

## LIST OF FLOW MEASUREMENT

ST.: 5-030 EXCHANGE FARM

NO.	DATE	----[Feet - Second]----				++++[Meter - Second]++++			
		H (f)	Q (f3/s)	A (f2)	V (f/s)	H (m)	Q (m3/s)	A (m2)	V (m/s)
1	19-Jan-70	0.79	6.7	24.6	0.26	0.24	0.19	2.3	0.08
2	15-Dec-70	0.10	0.4	2.8	0.10	0.03	0.01	0.3	0.03
3	04-Jan-71	0.46	3.2	20.8	0.13	0.14	0.09	1.9	0.04
4	26-Jan-71	2.33	28.6	34.2	0.85	0.71	0.81	3.2	0.26
5	28-Mar-71	0.36	2.5	4.8	0.49	0.11	0.07	0.5	0.15
6	06-Jan-72	0.26	1.4	16.4	0.89	0.08	0.04	1.5	0.27
7	28-Jan-72	0.85	9.2	24.8	0.33	0.26	0.26	2.3	0.10
8	05-Mar-72	2.30	5.3	24.5	0.23	0.70	0.15	2.3	0.07
9	08-Mar-72	0.56	3.9	11.3	0.36	0.17	0.11	1.1	0.11
10	26-Feb-79	3.87	568.2	330.8	0.62	1.18	16.09	30.7	0.19
11	27-Feb-79	5.81	572.5	478.8	0.39	1.77	16.21	44.5	0.12
12	12-Jan-81	2.62	70.6	53.8	1.31	0.80	2.00	5.0	0.40
13	18-Feb-81	2.20	35.3	43.1	1.05	0.67	1.00	4.0	0.32
14	17-Aug-81	0.36	2.8	21.5	0.13	0.11	0.08	2.0	0.04
15	27-Jan-82	4.63	60.4	53.8	1.12	1.41	1.71	5.0	0.34
16	21-Feb-85	0.66	10.6	21.5	0.49	0.20	0.30	2.0	0.15
17	22-Feb-85	0.66	15.7	35.3	0.46	0.20	0.45	3.3	0.14
18	04-Apr-85	0.85	13.4	18.9	0.72	0.26	0.38	1.8	0.22
19	22-Jan-86	0.43	12.4	32.8	0.36	0.13	0.35	3.1	0.11
20	11-Feb-86	2.49	57.2	80.2	0.72	0.76	1.62	7.5	0.22
21	23-Apr-86	2.33	42.7	49.6	0.85	0.71	1.21	4.6	0.26
22	08-Mar-89	2.43	40.3	51.1	0.79	0.74	1.14	4.8	0.24
23	09-Feb-90	2.43	53.0	49.5	1.05	0.74	1.50	4.6	0.32
24	17-Jul-90	0.66	0.7	0.7	1.05	0.20	0.02	0.1	0.01
25	31-Dec-90	0.39	1.8	53.8	0.03	0.12	0.05	5.0	0.02
26	22-Jan-91	2.03	31.4	479.0	0.07	0.62	0.89	44.5	0.21
27	02-Feb-91	1.21	10.9	15.9	0.69	0.37	0.31	1.5	0.12
28	21-Feb-91	0.92	8.1	20.6	0.39	0.28	0.23	1.9	0.09
29	05-Sep-91	0.20	4.6	15.5	0.30	0.06	0.13	1.4	0.07
30	09-Oct-91	0.08	1.4	6.2	0.23	0.02	0.04	0.6	0.03
31	22-Nov-91	0.10	2.5	25.1	0.10	0.03	0.07	2.3	0.05

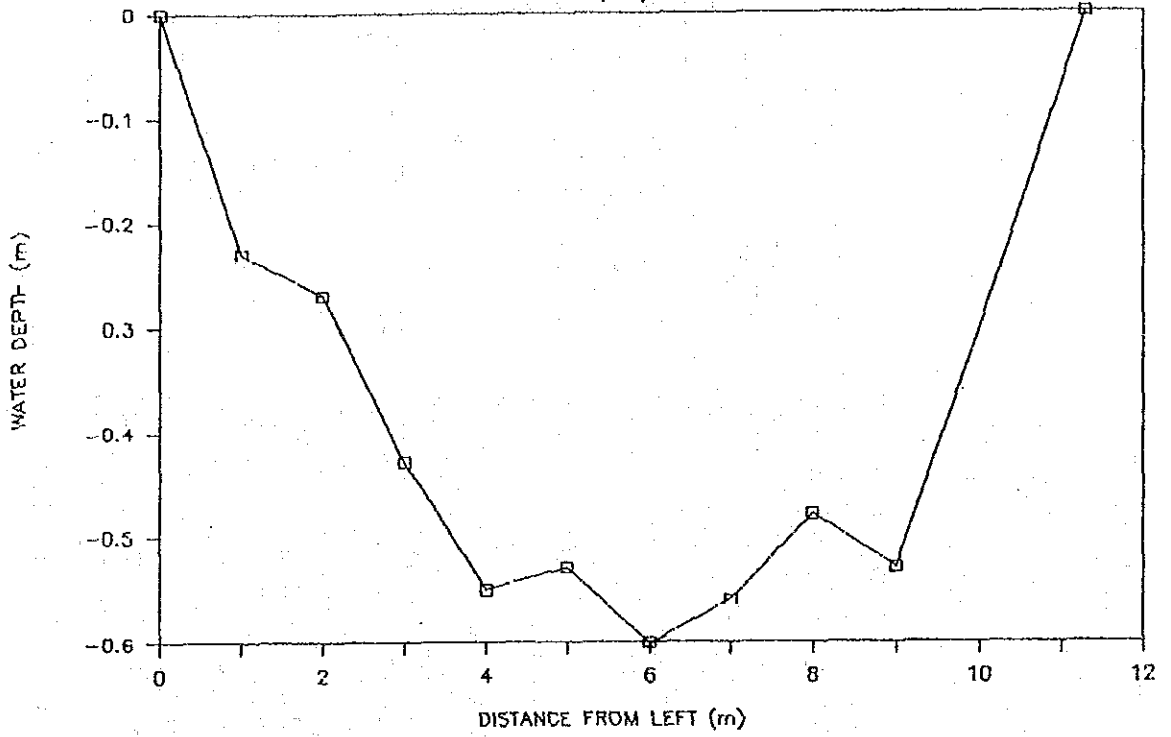
[Note] H:Water Level, Q:Discharge, A:Discharge Area, V:Velocity

FLOW MEASUREMENT ST. : 5-030 EXCHANGE FARM FEB/ 9/90

ITEMS	NO 1	NO 2	NO 3	NO 4	NO 5	NO 6	NO 7	NO 8	NO 9	NO R
WATER DEPTH (m)	0.00	0.23	0.43	0.55	0.53	0.60	0.56	0.48	0.53	0.00
SE/WIDTH (m)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.30
TOTAL SE/WIDTH(m)	0.00	1.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	11.30
VELOCITY.2 1(f/s)	0.00	0.63	1.39	1.58	1.84	1.76	1.43	1.53	0.56	0.00
VELOCITY.2 2(f/s)	0.00	0.62	1.14	1.58	1.81	1.78	1.36	1.56	0.55	0.00
MEAN VEL.2 (f/s)	0.00	0.63	1.26	1.58	1.82	1.77	1.39	1.55	0.55	0.00
VELOCITY.8 1(f/s)	0.00	0.60	0.95	1.43	1.59	1.33	0.84	1.04	0.40	0.00
VELOCITY.8 2(f/s)	0.00	0.64	0.89	1.33	1.59	1.23	0.84	1.03	0.40	0.00
MEAN VEL.8 (f/s)	0.00	0.62	0.92	1.33	1.59	1.28	0.84	1.04	0.40	0.00
MEAN VEL (f/s)	0.000	0.621	1.093	1.481	1.705	1.525	1.119	1.292	0.477	0.000
MEAN VEL (m/s)	0.000	0.189	0.333	0.451	0.520	0.465	0.341	0.394	0.145	0.000
L/MEAN DEPTH (m)	0.000	0.115	0.260	0.390	0.520	0.583	0.570	0.500	0.518	
L/MEAN WIDTH (m)	0.00	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
L/SEC. AREA (m2)	0.00	0.12	0.13	0.20	0.27	0.29	0.29	0.25	0.26	
R/MEAN DEPTH (m)	0.000	0.240	0.310	0.460	0.545	0.580	0.520	0.505	0.265	
R/MEAN WIDTH (m)	0.00	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
R/SEC. AREA (m2)	0.00	0.24	0.16	0.23	0.27	0.29	0.26	0.25	0.61	
S/AREA (m2)	0.00	0.36	0.29	0.43	0.53	0.58	0.55	0.50	0.87	
TOTAL AREA (m2)	0.0	0.4	0.6	1.1	1.6	2.1	3.3	3.8	4.6	
S/DISCHARGE(m3/s)	0.00	0.00	0.05	0.14	0.24	0.28	0.19	0.20	0.13	
TOTAL DIS. (m3/s)	0.00	0.00	0.05	0.20	0.44	0.99	1.17	1.37	1.50	
WATER LEVEL (f)	2.42	WATER LEVEL (m) : 0.74								
TOTAL DISCHARGE :	1.50	MEAN VELOCITY(m/s) : 0.32								

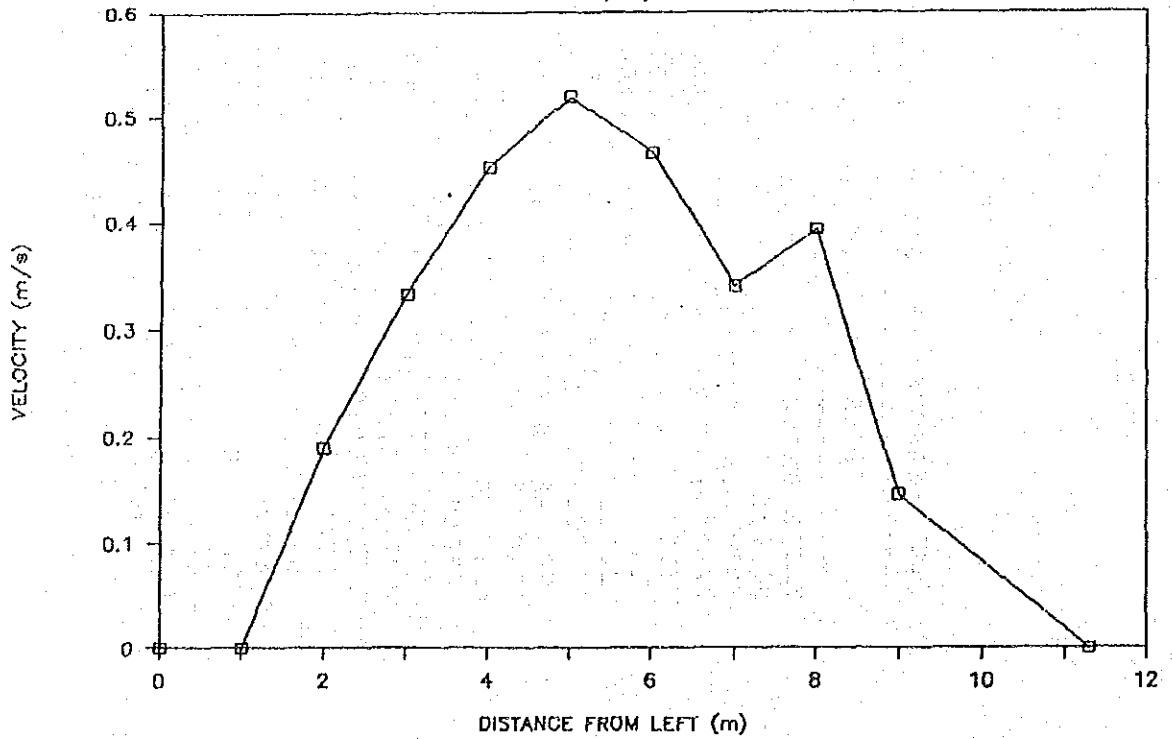
# WATER DEPTH (5-030)

FEB./ 9/00



# VELOCITY (5-030)

FEB./ 9/00



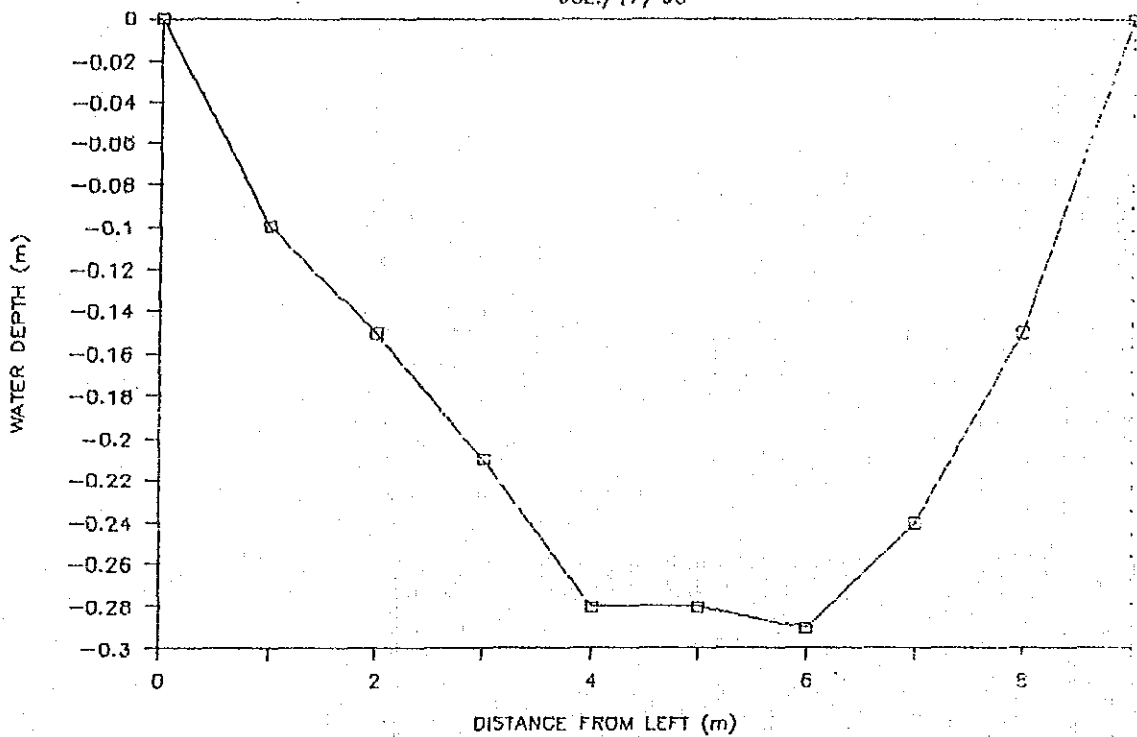
JUL./17/90

FLOW MEASUREMENT ST. : 5-030 EXCHANGE FARM

ITEMS	NO-L	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-R
WATER DEPTH (m)	0.00	0.10	0.15	0.21	0.28	0.28	0.29	0.24	0.15	0.00
SE/WIDTH (m)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TOTAL SE/WIDTH(m)	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00
VELOCITY.2-1(f/s)	-	-	-	-	-	-	-	-	-	-
VELOCITY.2-2(f/s)	-	-	-	-	-	-	-	-	-	-
MEAN VEL.2 (f/s)	-	-	-	-	-	-	-	-	-	-
VELOCITY.8-1(f/s)	0.00	0.00	0.05	0.10	0.10	0.05	0.00	0.00	0.00	0.00
VELOCITY.8-2(f/s)	0.00	0.00	0.05	0.15	0.10	0.05	0.00	0.00	0.00	0.00
MEAN VEL.8 (f/s)	0.00	0.00	0.05	0.13	0.10	0.05	0.00	0.00	0.00	0.00
MEAN VEL (f/s)	0.000	0.000	0.050	0.125	0.100	0.050	0.000	0.000	0.000	0.000
MEAN VEL (m/s)	0.000	0.000	0.015	0.038	0.030	0.015	0.000	0.000	0.000	0.000
L/MEAN DEPTH (m)	0.000	0.050	0.138	0.195	0.263	0.280	0.288	0.253	0.173	-
L/MEAN WIDTH (m)	0.00	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	-
L/SEC. AREA (m2)	0.00	0.05	0.07	0.10	0.13	0.14	0.14	0.13	0.09	-
R/MEAN DEPTH (m)	0.000	0.113	0.165	0.228	0.280	0.283	0.278	0.218	0.075	-
R/MEAN WIDTH (m)	0.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	1.00	-
R/SEC. AREA (m2)	0.00	0.06	0.08	0.11	0.14	0.14	0.14	0.11	0.08	-
S/AREA (m2)	0.00	0.11	0.15	0.21	0.27	0.28	0.28	0.24	0.16	-
TOTAL AREA (m2)	0.0	0.1	0.3	0.5	0.7	1.0	1.3	1.5	1.7	-
S/DISCHARGE(m3/s)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	-
TOTAL DIS. (m3/s)	0.00	0.00	0.00	0.01	0.02	0.02	0.02	0.02	0.02	-
WATER LEVEL (f)	0.66	WATER LEVEL (m) : 0.20								
TOTAL DISCHARGE :	0.02	MEAN VELOCITY(m/s) : 0.01								

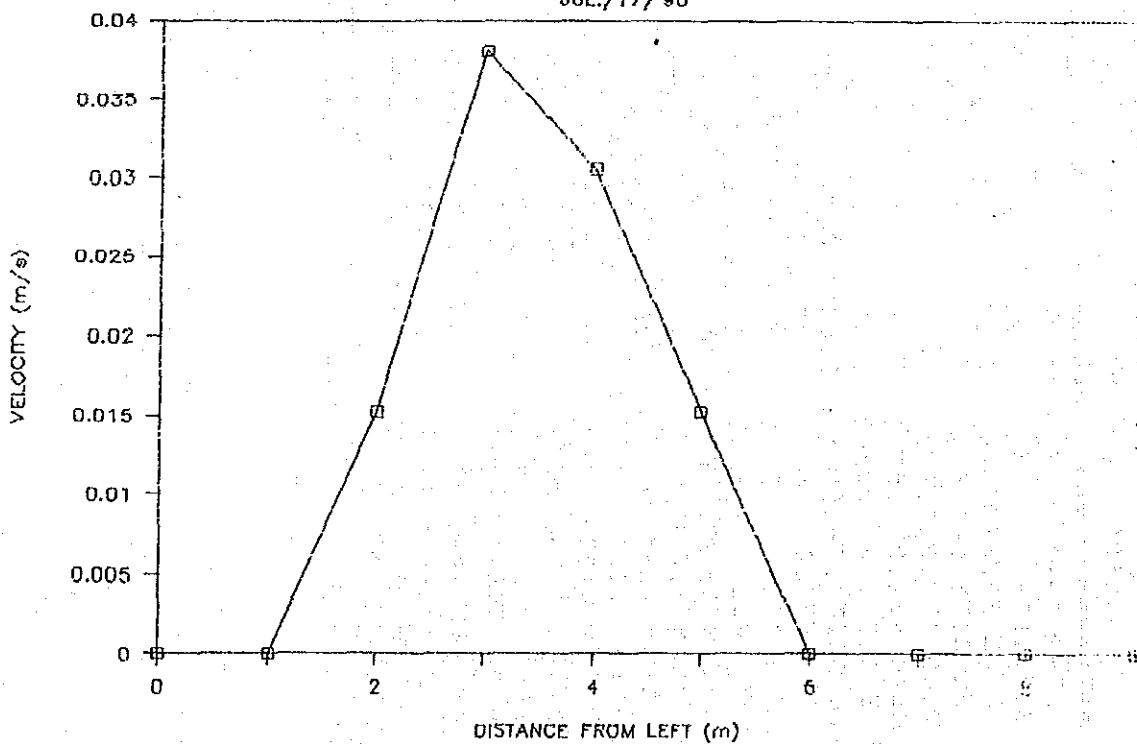
### WATER DEPTH (5-030)

JUL./17/90



### VELOCITY (5-030)

JUL./17/90



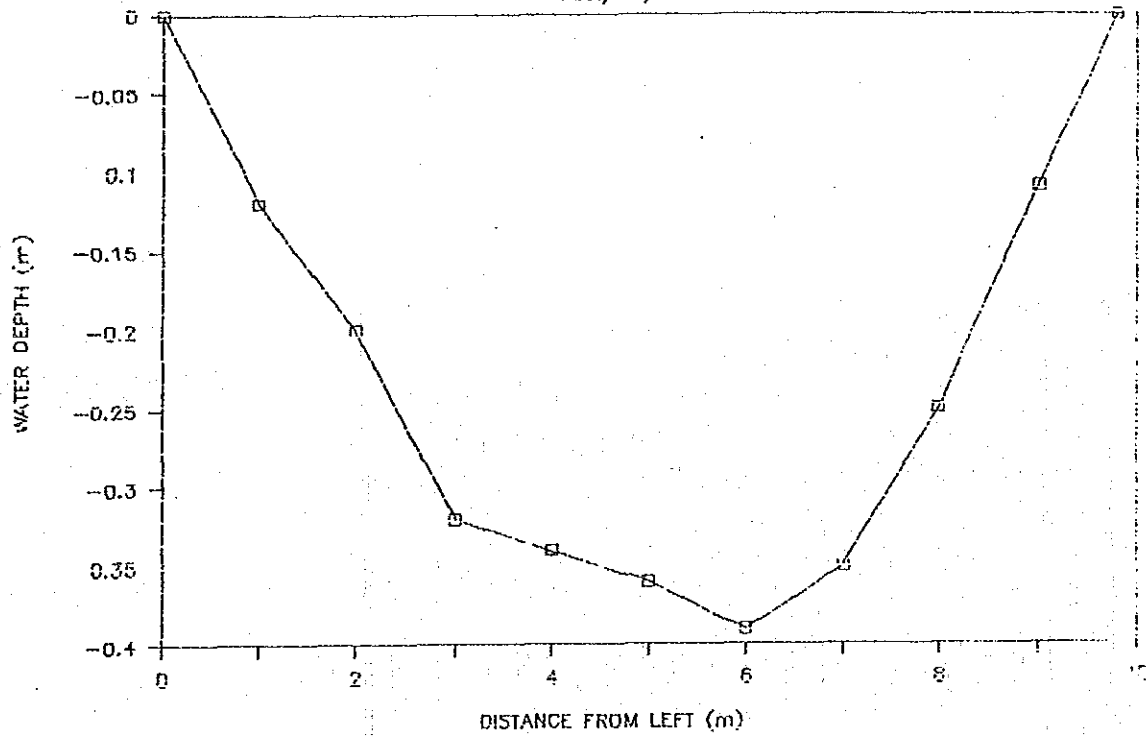
FLOW MEASUREMENT ST. : 5-030 EXCHANGE FARM DEC./31/'90

ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-R	
WATER DEPTH (m)	0.00	0.12	0.20	0.32	0.34	0.36	0.39	0.35	0.25	0.11	0.00
SE/WIDTH (m)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80
TOTAL SE/WIDTH(m)	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	9.80
VELOCITY.2-1(f/s)	-	-	-	-	-	-	-	-	-	-	-
VELOCITY.2-2(f/s)	-	-	-	-	-	-	-	-	-	-	-
MEAN VEL.2 (f/s)	-	-	-	-	-	-	-	-	-	-	-
VELOCITY.8-1(f/s)	0.00	0.00	0.00	0.20	0.20	0.10	0.00	0.00	0.00	0.00	0.00
VELOCITY.8-2(f/s)	0.00	0.00	0.00	0.20	0.20	0.05	0.00	0.00	0.00	0.00	0.00
MEAN VEL.8 (f/s)	0.00	0.00	0.00	0.20	0.20	0.08	0.00	0.00	0.00	0.00	0.00
MEAN VEL (f/s)	0.000	0.000	0.000	0.200	0.200	0.075	0.000	0.000	0.000	0.000	0.000
MEAN VEL (m/s)	0.000	0.000	0.000	0.061	0.061	0.023	0.000	0.000	0.000	0.000	0.000
L/MEAN DEPTH (m)	0.000	0.060	0.180	0.290	0.335	0.355	0.383	0.360	0.275	0.145	-
L/MEAN WIDTH (m)	0.00	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	-
L/SEC. AREA (m2)	0.00	0.06	0.09	0.15	0.17	0.18	0.19	0.18	0.14	0.07	-
R/MEAN DEPTH (m)	0.000	0.140	0.230	0.325	0.345	0.368	0.380	0.325	0.215	0.055	-
R/MEAN WIDTH (m)	0.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.80	-
R/SEC. AREA (m2)	0.00	0.07	0.12	0.16	0.17	0.18	0.19	0.16	0.11	0.04	-
S/AREA (m2)	0.00	0.13	0.21	0.31	0.34	0.36	0.38	0.34	0.25	0.12	-
TOTAL AREA (m2)	0.0	0.1	0.3	0.6	1.0	1.3	1.7	2.1	2.3	2.4	-
S/DISCHARGE(m3/s)	0.00	0.00	0.00	0.02	0.02	0.01	0.00	0.00	0.00	0.00	-
TOTAL DIS. (m3/s)	0.00	0.00	0.00	0.02	0.04	0.05	0.05	0.05	0.05	0.05	-

WATER LEVEL (f) : 0.40 WATER LEVEL (m) : 0.12  
 TOTAL DISCHARGE : 0.05 MEAN VELOCITY(m/s) : 0.02

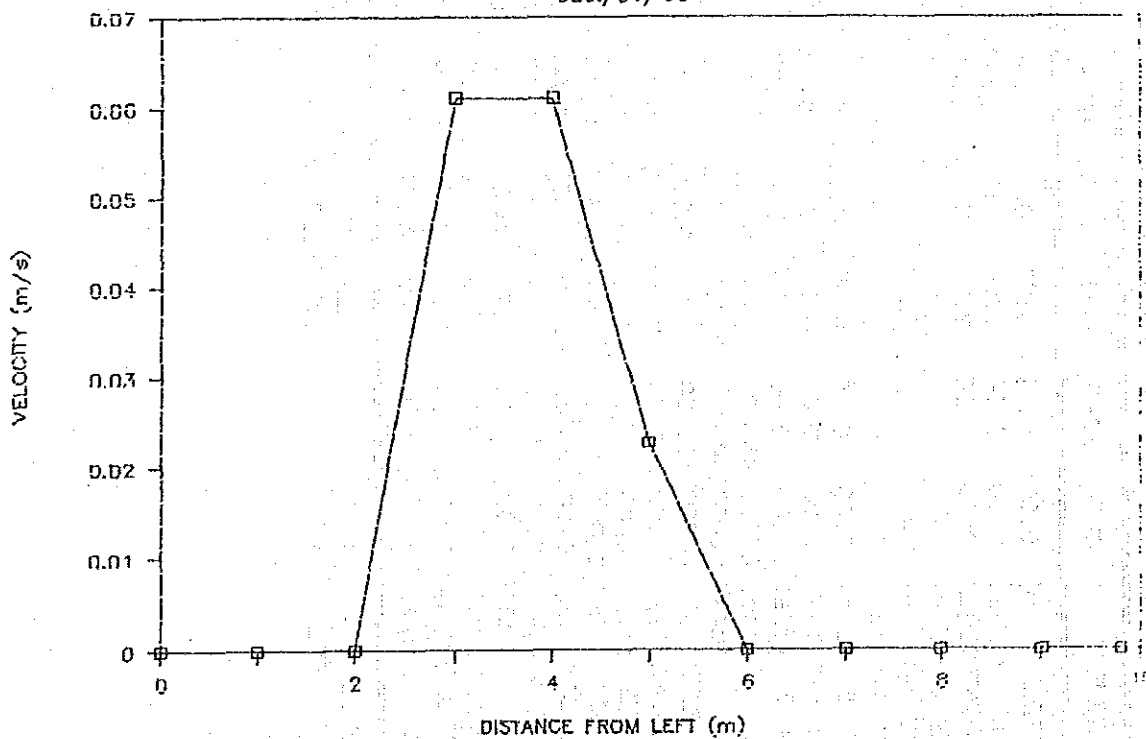
# WATER DEPTH (5-030)

DEC./31/70



# VELOCITY (5-030)

DEC./31/70



FLOW MEASUREMENT ST. : 5-030 EXCHANGE FARM

22/JAN/91

ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-10	NO-R
WATER DEPTH (m)	0.00	0.12	0.36	0.42	0.53	0.56	0.58	0.52	0.50	0.32	0.00
SE/WIDTH (m)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80
TOTAL SE/WIDTH(m)	0.00	1.00	2.00	3.00	4.00	6.00	7.00	8.00	9.00	10.00	10.80
VELOCITY.2-1(f/s)	0.00	-	-	-	-	-	-	-	-	-	-
VELOCITY.2-2(f/s)	0.00	-	-	-	-	-	-	-	-	-	-
MEAN VEL.2 (f/s)	0.00	-	-	-	-	-	-	-	-	-	-
VELOCITY.8-1(f/s)	0.00	0.00	0.10	0.75	1.00	1.20	0.95	0.30	0.00	0.00	0.00
VELOCITY.8-2(f/s)	0.00	0.00	0.10	0.75	1.00	1.20	0.95	0.30	0.00	0.00	0.00
MEAN VEL.8 (f/s)	0.00	0.00	0.10	0.75	1.00	1.20	0.95	0.30	0.00	0.00	0.00
MEAN VEL (f/s)	0.000	0.000	0.100	0.750	1.000	1.200	0.950	0.300	0.000	0.000	0.000
MEAN VEL (m/s)	0.000	0.000	0.030	0.229	0.305	0.366	0.290	0.091	0.000	0.000	0.000
L/MEAN DEPTH (m)	0.000	0.060	0.300	0.405	0.503	0.545	0.575	0.535	0.505	0.365	0.000
L/MEAN WIDTH (m)	0.00	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	-
L/SEC. AREA (m2)	0.00	0.06	0.15	0.20	0.25	0.27	0.29	0.27	0.25	0.18	-
R/MEAN DEPTH (m)	0.000	0.180	0.375	0.448	0.535	0.565	0.565	0.515	0.455	0.160	-
R/MEAN WIDTH (m)	0.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.80	-
R/SEC. AREA (m2)	0.00	0.09	0.19	0.22	0.27	0.28	0.28	0.26	0.23	0.13	-
S/AREA (m2)	0.00	0.15	0.34	0.43	0.52	0.55	0.57	0.53	0.48	0.31	-
TOTAL AREA (m2)	0.0	0.2	0.5	0.9	1.4	2.0	2.5	3.1	4.1	4.4	-
S/DISCHARGE(m3/s)	0.00	0.00	0.01	0.10	0.16	0.20	0.17	0.05	0.00	0.00	-
TOTAL DIS. (m3/s)	0.00	0.00	0.01	0.11	0.27	0.47	0.84	0.88	0.88	0.88	-

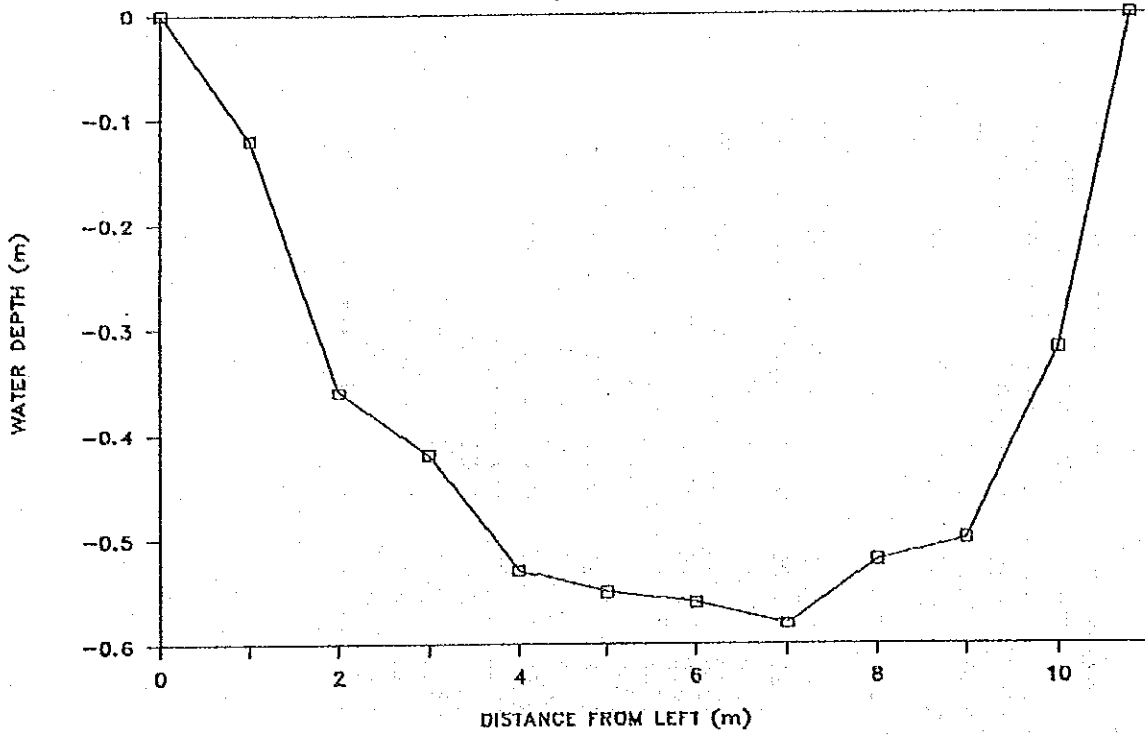
WATER LEVEL (f) : 2.02 WATER LEVEL (m) : 0.62  
 TOTAL DISCHARGE : 0.88 MEAN VELOCITY(m/s) : 0.21

NOTE : ALL SECTIONS ARE APPLIED 0.6 DEPTH METHOD.



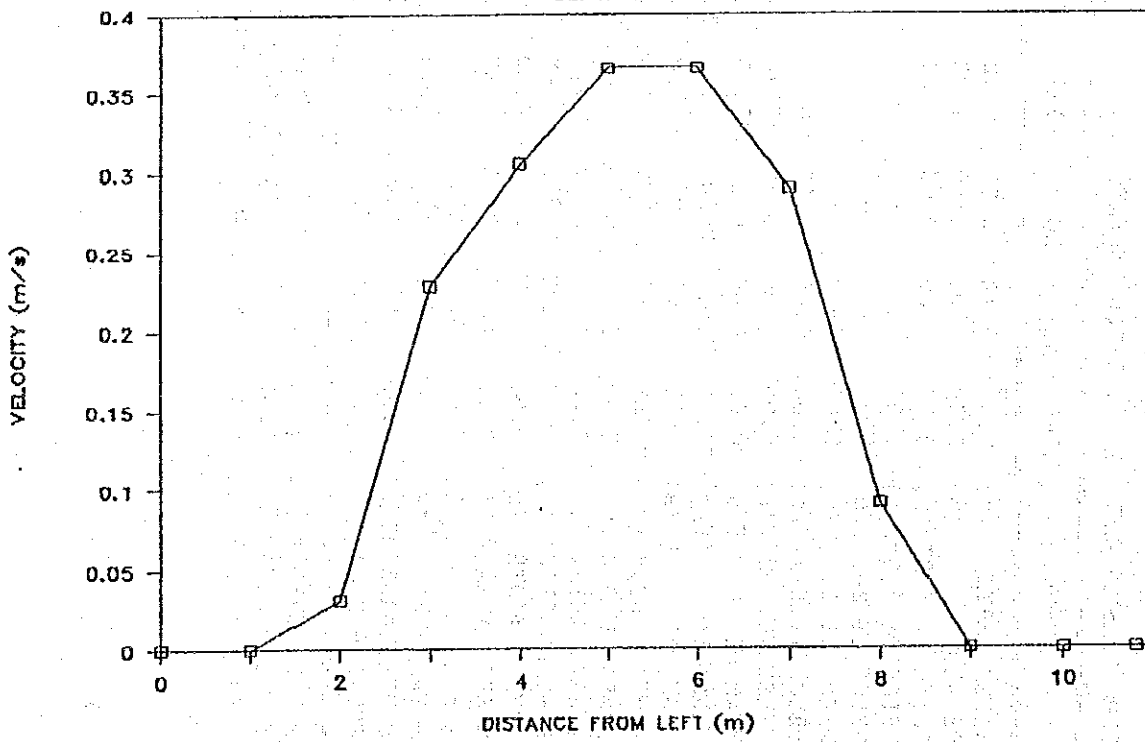
# WATER DEPTH (1-150)

22/JAN/91



# VELOCITY (1-150)

22/JAN/91



FLOW MEASUREMENT ST. : 5-000 EXCHANGE ERM FEB. /2/'91

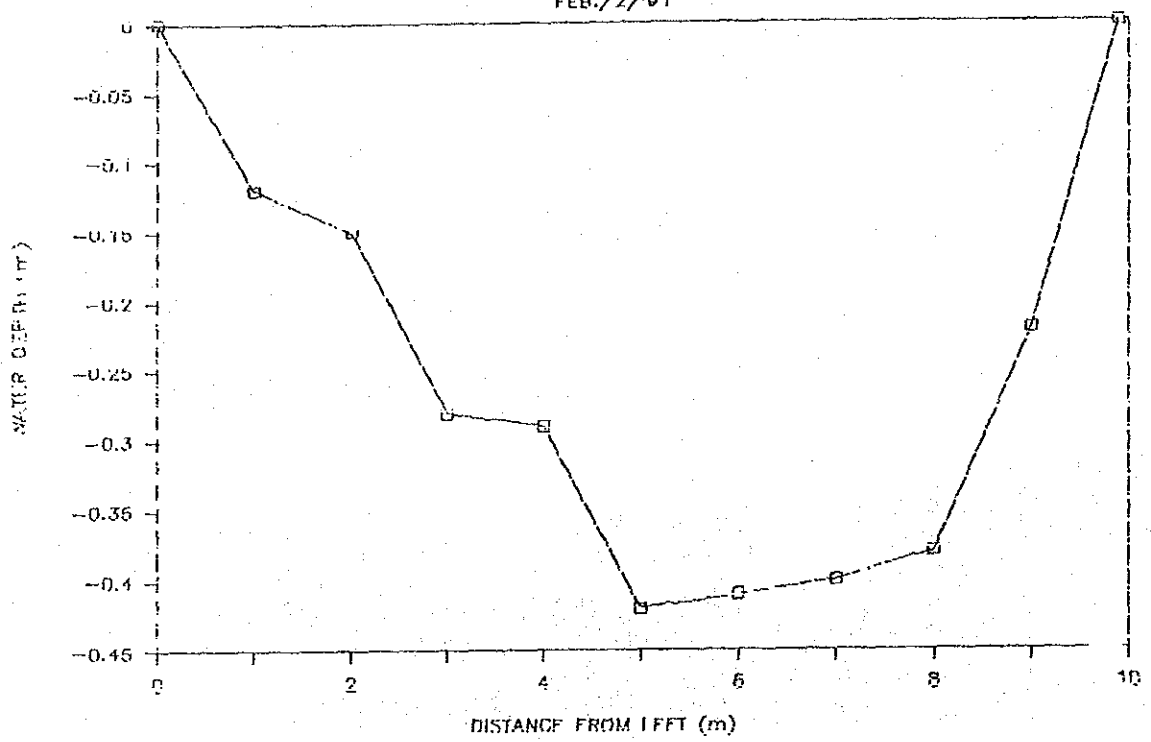
ITEMS	ND-1	ND-2	ND-3	ND-4	ND-5	ND-6	ND-7	ND-8	ND-9	ND-R
WATER DEPTH (m)	0.00	0.12	0.15	0.28	0.29	0.42	0.41	0.40	0.38	0.00
SE/WIDTH (m)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90
TOTAL SE/WIDTH(m)	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.90
VELOCITY.2-1(f/s)	-	-	-	-	-	-	-	-	-	-
VELOCITY.2-2(f/s)	-	-	-	-	-	-	-	-	-	-
MEAN VEL.2 (f/s)	-	-	-	-	-	-	-	-	-	-
VELOCITY.8-1(f/s)	0.00	0.00	0.55	0.60	0.80	0.50	0.40	0.20	0.15	0.10
VELOCITY.8-2(f/s)	0.00	0.00	0.60	0.65	0.80	0.55	0.40	0.25	0.10	0.05
MEAN VEL.8 (f/s)	0.00	0.00	0.58	0.63	0.80	0.53	0.40	0.23	0.13	0.08
MEAN VEL. (f/s)	0.000	0.000	0.575	0.625	0.800	0.525	0.400	0.225	0.125	0.075
MEAN VEL. (m/s)	0.000	0.000	0.175	0.191	0.244	0.160	0.122	0.069	0.038	0.023
L/MEAN DEPTH (m)	0.000	0.060	0.143	0.248	0.288	0.388	0.413	0.403	0.385	0.260
L/MEAN WIDTH (m)	0.00	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
L/SEC. AREA (m2)	0.00	0.06	0.07	0.12	0.14	0.19	0.21	0.20	0.19	0.13
R/MEAN DEPTH (m)	0.000	0.128	0.183	0.283	0.323	0.418	0.408	0.385	0.340	0.110
R/MEAN WIDTH (m)	0.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.90
R/SEC. AREA (m2)	0.00	0.06	0.09	0.14	0.16	0.21	0.20	0.20	0.17	0.10
S/AREA (m2)	0.00	0.12	0.16	0.27	0.31	0.40	0.41	0.40	0.36	0.23
TOTAL AREA (m2)	0.00	0.12	0.29	0.55	0.86	1.26	1.67	2.07	2.43	2.66
S/DISCHARGE(m2/s)	0.00	0.00	0.03	0.05	0.07	0.05	0.05	0.03	0.01	0.01
TOTAL DIS. (m2/s)	0.00	0.00	0.03	0.03	0.15	0.22	0.27	0.30	0.31	0.31

WATER LEVEL (f) : 1.21 WATER LEVEL (m) : 0.37  
 TOTAL DISCHARGE : 0.31 MEAN VELOCITY(m/s) : 0.12

\*NOTE : ALL SECTIONS WERE APPLIED BY USE OF 0.6 DEPTH METHOD.

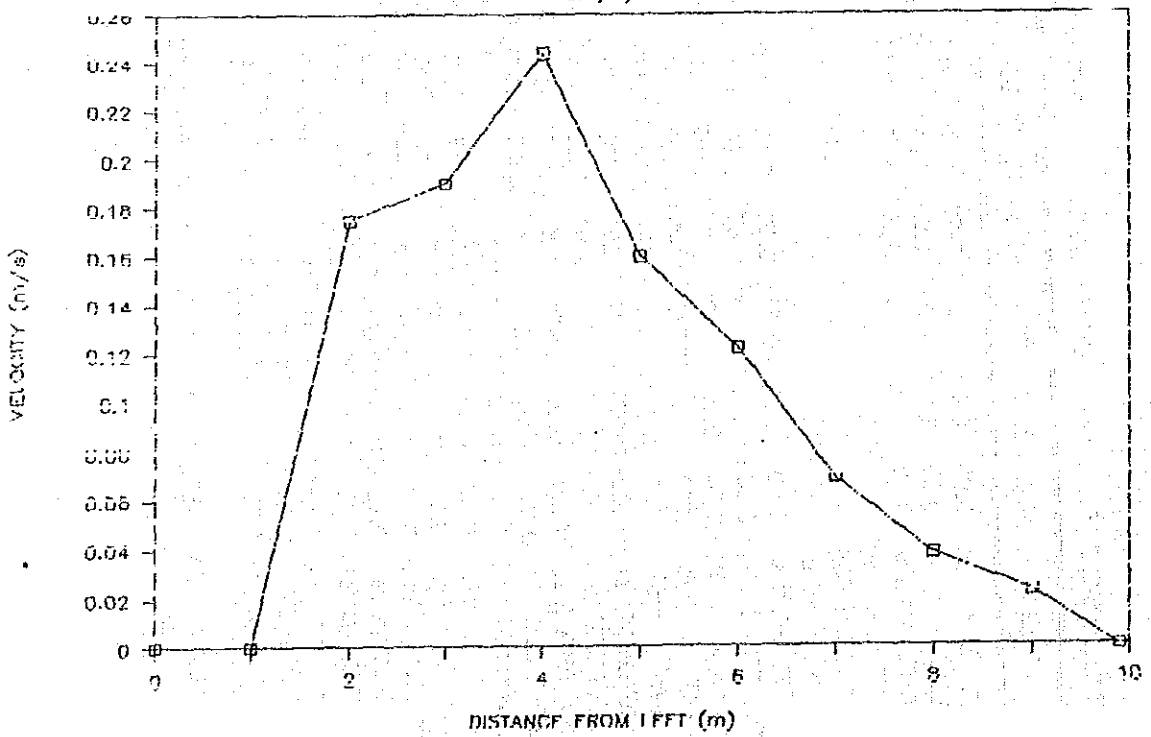
# WATER DEPTH (5-030)

FEB./2/91



# VELOCITY (5-030)

FEB./2/91



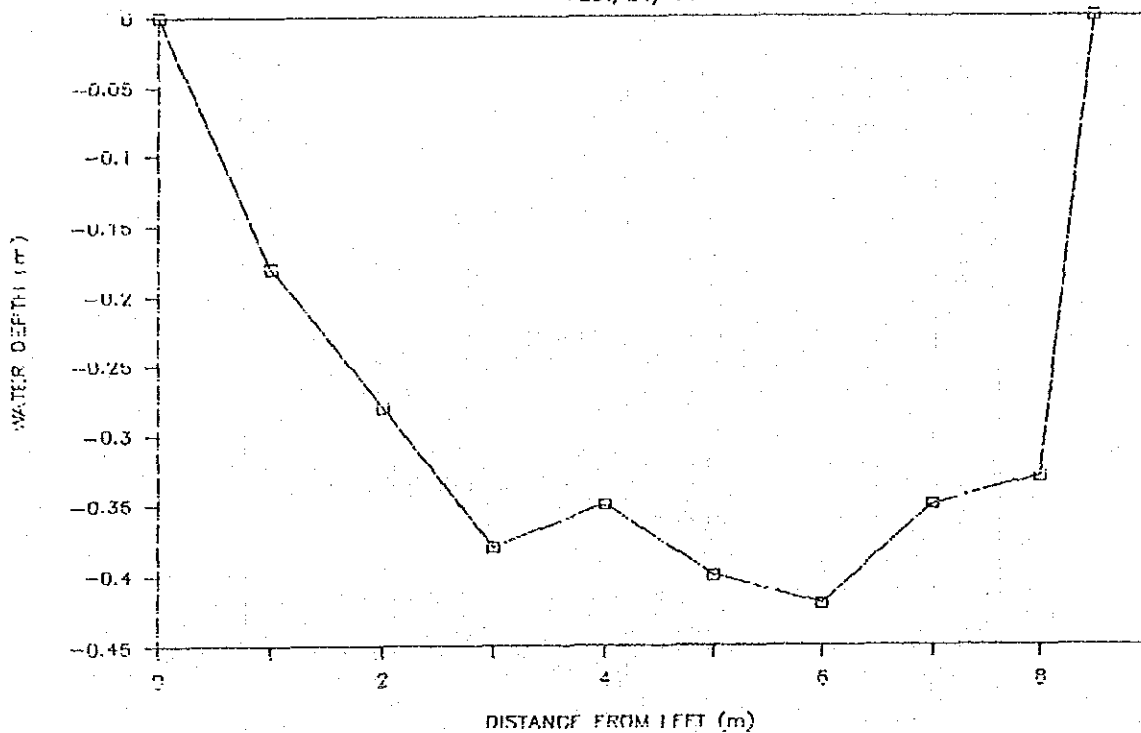
FLOW MEASUREMENT ST. : 5-030 EXCHANGE FARM FEB./21/'91

ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-R
WATER DEPTH (m)	0.00	0.18	0.28	0.38	0.35	0.40	0.42	0.35	0.33
SE/WIDTH (m)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50
TOTAL SE/WIDTH(m)	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.50
VELOCITY.2-1(f/s)	-	-	-	-	-	-	-	-	-
VELOCITY.2-2(f/s)	-	-	-	-	-	-	-	-	-
MLN VEL.2 (f/s)	-	-	-	-	-	-	-	-	-
VELOCITY.8-1(f/s)	0.00	0.30	0.40	0.40	0.55	0.55	0.22	0.10	0.00
VELOCITY.8-2(f/s)	0.00	0.25	0.40	0.40	0.50	0.55	0.22	0.10	0.00
MEAN VEL.8 (f/s)	0.00	0.28	0.40	0.40	0.53	0.55	0.22	0.10	0.00
MEAN VEL (f/s)	0.000	0.275	0.400	0.400	0.525	0.550	0.220	0.100	0.000
MEAN VEL (m/s)	0.000	0.084	0.122	0.122	0.160	0.168	0.067	0.030	0.000
L/MEAN DEPTH (m)	0.000	0.255	0.355	0.358	0.358	0.388	0.415	0.368	0.335
L/MEAN WIDTH (m)	0.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
L/SEC. AREA (m2)	0.00	0.09	0.13	0.18	0.18	0.19	0.21	0.18	0.17
R/MEAN DEPTH (m)	0.000	0.205	0.305	0.373	0.363	0.405	0.403	0.345	0.165
R/MEAN WIDTH (m)	0.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
R/SEC. AREA (m2)	0.00	0.10	0.15	0.19	0.18	0.20	0.20	0.17	0.09
S/AREA (m2)	0.00	0.19	0.28	0.36	0.36	0.40	0.41	0.36	0.25
TOTAL AREA (m2)	0.00	0.19	0.47	0.84	1.20	1.59	2.00	2.36	2.61
S/DISCHARGE(m3/s)	0.00	0.00	0.02	0.04	0.06	0.07	0.03	0.01	0.00
TOTAL DIS. (m3/s)	0.00	0.00	0.02	0.07	0.13	0.19	0.22	0.23	0.23

WATER LEVEL (f) : 0.91 WATER LEVEL (m) : 0.20  
 TOTAL DISCHARGE : 0.23 MEAN VELOCITY(m/s) : 0.09

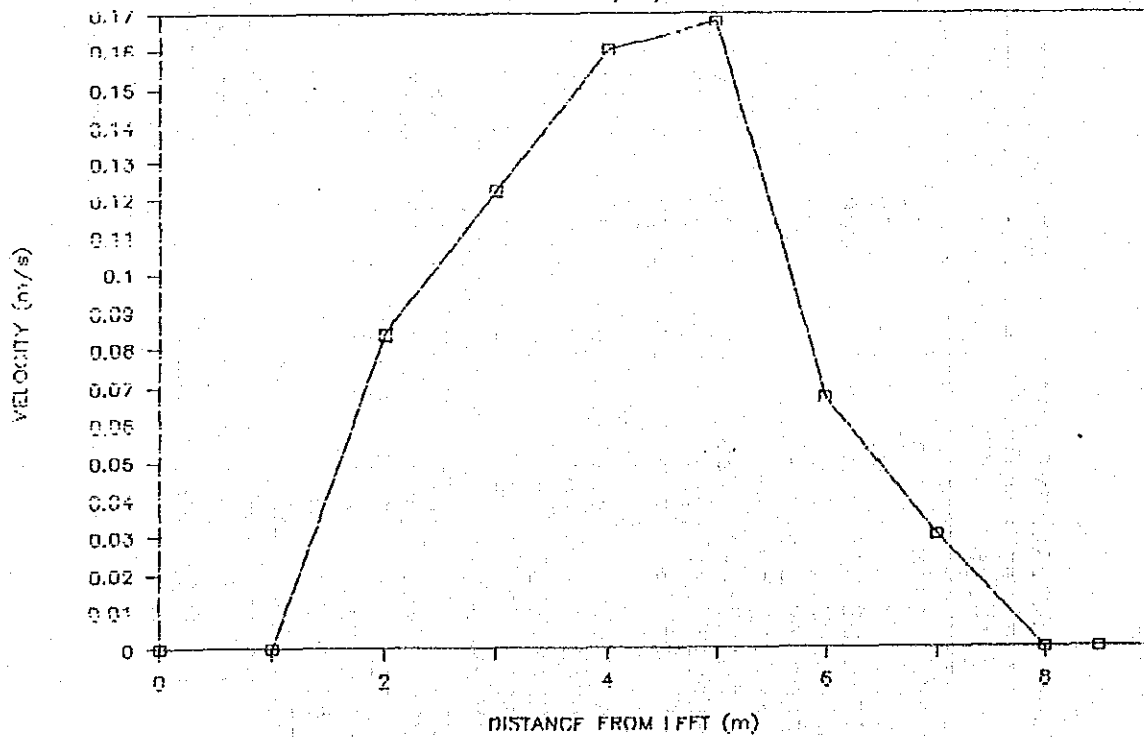
# WATER DEPTH (5-030)

FEB./21/01



# VELOCITY (5-030)

FEB./21/01



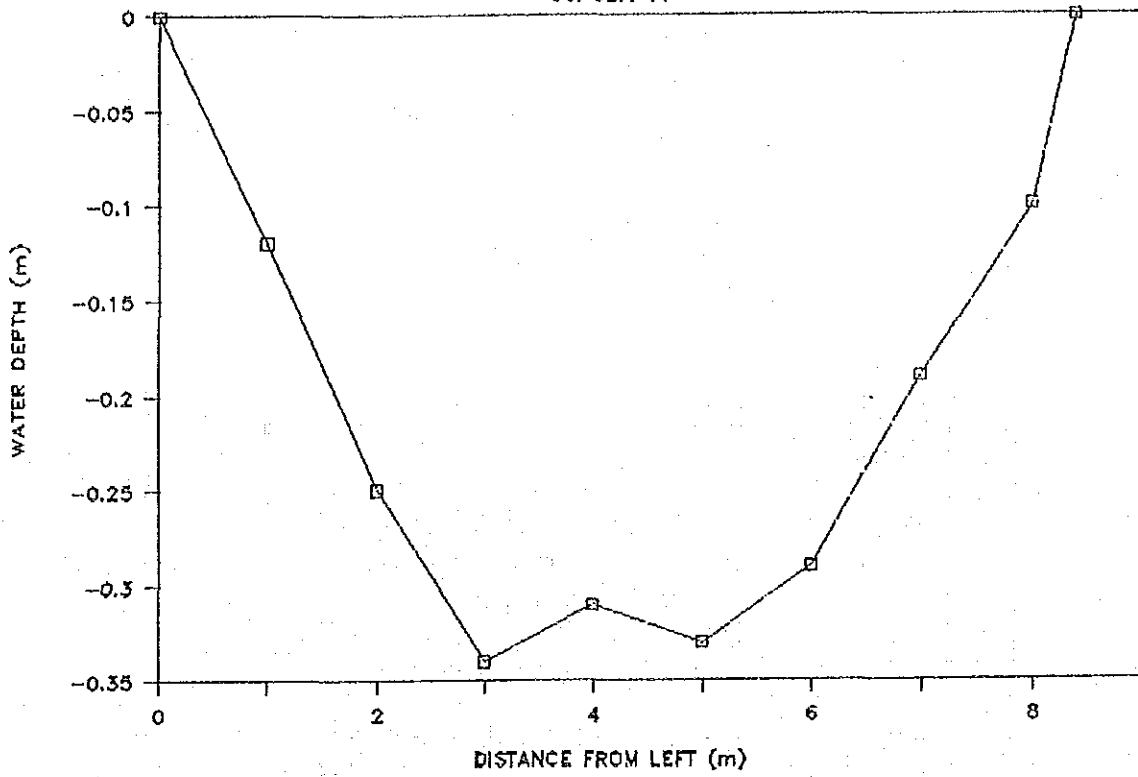
ITEMS	NO-L	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-R
WATER DEPTH (m)	0.00	0.12	0.25	0.34	0.31	0.33	0.29	0.19	0.10	0.00
SE/WIDTH (m)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.40
TOTAL SE/WIDTH(m)	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	8.40
VELOCITY.2-1(f/s)	-	-	-	-	-	-	-	-	-	-
VELOCITY.2-2(f/s)	-	-	-	-	-	-	-	-	-	-
MEAN VEL.2 (f/s)	-	-	-	-	-	-	-	-	-	-
VELOCITY.8-1(m/s)	0.00	0.00	0.10	0.10	0.05	0.10	0.05	0.05	0.05	0.00
VELOCITY.8-2(m/s)	0.00	0.00	0.10	0.10	0.05	0.10	0.03	0.05	0.05	0.00
MEAN VEL.8 (m/s)	0.00	0.00	0.10	0.10	0.05	0.10	0.04	0.05	0.05	0.00
MEAN VEL (m/s)	0.000	0.000	0.100	0.100	0.050	0.100	0.040	0.050	0.050	0.000
MEAN VEL (m/s)	0.000	0.000	0.100	0.100	0.050	0.100	0.040	0.050	0.050	0.000
L/MEAN DEPTH (m)	0.000	0.060	0.218	0.318	0.318	0.325	0.300	0.215	0.123	-
L/MEAN WIDTH (m)	0.00	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	-
L/SEC. AREA (m2)	0.00	0.06	0.11	0.16	0.16	0.16	0.15	0.11	0.06	-
R/MEAN DEPTH (m)	0.000	0.153	0.273	0.333	0.315	0.320	0.265	0.168	0.050	-
R/MEAN WIDTH (m)	0.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.40	-
R/SEC. AREA (m2)	0.00	0.08	0.14	0.17	0.16	0.16	0.13	0.08	0.02	-
S/AREA (m2)	0.00	0.14	0.25	0.33	0.32	0.32	0.28	0.19	0.08	-
TOTAL AREA (m2)	0.00	0.14	0.38	0.71	1.02	1.35	1.63	1.82	1.90	-
S/DISCHARGE(m3/s)	0.00	0.00	0.02	0.03	0.02	0.03	0.01	0.01	0.00	-
TOTAL DIS. (m3/s)	0.00	0.00	0.02	0.06	0.07	0.11	0.12	0.13	0.13	-

WATER LEVEL (f) : 0.20 WATER LEVEL (m) : 0.06  
 TOTAL DISCHARGE : 0.13 MEAN VELOCITY(m/s) : 0.07

\*NOTE ; ALL SECTIONS WERE APPLIED BY USE OF 0.6 DEPTH METHOD.

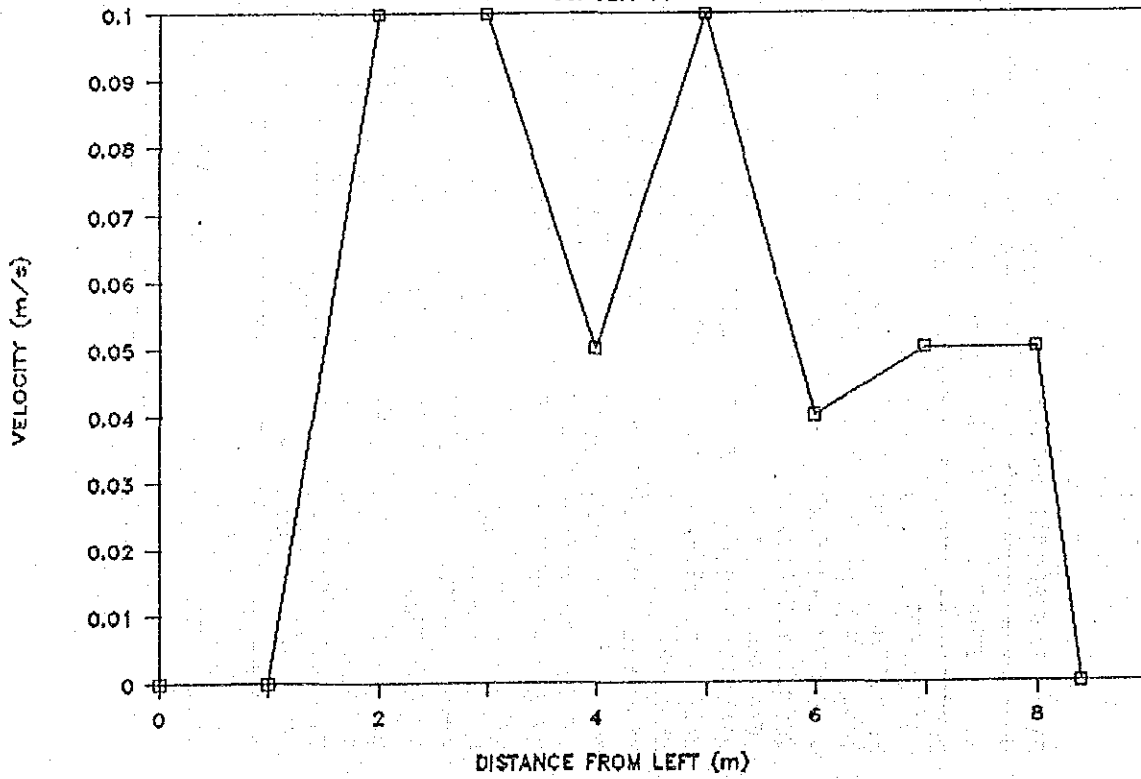
# WATER DEPTH (5-030)

05/SEP/91



# VELOCITY (5-030)

05/SEP/91



FLOW MEASUREMENT ST. : 5-030 EXCHANGE FARM 09/OCT/91

ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-R
WATER DEPTH (m)	0.00	0.10	0.22	0.28	0.23	0.20	0.17	0.10	0.00
SE/WIDTH (m)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.05
TOTAL SE/WIDTH(m)	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.05
VELOCITY.2-1(f/s)	-	-	-	-	-	-	-	-	-
VELOCITY.2-2(f/s)	-	-	-	-	-	-	-	-	-
MEAN VEL.2 (f/s)	-	-	-	-	-	-	-	-	-
VELOCITY.8-1(f/s)	0.00	0.00	0.00	0.18	0.20	0.17	0.15	0.00	0.00
VELOCITY.8-2(f/s)	0.00	0.00	0.00	0.17	0.18	0.15	0.15	0.00	0.00
MEAN VEL.8 (f/s)	0.00	0.00	0.00	0.18	0.19	0.16	0.15	0.00	0.00
MEAN VEL (f/s)	0.000	0.000	0.000	0.175	0.190	0.160	0.150	0.000	0.000
MEAN VEL (f/s)	0.000	0.000	0.000	0.053	0.058	0.049	0.046	0.000	0.000
L/MEAN DEPTH (m)	0.000	0.050	0.190	0.265	0.243	0.208	0.178	0.118	0.100
L/MEAN WIDTH (m)	0.00	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50
L/SEC. AREA (m2)	0.00	0.05	0.10	0.13	0.12	0.10	0.09	0.06	0.05
R/MEAN DEPTH (m)	0.000	0.130	0.235	0.268	0.223	0.193	0.153	0.100	0.050
R/MEAN WIDTH (m)	0.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.05
R/SEC. AREA (m2)	0.00	0.07	0.12	0.13	0.11	0.10	0.08	0.05	0.00
S/AREA (m2)	0.00	0.12	0.21	0.27	0.23	0.20	0.17	0.11	0.05
TOTAL AREA (m2)	0.00	0.12	0.33	0.59	0.83	1.03	1.19	1.30	1.35
S/DISCHARGE(m3/s)	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00
TOTAL DIS. (m3/s)	0.00	0.00	0.00	0.01	0.03	0.04	0.04	0.04	0.04

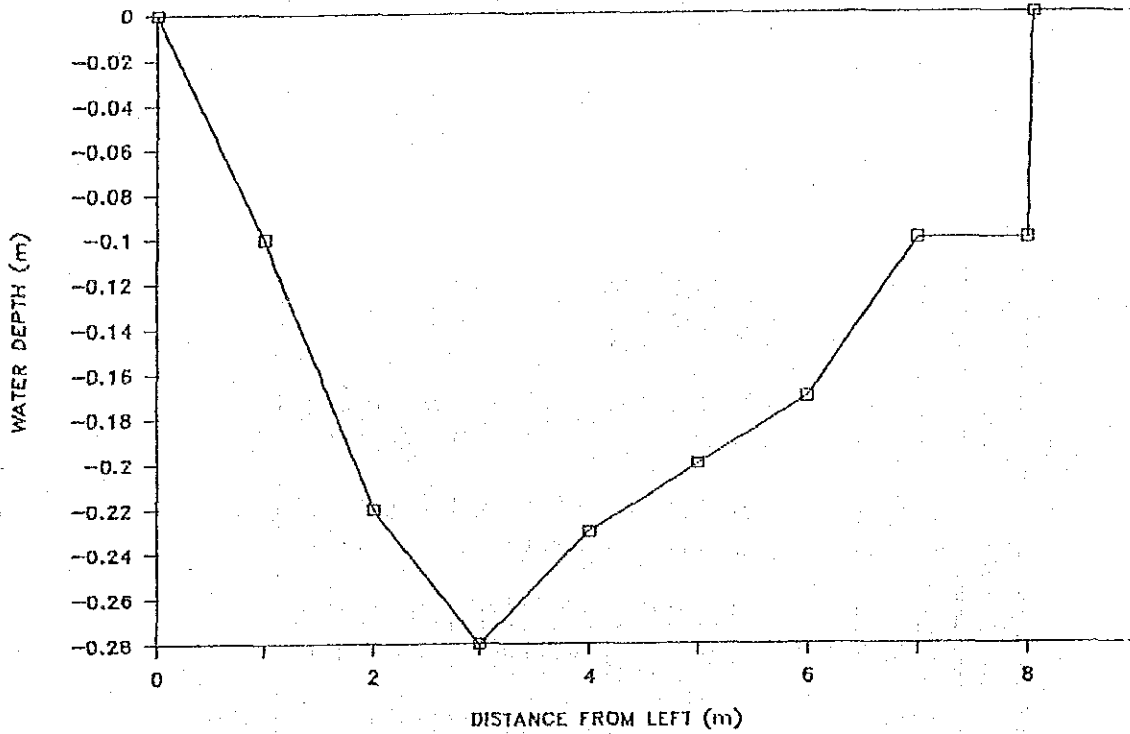
WATER LEVEL (f) : 0.07 WATER LEVEL (m) : 0.02  
 TOTAL DISCHARGE : 0.04 MEAN VELOCITY(m/s) : 0.03

\*NOTE ; ALL SECTIONS WERE APPLIED AS 0.6 DEPTH METHOD.



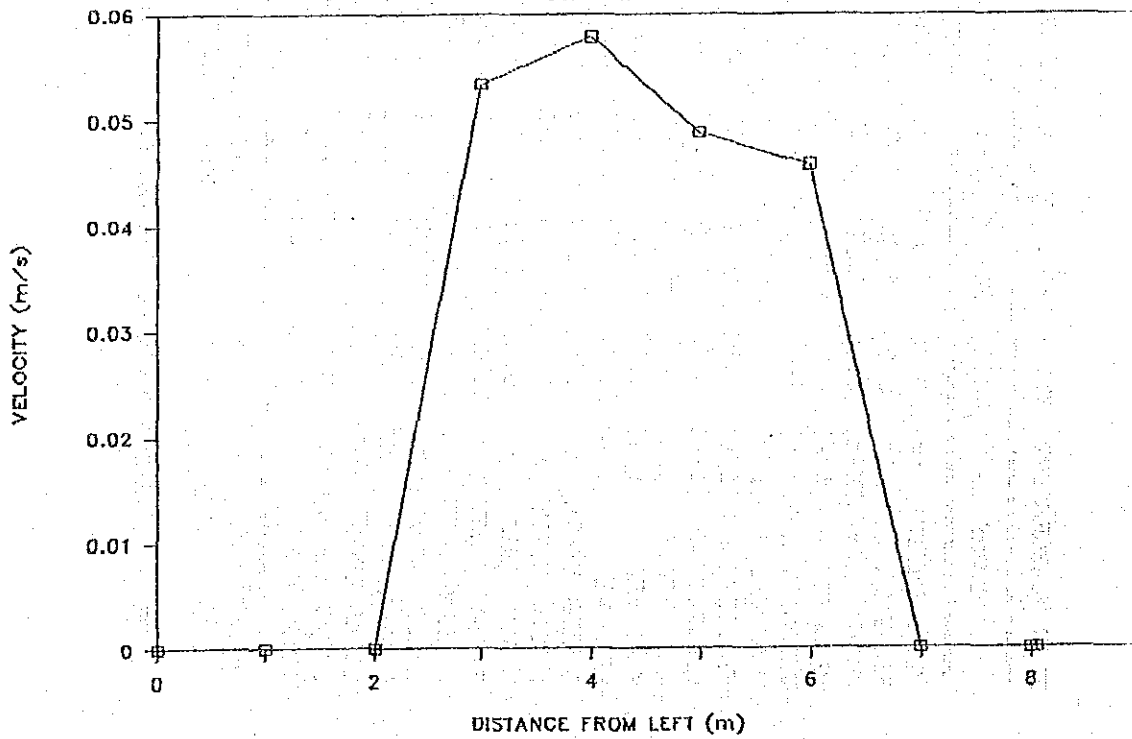
# WATER DEPTH (5-030)

09/OCT/91



# VELOCITY (5-030)

09/OCT/91



FLOW MEASUREMENT ST. : 5-030 EXCHANGE FARM 22/NOV/91

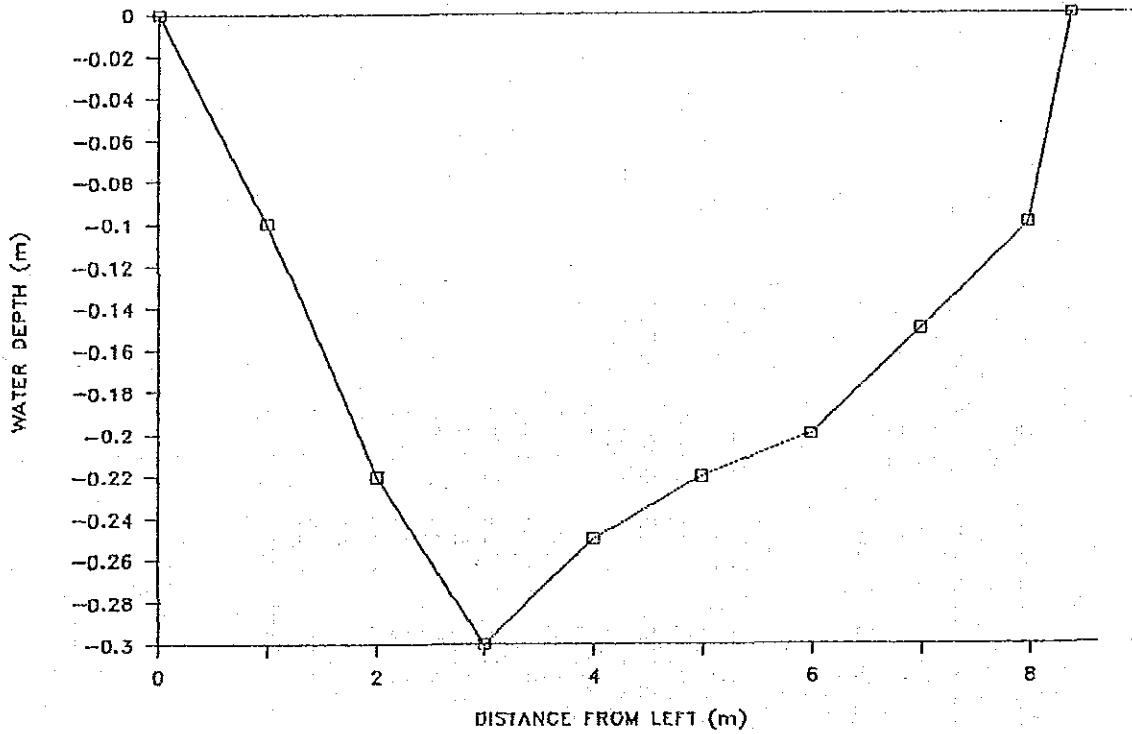
ITEMS	NO-L	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-R
WATER DEPTH (m)	0.00	0.10	0.22	0.30	0.25	0.22	0.20	0.15	0.10	0.00
SE/WIDTH (m)	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.40
TOTAL SE/WIDTH(m)	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	8.40
VELOCITY.2-1(f/s)	-	-	-	-	-	-	-	-	-	-
VELOCITY.2-2(f/s)	-	-	-	-	-	-	-	-	-	-
MEAN VEL.2 (f/s)	-	-	-	-	-	-	-	-	-	-
VELOCITY.8-1(f/s)	0.00	0.00	0.00	0.25	0.28	0.26	0.17	0.05	0.00	0.00
VELOCITY.8-2(f/s)	0.00	0.00	0.00	0.25	0.27	0.25	0.15	0.02	0.00	0.00
MEAN VEL.8 (f/s)	0.00	0.00	0.00	0.25	0.28	0.26	0.16	0.04	0.00	0.00
MEAN VEL (f/s)	0.000	0.000	0.000	0.250	0.275	0.255	0.160	0.035	0.000	0.000
MEAN VEL (f/s)	0.000	0.000	0.000	0.076	0.084	0.078	0.049	0.011	0.000	0.000
L/MEAN DEPTH (m)	0.000	0.050	0.190	0.280	0.263	0.228	0.205	0.163	0.113	-
L/MEAN WIDTH (m)	0.00	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	-
L/SEC. AREA (m2)	0.00	0.05	0.10	0.14	0.13	0.11	0.10	0.08	0.06	-
R/MEAN DEPTH (m)	0.000	0.130	0.240	0.288	0.243	0.215	0.188	0.138	0.050	-
R/MEAN WIDTH (m)	0.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.40	-
R/SEC. AREA (m2)	0.00	0.07	0.12	0.14	0.12	0.11	0.09	0.07	0.02	-
S/AREA (m2)	0.00	0.12	0.22	0.28	0.25	0.22	0.20	0.15	0.08	-
TOTAL AREA (m2)	0.00	0.12	0.33	0.61	0.87	1.09	1.28	1.43	1.51	-
S/DISCHARGE(m3/s)	0.00	0.00	0.00	0.02	0.02	0.02	0.01	0.00	0.00	-
TOTAL DIS. (m3/s)	0.00	0.00	0.00	0.02	0.04	0.06	0.07	0.07	0.07	-

WATER LEVEL (f) : 0.09 WATER LEVEL (m) : 0.03  
 TOTAL DISCHARGE : 0.07 MEAN VELOCITY(m/s) : 0.05

\*NOTE ; ALL SECTIONS WERE APPLIED AS 0.6 DEPTH METHOD.

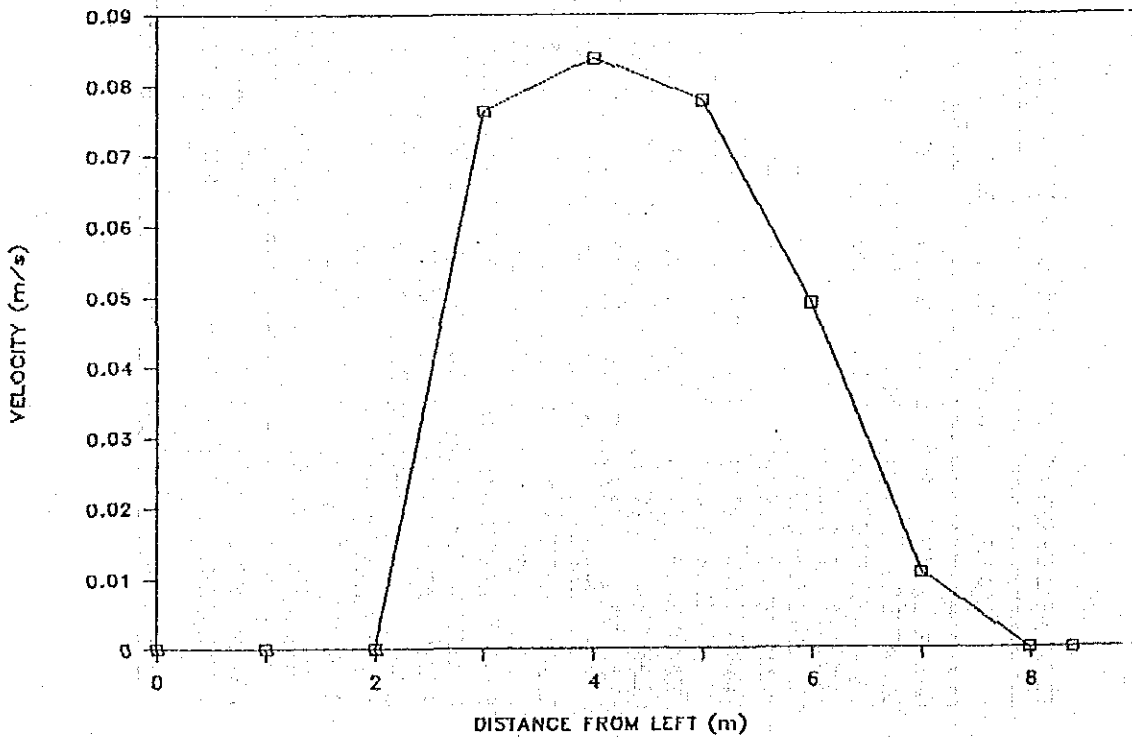
# WATER DEPTH (5-030)

22/NOV/91



# VELOCITY (5-030)

22/NOV/91



## LIST OF FLOW MEASUREMENT

ST.: 5-940 LUANGWA BRIDGE

NO.	DATE	-----[Feet - Second]-----				+++++[Meter - Second]++++			
		H (f)	Q (f3/s)	A (f2)	V (f/s)	H (m)	Q (m3/s)	A (m2)	V (m/s)
1	21-Oct-48	7.40	2439	1190	2.05	2.26	69	111	0.62
2	29-Jun-49	6.30	1146	668	1.74	1.92	32	62	0.53
3	19-Aug-49	5.90	387	392	0.96	1.80	11	36	0.29
4	25-Oct-49	5.60	228	285	0.80	1.71	6	26	0.24
5	10-May-50	11.55	12982	5028	2.58	3.52	368	467	0.79
6	15-Feb-51	16.45	31831	7455	4.27	5.01	901	693	1.30
7	10-Apr-51	13.15	15952	5147	3.10	4.01	452	478	0.94
8	30-May-51	7.95	3624	1647	2.46	2.42	103	153	0.75
9	11-Jul-51	7.40	2264	1109	1.96	2.26	64	103	0.60
10	19-Sep-51	6.85	1115	773	1.45	2.09	32	72	0.44
11	24-Oct-51	6.60	639	424	1.50	2.01	18	39	0.46
12	16-Sep-55	6.10	1664	1090	1.53	1.86	47	101	0.47
13	18-Oct-55	5.50	1646	1236	1.33	1.68	47	115	0.41
14	12-Sep-56	7.60	2200	1164	1.89	2.32	62	108	0.58
15	06-Sep-57	7.60	4294	1866	2.30	2.32	122	173	0.70
16	15-Nov-57	5.85	1551	884	1.75	1.78	44	82	0.53
17	12-Dec-57	5.25	2070	1105	1.87	1.60	59	103	0.57
18	27-Feb-58	39.22	167900	2351	7.14	11.95	4754	218	2.18
19	03-Mar-58	34.67	120000	1689	7.14	10.57	3398	157	2.18
20	14-Mar-58	18.33	43400	8800	4.93	5.59	1229	818	1.50
21	18-Mar-58	16.15	33600	9183	4.42	4.92	951	853	1.35
22	11-Feb-59	21.30	70840	10500	7.95	6.49	2006	975	2.42
23	26-Jan-60	8.30	8320	2550	3.26	2.53	236	237	0.99
24	11-Jul-63	33.50	10436	3321	3.14	10.21	296	309	0.96
25	27-Aug-63	8.00	6439	2434	2.65	2.44	182	226	0.81
26	01-Oct-63	6.95	4615	1790	2.58	2.12	131	166	0.79
27	04-Oct-63	6.35	4068	1607	2.53	1.94	115	149	0.77
28	14-Jan-64	23.96	36654	4508	6.66	7.30	1038	419	2.03
29	16-Feb-69	9.46	261	94	2.77	2.88	7	9	0.84
30	27-Feb-69	23.25	72500	11600	6.25	7.09	2053	1078	1.91
31	26-Mar-69	20.09	59900	9850	6.08	6.12	1696	915	1.85
32	02-Apr-69	20.34	56200	9900	5.68	6.20	1591	920	1.73
33	03-Aug-80	8.09	6097	2551	2.39	2.47	173	237	0.73
34	11-May-80	6.71	101	148	0.68	2.05	3	14	0.21
35	28-Nov-80	6.81	3490	1413	2.46	2.08	99	131	0.75
36	09-Feb-81	5.86	1417	933	2.54	1.79	40	87	0.77
37	06-Apr-81	14.17	25718	7270	3.54	4.32	728	675	1.08
38	13-Jun-81	8.60	6988	2594	2.69	2.62	198	241	0.82
39	25-Aug-81	24.87	4038	1318	3.06	7.58	114	122	0.93
40	20-Oct-81	5.91	2161	1031	2.10	1.80	61	96	0.64
41	21-Nov-81	5.64	1826	989	1.84	1.72	52	92	0.56
42	10-Dec-81	6.23	3178	1367	2.33	1.90	90	127	0.71
43	26-Dec-81	6.14	1734	1163	1.50	1.87	49	108	0.46
44	12-Feb-82	21.52	70347	14316	4.92	6.56	1992	1330	1.50
45	13-Feb-82	20.21	59064	11813	4.99	6.16	1673	1098	1.52
46	14-Feb-82	23.33	85747	13864	6.20	7.11	2428	1288	1.89
47	24-Feb-82	25.33	105338	15187	6.92	7.72	2983	1411	2.11
48	25-Feb-82	24.67	98132	15263	5.18	7.52	2779	1418	1.58
49	26-Feb-82	22.28	67813	12884	5.25	6.79	1920	1197	1.60
50	27-Feb-82	20.80	58461	11862	4.99	6.34	1655	1102	1.52

## LIST OF FLOW MEASUREMENT

ST.: 5-940 LUANGWA BRIDGE

NO.	DATE	----[Feet - Second]----				++++[Meter - Second]++++			
		H (f)	Q (f3/s)	A (f2)	V (f/s)	H (m)	Q (m3/s)	A (m2)	V (m/s)
51	28-Feb-82	20.21	55678	11216	4.95	6.16	1577	1042	1.51
52	08-Mar-82	17.59	40645	9655	4.20	5.36	1151	897	1.28
53	09-Mar-82	17.49	37821	9784	3.84	5.33	1071	909	1.17
54	10-Mar-82	16.80	37304	9354	4.00	5.12	1056	869	1.22
55	11-Mar-82	17.65	39652	9989	3.97	5.38	1123	928	1.21
56	12-Mar-82	16.80	42766	10549	4.07	5.12	1211	980	1.24
57	13-Mar-82	17.39	38458	9709	3.97	5.30	1089	902	1.21
58	14-Mar-82	17.39	39411	9300	4.23	5.30	1116	864	1.29
59	15-Mar-82	17.03	37645	9009	4.17	5.19	1066	837	1.27
60	16-Mar-82	16.57	34502	8622	4.00	5.05	977	801	1.22
61	17-Mar-82	16.21	32913	8353	3.94	4.94	932	776	1.20
62	18-Mar-82	15.88	33584	8439	3.74	4.84	951	784	1.14
63	19-Mar-82	15.26	29876	7427	4.04	4.65	846	690	1.23
64	21-Mar-82	13.98	23449	6943	3.38	4.26	664	645	1.03
65	22-Mar-82	13.68	23590	6857	3.44	4.17	668	637	1.05
66	23-Mar-82	13.88	23131	6953	3.31	4.23	655	646	1.01
67	24-Mar-82	13.12	21118	6480	3.58	4.00	598	602	1.09
68	25-Mar-82	12.60	19988	6189	3.22	3.84	566	575	0.98
69	26-Mar-82	12.37	17234	6039	2.85	3.77	488	561	0.87
70	27-Mar-82	12.14	17905	5748	3.12	3.70	507	534	0.95
71	06-May-82	9.48	5898	2120	2.79	2.89	167	197	0.85
72	17-Aug-82	6.23	1695	732	2.26	1.90	48	68	0.69
73	14-Oct-82	5.41	1554	883	1.77	1.65	44	82	0.54
74	09-Nov-82	5.48	1660	721	2.26	1.67	47	67	0.69
75	09-Jan-84	9.32	7699	2540	3.02	2.84	218	236	0.92
76	10-Jan-84	10.43	9782	3078	3.35	3.18	277	286	1.02
77	11-Jan-84	9.78	8652	2809	3.08	2.98	245	261	0.94
78	12-Jan-84	9.71	7699	2863	2.69	2.96	218	266	0.82
79	13-Jan-84	10.50	9323	3950	2.82	3.20	264	367	0.86
80	14-Jan-84	10.14	6957	3111	2.23	3.09	197	289	0.68
81	15-Jan-84	9.88	8193	2971	2.76	3.01	232	276	0.84
82	17-Jan-84	9.68	7875	2949	2.69	2.95	223	274	0.82
83	18-Jan-84	10.53	9394	3423	2.76	3.21	266	318	0.84
84	19-Jan-84	10.93	13349	4015	3.31	3.33	378	373	1.01
85	23-Jan-84	15.94	29558			4.86	837		
86	24-Jan-84	15.72	27086	7072	3.84	4.79	767	657	1.17
87	25-Jan-84	16.83	30724	7998	3.84	5.13	870	743	1.17
88	26-Jan-84	16.54	32843	7858	4.17	5.04	930	730	1.27
89	27-Jan-84	16.83	32984	8181	4.04	5.13	934	760	1.23
90	28-Jan-84	21.23	78610	12163	6.46	6.47	2226	1130	1.97
91	29-Jan-84	19.55	51383	10527	4.89	5.96	1455	978	1.49
92	30-Jan-84	18.80	44567	9817	4.53	5.73	1262	912	1.38
93	31-Jan-84	17.52	36198	9397	3.84	5.34	1025	873	1.17
94	01-Feb-84	17.03	36833	8525	4.33	5.19	1043	792	1.32
95	03-Feb-84	16.24	31536	7868	4.00	4.95	893	731	1.22
96	04-Feb-84	15.85	28216	7998	3.77	4.83	799	743	1.15
97	05-Feb-84	16.50	28711	7632	3.77	5.03	813	709	1.15
98	07-Feb-84	15.42	27510	7115	3.87	4.70	779	661	1.18
99	09-Feb-84	17.49	39941	8913	4.49	5.33	1131	828	1.37
100	10-Feb-84	18.96	41353	9042	4.82	5.78	1171	840	1.47

## LIST OF FLOW MEASUREMENT

ST.: 5-940 LUANGWA BRIDGE

NO.	DATE	[Feet - Second]				++++[Meter - Second]++++			
		H (f)	Q (f3/s)	A (f2)	V (f/s)	H (m)	Q (m3/s)	A (m2)	V (m/s)
101	11-Feb-84	18.37	41389	8676	4.56	5.60	1172	806	1.39
102	12-Feb-84	19.82	47745			6.04	1352		
103	13-Feb-84	19.03	45768	10161	4.49	5.80	1296	944	1.37
104	14-Feb-84	22.08	71477	12809	5.58	6.73	2024	1190	1.70
105	28-Feb-84	15.29	25850	8342	3.12	4.66	732	775	0.95
106	01-Mar-84	14.76	22284	8471	2.62	4.50	631	787	0.80
107	02-Mar-84	14.27	23449	8105	2.89	4.35	664	753	0.88
108	03-Mar-84	13.65	22389	7632	2.92	4.16	634	709	0.89
109	04-Mar-84	13.19	18364	7083	2.59	4.02	520	658	0.79
110	05-Mar-84	12.76	18540	6684	2.76	3.89	525	621	0.84
111	06-Mar-84	12.47	17269	6620	2.59	3.80	489	615	0.79
112	07-Mar-84	12.34	19035	6394	2.99	3.76	539	594	0.91
113	08-Mar-84	12.70	16774	6717	2.49	3.87	475	624	0.76
114	09-Mar-84	13.12	16916	6405	2.62	4.00	479	595	0.80
115	11-Mar-84	13.71	22601	7158	3.15	4.18	640	665	0.96
116	11-Mar-84	14.93	28110	8105	3.48	4.55	796	753	1.06
117	12-Mar-84	16.34	34043	9128	3.74	4.98	964	848	1.14
118	19-Mar-84	14.30	24791	7083	3.48	4.36	702	658	1.06
119	20-Mar-84	13.62	23060	6663	3.44	4.15	653	619	1.05
120	21-Mar-84	13.22	21118	6103	3.44	4.03	598	567	1.05
121	22-Mar-84	13.02	21860	6394	3.41	3.97	619	594	1.04
122	23-Mar-84	12.57	18222	5856	3.12	3.83	516	544	0.95
123	24-Mar-84	13.78	22813	6717	3.41	4.20	646	624	1.04
124	25-Mar-84	13.71	22707	6749	3.35	4.18	643	627	1.02
125	26-Mar-84	14.27	23484	6814	3.44	4.35	665	633	1.05
126	27-Mar-84	14.04	22354	6706	3.35	4.28	633	623	1.02
127	28-Mar-84	13.42	21330	6491	3.28	4.09	604	603	1.00
128	29-Mar-84	12.96	18364	6125	2.99	3.95	520	569	0.91
129	30-Mar-84	12.50	17269	5597	3.08	3.81	489	520	0.94
130	20-Apr-85	12.11	16669	5371	3.08	3.69	472	499	0.94
131	11-Jan-86	6.73	6357	1313	2.10	2.05	180	122	0.64
132	12-Aug-86	5.45	1165	667	1.74	1.66	33	62	0.53
133	21-Aug-87	8.76	16174	5576	2.43	2.67	458	518	0.74
134	09-Jul-90	8.60	4157	1920	2.17	2.62	118	178	0.66
135	08-Aug-90	7.94	2568	1283	2.00	2.42	73	119	0.61
136	18-Sep-90	6.96	1368	787	1.74	2.12	39	73	0.53
137	12-Oct-90	6.66	1211	724	1.67	2.03	34	67	0.51
138	30-Nov-90	6.61	1688	903	1.87	2.01	48	84	0.57
139	18-Jan-91	18.27	39036	9369	4.17	5.57	1105	870	1.27
140	28-Feb-91	13.30	15979	5127	3.12	4.05	452	476	0.95
141	30-Jul-91	13.30	1860	1090	1.71	2.32	53	101	0.52
142	18-Sep-91	13.30	828	601	1.38	2.04	23	56	0.42
143	26-Sep-91	13.30	669	434	1.54	1.86	19	40	0.47
144	02-Oct-91	13.30	1143	571	2.00	1.79	32	53	0.61
145	18-Nov-91	13.30	1167	574	2.03	1.87	33	53	0.62

[Note] H:Water Level, Q:Discharge, A:Discharge Area, V:Velocity

FLOW MEASUREMENT ST. : 5-940 LUANGWA BRIDGE JUL./09/'90

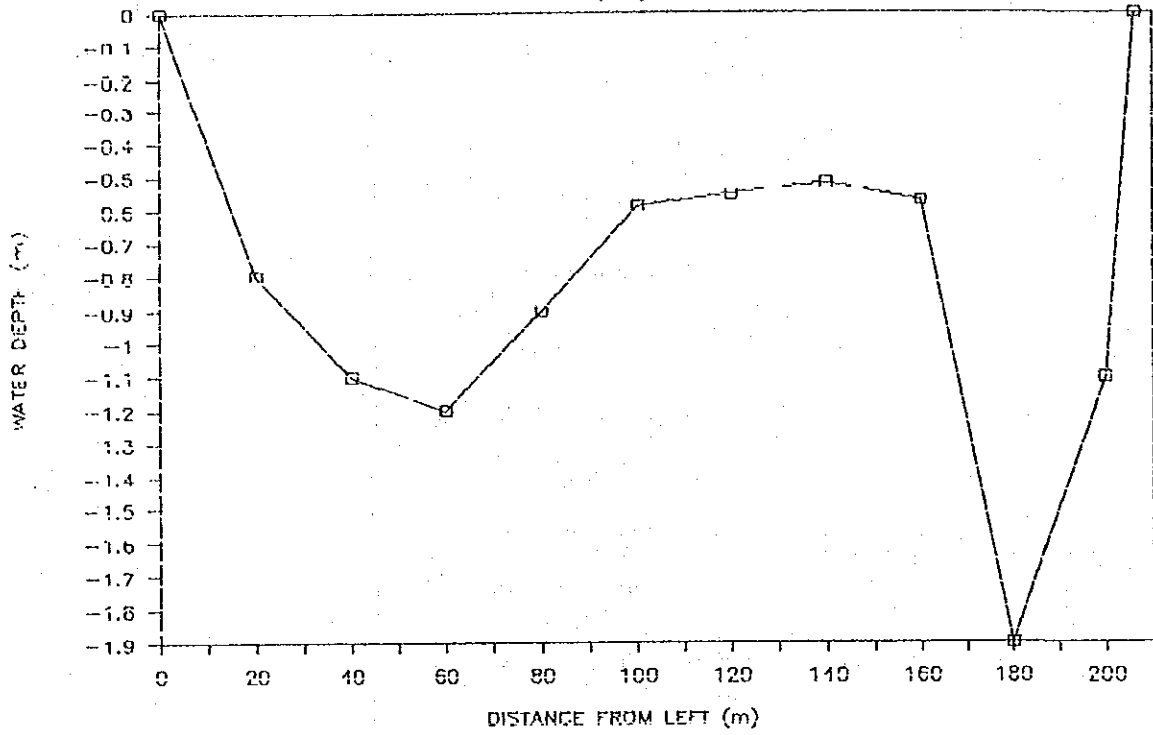
ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-10	NO-R
WATER DEPTH (m)	0.80	1.10	1.20	0.90	0.59	0.55	0.52	0.57	1.90	1.10	0.00
SE/WIDTH (m)	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	6.30
TOTAL SE/WIDTH(m)	20.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00	190.00	200.00	206.30
VELOCITY.2-1(f/s)	2.50	3.00	3.50	2.80	2.50	2.00	1.90	2.50	2.00	0.00	0.00
VELOCITY.2-2(f/s)	2.55	3.00	3.50	2.80	2.50	2.00	1.90	2.50	2.00	0.00	0.00
MEAN VEL.2 (f/s)	2.53	3.00	3.50	2.80	2.50	2.00	1.90	2.50	2.00	0.00	0.00
VELOCITY.8-1(f/s)	2.33	2.50	3.00	2.50	2.20	1.90	1.50	2.00	1.85	0.00	0.00
VELOCITY.8-2(f/s)	2.33	2.50	3.00	2.50	2.20	1.90	1.50	2.00	1.85	0.00	0.00
MEAN VEL.8 (f/s)	2.33	2.50	3.00	2.50	2.20	1.90	1.50	2.00	1.85	0.00	0.00
MEAN VEL (f/s)	2.428	2.750	3.250	2.650	2.350	1.950	1.650	2.250	1.925	0.000	0.000
MEAN VEL (m/s)	0.740	0.838	0.991	0.808	0.716	0.594	0.503	0.686	0.587	0.000	0.000
L/MEAN DEPTH (m)	0.400	1.025	1.175	0.975	0.668	0.560	0.528	0.558	1.568	1.300	-
L/MEAN WIDTH (m)	20.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	-
L/SEC. AREA (m2)	8.00	10.25	11.75	9.75	6.68	5.60	5.28	5.58	15.68	13.00	-
R/MEAN DEPTH (m)	0.875	1.125	1.125	0.823	0.580	0.543	0.533	0.903	1.700	0.550	-
R/MEAN WIDTH (m)	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	-
R/SEC. AREA (m2)	8.75	11.25	11.25	8.23	5.80	5.43	5.33	9.03	17.00	3.47	-
S/AREA (m2)	16.75	21.50	23.00	17.98	12.48	11.03	10.60	14.60	32.68	16.47	-
TOTAL AREA (m2)	0.0	16.8	38.3	61.3	91.7	102.7	113.3	127.9	160.6	177.1	-
S/DISCHARGE(m3/s)	0.00	12.39	18.02	22.78	14.52	8.94	5.33	10.01	19.17	0.00	-
TOTAL DIS. (m3/s)	0.00	12.39	30.41	53.20	67.72	76.65	83.21	98.54	117.72	117.72	-

WATER LEVEL (f) : 8.58  
 TOTAL DISCHARGE : 117.72

WATER LEVEL (m) : 2.62  
 MEAN VELOCITY(m/s) : 0.66

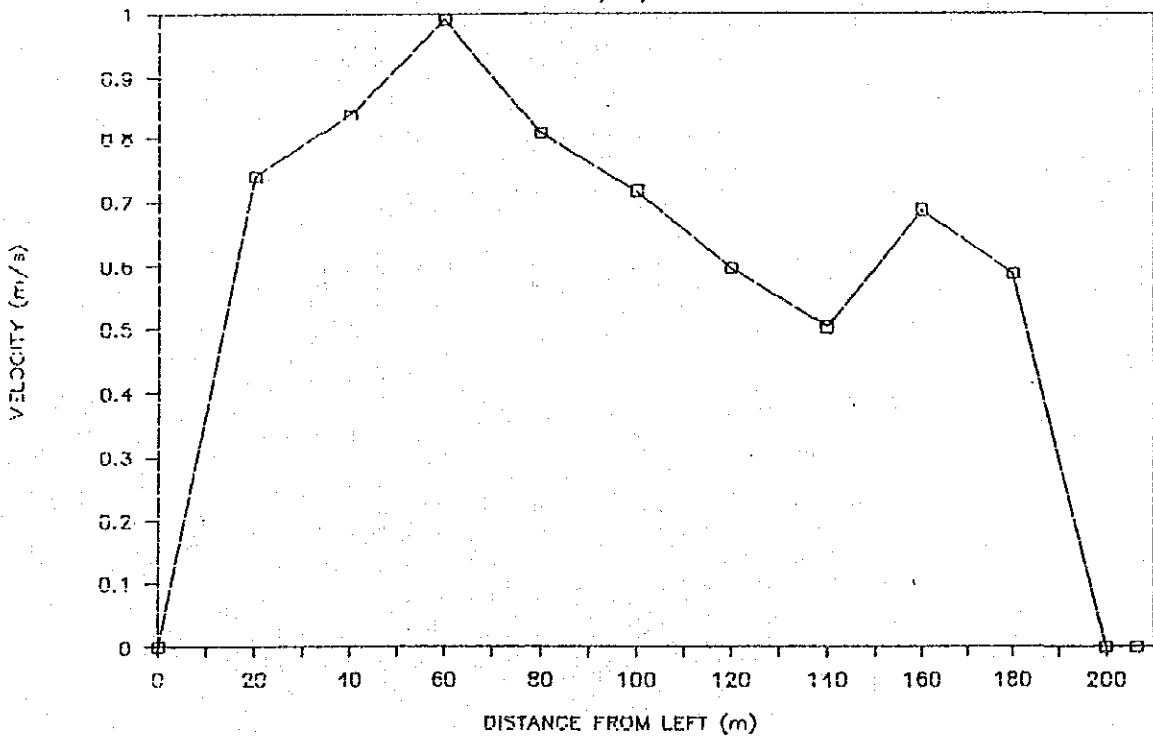
### WATER DEPTH (5-940)

JUL./09/'90



### VELOCITY (5-940)

JUL./09/'90





FLOW MEASUREMENT ST. : 5-940 LUANGWA BRIDGE AUG./08/'90

NO-1 NO-2 NO-3 NO-4 NO-5 NO-6 NO-7 NO-8 NO-R

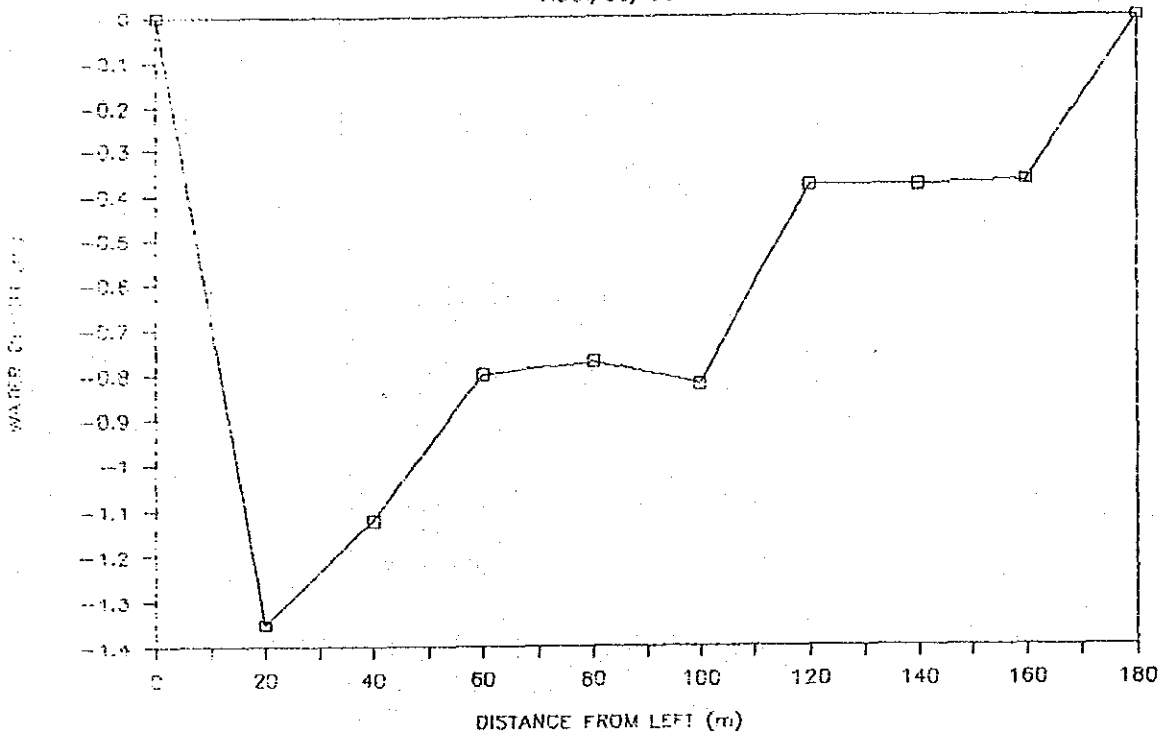
ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-R
WATER DEPTH (m)	1.35	1.12	0.80	0.77	0.82	0.38	0.38	0.37	0.00
SE/WIDTH (m)	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
TOTAL SE/WIDTH(m)	20.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00	180.00
VELOCITY.2-1(f/s)	2.90	2.80	2.90	3.00	1.15	-	-	-	0.00
VELOCITY.2-2(f/s)	2.70	2.80	2.90	2.80	1.15	-	-	-	0.00
MEAN VEL.2 (f/s)	2.80	2.80	2.90	2.90	1.15	-	-	-	0.00
VELOCITY.8-1(f/s)	2.80	1.50	2.40	2.50	0.85	0.70	0.70	0.65	0.00
VELOCITY.8-2(f/s)	2.60	1.50	2.50	2.50	0.85	0.70	0.70	0.65	0.00
MEAN VEL.8 (f/s)	2.70	1.50	2.45	2.50	0.85	0.70	0.70	0.65	0.00
MEAN VEL (f/s)	2.750	2.150	2.675	2.700	1.000	0.700	0.700	0.650	0.000
MEAN VEL (m/s)	0.838	0.655	0.815	0.823	0.305	0.213	0.213	0.198	0.000
L/MEAN DEPTH (m)	0.675	1.178	0.880	0.778	0.808	0.490	0.380	0.373	-
L/MEAN WIDTH (m)	20.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	-
L/SEC. AREA (m2)	13.50	11.78	8.80	7.78	8.08	4.90	3.80	3.73	-
R/MEAN DEPTH (m)	1.293	1.040	0.793	0.783	0.710	0.380	0.378	0.185	-
R/MEAN WIDTH (m)	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00	-
R/SEC. AREA (m2)	12.93	10.40	7.93	7.83	7.10	3.80	3.78	3.70	-
S/AREA (m2)	26.43	22.18	16.73	15.60	15.18	8.70	7.58	7.43	-
TOTAL AREA (m2)	26.4	48.6	65.3	80.9	96.1	104.8	112.4	119.8	-
S/DISCHARGE(m3/s)	0.00	22.15	14.53	13.64	12.84	4.63	1.86	1.47	-
TOTAL DIS. (m3/s)	0.00	22.15	36.68	50.32	67.78	69.64	71.25	72.72	-
WATER LEVEL (f) :	7.92								
WATER LEVEL (m) :									
TOTAL DISCHARGE :	72.72								
MEAN VELOCITY(m/s) :									
MEAN VELOCITY(m/s) :									

WATER LEVEL (f) : 7.92 WATER LEVEL (m) : 2.42  
 TOTAL DISCHARGE : 72.72 MEAN VELOCITY(m/s) : 0.61

NOTE: 0.6 METHOD WAS USED NO. 6 - 8

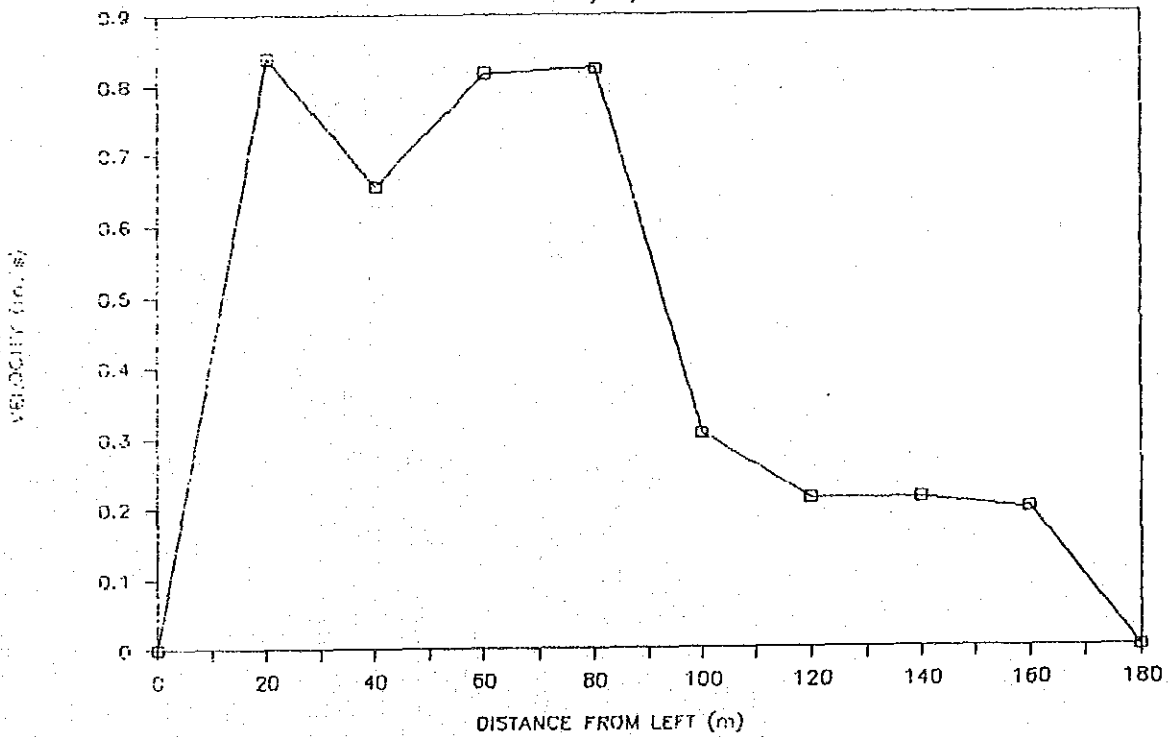
### WATER DEPTH (5-940)

AUG./08/90



### VELOCITY (5-940)

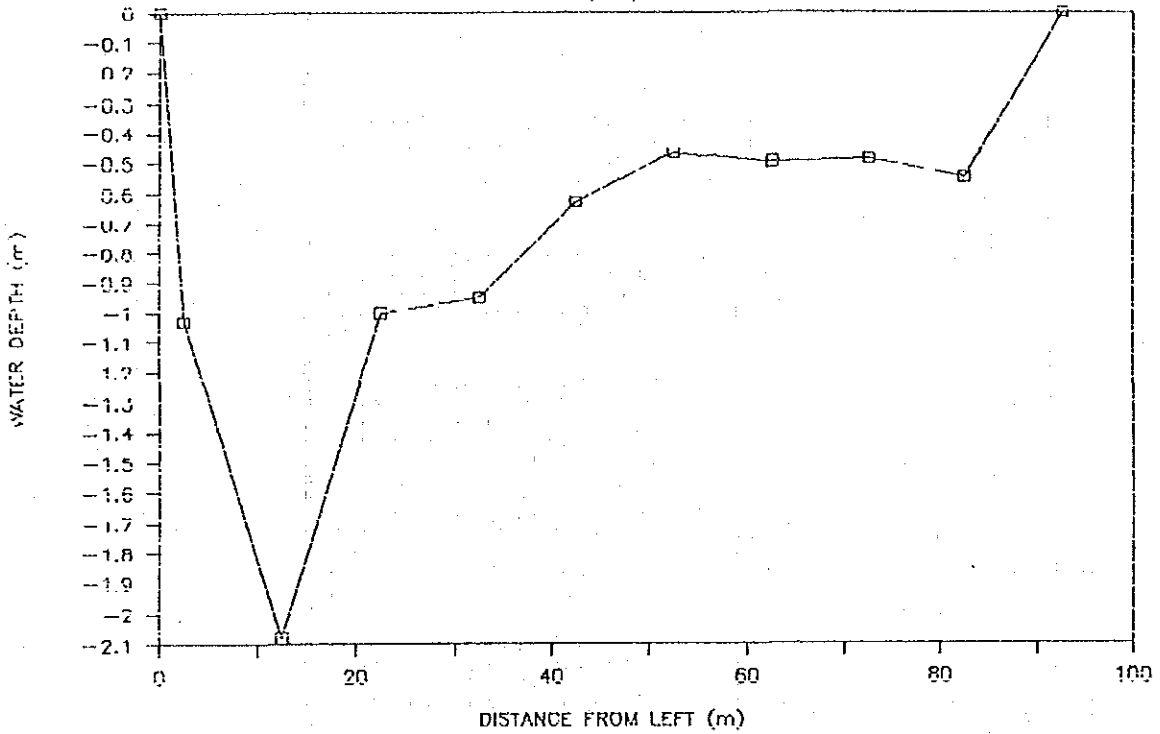
AUG./08/90



FLOW MEASUREMENT ST. : 5-940 LUANGWA BRIDGE SEP./18/90											
ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-R	
WATER DEPTH (m)	1.03	2.08	1.00	0.95	0.63	0.47	0.50	0.49	0.55	0.00	
SE/WIDTH (m)	2.50	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	
TOTAL SE/WIDTH(m)	2.50	12.50	22.50	32.50	42.50	52.50	62.50	72.50	82.50	92.50	
VELOCITY 2-1(f/s)	2.00	3.50	-	-	-	-	-	-	-	0.00	
VELOCITY 2-2(f/s)	2.00	3.50	-	-	-	-	-	-	-	0.00	
MEAN VEL.2 (f/s)	2.00	3.50	-	-	-	-	-	-	-	0.00	
VELOCITY 3-1(f/s)	1.80	3.00	2.50	1.20	0.55	0.50	0.65	0.60	0.40	0.00	
VELOCITY 3-2(f/s)	1.80	3.00	2.50	1.20	0.50	0.50	0.65	0.60	0.40	0.00	
MEAN VEL.3 (f/s)	1.80	3.00	2.50	1.20	0.53	0.50	0.65	0.60	0.40	0.00	
MEAN VEL (f/s)	1.900	3.250	2.500	1.200	0.525	0.500	0.650	0.600	0.400	0.000	
MEAN VEL (m/s)	0.579	0.991	0.762	0.368	0.160	0.152	0.198	0.183	0.122	0.000	
L/MEAN DEPTH (m)	0.515	1.818	1.270	0.963	0.710	0.510	0.493	0.493	0.535	-	
L/MEAN WIDTH (m)	2.50	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	-	
L/SEC. AREA (m2)	1.29	9.09	6.35	4.81	3.55	2.55	2.46	2.46	2.68	-	
R/MEAN DEPTH (m)	1.293	1.810	0.988	0.870	0.590	0.478	0.498	0.505	0.275	-	
R/MEAN WIDTH (m)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	10.00	-	
R/SEC. AREA (m2)	6.46	9.05	4.94	4.35	2.95	2.39	2.48	2.53	2.75	-	
S/AREA (m2)	7.75	18.14	11.29	9.18	6.50	4.94	4.95	4.99	5.43	-	
TOTAL AREA (m2)	7.8	25.9	37.2	46.3	52.8	57.8	62.7	67.7	73.1	-	
S/UNISCHARGE(m3/s)	4.48	17.97	8.60	3.35	1.04	0.75	0.98	0.91	0.88	-	
TOTAL DIS. (m3/s)	4.49	22.46	31.06	34.41	35.45	36.20	37.18	38.09	38.75	-	
WATER LEVEL (f)	5.97										WATER LEVEL (m) : 2.12
TOTAL DISCHARGE :	38.75										MEAN VELOCITY(m/s) : 0.53

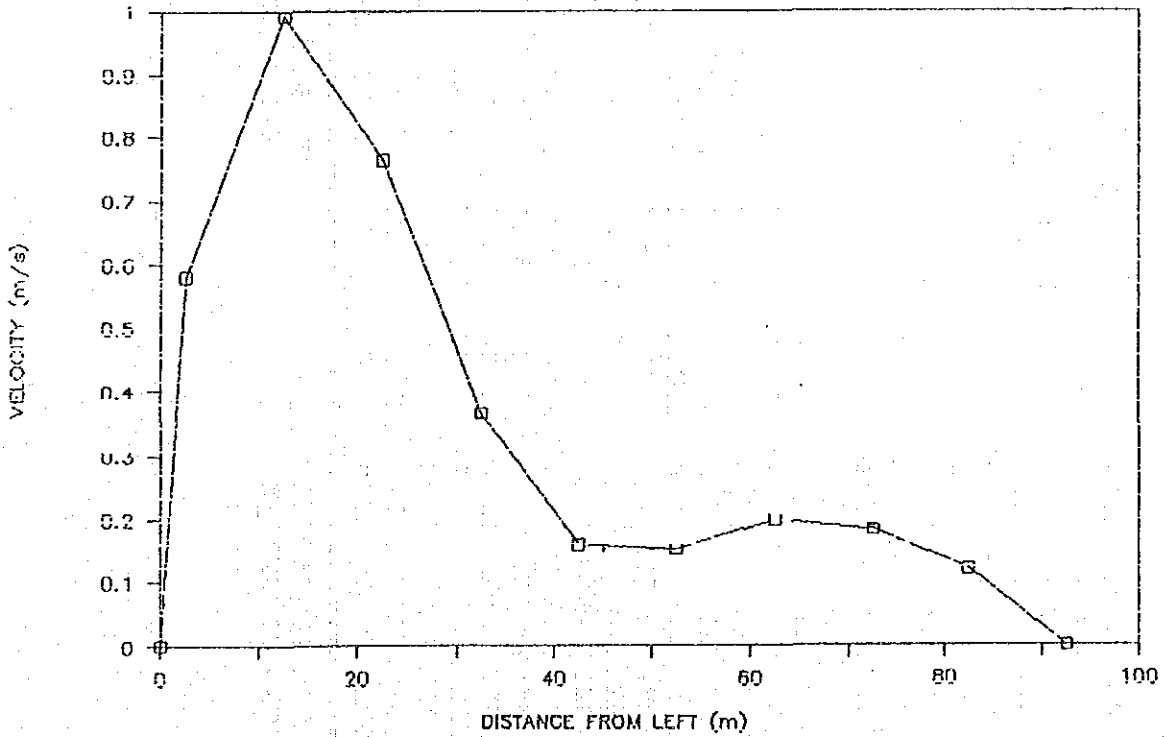
# WATER DEPTH (5-940)

SEP./18/90



# VELOCITY (5-940)

SEP./18/90



FLOW MEASUREMENT		ST. : 5-940 LUANGWA BRIDGE										OCT./12/'90	
ITEMS		NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-10		
WATER DEPTH	(m)	0.00	1.20	0.40	0.37	0.37	0.38	0.29	0.49	0.30	0.35	0.00	0.00
SE/WIDTH	(m)	0.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
TOTAL SE/WIDTH	(m)	0.00	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00	100.00
VELOCITY.2-1	(f/s)	0.00	1.90	-	-	-	-	-	-	-	-	0.00	0.00
VELOCITY.2-2	(f/s)	0.00	1.90	-	-	-	-	-	-	-	-	0.00	0.00
MEAN VEL.2	(f/s)	0.00	1.90	-	-	-	-	-	-	-	-	0.00	0.00
VELOCITY.8-1	(f/s)	0.00	1.55	2.60	2.00	1.50	1.80	1.30	1.35	1.20	1.00	0.00	0.00
VELOCITY.8-2	(f/s)	0.00	1.55	2.60	2.00	1.50	1.80	1.30	1.35	1.20	1.00	0.00	0.00
MEAN VEL.8	(f/s)	0.00	1.55	2.60	2.00	1.50	1.80	1.30	1.35	1.20	1.00	0.00	0.00
MEAN VEL	(f/s)	0.000	1.725	2.600	2.000	1.500	1.800	1.300	1.350	1.200	1.000	0.000	0.000
MEAN VEL	(m/s)	0.000	0.526	0.792	0.610	0.457	0.549	0.396	0.411	0.366	0.305	0.000	0.000
L/MEAN DEPTH	(m)	0.000	0.600	0.600	0.378	0.370	0.378	0.313	0.440	0.348	0.338	-	-
L/MEAN WIDTH	(m)	0.00	10.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
L/SEC. AREA	(m2)	0.00	6.00	3.00	1.89	1.85	1.89	1.56	2.20	1.74	1.69	-	-
R/MEAN DEPTH	(m)	0.000	1.000	0.393	0.370	0.373	0.358	0.340	0.443	0.313	0.175	-	-
R/MEAN WIDTH	(m)	0.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	10.00	-	-
R/SEC. AREA	(m2)	0.00	5.00	1.96	1.85	1.86	1.79	1.70	2.21	1.56	1.75	-	-
S/AREA	(m2)	0.00	11.00	4.96	3.74	3.71	3.68	3.26	4.41	3.30	3.44	-	-
TOTAL AREA	(m2)	0.0	11.0	16.0	19.7	23.4	27.1	30.4	34.8	38.1	41.5	-	-
S/DISCHARGE	(m3/s)	0.00	5.78	3.93	2.28	1.70	2.02	1.29	1.82	1.21	1.05	-	-
TOTAL DIS.	(m3/s)	0.00	5.78	9.72	11.99	13.69	15.71	17.00	18.82	20.02	21.07	-	-
WATER LEVEL	(f)	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL DISCHARGE	:	-	-	-	-	-	-	-	-	-	-	-	-
WATER LEVEL	(m)	-	-	-	-	-	-	-	-	-	-	-	-
MEAN VELOCITY	(m/s)	-	-	-	-	-	-	-	-	-	-	-	-

FLOW MEASUREMENT ST. : 5-940 LUANGWA BRIDGE OCT./12/'90

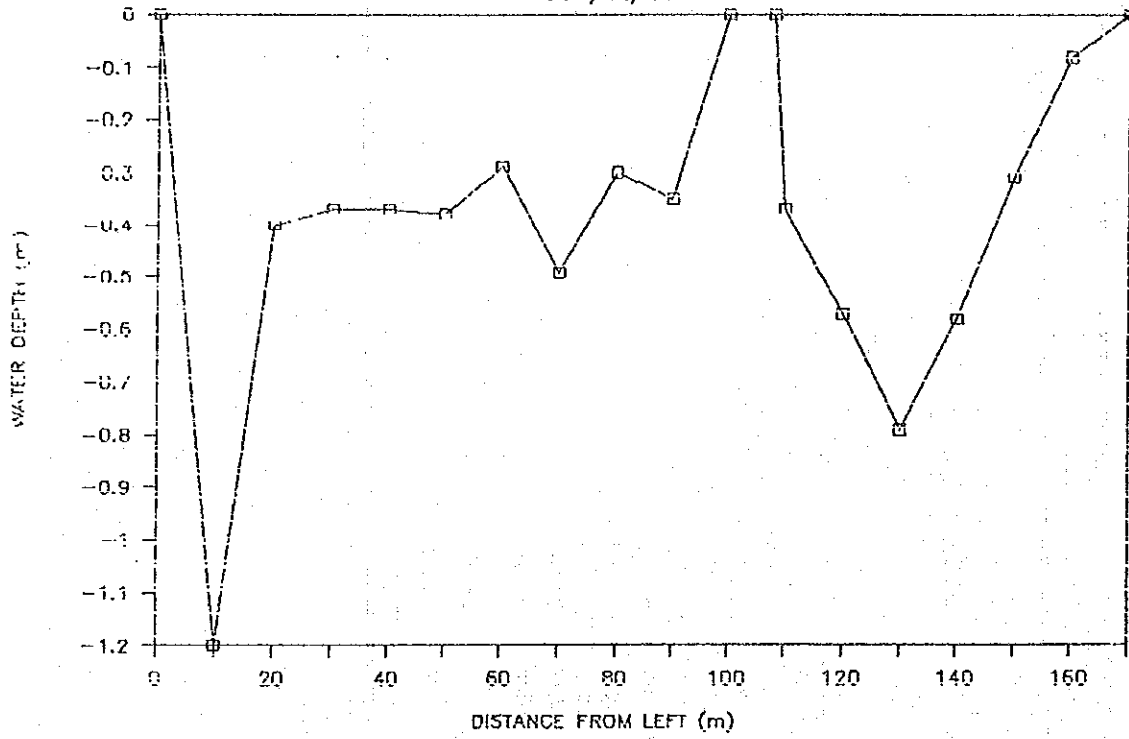
ITEMS	NO-11	NO-12	NO-13	NO-14	NO-15	NO-16	NO-17	NO-R
WATER DEPTH (m)	0.00	0.37	0.57	0.79	0.58	0.31	0.08	0.00
SE/WIDTH (m)	8.00	2.00	10.00	10.00	10.00	10.00	10.00	10.00
TOTAL SE/WIDTH(m)	108.00	110.00	120.00	130.00	140.00	150.00	160.00	170.00
VELOCITY. 2-1 (f/s)	0.00	-	-	-	-	-	-	0.00
VELOCITY. 2-2 (f/s)	0.00	-	-	-	-	-	-	0.00
MEAN VEL. 2 (f/s)	0.00	-	-	-	-	-	-	0.00
VELOCITY. 8-1 (f/s)	0.00	1.50	1.55	2.00	1.90	1.50	0.45	0.00
VELOCITY. 8-2 (f/s)	0.00	1.50	1.55	2.00	1.90	1.50	0.45	0.00
MEAN VEL. 8 (f/s)	0.00	1.50	1.55	2.00	1.90	1.50	0.45	0.00
MEAN VEL (f/s)	0.000	1.500	1.550	2.000	1.900	1.500	0.450	0.000
MEAN VEL (m/s)	0.000	0.457	0.472	0.610	0.579	0.457	0.137	0.000
L/MEAN DEPTH (m)	0.000	0.185	0.520	0.735	0.633	0.378	0.138	-
L/MEAN WIDTH (m)	0.00	2.00	5.00	5.00	5.00	5.00	5.00	-
L/SEC. AREA (m2)	0.00	0.37	2.60	3.68	3.16	1.89	0.69	-
R/MEAN DEPTH (m)	0.000	0.420	0.625	0.738	0.513	0.253	0.040	-
R/MEAN WIDTH (m)	0.00	5.00	5.00	5.00	5.00	5.00	10.00	-
R/SEC. AREA (m2)	0.00	2.10	3.13	3.69	2.56	1.26	0.40	-
S/AREA (m2)	0.00	2.47	5.73	7.36	5.73	3.15	1.09	-
TOTAL AREA (m2)	41.5	44.0	49.7	57.1	62.8	65.9	67.0	-
S/DISCHARGE (m3/s)	0.00	1.13	2.70	4.49	3.32	1.44	0.15	-
TOTAL DIS. (m3/s)	21.07	22.20	24.91	29.39	32.71	34.15	34.30	-

WATER LEVEL (f) : 6.67 WATER LEVEL (m) : 2.03  
 TOTAL DISCHARGE : 34.30 MEAN VELOCITY(m/s) : 0.51

\*NOTE: 0.6 METHOD WAS DONE AT NO.12 - 17

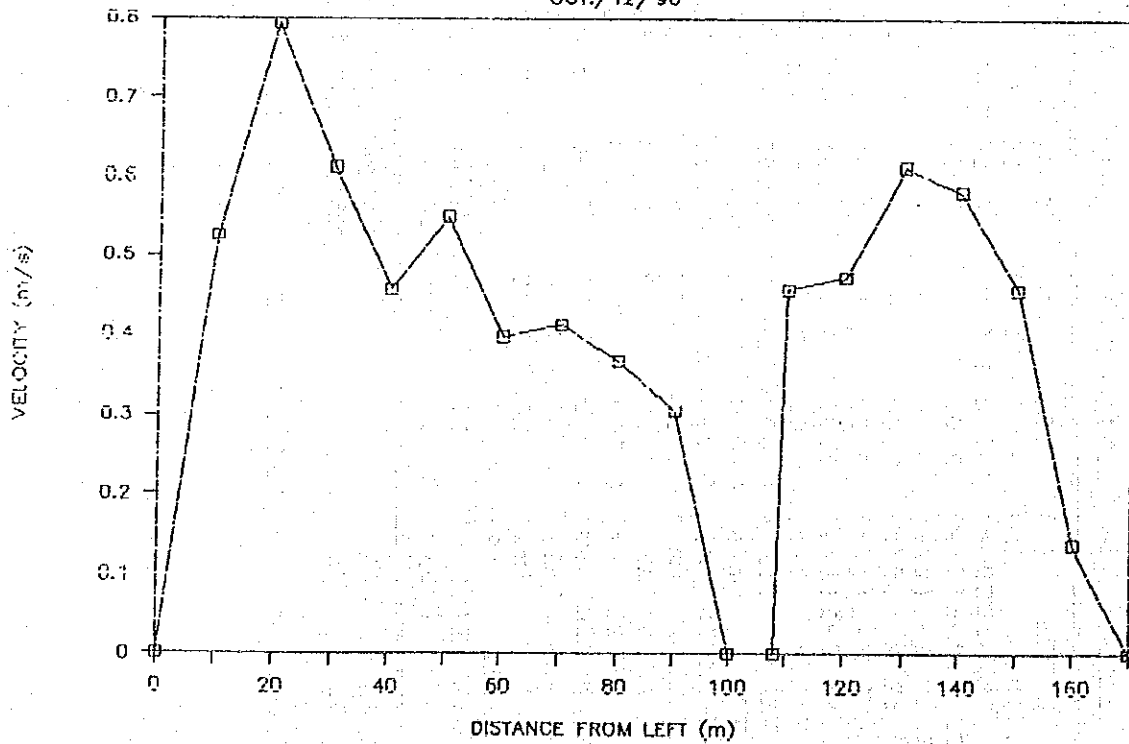
# WATER DEPTH (5-940)

OCT./12/90



# VELOCITY (5-940)

OCT./12/90



ITEMS	ND-1	ND-2	ND-3	ND-4	ND-5	ND-6	ND-7	ND-8	ND-R
WATER DEPTH (m)	0.00	0.38	0.20	0.68	0.46	0.46	0.88	0.82	0.00
SE/WIDTH (m)	0.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
TOTAL SE/WIDTH(m)	0.00	21.10	41.10	61.10	81.10	101.10	121.10	141.10	161.10
VELOCITY.2-1(f/s)	0.00	-	-	1.50	-	-	2.30	2.20	0.00
VELOCITY.2-2(f/s)	0.00	-	-	1.50	-	-	2.30	2.20	0.00
MEAN VEL.2 (f/s)	0.00	-	-	1.50	-	-	2.30	2.20	0.00
VELOCITY.8-1(f/s)	0.00	1.50	1.40	1.50	1.45	2.00	2.10	2.00	0.00
VELOCITY.8-2(f/s)	0.00	1.50	1.40	1.50	1.45	2.00	2.10	2.00	0.00
MEAN VEL.8 (f/s)	0.00	1.50	1.40	1.50	1.45	2.00	2.10	2.00	0.00
MEAN VEL (f/s)	0.000	1.500	1.400	1.500	1.475	2.000	2.100	2.175	2.100
MEAN VEL (m/s)	0.000	0.457	0.427	0.457	0.450	0.610	0.640	0.663	0.640
L/MEAN DEPTH (m)	0.000	0.900	0.435	0.245	0.560	0.515	0.460	0.775	0.835
L/MEAN WIDTH (m)	0.00	1.10	10.00	10.00	10.00	10.00	10.00	10.00	10.00
L/SEC. AREA (m2)	0.00	0.33	4.35	2.45	5.60	5.15	4.60	7.75	8.35
R/MEAN DEPTH (m)	0.000	0.545	0.335	0.320	0.625	0.460	0.565	0.865	0.410
R/MEAN WIDTH (m)	0.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00
R/SEC. AREA (m2)	0.00	5.45	3.35	3.20	6.25	4.60	5.65	8.65	8.20
S/AREA (m2)	0.00	5.78	7.70	5.65	11.85	9.75	10.25	16.40	16.55
TOTAL AREA (m2)	0.0	5.8	13.5	19.1	31.0	40.7	51.0	67.4	83.9
S/DIS. (m/s)	0.00	2.64	3.29	2.58	5.33	5.94	6.56	10.87	10.59
TOTAL DIS. (m3/s)	0.00	2.64	5.93	8.51	13.84	19.78	26.34	37.22	47.81

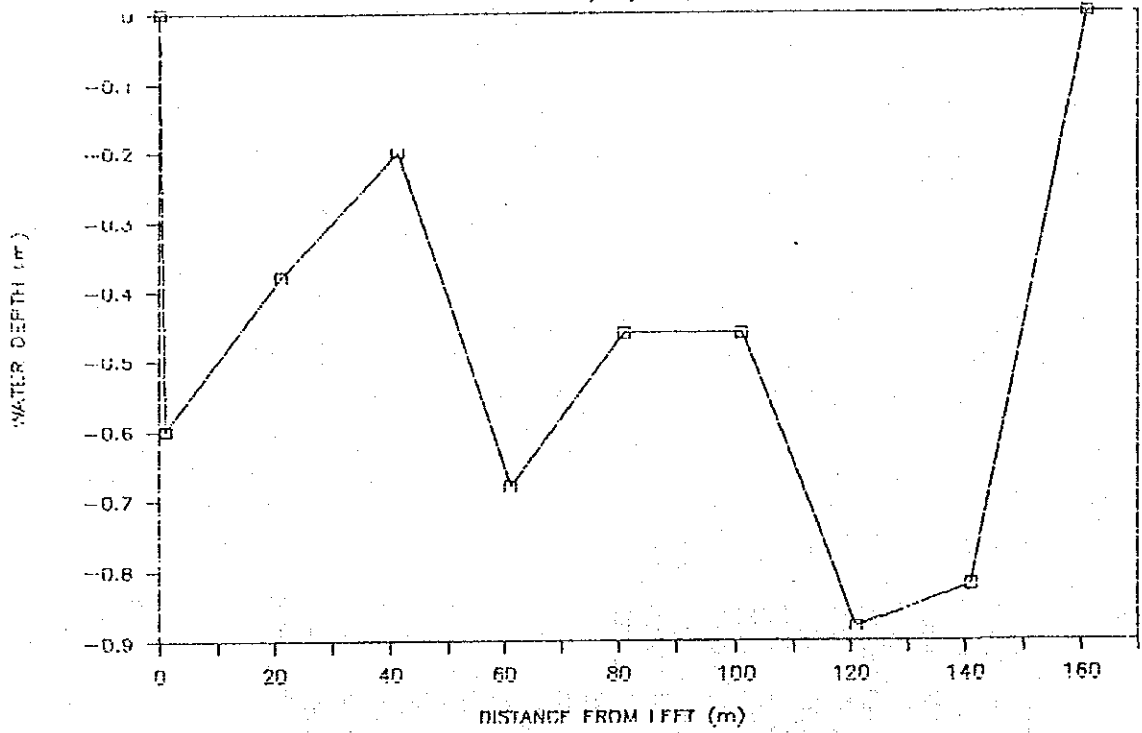
WATER LEVEL (f) : 6.62 WATER LEVEL (m) : 2.02  
 TOTAL DIS. (m3/s) : 47.81 MEAN VELOCITY (m/s) : 0.57

NOTE: SEVERAL POINTS ARE ADAPTED BY USE OF 0.6 METHOD.



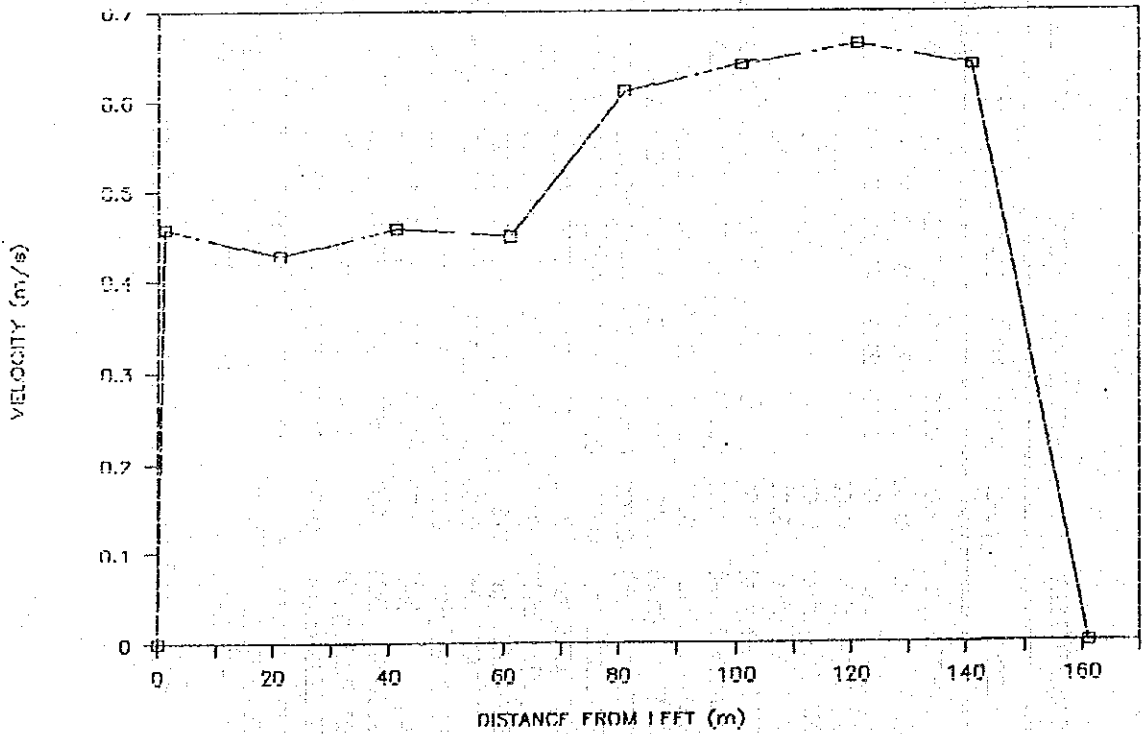
# WATER DEPTH (5-940)

NOV./30/90



# VELOCITY (5-940)

NOV./30/90



FLOW MEASUREMENT ST. : 5-940 LUANGWA BRIDGE

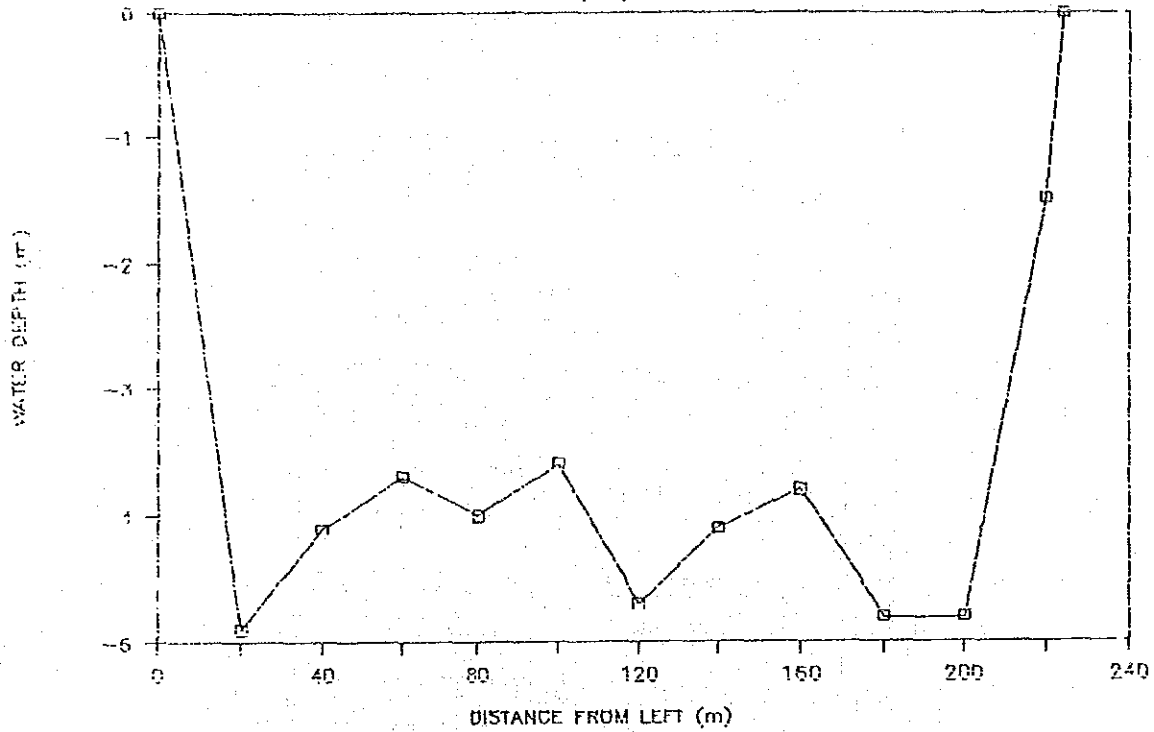
JAN./18/'91

ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-10	NO-11	NO-R	
WATER DEPTH (m)	4.90	4.11	3.70	4.00	3.60	4.70	4.10	3.80	4.80	4.80	4.80	1.50	0.00
SE/WIDTH (m)	0.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	4.00
TOTAL SE/WIDTH(m)	0.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00	180.00	200.00	220.00	224.00	0.00
VELOCITY.2-1(m/s)	0.80	1.60	1.50	1.55	1.65	1.60	1.60	1.70	1.70	1.40	1.40	0.08	0.00
VELOCITY.2-2(m/s)	0.00	1.20	1.55	1.50	1.70	1.70	1.70	1.65	1.60	1.60	1.60	0.07	0.00
MEAN VEL.2 (m/s)	0.00	1.00	1.58	1.53	1.68	1.65	1.65	1.68	1.65	1.50	1.50	0.08	0.00
VELOCITY.8-1(m/s)	0.00	0.60	1.00	1.00	1.20	1.00	1.10	1.40	1.20	1.30	1.30	0.05	0.00
VELOCITY.8-2(m/s)	0.00	0.60	0.98	1.25	1.10	0.90	1.10	1.45	1.25	1.20	1.20	0.05	0.00
MEAN VEL.8 (m/s)	0.00	0.60	0.99	1.23	1.05	0.95	1.10	1.43	1.23	1.25	1.25	0.05	0.00
MEAN VEL (f/s)													
MEAN VEL (m/s)	0.000	0.800	1.283	1.363	1.288	1.300	1.375	1.550	1.438	1.375	1.375	0.063	0.000
L/MEAN DEPTH (m)	0.000	2.450	4.308	3.803	3.925	3.700	4.425	4.250	3.875	4.550	4.800	2.325	-
L/MEAN WIDTH (m)	0.00	20.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	-
L/SEC. AREA (m2)	0.00	49.00	43.08	38.03	39.25	37.00	44.25	42.50	38.75	45.50	48.00	23.25	-
R/MEAN DEPTH (m)	0.000	4.703	4.008	3.775	3.900	4.550	4.025	4.050	4.800	3.975	3.975	0.750	-
R/MEAN WIDTH (m)	0.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	4.00	-
R/SEC. AREA (m2)	0.00	47.03	40.08	37.75	39.00	38.75	40.25	40.50	48.00	39.75	39.75	3.00	-
S/AREA (m2)	0.00	96.03	83.15	75.78	78.25	75.75	89.75	82.75	79.25	87.75	87.75	26.25	-
TOTAL AREA (m2)	0.0	96.0	179.2	255.0	333.2	409.0	498.7	581.5	660.7	754.2	842.0	868.2	-
S/DISCHARGE(m3/s)	0.00	76.82	105.64	103.24	100.75	107.94	116.68	113.78	122.84	134.41	120.66	1.64	-
TOTAL DIS. (m3/s)	0.00	76.82	183.46	286.70	387.45	495.99	612.07	725.85	848.69	983.09	1103.75	1105.39	-

WATER LEVEL (f) : 18.28  
 WATER LEVEL (m) : 5.57  
 TOTAL DISCHARGE : 1105.39  
 MEAN VELOCITY(m/s) : 1.27

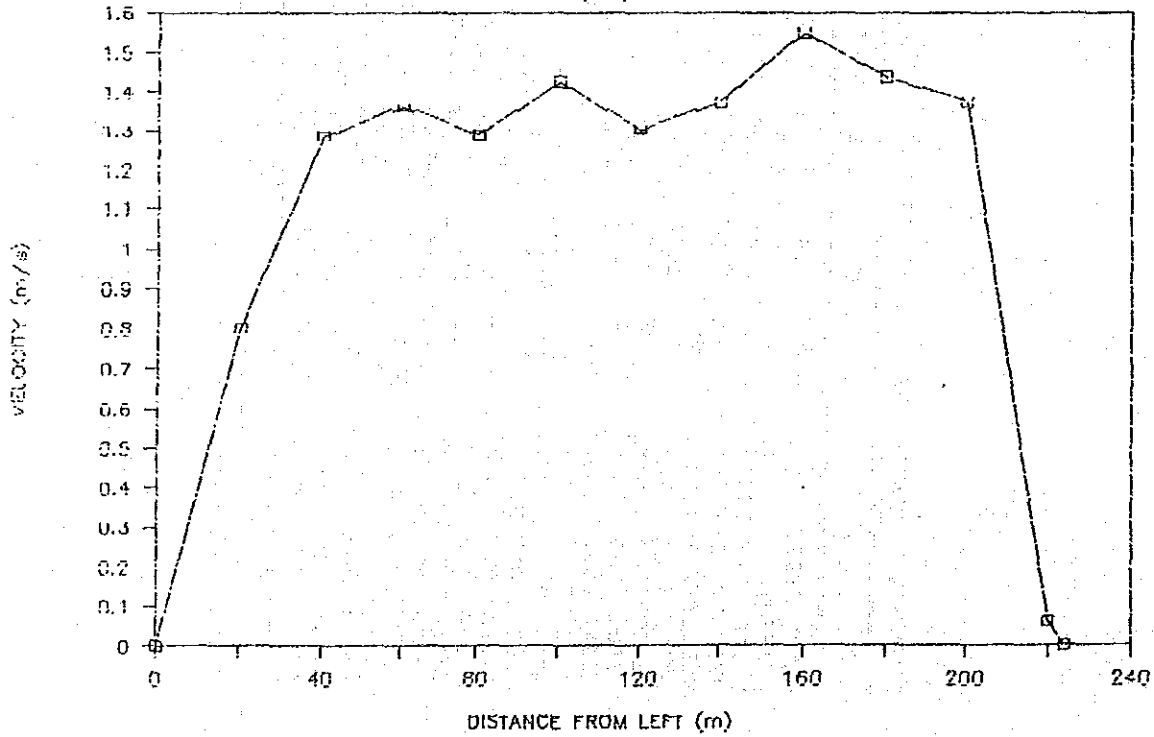
# WATER DEPTH (5-940)

JAN./18/91



# VELOCITY (5-940)

JAN./18/91



FLOW MEASUREMENT ST. : 5-940 LUMINAWA BRIDGE FEB./28/'91

ITEMS	ND-1	ND-2	ND-3	ND-4	ND-5	ND-6	ND-7	ND-8	ND-9	ND-10	ND-11	ND-12	ND-13	ND-14
WATER DEPTH (m)	3.70	3.30	2.70	2.55	2.00	2.20	2.20	2.20	1.70	2.20	1.90	1.80	1.80	1.45
SS WIDTH (m)	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
TOTAL SEAWIDTH(m)	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
WATER VELOCITY (f/s)	0.90	3.00	3.50	3.70	4.00	4.10	4.50	4.05	4.00	3.90	3.50	3.60	3.50	3.60
VELOCITY 2-2(f/s)	0.90	3.10	3.00	3.50	4.00	4.10	4.00	4.05	4.00	3.95	3.50	3.60	3.40	3.50
MEAN VEL. 2 (f/s)	0.90	3.05	3.25	3.60	4.00	4.10	4.25	4.05	4.00	3.93	3.50	3.60	3.45	3.55
VELOCITY 8-1(f/s)	0.65	2.60	3.00	3.00	3.50	3.60	3.50	3.00	3.70	3.00	2.50	2.80	2.80	2.70
VELOCITY 8-2(f/s)	0.65	2.60	3.00	3.00	3.50	3.60	3.50	3.00	3.70	3.00	2.50	2.80	2.80	2.70
MEAN VEL. 8 (f/s)	0.65	2.60	3.00	3.00	3.50	3.60	3.50	3.00	3.70	3.00	2.50	2.80	2.80	2.70
MEAN VEL (f/s)	0.690	2.775	3.125	3.300	3.750	3.650	3.875	3.525	3.850	3.463	3.000	3.200	3.125	3.125
MEAN VEL (m/s)	0.000	0.236	0.891	1.006	1.143	1.173	1.181	1.074	1.173	1.055	0.914	0.975	0.953	0.953
LAMEAN DEPTH (m)	0.000	1.850	3.400	2.650	2.588	2.138	2.200	2.200	1.825	2.075	1.975	1.825	1.650	1.488
LAMEAN WIDTH (m)	0.00	10.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
L/SEC. AREA (m2)	0.00	18.50	17.00	12.94	10.69	10.75	11.00	11.00	9.13	10.38	9.88	9.13	8.25	7.44
R/MEAN DEPTH (m)	0.000	3.600	3.150	2.663	2.413	2.050	2.200	2.075	1.825	2.125	1.875	1.750	1.563	1.438
R/MEAN WIDTH (m)	0.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
R/SEC. AREA (m2)	0.00	18.00	15.75	13.31	12.08	10.25	11.00	10.38	9.13	10.63	9.38	8.75	7.81	7.19
S/AREA (m2)	0.00	36.50	32.75	27.56	25.00	20.94	21.75	22.00	21.38	18.25	19.25	17.88	16.06	14.63
TOTAL AREA (m2)	0.0	36.5	69.3	121.8	142.8	154.5	186.5	207.9	226.1	247.1	266.4	284.3	300.3	314.9
S/VELOCITY(m/s)	0.00	8.62	28.20	26.25	25.15	23.93	25.52	22.97	21.42	22.16	17.60	17.43	15.30	13.93
TOTAL DIS. (m3/s)	0.00	8.62	36.82	63.08	88.22	112.15	137.68	163.66	186.83	208.04	230.20	247.81	265.24	284.47

WATER LEVEL (f) : 5.62 WATER LEVEL (m) : 2.02  
 DISCHARGE : 452.47 MEAN VELOCITY(m/s) : 0.95

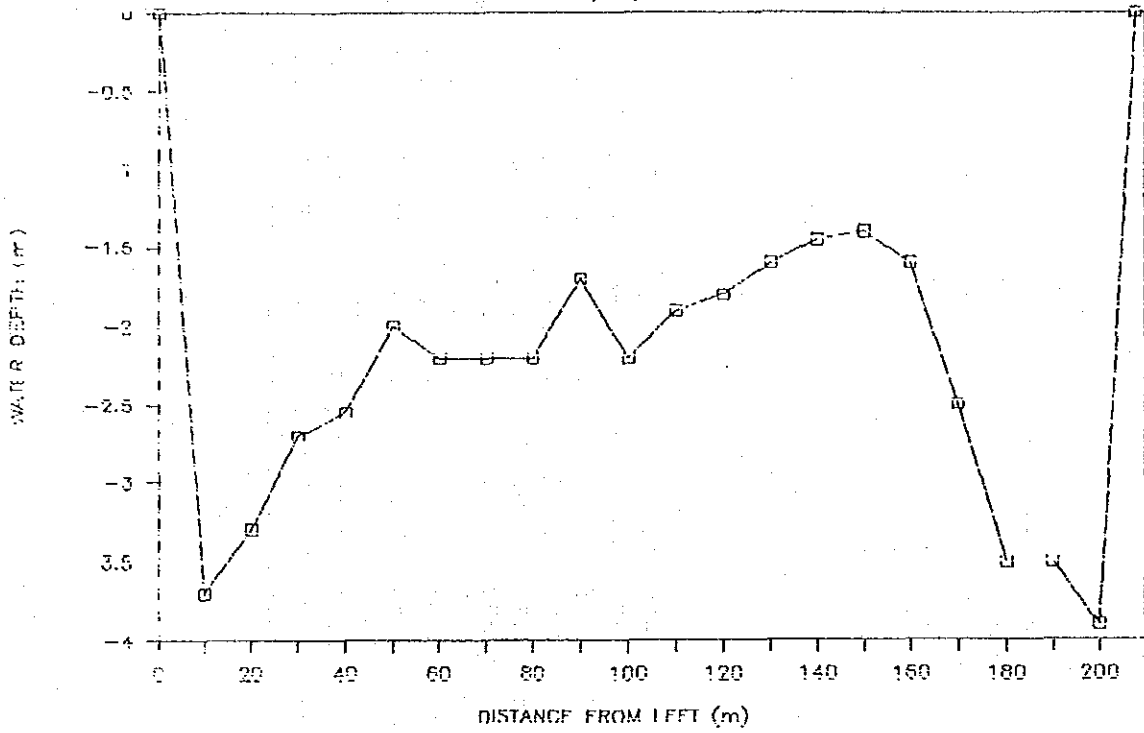
FLOW MEASUREMENT ST. : S-840 LUMOGWA BRIDGE FEB. 28/31

ITEMS	ND-15	ND-16	ND-17	ND-18	ND-19	ND-20	ND-R
WATER DEPTH (m)	1.40	1.60	2.50	3.50	3.50	3.90	0.00
SEAWIDTH (m)	10.00	10.00	10.00	10.00	10.00	10.00	0.00
TOTAL SEAWIDTH(m)	150.00	160.00	170.00	180.00	190.00	200.00	208.00
VEL.	3.80	3.80	4.50	3.50	3.50	3.00	0.00
VELOCITY 2-2 (f/s)	3.50	3.80	4.00	3.50	3.80	3.00	0.00
MEAN VEL. 2 (f/s)	3.65	3.80	4.25	3.50	3.65	3.00	0.00
VELOCITY 8-1 (f/s)	2.80	3.00	3.00	3.00	3.05	2.50	0.00
VELOCITY 8-2 (f/s)	2.80	3.00	3.00	3.00	3.05	2.50	0.00
MEAN VEL. 8 (f/s)	2.80	3.00	3.00	3.00	3.05	2.50	0.00
MEAN VEL (f/s)	3.225	3.400	3.625	3.250	3.350	2.750	0.000
MEAN VEL (m/s)	0.983	1.086	1.105	0.991	1.021	0.838	0.000
LAMEAN DEPTH (m)	1.413	1.550	2.275	3.250	3.500	3.800	-
LAMEAN WIDTH (m)	5.00	5.00	5.00	5.00	5.00	5.00	-
L/SEC. AREA (m2)	7.06	7.75	11.38	16.25	17.50	19.00	-
RAMEAN DEPTH (m)	1.450	1.825	2.750	3.500	3.600	1.950	-
RAMEAN WIDTH (m)	5.00	5.00	5.00	5.00	5.00	8.00	-
R/SEC. AREA (m2)	7.25	9.13	13.75	17.50	18.00	15.60	-
S/AREA (m2)	14.31	16.88	25.13	33.75	35.50	34.60	-
TOTAL AREA (m2)	303.3	346.1	371.3	405.0	440.5	475.1	-
S/ANISCHARGE(m3/s)	14.07	17.48	27.76	33.43	36.25	29.00	-
TOTAL DIS. (m3/s)	377.54	326.03	353.79	367.22	423.47	482.67	-

WATER LEVEL (f) :  
 WIND DISCHARGE :

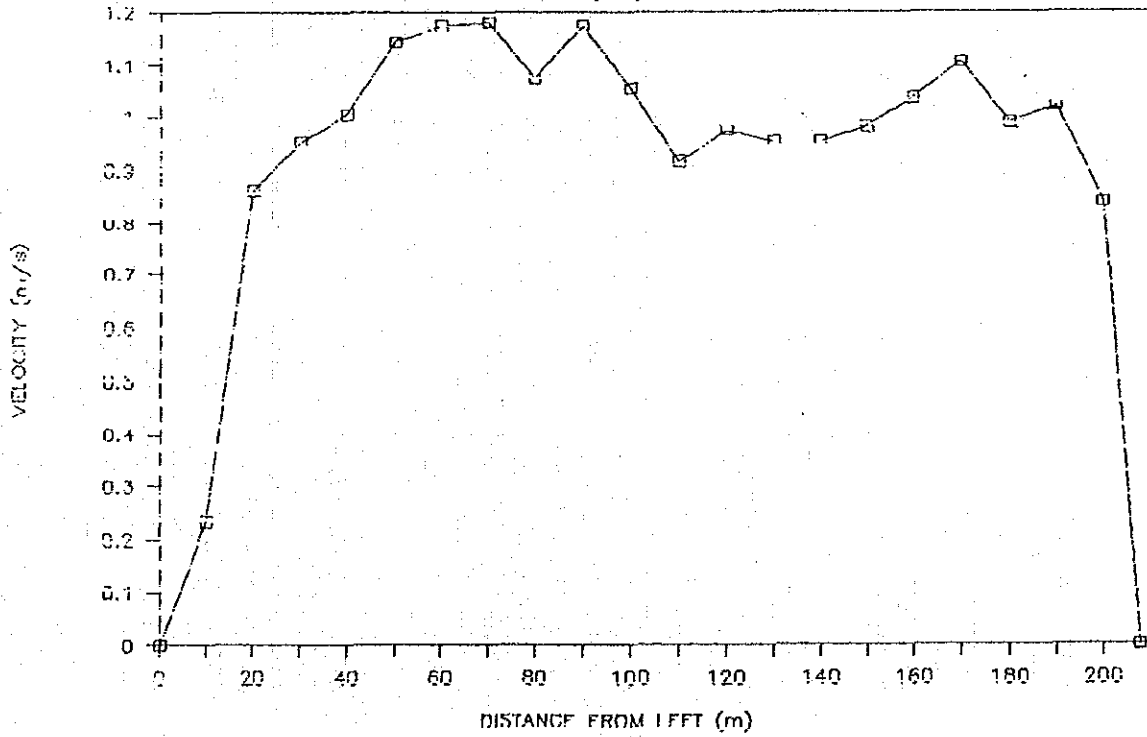
# WATER DEPTH (5-940)

FEB./28/'97



# VELOCITY (5-940)

FEB./28/'97



30/JUL/91

FLOW MEASUREMENT ST. : 5-940 LUANGWA BRIDGE

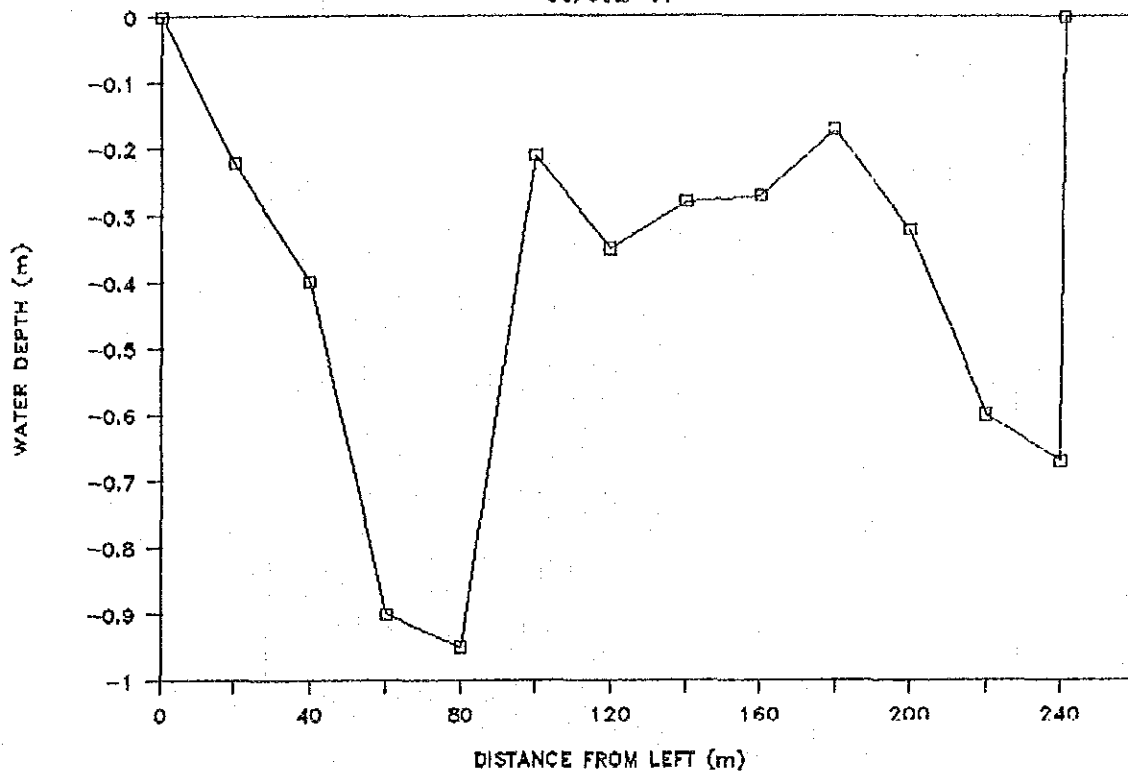
ITEMS	NO-L	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-10	NO-11	NO-12	NO-R
WATER DEPTH (m)	0.00	0.22	0.40	0.90	0.95	0.21	0.35	0.28	0.27	0.17	0.32	0.60	0.67	0.00
SE/WIDTH (m)	0.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	1.50
TOTAL SE/WIDTH(m)	0.00	20.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00	180.00	200.00	220.00	240.00	241.50
VELOCITY.6-1(f/s)	0.00	1.15	1.70	2.00	2.50	1.90	1.45	1.40	1.20	1.80	1.50	1.20	0.95	0.00
VELOCITY.6-2(f/s)	0.00	1.20	1.70	2.05	2.55	1.90	1.40	1.35	1.15	1.80	1.70	1.40	0.95	0.00
MEAN VEL.6 (f/s)	0.00	1.18	1.70	2.03	2.53	1.90	1.43	1.38	1.18	1.80	1.60	1.30	0.95	0.00
VELOCITY.8-1(f/s)	0.00	-	-	-	-	-	-	-	-	-	-	-	-	0.00
VELOCITY.8-2(f/s)	0.00	-	-	-	-	-	-	-	-	-	-	-	-	0.00
MEAN VEL.8 (f/s)	0.00	-	-	-	-	-	-	-	-	-	-	-	-	0.00
MEAN VEL (f/s)	0.000	1.175	1.700	2.025	2.525	1.900	1.425	1.375	1.175	1.800	1.600	1.300	0.950	0.000
MEAN VEL (m/s)	0.000	0.358	0.518	0.617	0.770	0.579	0.434	0.419	0.358	0.549	0.488	0.396	0.290	0.000
L/MEAN DEPTH (m)	0.000	0.110	0.355	0.775	0.938	0.395	0.315	0.298	0.273	0.195	0.283	0.530	0.653	-
L/MEAN WIDTH (m)	0.00	20.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	-
L/SEC. AREA (m2)	0.00	2.20	3.55	7.75	9.38	3.95	3.15	2.98	2.73	1.95	2.83	5.30	6.53	-
R/MEAN DEPTH (m)	0.000	0.265	0.525	0.913	0.765	0.245	0.333	0.278	0.245	0.208	0.390	0.618	0.335	-
R/MEAN WIDTH (m)	0.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	-
R/SEC. AREA (m2)	0.00	2.65	5.25	9.13	7.65	2.45	3.33	2.78	2.45	2.08	3.90	6.18	0.50	-
S/AREA (m2)	0.00	4.85	8.80	16.88	17.03	6.40	6.48	5.75	5.18	4.03	6.73	11.48	7.03	-
TOTAL AREA (m2)	0.0	4.9	13.7	30.5	47.6	54.0	60.4	66.2	71.4	75.4	82.1	93.6	100.6	-
S/DISCHARGE(m3/s)	0.00	1.74	4.56	10.42	13.10	3.71	2.81	2.41	1.85	2.21	3.28	4.55	2.03	-
TOTAL DIS. (m3/s)	0.00	1.74	6.30	16.71	29.82	33.52	36.33	38.74	40.60	42.81	46.08	50.63	52.67	-

WATER LEVEL (f) : 7.61                      WATER LEVEL (m) : 2.32  
 TOTAL DISCHARGE : 52.67                      MEAN VELOCITY(m/s) : 0.52

NOTE: ALL POINTS ARE ADAPTED BY USE OF 0.6 METHOD.

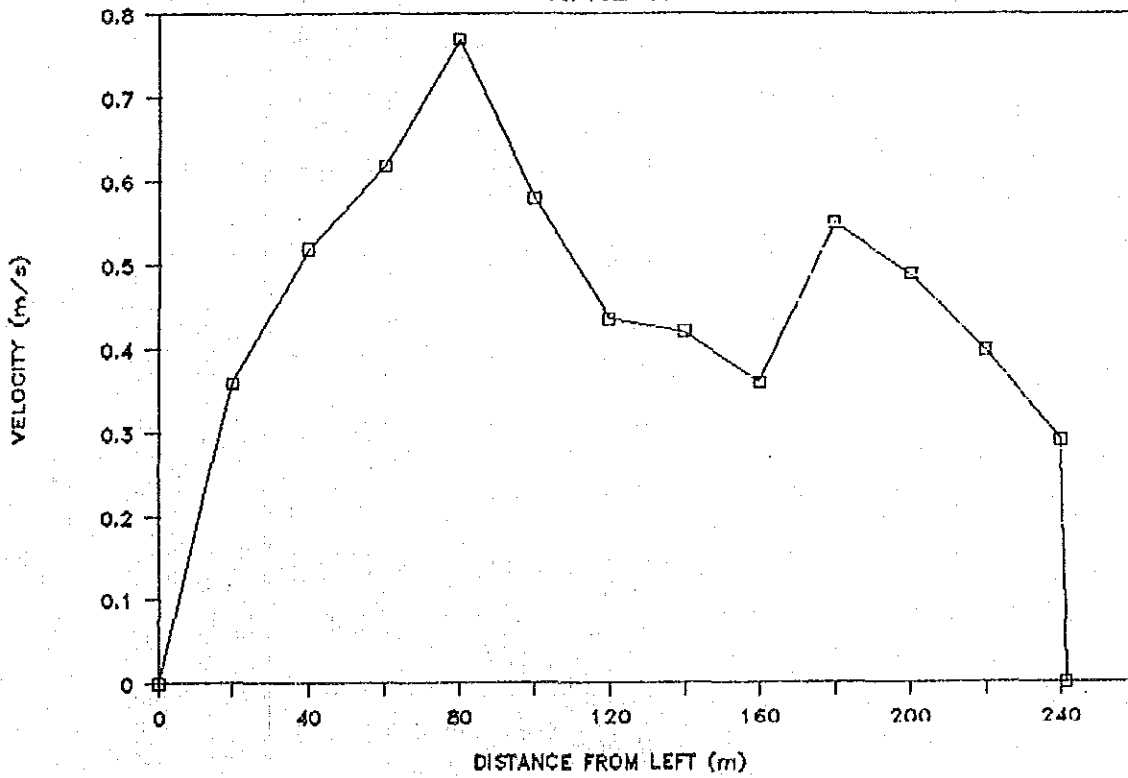
# WATER DEPTH (5-940)

30/JUL/'91



# VELOCITY (5-940)

30/JUL/'91





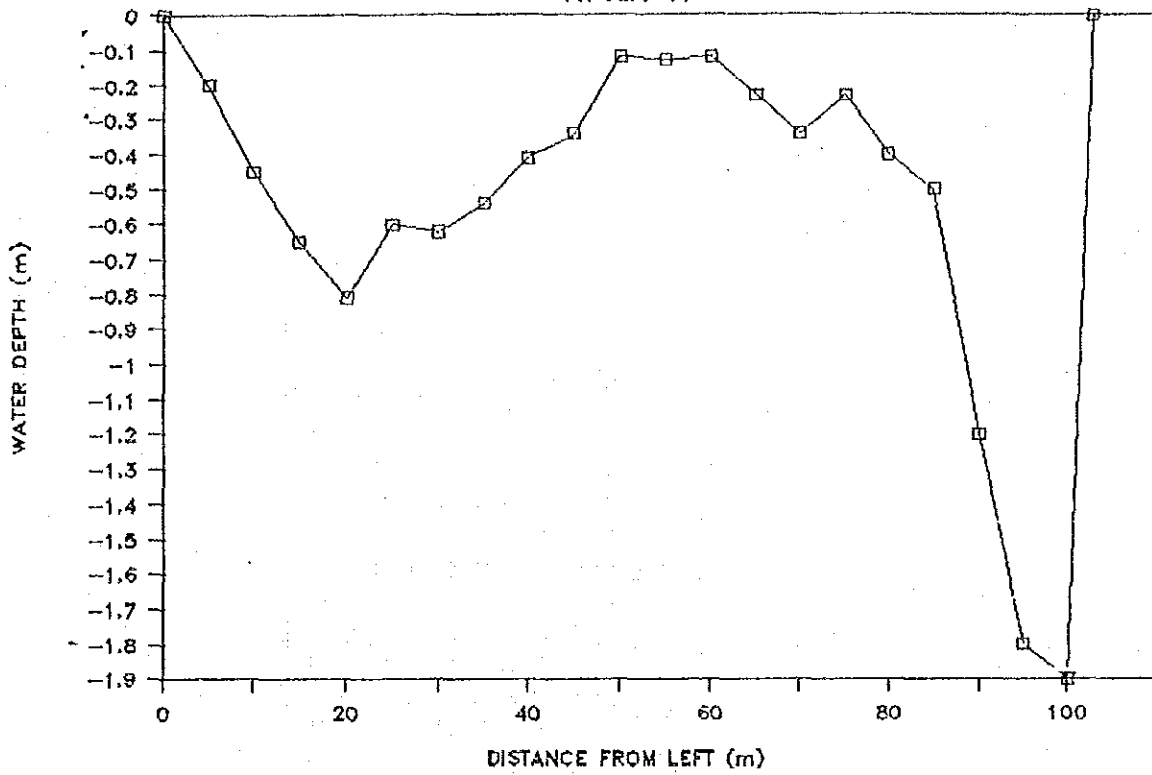
ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-10	NO-11	NO-12	NO-13	NO-14	NO-15	NO-16	NO-17	NO-18	NO-19	NO-20	NO-R	
WATER DEPTH (m)	0.00	0.20	0.45	0.65	0.81	0.60	0.62	0.54	0.41	0.34	0.12	0.13	0.12	0.23	0.34	0.23	0.40	0.50	1.20	1.90	1.90	0.00
SE/WIDTH (m)	0.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.00
TOTAL SE/WIDTH(m)	0.00	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00	100.00	103.00
VELOCITY.5-1(f/s)	0.00	1.20	2.00	2.30	2.00	1.90	1.75	1.30	1.35	1.45	1.00	1.70	1.70	1.55	1.20	1.20	0.80	1.00	1.20	1.30	1.20	0.00
VELOCITY.6-2(f/s)	0.00	1.15	1.95	2.20	2.00	1.90	1.75	1.30	1.30	1.45	1.00	1.70	1.70	1.50	1.25	1.20	0.80	1.00	1.20	1.30	1.20	0.00
MEAN VEL.5 (f/s)	0.00	1.18	1.98	2.25	2.00	1.90	1.75	1.30	1.33	1.45	1.00	1.70	1.70	1.53	1.23	1.20	0.80	1.00	1.20	1.30	1.20	0.00
VELOCITY.8-1(f/s)	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
VELOCITY.8-2(f/s)	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
MEAN VEL.8 (f/s)	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
MEAN VEL (f/s)	0.000	1.175	1.975	2.250	2.000	1.900	1.750	1.300	1.325	1.450	1.000	1.700	1.700	1.525	1.225	1.200	0.800	1.000	1.000	1.100	1.100	0.00
MEAN VEL (m/s)	0.000	0.358	0.602	0.685	0.610	0.579	0.533	0.396	0.404	0.442	0.305	0.518	0.518	0.465	0.373	0.366	0.244	0.305	0.305	0.335	0.335	0.00
L/MEAN DEPTH (m)	0.000	0.100	0.388	0.600	0.770	0.653	0.615	0.560	0.443	0.368	0.175	0.128	0.123	0.203	0.313	0.258	0.358	0.475	1.025	1.650	1.875	0.00
L/MEAN WIDTH (m)	0.00	5.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
L/SEC. AREA (m2)	0.00	0.50	0.97	1.50	1.93	1.63	1.54	1.40	1.11	0.89	0.44	0.32	0.31	0.51	0.78	0.64	0.89	1.19	2.56	4.13	4.89	-
R/MEAN DEPTH (m)	0.000	0.263	0.500	0.690	0.758	0.605	0.600	0.508	0.393	0.285	0.123	0.123	0.148	0.258	0.313	0.273	0.425	0.675	1.350	1.625	0.950	-
R/MEAN WIDTH (m)	0.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	3.00
R/SEC. AREA (m2)	0.00	0.66	1.25	1.73	1.89	1.51	1.50	1.27	0.98	0.71	0.31	0.32	0.37	0.64	0.78	0.68	1.06	1.69	3.38	4.56	2.85	-
S/AREA (m2)	0.00	1.16	2.22	3.23	3.82	3.14	3.04	2.87	2.09	1.61	0.74	0.64	0.68	1.15	1.56	1.33	1.96	2.98	5.94	8.89	7.54	-
TOTAL AREA (m2)	0.0	1.2	3.4	6.6	10.4	13.6	16.6	19.3	21.4	23.0	23.7	24.3	25.0	26.2	27.7	29.1	31.0	33.9	39.8	48.5	56.1	-
S/DISCHARGE(m3/s)	0.00	0.41	1.34	2.21	2.33	1.82	1.82	1.06	0.84	0.71	0.23	0.33	0.35	0.53	0.58	0.48	0.48	0.88	1.81	2.91	2.53	-
TOTAL DIS. (m3/s)	0.00	0.41	1.75	3.96	6.29	6.11	9.73	10.79	11.63	12.34	12.57	12.90	13.25	13.78	14.37	14.85	15.33	16.20	18.61	20.93	23.45	-

WATER LEVEL (f) : 6.69 WATER LEVEL (m) : 2.04  
 TOTAL DISCHARGE : 23.45 MEAN VELOCITY(m/s) : 0.42

NOTE: ALL POINTS ARE ADAPTED BY USE OF 0.6 METHOD.

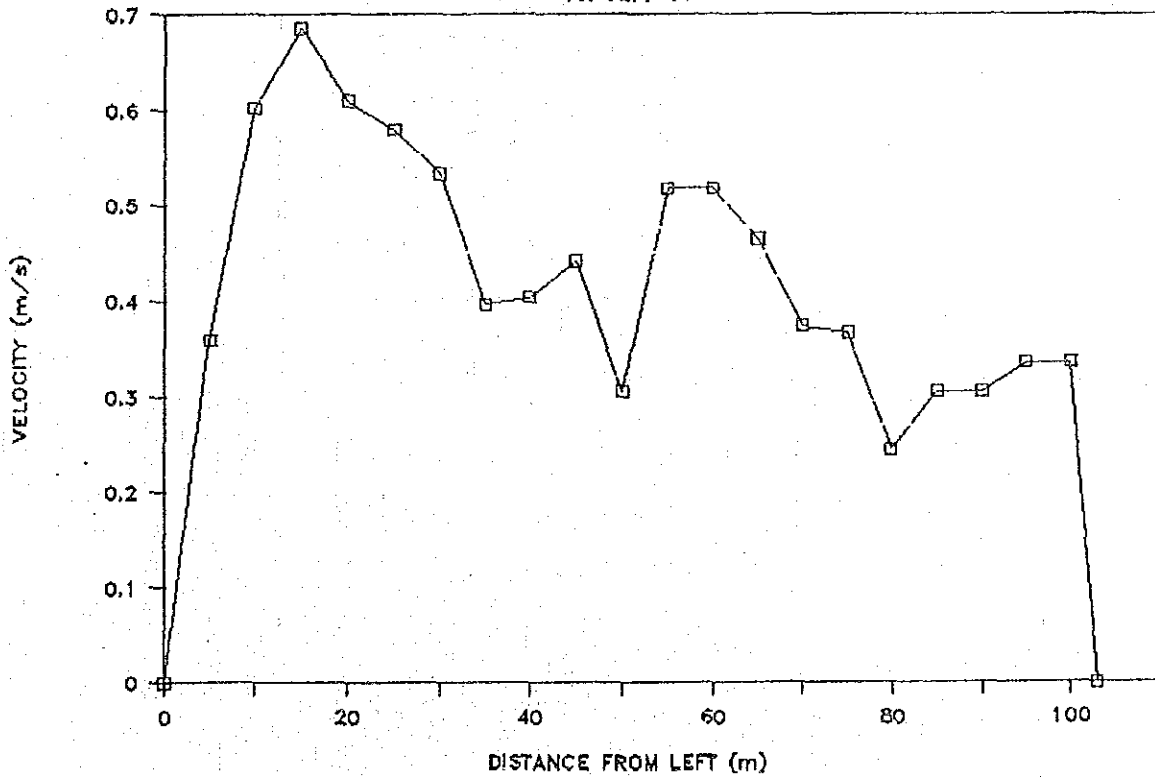
# WATER DEPTH (5-940)

18/SEP/'91



# VELOCITY (5-940)

18/SEP/'91



FLOW MEASUREMENT ST. : 5-940 LUANGNIA BRIDGE 26/SEP/91

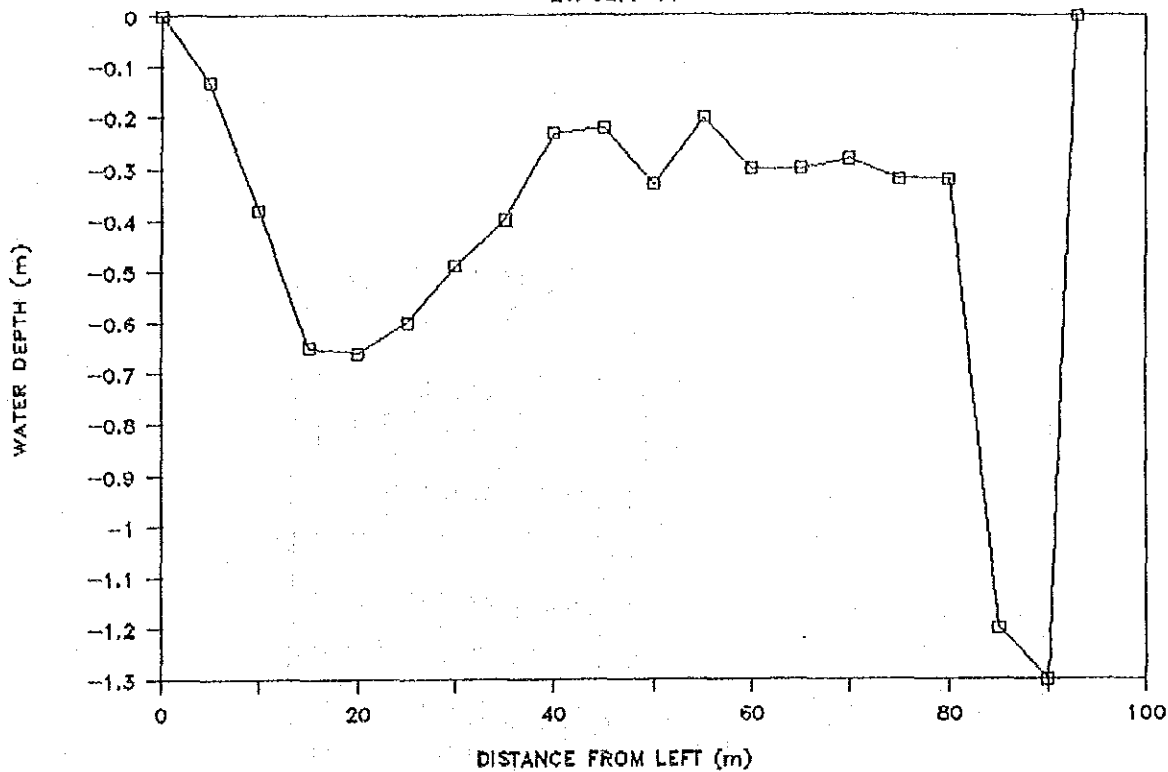
ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-10	NO-11	NO-12	NO-13	NO-14	NO-15	NO-16	NO-17	NO-18	NO-R
WATER DEPTH (m)	0.00	0.13	0.38	0.65	0.60	0.49	0.40	0.23	0.22	0.33	0.23	0.30	0.30	0.28	0.32	0.32	1.20	1.30	0.00
SE/WIDTH (m)	0.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.00
TOTAL SE/WIDTH(m)	0.00	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00
VELOCITY.5-1(f/s)	0.00	0.80	2.10	2.50	2.30	2.20	1.90	1.50	1.70	1.70	1.70	1.20	1.30	1.00	1.00	1.00	0.80	0.80	0.00
VELOCITY.5-2(f/s)	0.00	0.80	2.05	2.50	2.40	2.30	2.20	1.80	1.70	1.80	1.60	1.20	1.30	1.00	1.00	1.00	0.90	0.90	0.00
MEAN VEL.5 (f/s)	0.00	0.80	2.08	2.50	2.45	2.30	2.20	1.85	1.75	1.75	1.65	1.20	1.30	1.00	1.00	1.00	0.85	0.85	0.00
VELOCITY.8-1(f/s)	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.80	0.80	0.00
VELOCITY.8-2(f/s)	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.75	0.80	0.00
MEAN VEL.8 (f/s)	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.76	0.80	0.00
MEAN VEL (f/s)	0.000	0.800	2.075	2.500	2.450	2.300	2.200	1.850	1.750	1.750	1.650	1.200	1.300	1.000	1.000	1.000	0.813	0.825	0.00
MEAN VEL (m/s)	0.000	0.244	0.632	0.762	0.747	0.701	0.671	0.564	0.472	0.518	0.533	0.366	0.396	0.305	0.305	0.305	0.248	0.251	0.00
L/MEAN DEPTH (m)	0.000	0.065	0.318	0.583	0.658	0.615	0.518	0.423	0.273	0.223	0.303	0.233	0.275	0.300	0.285	0.310	0.320	0.990	1.275
L/MEAN WIDTH (m)	0.00	5.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
L/SEC. AREA (m2)	0.00	0.33	0.79	1.46	1.64	1.54	1.29	1.06	0.88	0.96	0.76	0.58	0.69	0.75	0.71	0.78	0.80	2.45	3.19
R/MEAN DEPTH (m)	0.000	0.193	0.448	0.653	0.645	0.573	0.488	0.358	0.228	0.248	0.298	0.225	0.300	0.295	0.290	0.320	0.540	1.225	0.650
R/MEAN WIDTH (m)	0.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
R/SEC. AREA (m2)	0.00	0.48	1.12	1.63	1.61	1.43	1.17	0.89	0.67	0.62	0.74	0.55	0.75	0.74	0.73	0.80	1.35	3.06	1.95
S/AREA (m2)	0.00	0.81	1.91	3.09	3.26	2.97	2.46	1.95	1.25	1.18	1.50	1.14	1.44	1.49	1.44	1.56	2.15	5.51	5.14
TOTAL AREA (m2)	0.0	0.8	2.7	5.8	9.1	12.0	14.5	16.4	17.7	18.9	20.4	21.5	23.0	24.4	25.9	27.5	29.6	35.1	40.3
S/DISCHARGE(m3/s)	0.00	0.20	1.21	2.35	2.43	2.08	1.65	1.10	0.59	0.61	0.80	0.58	0.53	0.59	0.44	0.48	0.66	1.37	1.29
TOTAL DIS. (m3/s)	0.00	0.20	1.41	3.76	6.19	8.27	9.92	11.02	11.61	12.22	13.02	13.60	14.12	14.71	15.15	15.63	16.29	17.55	18.94

WATER LEVEL (f) : 6.10 WATER LEVEL (m) : 1.85  
 TOTAL DISCHARGE : 18.94 MEAN VELOCITY(m/s) : 0.47

NOTE: MOST OF POINTS ARE ADAPTED BY USE OF 0.6 METHOD.

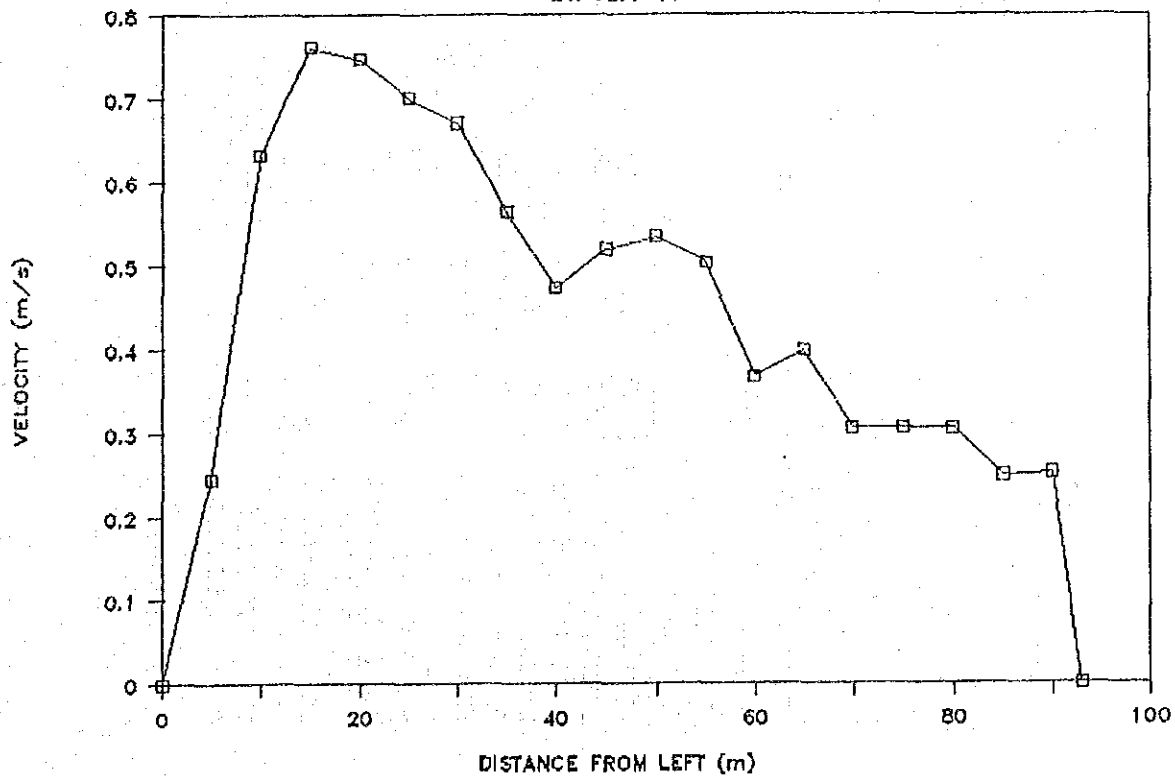
# WATER DEPTH (5 940)

26/SEP/'91



# VELOCITY (5-940)

26/SEP/'91



FLOW MEASUREMENT ST. : 5-940 LUANGWA BRIDGE 02/OCT/91

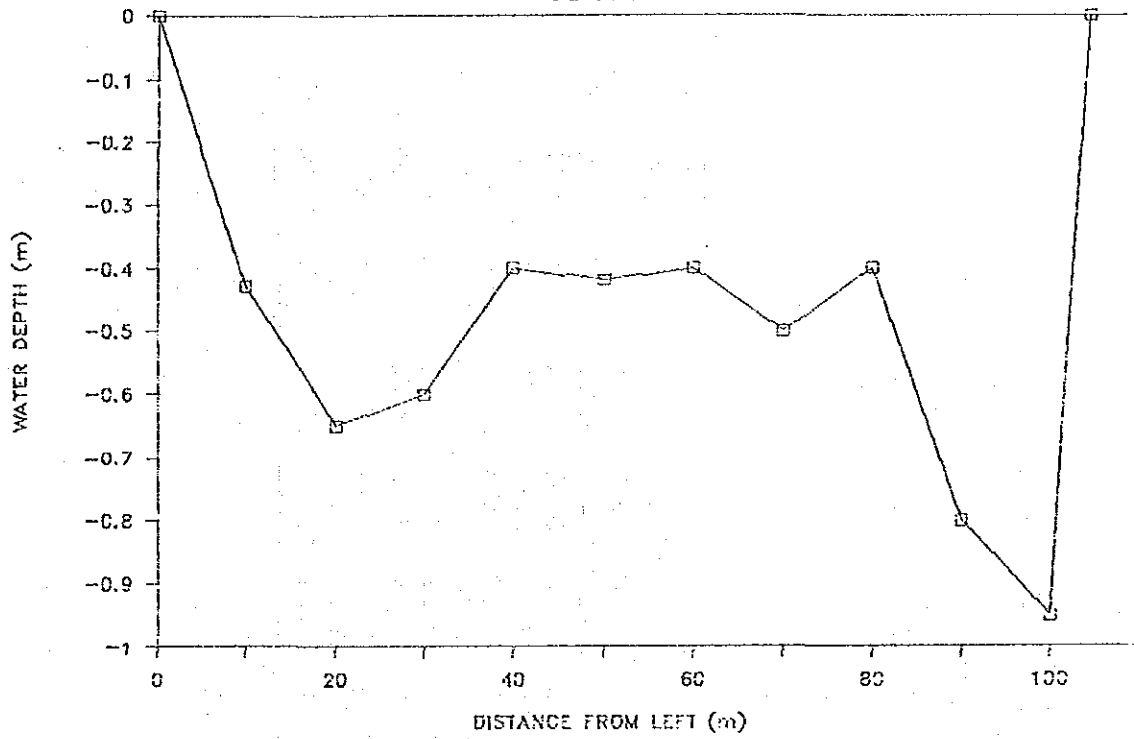
ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-10	NO-R
WATER DEPTH (m)	0.43	0.65	0.60	0.40	0.42	0.40	0.50	0.40	0.80	0.95	0.00
SE/WIDTH (m)	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	4.70
TOTAL SE/WIDTH(m)	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00	104.70
VELOCITY.6-1(f/s)	2.10	2.50	2.30	2.30	2.00	1.80	1.90	1.90	1.80	1.80	0.00
VELOCITY.6-2(f/s)	2.10	2.50	2.30	2.30	2.00	1.80	1.90	1.90	1.80	1.80	0.00
MEAN VEL.6 (f/s)	2.10	2.50	2.30	2.30	2.00	1.80	1.90	1.90	1.80	1.80	0.00
VELOCITY.8-1(f/s)	-	-	-	-	-	-	-	-	-	1.30	0.00
VELOCITY.8-2(f/s)	-	-	-	-	-	-	-	-	-	1.30	0.00
MEAN VEL.8 (f/s)	-	-	-	-	-	-	-	-	-	1.30	0.00
MEAN VEL (f/s)	2.100	2.500	2.300	2.300	2.000	1.800	1.900	1.900	1.800	1.550	0.00
MEAN VEL (m/s)	0.640	0.762	0.701	0.701	0.610	0.549	0.579	0.579	0.549	0.472	0.00
L/MEAN DEPTH (m)	0.215	0.595	0.613	0.450	0.415	0.405	0.475	0.425	0.700	0.913	0.00
L/MEAN WIDTH (m)	10.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	-
L/SEC. AREA (m2)	2.15	2.98	3.06	2.25	2.08	2.03	2.38	2.13	3.50	4.56	-
R/MEAN DEPTH (m)	0.485	0.638	0.550	0.405	0.415	0.425	0.475	0.500	0.838	0.475	-
R/MEAN WIDTH (m)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	4.70	-
R/SEC. AREA (m2)	2.43	3.19	2.75	2.03	2.08	2.13	2.38	2.50	4.19	2.23	-
S/AREA (m2)	4.58	6.16	5.81	4.28	4.15	4.15	4.75	4.63	7.69	6.80	-
TOTAL AREA (m2)	4.6	10.7	16.6	20.8	25.0	29.1	33.9	36.5	46.2	53.0	-
S/DISCHARGE (m3/s)	2.93	4.70	4.07	3.00	2.53	2.28	2.75	2.68	4.22	3.21	-
TOTAL DIS. (m3/s)	2.93	7.62	11.70	14.70	17.23	19.50	22.25	24.93	29.15	32.36	-

WATER LEVEL (f) : 5.87      WATER LEVEL (m) : 1.79  
 TOTAL DISCHARGE : 32.36      MEAN VELOCITY(m/s) : 0.61

NOTE: MOST OF POINTS ARE ADAPTED BY USE OF 0.6 METHOD.

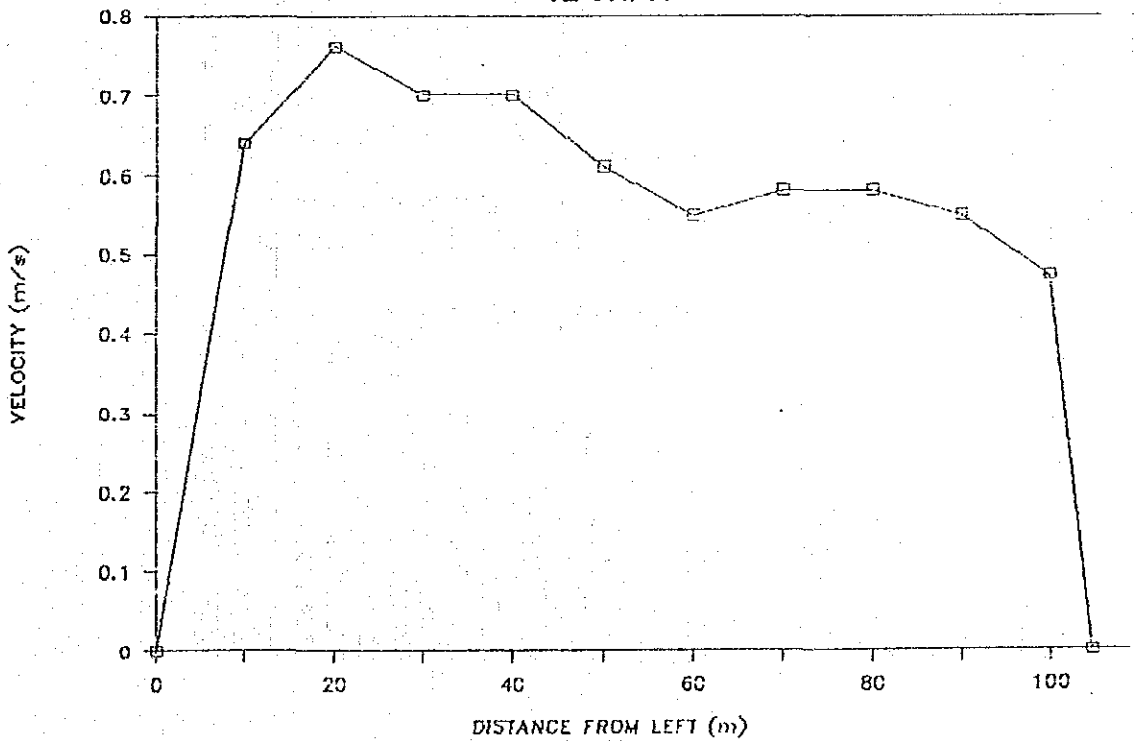
### WATER DEPTH (5-940)

02/OCT/91



### VELOCITY (5-940)

02/OCT/91



FLOW MEASUREMENT ST. : 5-940 LUANGWA BRIDGE

18/NOV/91

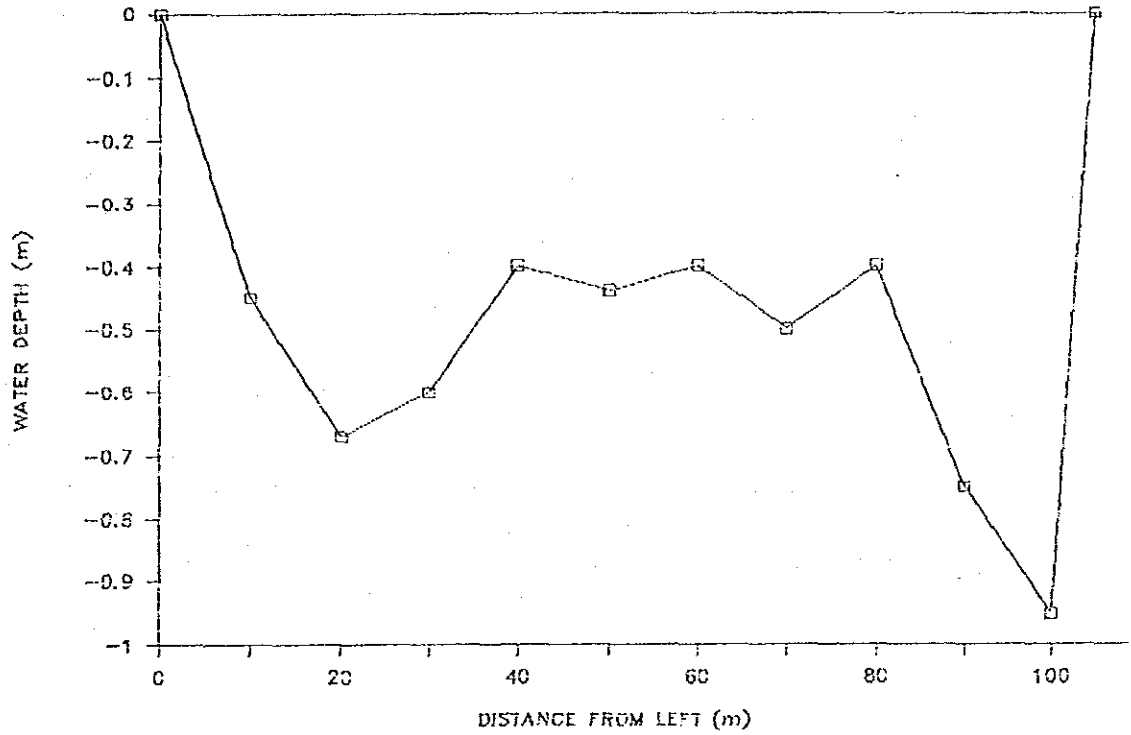
ITEMS	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7	NO-8	NO-9	NO-10	NO-R
WATER DEPTH (m)	0.45	0.67	0.60	0.40	0.44	0.40	0.50	0.40	0.75	0.95	0.00
SE/WIDTH (m)	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	5.00
TOTAL SE/WIDTH(m)	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00	105.00
VELOCITY.6-1(f/s)	2.25	2.55	2.35	2.30	2.00	1.90	1.95	1.90	1.85	1.80	0.00
VELOCITY.6-2(f/s)	2.20	2.50	2.30	2.30	2.00	1.80	1.90	1.90	1.85	1.80	0.00
MEAN VEL.6 (f/s)	2.23	2.53	2.33	2.30	2.00	1.85	1.93	1.90	1.85	1.80	0.00
VELOCITY.8-1(f/s)	-	-	-	-	-	-	-	-	-	-	0.00
VELOCITY.8-2(f/s)	-	-	-	-	-	-	-	-	-	-	0.00
MEAN VEL.8 (f/s)	-	-	-	-	-	-	-	-	-	-	0.00
MEAN VEL (f/s)	2.225	2.525	2.325	2.300	2.000	1.850	1.925	1.900	1.850	1.550	0.00
MEAN VEL (m/s)	0.678	0.770	0.709	0.701	0.610	0.564	0.587	0.579	0.564	0.472	0.00
L/MEAN DEPTH (m)	0.225	0.615	0.618	0.450	0.430	0.410	0.475	0.425	0.663	0.900	0.00
L/MEAN WIDTH (m)	10.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	-
L/SEC. AREA (m2)	2.25	3.08	3.09	2.25	2.15	2.05	2.38	2.13	3.31	4.50	-
R/MEAN DEPTH (m)	0.505	0.653	0.550	0.410	0.430	0.425	0.475	0.488	0.800	0.475	-
R/MEAN WIDTH (m)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	-
R/SEC. AREA (m2)	2.53	3.26	2.75	2.05	2.15	2.13	2.38	2.44	4.00	2.38	-
S/AREA (m2)	4.78	6.34	5.84	4.30	4.30	4.18	4.75	4.56	7.31	6.88	-
TOTAL AREA (m2)	4.8	11.1	17.0	21.3	25.6	29.7	34.5	39.0	46.4	53.2	-
S/DISCHARGE(m3/s)	3.24	4.88	4.14	3.01	2.62	2.35	2.79	2.64	4.12	3.25	-
TOTAL DIS. (m3/s)	3.24	8.12	12.25	15.27	17.89	20.24	23.03	25.67	29.80	33.04	-

WATER LEVEL (f) : 6.14 WATER LEVEL (m) : 1.67  
 TOTAL DISCHARGE : 33.04 MEAN VELOCITY(m/s) : 0.62

NOTE: MOST OF POINTS ARE ADAPTED BY USE OF 0.6 METHOD.

# WATER DEPTH (5-940)

18/NOV/91



# VELOCITY (5-940)

18/NOV/91

