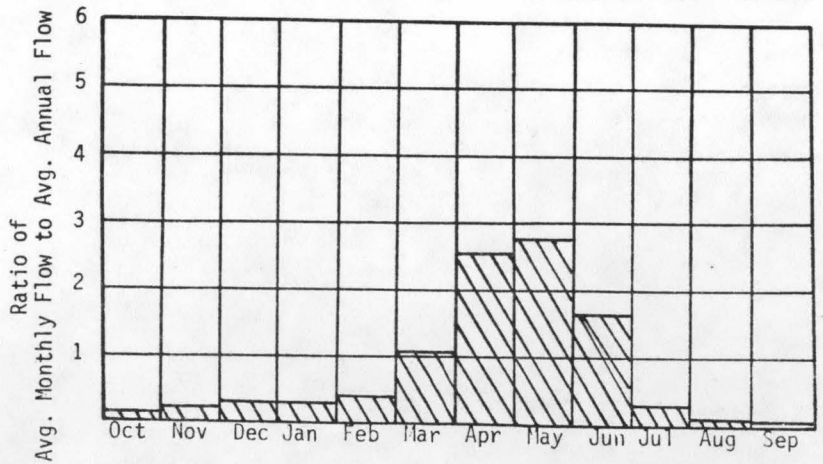
A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	157.2	Sq.Mi.
F. Inflow Classification	Natural	

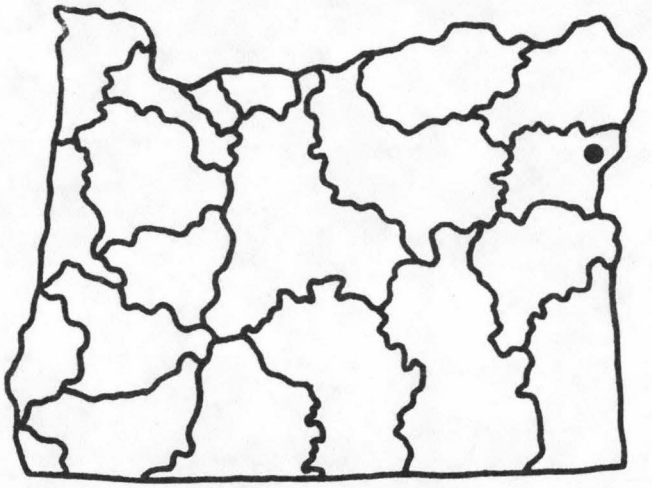
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	5.8	.03	.28	1.000
80	13.0	.07	.59	.931
50	36.7	.21	1.35	.750
30	78.4	.44	2.17	.564
10	202.0	1.13	3.38	.341

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 82 CFS





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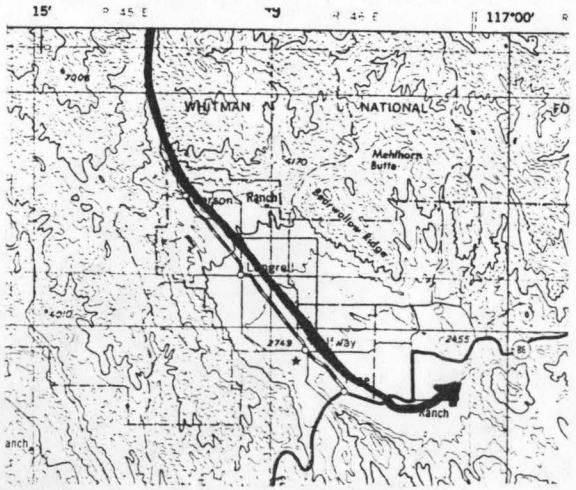
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0002

I. LOCATION

A. State	Oregon	
B. County	Baker	
C. Township, Range	Sec.29, T9S, R45E	
D. Latitude, Longitude	44°45'N, 117°14'W	
E. Stream Name	Powder River	
F. Major Basin Name	Powder	
G. River Mile	9.5 to 21.3	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

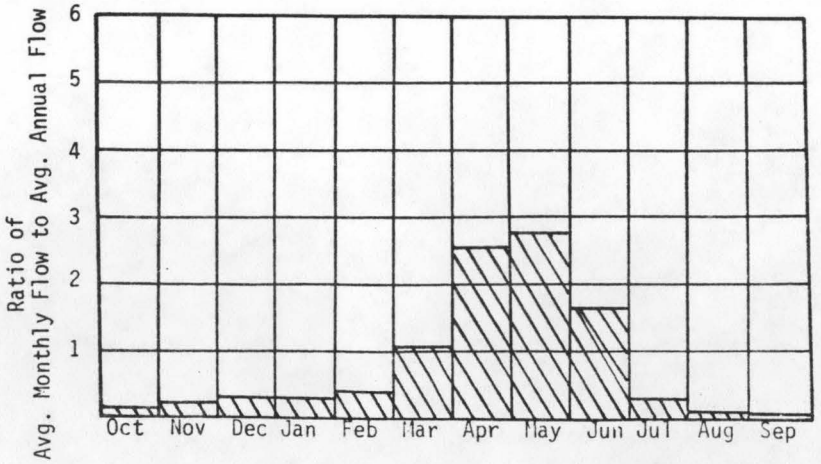
A. Upstream Elevation of Reach	2250	Ft. MSL
B. Downstream Elevation of Reach	2077	Ft. MSL
C. Total Available Head in Reach	173	Ft.
D. Average Slope in Reach	14.7	Ft./Mi.
E. Drainage Area above Reach Mouth	1414	Sq.Mi.
F. Inflow Classification	Regulated	

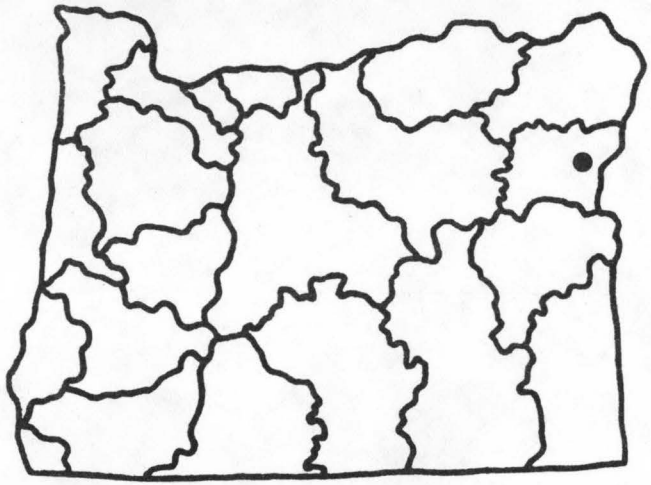
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	18.4	.27	2.36	1.000
80	37.5	.55	4.51	.936
50	95.2	1.40	9.32	.763
30	231.3	3.39	16.32	.549
10	707.4	10.37	28.55	.314

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 242 CFS





U.S.G.S. TOPO. SERIES
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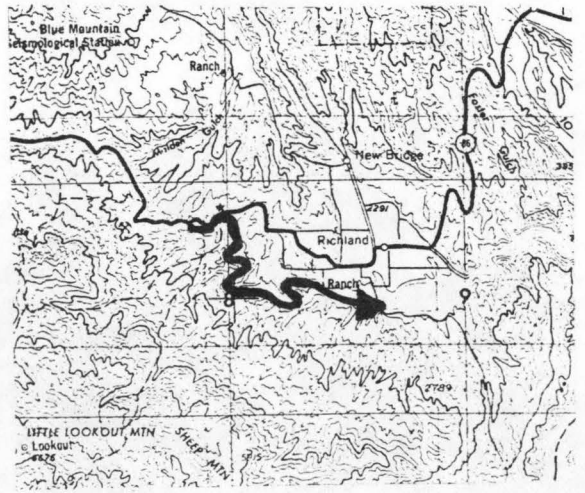
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0003

I. LOCATION

A. State	Oregon	
B. County	Baker	
C. Township, Range	Sec.5, T9S, R44E	
D. Latitude, Longitude	44°48'N, 117°21'W	
E. Stream Name	Powder River	
F. Major Basin Name	Powder	
G. River Mile	21.3 to 34.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

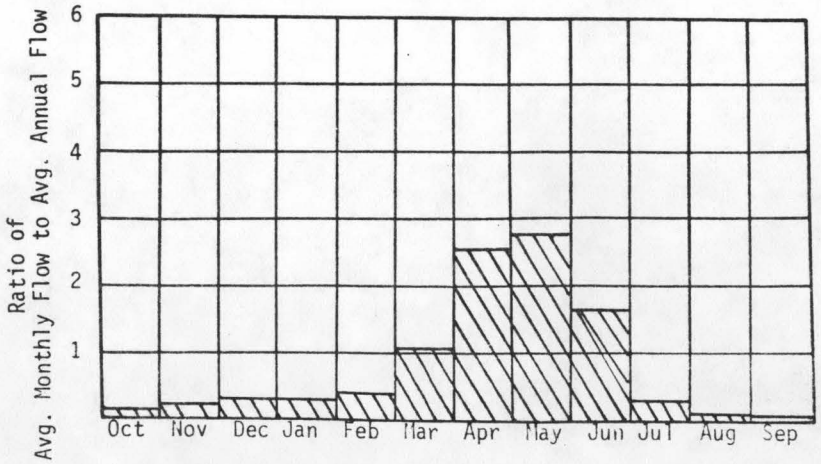
A. Upstream Elevation of Reach	2630	Ft. MSL
B. Downstream Elevation of Reach	2250	Ft. MSL
C. Total Available Head in Reach	380	Ft.
D. Average Slope in Reach	29.9	Ft./Mi.
E. Drainage Area above Reach Mouth	1352	Sq.Mi.
F. Inflow Classification	Regulated	

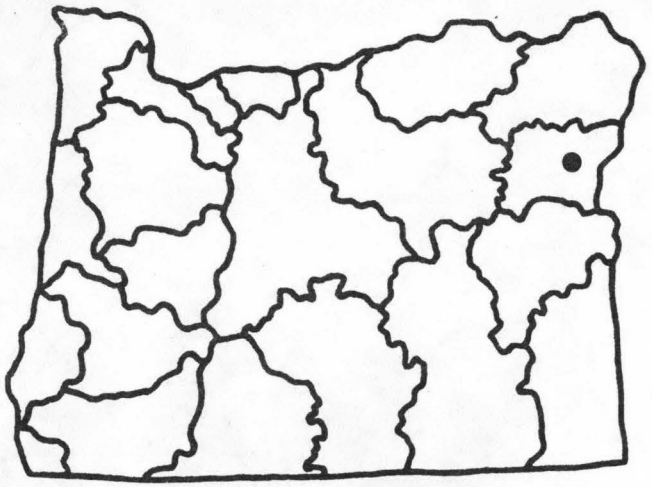
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	17.8	.57	5.02	1.000
80	36.4	1.17	9.62	.936
50	92.7	2.99	19.95	.762
30	224.6	7.23	34.82	.550
10	683.7	22.02	60.73	.315

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 236 CFS





U.S.G.S. TOPO. SERIES
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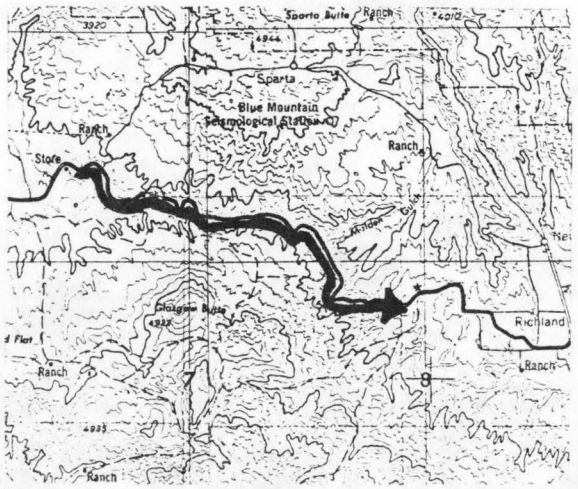
MAP NAME: BAKER

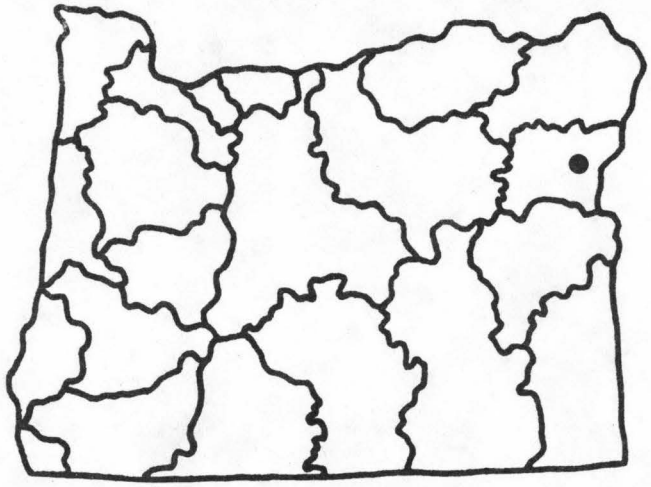


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.31, T8S, R43E
D.	Latitude, Longitude	44°44'N, 117°29'W
E.	Stream Name	Powder River
F.	Major Basin Name	Powder
G.	River Mile	34.0 to 43.0



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

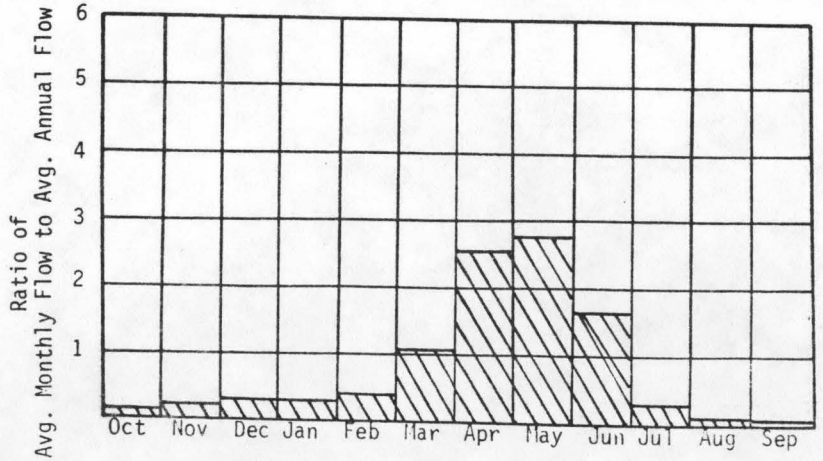
A.	Upstream Elevation of Reach	2650	Ft. MSL
B.	Downstream Elevation of Reach	2630	Ft. MSL
C.	Total Available Head in Reach	20	Ft.
D.	Average Slope in Reach	2.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	12.77	Sq.Mi.
F.	Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

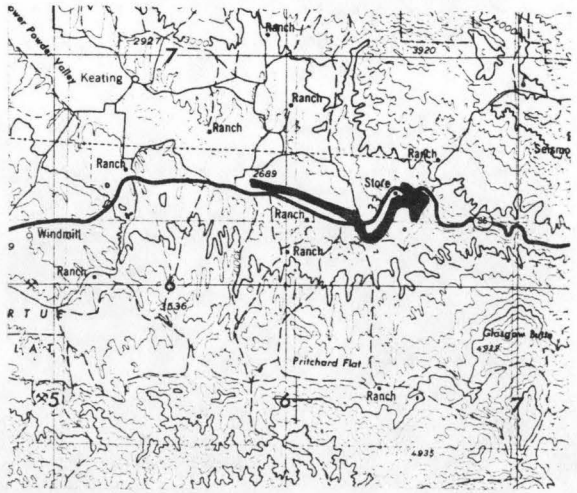
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	17.1	.03	.25	1.000
80	35.1	.06	.49	.936
50	89.6	.15	1.01	.762
30	215.9	.37	1.76	.550
10	653.4	1.11	3.06	.316

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 226 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.22, T8S, R42E
D.	Latitude, Longitude	44°52'N, 117°33'W
E.	Stream Name	Powder River
F.	Major Basin Name	Powder
G.	River Mile	43.0 to 53.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

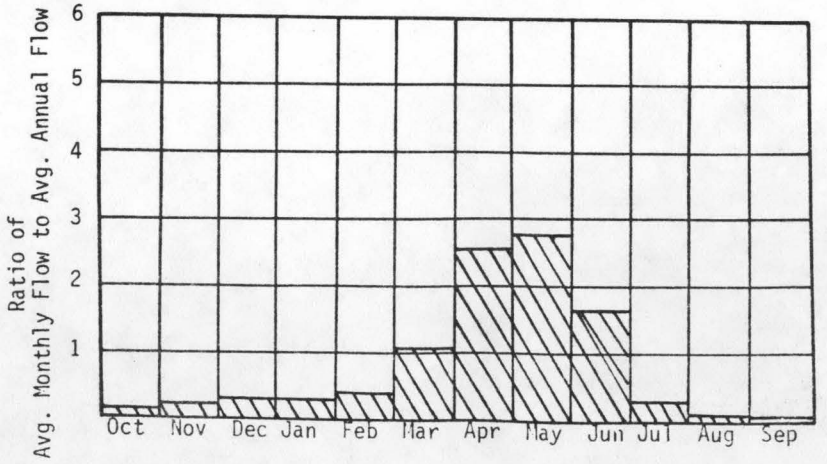
A.	Upstream Elevation of Reach	2720	Ft. MSL
B.	Downstream Elevation of Reach	2650	Ft. MSL
C.	Total Available Head in Reach	70	Ft.
D.	Average Slope in Reach	7	Ft./Mi.
E.	Drainage Area above Reach Mouth	1181	Sq.Mi.
F.	Inflow Classification	Regulated	

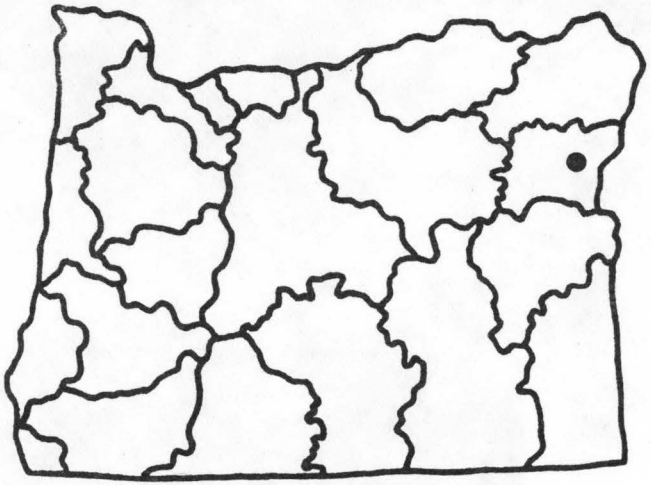
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	16.1	.10	.84	1.000
80	33.3	.20	1.62	.936
50	85.5	.51	3.38	.761
30	204.8	1.21	5.86	.551
10	614.4	3.64	10.12	.317

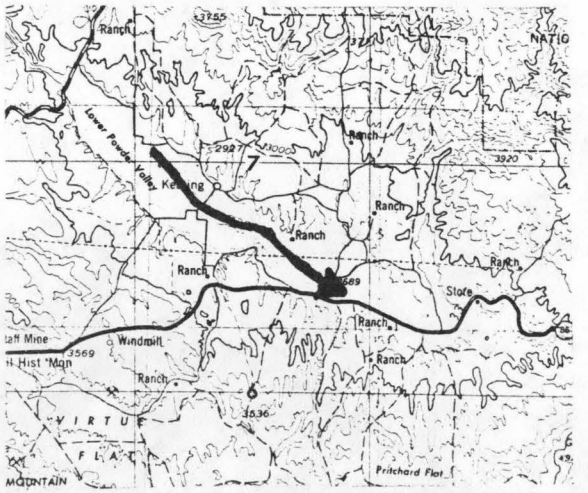
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 215 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.2, T8S, R41E
D.	Latitude, Longitude	44°54'N, 117°39'W
E.	Stream Name	Powder River
F.	Major Basin Name	Powder
G.	River Mile	53.0 to 63.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

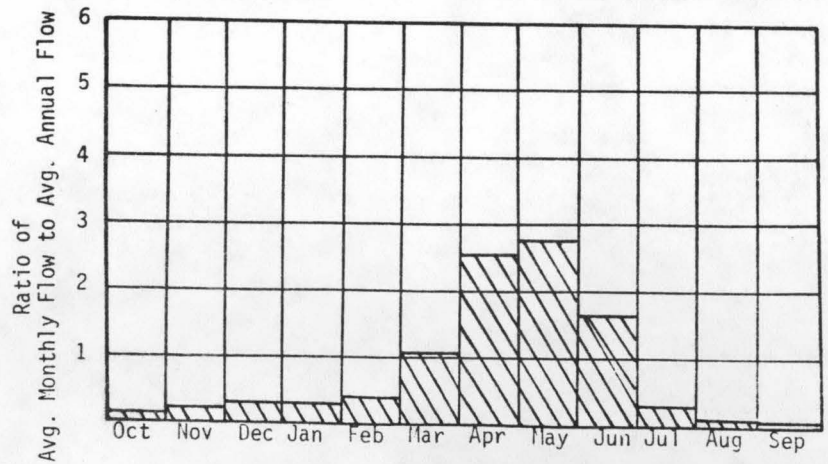
A.	Upstream Elevation of Reach	2825	Ft. MSL
B.	Downstream Elevation of Reach	2720	Ft. MSL
C.	Total Available Head in Reach	105	Ft.
D.	Average Slope in Reach	10.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	1070	Sq.Mi.
F.	Inflow Classification	Regulated	

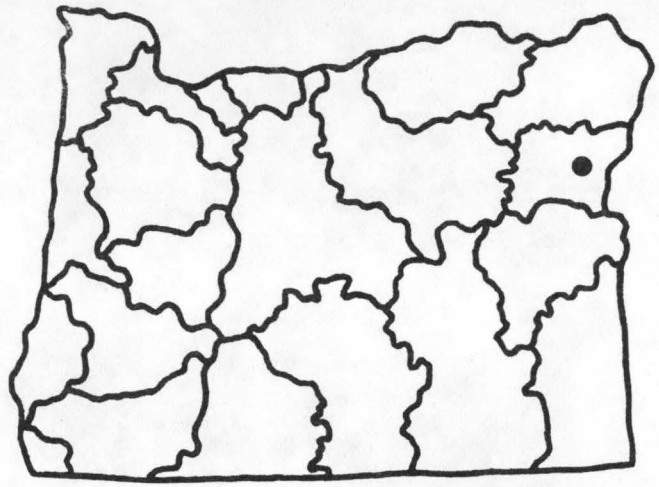
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	15.0	.13	1.17	1.000
80	31.2	.28	2.27	.935
50	80.5	.72	4.77	.760
30	191.3	1.70	8.23	.552
10	567.7	5.05	14.09	.318

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 200 CFS





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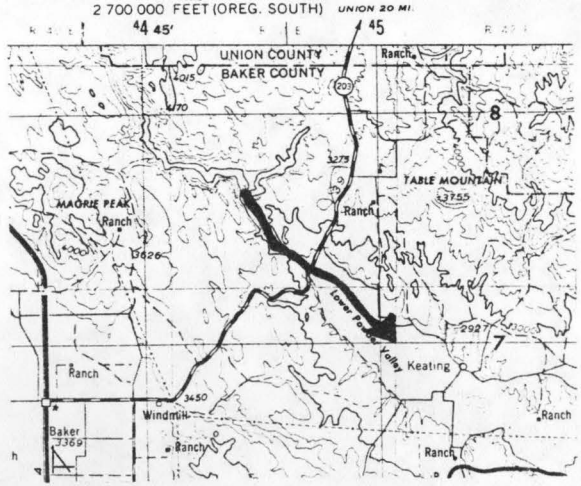
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Baker-Union
C.	Township, Range	Sec.12, T7S, R40E
D.	Latitude, Longitude	44°57'N, 117°45'W
E.	Stream Name	Powder River
F.	Major Basin Name	Powder
G.	River Mile	63.4 to 71.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

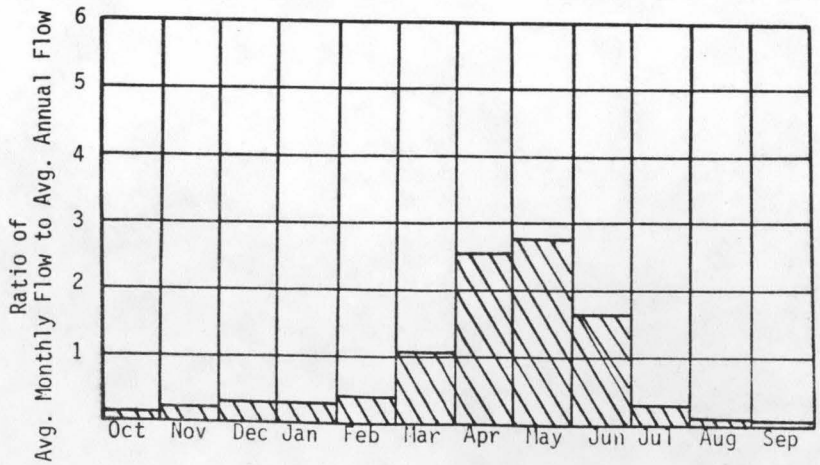
A.	Upstream Elevation of Reach	3150	Ft. MSL
B.	Downstream Elevation of Reach	2825	Ft. MSL
C.	Total Available Head in Reach	325	Ft.
D.	Average Slope in Reach	22.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	934	Sq.Mi.
F.	Inflow Classification	Regulated	

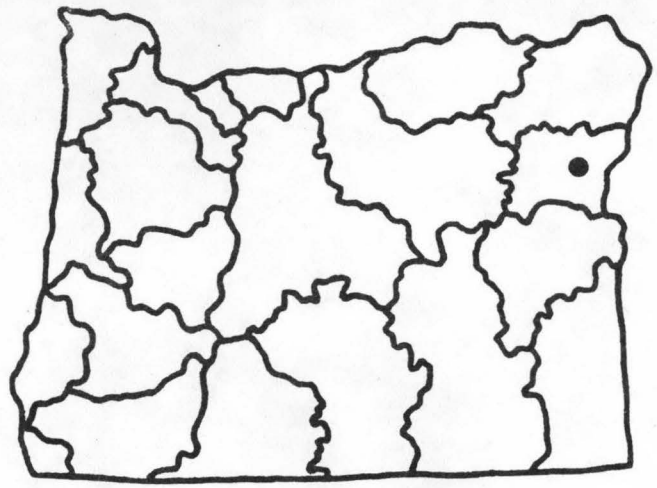
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.3	.39	3.44	1.000
80	29.8	.82	6.71	.935
50	77.3	2.13	14.16	.760
30	182.5	5.03	24.32	.552
10	537.7	14.81	41.46	.320

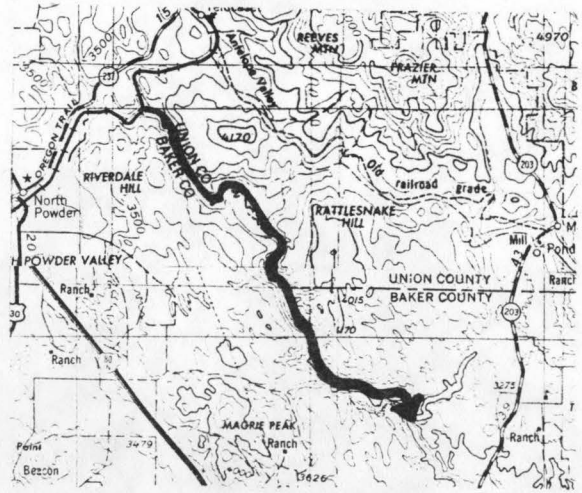
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 190 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER-GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0008

I. LOCATION

A. State	Oregon	
B. County	Baker-Union	
C. Township, Range	Sec. 7, T6S, R40E	
D. Latitude, Longitude	45°03'N, 117°52'W	
E. Stream Name	Powder River	
F. Major Basin Name	Powder	
G. River Mile	75.0 to 83.2	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

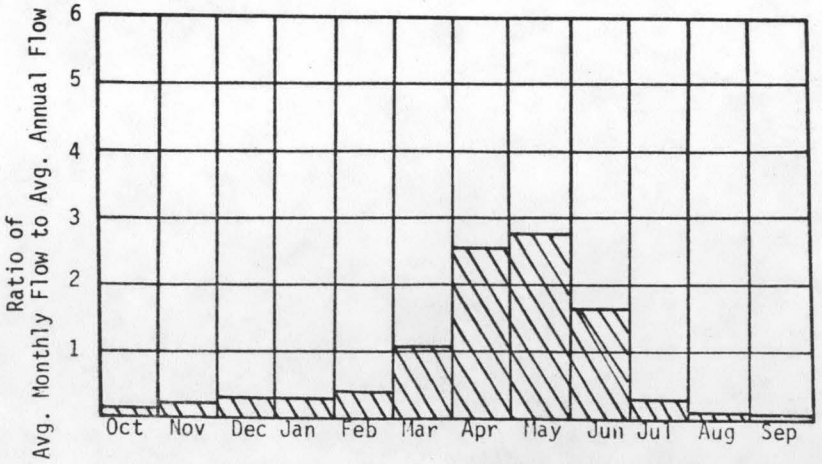
A. Upstream Elevation of Reach	3200	Ft. MSL
B. Downstream Elevation of Reach	3150	Ft. MSL
C. Total Available Head in Reach	50	Ft.
D. Average Slope in Reach	8.9	Ft./Mi.
E. Drainage Area above Reach Mouth	892	Sq.Mi.
F. Inflow Classification	Regulated	

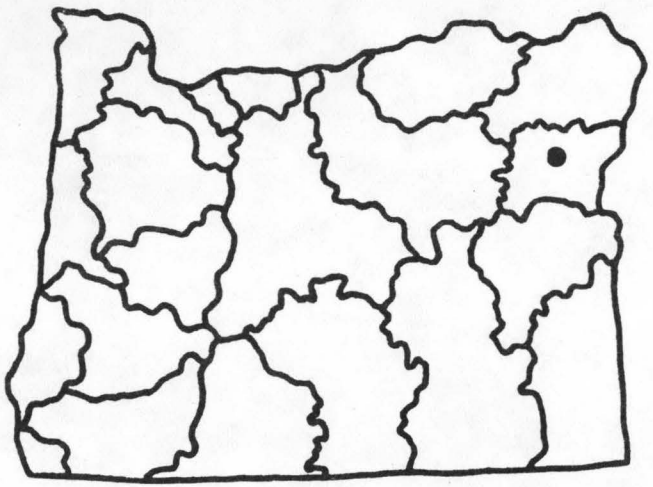
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.7	.05	.47	1.000
80	26.7	.11	.92	.934
50	70.0	.30	1.97	.758
30	163.1	.69	3.35	.554
10	471.9	2.00	5.64	.322

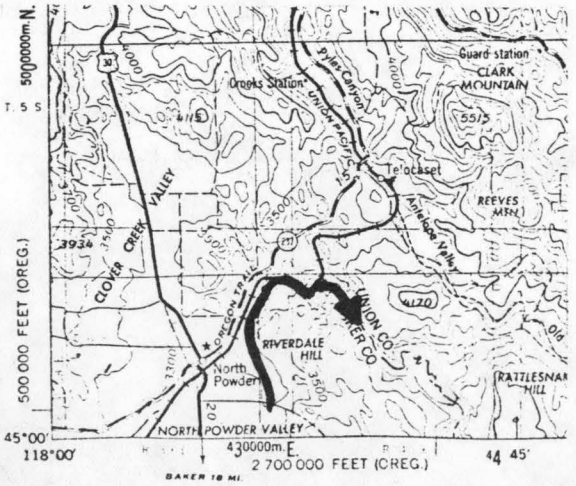
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 171 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: GRANGEVILLE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0009

I. LOCATION

A. State	Oregon	
B. County	Baker	
C. Township, Range	Sec.36, T6S, R39E	
D. Latitude, Longitude	45°00'N, 117°53'W	
E. Stream Name	Powder River	
F. Major Basin Name	Powder	
G. River Mile	83.2 to 95.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

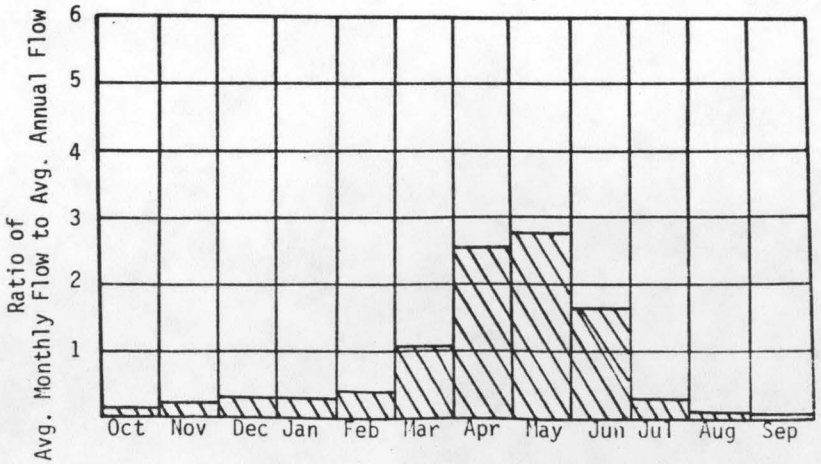
A. Upstream Elevation of Reach	3300	Ft. MSL
B. Downstream Elevation of Reach	3200	Ft. MSL
C. Total Available Head in Reach	100	Ft.
D. Average Slope in Reach	8.5	Ft./Mi.
E. Drainage Area above Reach Mouth	648	Sq.Mi.
F. Inflow Classification	Regulated	

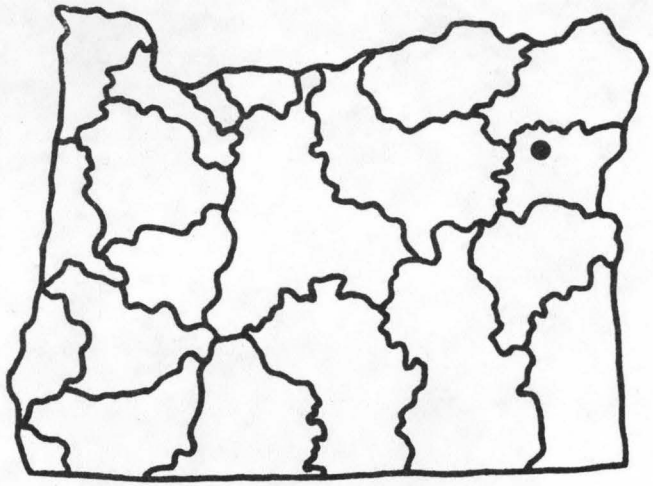
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	11.1	.09	.83	1.000
80	23.7	.20	1.64	.934
50	62.9	.53	3.53	.757
30	144.4	1.22	5.95	.555
10	410.0	3.47	9.90	.325

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 152 CFS





U.S.G.S. TOPO. SERIES
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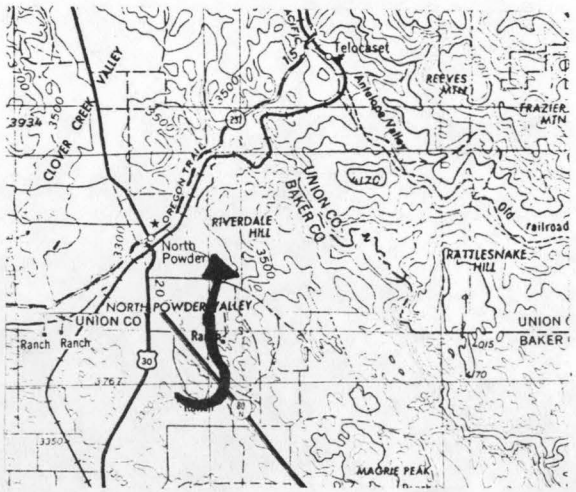
MAP NAME: GRANGEVILLE-JORDAN VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0010

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.21, T7S, R39E
D.	Latitude, Longitude	44°56'N, 117°56'W
E.	Stream Name	Powder River
F.	Major Basin Name	Powder
G.	River Mile	95.0 to 103.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

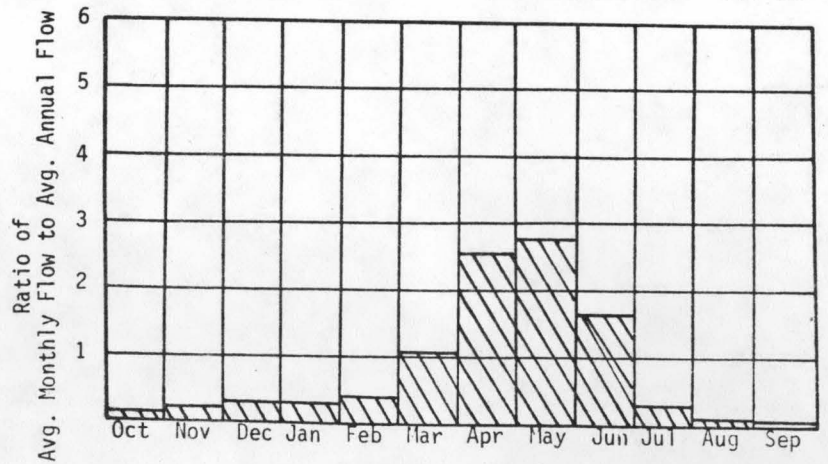
A.	Upstream Elevation of Reach	3341	Ft. MSL
B.	Downstream Elevation of Reach	3300	Ft. MSL
C.	Total Available Head in Reach	41	Ft.
D.	Average Slope in Reach	5.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	593	Sq.Mi.
F.	Inflow Classification	Regulated	

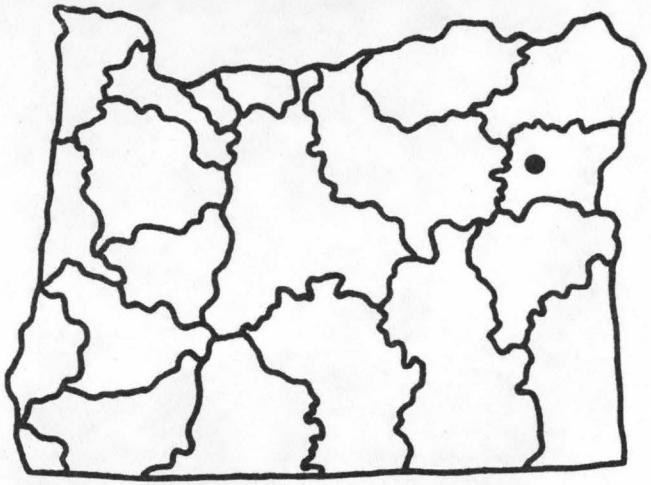
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	10.5	.04	.32	1.000
80	22.4	.08	.64	.933
50	59.7	.21	1.37	.756
30	136.3	.47	2.31	.556
10	383.2	1.33	3.81	.327

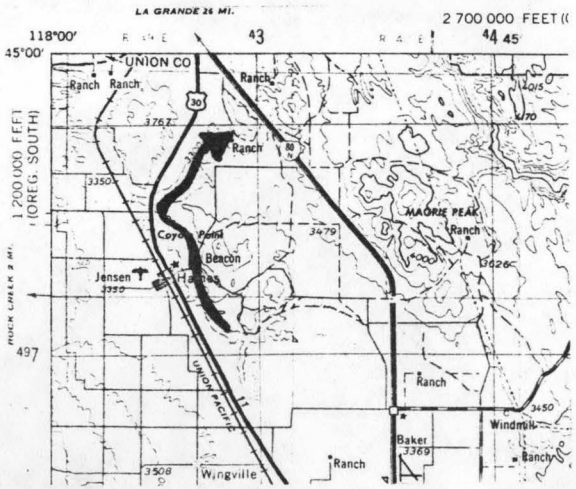
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 143 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDAN VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0011

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.32, T7S, R40E
D.	Latitude, Longitude	44°53'N, 117°50'W
E.	Stream Name	Powder River
F.	Major Basin Name	Powder
G.	River Mile	103.0 to 116.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

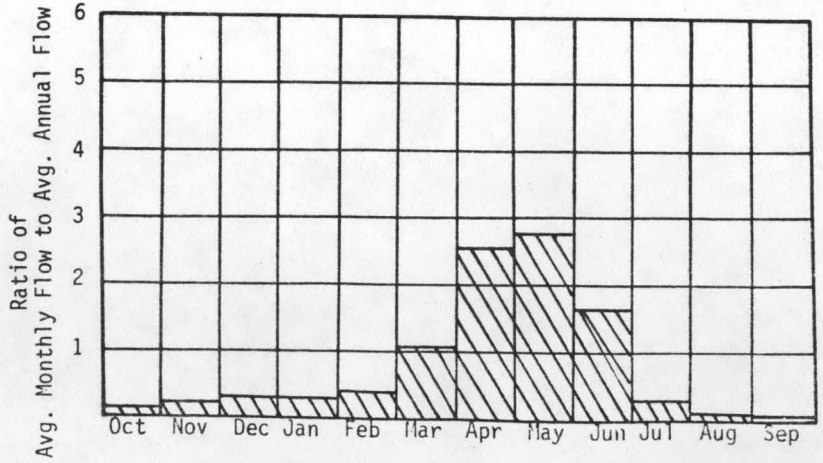
A.	Upstream Elevation of Reach	3383	Ft. MSL
B.	Downstream Elevation of Reach	3341	Ft. MSL
C.	Total Available Head in Reach	42	Ft.
D.	Average Slope in Reach	3.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	511	Sq.Mi.
F.	Inflow Classification	Regulated	

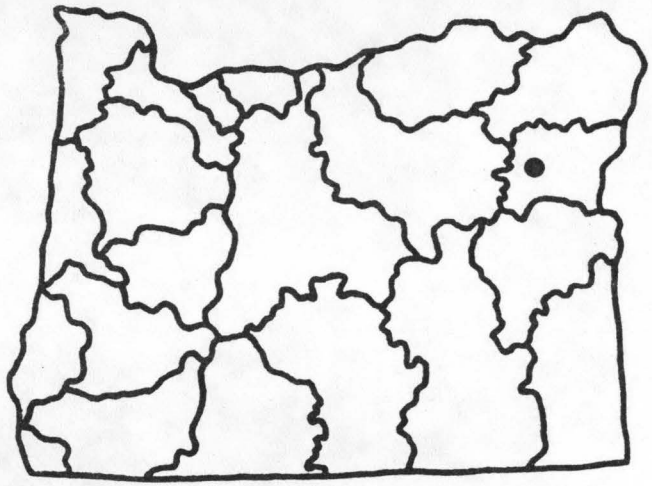
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	9.4	.03	.29	1.000
80	20.2	.07	.59	.933
50	54.6	.19	1.28	.755
30	122.9	.44	2.14	.557
10	340.2	1.21	3.49	.329

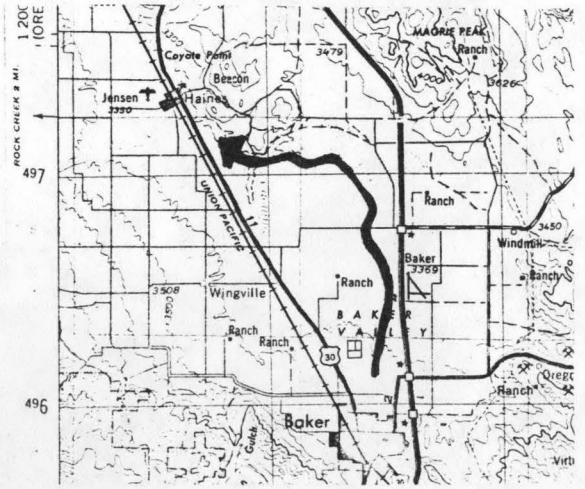
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 129 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0012

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.8, T9S, R40E
D.	Latitude, Longitude	44°47'N, 117°50'W
E.	Stream Name	Powder River
F.	Major Basin Name	Powder
G.	River Mile	116.2 to 121.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

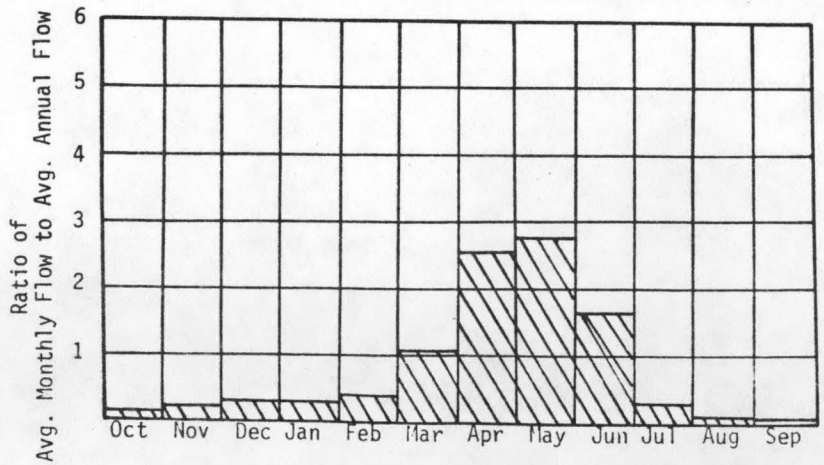
A.	Upstream Elevation of Reach	3440	Ft. MSL
B.	Downstream Elevation of Reach	3383	Ft. MSL
C.	Total Available Head in Reach	57	Ft.
D.	Average Slope in Reach	10.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	398	Sq.Mi.
F.	Inflow Classification	Regulated	

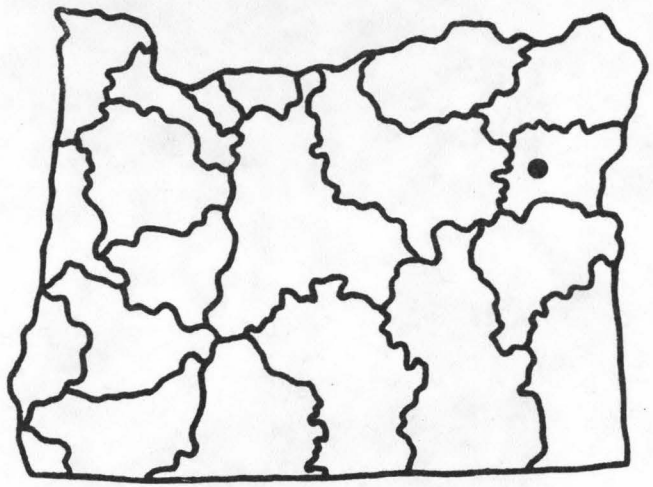
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	8.4	.04	.36	1.000
80	18.3	.09	.72	.932
50	49.9	.24	1.59	.754
30	111.0	.54	2.63	.559
10	302.3	1.46	4.24	.332

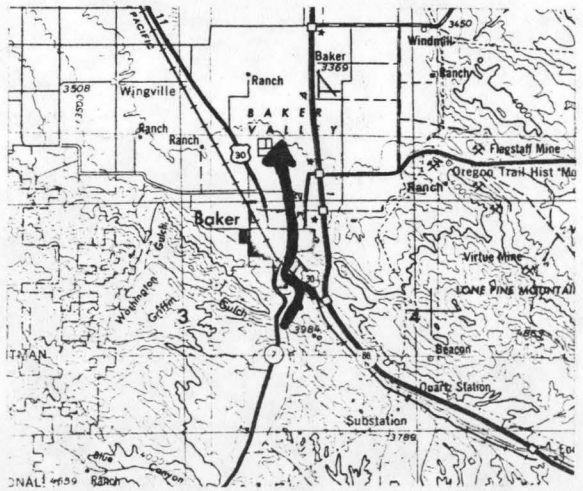
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 116 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0013

I. LOCATION

A. State	Oregon	
B. County	Baker	
C. Township, Range	Sec.8, T10S, R40E	
D. Latitude, Longitude	44°43'N, 117°50'W	
E. Stream Name	Powder River	
F. Major Basin Name	Powder	
G. River Mile	121.8 to 129.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

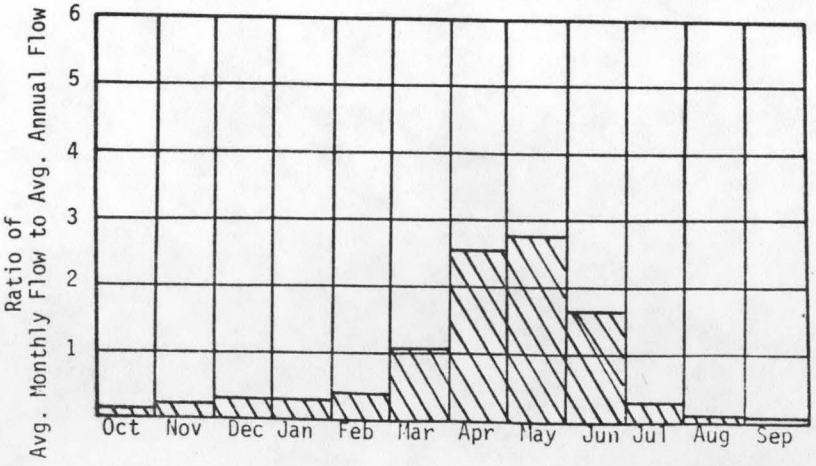
A. Upstream Elevation of Reach	3600	Ft. MSL
B. Downstream Elevation of Reach	3440	Ft. MSL
C. Total Available Head in Reach	160	Ft.
D. Average Slope in Reach	22.2	Ft./Mi.
E. Drainage Area above Reach Mouth	313	Sq.Mi.
F. Inflow Classification	Regulated	

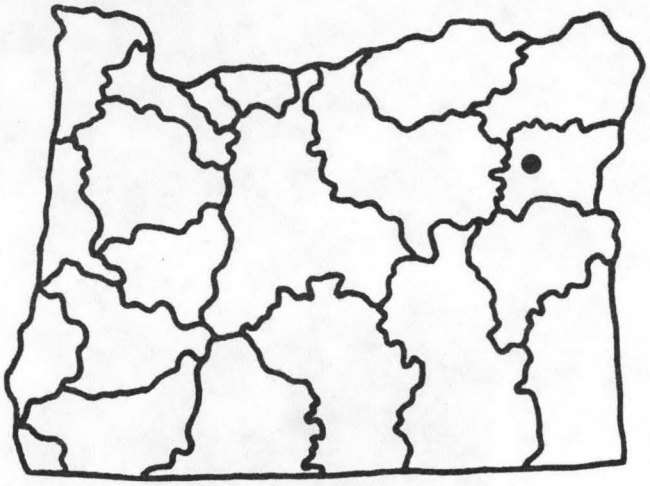
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	7.5	.10	.89	1.000
80	16.5	.22	1.83	.932
50	45.5	.62	4.07	.752
30	100.0	1.36	6.66	.560
10	267.8	3.63	10.64	.335

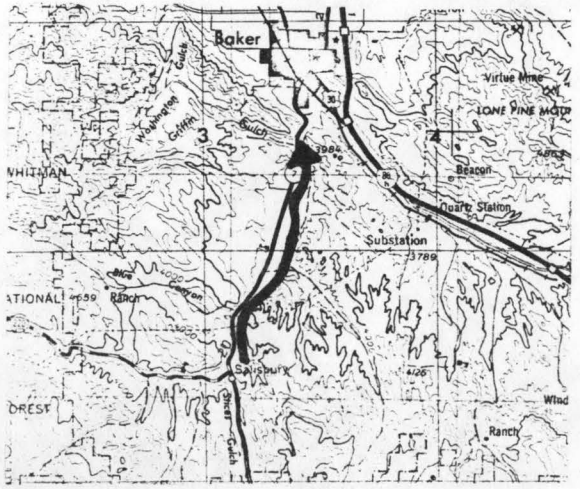
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 105 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0014

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.34, T10S, R39E
D.	Latitude, Longitude	44°39'N, 117°55'W
E.	Stream Name	Powder River
F.	Major Basin Name	Powder
G.	River Mile	129.0 to 139.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

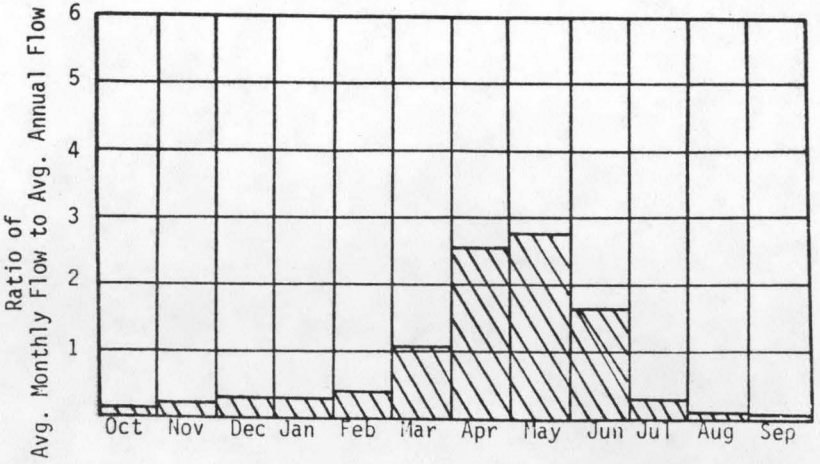
A.	Upstream Elevation of Reach	3880	Ft. MSL
B.	Downstream Elevation of Reach	3600	Ft. MSL
C.	Total Available Head in Reach	280	Ft.
D.	Average Slope in Reach	10.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	245	Sq.Mi.
F.	Inflow Classification	Regulated	

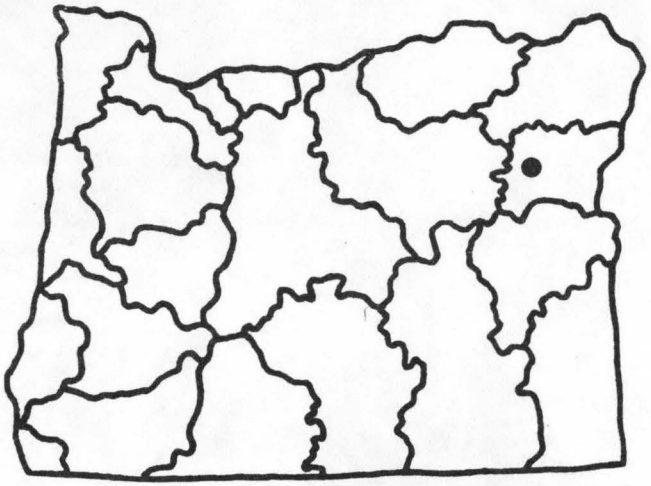
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	6.6	.16	1.36	1.000
80	14.6	.35	2.83	.931
50	40.7	.96	6.35	.751
30	88.1	2.09	10.29	.562
10	231.1	5.48	16.23	.338

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 92 CFS





U.S.G.S. TOPO. SERIES
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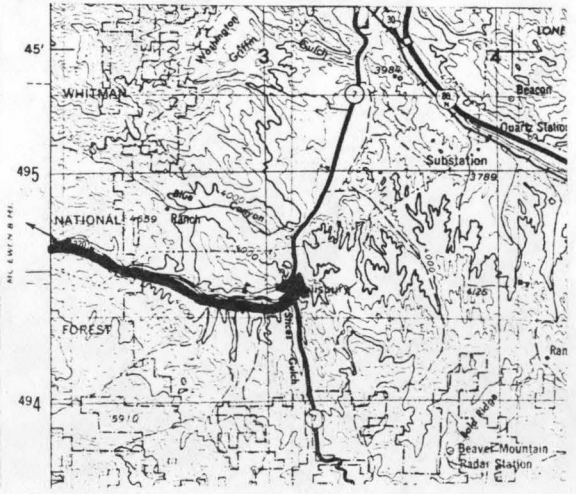


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-000-R0015

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.19, T10S, R38E
D.	Latitude, Longitude	44°41'N, 118°00'W
E.	Stream Name	Powder River
F.	Major Basin Name	Powder
G.	River Mile	144.5 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

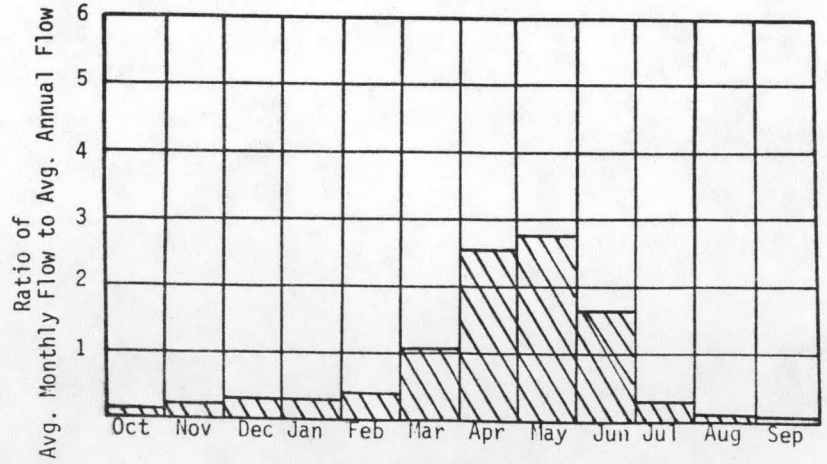
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	92	Sq.Mi.
F.	Inflow Classification	Natural	

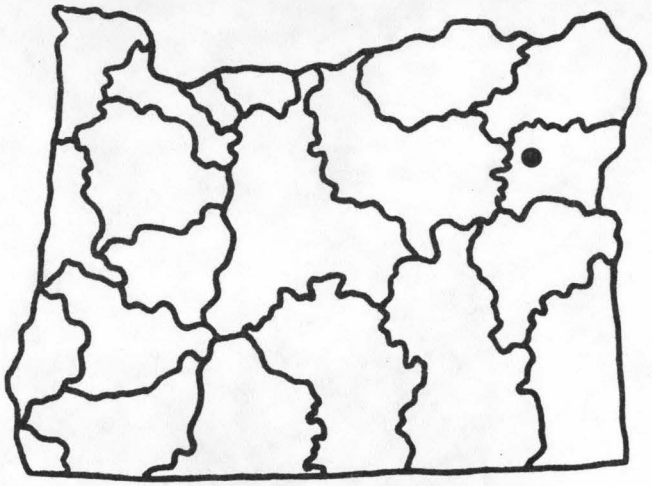
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.1	.02	.20	1.000
80	9.5	.05	.43	.929
50	27.5	.15	1.01	.746
30	56.6	.32	1.58	.568
10	138.4	.77	2.38	.351

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 87 CFS





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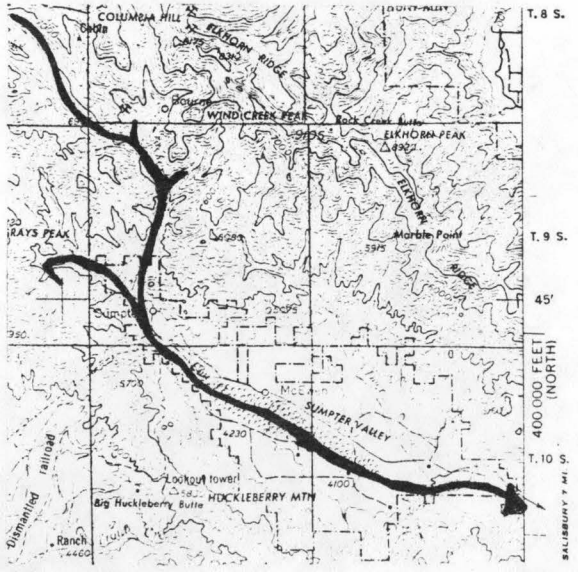


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-010-R0001

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.23, T9S, R45E
D.	Latitude, Longitude	44°46'N, 117°10'W
E.	Stream Name	Eagle Creek
F.	Major Basin Name	Powder
G.	River Mile	0.0 to 4.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

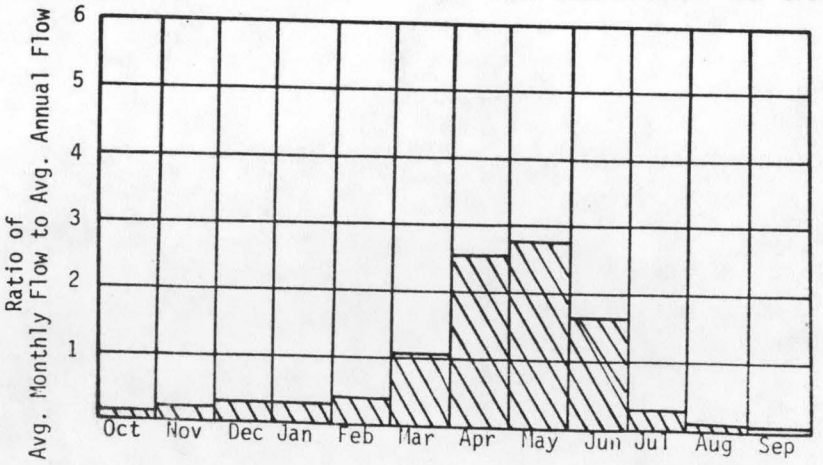
A.	Upstream Elevation of Reach	2480	Ft. MSL
B.	Downstream Elevation of Reach	2078	Ft. MSL
C.	Total Available Head in Reach	402	Ft.
D.	Average Slope in Reach	100.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	195	Sq.Mi.
F.	Inflow Classification	Natural	

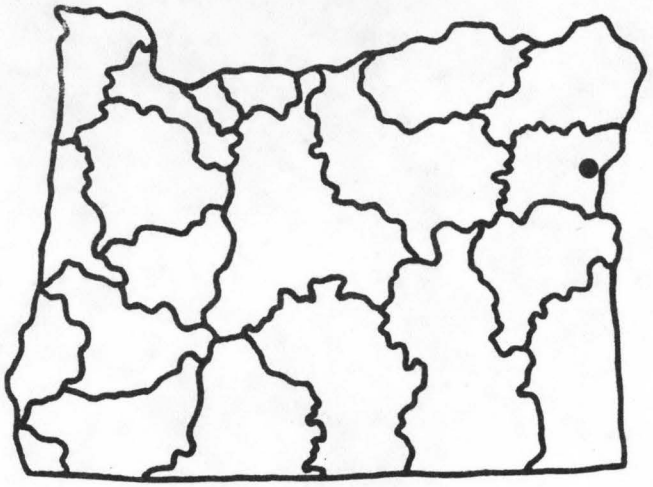
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	7.7	.26	2.29	1.000
80	16.9	.57	4.69	.932
50	46.3	1.58	10.39	.753
30	101.9	3.47	17.04	.560
10	273.8	9.33	27.30	.334

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 107 CFS





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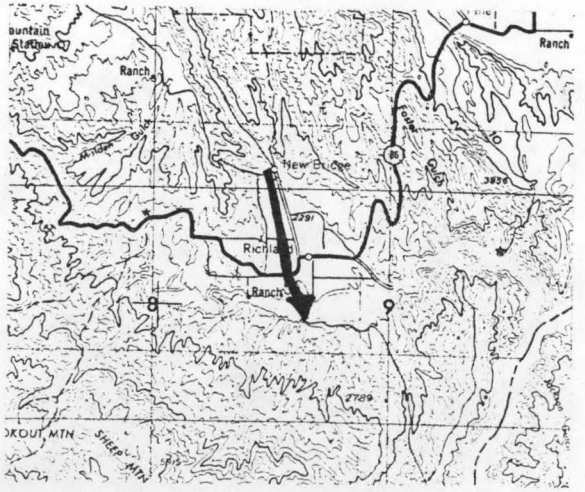


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-010-R0002

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.29, T8S, R45E
D.	Latitude, Longitude	44°51'N,117°14'W
E.	Stream Name	Eagle Creek
F.	Major Basin Name	Powder
G.	River Mile	4.0 to 12.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

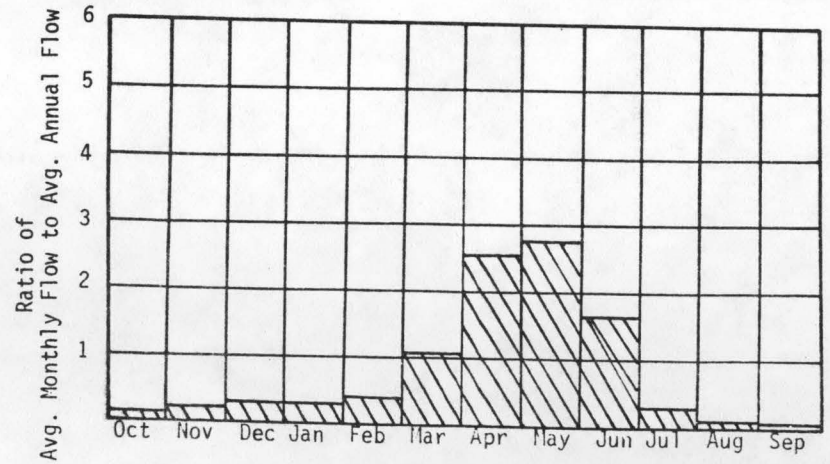
A.	Upstream Elevation of Reach	2940	Ft. MSL
B.	Downstream Elevation of Reach	2480	Ft. MSL
C.	Total Available Head in Reach	460	Ft.
D.	Average Slope in Reach	57.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	181	Sq.Mi.
F.	Inflow Classification	Natural	

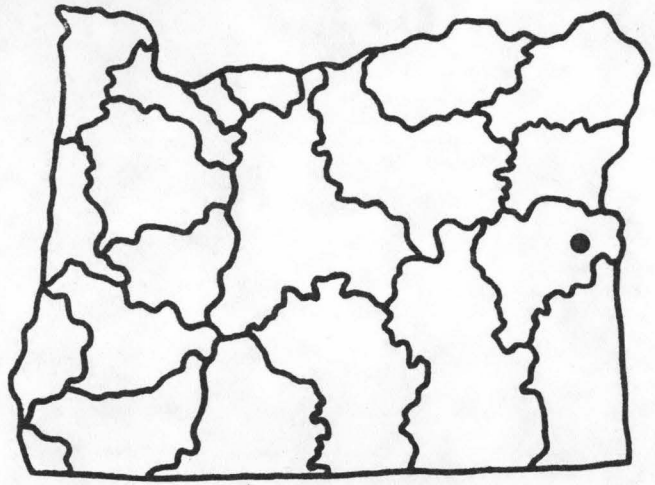
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	7.2	.28	2.47	1.000
80	15.9	.62	5.07	.932
50	44.0	1.72	11.30	.752
30	96.3	3.76	18.45	.561
10	256.4	10.00	29.38	.336

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 101 CFS





U.S.G.S. TOPO. SERIES
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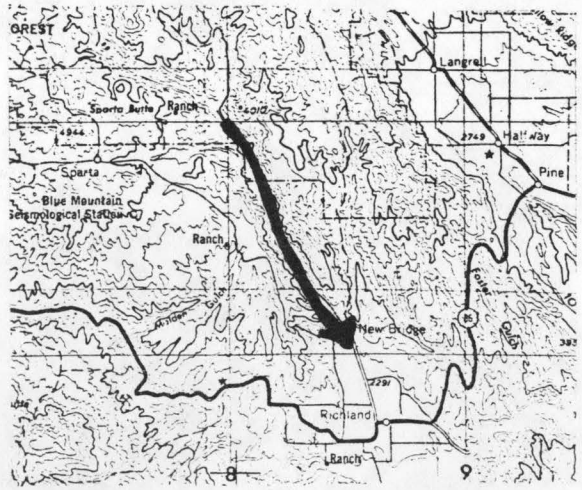


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-010-R0003

I. LOCATION

A. State	Oregon	
B. County	Baker	
C. Township, Range	Sec.34, T7S, R44E	
D. Latitude, Longitude	44°54'N, 117°17'W	
E. Stream Name	Eagle Creek	
F. Major Basin Name	Powder	
G. River Mile	12.0 to 18.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

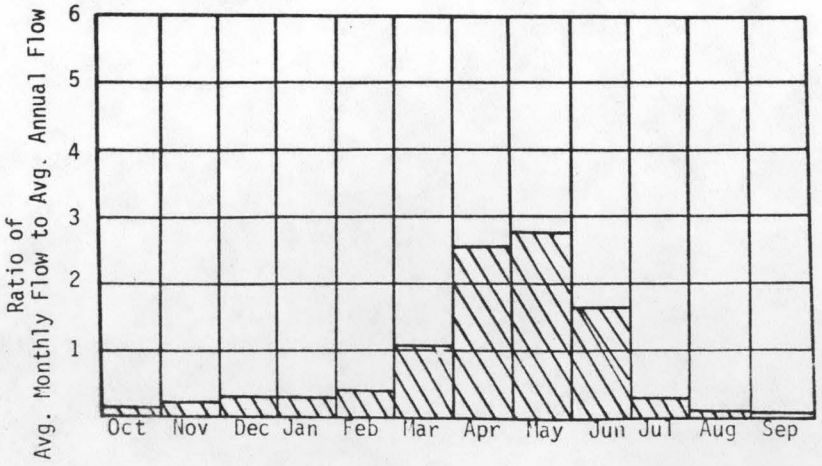
A. Upstream Elevation of Reach	3360	Ft. MSL
B. Downstream Elevation of Reach	2940	Ft. MSL
C. Total Available Head in Reach	420	Ft.
D. Average Slope in Reach	70.0	Ft./Mi.
E. Drainage Area above Reach Mouth	140	Sq.Mi.
F. Inflow Classification	Natural	

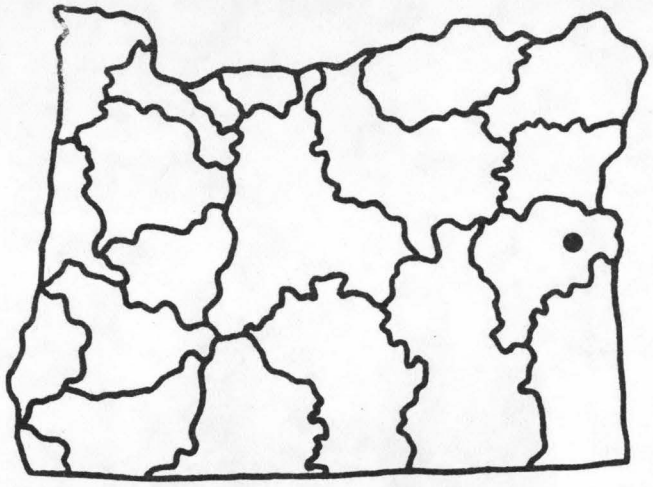
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	6.6	.23	2.06	1.000
80	14.7	.52	4.26	.931
50	40.8	1.45	9.56	.751
30	88.4	3.15	15.50	.562
10	232.2	8.26	24.46	.338

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 92 CFS





U.S.G.S. TOPO. SERIES
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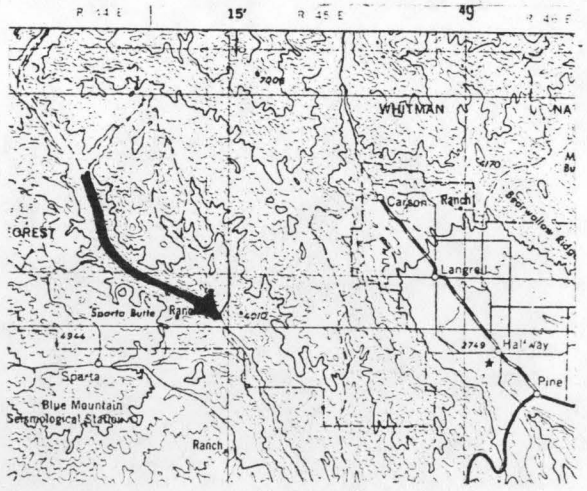


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-120-010-R0004

I. LOCATION

A.	State	Oregon
B.	County	Baker-Union
C.	Township, Range	Sec.21, T7S, R44E
D.	Latitude, Longitude	44°56'N, 117°18'W
E.	Stream Name	Eagle Creek
F.	Major Basin Name	Powder
G.	River Mile	18.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

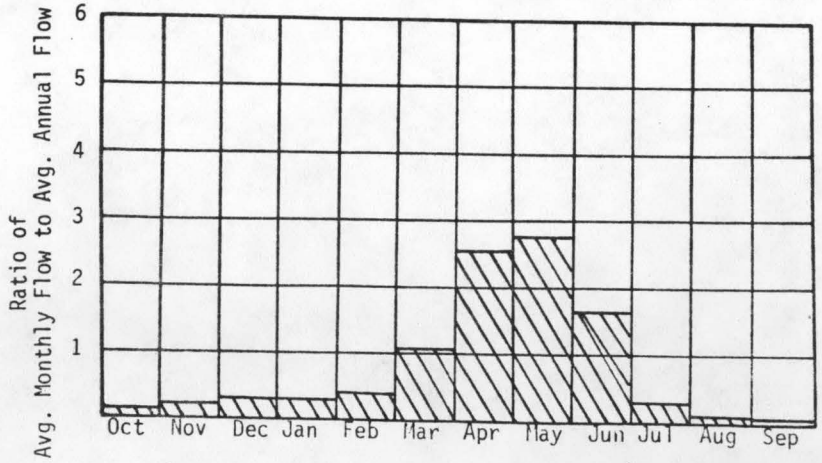
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	114	Sq.Mi.
F.	Inflow Classification	Natural	

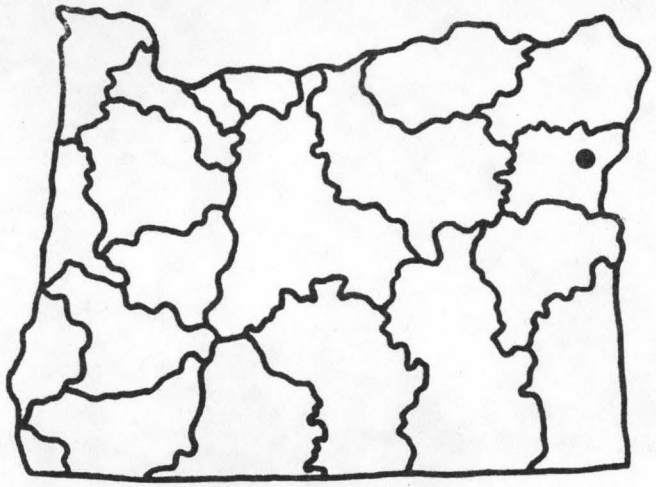
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	6.3	.04	.31	1.000
80	14.1	.08	.64	.931
50	39.4	.22	1.45	.751
30	85.0	.48	2.34	.563
10	221.8	1.24	3.68	.339

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 89 CFS





U.S.G.S. TOPO. SERIES
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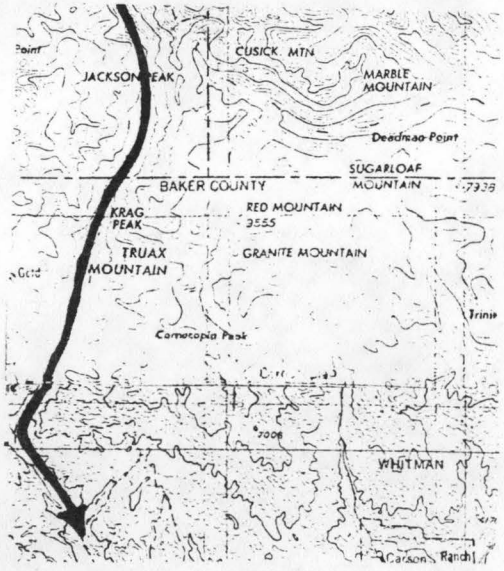


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-123-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.2, T14S, R44E
D.	Latitude, Longitude	44°22'N, 117°18'W
E.	Stream Name	Burnt River
F.	Major Basin Name	Powder
G.	River Mile	0.0 to 11.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

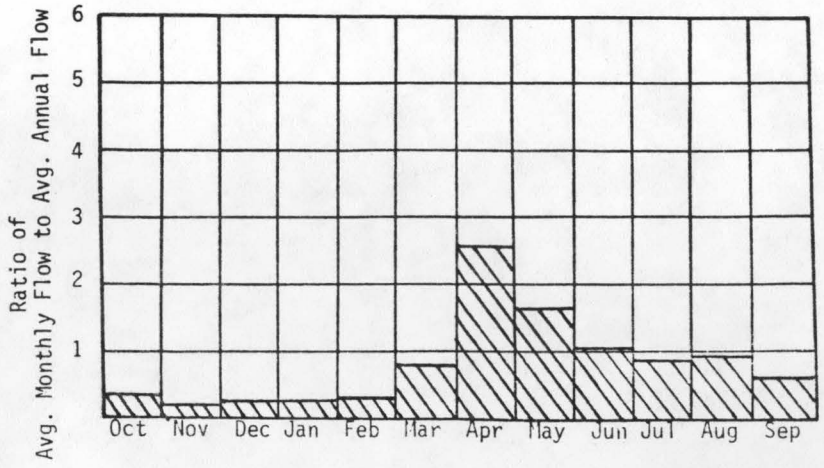
A.	Upstream Elevation of Reach	2300	Ft. MSL
B.	Downstream Elevation of Reach	2077	Ft. MSL
C.	Total Available Head in Reach	223	Ft.
D.	Average Slope in Reach	19.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	1039	Sq.Mi.
F.	Inflow Classification	Regulated	

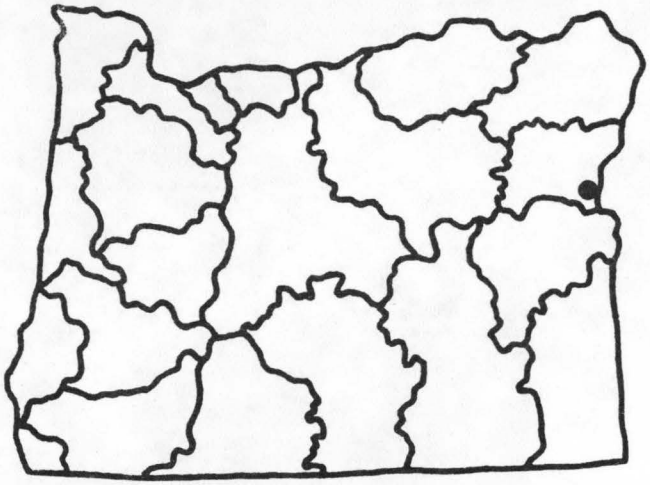
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	13.7	.26	2.27	1.000
80	28.6	.54	4.43	.935
50	74.6	1.41	9.38	.759
30	175.5	3.32	16.06	.553
10	513.8	9.71	27.26	.321

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 184 CFS





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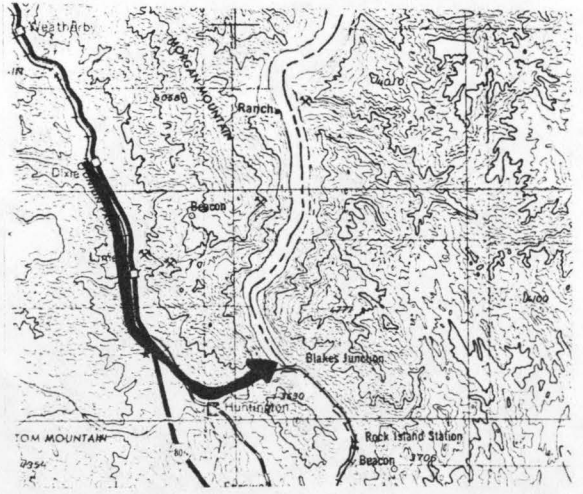
1:250,000 SCALE
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-123-000-R0002

I. LOCATION

A. State	Oregon	
B. County	Baker	
C. Township, Range	Sec.32, T12S, R44E	
D. Latitude, Longitude	44°28'N, 117°20'W	
E. Stream Name	Burnt River	
F. Major Basin Name	Powder	
G. River Mile	11.2 to 19.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

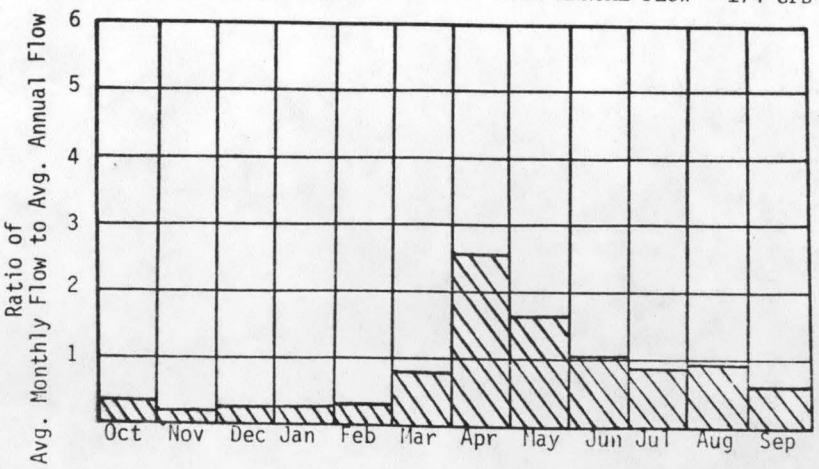
A. Upstream Elevation of Reach	2465	Ft. MSL
B. Downstream Elevation of Reach	2300	Ft. MSL
C. Total Available Head in Reach	165	Ft.
D. Average Slope in Reach	21.2	Ft./Mi.
E. Drainage Area above Reach Mouth	903	Sq.Mi.
F. Inflow Classification	Regulated	

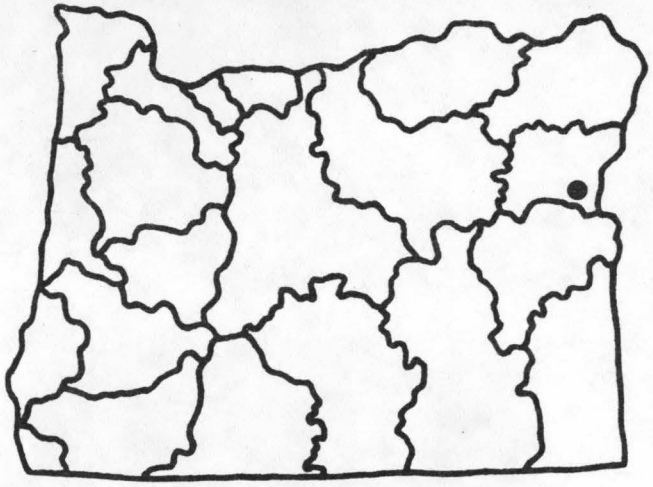
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.9	.18	1.58	1.000
80	27.1	.38	3.10	.934
50	71.0	.99	6.59	.759
30	165.7	2.32	11.23	.554
10	480.6	6.72	18.95	.322

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 174 CFS





U.S.G.S. TOPO. SERIES
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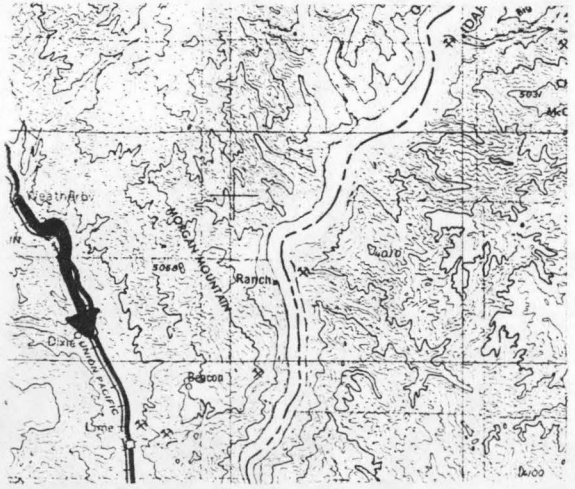
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-123-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.11, T12S, R43E
D.	Latitude, Longitude	44°32'N, 117°25'W
E.	Stream Name	Burnt River
F.	Major Basin Name	Powder
G.	River Mile	19.0 to 25.1

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

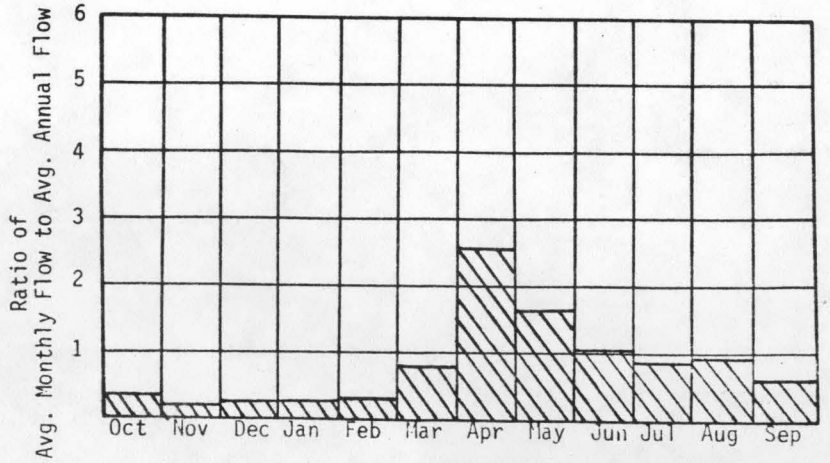
A.	Upstream Elevation of Reach	2560	Ft. MSL
B.	Downstream Elevation of Reach	2465	Ft. MSL
C.	Total Available Head in Reach	95	Ft.
D.	Average Slope in Reach	15.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	866	Sq.Mi.
F.	Inflow Classification	Regulated	

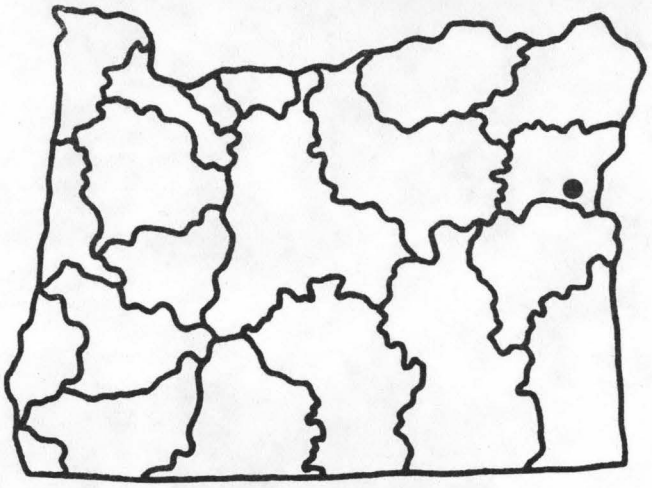
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	12.5	.10	.88	1.000
80	26.3	.21	1.73	.934
50	69.1	.56	3.70	.758
30	160.9	1.30	6.29	.554
10	464.6	3.74	10.57	.323

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 168 CFS





U.S.G.S. TOPO. SERIES
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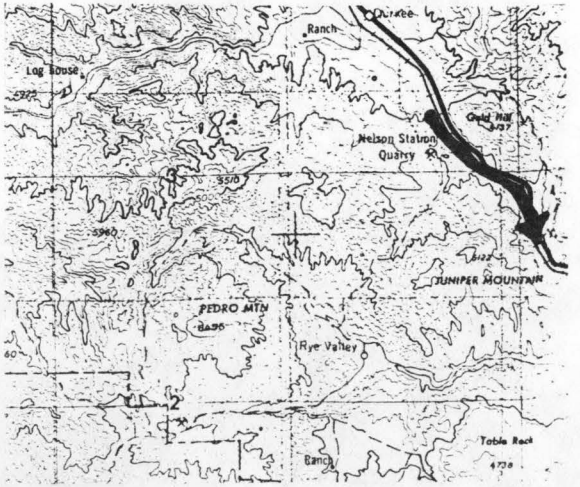
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-123-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.28, T12S, R43E
D.	Latitude, Longitude	44°35'N, 17°28'W
E.	Stream Name	Burnt River
F.	Major Basin Name	Powder
G.	River Mile	25.1 to 27.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

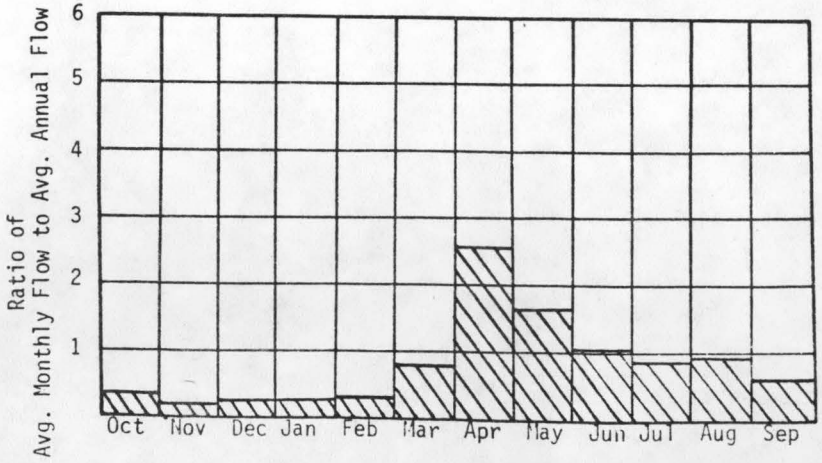
A.	Upstream Elevation of Reach	2750	Ft. MSL
B.	Downstream Elevation of Reach	2560	Ft. MSL
C.	Total Available Head in Reach	190	Ft.
D.	Average Slope in Reach	76	Ft./Mi.
E.	Drainage Area above Reach Mouth	801	Sq.Mi.
F.	Inflow Classification	Regulated	

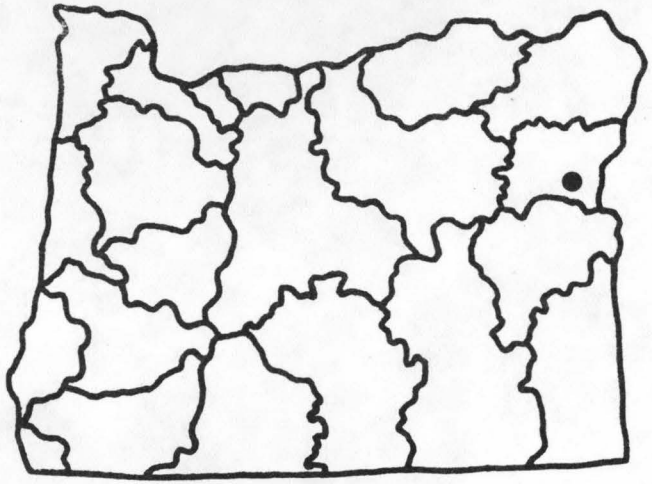
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	11.6	.19	1.64	1.000
80	24.7	.40	3.25	.934
50	65.2	1.05	6.97	.757
30	150.6	2.43	11.79	.555
10	430.4	6.93	19.68	.324

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 158 CFS





U.S.G.S. TOPO. SERIES
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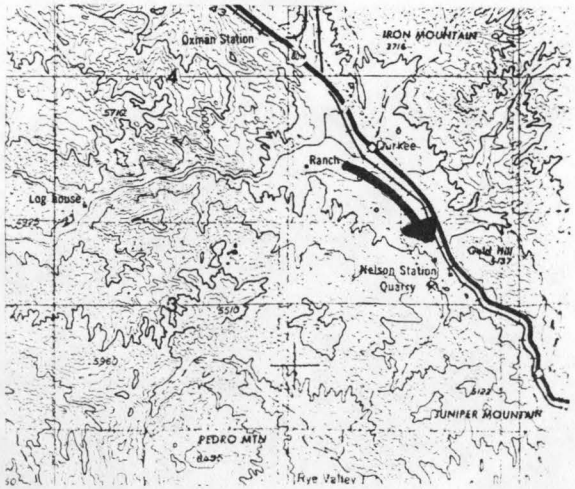
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-123-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.27, T11S, R42E
D.	Latitude, Longitude	44°35'N, 117°33'W
E.	Stream Name	Burnt River
F.	Major Basin Name	Powder
G.	River Mile	27.6 to 37.1

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

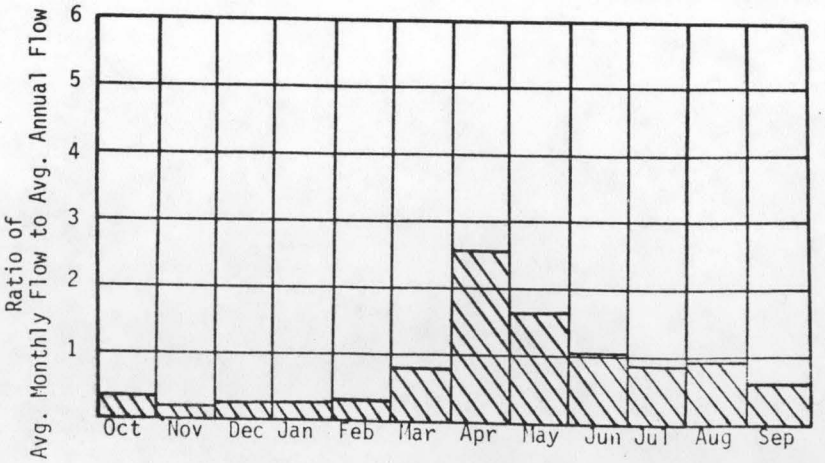
A.	Upstream Elevation of Reach	3225	Ft. MSL
B.	Downstream Elevation of Reach	2750	Ft. MSL
C.	Total Available Head in Reach	475	Ft.
D.	Average Slope in Reach	50	Ft./Mi.
E.	Drainage Area above Reach Mouth	657	Sq.Mi.
F.	Inflow Classification	Regulated	

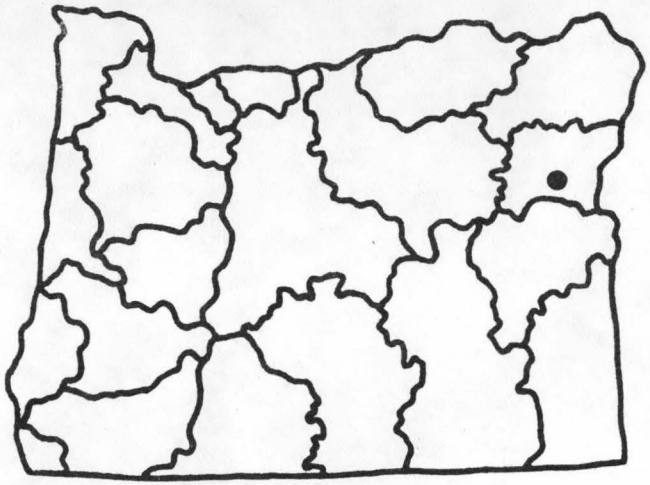
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	10.9	.44	3.83	1.000
80	23.2	.93	7.63	.934
50	61.7	2.48	16.46	.757
30	141.4	5.69	27.70	.556
10	399.9	16.10	45.93	.326

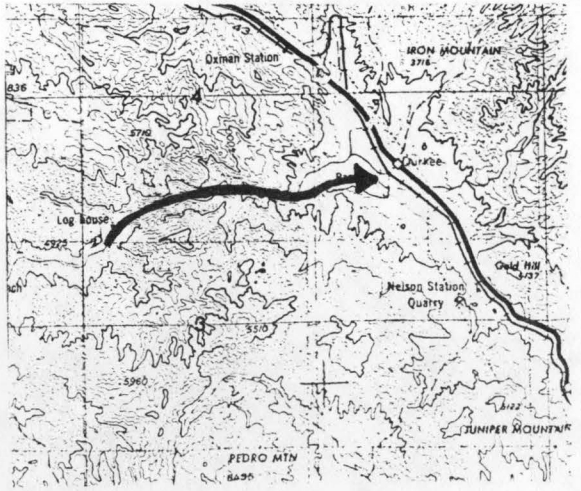
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 148 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-123-000-R0006

I. LOCATION

A. State	Oregon	
B. County	Baker	
C. Township, Range	Sec.10, T12S, R41E	
D. Latitude, Longitude	44°33'N, 117°41'W	
E. Stream Name	Burnt River	
F. Major Basin Name	Powder	
G. River Mile	37.1 to 46.4	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

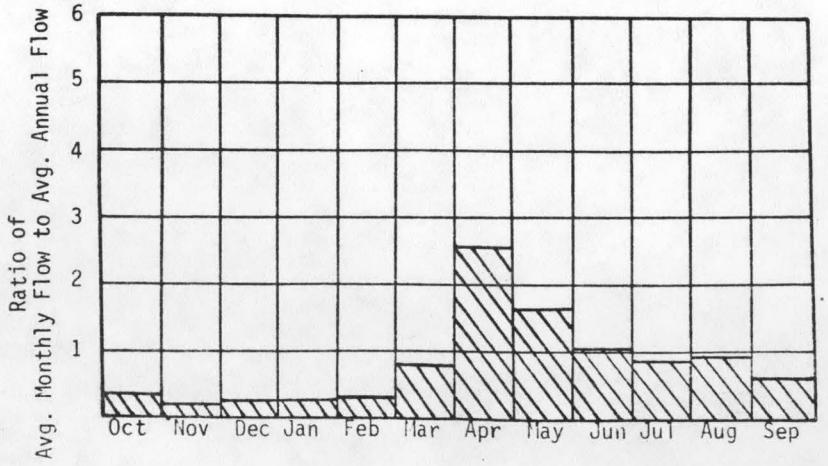
A. Upstream Elevation of Reach	3369	Ft. MSL
B. Downstream Elevation of Reach	3225	Ft. MSL
C. Total Available Head in Reach	144	Ft.
D. Average Slope in Reach	15.5	Ft./Mi.
E. Drainage Area above Reach Mouth	615	Sq.Mi.
F. Inflow Classification	Regulated	

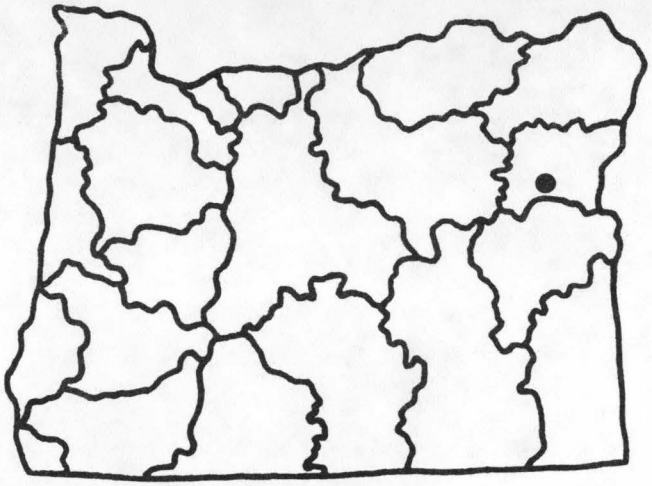
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	10.4	.13	1.11	1.000
80	22.2	.27	2.21	.933
50	59.3	.72	4.79	.756
30	135.1	1.65	8.04	.556
10	379.5	4.63	13.26	.327

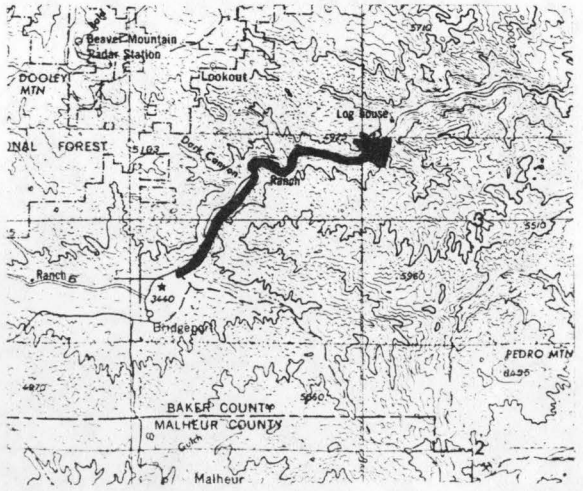
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 142 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-123-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.26, T12S, R40E
D.	Latitude, Longitude	44°30'N, 117°33'W
E.	Stream Name	Burnt River
F.	Major Basin Name	Powder
G.	River Mile	46.4 to 55.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

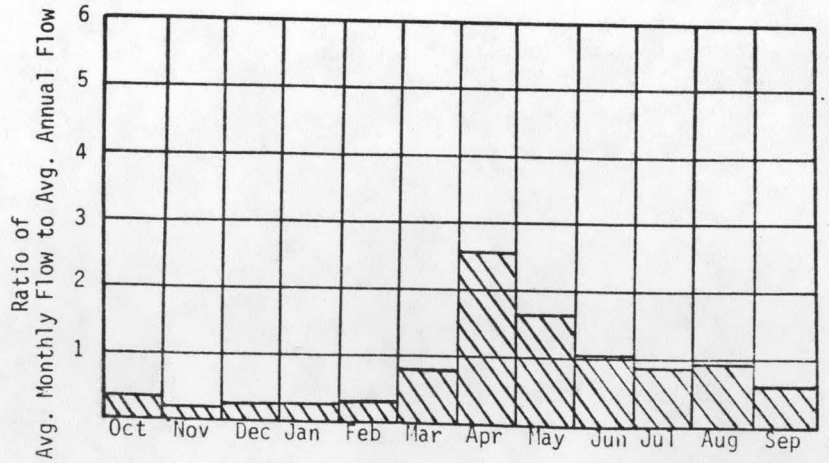
A.	Upstream Elevation of Reach	3440	Ft. MSL
B.	Downstream Elevation of Reach	3369	Ft. MSL
C.	Total Available Head in Reach	71	Ft.
D.	Average Slope in Reach	7.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	556	Sq.Mi.
F.	Inflow Classification	Regulated	

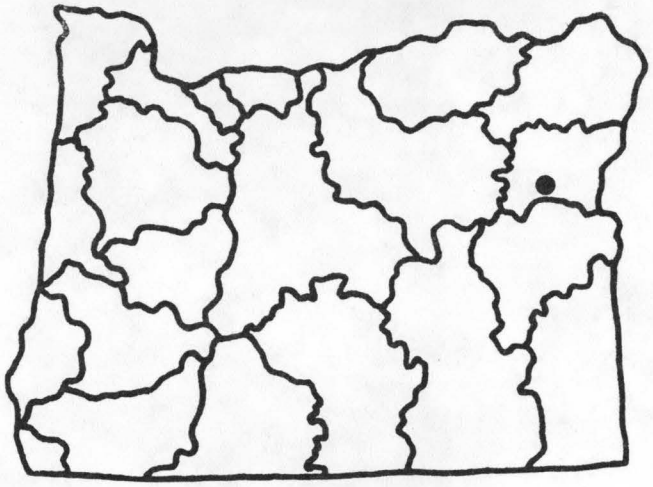
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	9.7	.06	.51	1.000
80	20.9	.13	1.03	.933
50	56.1	.34	2.23	.755
30	127.0	.76	3.73	.557
10	353.1	2.12	6.11	.328

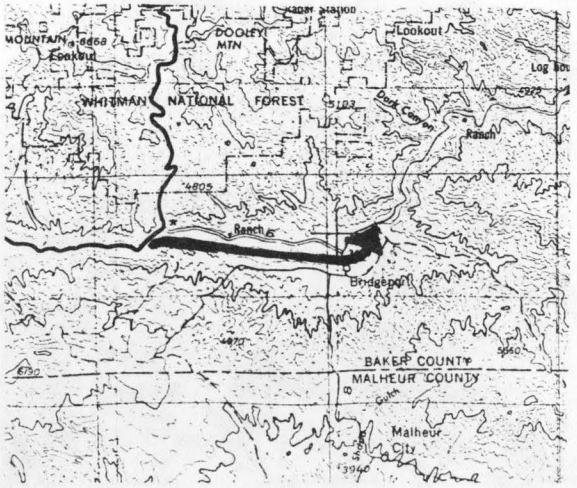
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 133 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-123-000-R0008

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.27, T12S, R39E
D.	Latitude, Longitude	44°30'N, 117°56'W
E.	Stream Name	Burnt River
F.	Major Basin Name	Powder
G.	River Mile	55.8 to 66.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

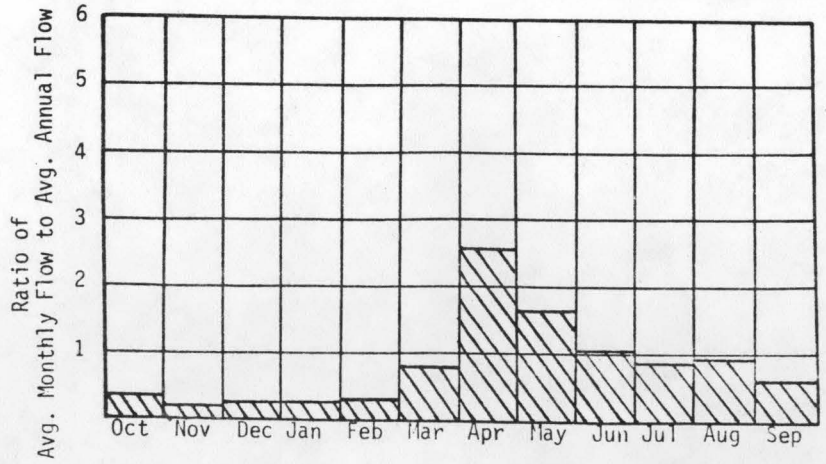
A.	Upstream Elevation of Reach	3590	Ft. MSL
B.	Downstream Elevation of Reach	3440	Ft. MSL
C.	Total Available Head in Reach	150	Ft.
D.	Average Slope in Reach	14.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	503	Sq.Mi.
F.	Inflow Classification	Regulated	

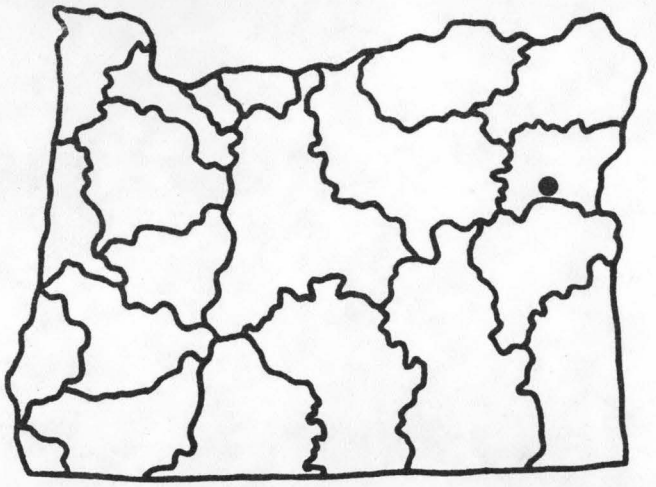
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	8.8	.11	.98	1.000
80	19.1	.24	1.98	.933
50	51.8	.66	4.35	.754
30	115.8	1.47	7.20	.558
10	317.4	4.04	11.69	.331

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 122 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER-CANYON CITY

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-123-000-R0009

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.27, T12S, R38E
D.	Latitude, Longitude	44°30'N, 118°03'W
E.	Stream Name	Burnt River
F.	Major Basin Name	Powder
G.	River Mile	66.4 to 74.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

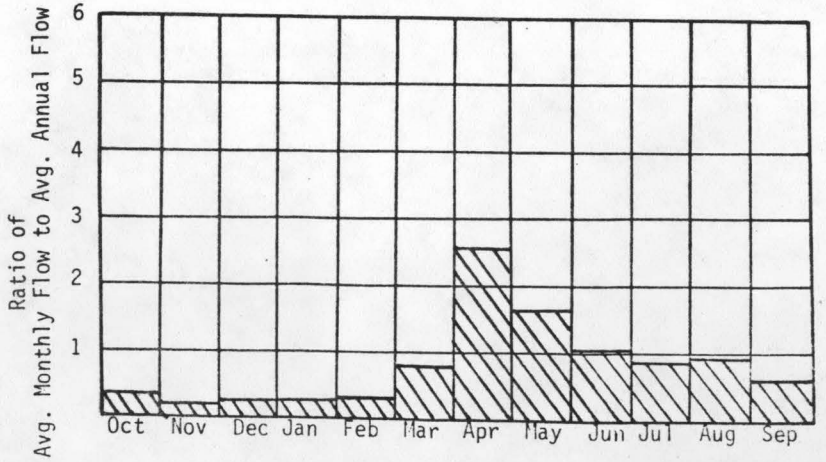
A.	Upstream Elevation of Reach	3670	Ft. MSL
B.	Downstream Elevation of Reach	3590	Ft. MSL
C.	Total Available Head in Reach	80	Ft.
D.	Average Slope in Reach	10.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	413	Sq.Mi.
F.	Inflow Classification	Regulated	

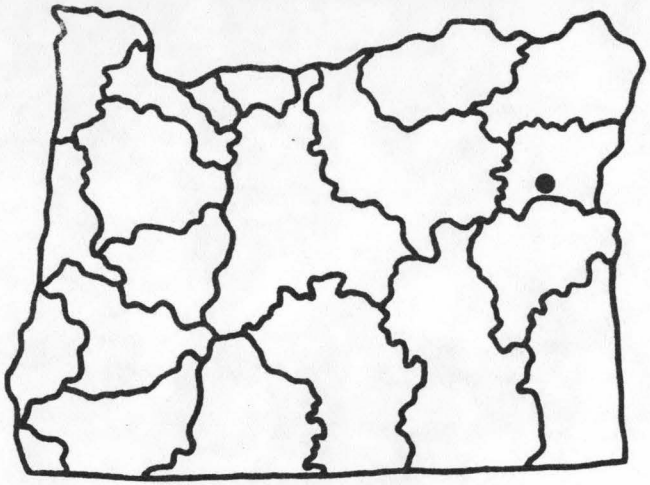
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	7.8	.05	.46	1.000
80	17.1	.12	.95	.932
50	46.8	.32	2.09	.753
30	103.4	.70	3.44	.560
10	278.4	1.89	5.52	.334

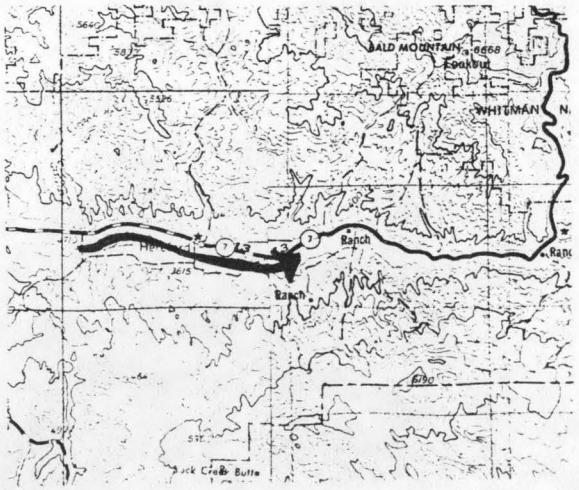
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 108 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-123-000-R0010

I. LOCATION

A.	State	Oregon
B.	County	Baker
C.	Township, Range	Sec.26, T12S, R37E
D.	Latitude, Longitude	44°29'N, 118°07'W
E.	Stream Name	Burnt River
F.	Major Basin Name	Powder
G.	River Mile	74.2 to 79.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

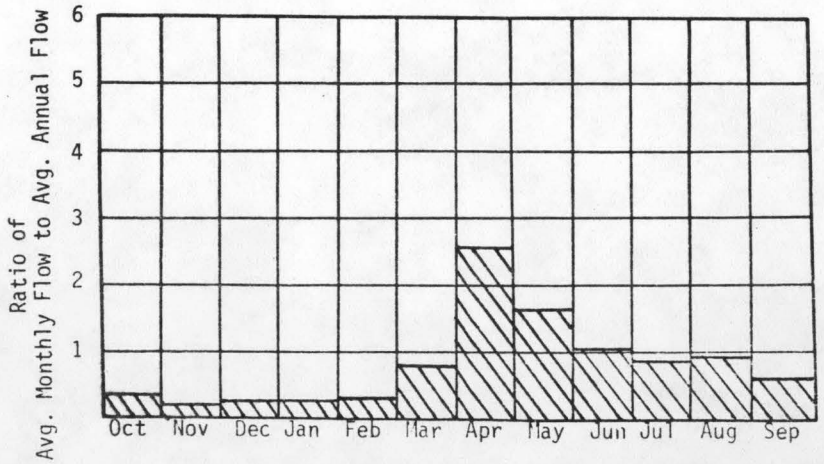
A.	Upstream Elevation of Reach	3780	Ft. MSL
B.	Downstream Elevation of Reach	3670	Ft. MSL
C.	Total Available Head in Reach	110	Ft.
D.	Average Slope in Reach	19.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	341	Sq.Mi.
F.	Inflow Classification	Regulated	

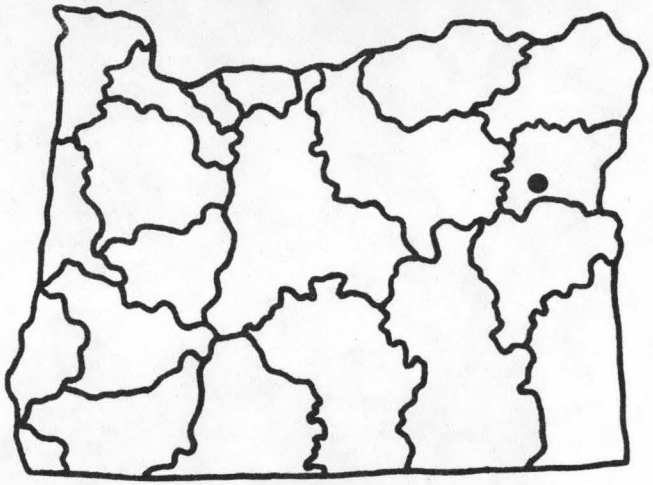
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	7.4	.07	.60	1.000
80	16.3	.15	1.24	.932
50	44.9	.42	2.76	.752
30	98.5	.92	4.51	.561
10	263.0	2.45	7.20	.335

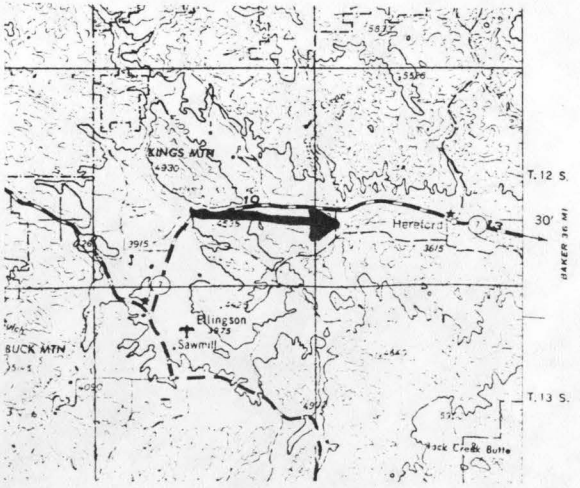
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 104 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER



FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-240-								
117-000-R0001	-	-	X	-	1.0	69-IP	-	13.0
117-000-R0002	-	-	X	-	3.2	69-IP	-	6.8
117-000-R0003	-	-	X	-	3.2	69-IP	-	5.2
120-010-R0001	-	-	X	-	2.1	230-IP	-	7.1
120-010-R0002	-	-	-	-	2.7	230-IP	1	5.2
120-010-R0003	-	-	-	-	5.2	230-IP	-	10.0
120-010-R0004	-	-	-	-	7.0	230-IP	-	12.0
120-000-R0002	-	X	-	-	1.2	230-IP	-	8.2
120-000-R0003	X	X	-	-	1.2	230-IP	-	11.6
120-000-R0004	-	X	-	-	2.2	230-IP	-	17.0
120-000-R0005	-	-	-	-	1.3	230-IP	-	8.8
120-000-R0006	X	-	-	-	1.7	230-CPU	-	7.0
120-000-R0007	-	-	-	-	1.8	230-IP	-	14.8

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-240-								
120-000-R0008	-	-	-	-	1.0	230-IP	-	19.0
120-000-R0009	-	-	-	-	0.2	69-CPU	-	10.0
120-000-R0010	-	-	-	-	0.3	23-CPU	-	11.2
120-000-R0011	-	-	-	-	3.0	69-CPU	-	7.0
120-000-R0012	-	X	-	-	0.3	23-CPU	1,2	1.0
120-000-R0013	-	X	-	-	2.0	138-IP	1,2	5.0
120-000-R0014	-	X	-	-	1.6	138-IP	-	9.7
120-000-R0015	-	X	-	-	1.0	138-IP	-	11.0
123-000-R0001	X	X	-	-	2.1	138-IP	-	8.0
123-000-R0002	-	X	-	-	8.6	138-IP	-	11.0
123-000-R0003	-	X	-	-	11.0	138-IP	-	15.0
123-000-R0004	-	X	-	-	12.5	138-IP	-	18.0
123-000-R0005	-	X	-	-	14.0	138-IP	-	20.0
123-000-R0006	X	X	-	-	12.5	69-IP	-	26.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-240-								
123-000-R0007	-	X	-	-	11.5	69-IP	-	31.0
123-000-R0008	-	X	-	-	7.5	69-IP	-	35.0
123-000-R0009	-	X	-	-	3.1	69-IP	-	40.0
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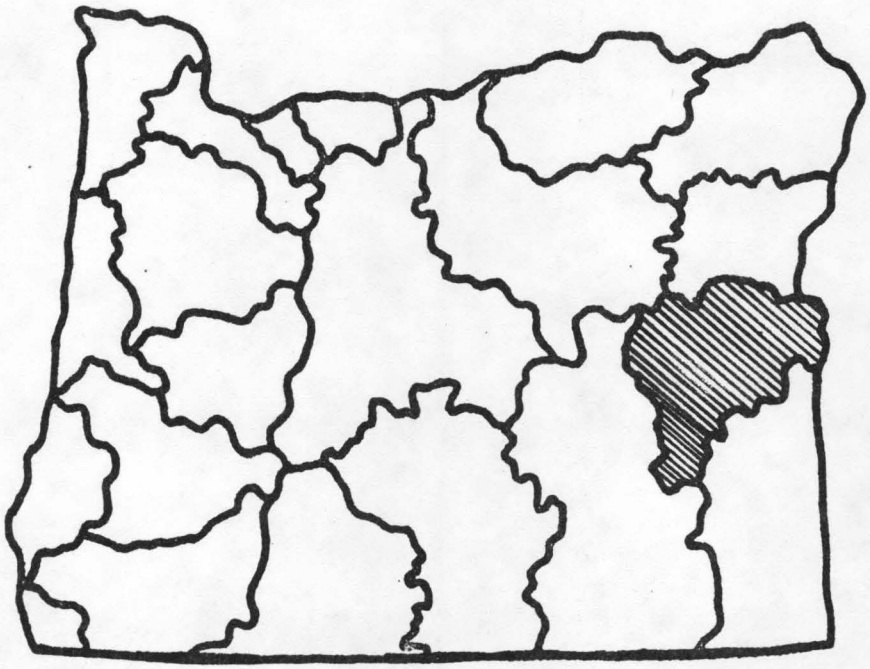
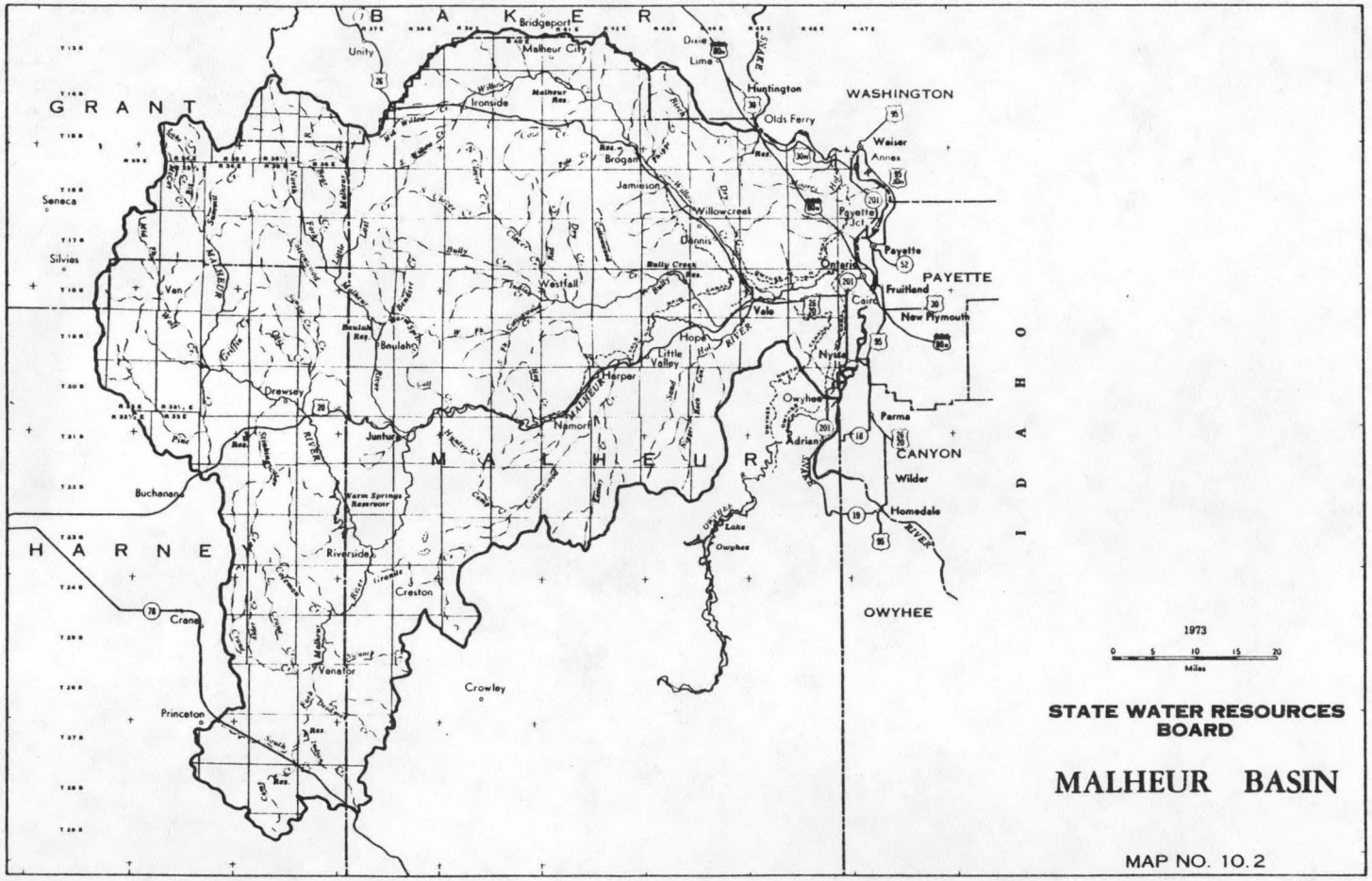


APPENDIX 10

MALHEUR BASIN


BAKER
GRANT
WASHINGTON
PAYETTE
CANYON
OWYHEE
HARNEY
MALHEUR
IDAHO
Bridgeport
Malheur City
Unity
Dixie
Lime
Huntington
Olds Ferry
Ironside
Weiser
Annex
Jamieson
Willowcreek
Payette Jct.
Payette
Ontario
Fruitland
Dennis
Westfall
Vale
Cairo
New Plymouth
Hope
Little Valley
Harper
Nyssa
Owyhee
Parma
Adrian
Wilder
Homedale
Namorf
Juntura
Drewsey
Silvies
Seneca
Van
Buchanan
Riverside
Creston
Crane
Venator
Princeton
Crowley
Lake Owyhee
1973
0 5 10 15 20
Miles
STATE WATER RESOURCES BOARD
MALHEUR BASIN
MAP NO. 10.2

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.16, T18S, R46E
D.	Latitude, Longitude	44°00'N, 117°06'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	0.0 to 19.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

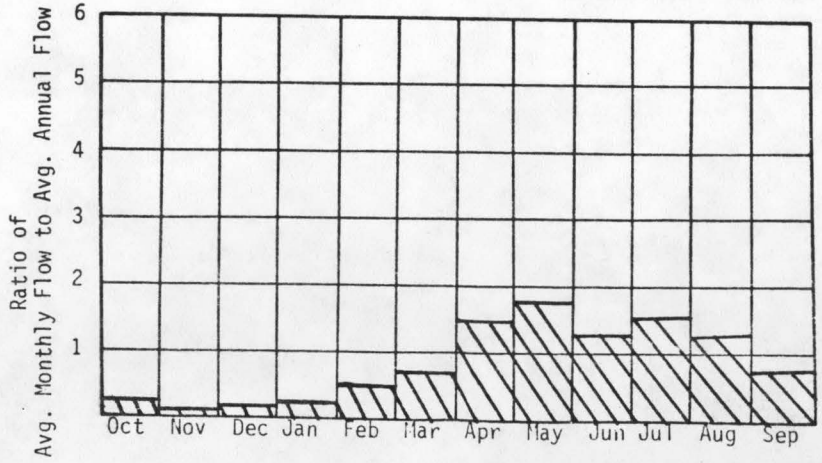
A.	Upstream Elevation of Reach	2210	Ft. MSL
B.	Downstream Elevation of Reach	2140	Ft. MSL
C.	Total Available Head in Reach	70	Ft.
D.	Average Slope in Reach	3.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	4999	Sq.Mi.
F.	Inflow Classification	Regulated	

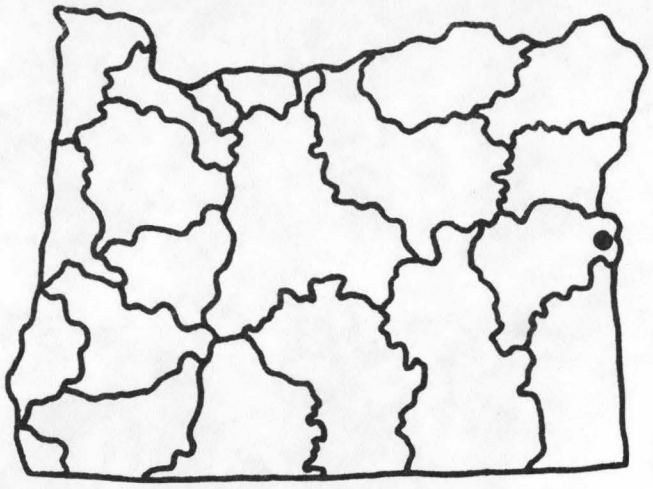
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	33.5	.20	1.74	1.000
80	65.6	.39	3.20	.939
50	145.8	.87	5.91	.780
30	244.9	1.45	7.97	.626
10	437.5	2.60	9.97	.439

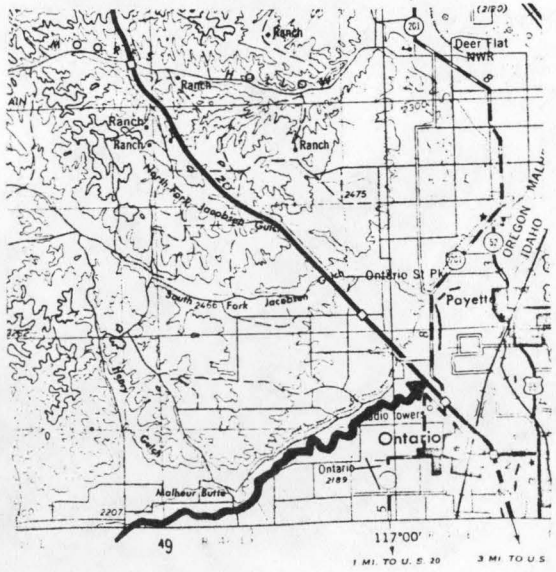
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 289 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BAKER-BOISE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.20, T8S, R45E
D.	Latitude, Longitude	43°59'N, 117°14'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	19.3 to 20.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

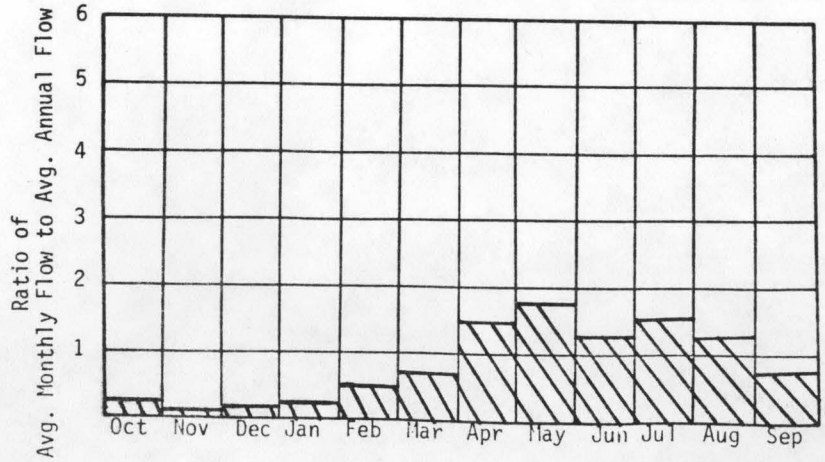
A.	Upstream Elevation of Reach	2230	Ft. MSL
B.	Downstream Elevation of Reach	2210	Ft. MSL
C.	Total Available Head in Reach	20	Ft.
D.	Average Slope in Reach	20	Ft./Mi.
E.	Drainage Area above Reach Mouth	4951	Sq.Mi.
F.	Inflow Classification	Regulated	

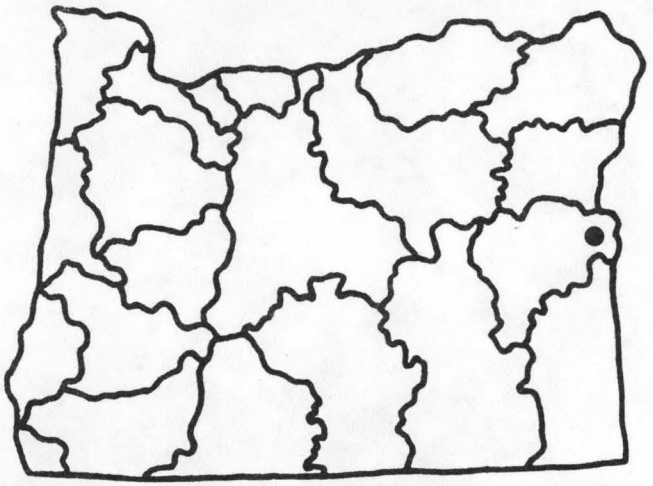
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	33.2	.06	.49	1.000
80	65.0	.11	.91	.939
50	144.6	.25	1.67	.780
30	242.8	.41	2.26	.626
10	433.9	.74	2.83	.439

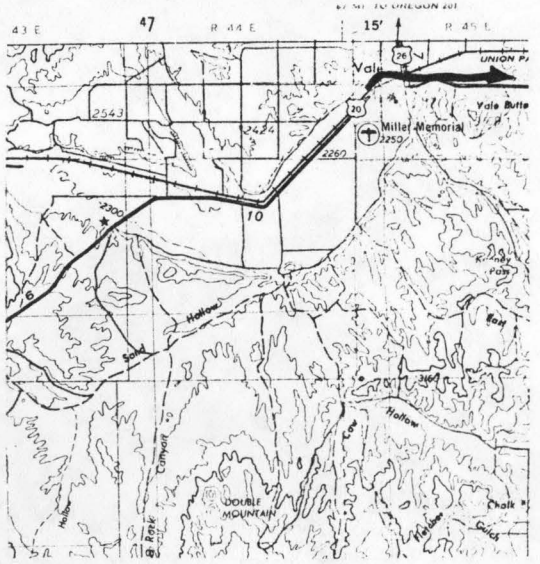
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 286 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BOISE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.6, T19S, R44E
D.	Latitude, Longitude	43°46'N, 117°16'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	20.3 to 28.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

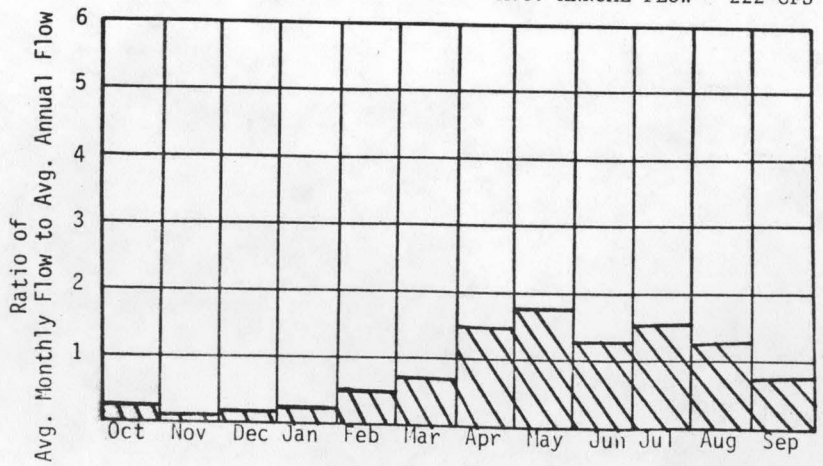
A.	Upstream Elevation of Reach	2270	Ft. MSL
B.	Downstream Elevation of Reach	2230	Ft. MSL
C.	Total Available Head in Reach	40	Ft.
D.	Average Slope in Reach	4.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	4082	Sq.Mi.
F.	Inflow Classification	Regulated	

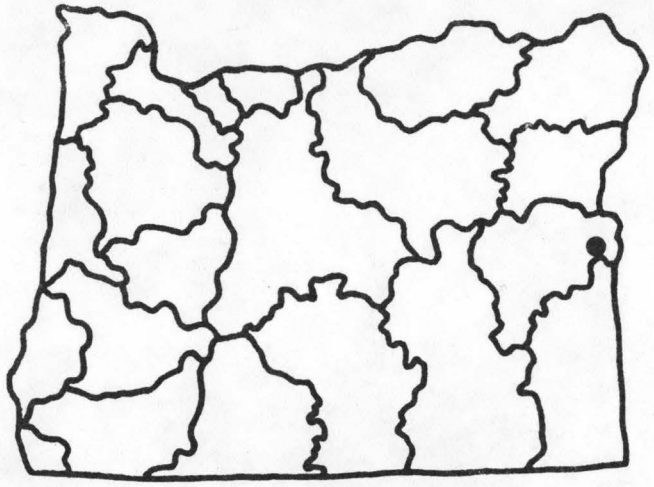
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	25.8	.09	.76	1.000
80	50.4	.17	1.41	.939
50	112.1	.38	2.60	.780
30	188.3	.64	3.50	.626
10	336.4	1.14	4.38	.439

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 222 CFS





U.S.G.S. TOPO. SERIES
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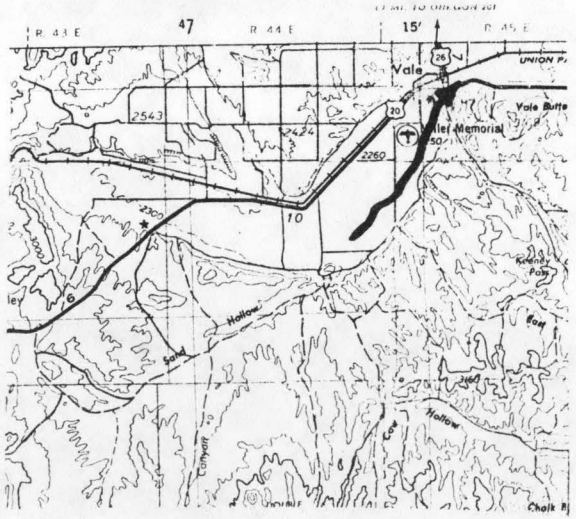
MAP NAME: BOISE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.6, T19S, R44E
D.	Latitude, Longitude	43°56'N, 117°23'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	28.8 to 40.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

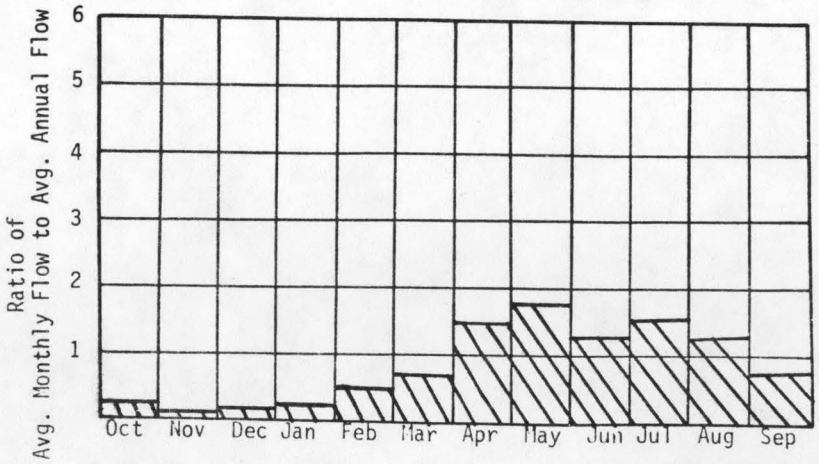
A.	Upstream Elevation of Reach	2340	Ft. MSL
B.	Downstream Elevation of Reach	2270	Ft. MSL
C.	Total Available Head in Reach	70	Ft.
D.	Average Slope in Reach	6.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	3358	Sq.Mi.
F.	Inflow Classification	Regulated	

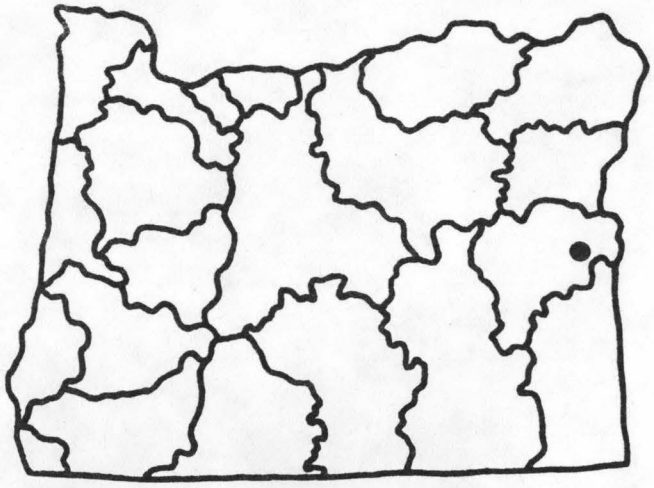
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	22.5	.13	1.17	1.000
80	43.9	.26	2.14	.939
50	97.7	.58	3.96	.780
30	164.1	.97	5.34	.626
10	293.2	1.74	6.68	.439

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 194 CFS





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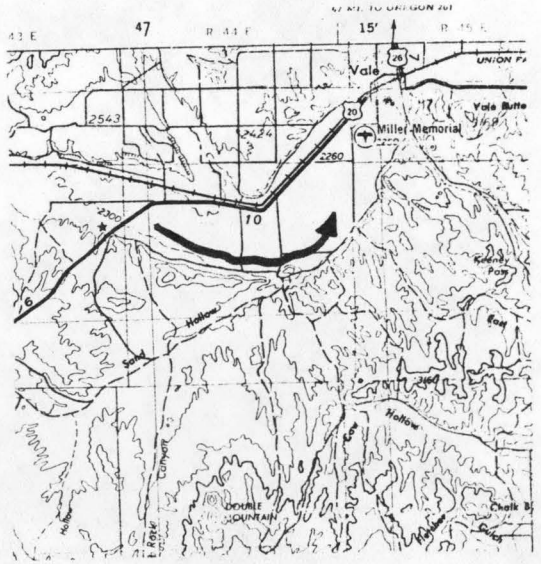


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.18, T19S, R43E
D.	Latitude, Longitude	43°53'N, 117°29'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	40.0 to 53.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

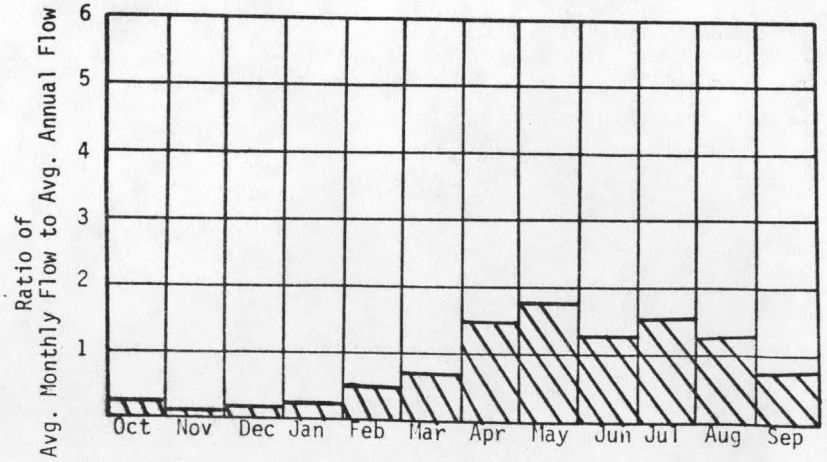
A.	Upstream Elevation of Reach	2480	Ft. MSL
B.	Downstream Elevation of Reach	2340	Ft. MSL
C.	Total Available Head in Reach	140	Ft.
D.	Average Slope in Reach	10.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	3332	Sq.Mi.
F.	Inflow Classification	Regulated	

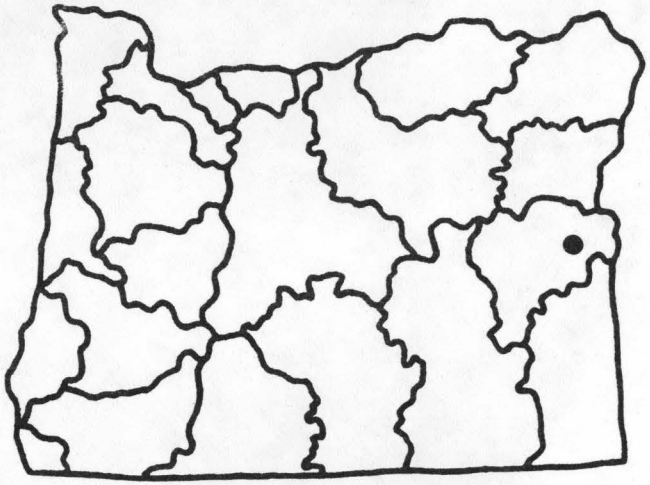
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	22.3	.26	2.31	1.000
80	43.6	.52	4.25	.939
50	96.9	1.15	7.85	.780
30	162.7	1.93	10.59	.626
10	290.7	3.45	13.25	.439

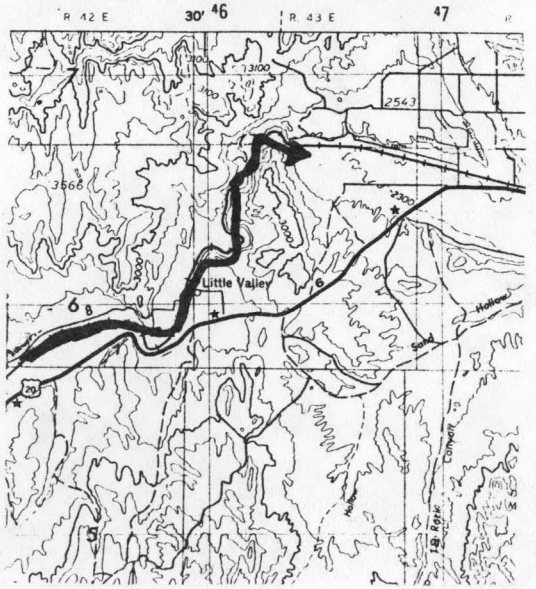
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 192 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BOISE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0006

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.12, T20S, R41E
D.	Latitude, Longitude	43°50'N, 117°39'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	53.4 to 64.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

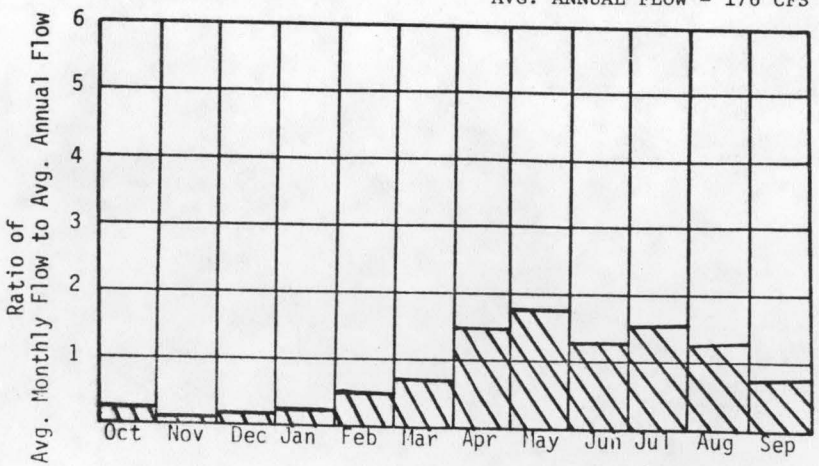
A.	Upstream Elevation of Reach	2590	Ft. MSL
B.	Downstream Elevation of Reach	2480	Ft. MSL
C.	Total Available Head in Reach	110	Ft.
D.	Average Slope in Reach	9.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	3052	Sq.Mi.
F.	Inflow Classification	Regulated	

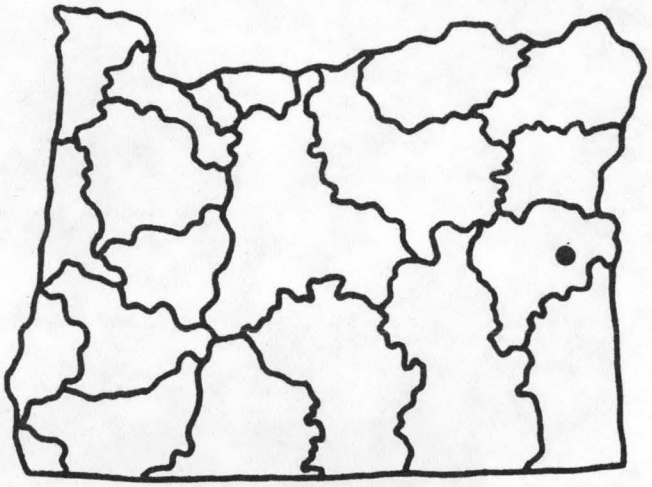
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	20.4	.19	1.66	1.000
80	39.8	.37	3.06	.939
50	88.6	.83	5.65	.780
30	148.9	1.39	7.61	.626
10	265.9	2.48	9.52	.439

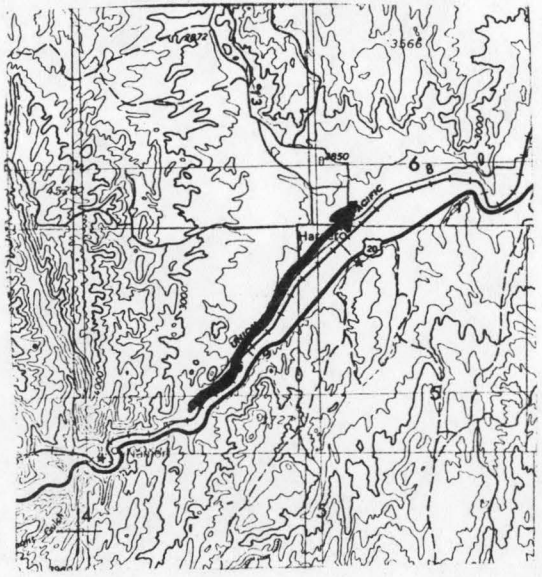
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 176 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BOISE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0007

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.36, T20S, R40E
D.	Latitude, Longitude	43°46'N, 117°46'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	64.8 to 76.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

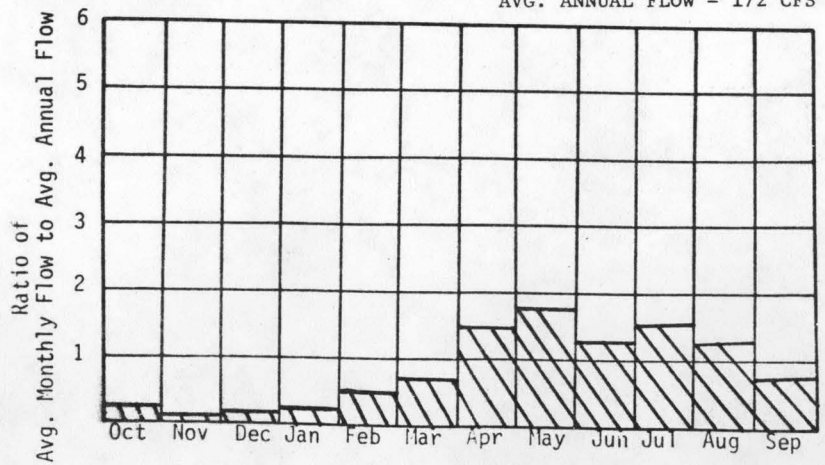
A.	Upstream Elevation of Reach	2780	Ft. MSL
B.	Downstream Elevation of Reach	2590	Ft. MSL
C.	Total Available Head in Reach	190	Ft.
D.	Average Slope in Reach	16.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	2958	Sq.Mi.
F.	Inflow Classification	Regulated	

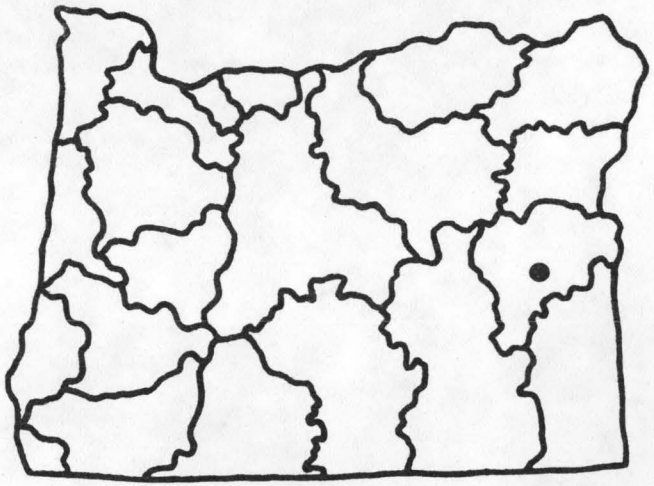
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	20.0	.32	2.82	1.000
80	39.1	.63	5.17	.939
50	86.9	1.40	9.56	.780
30	146.0	2.35	12.89	.626
10	260.8	4.20	16.13	.439

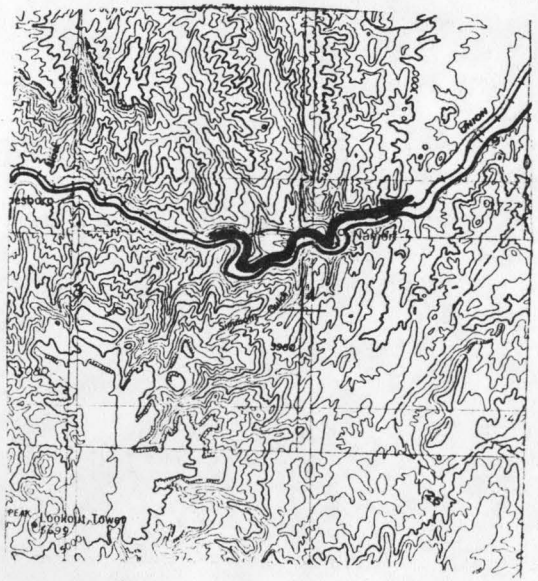
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 172 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BOISE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0008

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.25, T20S, R39E
D.	Latitude, Longitude	43°47'N, 117°53'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	76.0 to 86.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

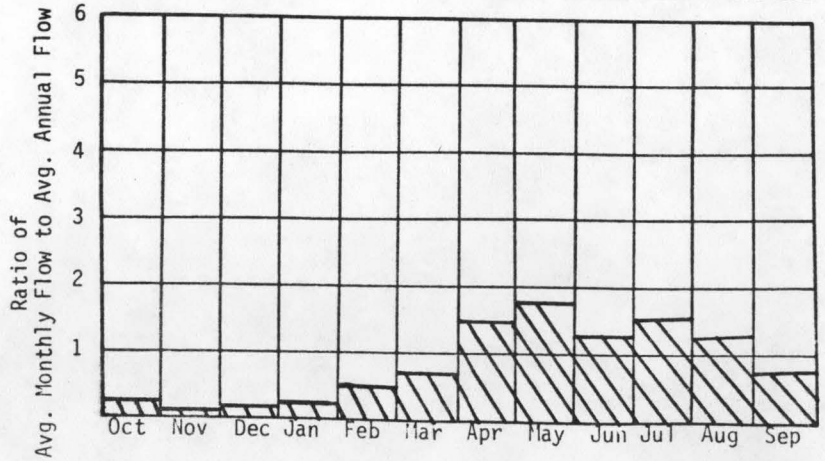
A.	Upstream Elevation of Reach	2900	Ft. MSL
B.	Downstream Elevation of Reach	2780	Ft. MSL
C.	Total Available Head in Reach	120	Ft.
D.	Average Slope in Reach	12	Ft./Mi.
E.	Drainage Area above Reach Mouth	2881	Sq.Mi.
F.	Inflow Classification	Regulated	

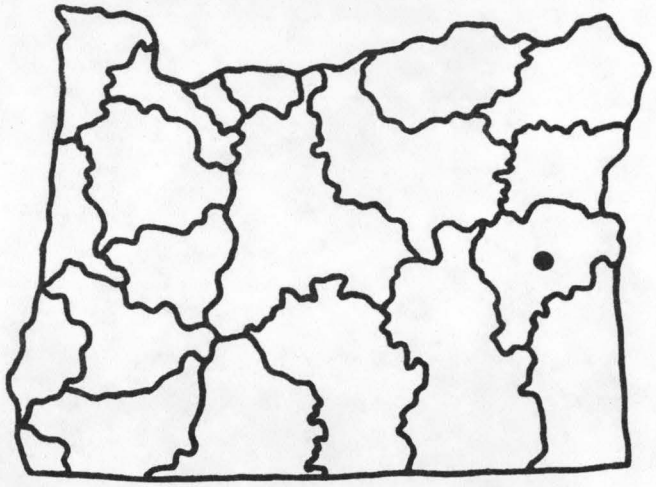
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.7	.20	1.75	1.000
80	38.5	.39	3.22	.939
50	85.6	.87	5.95	.780
30	143.8	1.46	8.02	.626
10	256.9	2.61	10.04	.439

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 170 CFS





U.S.G.S. TOPO. SERIES
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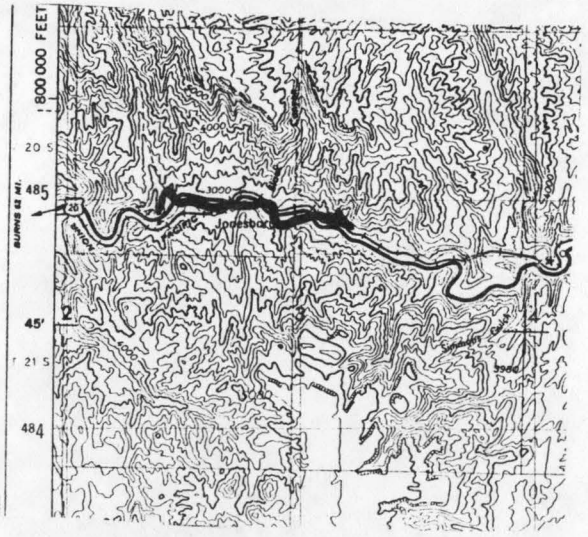
MAP NAME: BOISE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0009

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.35, T20S, R38E
D.	Latitude, Longitude	43°46'N, 118°01'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	86.0 to 96.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

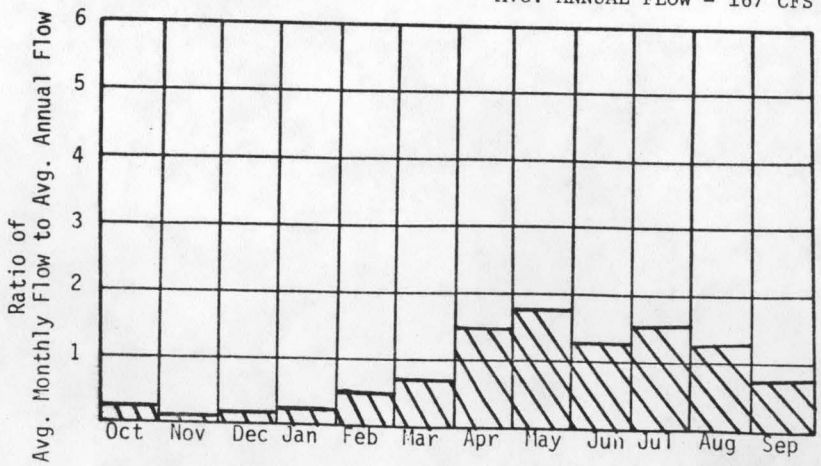
A.	Upstream Elevation of Reach	2920	Ft. MSL
B.	Downstream Elevation of Reach	2900	Ft. MSL
C.	Total Available Head in Reach	20	Ft.
D.	Average Slope in Reach	2	Ft./Mi.
E.	Drainage Area above Reach Mouth	2830	Sq.Mi.
F.	Inflow Classification	Regulated	

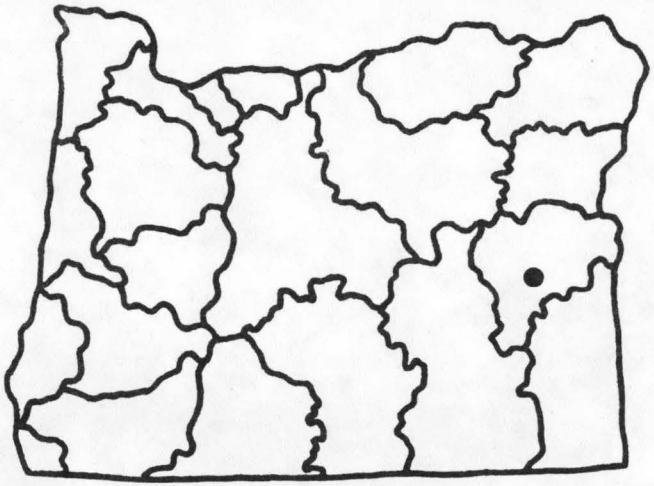
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	19.3	.03	.29	1.000
80	37.8	.06	.53	.939
50	84.1	.14	.97	.780
30	141.3	.24	1.31	.626
10	252.4	.43	1.64	.439

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 167 CFS





U.S.G.S. TOPO. SERIES
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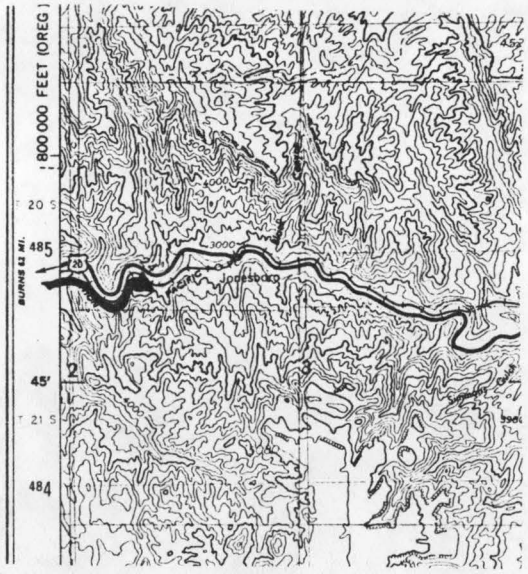
MAP NAME: BOISE-BURNS

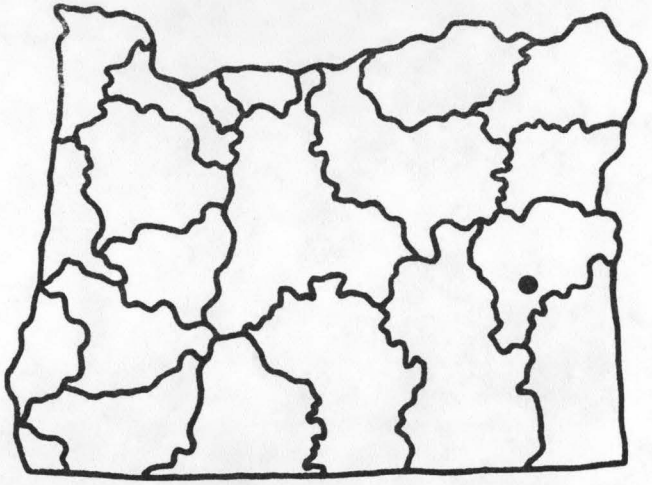


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-015-R0001

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.22, T20S, R37E
D.	Latitude, Longitude	43°48'N, 118°09'W
E.	Stream Name	North Fork Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	0.0 to 18.0



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

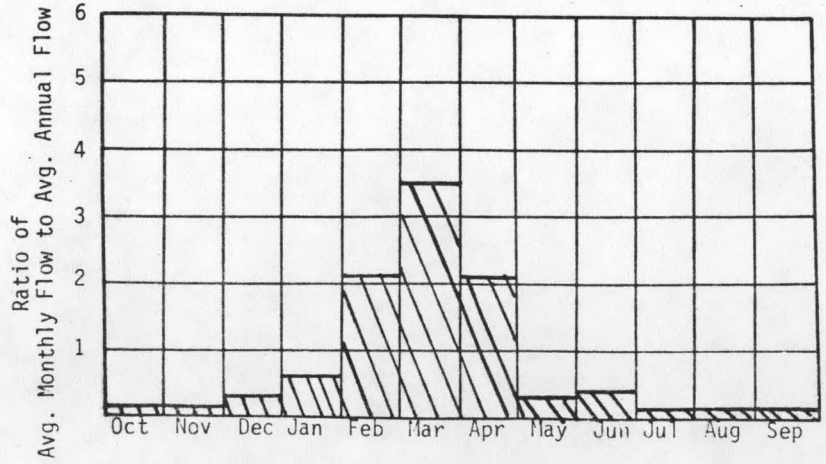
A.	Upstream Elevation of Reach	3360	Ft. MSL
B.	Downstream Elevation of Reach	2920	Ft. MSL
C.	Total Available Head in Reach	440	Ft.
D.	Average Slope in Reach	24	Ft./Mi.
E.	Drainage Area above Reach Mouth	514	Sq.Mi.
F.	Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	38.8	1.45	12.67	1.000
80	48.5	1.81	15.44	.975
50	68.9	2.57	19.78	.879
30	128.2	4.78	27.52	.657
10	344.9	12.86	41.68	.370

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 140 CFS



U.S.G.S. TOPO. SERIES
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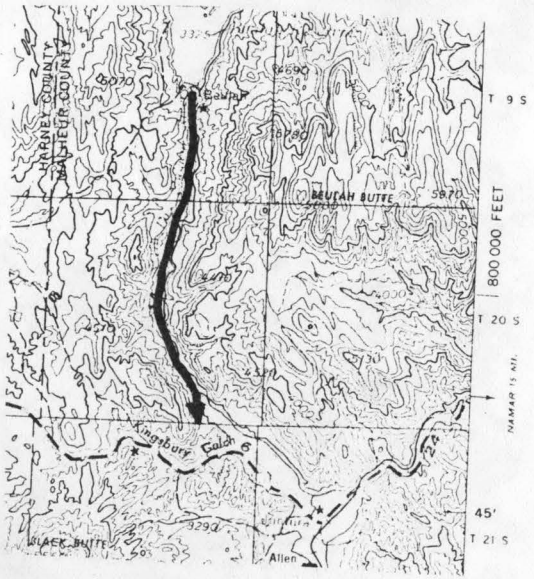
MAP NAME: BURNS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-015-R0002

I. LOCATION

A.	State	Oregon
B.	County	Malheur-Harney
C.	Township, Range	Sec.7, T17S, R36E
D.	Latitude, Longitude	44°05'N, 118°19'W
E.	Stream Name	North Fork Malheur
F.	Major Basin Name	Malheur
G.	River Mile	21.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

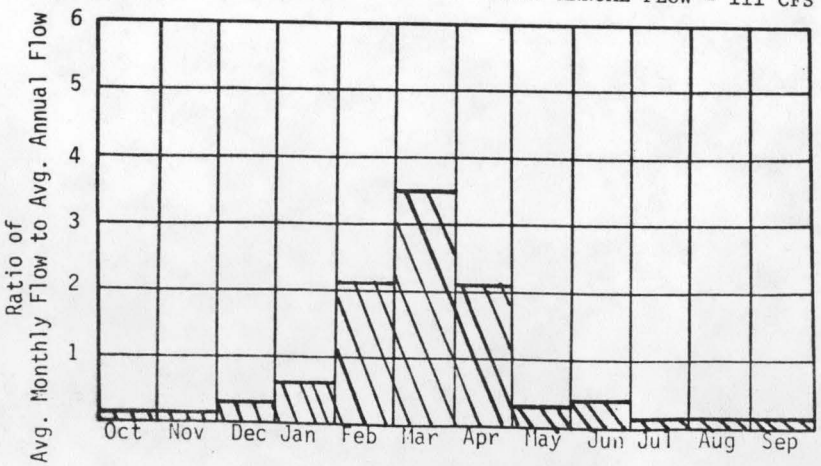
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	334	Sq.Mi.
F.	Inflow Classification	Natural	

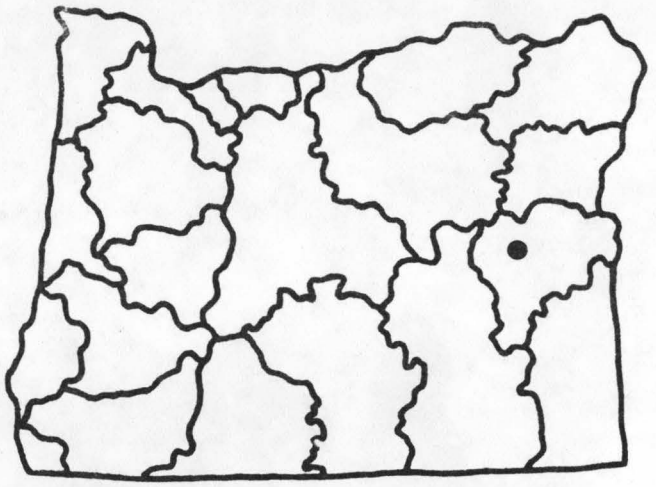
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	30.6	.17	1.50	1.000
80	38.2	.21	1.83	.975
50	54.4	.30	2.34	.879
30	101.1	.57	3.26	.657
10	272.1	1.52	4.93	.370

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 111 CFS





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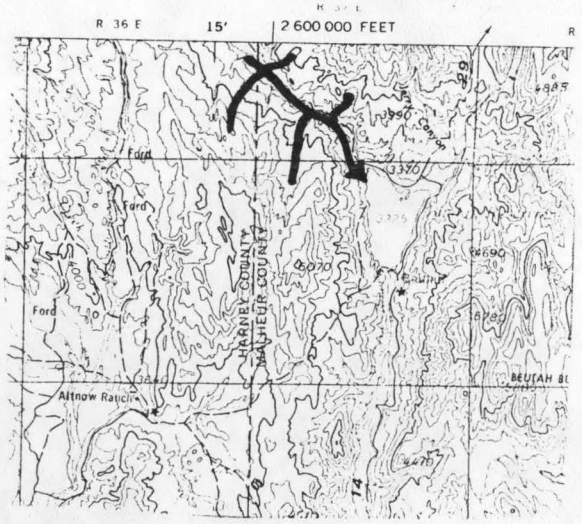
1:250,000 SCALE
MAP NAME: BURNS-CANYON CITY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0010

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.32, T21S, R38E
D.	Latitude, Longitude	43°42'N, 118°05'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	96.0 to 106.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

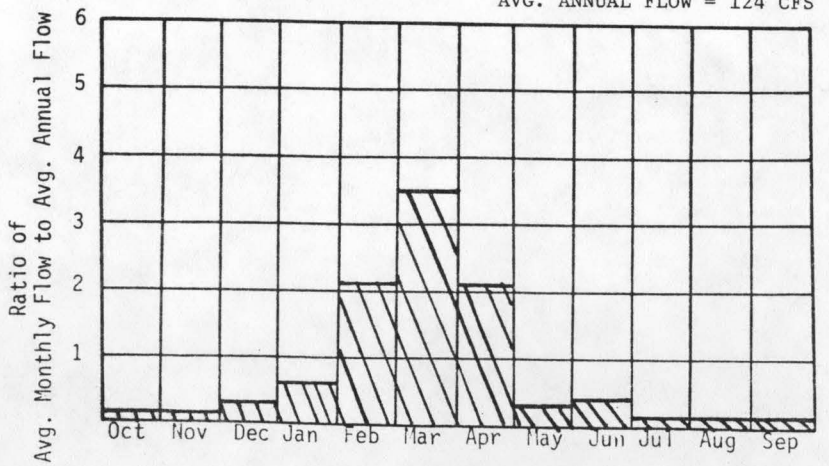
A.	Upstream Elevation of Reach	3100	Ft. MSL
B.	Downstream Elevation of Reach	2920	Ft. MSL
C.	Total Available Head in Reach	180	Ft.
D.	Average Slope in Reach	18	Ft./Mi.
E.	Drainage Area above Reach Mouth	2209	Sq.Mi.
F.	Inflow Classification	Regulated	

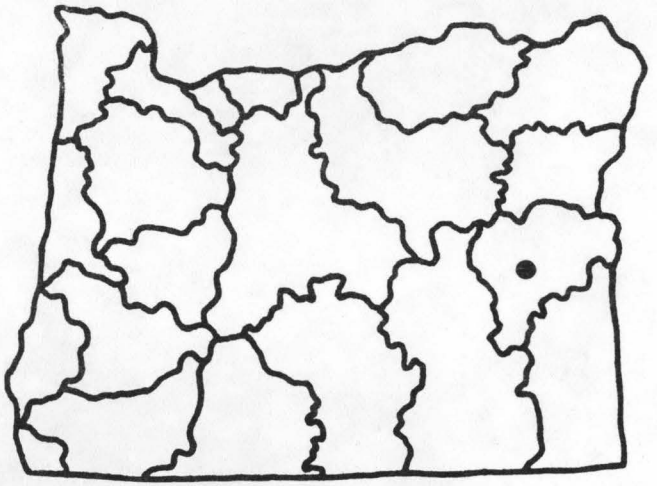
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.4	.22	1.93	1.000
80	28.2	.43	3.54	.939
50	62.8	.96	6.54	.780
30	105.4	1.61	8.82	.626
10	188.4	2.87	11.04	.439

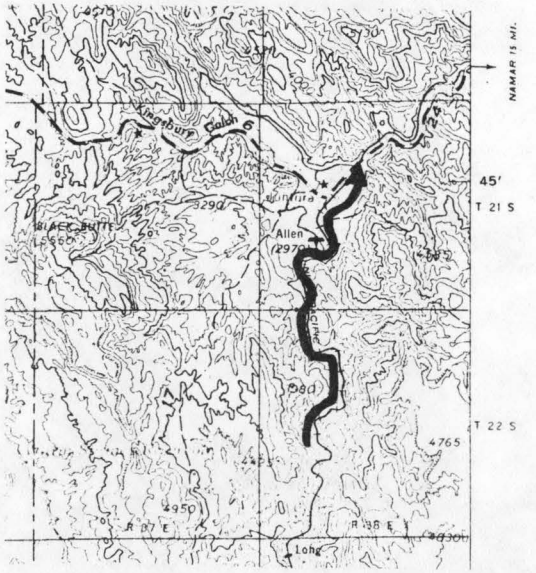
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 124 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0011

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.7, T23S, R38E
D.	Latitude, Longitude	43°36'N, 118°06'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	106.0 to 119.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

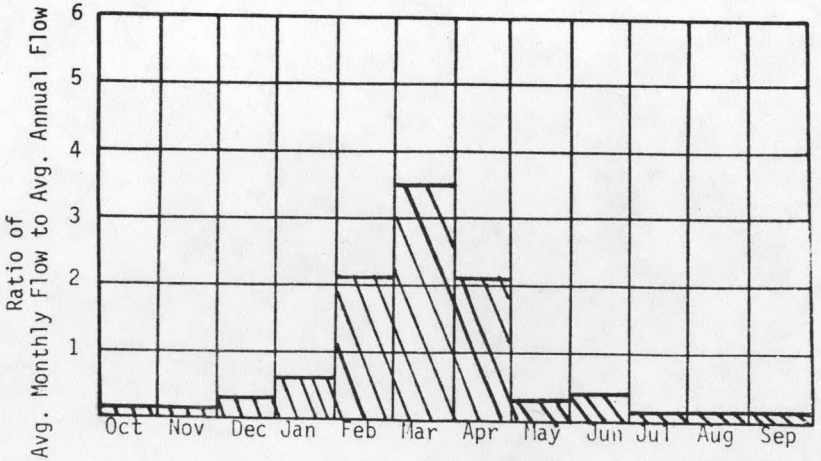
A.	Upstream Elevation of Reach	3300	Ft. MSL
B.	Downstream Elevation of Reach	3100	Ft. MSL
C.	Total Available Head in Reach	200	Ft.
D.	Average Slope in Reach	15.4	Ft./Mi.
E.	Drainage Area above Reach Mouth	2139	Sq.Mi.
F.	Inflow Classification	Regulated	

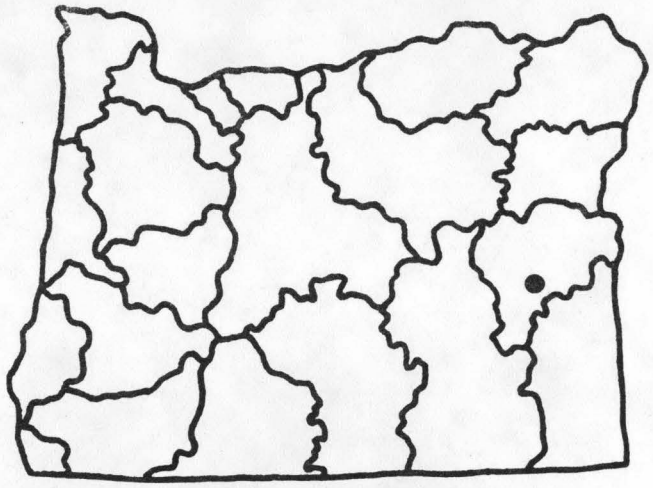
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	14.1	.24	2.10	1.000
80	27.7	.47	3.86	.939
50	61.6	1.04	7.13	.780
30	103.4	1.75	9.61	.626
10	184.7	3.13	12.03	.439

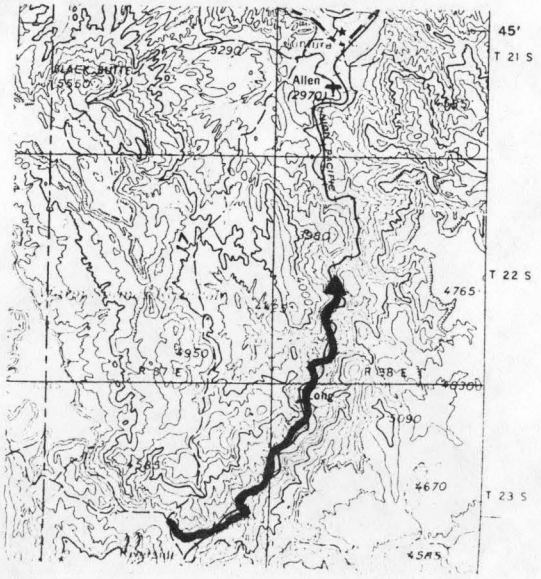
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 122 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0012

I. LOCATION

A. State	Oregon	
B. County	Malheur	
C. Township, Range	Sec.20, T23S, R37E	
D. Latitude, Longitude	43°33'N, 118°11'W	
E. Stream Name	Malheur River	
F. Major Basin Name	Malheur	
G. River Mile	119.0 to 123.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

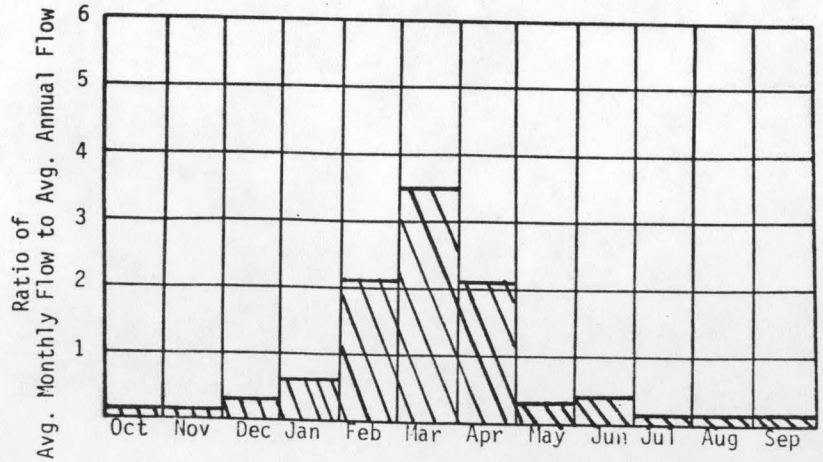
A. Upstream Elevation of Reach	3400	Ft. MSL
B. Downstream Elevation of Reach	3300	Ft. MSL
C. Total Available Head in Reach	100	Ft.
D. Average Slope in Reach	25	Ft./Mi.
E. Drainage Area above Reach Mouth	1400	Sq.Mi.
F. Inflow Classification	Regulated	

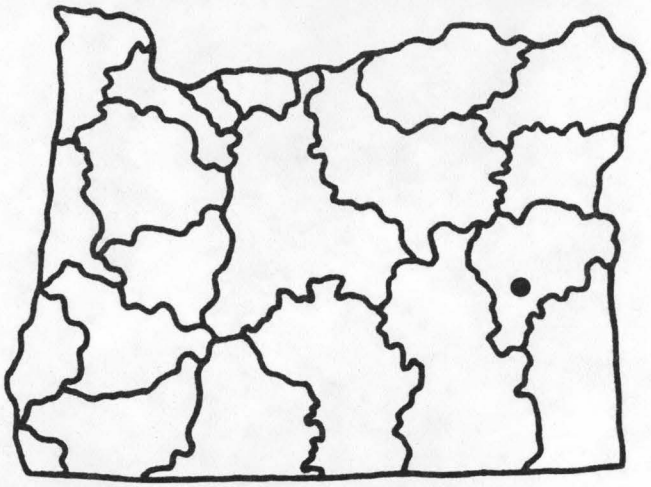
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	.0	.00	.00	1.000
80	.2	.00	.01	.884
50	1.3	.01	.07	.682
30	384.2	3.26	11.44	.401
10	610.8	5.18	14.80	.326

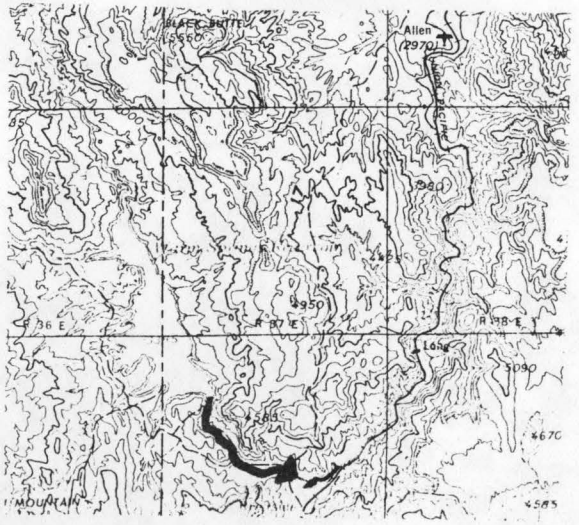
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 325 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0013

I. LOCATION

A.	State	Oregon
B.	County	Harney
C.	Township, Range	Sec.21, T21S, R36E
D.	Latitude, Longitude	43°44'N, 118°17'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	131.0 to 143.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

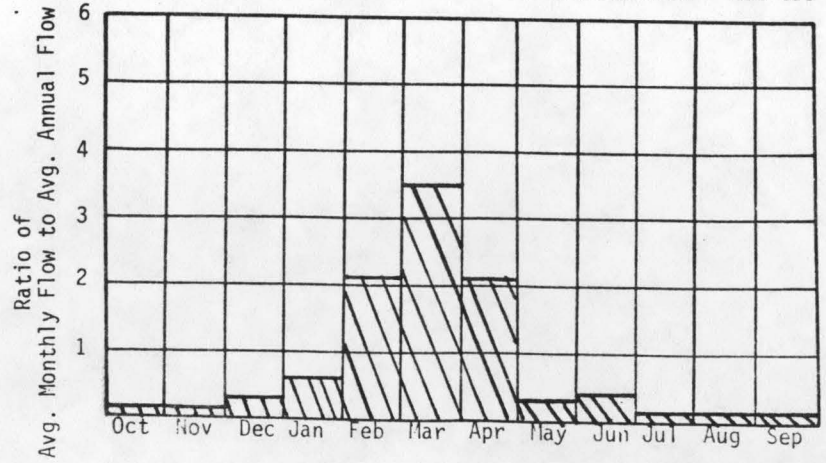
A.	Upstream Elevation of Reach	3510	Ft. MSL
B.	Downstream Elevation of Reach	3400	Ft. MSL
C.	Total Available Head in Reach	110	Ft.
D.	Average Slope in Reach	9.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	1300	Sq.Mi.
F.	Inflow Classification	Regulated	

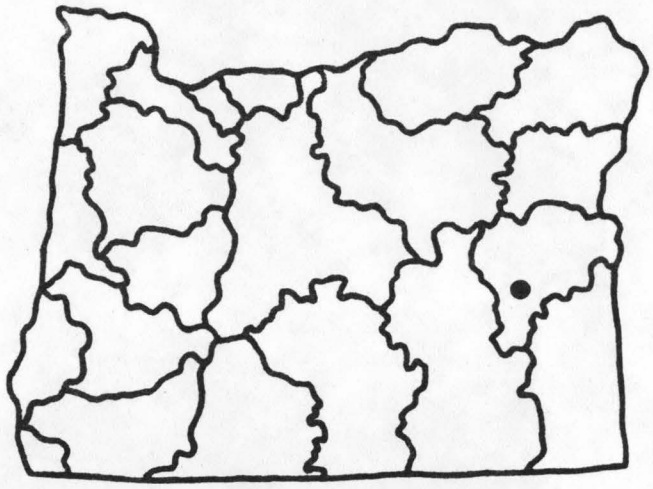
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3.4	.03	.27	1.000
80	19.7	.18	1.44	.896
50	85.1	.79	4.91	.707
30	179.3	1.67	7.99	.546
10	644.8	6.01	15.59	.296

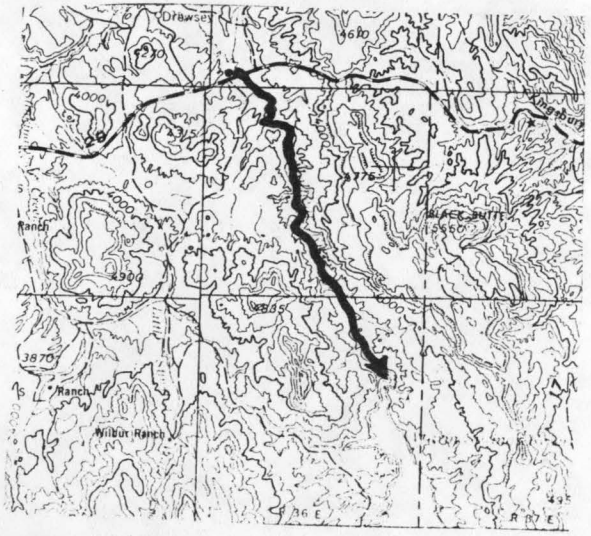
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 234 CFS





U.S.G.S.TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0014

I. LOCATION

A.	State	Oregon
B.	County	Harney
C.	Township, Range	Sec.25, T20S, R35
D.	Latitude, Longitude	43°47'N, 118°27'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	143.0 to 148.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

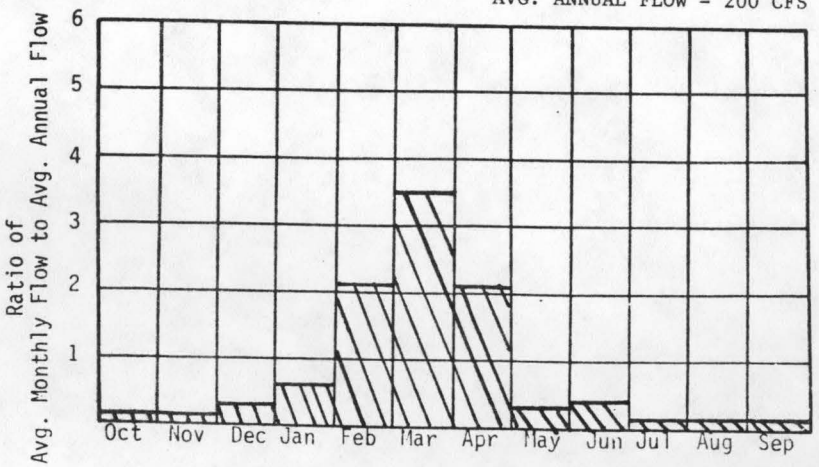
A.	Upstream Elevation of Reach	3540	Ft. MSL
B.	Downstream Elevation of Reach	3510	Ft. MSL
C.	Total Available Head in Reach	30	Ft.
D.	Average Slope in Reach	5.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	1092	Sq.Mi.
F.	Inflow Classification	Regulated	

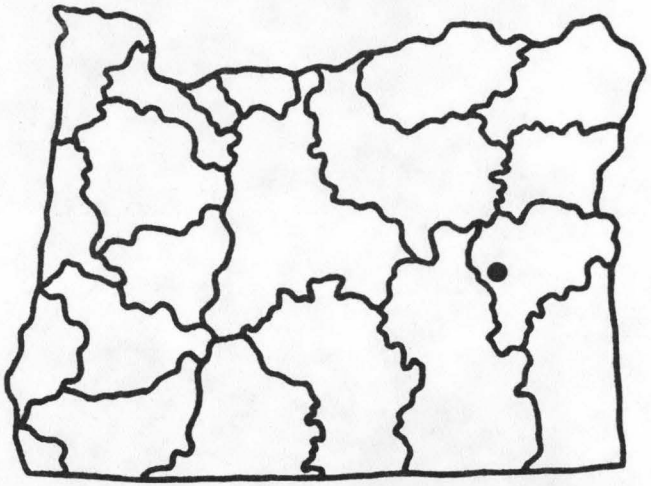
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	2.9	.01	.06	1.000
80	16.9	.04	.34	.896
50	73.1	.19	1.15	.707
30	153.9	.39	1.87	.546
10	553.6	1.41	3.65	.296

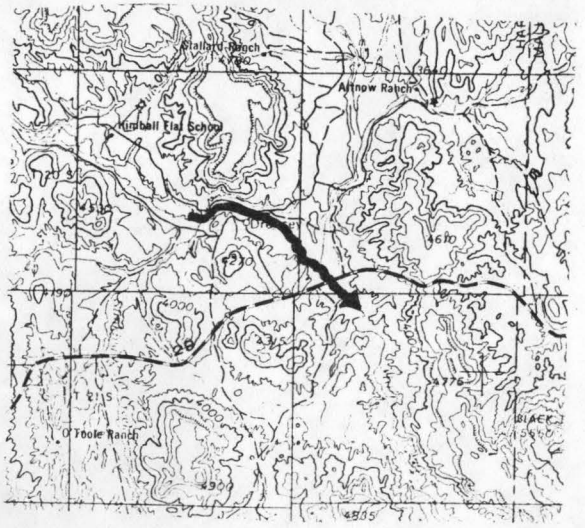
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 200 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS

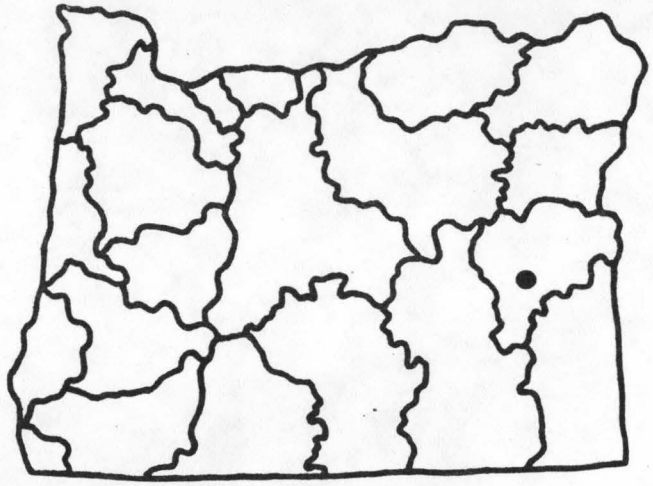


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0015

I. LOCATION

A.	State	Oregon
B.	County	Harney
C.	Township, Range	Sec.18, T20S, R35E
D.	Latitude, Longitude	43°49'N, 118°27'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	148.8 to 157.0



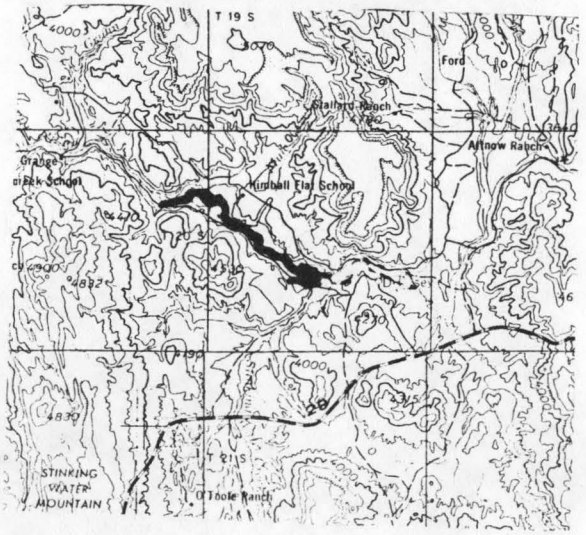
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	3590	Ft. MSL
B.	Downstream Elevation of Reach	3540	Ft. MSL
C.	Total Available Head in Reach	50	Ft.
D.	Average Slope in Reach	6.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	1004	Sq.Mi.
F.	Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

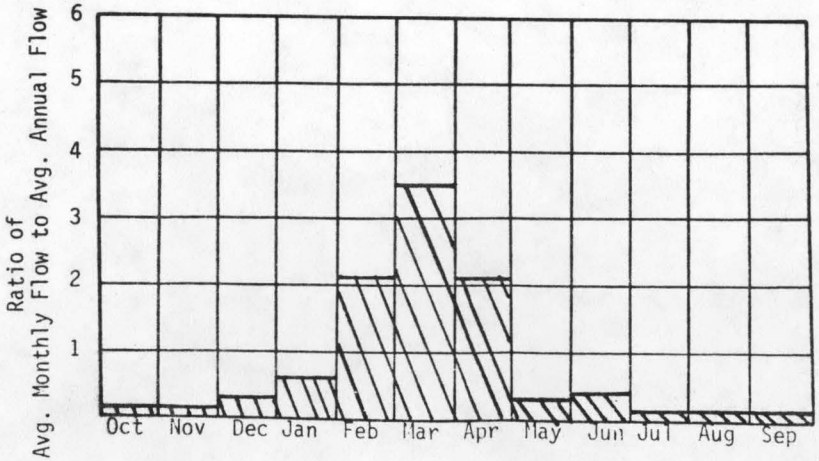
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	2.3	.01	.09	1.000
80	13.7	.06	.45	.896
50	58.9	.25	1.55	.707
30	124.1	.53	2.51	.546
10	446.4	1.89	4.91	.296

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 162 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0016

I. LOCATION

A.	State	Oregon
B.	County	Harney
C.	Township, Range	Sec.18, T19S, R35E
D.	Latitude, Longitude	43°52'N, 118°32'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	157.0 to 166.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

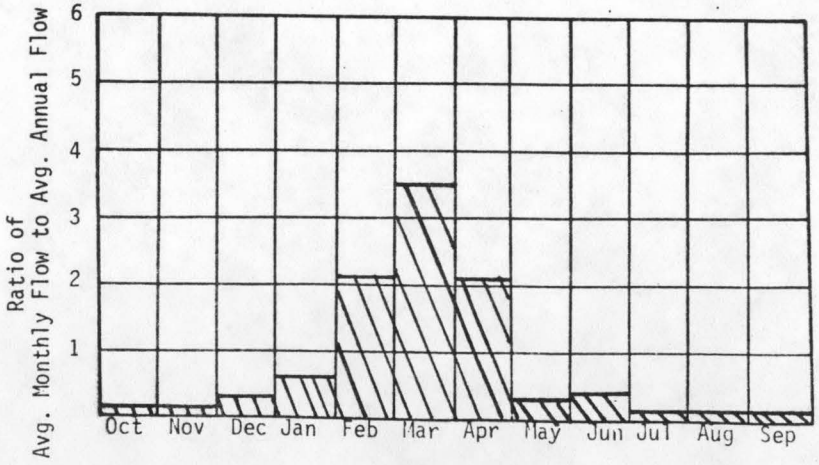
A.	Upstream Elevation of Reach	3760	Ft. MSL
B.	Downstream Elevation of Reach	3590	Ft. MSL
C.	Total Available Head in Reach	170	Ft.
D.	Average Slope in Reach	18.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	550	Sq.Mi.
F.	Inflow Classification	Regulated	

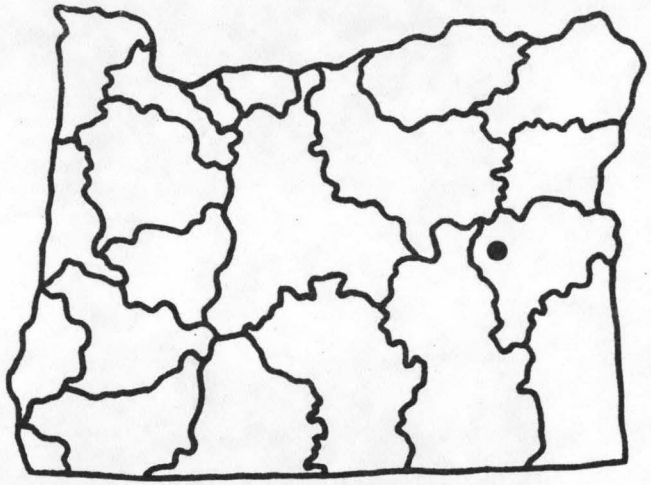
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	1.5	.02	.19	1.000
80	8.8	.13	1.00	.896
50	38.2	.55	3.41	.707
30	80.4	1.16	5.54	.546
10	289.3	4.17	10.81	.296

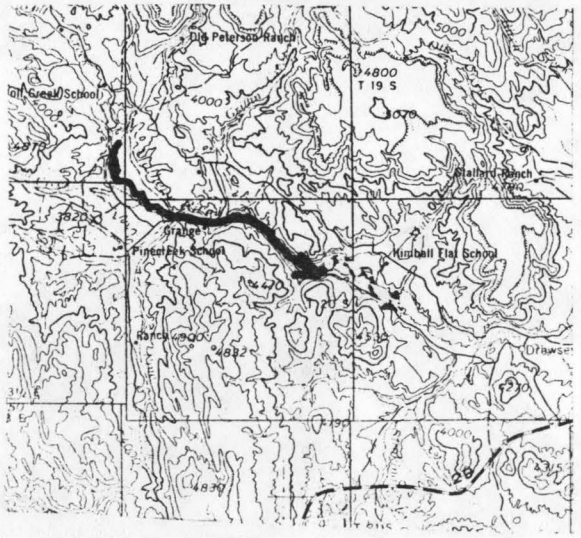
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 104 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS

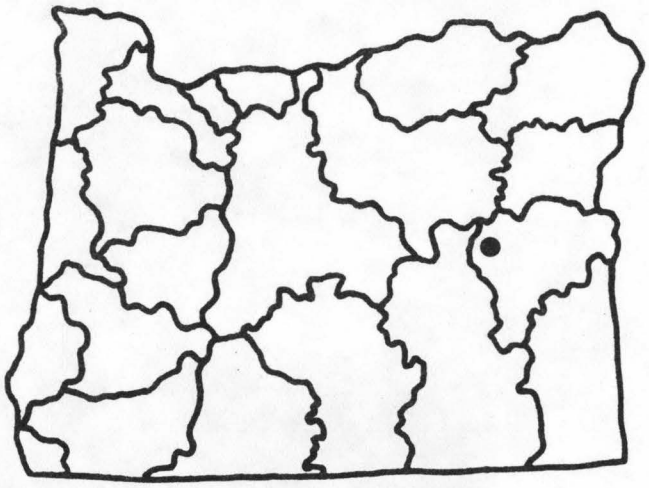


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0017

I. LOCATION

A.	State	Oregon
B.	County	Harney-Grant
C.	Township, Range	Sec.4, T18S, R35E
D.	Latitude, Longitude	43°54'N, 118°34'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	166.4 to 173.0



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

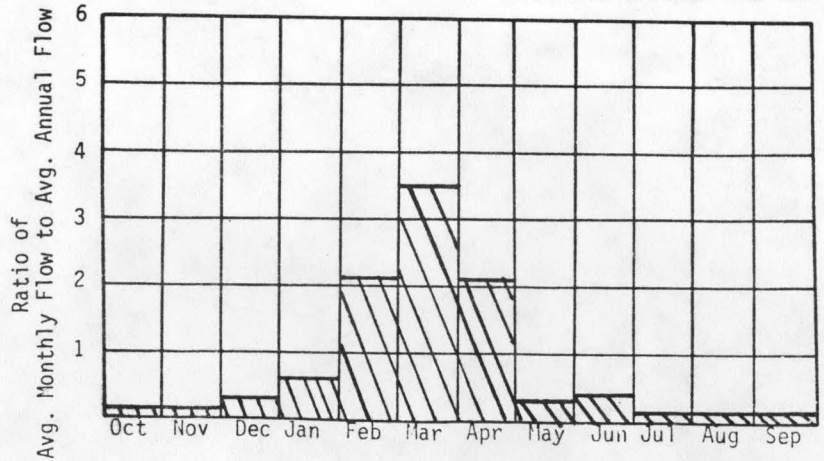
A.	Upstream Elevation of Reach	4000	Ft. MSL
B.	Downstream Elevation of Reach	3760	Ft. MSL
C.	Total Available Head in Reach	240	Ft.
D.	Average Slope in Reach	36.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	360	Sq.Mi.
F.	Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	1.0	.02	.17	1.000
80	5.7	.12	.92	.896
50	24.7	.50	3.12	.707
30	52.1	1.06	5.07	.546
10	187.4	3.81	9.89	.296

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 68 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-180-000-R0018

I. LOCATION

A.	State	Oregon
B.	County	Grant
C.	Township, Range	Sec.12, T17S, R34E
D.	Latitude, Longitude	44°06'N, 118°35'W
E.	Stream Name	Malheur River
F.	Major Basin Name	Malheur
G.	River Mile	173.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

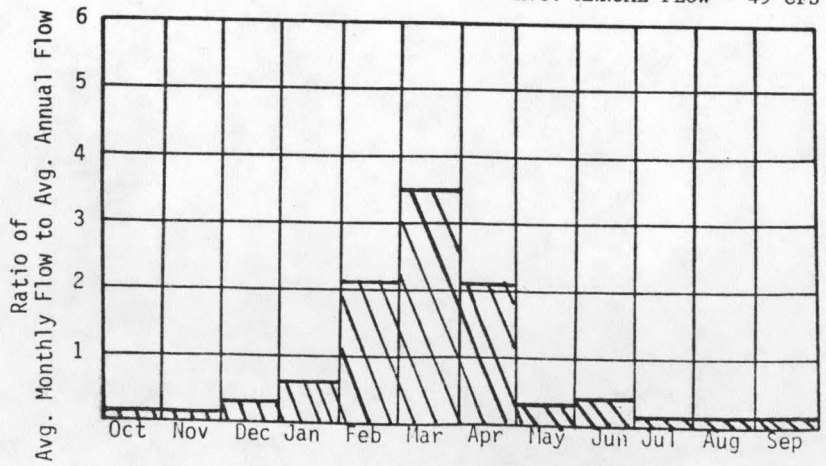
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	186	Sq.Mi.
F.	Inflow Classification	Natural	

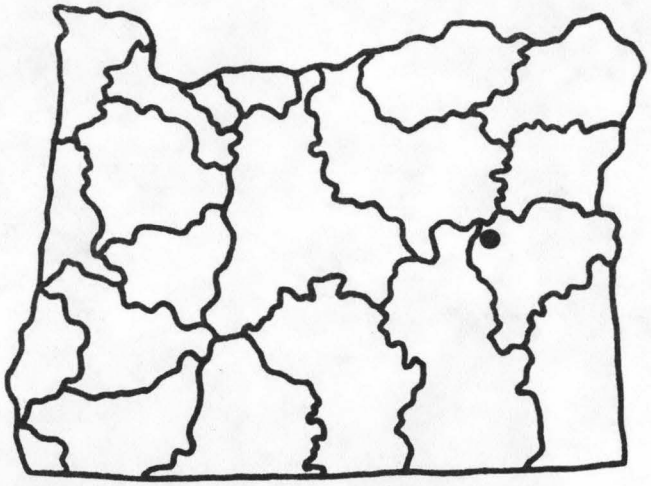
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	.7	.00	.03	1.000
80	4.2	.02	.18	.896
50	18.0	.10	.62	.707
30	38.0	.21	1.02	.546
10	136.7	.76	1.98	.296

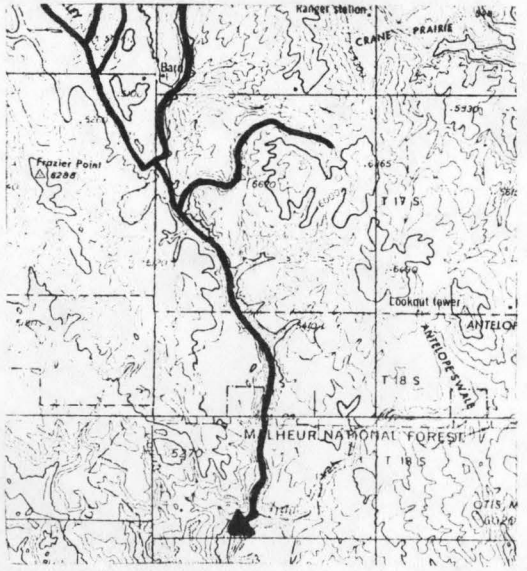
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 49 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS

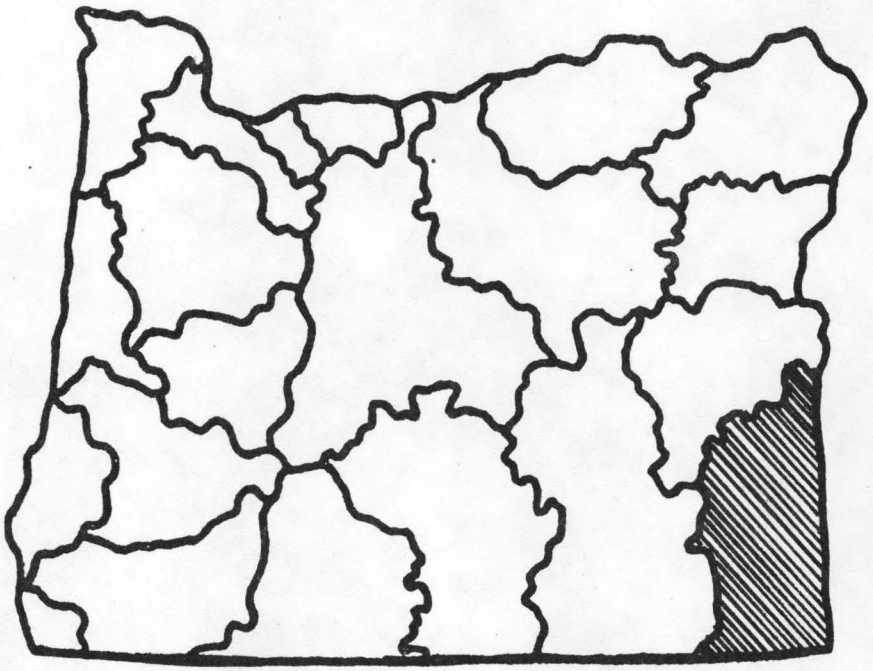


FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-240-180-								
000-R0001	-	X	-	-	1.3	69-IP	1	7.8
000-R0002	-	X	X	-	0.2	69-IP	1	1.0
000-R0003	-	X	X	-	1.2	69-IP	1	2.2
000-R0004	-	-	-	-	0.3	69-IP	-	7.0
000-R0005	-	X	-	-	1.5	69-IP	-	13.0
000-R0006	-	X	X	-	0.2	69-IP	-	22.0
000-R0007	-	X	-	-	0.3	69-IP	-	28.5
000-R0008	-	X	-	-	0.1	69-IP	-	34.5
000-R0009	-	X	-	-	0.1	69-IP	-	42.0
015-R0001	-	-	-	-	2.5	69-IP	-	48.0
015-R0002	-	-	-	-	12.5	69-IP	-	49.0
000-R0010	-	-	-	-	1.0	69-IP	-	44.0
000-R0011	-	-	-	-	13.2	69-IP	-	52.0

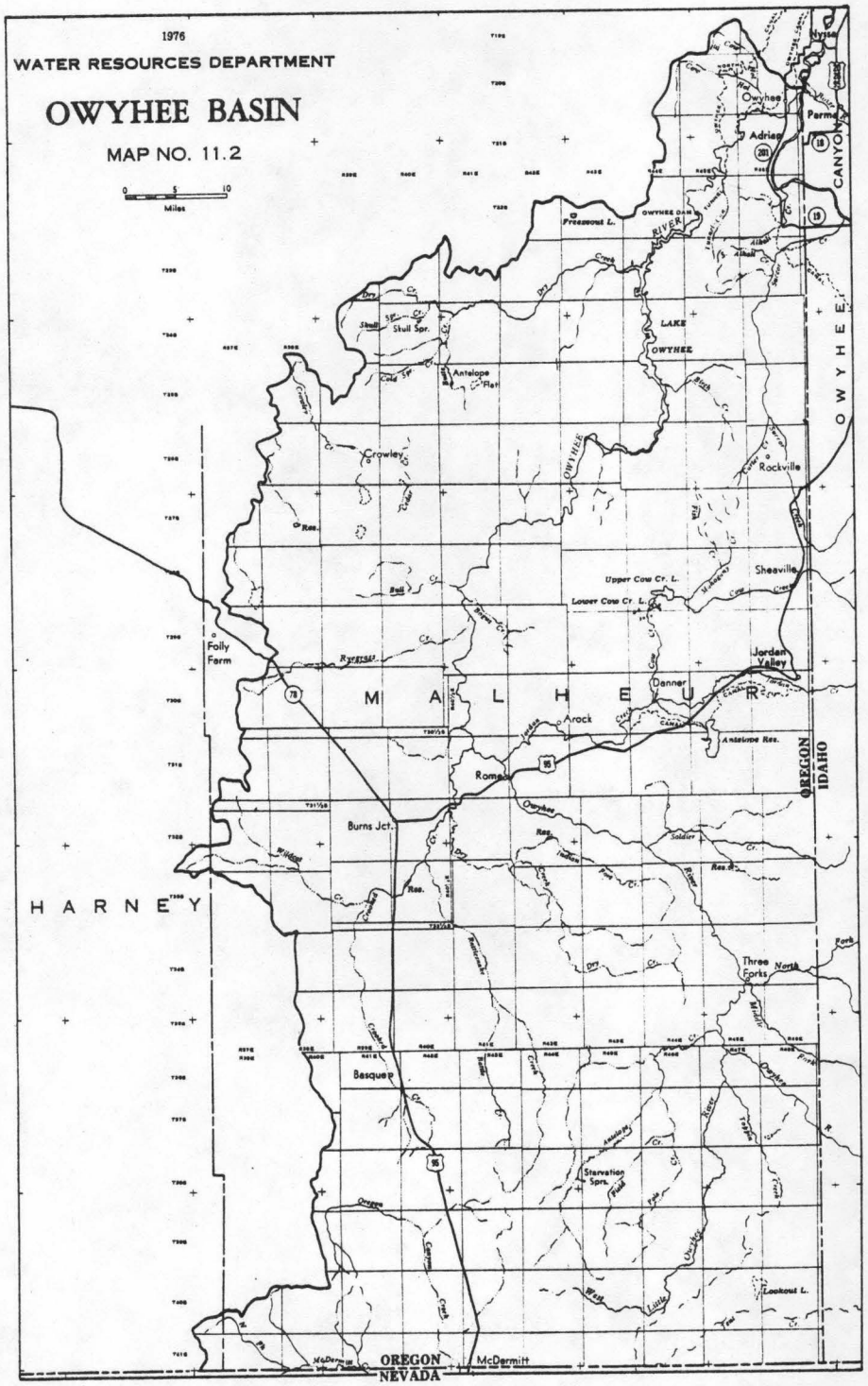
FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-240-180-								
000-R0012	-	-	-	-	13.5	69-IP	-	55.0
000-R0013	-	-	-	-	4.2	69-IP	-	57.0
000-R0014	-	X	X	-	0.2	69-IP	-	59.0
000-R0015	-	-	-	-	1.0	69-IP	-	63.0
000-R0016	-	-	-	-	1.3	69-IP	-	68.0
000-R0017	-	-	-	-	1.0	69-IP	-	70.0
000-R0018	-	-	-	-	2.8	69-IP	-	70.0



APPENDIX 11

OWYHEE BASIN


1976
WATER RESOURCES DEPARTMENT
OWYHEE BASIN
MAP NO. 11.2
0 5 10
Miles
Owyhee
Adrian
Parma
CANYON
OWYHEE
Freezeout L.
OWYHEE DAM
RIVER
LAKE
OWYHEE
Stull Spr.
Antelope Flat
Crowley
Rockville
Sheaville
Upper Cow Cr. L.
Lower Cow Cr. L.
Folly Farm
Jordan Valley
Danner
M A L H E U R
Arock
Antelope Res.
Reno
OREGON
IDAHO
Burns Jct.
H A R N E Y
Three Forks North
Basque
Starvation Spr.
Lookout L.
OREGON
NEVADA
McDermitt

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.3, T21S, R46E
D.	Latitude, Longitude	43°43'N, 117°05'W
E.	Stream Name	Owyhee River
F.	Major Basin Name	Owyhee
G.	River Mile	0.0 to 10.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

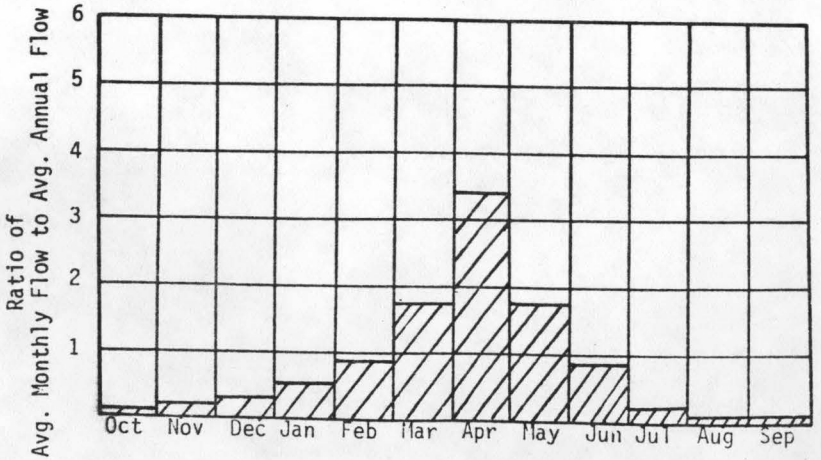
A.	Upstream Elevation of Reach	2230	Ft. MSL
B.	Downstream Elevation of Reach	2180	Ft. MSL
C.	Total Available Head in Reach	50	Ft.
D.	Average Slope in Reach	5	Ft./Mi.
E.	Drainage Area above Reach Mouth	10470	Sq.Mi.
F.	Inflow Classification	Regulated	

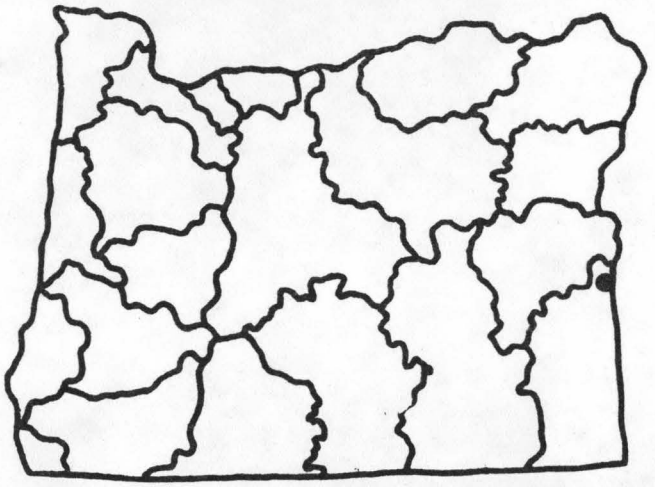
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	139.2	.59	5.17	1.000
80	201.0	.85	7.17	.962
50	357.7	1.52	10.95	.825
30	867.4	3.68	18.52	.575
10	3713.8	15.74	39.65	.288

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1295 CFS





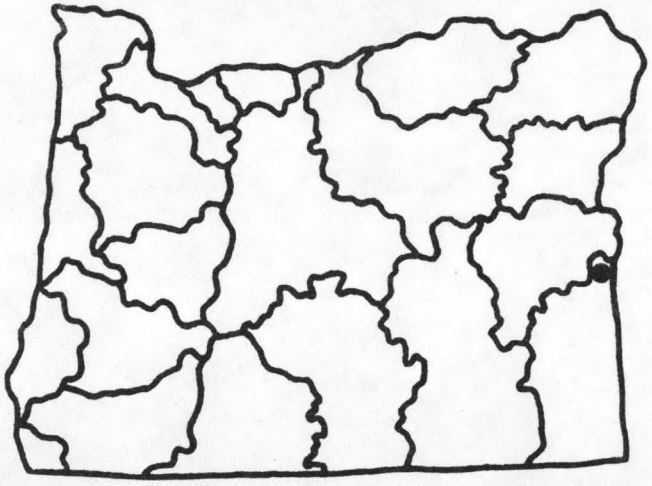
U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BOISE

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0010

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.22, T21S, R45E
D.	Latitude, Longitude	43°45'N, 117°12'W
E.	Stream Name	Owyhee River
F.	Major Basin Name	Owyhee
G.	River Mile	10.0 to 20.0



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2335	Ft. MSL
B.	Downstream Elevation of Reach	2230	Ft. MSL
C.	Total Available Head in Reach	105	Ft.
D.	Average Slope in Reach	10.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	10387	Sq.Mi.
F.	Inflow Classification	Regulated	

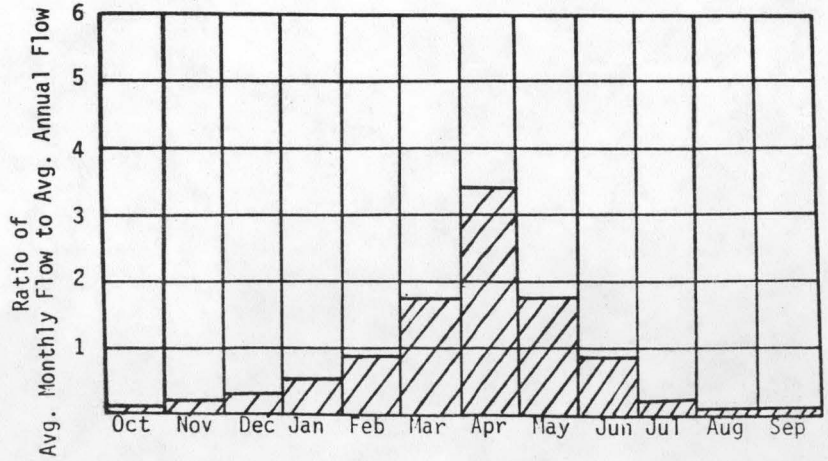
U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BOISE

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	138.4	1.23	10.79	1.000
80	199.9	1.78	14.98	.962
50	355.6	3.16	22.87	.825
30	862.5	7.68	38.68	.575
10	3692.6	32.86	82.80	.288

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1288 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0020

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.9, T22S, R45W
D.	Latitude, Longitude	43°40'N, 117°14'W
E.	Stream Name	Owyhee River
F.	Major Basin Name	Owyhee
G.	River Mile	20.0 to 28.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

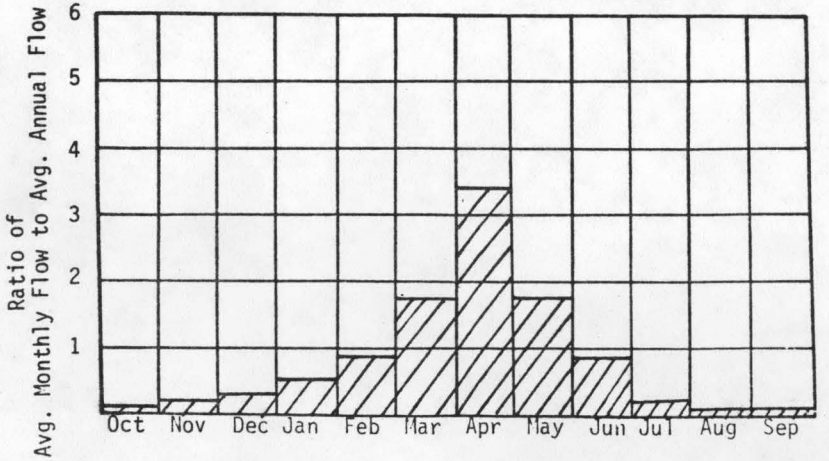
A.	Upstream Elevation of Reach	2380	Ft. MSL
B.	Downstream Elevation of Reach	2335	Ft. MSL
C.	Total Available Head in Reach	45	Ft.
D.	Average Slope in Reach	5.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	10332	Sq.Mi.
F.	Inflow Classification	Regulated	

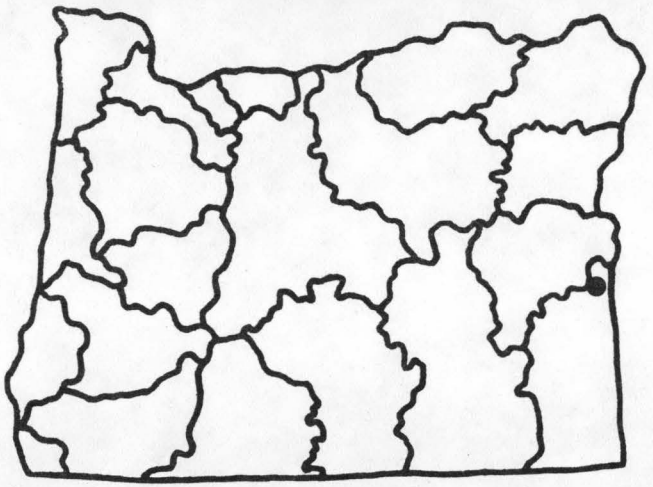
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	137.9	.53	4.61	1.000
80	199.2	.76	6.40	.962
50	354.3	1.35	9.77	.825
30	859.4	3.28	16.52	.575
10	3679.2	14.03	35.36	.288

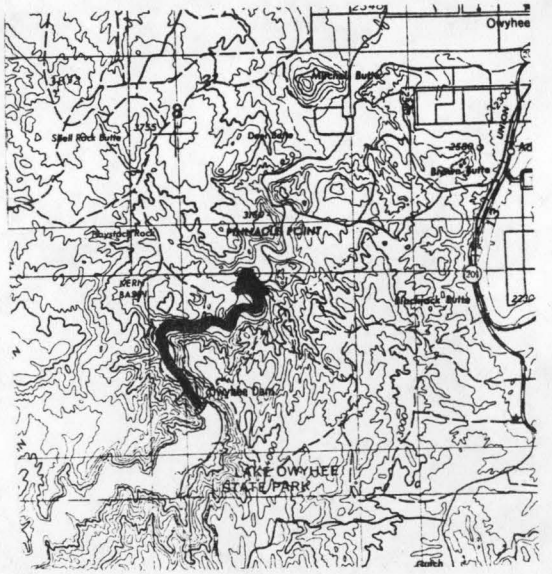
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1284 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BOISE

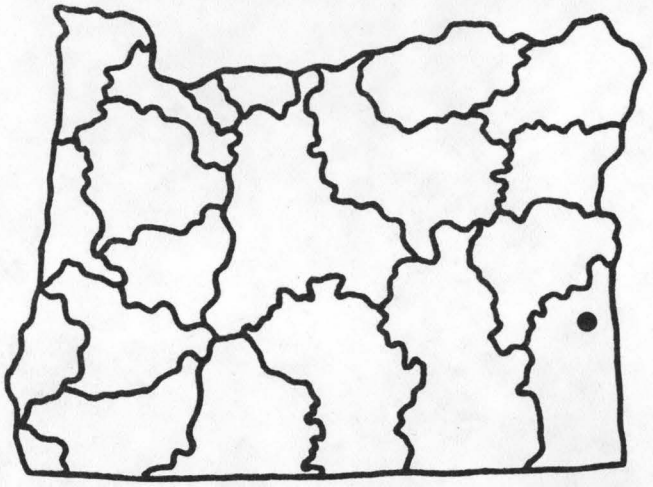


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0070

I. LOCATION

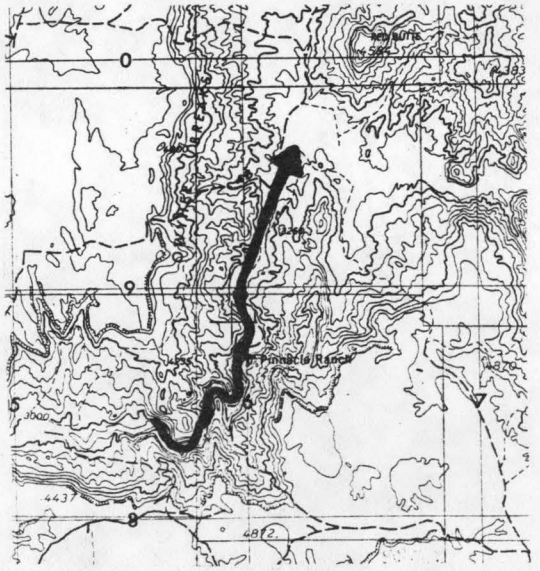
A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.7, T27S, R43E
D.	Latitude, Longitude	43°14'N, 117°30'W
E.	Stream Name	Owyhee River
F.	Major Basin Name	Owyhee
G.	River Mile	70.0 to 80.0



II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	2756	Ft. MSL
B.	Downstream Elevation of Reach	2655	Ft. MSL
C.	Total Available Head in Reach	101	Ft.
D.	Average Slope in Reach	10.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	9490	Sq.Mi.
F.	Inflow Classification	Natural	

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BOISE

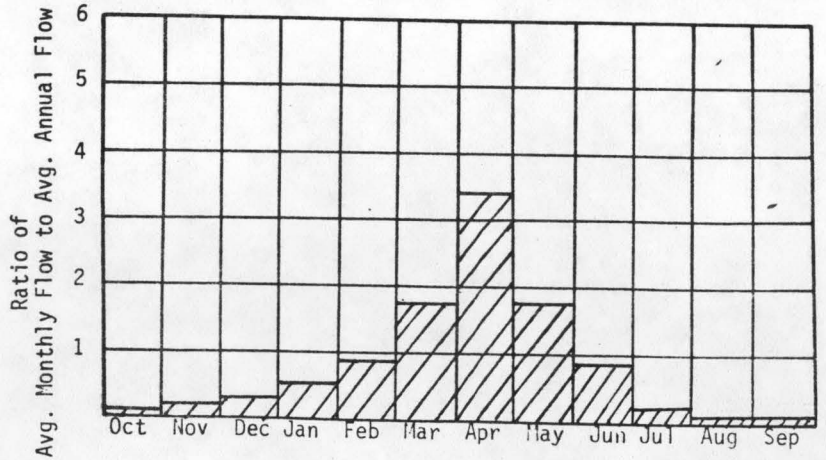


III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	128.1	1.10	9.61	1.000
80	185.0	1.58	13.34	.962
50	329.1	2.82	20.36	.825
30	799.0	6.84	34.46	.575
10	3418.6	29.26	73.74	.288

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1201 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-700-240-200-000-R0080

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.29, T27S, R42E
D.	Latitude, Longitude	43°12'N, 117°36'W
E.	Stream Name	Owyhee River
F.	Major Basin Name	Owyhee
G.	River Mile	80.0 to 90.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

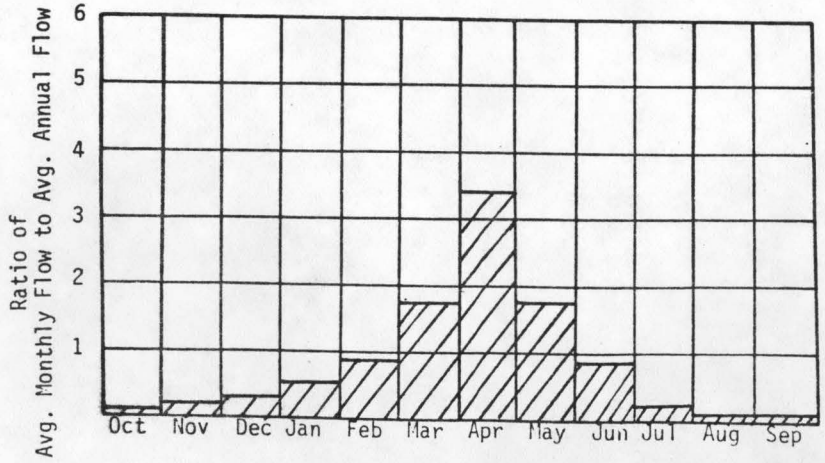
A.	Upstream Elevation of Reach	2932	Ft. MSL
B.	Downstream Elevation of Reach	2756	Ft. MSL
C.	Total Available Head in Reach	176	Ft.
D.	Average Slope in Reach	17.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	9454	Sq.Mi.
F.	Inflow Classification	Natural	

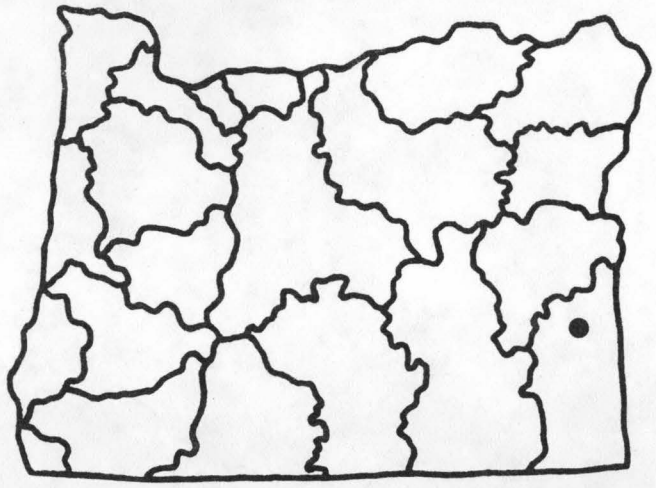
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	127.3	1.90	16.64	1.000
80	183.9	2.74	23.11	.962
50	327.1	4.88	35.27	.825
30	794.3	11.85	59.68	.575
10	3398.1	50.68	127.73	.288

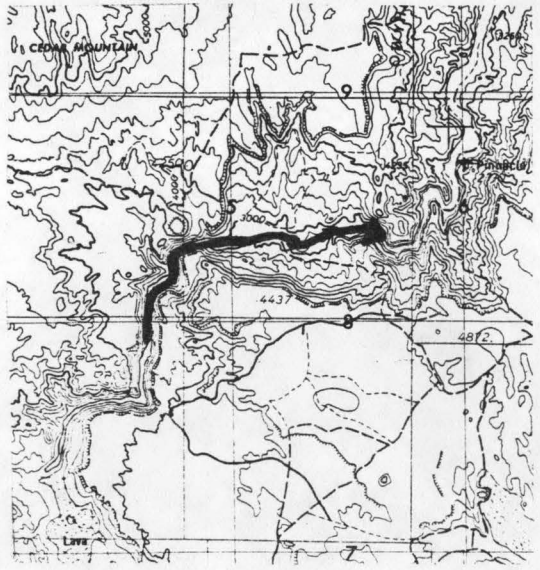
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1194 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BOISE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0090

I. LOCATION

A. State	Oregon	
B. County	Malheur	
C. Township, Range	Sec.28, T28S, R41E	
D. Latitude, Longitude	43°07'N, 117°42'W	
E. Stream Name	Owyhee River	
F. Major Basin Name	Owyhee	
G. River Mile	90.0 to 100.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

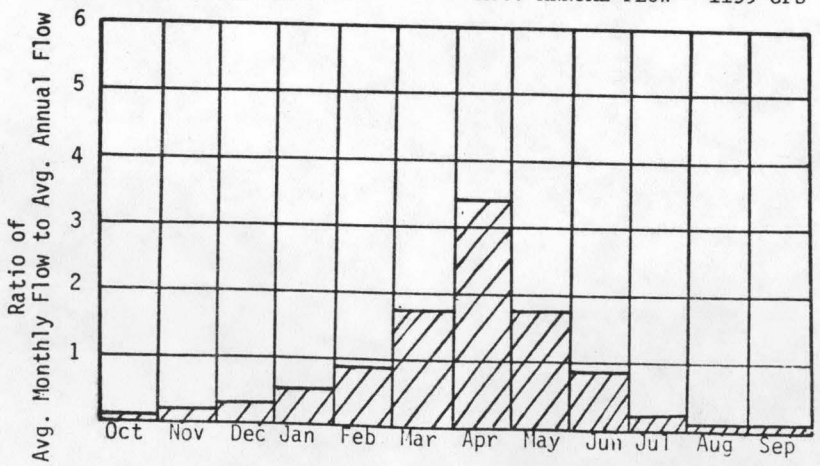
A. Upstream Elevation of Reach	3100	Ft. MSL
B. Downstream Elevation of Reach	2932	Ft. MSL
C. Total Available Head in Reach	168	Ft.
D. Average Slope in Reach	16.8	Ft./Mi.
E. Drainage Area above Reach Mouth	9358	Sq.Mi.
F. Inflow Classification	Natural	

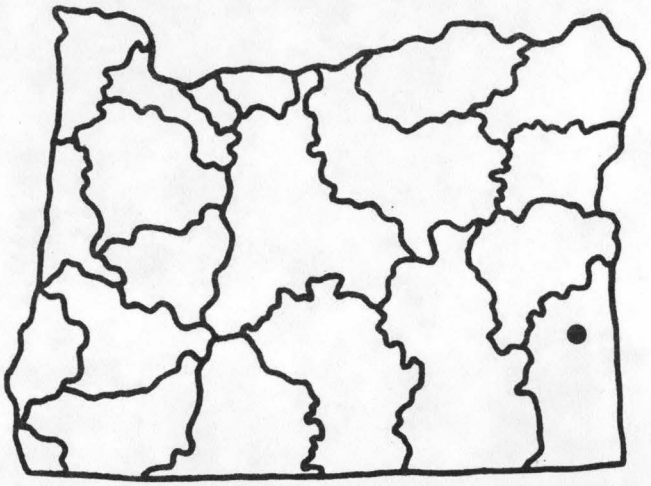
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	123.2	1.75	15.36	1.000
80	177.9	2.53	21.34	.962
50	316.4	4.50	32.56	.825
30	768.6	10.94	55.12	.575
10	3287.5	46.81	117.95	.288

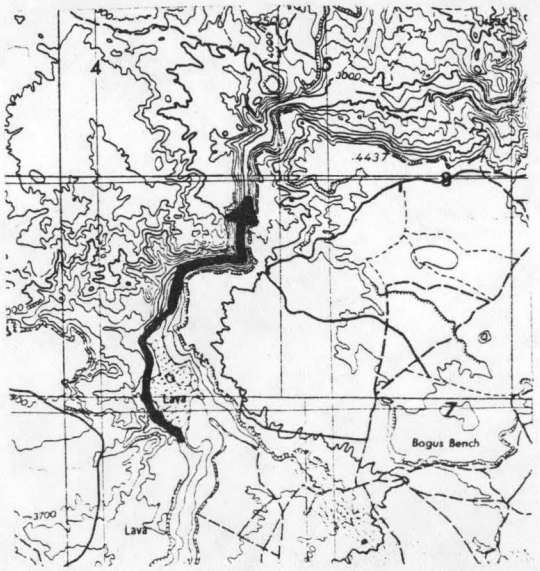
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1159 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BOISE



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0100

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.29, T29S, R41E
D.	Latitude, Longitude	43°01'N, 117°43'W
E.	Stream Name	Owyhee River
F.	Major Basin Name	Owyhee
G.	River Mile	100.0 to 110.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

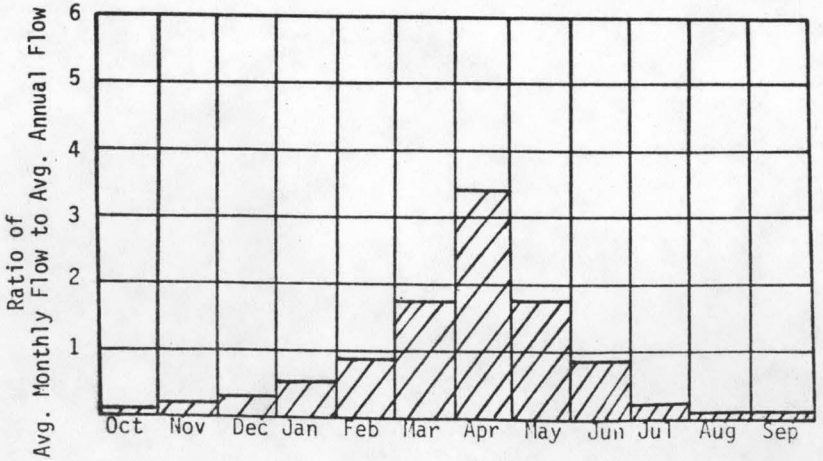
A.	Upstream Elevation of Reach	3232	Ft. MSL
B.	Downstream Elevation of Reach	3100	Ft. MSL
C.	Total Available Head in Reach	132	Ft.
D.	Average Slope in Reach	13.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	8736	Sq.Mi.
F.	Inflow Classification	Natural	

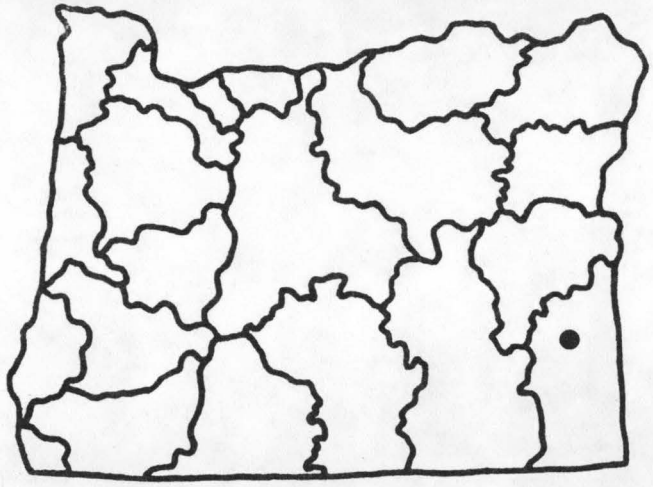
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	119.3	1.33	11.69	1.000
80	172.3	1.93	16.24	.962
50	306.4	3.43	24.77	.825
30	744.6	8.33	41.95	.575
10	3183.9	35.62	89.76	.288

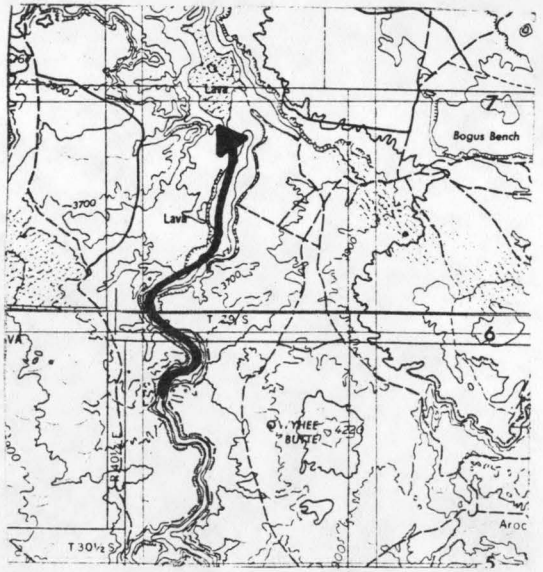
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1126 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BOISE--JORDON VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0110

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.28, T30S, R41E
D.	Latitude, Longitude	42°56'N, 117°42'W
E.	Stream Name	Owyhee River
F.	Major Basin Name	Owyhee
G.	River Mile	110.0 to 118.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

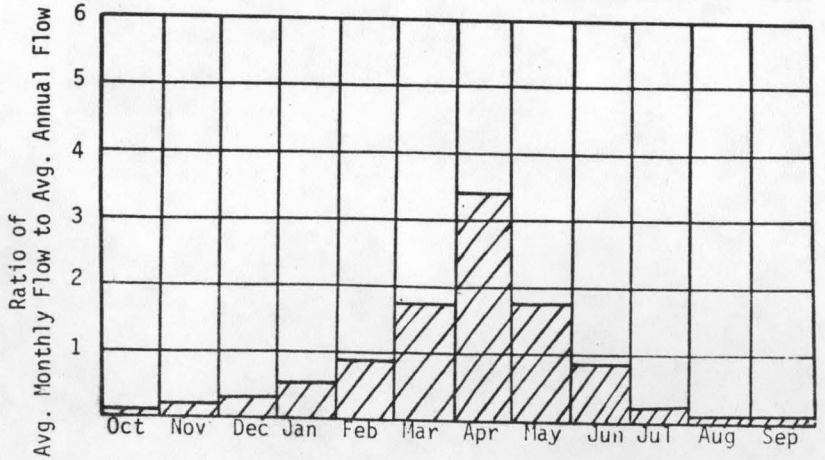
A.	Upstream Elevation of Reach	3340	Ft. MSL
B.	Downstream Elevation of Reach	3232	Ft. MSL
C.	Total Available Head in Reach	108	Ft.
D.	Average Slope in Reach	13.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	8683	Sq.Mi.
F.	Inflow Classification	Natural	

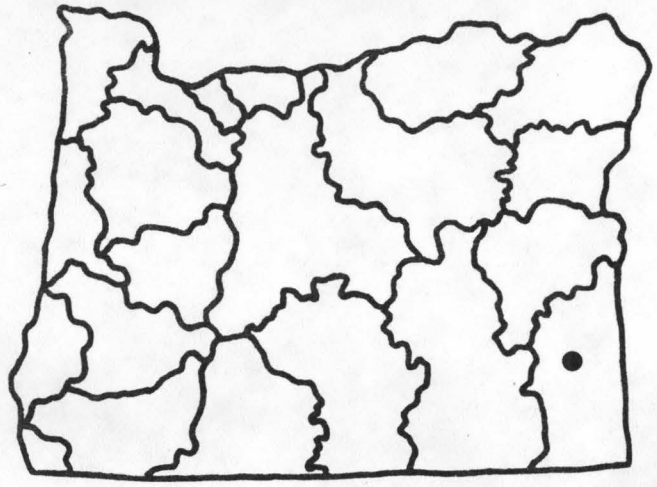
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	117.6	1.08	9.43	1.000
80	169.9	1.55	13.10	.962
50	301.9	2.76	19.98	.825
30	734.0	6.72	33.83	.575
10	3138.1	28.72	72.39	.288

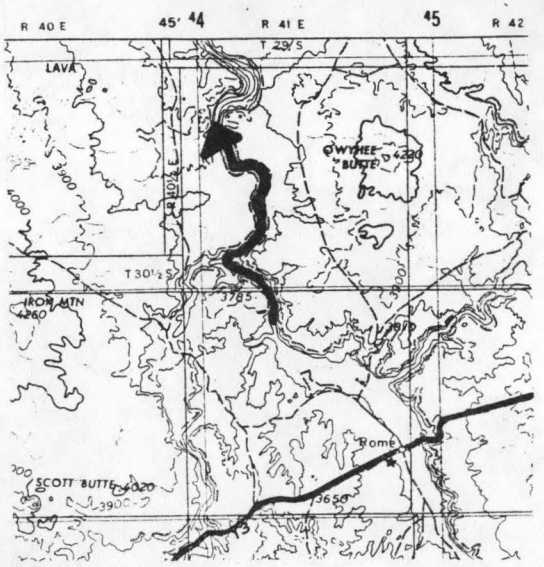
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1111 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDON VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-003-R0001

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.6, T32S, R43E
D.	Latitude, Longitude	42°48'N, 117°44'W
E.	Stream Name	Crooked Creek
F.	Major Basin Name	Owyhee
G.	River Mile	0.0 to 17.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

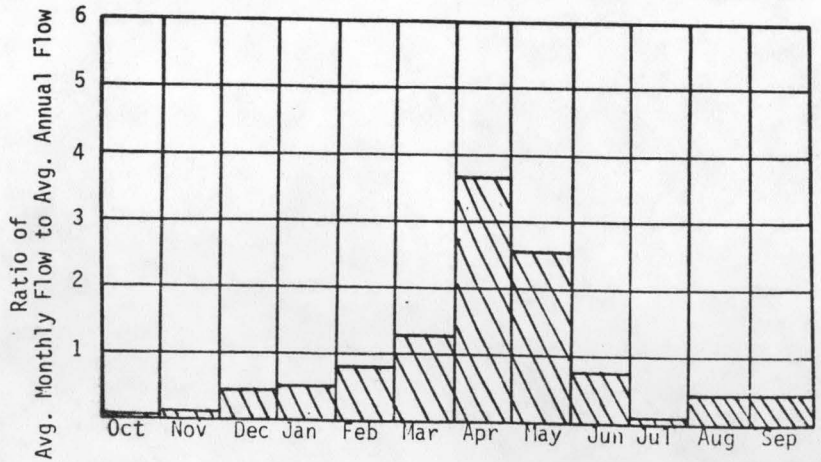
A.	Upstream Elevation of Reach	3740	Ft. MSL
B.	Downstream Elevation of Reach	3340	Ft. MSL
C.	Total Available Head in Reach	400	Ft.
D.	Average Slope in Reach	23	Ft./Mi.
E.	Drainage Area above Reach Mouth	1084	Sq.Mi.
F.	Inflow Classification	Natural	

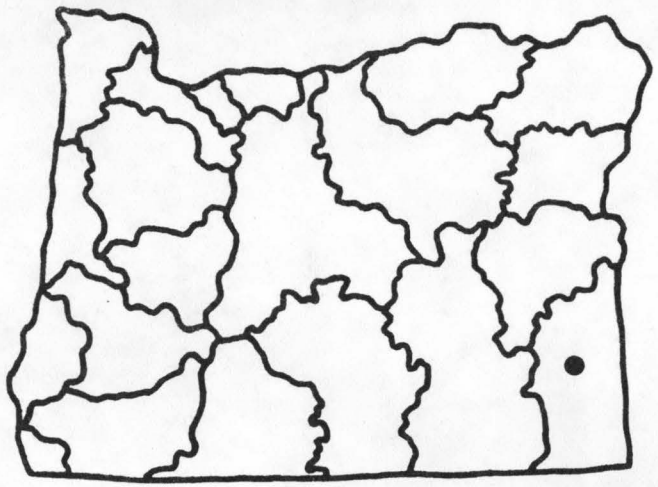
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	7.2	.25	2.15	1.000
80	9.9	.33	2.84	.967
50	29.6	1.00	6.65	.756
30	115.3	3.91	16.82	.491
10	482.5	16.36	38.63	.270

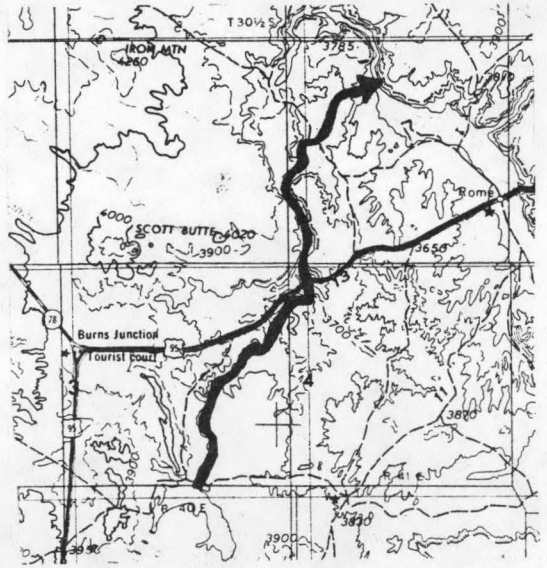
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 165 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDON VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-003-R0003

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.17, T33S, R42E
D.	Latitude, Longitude	42°41'N, 117°50'W
E.	Stream Name	Crooked Creek
F.	Major Basin Name	Owyhee
G.	River Mile	17.4 to 24.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

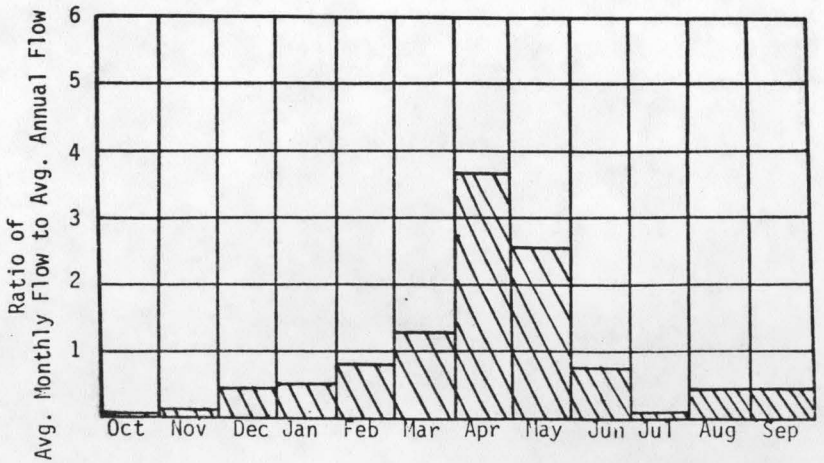
A.	Upstream Elevation of Reach	3840	Ft. MSL
B.	Downstream Elevation of Reach	3740	Ft. MSL
C.	Total Available Head in Reach	100	Ft.
D.	Average Slope in Reach	15.1	Ft./Mi.
E.	Drainage Area above Reach Mouth	721	Sq.Mi.
F.	Inflow Classification	Natural	

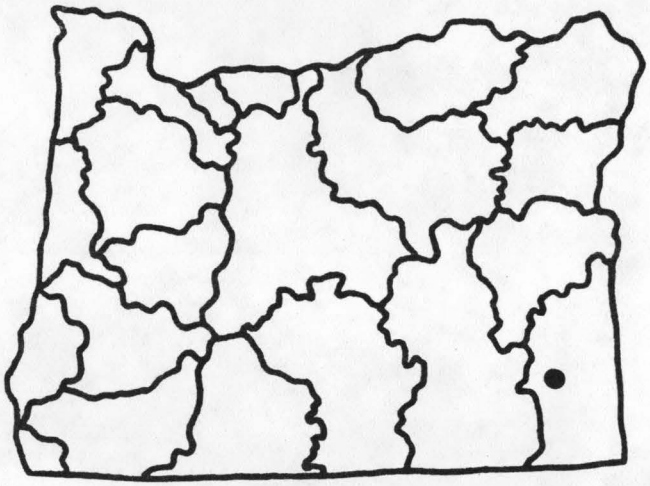
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.6	.04	.34	1.000
80	6.3	.05	.45	.967
50	18.9	.16	1.06	.756
30	73.7	.62	2.69	.491
10	308.4	2.61	6.17	.270

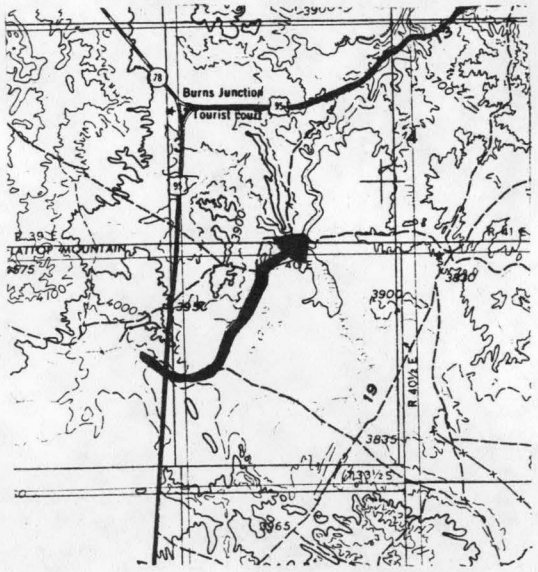
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 106 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDON VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-003-R0004

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.24, T33S, R42E
D.	Latitude, Longitude	42°41'N, 117°51'W
E.	Stream Name	Crooked Creek
F.	Major Basin Name	Owyhee
G.	River Mile	24.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

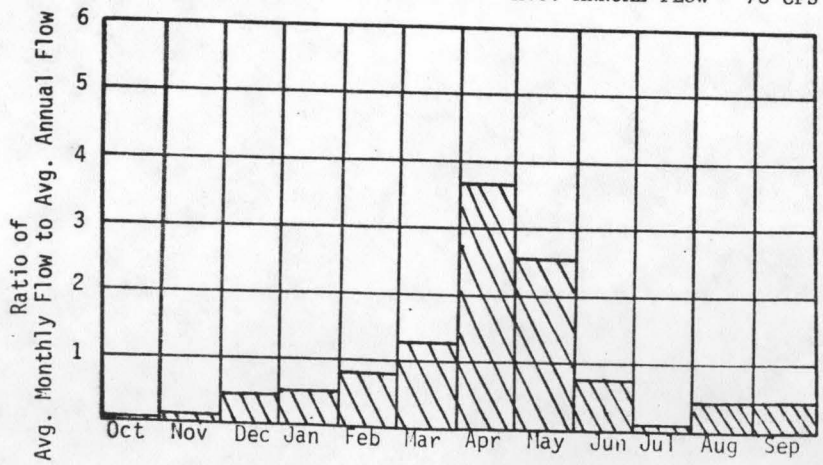
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	441	Sq.Mi.
F.	Inflow Classification	Natural	

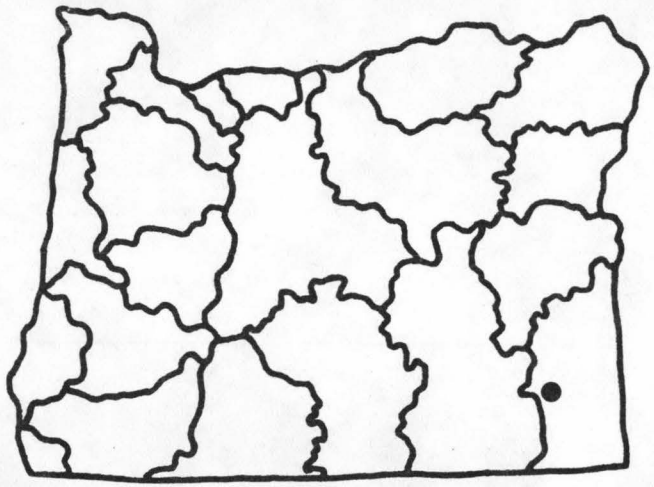
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3.4	.02	.17	1.000
80	4.7	.03	.22	.967
50	14.0	.08	.52	.756
30	54.6	.31	1.31	.491
10	228.5	1.28	3.02	.270

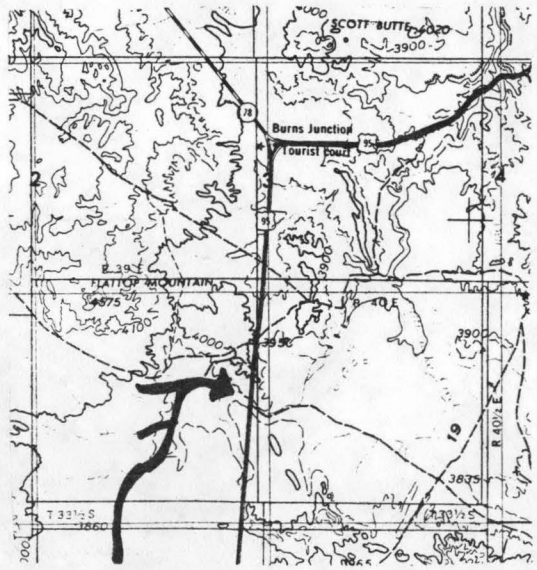
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 78 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDON VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0118

I. LOCATION

A. State	Oregon	
B. County	Malheur	
C. Township, Range	Sec.15, T31S, R41E	
D. Latitude, Longitude	42°52'N, 117°42'W	
E. Stream Name	Owyhee River	
F. Major Basin Name	Owyhee	
G. River Mile	118.0 to 122.9	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

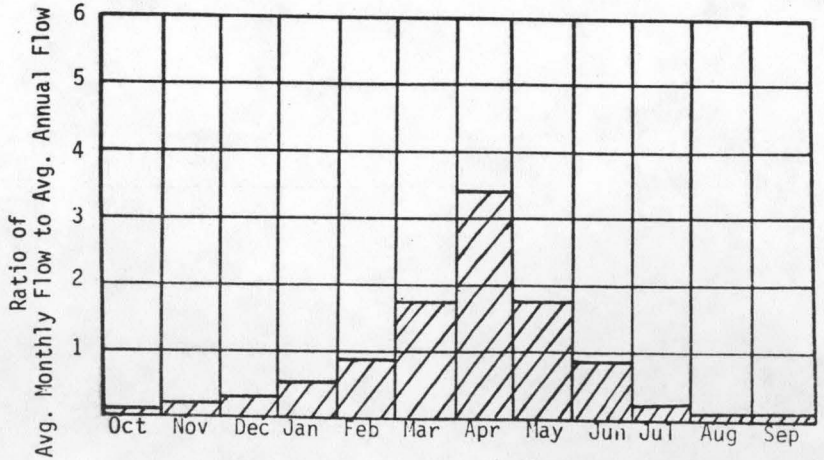
A. Upstream Elevation of Reach	3355	Ft. MSL
B. Downstream Elevation of Reach	3340	Ft. MSL
C. Total Available Head in Reach	15	Ft.
D. Average Slope in Reach	3.1	Ft./Mi.
E. Drainage Area above Reach Mouth	7354	Sq.Mi.
F. Inflow Classification	Natural	

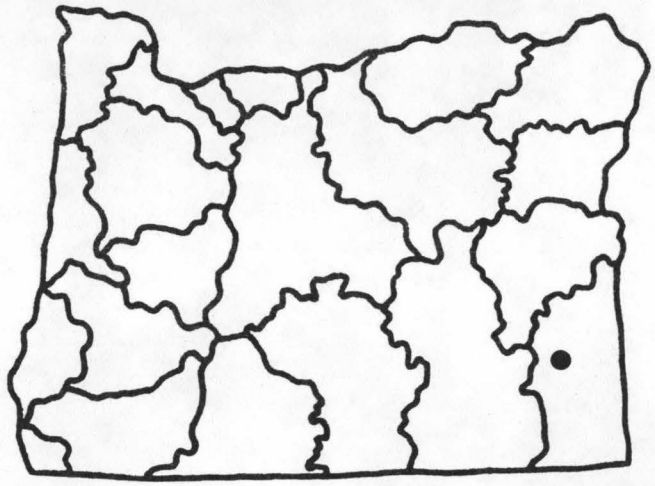
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	103.3	.13	1.15	1.000
80	149.3	.19	1.60	.962
50	265.1	.34	2.44	.825
30	645.7	.82	4.13	.575
10	2757.7	3.51	8.84	.288

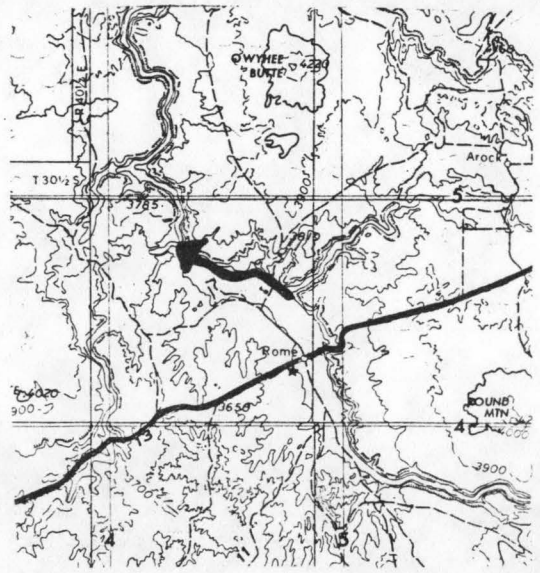
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 987 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDON VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-005-R0001

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.4, T31S, R44E
D.	Latitude, Longitude	42°55'N, 117°37W
E.	Stream Name	Jordan Creek
F.	Major Basin Name	Owyhee
G.	River Mile	0.0 to 10.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

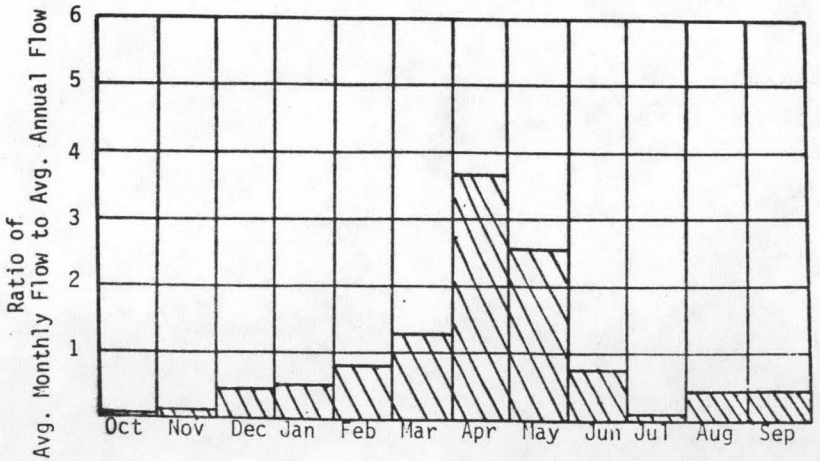
A.	Upstream Elevation of Reach	3700	Ft. MSL
B.	Downstream Elevation of Reach	3355	Ft. MSL
C.	Total Available Head in Reach	345	Ft.
D.	Average Slope in Reach	34.5	Ft./Mi.
E.	Drainage Area above Reach Mouth	1253	Sq.Mi.
F.	Inflow Classification	Regulated	

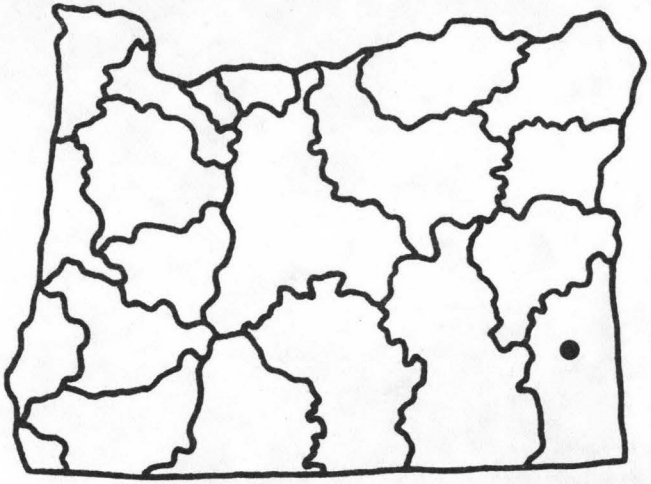
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	8.8	.26	2.25	1.000
80	13.9	.41	3.40	.954
50	64.5	1.89	11.82	.716
30	261.7	7.65	32.02	.478
10	1047.1	30.62	72.25	.269

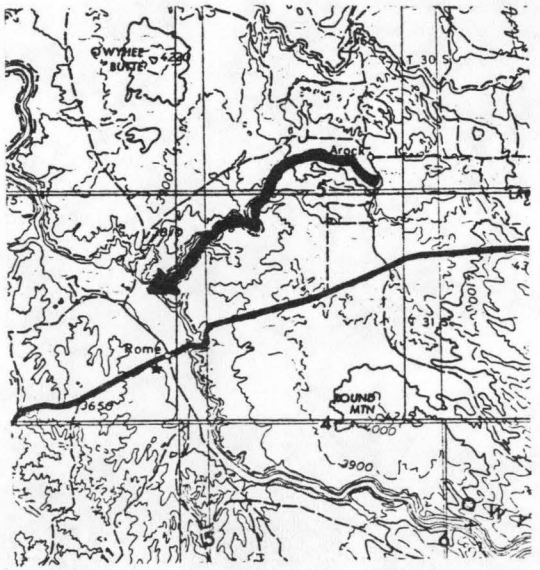
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 244 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDON VALLEY

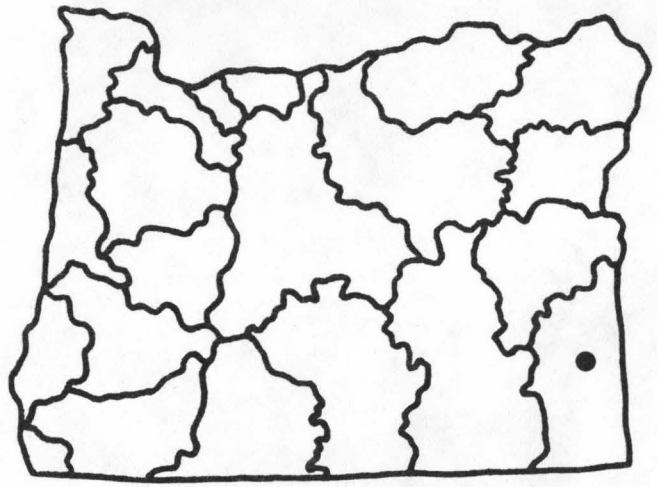


REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-005-R0002

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.4, T31S, R45E
D.	Latitude, Longitude	42°52'N, 117°28'W
E.	Stream Name	Jordan Creek
F.	Major Basin Name	Owyhee
G.	River Mile	10.0 to 20.0



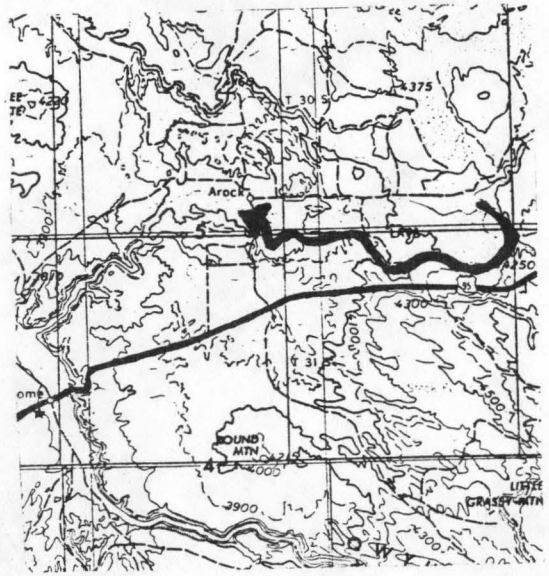
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	4100	Ft. MSL
B.	Downstream Elevation of Reach	3700	Ft. MSL
C.	Total Available Head in Reach	400	Ft.
D.	Average Slope in Reach	40	Ft./Mi.
E.	Drainage Area above Reach Mouth	1156	Sq.Mi.
F.	Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

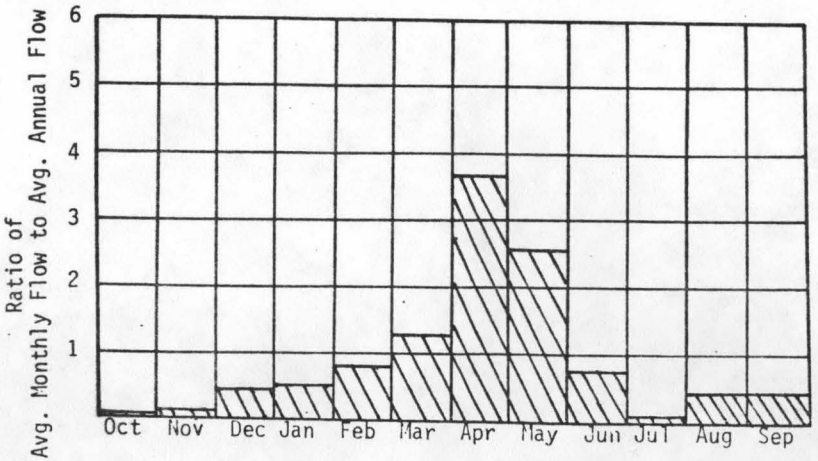
EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	8.3	.28	2.47	1.000
80	13.2	.45	3.73	.954
50	60.9	2.06	12.95	.716
30	247.1	8.38	35.06	.478
10	989.0	33.52	79.12	.269

U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDAN VALLEY



IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 231 CFS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-005-R0003

I. LOCATION

A. State	Oregon	
B. County	Malheur-Idaho	
C. Township, Range	Sec.19, T30S, R46E	
D. Latitude, Longitude	42°57'N, 117°22'W	
E. Stream Name	Jordan Creek	
F. Major Basin Name	Owyhee	
G. River Mile	20.0 to 25.8	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

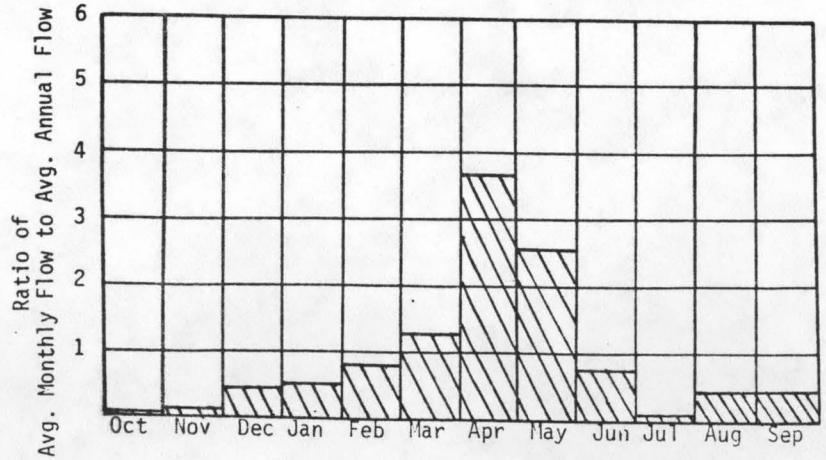
A. Upstream Elevation of Reach	4205	Ft. MSL
B. Downstream Elevation of Reach	4100	Ft. MSL
C. Total Available Head in Reach	105	Ft.
D. Average Slope in Reach	18.1	Ft./Mi.
E. Drainage Area above Reach Mouth	1100	Sq.Mi.
F. Inflow Classification	Regulated	

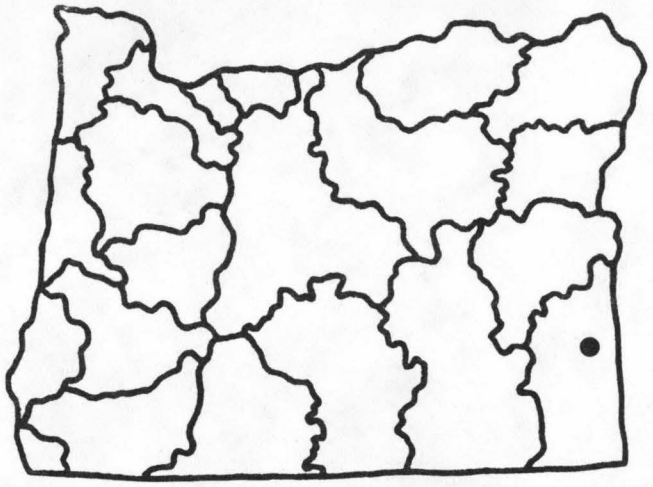
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	8.0	.07	.63	1.000
80	12.7	.11	.94	.954
50	58.8	.52	3.28	.716
30	238.7	2.12	8.89	.478
10	955.3	8.50	20.06	.269

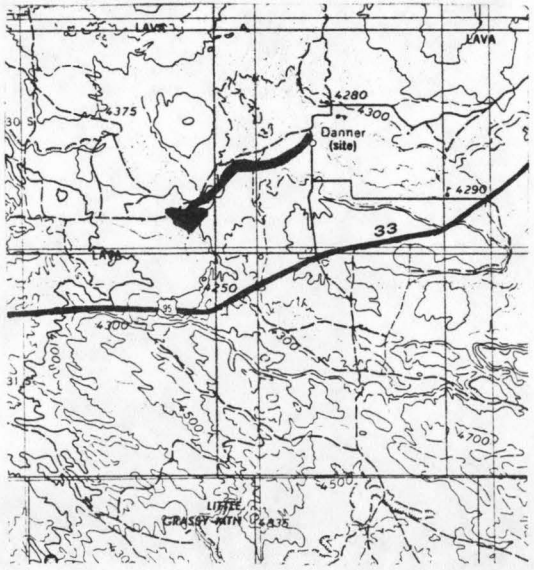
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 223 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDAN VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-005-R0006

I. LOCATION

A. State	Oregon	
B. County	Malheur	
C. Township, Range	Sec.24, T30S, R46E	
D. Latitude, Longitude	42°55'N, 117°18'W	
E. Stream Name	Jordan Creek	
F. Major Basin Name	Owyhee	
G. River Mile	25.8 to 36.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

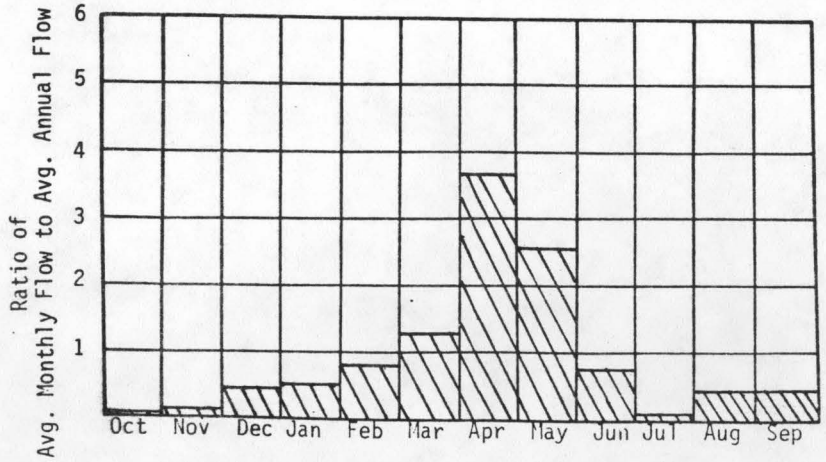
A. Upstream Elevation of Reach	4287	Ft. MSL
B. Downstream Elevation of Reach	4205	Ft. MSL
C. Total Available Head in Reach	82	Ft.
D. Average Slope in Reach	8.0	Ft./Mi.
E. Drainage Area above Reach Mouth	726	Sq.Mi.
F. Inflow Classification	Regulated	

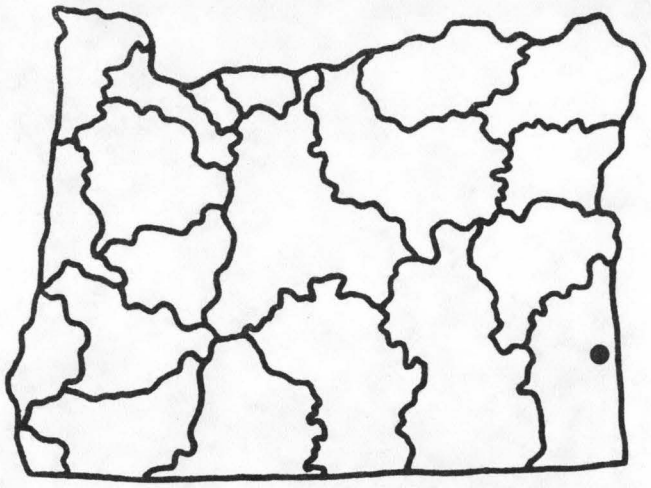
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	6.1	.04	.37	1.000
80	9.6	.07	.56	.954
50	44.5	.31	1.94	.716
30	180.6	1.26	5.25	.478
10	722.9	5.02	11.86	.269

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 168 CFS





U.S.G.S. TOPO. SERIES
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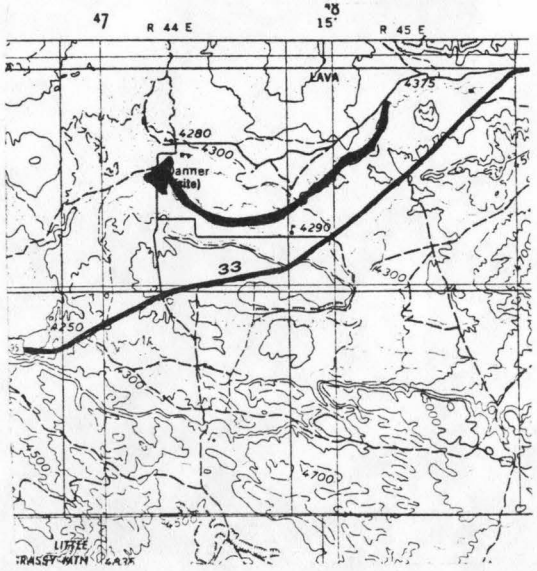
MAP NAME: JORDAN VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-005-R0007

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.5, T30S, R48E
D.	Latitude, Longitude	42°58'N, 117°08'W
E.	Stream Name	Jordan Creek
F.	Major Basin Name	Owyhee
G.	River Mile	36.0 to 49.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

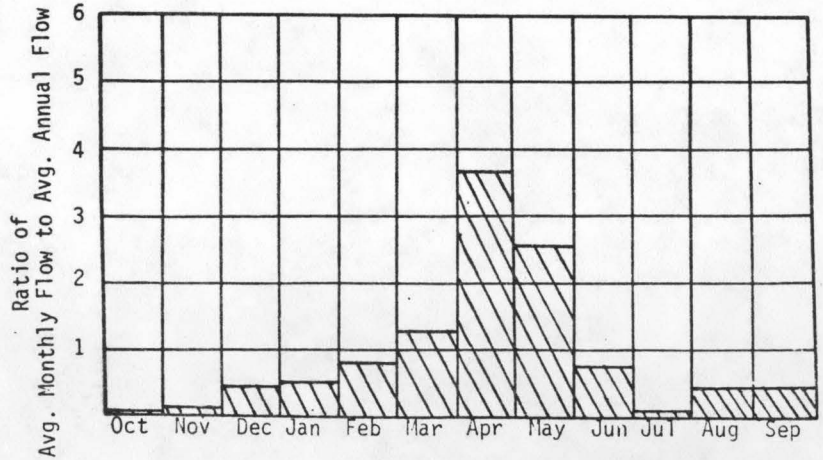
A.	Upstream Elevation of Reach	4400	Ft. MSL
B.	Downstream Elevation of Reach	4287	Ft. MSL
C.	Total Available Head in Reach	113	Ft.
D.	Average Slope in Reach	8.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	630	Sq.Mi.
F.	Inflow Classification	Regulated	

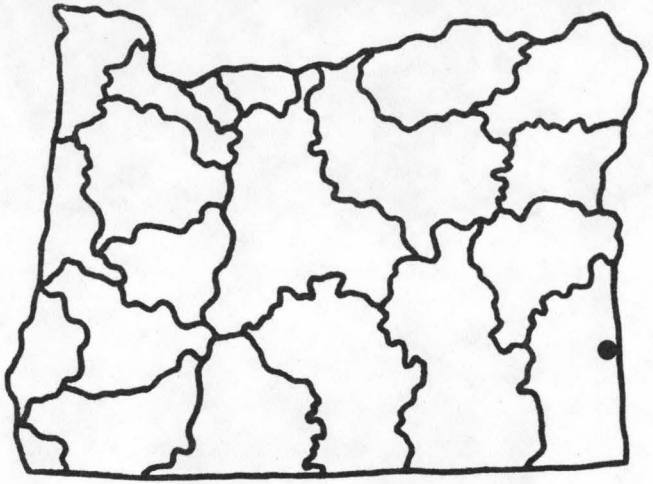
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	5.4	.05	.45	1.000
80	8.6	.08	.69	.954
50	39.6	.38	2.38	.716
30	160.8	1.54	6.45	.478
10	643.7	6.16	14.55	.269

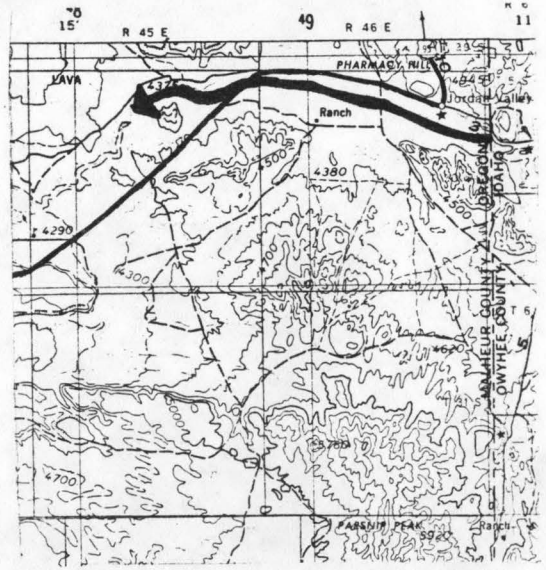
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 150 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDAN VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0122

I. LOCATION

A. State	Oregon	
B. County	Malheur	
C. Township, Range	Sec.5, T32S, R44E	
D. Latitude, Longitude	42°48'N, 117°34'W	
E. Stream Name	Owyhee River	
F. Major Basin Name	Owyhee	
G. River Mile	122.9 to 135.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

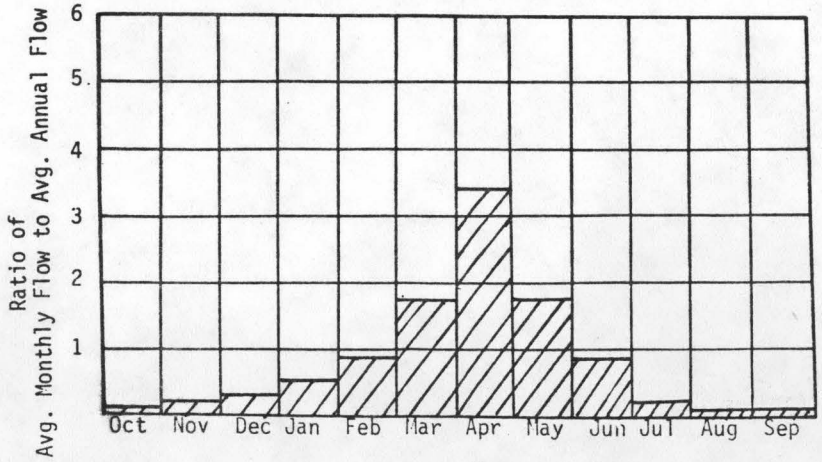
A. Upstream Elevation of Reach	3464	Ft. MSL
B. Downstream Elevation of Reach	3355	Ft. MSL
C. Total Available Head in Reach	109	Ft.
D. Average Slope in Reach	9	Ft./Mi.
E. Drainage Area above Reach Mouth	6082	Sq.Mi.
F. Inflow Classification	Natural	

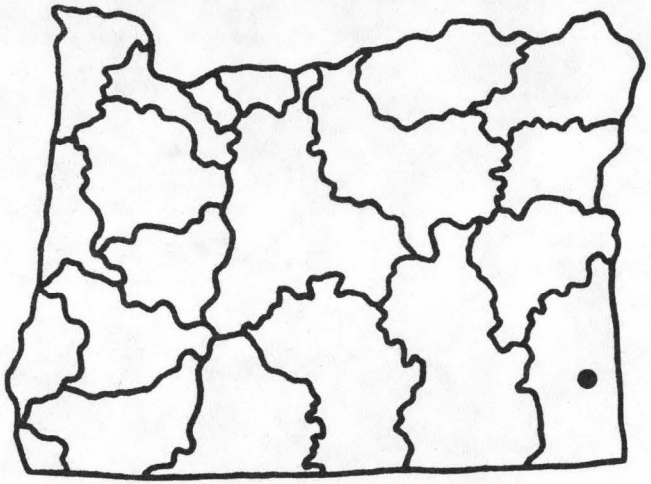
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	86.6	.80	7.01	1.000
80	125.2	1.16	9.74	.962
50	222.0	2.05	14.83	.826
30	542.1	5.01	25.19	.574
10	2312.1	21.36	53.84	.288

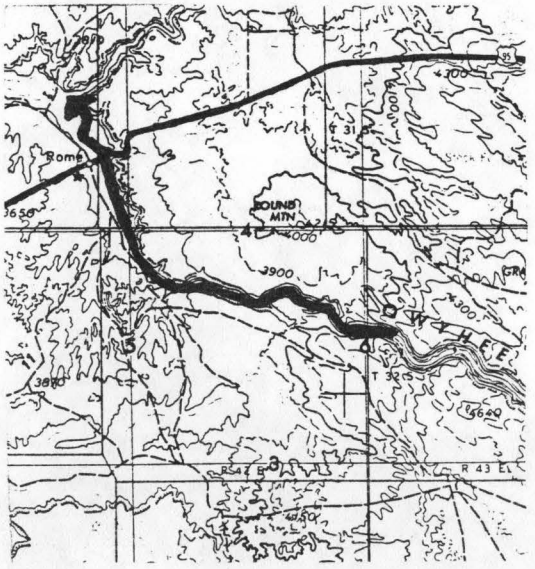
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 841 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDAN VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0135

I. LOCATION

A. State	Oregon	
B. County	Malheur	
C. Township, Range	Sec.23, T32S, R45E	
D. Latitude, Longitude	42°46'N, 117°22'W	
E. Stream Name	Owyhee River	
F. Major Basin Name	Owyhee	
G. River Mile	135.0 to 145.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

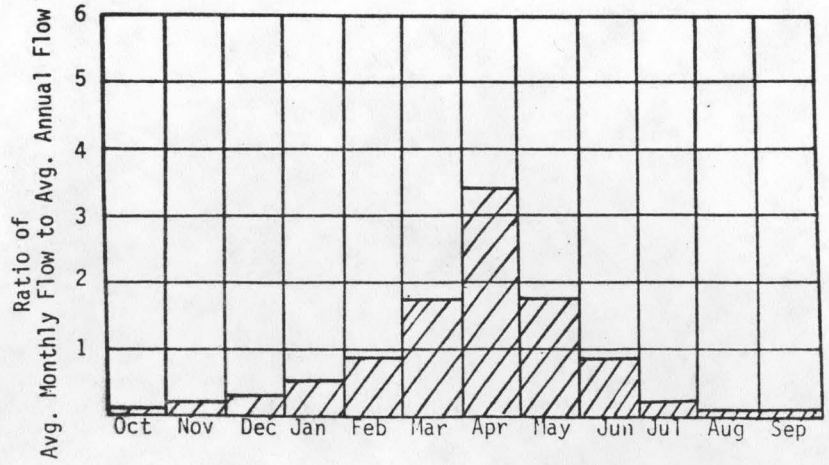
A. Upstream Elevation of Reach	3654	Ft. MSL
B. Downstream Elevation of Reach	3464	Ft. MSL
C. Total Available Head in Reach	190	Ft.
D. Average Slope in Reach	19	Ft./Mi.
E. Drainage Area above Reach Mouth	6021	Sq.Mi.
F. Inflow Classification	Natural	

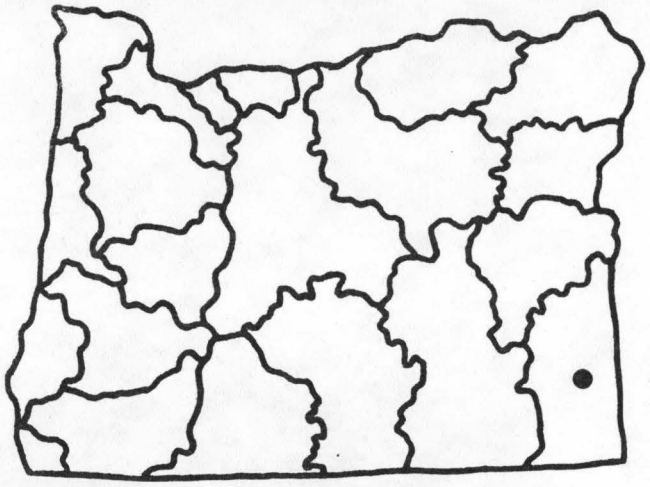
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	85.2	1.37	12.01	1.000
80	123.0	1.98	16.68	.962
50	218.2	3.51	25.41	.826
30	532.9	8.58	43.16	.574
10	2272.3	36.59	92.23	.288

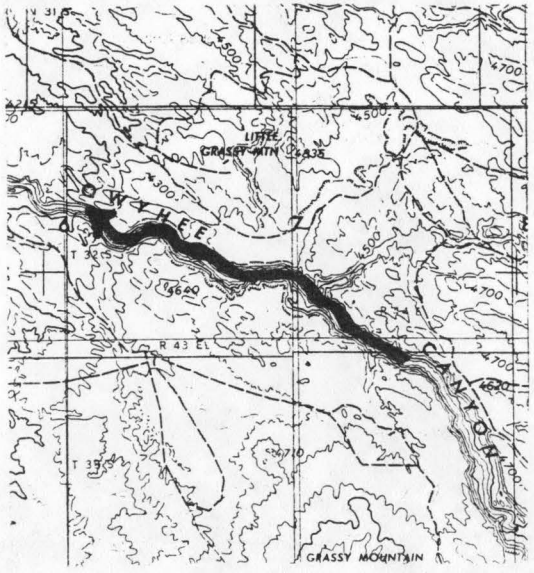
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 828 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDAN VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0145

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.25, T33S, R46E
D.	Latitude, Longitude	42°40'N, 117°15'W
E.	Stream Name	Owyhee River
F.	Major Basin Name	Owyhee
G.	River Mile	145.0 to 156.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

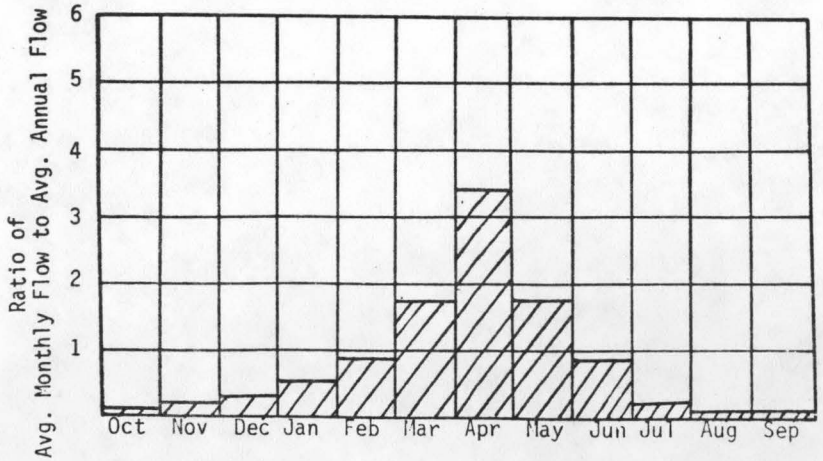
A.	Upstream Elevation of Reach	3950	Ft. MSL
B.	Downstream Elevation of Reach	3654	Ft. MSL
C.	Total Available Head in Reach	296	Ft.
D.	Average Slope in Reach	26.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	5819	Sq.Mi.
F.	Inflow Classification	Natural	

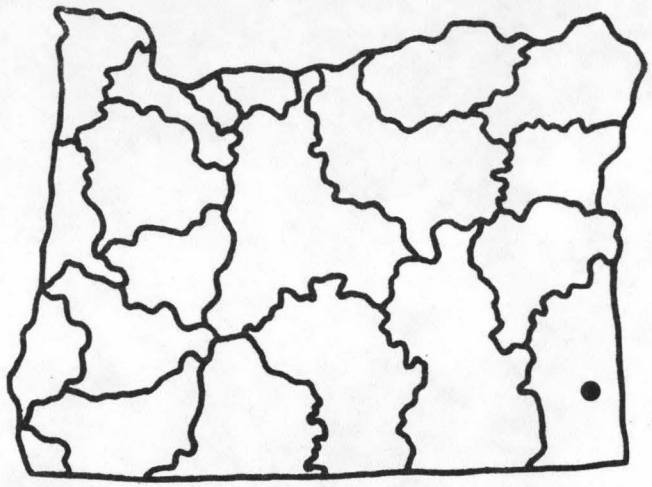
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	83.7	2.10	18.40	1.000
80	121.0	3.03	25.56	.962
50	214.5	5.38	38.92	.826
30	524.1	13.15	66.13	.574
10	2234.6	56.05	141.31	.288

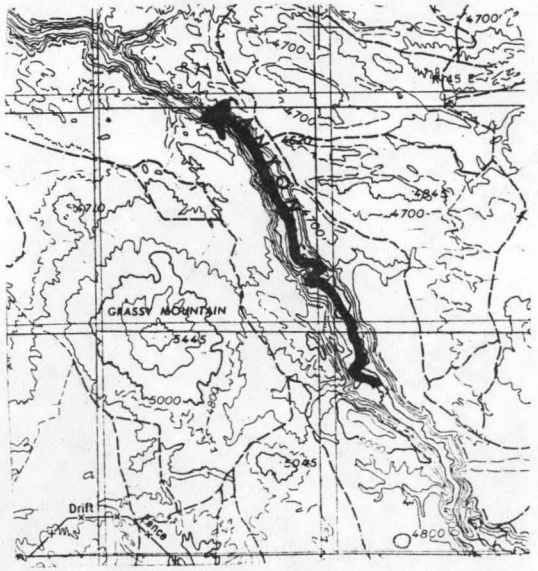
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW - 814 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDAN VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0156

I. LOCATION

A.	State	Oregon
B.	County	Malheur
C.	Township, Range	Sec.21, T34S, R47E
D.	Latitude, Longitude	42°35'N, 117°12'W
E.	Stream Name	Owyhee River
F.	Major Basin Name	Owyhee
G.	River Mile	156.0 to 161.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

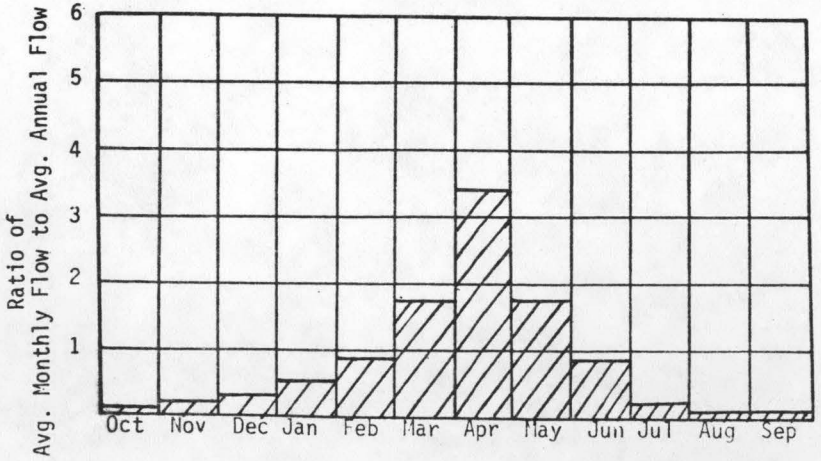
A.	Upstream Elevation of Reach	3970	Ft. MSL
B.	Downstream Elevation of Reach	3950	Ft. MSL
C.	Total Available Head in Reach	20	Ft.
D.	Average Slope in Reach	3.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	5771	Sq.Mi.
F.	Inflow Classification	Natural	

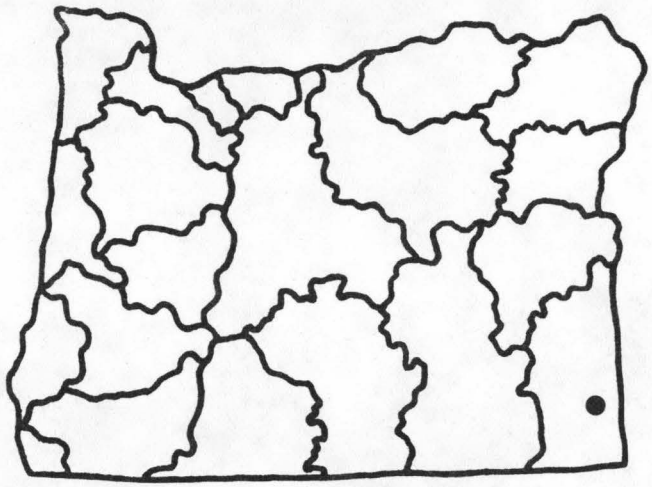
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	83.3	.14	1.24	1.000
80	120.4	.20	1.72	.962
50	213.5	.36	2.62	.826
30	521.6	.88	4.45	.574
10	2223.6	3.77	9.50	.288

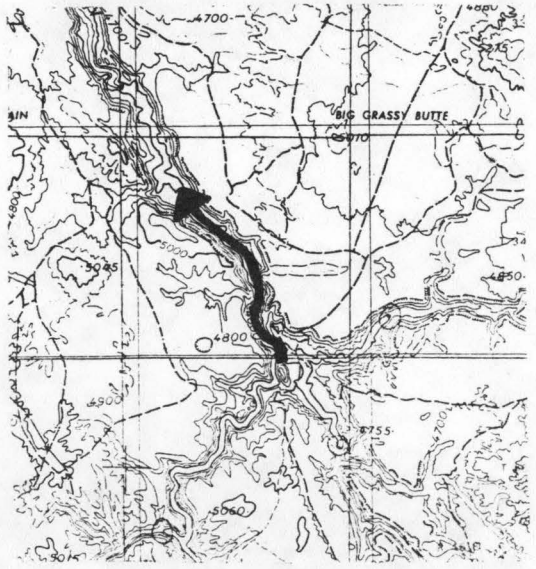
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 811 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDAN VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0161

I. LOCATION

A. State	Oregon	
B. County	Malheur	
C. Township, Range	Sec.16, T35S, R47E	
D. Latitude, Longitude	42°31'N, 117°12'W	
E. Stream Name	Owyhee River	
F. Major Basin Name	Owyhee	
G. River Mile	161.5 to 171.7	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

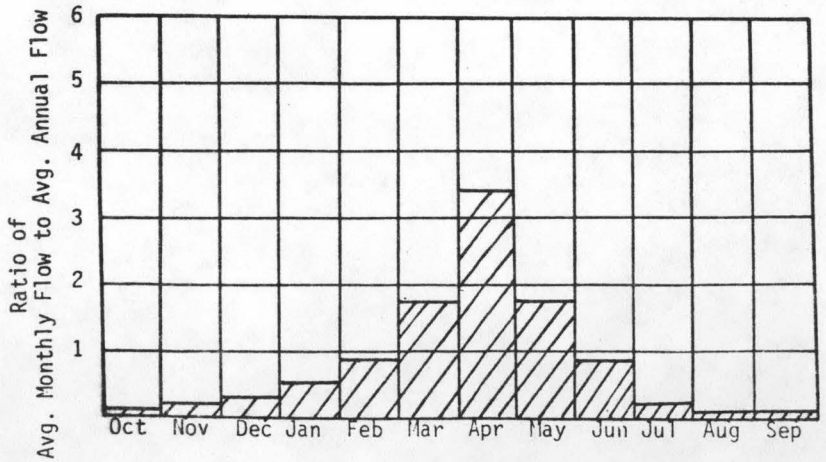
A. Upstream Elevation of Reach	3980	Ft. MSL
B. Downstream Elevation of Reach	3970	Ft. MSL
C. Total Available Head in Reach	10	Ft.
D. Average Slope in Reach	1	Ft./Mi.
E. Drainage Area above Reach Mouth	5655	Sq.Mi.
F. Inflow Classification	Natural	

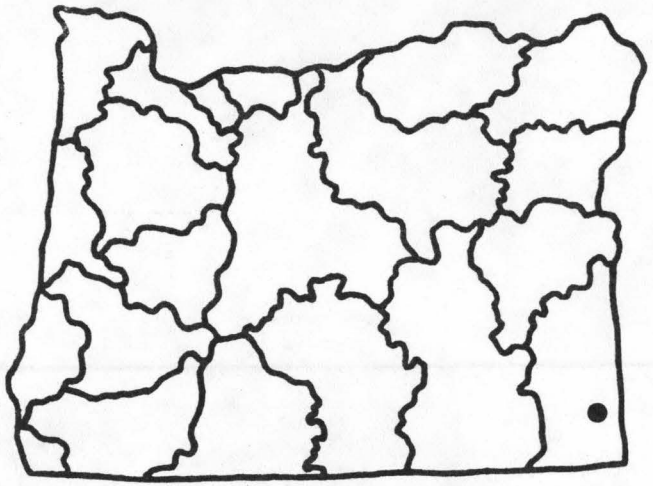
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	79.5	.07	.59	1.000
80	114.9	.10	.82	.962
50	203.7	.17	1.25	.826
30	498.0	.42	2.12	.574
10	2122.4	1.80	4.53	.288

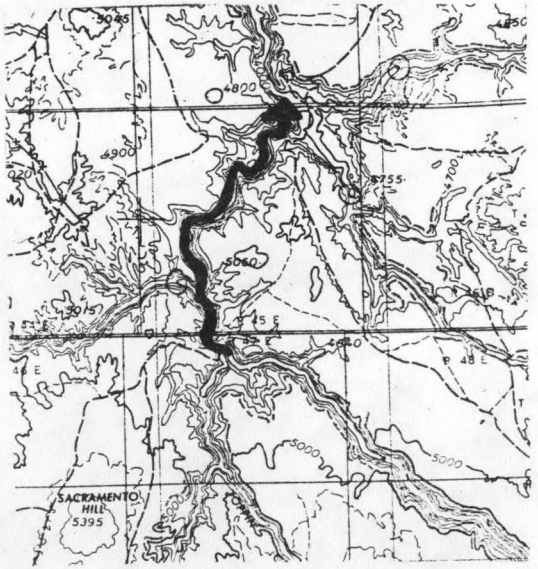
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 778 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDAN VALLEY



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-240-200-000-R0171

I. LOCATION

A. State	Oregon	
B. County	Malheur	
C. Township, Range	Sec.4, T37S, R48E	
D. Latitude, Longitude	42°23'N, 117°05'W	
E. Stream Name	Owyhee River	
F. Major Basin Name	Owyhee	
G. River Mile	171.7 to 186.5	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

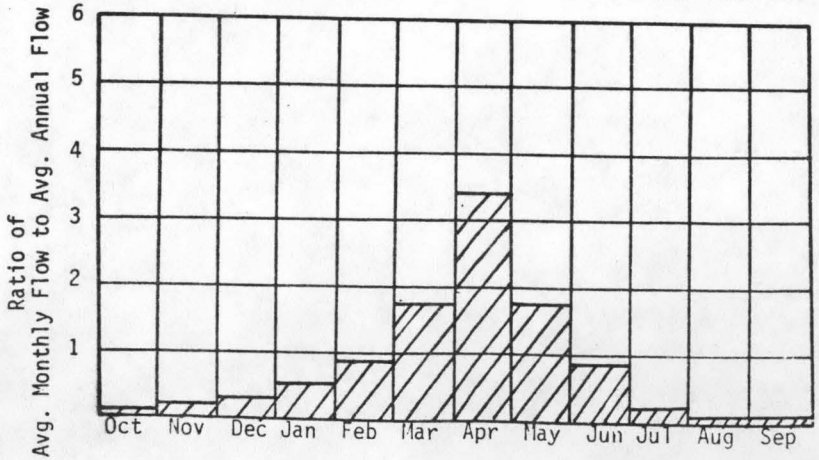
A. Upstream Elevation of Reach	4250	Ft. MSL
B. Downstream Elevation of Reach	3980	Ft. MSL
C. Total Available Head in Reach	270	Ft.
D. Average Slope in Reach	18.2	Ft./Mi.
E. Drainage Area above Reach Mouth	5306	Sq.Mi.
F. Inflow Classification	Natural	

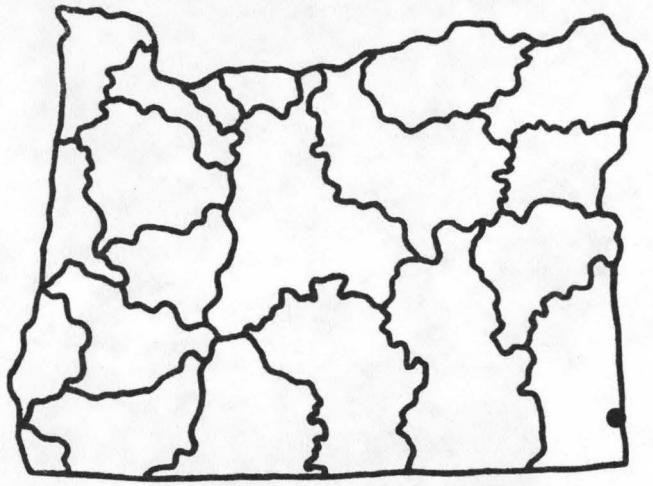
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	74.6	1.71	14.95	1.000
80	107.7	2.47	20.76	.962
50	190.9	4.37	31.60	.826
30	467.3	10.69	53.76	.574
10	1990.3	45.54	114.81	.288

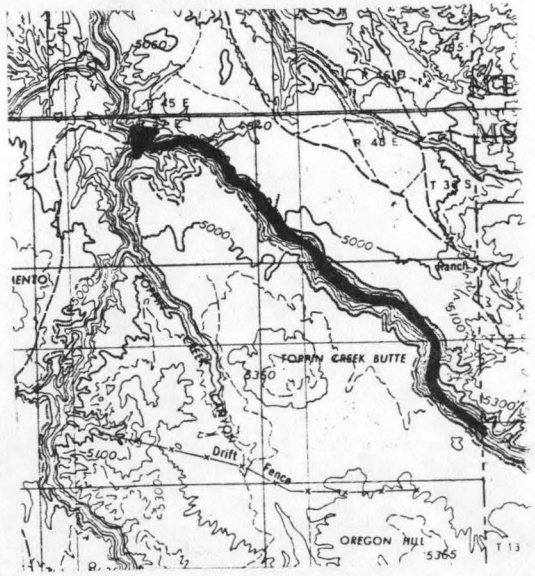
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 733 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: JORDAN VALLEY

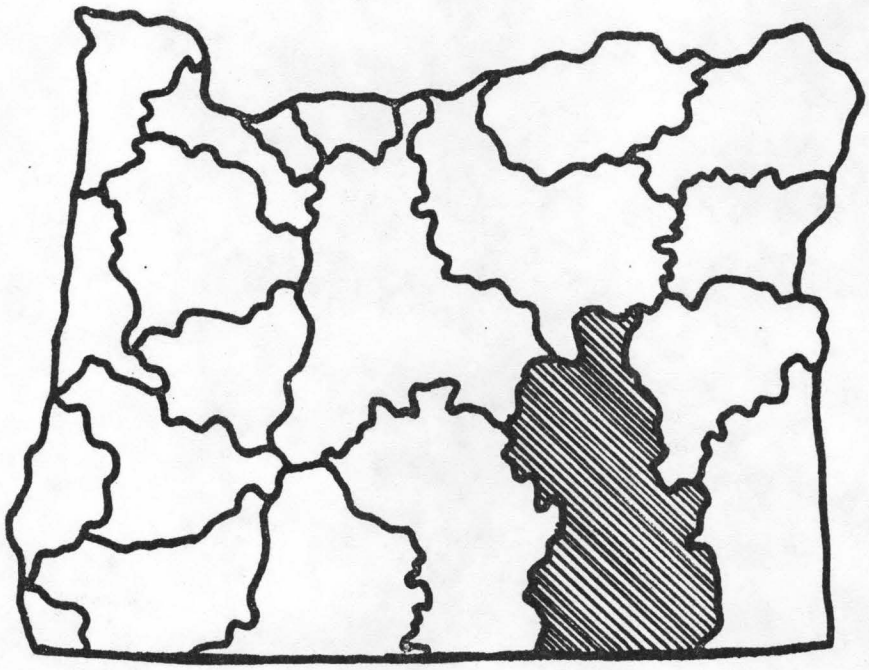


FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-500-240-200-								
000-R0001	-	-	-	-	0.5	69-USBR	1,3	5.0
000-R0010	-	-	-	-	2.2	69-USBR	-	9.0
000-R0020	-	-	-	-	1.2	69-USBR	-	14.0
000-R0070	X	-	-	-	23.0	69-IP	-	50.0
000-R0080	X	-	-	-	30.0	69-IP	-	54.0
000-R0090	X	-	-	-	34.0	69-IP	-	62.0
000-R0100	X	-	-	-	33.0	69-IP	-	69.0
000-R0110	X	-	-	-	33.0	69-IP	-	73.0
003-R0001	-	-	-	-	34.0	115-H-C	-	80.0
003-R0003	-	-	-	-	26.0	115-H-C	-	88.0
003-R0004	-	-	-	-	25.0	115-H-C	-	87.0
000-R0118	-	-	-	-	31.0	69-IP	-	76.0
005-R0001	-	-	-	-	27.0	69-IP	-	73.0

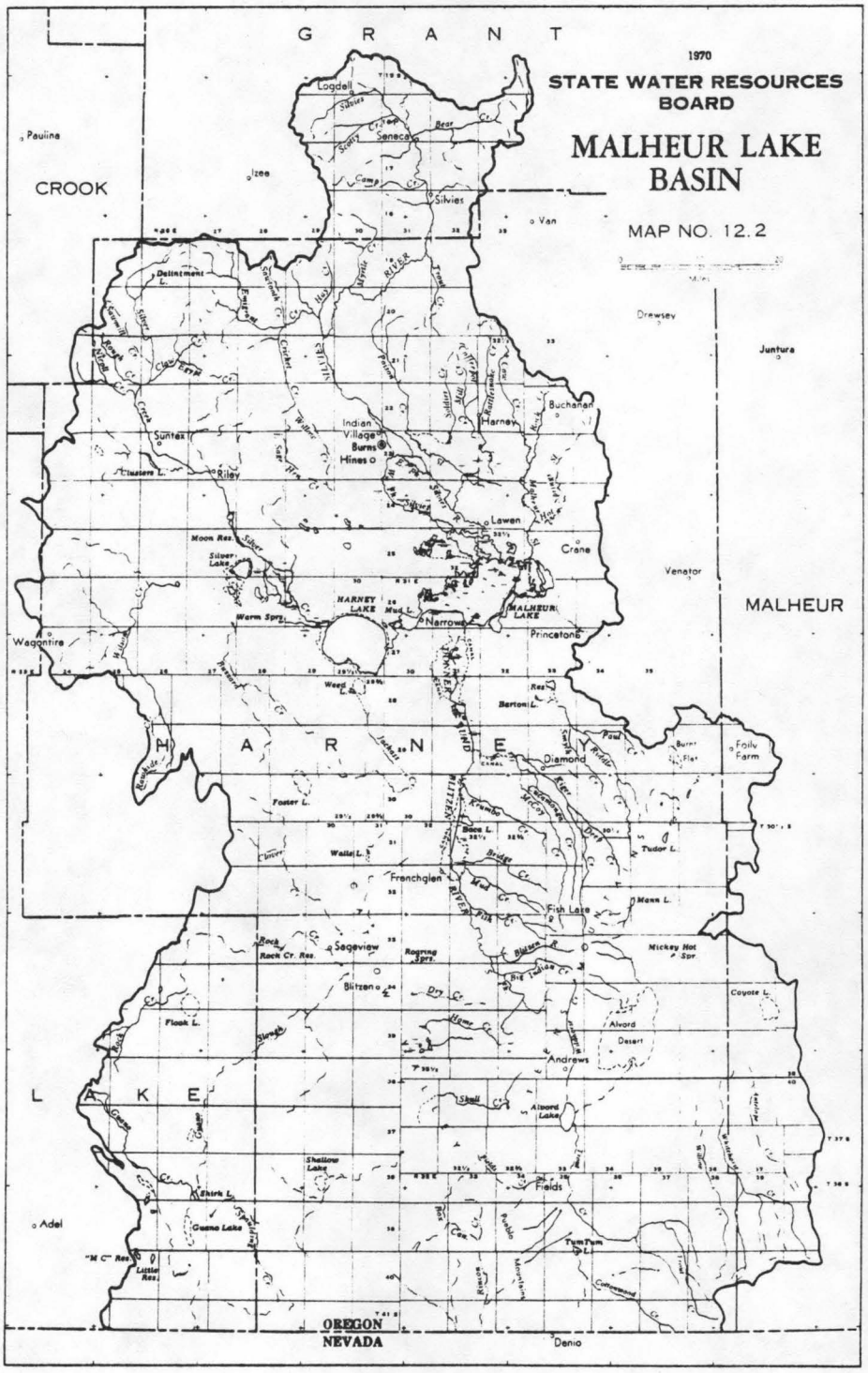
FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY>1000 Miles
02-500-240-200-								
005-R0002	-	-	-	-	19.0	69-IP	-	72.0
005-R0003	-	-	-	-	17.0	69-IP	-	70.0
005-R0006	-	-	-	-	11.0	69-IP	-	72.0
005-R0007	-	-	-	-	2.5	69-IP	-	74.0
000-R0122	-	-	-	-	28.0	69-IP	-	84.0
000-R0135	-	-	-	-	23.0	69-IP	-	92.0
000-R0145	-	-	-	-	24.0	69-IP	-	100.0
000-R0156	-	-	-	-	28.5	69-IP	-	104.0
000-R0161	-	-	-	-	34.0	69-IP	-	109.0
000-R0171	-	-	-	-	40.0	69-IP	-	113.0



APPENDIX 12

MALHEUR LAKE BASIN


1970
STATE WATER RESOURCES BOARD
MALHEUR LAKE BASIN
MAP NO. 12.2
GRANT
CROOK
HARNEY
MALHEUR
LAKE
OREGON
NEVADA
Logdell
Paulina
Izee
Silvies
Van
Drewsey
Juntura
Buchanan
Harney
Indian Village
Burns
Hines
Suntex
Riley
Lawen
Crane
Venator
Princeton
Wagontire
Diamond
Frenchglen
Fish Lake
Sagehen
Blitzen
Andrews
Alvord Desert
Alvord Lake
Fields
Adel
Denio
Malheur Lake
Harney Lake
Mud L.
Warm Spgs.
Silver Lake
Moon Res.
Weed L.
Bartoni L.
Foster L.
Wade L.
Tudor L.
Mann L.
Coyote L.
Flook L.
Shallow Lake
Guano Lake
Thomtom L.
Mickey Hot Spr.
Roaring Spgs.
Rock Creek Res.
Burnt Flat
Frnly Farm

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-012-001-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Harney
C.	Township, Range	Sec.36, T24S, R31E.
D.	Latitude, Longitude	43°26'N, 118°56'W
E.	Stream Name	West Fork Silvies River
F.	Major Basin Name	Malheur Lake Basin
G.	River Mile	0.0 to 30.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

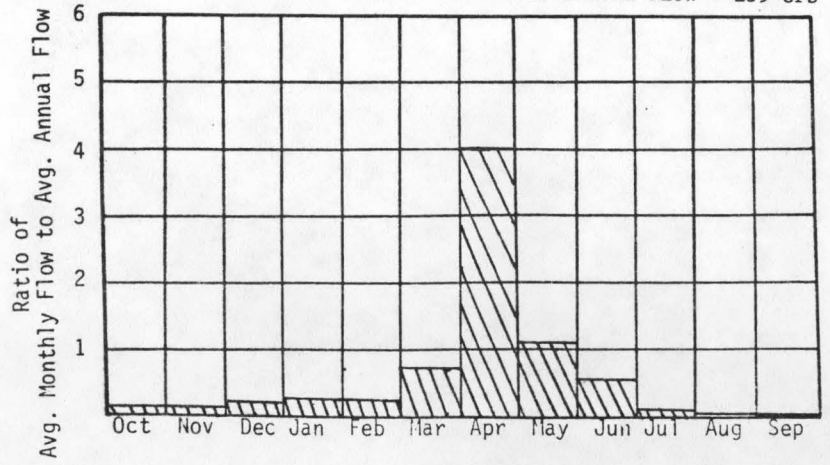
A.	Upstream Elevation of Reach	4145	Ft. MSL
B.	Downstream Elevation of Reach	4107	Ft. MSL
C.	Total Available Head in Reach	38	Ft.
D.	Average Slope in Reach	1.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	1232	Sq.Mi.
F.	Inflow Classification	Natural	

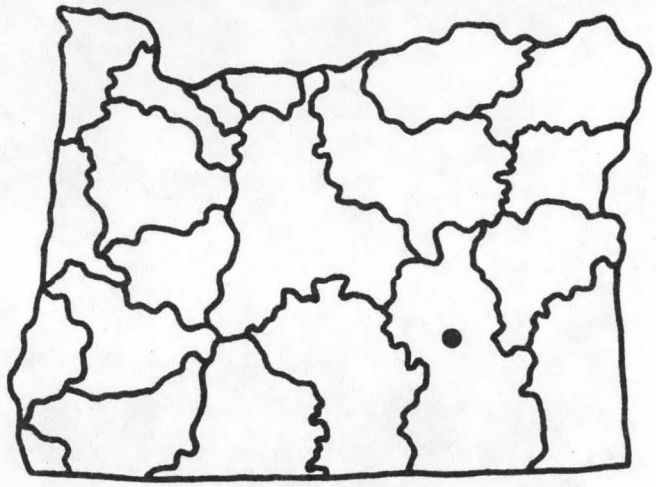
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	5.2	.02	.15	1.000
80	13.5	.04	.35	.924
50	37.9	.12	.80	.747
30	88.1	.28	1.37	.549
10	375.7	1.21	2.99	.282

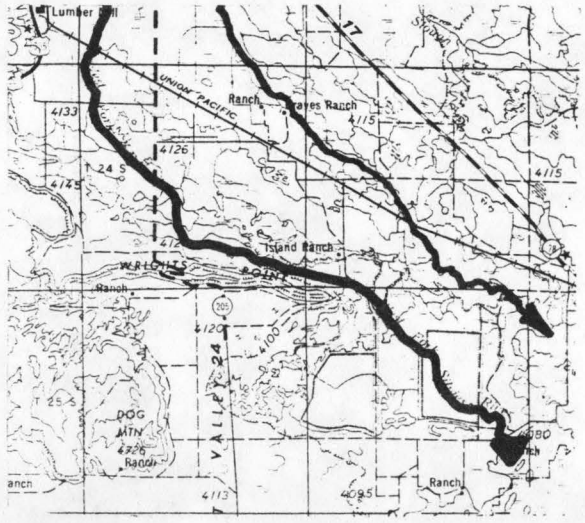
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 139 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-012-001-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Harney
C.	Township, Range	Sec.25, T22S, R30E
D.	Latitude, Longitude	43°38'N, 119°06'W
E.	Stream Name	Silvies River
F.	Major Basin Name	Malheur Lake Basin
G.	River Mile	0.0 to 19.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

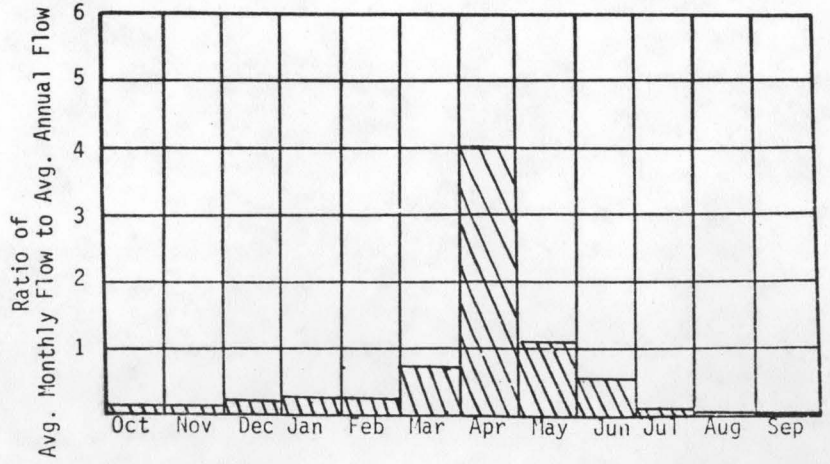
A.	Upstream Elevation of Reach	4180	Ft. MSL
B.	Downstream Elevation of Reach	4145	Ft. MSL
C.	Total Available Head in Reach	35	Ft.
D.	Average Slope in Reach	1.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	483	Sq.Mi.
F.	Inflow Classification	Natural	

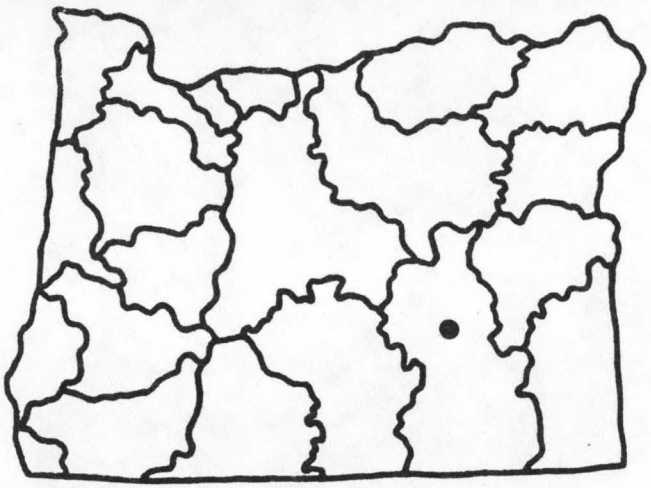
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	5.2	.02	.13	1.000
80	13.1	.04	.31	.924
50	36.3	.11	.71	.749
30	83.3	.25	1.19	.552
10	349.4	1.04	2.58	.284

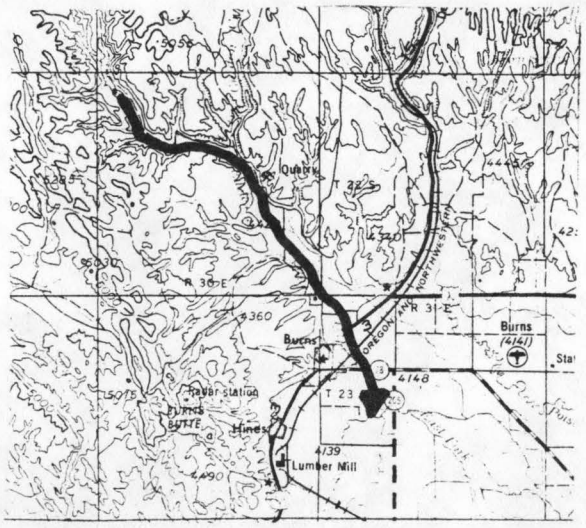
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 130 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-012-001-000-R0003

I. LOCATION

A. State	Oregon	
B. County	Harney	
C. Township, Range	Sec.24, T21S, R29E	
D. Latitude, Longitude	43°43'N, 119°11'W	
E. Stream Name	Silvies River	
F. Major Basin Name	Malheur Lake Basin	
G. River Mile	19.0 to 29.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

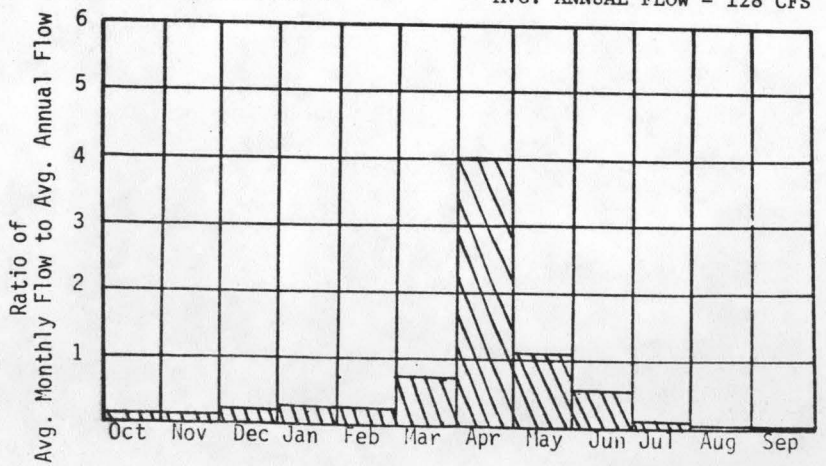
A. Upstream Elevation of Reach	4260	Ft. MSL
B. Downstream Elevation of Reach	4180	Ft. MSL
C. Total Available Head in Reach	80	Ft.
D. Average Slope in Reach	8	Ft./Mi.
E. Drainage Area above Reach Mouth	937	Sq.Mi.
F. Inflow Classification	Natural	

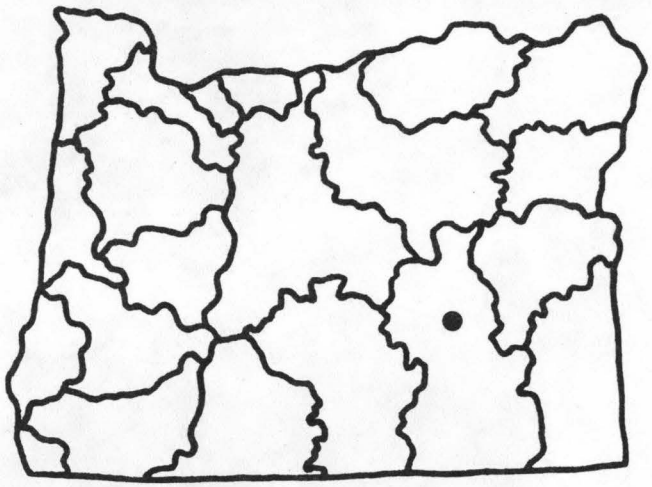
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	5.1	.03	.31	1.000
80	13.0	.09	.71	.924
50	35.8	.24	1.59	.750
30	81.9	.56	2.69	.553
10	342.3	2.32	5.78	.284

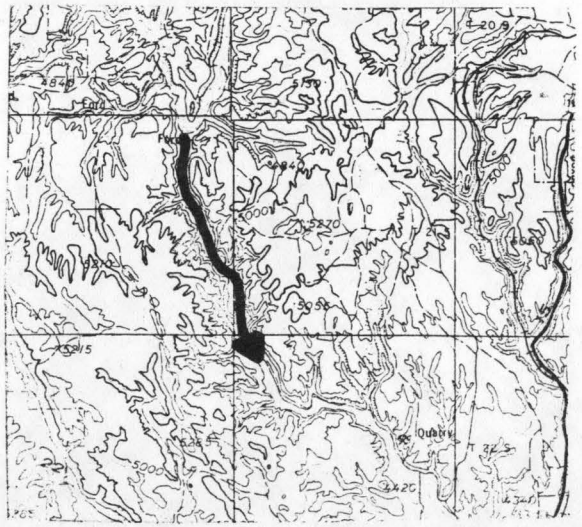
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 128 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-012-001-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Harney
C.	Township, Range	Sec.2, T21S, R29E
D.	Latitude, Longitude	43°46'N, 119°14'W
E.	Stream Name	Silvies River
F.	Major Basin Name	Malheur Lake Basin
G.	River Mile	29.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

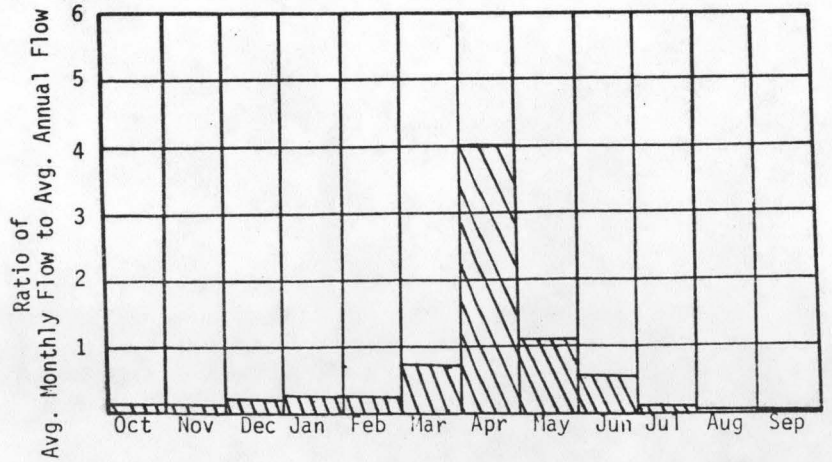
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	913	Sq.Mi.
F.	Inflow Classification	Natural	

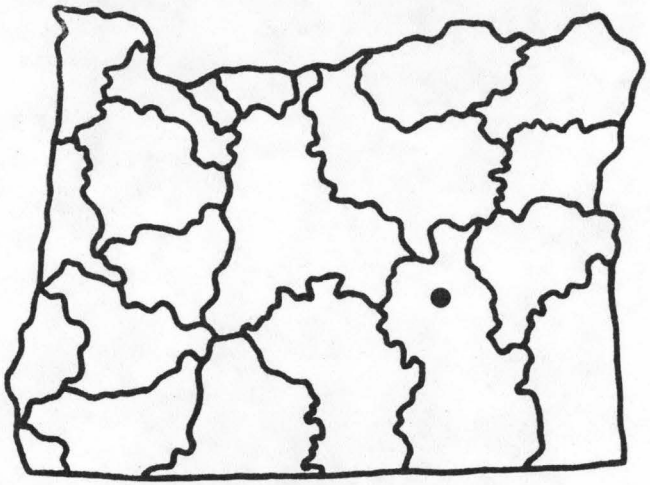
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	5.1	.03	.25	1.000
80	13.0	.07	.59	.924
50	35.6	.20	1.31	.750
30	81.5	.46	2.21	.553
10	340.0	1.90	4.74	.285

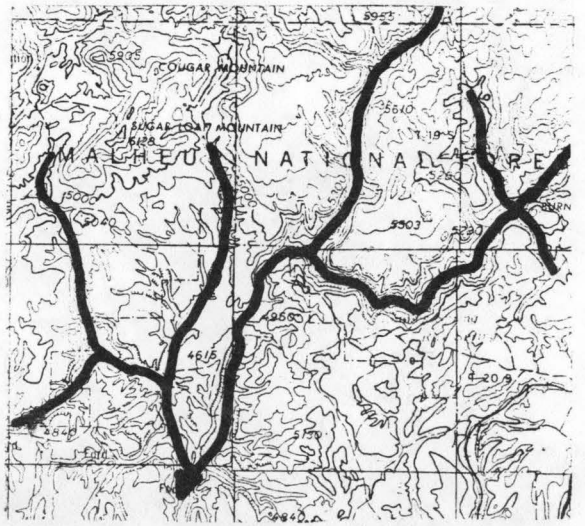
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 127 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-012-002-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Harney
C.	Township, Range	Sec.33, T27S, R31E
D.	Latitude, Longitude	43°11'N,118°55'W
E.	Stream Name	Donner und Blitzen River
F.	Major Basin Name	Malheur Lake
G.	River Mile	3.0 to 20.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

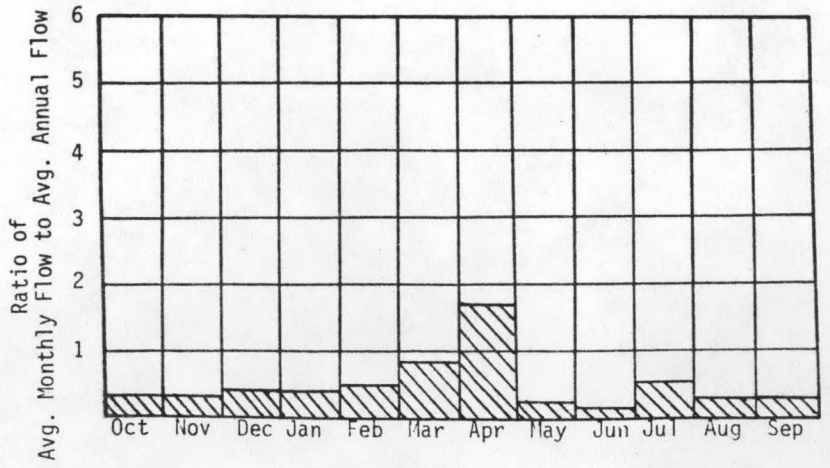
A.	Upstream Elevation of Reach	4130	Ft. MSL
B.	Downstream Elevation of Reach	4100	Ft. MSL
C.	Total Available Head in Reach	30	Ft.
D.	Average Slope in Reach	1.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	743	Sq.Mi.
F.	Inflow Classification	Natural	

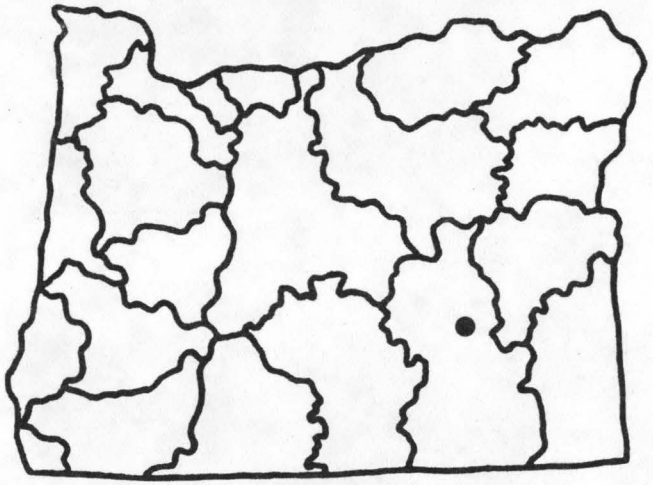
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.6	.01	.10	1.000
80	10.6	.03	.22	.929
50	25.4	.06	.43	.767
30	53.4	.14	.68	.574
10	198.2	.50	1.33	.301

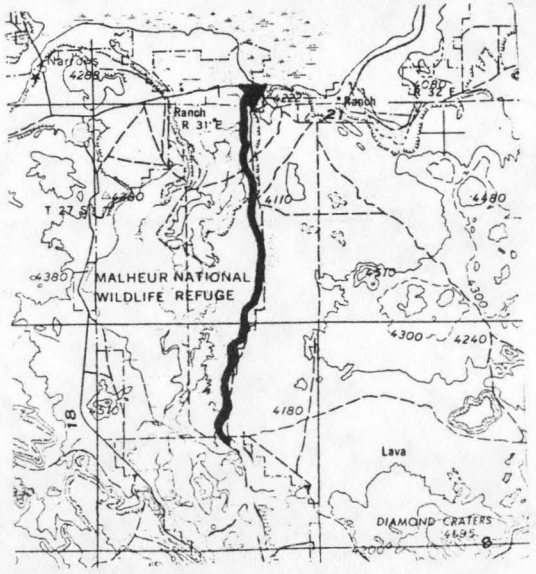
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 78 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-012-002-000-R0002

I. LOCATION

A. State	Oregon	
B. County	Harney	
C. Township, Range	Sec.23, T29S, R31E	
D. Latitude, Longitude	43°02'N,118°30'W	
E. Stream Name	Donner und Blitzen River	
F. Major Basin Name	Malheur Lake	
G. River Mile	20.0 to 33.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

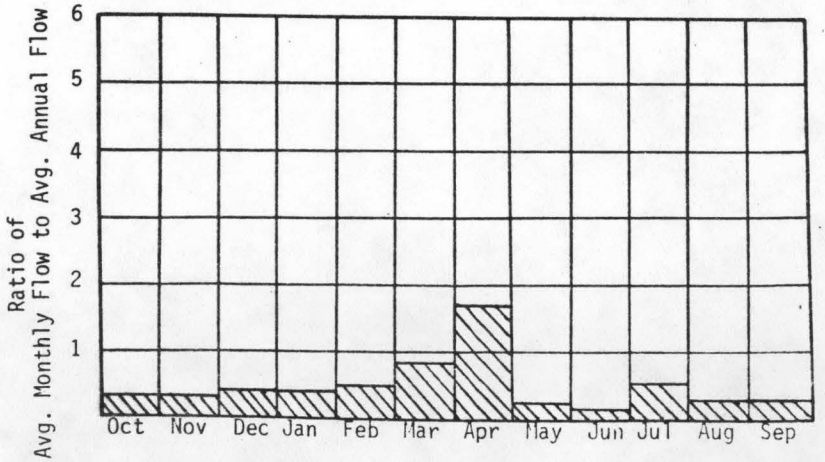
A. Upstream Elevation of Reach	4151	Ft. MSL
B. Downstream Elevation of Reach	4130	Ft. MSL
C. Total Available Head in Reach	21	Ft.
D. Average Slope in Reach	1.6	Ft./Mi.
E. Drainage Area above Reach Mouth	673	Sq.Mi.
F. Inflow Classification	Natural	

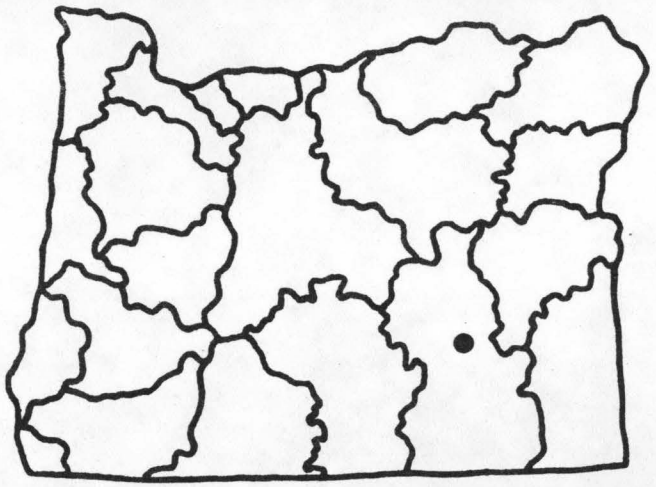
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.4	.01	.07	1.000
80	9.8	.02	.14	.932
50	22.0	.04	.27	.775
30	44.8	.08	.41	.584
10	158.3	.28	.76	.309

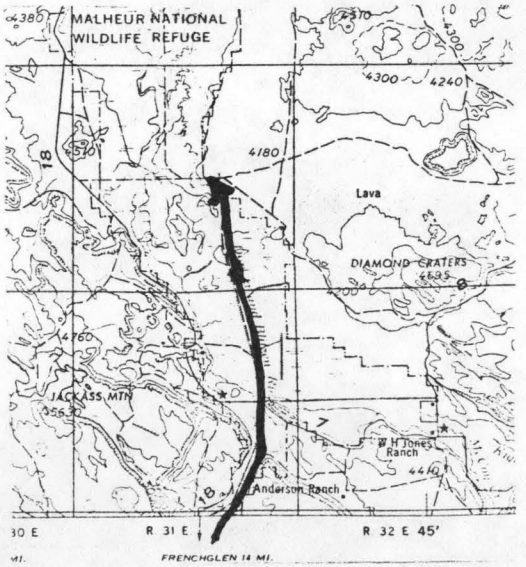
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 64 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: BURNS-ADEL



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-012-002-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Harney
C.	Township, Range	Sec.25, T31S, R32E
D.	Latitude, Longitude	42°51'N,118°30'W
E.	Stream Name	Donner und Blitzen
F.	Major Basin Name	Malheur Lake
G.	River Mile	33.0 to 49.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

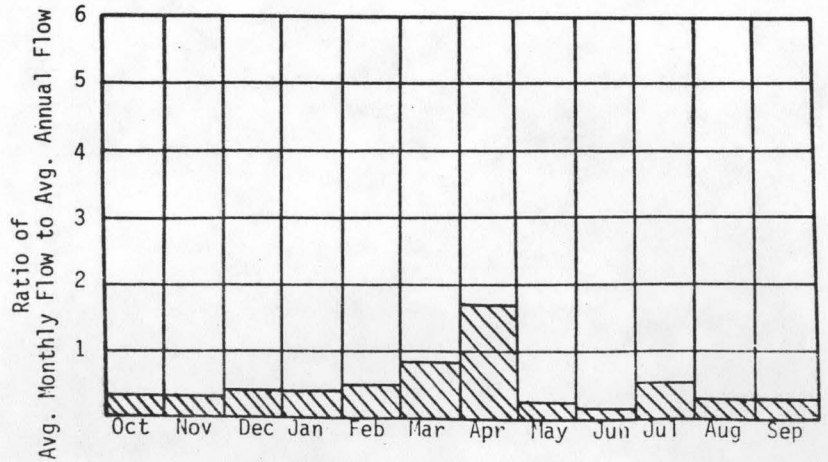
A.	Upstream Elevation of Reach	4362	Ft. MSL
B.	Downstream Elevation of Reach	4151	Ft. MSL
C.	Total Available Head in Reach	211	Ft.
D.	Average Slope in Reach	13.2	Ft./Mi.
E.	Drainage Area above Reach Mouth	351	Sq.Mi.
F.	Inflow Classification	Natural	

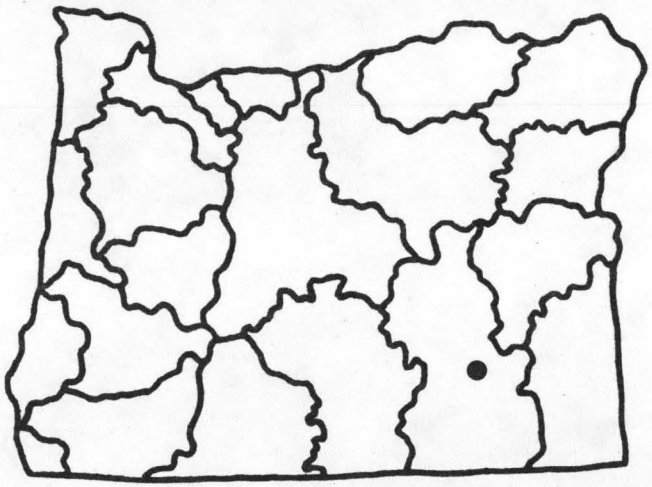
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	4.1	.07	.64	1.000
80	8.4	.15	1.23	.936
50	16.9	.30	2.10	.791
30	32.3	.58	3.06	.605
10	104.3	1.86	5.31	.325

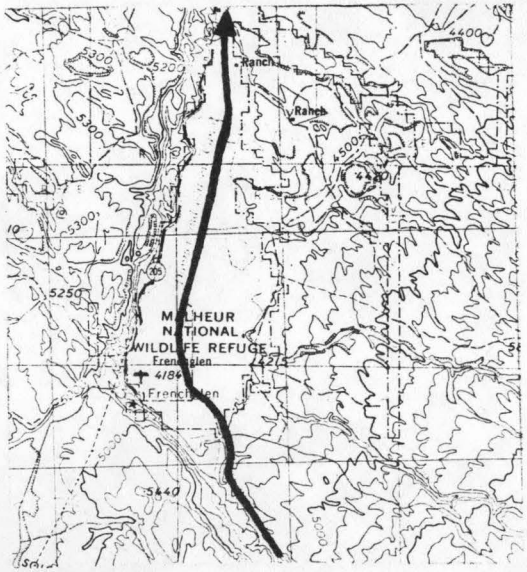
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 44 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: ADEL



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-012-002-000-R0004

I. LOCATION

A.	State	Oregon
B.	County	Harney
C.	Township, Range	Sec.28, T32S, R32E
D.	Latitude, Longitude	42°45'N,118°30'W
E.	Stream Name	Donner und Blitzen River
F.	Major Basin Name	Malheur Lake
G.	River Mile	49.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

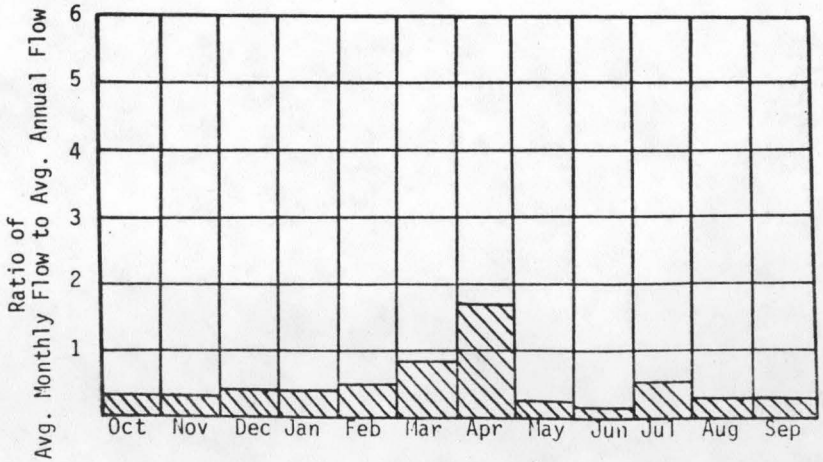
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	190	Sq.Mi.
F.	Inflow Classification	Natural	

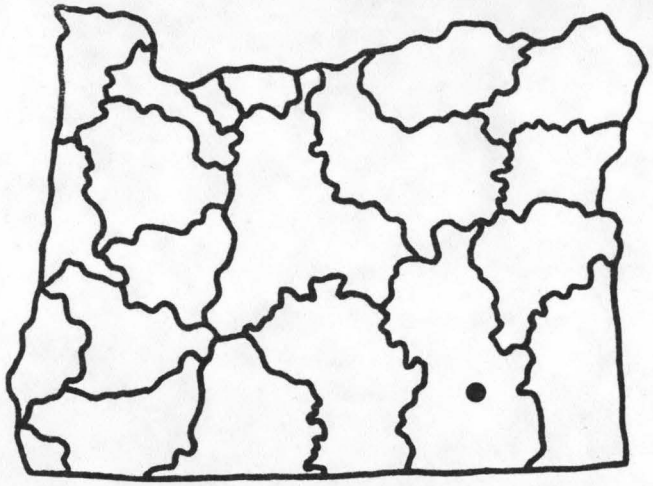
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	3.9	.02	.19	1.000
80	7.7	.04	.35	.938
50	14.8	.08	.58	.801
30	27.2	.15	.82	.617
10	83.8	.47	1.38	.335

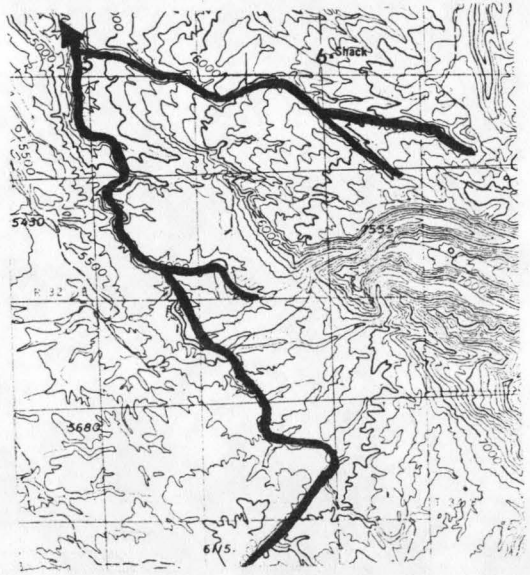
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 36 CFS



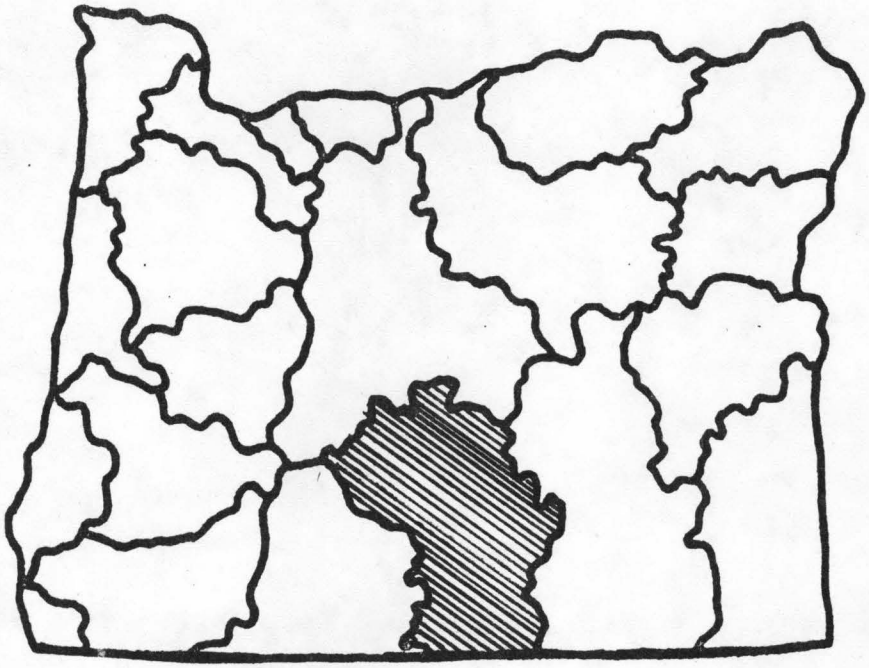


U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: ADEL



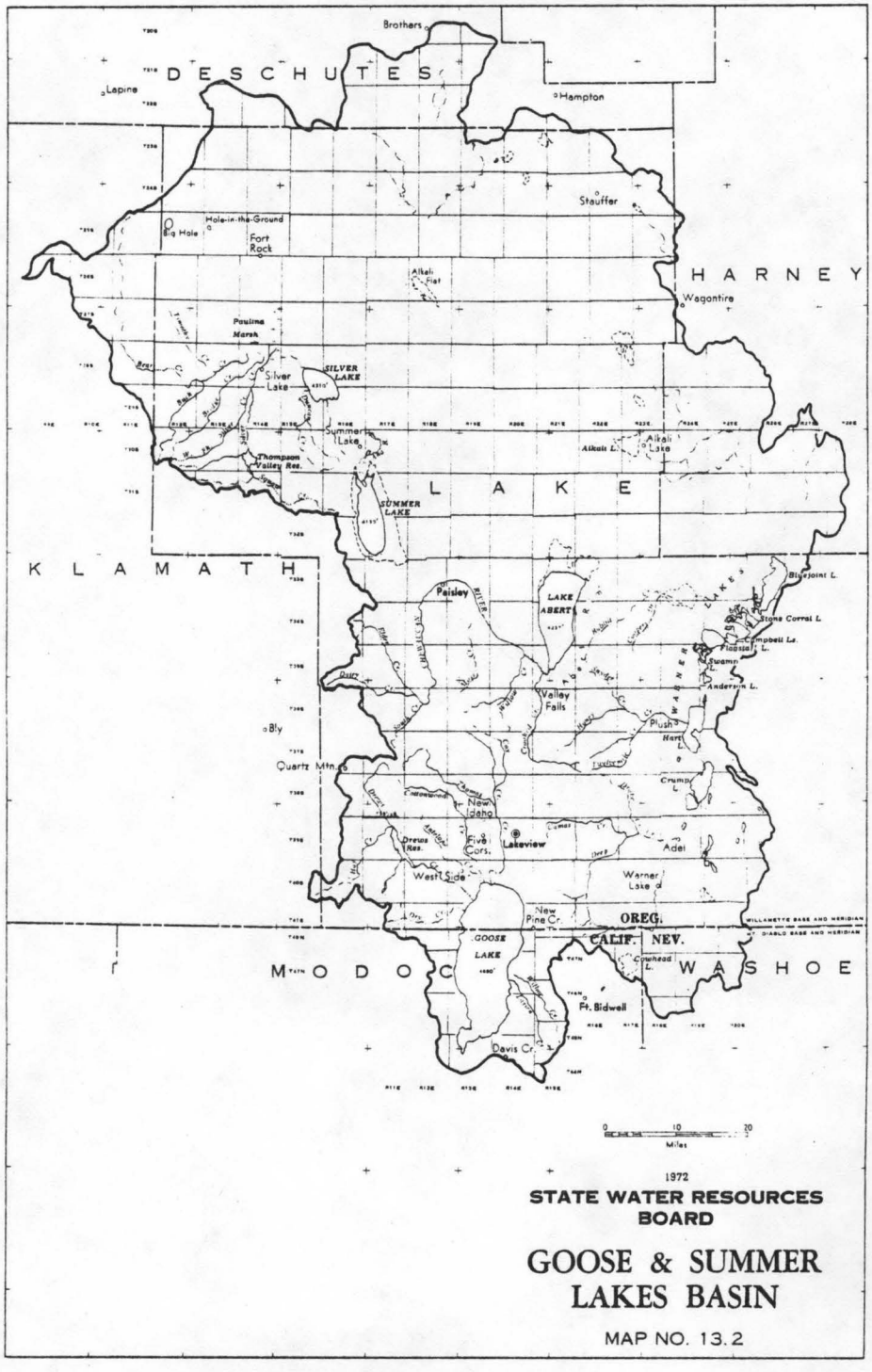
FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-000-012								
002-000-R0001	X	-	-	-	6.0	115 H-C	-	58.0
002-000-R0002	X	X	-	-	1.5	115 H-C	-	49.0
002-000-R0003	-	-	-	-	1.0	115 H-C	-	40.0
002-000-R0004	-	-	-	-	4.8	115 H-C	-	29.0
001-000-R0001	-	-	-	-	3.5	115 H-C	-	11.0
001-000-R0002	-	X	X	-	1.0	138 CPU	1	3.5
001-000-R0003	-	-	-	-	7.5	138 CPU	-	12.0
001-000-R0004	-	-	-	-	9.0	138 CPU	-	16.0



APPENDIX 13

GOOSE & SUMMER LAKES BASIN


DESCHUTES
HARNEY
LAKE
KLAMATH
MODOC
WASHOE
OREG.
CALIF.
NEV.
Brothers
Lapine
Hampton
Stauffer
Hole-in-the-Ground
Big Hole
Fort Rock
Alkali Flat
Wagontire
Pauline Marsh
Silver Lake
SILVER LAKE
Summer Lake
Alkali L.
Alkali Lake
Thompson Valley Res.
SUMMER LAKE
Paisley
LAKE ABERT
Bluejoint L.
Stone Corral L.
Campbell La.
Swamp
Anderson L.
Valley Falls
Plush
Hart L.
Bly
Quartz Mtn.
Crump L.
New Idaho
Five Cors.
Lakeview
Drews Res.
Adel
West Side
Warner Lake
New Pine Cr.
GOOSE LAKE
Crowhead L.
Ft. Bidwell
Davis Cr.
0 10 20
Miles
1972
STATE WATER RESOURCES BOARD
GOOSE & SUMMER LAKES BASIN
MAP NO. 13.2

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-013-000-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Lake
C.	Township, Range	Sec.21, T35S, R21E
D.	Latitude, Longitude	42°31'N, 120°15'W
E.	Stream Name	Chewaucan River
F.	Major Basin Name	Goose-Summer Lake
G.	River Mile	0.0 to 3.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

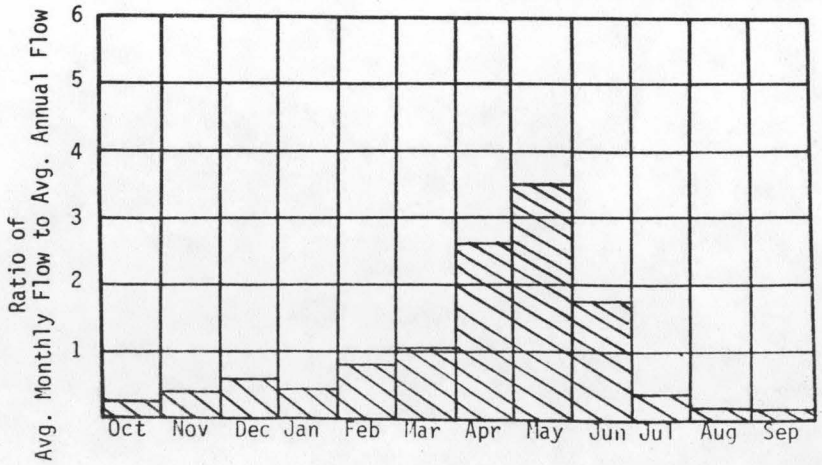
A.	Upstream Elevation of Reach	4275	Ft. MSL
B.	Downstream Elevation of Reach	4255	Ft. MSL
C.	Total Available Head in Reach	20	Ft.
D.	Average Slope in Reach	5.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	598	Sq.Mi.
F.	Inflow Classification	Natural	

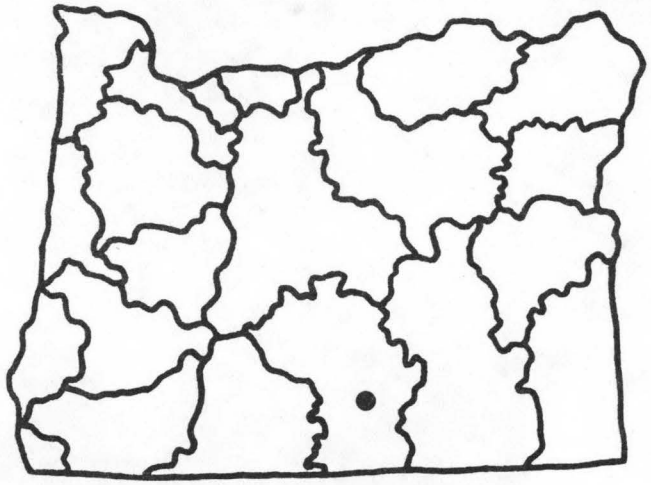
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	38.0	.06	.56	1.000
80	58.9	.10	.84	.956
50	108.2	.18	1.31	.816
30	228.1	.39	2.02	.598
10	778.9	1.32	3.66	.316

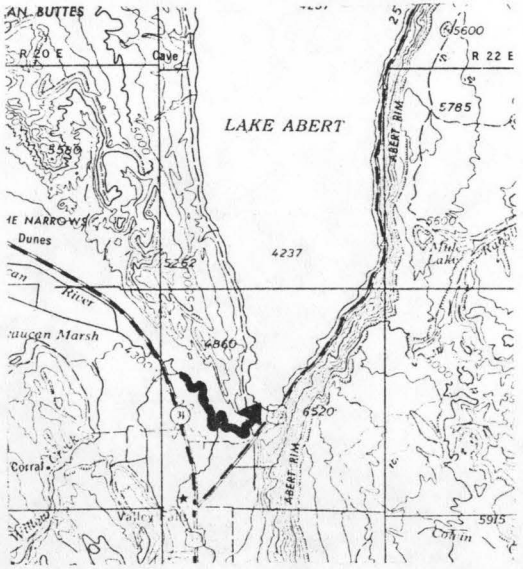
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 276 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: KLAMATH FALLS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-013-000-000-R0002

I. LOCATION

A. State	Oregon	
B. County	Lake	
C. Township, Range	Sec.18, T35S, R21E	
D. Latitude, Longitude	42°33'N, 120°16'W	
E. Stream Name	Chewaucan River	
F. Major Basin Name	Goose-Summer Lake	
G. River Mile	3.8 to 10.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

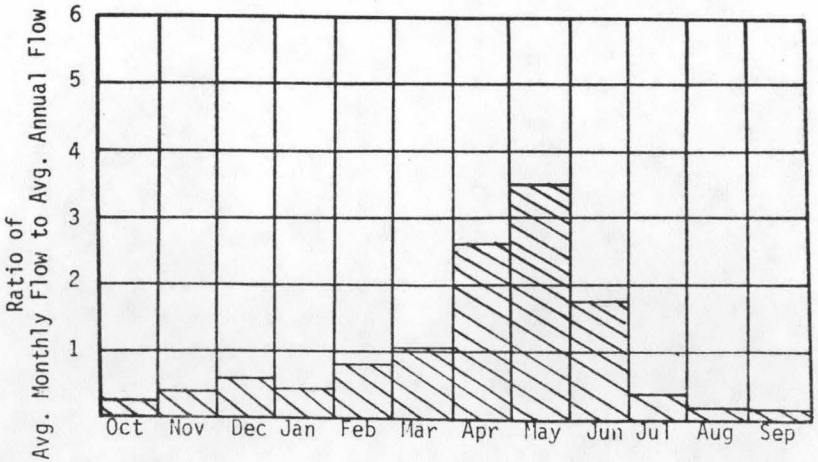
A. Upstream Elevation of Reach	4289	Ft. MSL
B. Downstream Elevation of Reach	4275	Ft. MSL
C. Total Available Head in Reach	14	Ft.
D. Average Slope in Reach	2.3	Ft./Mi.
E. Drainage Area above Reach Mouth	503	Sq.Mi.
F. Inflow Classification	Natural	

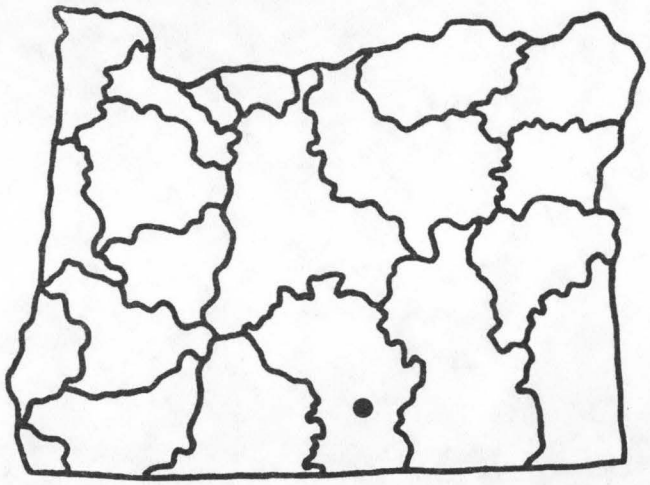
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	30.6	.04	.32	1.000
80	47.4	.06	.47	.956
50	87.0	.10	.74	.816
30	183.3	.22	1.14	.598
10	626.2	.74	2.06	.316

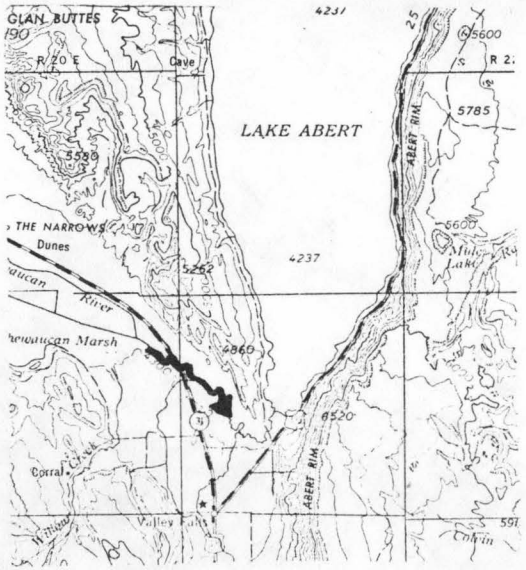
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 221 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: KLAMATH FALLS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-013-000-000-R0003

I. LOCATION

A.	State	Oregon
B.	County	Lake
C.	Township, Range	Sec.33, T34S, R20E
D.	Latitude, Longitude	42°35'N, 120°22'W
E.	Stream Name	Chewaucan River
F.	Major Basin Name	Goose-Summer Lake
G.	River Mile	10.0 to 17.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

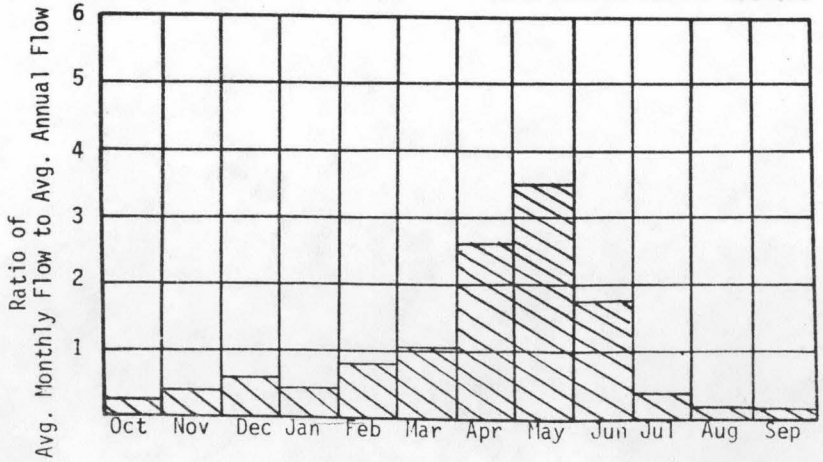
A.	Upstream Elevation of Reach	4300	Ft. MSL
B.	Downstream Elevation of Reach	4289	Ft. MSL
C.	Total Available Head in Reach	11	Ft.
D.	Average Slope in Reach	1.6	Ft./Mi.
E.	Drainage Area above Reach Mouth	433	Sq.Mi.
F.	Inflow Classification	Natural	

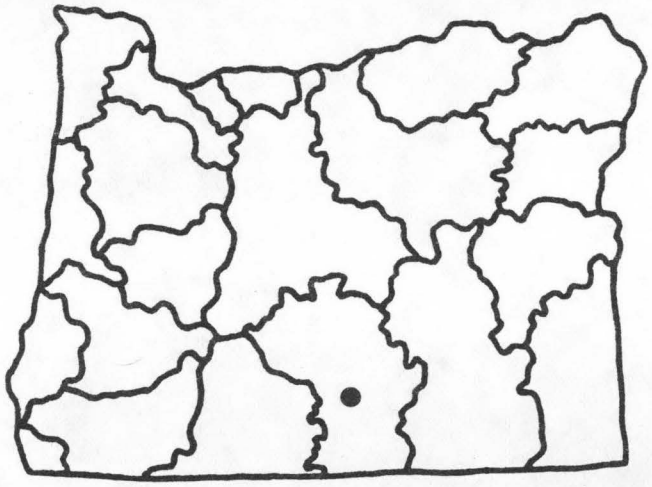
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	26.3	.02	.22	1.000
80	40.8	.04	.32	.956
50	75.0	.07	.50	.816
30	158.0	.15	.77	.598
10	539.6	.50	1.39	.316

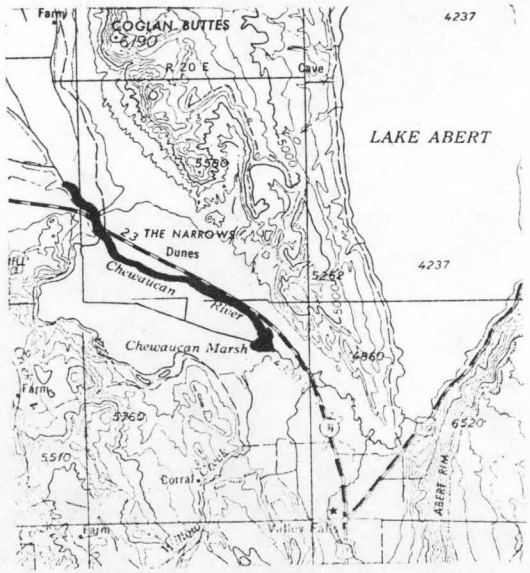
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 191 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: KLAMATH FALLS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-013-000-000-R0004

I. LOCATION

A. State	Oregon	
B. County	Lake	
C. Township, Range	Sec.27, T33S, R19E	
D. Latitude, Longitude	42°42'N, 120°28'W	
E. Stream Name	Chewaucan	
F. Major Basin Name	Goose-Summer Lake	
G. River Mile	17.0 to 28.0	

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

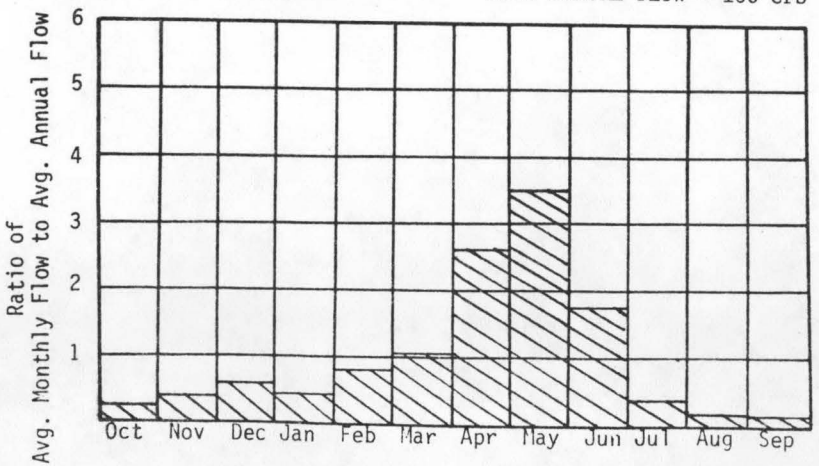
A. Upstream Elevation of Reach	4420	Ft. MSL
B. Downstream Elevation of Reach	4300	Ft. MSL
C. Total Available Head in Reach	120	Ft.
D. Average Slope in Reach	10.9	Ft./Mi.
E. Drainage Area above Reach Mouth	390	Sq.Mi.
F. Inflow Classification	Natural	

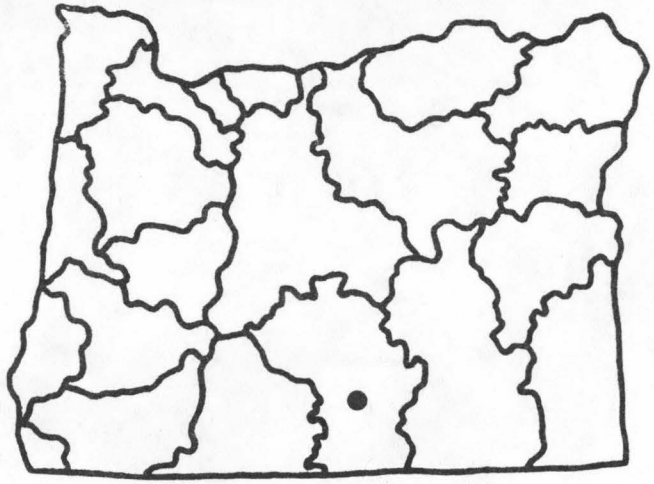
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	22.9	.23	2.04	1.000
80	35.5	.36	3.02	.956
50	65.2	.66	4.74	.816
30	137.4	1.40	7.31	.598
10	469.2	4.77	13.23	.316

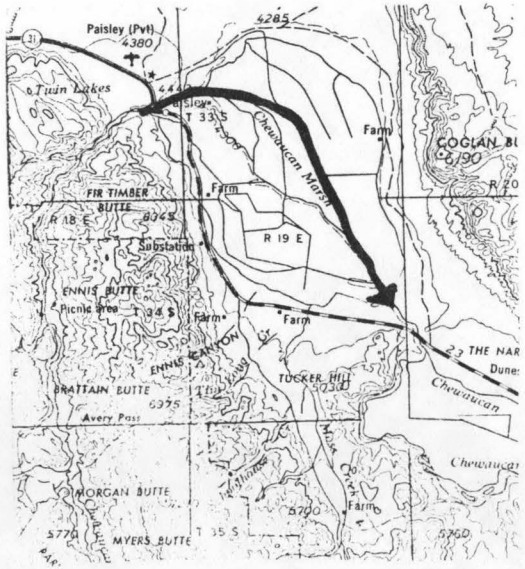
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 166 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: KLAMATH FALLS



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-013-000-000-R0005

I. LOCATION

A.	State	Oregon
B.	County	Lake
C.	Township, Range	Sec.22, T33S, R18E
D.	Latitude, Longitude	42°43'N, 120°33'W
E.	Stream Name	Chewaucan River
F.	Major Basin Name	Goose-Summer Lake
G.	River Mile	28.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

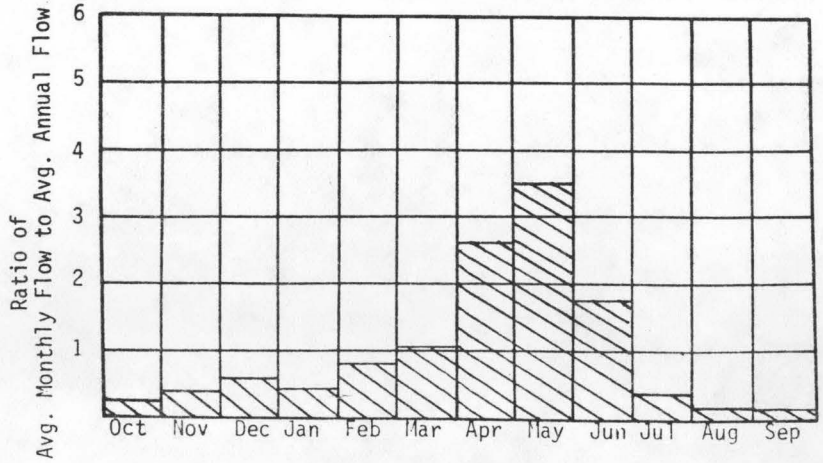
A.	Upstream Elevation of Reach	--	Ft. MSL
B.	Downstream Elevation of Reach	--	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach	--	Ft./Mi.
E.	Drainage Area above Reach Mouth	280	Sq.Mi.
F.	Inflow Classification	Natural	

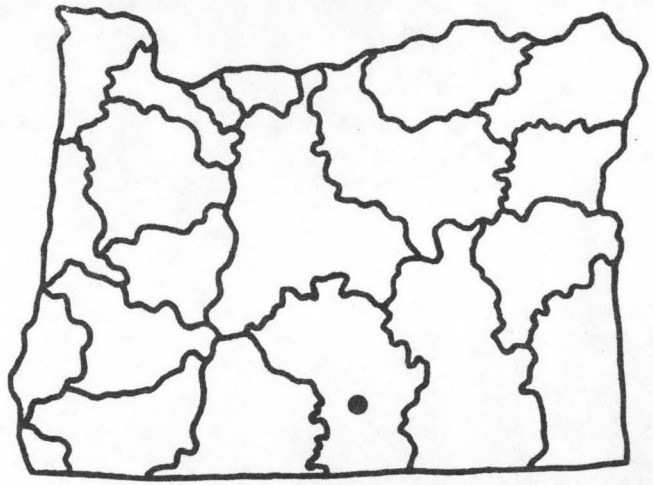
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	20.4	.11	1.00	1.000
80	31.6	.18	1.48	.956
50	58.1	.33	2.32	.816
30	122.4	.68	3.59	.598
10	418.2	2.34	6.48	.316

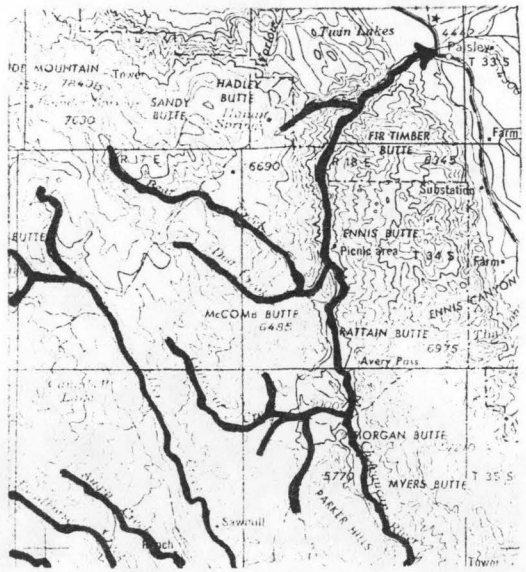
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 148 CFS



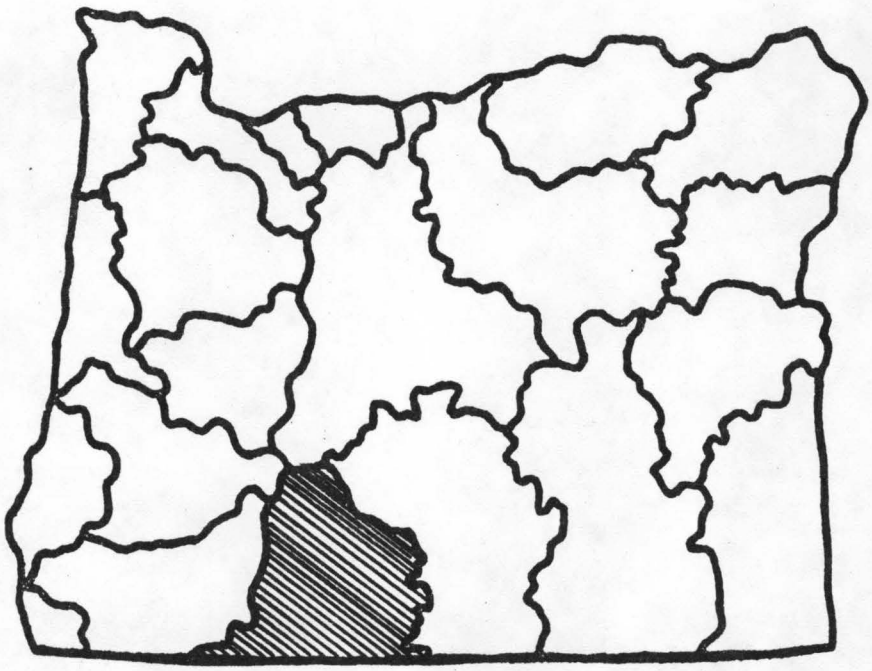


U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: KLAMATH FALLS



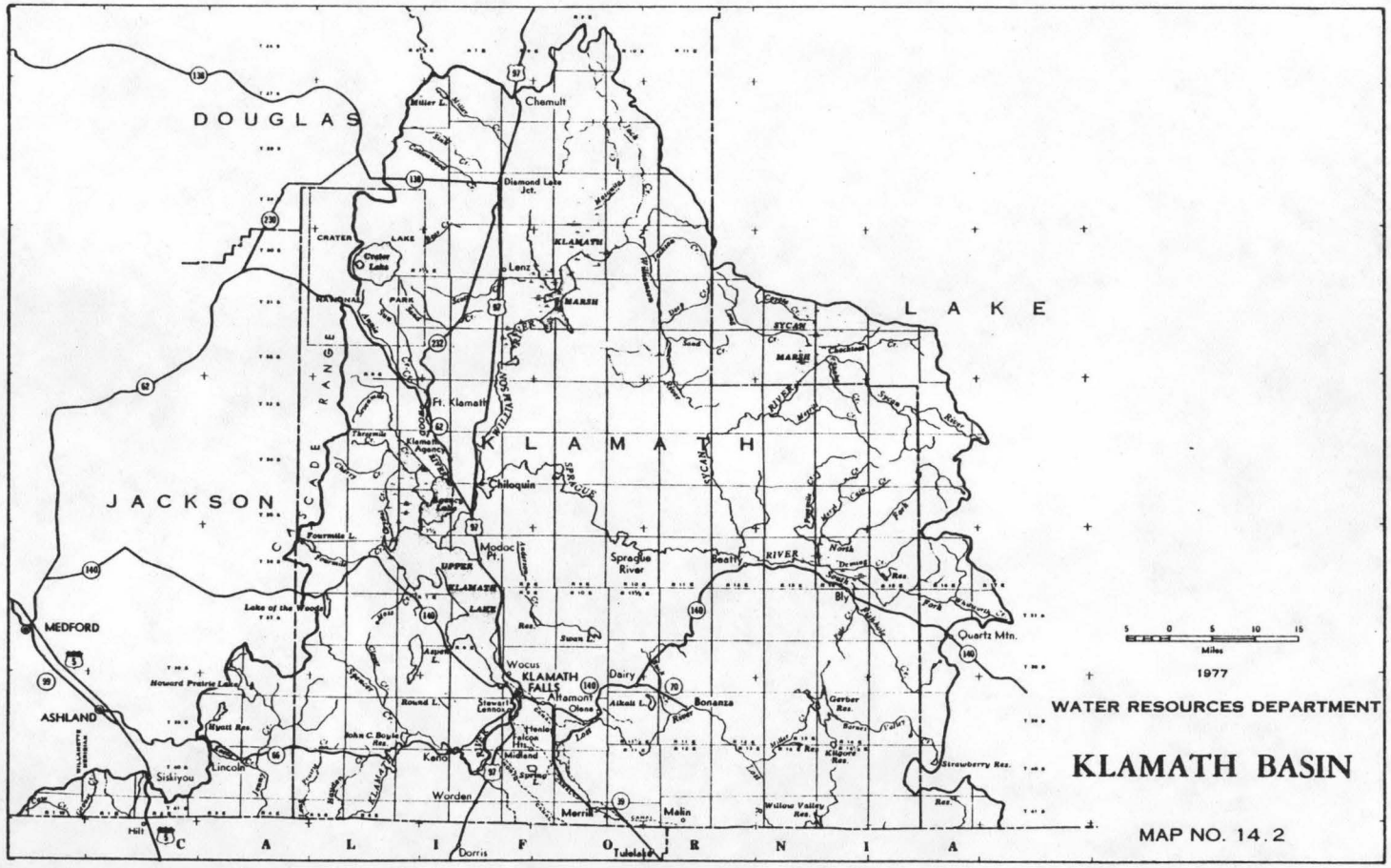
FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY >1000 Miles
02-000-013-000-								
000-R0001	-	-	-	-	1.2	69-SV	-	23.0
000-R0002	-	X	-	-	0.8	69-SV	-	24.5
000-R0003	-	X	-	-	1.2	69-SV	-	27.5
000-R0004	-	-	-	-	4.0	69-SV	-	35.0
000-R0005	X	-	-	-	1.0	69-SV	-	36.0



APPENDIX 14

KLAMATH BASIN


DOUGLAS
JACKSON
KLAMATH
LAKE
CALIFORNIA
Chemult
Diamond Lake Jct.
CRATER LAKE NATIONAL PARK
Crater Lake
Lenz
KLAMATH MARSH
Ft. Klamath
Chiloquin
Modoc Pt.
Sprague River
Beatty
Bly
Quartz Mtn.
Fourmile L.
Lake of the Woods
UPPER KLAMATH LAKE
MEDFORD
ASHLAND
Howard Prairie Lake
Hyatt Res.
Lincoln
Siskiyou
Hill
Wocus
KLAMATH FALLS
Altamont
Olene
Dairy
Bonanza
Gerber Res.
Klamath Res.
Strawberry Res.
Willow Valley Res.
Aspen L.
Round L.
Stewart Lennox
John C. Boyle Res.
Keno
Midland
Worden
Merrill
Malin
Tulelake
Dorris
Miles
1977
WATER RESOURCES DEPARTMENT
KLAMATH BASIN
MAP NO. 14.2

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-014-001-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Jackson
C.	Township, Range	Sec.18, T40S, R4E
D.	Latitude, Longitude	42°04'N,122°21'W
E.	Stream Name	Jenny Creek
F.	Major Basin Name	Klamath
G.	River Mile	4.0 to 11.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

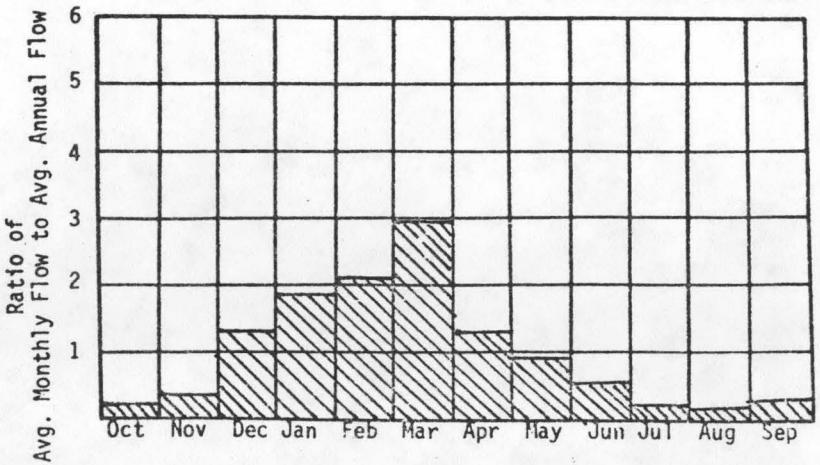
A.	Upstream Elevation of Reach	3020	Ft. MSL
B.	Downstream Elevation of Reach	2960	Ft. MSL
C.	Total Available Head in Reach	60	Ft.
D.	Average Slope in Reach	7.9	Ft./Mi.
E.	Drainage Area above Reach Mouth	191	Sq.Mi.
F.	Inflow Classification	Regulated	

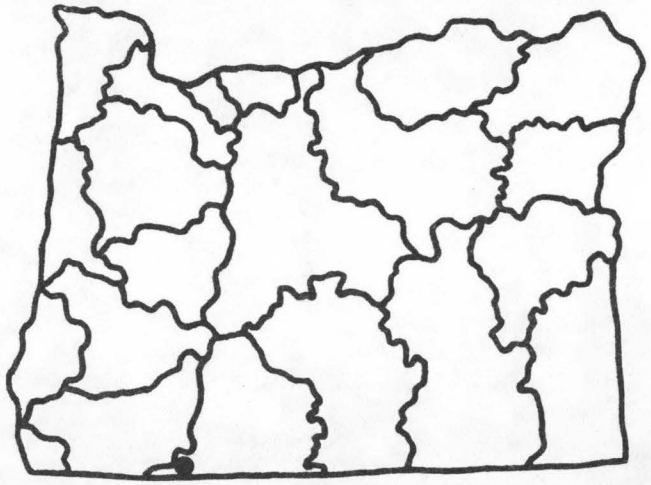
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	2.3	.01	.10	1.000
80	82.3	.42	3.22	.879
50	281.6	1.43	8.99	.717
30	375.5	1.91	10.66	.638
10	438.1	2.23	11.22	.575

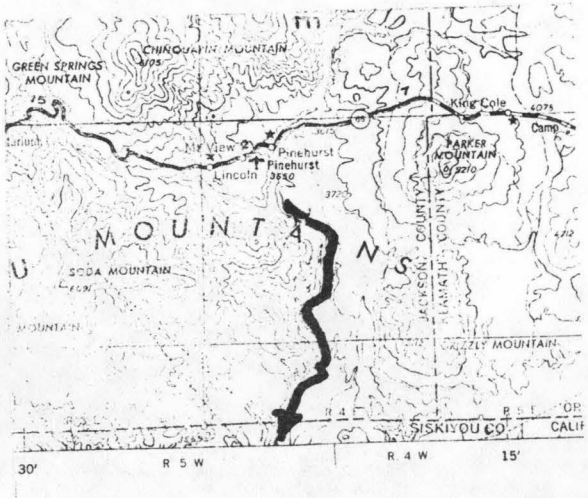
IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 313 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: MEDFORD



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-000-014-001-000-R0002

I. LOCATION

A.	State	Oregon
B.	County	Jackson
C.	Township, Range	Sec.19, T39S, R4E
D.	Latitude, Longitude	42°09'N,122°20'W
E.	Stream Name	Jenny Creek
F.	Major Basin Name	Klamath
G.	River Mile	11.6 to 19.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

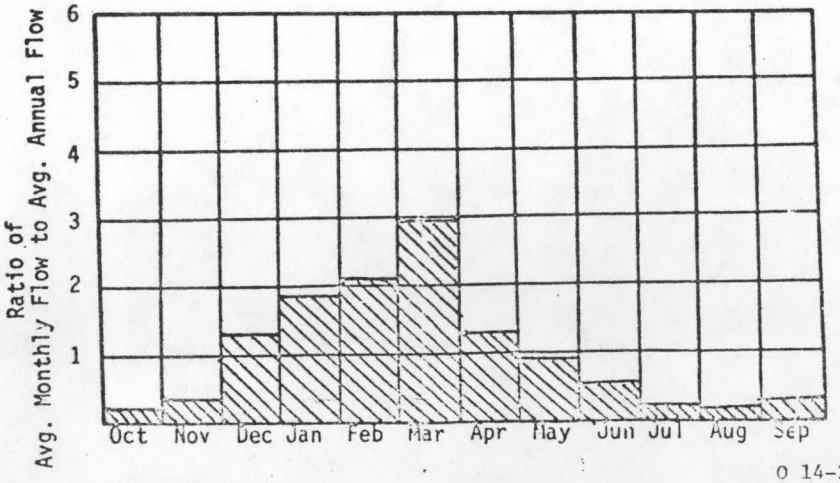
A.	Upstream Elevation of Reach	3640	Ft. MSL
B.	Downstream Elevation of Reach	3020	Ft. MSL
C.	Total Available Head in Reach	620	Ft.
D.	Average Slope in Reach	83.8	Ft./Mi.
E.	Drainage Area above Reach Mouth	136	Sq.Mi.
F.	Inflow Classification	Regulated	

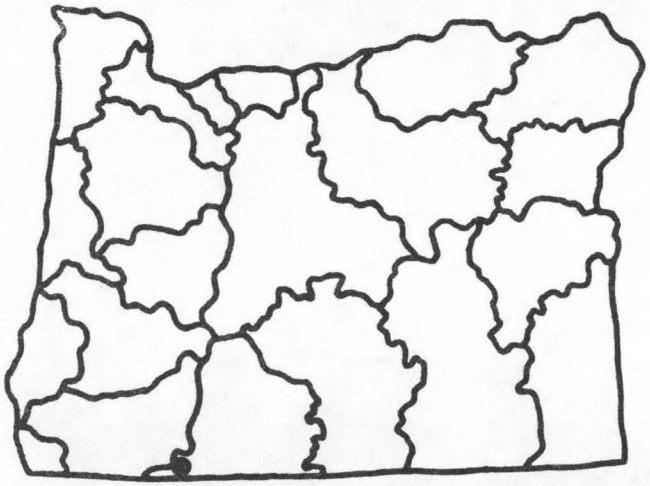
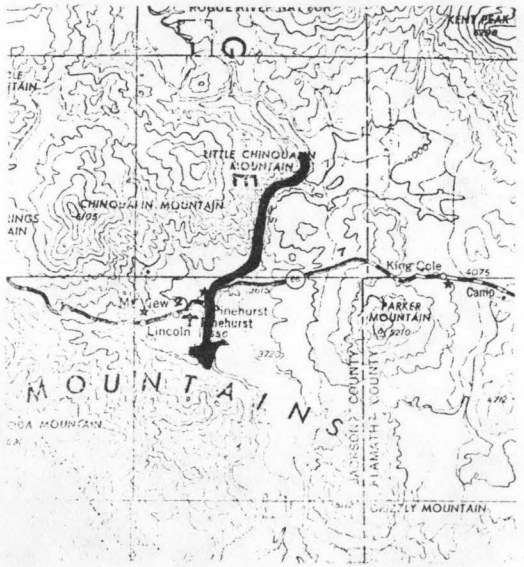
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

EXCEEDANCE PERCENTAGE	DISCHARGE CFS	THEORETICAL PLANT SIZE MW	ANNUAL ENERGY AVAILABLE GWH	PLANT FACTOR
95	1.4	.07	.64	1.000
80	48.7	2.56	19.69	.879
50	166.6	8.76	54.98	.717
30	222.2	11.67	65.20	.638
10	259.2	13.62	68.61	.575

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 186 CFS





U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: MEDFORD