

Calculation of Natural Flow at the New Lengkon Dam (1/2)

Unit : m³/s

YEAR : 1991

	Brantas: Atas Irrigation	Brantas: Net	Brantas: Bawah Irrigation	Return Flow from Brantas Atas Irrigation	Return Flow from Brantas Bawah Irrigation	Net Return Flow	Molek Irrigation	Molek Irrigation (Net)	Net	Return Flow from Molek Irrigation	Lodagong Irrigation	Lodagong Irrigation (Net)	Net	Return Flow from Lodagong Irrigation	Waruyang -Kertosono Irrigation (Miran Kiri)	Waruyang -Kertosono Irrigation (Miran Kiri) (Net)	Net	Turi- Tungosono Irrigation (Miran Kanan)	Net	Brantas: Kediri Irrigation	Net	Return Flow from Waruyang -Kertosono Irrigation		
Jan.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	7.23	6.61	8.65	2.17	12.89	10.72	19.38	0.50	2.27	11.77	31.14	12.35	43.49	0.86	44.35	3.68
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.49	5.88	7.92	1.95	13.31	11.36	19.28	0.52	1.57	11.05	30.33	10.41	40.74	0.95	41.69	3.47
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.33	5.72	7.75	1.90	11.06	9.17	16.92	0.43	10.26	9.82	26.74	10.65	37.40	0.56	37.96	3.08
Feb.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	7.43	6.81	8.85	2.23	11.85	9.62	18.47	0.46	8.95	8.49	26.96	10.64	37.60	0.56	38.16	2.89
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.62	6.01	8.05	1.99	12.80	10.82	18.86	0.50	10.18	9.68	28.55	10.79	39.33	0.54	39.87	3.05
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	7.51	6.90	8.94	2.25	6.82	4.57	13.50	0.27	11.39	11.13	24.63	10.94	35.57	0.54	36.11	3.42
Mar.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.63	6.02	8.06	1.99	9.72	7.73	15.79	0.38	11.34	10.96	26.75	10.60	37.34	0.58	37.92	3.40
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.55	5.94	7.98	1.97	12.03	10.07	18.04	0.47	10.84	10.37	28.42	10.46	37.87	0.58	38.45	3.25
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.53	5.91	7.95	1.96	12.19	10.24	18.19	0.48	10.05	9.57	27.76	8.17	35.93	0.58	36.51	3.01
Apr.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.03	5.41	7.45	1.81	12.26	10.45	17.90	0.48	10.11	9.63	27.53	8.08	35.61	0.53	36.14	3.03
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.12	5.51	7.55	1.84	12.00	10.16	17.71	0.47	10.54	10.08	27.79	8.01	35.79	0.53	36.32	3.16
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.85	6.24	8.28	2.06	12.00	9.94	18.22	0.47	10.92	10.45	28.67	8.32	37.00	0.49	37.49	3.27
May	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.93	5.32	7.36	1.78	11.70	9.92	17.28	0.46	10.94	10.48	27.76	9.12	36.89	0.41	37.30	3.28
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.75	5.14	7.18	1.72	11.54	9.82	16.99	0.45	10.74	10.29	27.29	8.88	34.17	0.15	34.32	3.22
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.14	5.53	7.57	1.84	11.57	9.90	16.87	0.44	10.53	10.09	27.13	8.24	35.37	0.15	35.52	3.16
June	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.54	4.93	6.97	1.66	11.57	9.90	16.87	0.45	9.59	9.13	26.00	8.56	34.56	0.15	34.71	2.88
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.11	5.49	7.53	1.83	11.40	9.57	17.10	0.44	8.09	7.65	24.75	7.35	32.10	0.15	32.25	2.43
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.00	5.39	7.43	1.80	10.98	9.18	16.60	0.43	6.47	6.05	22.65	6.75	29.40	0.15	29.55	1.94
July	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.26	4.64	6.68	1.58	11.87	10.29	16.97	0.46	6.30	5.84	22.81	7.24	30.05	0.15	30.20	1.89
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.88	5.26	7.30	1.76	11.15	9.39	16.69	0.43	6.09	5.65	22.34	6.80	29.14	0.15	29.29	1.83
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.79	5.18	7.22	1.74	6.66	4.93	12.14	0.26	6.13	5.87	18.01	6.62	24.63	0.15	24.78	1.84
Aug.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.67	5.06	7.10	1.70	6.98	5.27	12.37	0.27	7.52	7.25	19.62	5.42	23.03	0.15	23.18	2.26
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	4.52	3.91	5.95	1.36	7.02	5.66	11.61	0.27	7.14	6.86	18.47	4.84	23.31	0.15	23.46	2.14
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	2.57	1.95	3.99	0.77	7.02	6.25	10.25	0.27	7.20	6.93	17.17	4.97	22.15	0.15	22.30	2.16
Sept.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	3.00	2.38	4.42	0.90	3.20	2.40	6.72	0.12	7.09	6.96	13.68	4.93	18.61	0.15	18.76	2.13
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	4.74	4.13	6.17	1.42	6.52	5.10	11.27	0.25	7.01	6.75	18.02	4.94	22.97	0.15	23.12	2.10
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	3.12	2.51	4.55	0.94	2.65	1.71	6.26	0.10	7.07	6.96	13.22	4.92	18.15	0.15	18.30	2.12
Oct.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	3.42	2.81	4.85	1.03	9.29	8.26	13.11	0.36	7.31	6.95	20.06	4.80	24.86	0.15	25.01	2.19
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	4.46	3.85	5.89	1.34	6.00	4.66	10.55	0.23	7.53	7.29	17.84	4.61	22.45	0.15	22.60	2.26
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	3.21	2.60	4.64	0.96	6.01	5.05	9.69	0.23	7.26	7.03	16.72	4.69	21.40	0.15	21.55	2.18
Nov.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.17	5.56	7.59	1.85	9.34	7.49	15.09	0.36	5.66	5.29	20.38	5.97	26.34	0.15	26.49	1.70
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.56	4.95	6.99	1.67	9.50	7.83	14.82	0.37	5.68	5.31	20.13	6.20	26.33	0.15	26.48	1.70
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.85	5.23	7.27	1.75	9.50	7.75	15.02	0.37	5.80	5.43	20.45	6.37	26.82	0.15	26.97	1.74
Dec.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	3.65	3.04	5.08	1.09	12.45	11.36	16.43	0.49	8.69	8.21	24.64	8.66	33.30	0.27	33.57	2.61
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.21	4.60	6.64	1.56	15.00	13.44	20.08	0.59	10.15	9.56	29.64	10.13	39.77	0.66	40.43	3.04
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.23	5.62	7.66	1.87	15.00	13.13	20.79	0.59	10.54	9.95	30.74	11.20	41.94	0.73	42.67	3.16
Total (million m ³)		45.47	45.47	18.83	64.30	13.64	5.65	19.29	174.74	155.45	219.75	52.42	318.08	265.66	485.41	12.41	275.48	263.08	748.49	243.55	992.04	10.81	1002.85	82.64
Total in the dry season (million m ³)		22.80	22.80	9.44	32.24	6.84	2.83	9.67	76.03	66.36	98.60	22.81	128.40	105.59	204.19	5.01	109.72	104.71	308.90	92.97	401.88	2.37	404.25	32.92

Source : Calculated by the Study Team

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Unit : m ³/s

Calculation of Natural Flow at the New Lengkong Dam (1/2)

YEAR : 1992

	Brantas Atas Irrigation	Net Brantas Bawah Irrigation	Return Flow from Brantas Atas Irrigation	Return Flow from Brantas Bawah Irrigation	Return Flow from Molek Irrigation	Lodagang Irrigation (Net)	Lodagang Irrigation (Net)	Return Flow from Lodagang Irrigation	Warujeng Irrigation (Mfrican Kiri)	Warujeng Irrigation (Mfrican Kiri) (Net)	Net Tunggoro Irrigation (Mfrican Kanan)	Net Brantas Kediri Irrigation	Return Flow from Warujeng Irrigation -Kertosono
Jan.	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Feb.	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Mar.	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Apr.	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
May	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
June	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
July	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Aug.	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Sept.	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Oct.	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Nov.	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Dec.	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
1st	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.60	0.60	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Total (million m ³)	45.60	45.60	18.88	64.48	13.68	13.68	13.68	13.68	13.68	13.68	13.68	13.68	13.68
Total in the dry season (million m ³)	22.80	22.80	9.44	32.24	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84

Source : Calculated by the Study Team

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	Return Flow from Brantas Kediri Irrigation	Return Flow from Turi- Tunggoro Irrigation	Jatirek Irrigation (Net)	Net	Menurus Irrigation	Net	Industrial Water	Return Flow from Jatirek Irrigation	Return Flow from Menurus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Net Return Flow from Jati and Menurus Turi-Tun.	Minip Gate	Minip Gate (Net)	Net	Brantas Delta Irrigation	Storage of Sutami and Lahor Reservoirs	New Lengcong Dam Observed Discharge	Net Total Taken Water	Natural Flow at New Lengcong Dam	
Jan.	1st 0.26	0.90	1.91	-3.42	44.11	3.22	47.32	2.35	49.67	0.57	0.96	31.98	27.31	76.98	52.12	14.11	194.70	143.20	337.90	
	2nd 0.29	0.48	1.86	-2.77	36.86	3.12	39.98	2.35	42.33	0.56	1.56	33.25	30.20	72.53	41.26	37.32	352.80	151.11	505.91	
	3rd 0.17	0.57	1.40	-1.26	28.83	3.11	31.95	2.35	34.30	0.42	1.85	38.03	34.82	69.12	44.93	49.58	425.60	163.62	589.22	
Feb.	1st 0.17	0.38	0.95	0.21	28.35	1.83	30.18	2.35	32.53	0.29	1.89	24.16	21.44	53.97	35.39	1.75	447.20	103.40	550.50	
	2nd 0.16	0.62	0.93	-1.65	32.80	2.99	35.79	2.35	38.14	0.28	2.02	15.68	12.48	50.62	52.95	-10.16	436.30	93.41	529.71	
	3rd 0.16	0.67	0.96	-3.47	36.86	2.85	39.71	2.35	42.06	0.29	2.18	11.53	8.20	50.26	52.92	-0.26	282.50	102.32	384.82	
Mar.	1st 0.17	0.56	0.49	-3.85	35.93	2.75	38.67	2.35	41.02	0.15	1.84	44.04	41.23	82.26	62.55	13.10	224.00	157.91	381.91	
	2nd 0.17	0.27	0.76	-2.32	29.79	2.80	32.59	2.35	34.94	0.23	0.87	31.82	29.88	64.82	44.15	7.42	613.20	116.39	729.59	
	3rd 0.17	0.00	1.00	-0.89	24.59	2.66	27.25	2.35	29.60	0.30	1.10	26.19	25.09	54.70	45.07	-1.16	408.40	98.61	407.01	
Apr.	1st 0.16	0.00	1.09	-1.77	24.60	2.58	27.18	2.35	29.53	0.33	1.10	30.04	28.94	58.43	42.05	-1.91	430.50	98.61	529.11	
	2nd 0.16	0.00	0.97	-2.52	26.54	2.47	29.00	2.35	31.35	0.29	1.03	38.02	36.99	68.34	35.35	5.13	416.70	108.82	525.52	
	3rd 0.15	0.11	1.36	-2.50	28.39	2.78	31.17	2.35	33.52	0.41	1.61	33.75	32.14	65.66	39.40	1.78	227.10	106.84	333.94	
May	1st 0.12	0.39	1.46	-2.65	32.34	2.19	34.53	2.35	36.88	0.44	1.28	30.06	27.69	84.57	42.05	-1.89	70.70	124.73	195.43	
	2nd 0.05	0.21	1.45	-2.41	29.37	2.25	31.62	2.35	33.97	0.43	0.69	48.72	46.92	80.89	52.03	-1.36	33.00	131.56	164.56	
	3rd 0.05	0.18	1.62	-2.18	29.56	2.06	31.62	2.35	33.97	0.46	0.57	49.94	48.77	82.23	49.72	2.69	94.40	134.63	229.03	
June	1st 0.05	0.62	1.20	-3.07	32.81	1.76	34.57	2.35	36.92	0.36	0.53	2.92	48.69	45.77	82.69	53.04	-1.13	111.20	134.60	245.80
	2nd 0.05	0.57	1.24	-2.80	31.40	1.71	33.11	2.35	35.46	0.37	1.88	38.04	35.27	70.74	48.89	-0.88	7.90	118.75	126.65	
	3rd 0.05	0.59	1.14	-0.94	27.32	1.75	29.07	2.35	31.42	0.34	1.94	2.81	24.85	22.04	53.46	47.52	0.15	101.13	101.13	
July	1st 0.05	0.56	1.14	-0.99	27.26	1.08	28.34	2.35	30.69	0.32	1.83	40.96	38.47	69.16	36.56	15.81	5.90	121.53	127.43	
	2nd 0.05	0.47	1.01	-1.53	26.55	1.19	27.74	2.35	30.09	0.30	1.55	2.21	30.61	28.40	58.49	33.95	3.64	0.00	88.80	
	3rd 0.05	0.47	0.95	-1.59	27.01	0.83	27.84	2.35	30.19	0.29	1.55	2.08	22.13	20.05	50.23	31.03	-9.67	0.00	71.59	
Aug.	1st 0.05	0.38	0.85	-1.49	23.96	0.98	24.94	2.35	27.29	0.25	1.26	23.01	21.20	48.49	30.89	-4.82	0.00	84.21	84.21	
	2nd 0.05	0.35	0.81	-1.69	22.95	1.29	24.24	2.35	26.59	0.24	1.15	1.78	20.90	19.12	45.71	30.35	4.13	0.00	80.20	
	3rd 0.05	0.37	0.85	-1.67	23.58	1.25	24.83	2.35	27.18	0.25	1.21	1.84	23.80	21.96	49.15	30.27	4.16	0.00	83.58	
Sept.	1st 0.05	0.39	0.67	-0.76	18.64	0.80	19.44	2.35	21.79	0.20	1.26	1.70	61.09	59.39	81.18	26.61	-5.92	55.80	101.87	
	2nd 0.05	0.39	0.50	-2.03	19.76	1.59	21.35	2.35	23.70	0.15	1.26	50.31	48.42	72.12	22.39	-21.22	0.00	73.29	73.29	
	3rd 0.05	0.37	0.30	-2.14	19.89	1.56	21.45	2.35	23.80	0.09	1.22	1.78	39.35	37.57	61.37	26.62	-2.49	0.00	85.50	
Oct.	1st 0.05	0.37	0.69	-1.65	20.14	1.64	21.78	2.35	24.13	0.21	1.20	1.90	57.58	55.68	79.82	30.60	32.29	64.80	142.71	
	2nd 0.05	0.35	0.72	-1.76	19.92	1.31	21.23	2.35	23.58	0.22	1.15	1.76	60.76	59.00	88.92	33.50	-6.82	34.90	109.27	
	3rd 0.05	0.37	0.87	-1.80	24.63	1.64	26.27	2.35	28.62	0.26	1.15	1.90	62.20	60.30	88.92	37.60	-44.75	53.40	144.17	
Nov.	1st 0.05	0.64	1.49	-1.50	29.69	1.87	31.55	2.35	33.90	0.45	2.09	3.10	60.74	57.64	91.55	39.72	-54.33	57.70	76.94	
	2nd 0.05	0.70	1.64	-1.58	32.53	1.78	34.31	2.35	36.66	0.49	2.30	3.32	58.61	55.29	91.95	39.72	-8.87	53.60	122.79	
	3rd 0.05	0.70	1.50	-1.77	32.62	1.89	34.51	2.35	36.86	0.45	2.29	3.31	68.37	68.37	105.23	49.18	-4.90	150.10	169.30	
Dec.	1st 0.08	0.75	1.61	-2.04	36.55	1.99	38.53	2.35	40.88	0.48	2.47	3.55	46.52	42.97	133.85	52.57	41.19	257.70	177.61	
	2nd 0.20	0.81	1.72	-2.40	38.28	2.73	41.01	2.35	43.36	0.51	2.64	3.97	28.59	24.62	67.98	57.59	10.47	296.50	136.04	
	3rd 0.22	0.86	1.83	-2.66	39.65	2.82	42.47	2.35	44.82	0.55	2.82	4.21	24.76	20.55	65.37	68.22	27.03	125.20	160.62	
Total (million m ³)	3.26	14.57	36.00	-62.72	915.98	64.16	980.15	74.31	1054.46	10.80	19.25	1232.01	1154.26	2208.73	1333.84	109.01	5101.27	3651.58	8752.85	
Total in the dry season (million m ³)	0.71	7.58	15.40	-27.38	404.51	22.73	427.24	37.16	464.40	4.62	6.82	696.49	660.24	1124.64	568.79	-76.45	518.95	1616.98	2135.94	

Source: Calculated by the Study Team

Calculation of Natural Flow at the New Lengong Dam (1/2)

Unit : m ³/s

YEAR : 1993

	Brantas Atas Irrigation	Net Brantas Bawah Irrigation	Return Flow from Brantas Atas Irrigation	Return Flow from Brantas Bawah Irrigation	Net Return Flow	Molek Irrigation (Net)	Molek Irrigation (Net)	Return Flow from Molek Irrigation	Lodagang Irrigation (Net)	Lodagang Irrigation (Net)	Return Flow from Lodagang Irrigation	Wanuyang Irrigation (Mrican Kin)	Wanuyang Irrigation (Mrican Kin) (Net)	Wanuyang Irrigation (Mrican Kin) (Net)	Tungsonoro Irrigation (Mrican Kanan)	Net Tungsonoro Irrigation	Brantas Kediri Irrigation	Net Brantas Kediri Irrigation	Return Flow from Wanuyang Irrigation
Jan.	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Feb.	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Mar.	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Apr.	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
May	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
June	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
July	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Aug.	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Sept.	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Oct.	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Nov.	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Dec.	1st 1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2nd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
3rd	1.44	1.44	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Total (million m ³)	45.47	45.47	13.64	13.64	13.64	13.64	13.64	13.64	13.64	13.64	13.64	13.64	13.64	13.64	13.64	13.64	13.64	13.64	13.64
Total in the dry season (million m ³)	22.80	22.80	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84

Source : Calculated by the Study Team

YEAR : 1993

	Return Flow from Brantas Kediri Irrigation	Return Flow from Turi- Tunggorono Irrigation	Jatimirek Irrigation (Net)	Net	Mentrus Irrigation	Net	Industrial Water	Net	Return Flow from Jatimirek Irrigation	Return Flow from Mentrus Irrigation	Return Flow from Turi- Tunggorono Irrigation	Net Return Flow from Jatimirek and Mentrus Turi-Tun.	Minilip Gate (Net)	Minilip Gate (Net)	Net	Brantas Delta Irrigation	Storage of Sutami and Lathor Reservoirs	New Lenglong Dam Observed Discharge	Net Total Taken Water	Natural Flow at New Lenglong Dam
Jan.	0.26	0.91	0.94	2.94	41.42	3.22	44.64	2.35	46.99	0.58	2.99	4.54	30.17	25.61	72.62	67.22	15.31	312.75	155.15	467.90
2nd	0.29	0.91	2.16	2.73	41.65	3.12	44.76	2.35	47.11	0.65	2.99	4.57	29.06	24.49	71.60	67.10	7.80	352.10	156.50	508.61
3rd	0.17	0.89	2.05	2.69	41.53	3.11	44.64	2.35	46.99	0.61	2.92	4.47	24.76	20.28	67.28	66.40	-2.52	423.67	131.16	554.83
Feb.	0.17	0.91	1.95	2.82	41.24	1.83	43.07	2.35	45.42	0.58	2.98	4.12	34.05	29.93	75.35	62.11	-4.23	442.02	133.23	575.25
2nd	0.16	0.91	0.93	3.82	40.04	2.99	43.02	2.35	45.37	0.28	2.97	4.15	33.83	29.68	75.06	70.11	-10.44	182.99	134.73	317.71
3rd	0.16	0.91	0.08	4.68	39.70	2.85	42.55	2.35	44.90	0.02	2.98	3.86	39.70	35.84	80.74	55.92	-0.58	154.04	136.07	290.12
Mar.	0.17	0.91	0.06	4.71	38.05	2.75	40.80	2.35	43.15	0.02	2.97	3.81	38.28	34.47	77.61	67.96	12.00	93.51	157.57	251.08
2nd	0.17	0.91	0.79	4.06	37.65	2.80	40.45	2.35	42.80	0.24	2.97	4.05	39.28	35.23	78.03	69.45	0.67	205.17	148.16	353.32
3rd	0.17	0.91	1.22	3.54	38.00	2.66	40.66	2.35	43.01	0.37	2.99	4.16	55.94	51.78	94.79	38.23	-1.03	279.56	131.99	411.55
Apr.	0.16	0.91	1.70	3.06	37.50	2.58	40.08	2.35	42.43	0.51	2.97	4.25	60.07	55.92	98.25	44.42	23.34	446.18	166.01	612.19
2nd	0.16	0.91	1.61	3.15	37.31	2.47	39.77	2.35	42.12	0.48	2.99	4.31	57.28	53.07	95.19	41.20	-8.01	400.29	128.39	528.68
3rd	0.15	0.91	0.87	3.88	36.76	2.78	39.54	2.35	41.89	0.26	2.99	4.08	32.07	27.99	69.88	47.13	7.28	216.28	124.29	340.57
May	0.12	0.91	1.84	2.90	37.57	2.19	39.76	2.35	42.11	0.55	2.99	4.20	62.01	57.81	99.92	50.66	-1.16	114.99	149.43	264.41
2nd	0.05	0.87	0.05	3.26	36.58	2.25	38.83	2.35	41.18	0.32	2.84	3.83	50.48	46.65	87.83	54.38	0.96	14.12	143.17	157.29
3rd	0.05	0.81	1.57	2.98	35.77	2.05	37.82	2.35	40.17	0.47	2.66	3.75	50.50	46.75	86.92	50.22	-0.51	9.03	136.63	145.66
June	0.05	0.55	1.39	1.71	29.32	1.78	31.10	2.35	33.45	0.42	1.80	2.75	47.99	45.24	78.69	44.27	3.59	10.32	126.55	136.87
2nd	0.05	0.45	1.59	1.27	27.67	0.94	28.60	2.35	30.95	0.48	1.49	2.24	52.99	50.75	81.70	47.70	-1.19	31.48	128.21	259.68
3rd	0.05	0.29	1.22	1.48	24.96	1.16	26.12	2.35	28.47	0.37	0.96	1.67	47.27	45.60	74.07	48.05	-1.00	42.30	121.12	163.42
July	0.05	0.46	1.28	1.28	26.92	0.42	27.34	2.35	29.69	0.38	1.52	2.03	42.16	40.13	69.83	39.19	-0.22	0.00	108.80	108.80
2nd	0.05	0.48	1.20	1.33	26.74	0.98	27.72	2.35	30.07	0.36	1.57	2.23	35.26	33.03	63.10	31.28	-8.59	0.00	85.80	85.80
3rd	0.05	0.42	0.87	1.62	23.99	1.35	25.34	2.35	27.69	0.26	1.39	2.05	37.49	35.44	63.13	35.94	-14.20	0.00	84.87	84.87
Aug.	0.05	0.35	0.16	1.87	20.69	0.81	21.50	2.35	23.85	0.05	1.15	1.44	32.68	31.24	55.09	30.71	-9.37	0.00	76.42	76.42
2nd	0.05	0.33	0.10	2.14	20.95	2.15	23.10	2.35	25.45	0.03	1.01	1.77	28.67	26.90	52.35	30.34	-9.09	0.00	73.60	73.60
3rd	0.05	0.38	0.04	2.25	21.50	1.97	23.47	2.35	25.82	0.01	1.25	1.85	34.41	32.36	58.37	30.62	-12.00	0.00	77.00	77.00
Sept.	0.05	0.36	0.33	1.91	19.37	0.00	19.57	2.35	21.92	0.16	1.17	1.33	32.07	30.74	52.66	25.03	-17.54	0.00	60.15	60.15
2nd	0.05	0.36	0.52	1.93	19.20	2.80	22.00	2.35	24.35	0.16	1.18	2.17	31.08	28.91	53.26	23.22	-17.95	0.00	58.53	58.53
3rd	0.05	0.36	0.52	1.69	20.93	2.79	23.72	2.35	26.07	0.16	1.18	2.18	27.40	25.22	51.29	22.49	-19.78	0.00	54.00	54.00
Oct.	0.05	0.36	0.51	1.74	22.40	2.76	25.16	2.35	27.51	0.15	1.19	2.17	27.13	24.96	52.47	22.29	-19.36	0.00	55.40	55.40
2nd	0.05	0.34	1.16	1.28	22.64	1.42	24.06	2.35	26.41	0.35	1.10	1.88	23.35	21.47	47.89	19.53	-8.79	0.00	58.63	58.63
3rd	0.05	0.36	1.30	0.98	22.03	2.65	24.68	2.35	27.03	0.39	1.19	2.37	20.64	18.26	45.29	14.96	-11.80	0.00	48.45	48.45
Nov.	0.05	0.35	1.31	0.88	17.60	2.32	19.98	2.35	22.33	0.39	1.15	2.24	23.25	21.01	43.34	12.71	-9.89	0.00	46.16	46.16
2nd	0.05	0.37	1.42	0.67	18.11	1.95	20.06	2.35	22.41	0.43	1.22	2.23	38.41	36.18	58.59	32.41	3.14	5.14	94.14	99.27
3rd	0.05	0.43	1.56	0.72	20.05	2.38	22.43	2.35	24.78	0.47	1.41	2.59	41.54	38.95	63.73	44.76	23.27	27.85	131.76	159.61
Dec.	0.08	0.54	1.60	1.46	26.68	2.05	28.73	2.35	31.08	0.48	1.77	2.86	41.85	38.99	70.07	48.51	33.47	180.52	350.04	332.57
2nd	0.20	0.75	1.61	2.55	32.49	2.30	34.79	2.35	37.14	0.48	2.46	3.63	53.32	49.69	86.83	44.42	8.77	104.09	140.02	244.10
3rd	0.22	0.74	1.66	2.61	34.79	2.50	37.29	2.35	39.64	0.50	2.44	3.69	59.76	56.07	93.71	45.12	22.83	66.78	163.66	230.45
Total	3.24	19.73	36.47	-73.71	945.12	67.54	1012.65	74.11	1086.76	10.94	64.59	95.79	1241.21	1145.42	2232.19	1350.46	-16.09	3682.60	3566.56	7249.16
Total in the dry season (million m ³)	0.71	6.17	14.59	-23.52	356.05	26.97	383.02	37.16	420.18	4.38	20.20	32.67	546.94	514.27	934.45	487.00	-116.27	187.55	1305.19	1492.73

Source : Calculated by the Study Team

Calculation of Natural Flow at the New Lenglong Dam (1/2)

Unit : m ³/s

YEAR : 1994

	Brantas Atas Irrigation	Brantas Bawah Irrigation	Net Brantas Irrigation	Return Flow from Brantas Atas Irrigation	Return Flow from Brantas Bawah Irrigation	Net Return Flow	Molek Irrigation (Net)	Molek Irrigation (Net)	Return Flow from Molek Irrigation	Lodang Irrigation (Net)	Lodang Irrigation (Net)	Return Flow from Lodang Irrigation	Warujang Irrigation (Miran Kiri)	Warujang Irrigation (Miran Kiri)	Net Warujang Irrigation (Net)	Turi- Irrigation (Miran Kanan)	Net Turi- Irrigation	Return Flow from Turi- Irrigation	Net Return Flow
Jan.	1st 1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
Feb.	1st	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
Mar.	1st	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
Apr.	1st	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
May	1st	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
June	1st	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
July	1st	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
Aug.	1st	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
Sept.	1st	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
Oct.	1st	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
Nov.	1st	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
Dec.	1st	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18	0.43	0.18	0.61	0.61	0.18
Total	45.47	45.47	18.83	64.30	13.64	5.65	19.29	182.45	163.16	227.46	250.00	195.26	422.73	258.24	248.49	671.22	229.35	900.57	10.81
Total in the dry season (million m ³)	22.80	22.80	9.44	32.24	6.84	2.83	9.67	79.32	69.65	101.89	117.58	93.79	195.68	99.70	95.12	290.79	92.80	383.59	2.37

Source : Calculated by the Study Team

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Source : Calculated by the Study Team

Calculation of Natural Flow at the New Lenglong Dam (1/2)

Unit : m ³/s

YEAR : 1995

	Brantas Atas Irrigation	Net	Brantas Bawah Irrigation	Net	Return Flow from Brantas Atas Irrigation	Return Flow from Brantas Bawah Irrigation	Net Return Flow	Molek Irrigation (Net)	Molek Irrigation (Net)	Return Flow from Molek Irrigation	Lodajung Irrigation (Net)	Lodajung Irrigation (Net)	Return Flow from Lodajung Irrigation	Net	Warujayung -Kertosono Irrigation (Mrican Kin)	Warujayung -Kertosono Irrigation (Mrican Kin) (Net)	Turi- Tunggoro- Irrigation (Mrican Kanan)	Net	Brantas Kin Kediri Irrigation	Net	Return Flow from Warujayung -Kertosono Irrigation		
Jan.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.29	5.68	7.72	1.89	9.00	7.11	12.83	0.35	11.64	11.29	26.12	11.37	37.69	0.86	38.55
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.37	5.76	7.80	1.91	9.17	7.26	15.06	0.36	12.89	12.53	27.59	12.53	40.12	0.95	41.07
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	7.19	6.58	8.61	2.16	9.23	6.07	14.69	0.32	12.88	12.56	27.25	12.52	39.77	0.56	40.33
Feb.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.12	5.51	7.55	1.84	7.64	5.80	13.35	0.30	12.92	12.62	25.97	12.50	38.27	0.56	38.83
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.10	5.49	7.53	1.83	7.80	5.97	13.50	0.30	12.94	12.64	26.13	12.53	38.66	0.54	39.20
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.89	6.28	8.32	2.07	7.21	5.14	13.46	0.28	12.94	12.66	26.12	12.53	38.65	0.54	39.19
Mar.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.17	5.56	7.60	1.85	7.10	5.25	12.85	0.28	12.93	12.65	25.50	12.52	38.02	0.58	38.60
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.25	5.64	7.68	1.88	7.80	5.92	13.60	0.30	12.94	12.64	26.24	12.53	38.68	0.58	37.56
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.89	6.28	8.32	2.07	7.10	5.25	12.85	0.28	12.93	12.65	25.50	12.52	38.02	0.58	38.60
Apr.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.40	5.79	7.83	1.92	8.99	7.07	14.90	0.35	9.57	9.22	24.12	8.94	33.06	0.53	33.59
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.30	5.68	7.72	1.89	8.61	6.72	14.44	0.34	9.19	8.85	23.30	8.90	32.20	0.53	32.73
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.21	5.60	7.64	1.86	8.60	6.74	14.37	0.34	9.20	8.86	23.24	8.91	32.15	0.49	32.64
May	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.45	4.84	6.88	1.64	8.01	6.37	13.25	0.31	9.20	8.89	22.14	8.91	31.05	0.41	31.46
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.09	5.48	7.52	1.83	8.50	6.67	14.19	0.33	9.20	8.87	23.06	8.91	31.97	0.15	32.12
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.58	5.97	8.01	1.98	8.50	6.52	14.54	0.33	9.20	8.87	23.40	8.91	32.31	0.15	32.46
June	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.67	6.06	8.10	2.00	9.95	7.95	16.05	0.39	9.21	8.82	24.87	8.92	33.79	0.15	33.94
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.69	6.08	8.11	2.01	10.00	7.99	16.11	0.39	9.39	8.99	25.11	8.90	33.91	0.15	29.06
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.07	5.45	7.49	1.82	10.00	8.18	15.67	0.39	9.39	8.99	25.11	8.90	33.91	0.15	28.06
July	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.66	6.05	8.09	2.00	8.91	6.91	15.00	0.35	9.09	8.74	20.75	8.55	27.30	0.15	27.45
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.51	5.90	7.94	1.95	7.92	5.97	13.91	0.31	9.09	8.74	20.75	8.55	27.30	0.15	26.39
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.37	5.76	7.80	1.91	6.05	4.14	11.94	0.24	9.09	8.74	20.75	8.55	27.30	0.15	24.22
Aug.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.84	5.23	7.26	1.75	6.00	4.25	11.51	0.23	9.09	8.74	20.75	8.55	27.30	0.15	21.50
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.78	5.17	7.21	1.74	6.00	4.26	11.48	0.23	9.09	8.74	20.75	8.55	27.30	0.15	19.53
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.40	4.79	6.83	1.62	6.00	4.38	11.21	0.23	9.09	8.74	20.75	8.55	27.30	0.15	19.21
Sept.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.67	5.06	7.10	1.70	6.00	4.30	11.40	0.23	9.09	8.74	20.75	8.55	27.30	0.15	19.40
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.76	5.15	7.19	1.73	6.00	4.27	11.46	0.23	9.09	8.74	20.75	8.55	27.30	0.15	19.48
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.48	5.87	7.91	1.94	6.00	4.06	11.96	0.23	9.09	8.74	20.75	8.55	27.30	0.15	19.99
Oct.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.16	4.55	6.59	1.55	6.00	4.45	11.04	0.23	9.09	8.74	20.75	8.55	27.30	0.15	18.02
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.97	5.36	7.40	1.79	6.00	4.21	11.60	0.23	9.09	8.74	20.75	8.55	27.30	0.15	15.53
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.50	4.89	6.92	1.65	6.00	4.35	11.28	0.23	9.09	8.74	20.75	8.55	27.30	0.15	17.33
Nov.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.12	5.51	7.55	1.84	6.00	4.16	11.71	0.23	9.09	8.74	20.75	8.55	27.30	0.15	21.18
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.63	5.02	7.06	1.69	6.00	4.31	11.37	0.23	9.09	8.74	20.75	8.55	27.30	0.15	20.81
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.27	5.66	7.70	1.88	6.00	4.12	11.82	0.23	9.09	8.74	20.75	8.55	27.30	0.15	21.27
Dec.	1st	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.05	5.44	7.48	1.81	9.51	7.70	15.17	0.37	12.55	12.18	27.35	12.57	39.92	0.27	40.19
	2nd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	5.90	5.29	7.33	1.77	8.62	6.85	14.18	0.34	12.54	12.20	26.38	12.57	39.92	0.27	38.02
	3rd	1.44	1.44	0.60	2.04	0.43	0.18	0.61	6.25	5.64	7.68	1.87	7.72	5.85	13.52	0.30	12.54	12.24	25.76	12.37	38.13	0.73	38.86
Total (million m ³)		45.47	45.47	18.83	64.30	13.64	5.65	19.29	194.49	175.20	239.50	55.35	239.82	181.47	420.97	9.35	256.89	247.54	668.51	250.91	919.42	10.81	930.23
Total in the dry season (million m ³)		22.80	22.80	9.44	32.24	6.84	2.83	9.67	95.28	85.61	117.85	28.58	109.42	80.84	198.69	4.27	75.16	70.89	269.57	80.94	350.52	2.37	352.89
Total in the wet season (million m ³)		22.67	22.67	9.39	32.06	6.80	2.82	9.62	99.21	89.59	121.65	26.77	130.40	100.63	122.28	5.08	181.73	176.65	398.94	169.97	568.90	7.44	577.34

Source : Calculated by the Study Team

Calculation of Natural Flow at the New Lengong Dam (2/2)

Unit : m³/s

YEAR : 1995

	Return Flow from Brantas Kiri Kediri Irrigation	Return Flow from Tunggorono Irrigation	Jatirek Irrigation (Net)	Net	Menurus Irrigation	Net	Industrial Water	Net	Return Flow from Jatirek Irrigation	Return Flow from Menurus Irrigation	Return Flow from Tunggorono Irrigation	Net Return Flow from Jatirek and Tunggorono Irrigation	Minip Gate (Net)	Minip Gate	Net	Brantas Delta Irrigation	Storage of Sutami and Lahor Reservoirs	New Lengong Dam Observed Discharge	Net Total Taken Water	Natural Flow at New Lengong Dam
Jan.	1st 0.26	0.81	1.99	35.98	2.61	38.59	2.35	40.94	0.60	0.78	2.66	4.04	39.27	35.25	76.17	46.34	19.47	69.98	141.98	211.96
	2nd 0.29	0.88	1.41	37.45	2.81	40.26	2.35	42.61	0.42	0.84	2.88	4.15	25.09	20.94	63.55	46.04	18.79	184.62	128.38	313.00
	3rd 0.17	0.88	1.24	36.66	2.80	39.46	2.35	41.81	0.37	0.84	2.88	4.09	26.03	21.94	63.75	36.68	37.52	302.16	137.94	440.10
Feb.	1st 0.17	0.86	1.03	34.96	1.97	36.93	2.35	38.68	0.31	0.41	2.83	3.55	33.12	29.57	68.25	38.15	36.21	459.70	142.61	602.31
	2nd 0.16	0.88	1.04	35.32	2.19	37.51	2.35	39.86	0.31	0.66	2.88	3.85	38.53	34.68	74.54	43.43	14.96	417.11	103.01	520.12
	3rd 0.16	0.88	1.81	36.08	2.35	38.43	2.35	40.78	0.54	0.71	2.88	4.13	36.31	32.19	92.96	56.95	9.20	362.62	140.72	503.34
Mar.	1st 0.17	0.88	0.40	34.07	1.93	36.00	2.35	38.35	0.12	0.58	2.88	3.57	61.65	58.09	96.42	62.52	7.76	325.09	151.18	476.27
	2nd 0.17	0.75	0.31	33.06	1.83	34.89	2.35	37.24	0.09	0.55	2.47	3.11	71.46	68.35	105.59	67.31	23.93	476.78	196.83	673.60
	3rd 0.17	0.59	0.65	31.91	1.77	33.68	2.35	36.03	0.19	0.53	1.92	2.65	70.89	68.24	104.27	58.01	1.27	444.30	163.55	607.84
Apr.	1st 0.16	0.63	1.08	31.01	1.62	32.64	2.35	34.99	0.32	0.49	2.05	2.87	61.45	58.58	93.57	39.54	25.08	442.72	158.19	600.91
	2nd 0.16	0.62	0.27	29.46	1.22	30.68	2.35	33.03	0.08	0.37	2.05	2.49	47.05	44.56	77.59	28.25	0.67	247.18	106.51	353.69
	3rd 0.15	0.63	0.74	29.85	1.85	31.69	2.35	34.04	0.22	0.55	2.05	2.82	73.76	70.94	104.98	38.38	6.01	69.19	149.37	218.56
May	1st 0.12	0.63	1.98	29.93	1.83	31.76	2.35	34.11	0.59	0.55	2.05	3.19	75.55	72.36	106.47	33.60	-1.75	109.58	138.32	247.90
	2nd 0.05	0.63	1.98	30.67	1.82	32.49	2.35	34.84	0.59	0.55	2.05	3.19	75.55	72.36	107.20	38.22	-0.59	36.15	145.06	181.21
	3rd 0.05	0.63	1.98	31.01	1.71	32.72	2.35	35.07	0.59	0.51	2.05	3.15	44.42	41.26	76.34	38.22	1.51	135	116.07	117.41
June	1st 0.05	0.63	0.42	30.92	1.11	32.03	2.35	34.38	0.13	0.33	2.05	2.51	49.95	47.44	81.33	40.99	0.27	8.65	122.55	131.19
	2nd 0.05	0.48	1.37	27.99	1.83	29.82	2.35	32.17	0.41	0.55	1.56	2.52	81.02	78.50	110.67	49.76	0.72	48.55	161.15	209.70
	3rd 0.05	0.46	1.24	26.98	1.81	28.79	2.35	31.14	0.37	0.54	1.51	2.42	81.65	79.23	110.37	42.74	-0.83	110.19	152.27	262.46
July	1st 0.05	0.46	1.20	26.32	0.00	26.32	2.35	28.67	0.36	0.00	1.51	1.87	66.50	64.63	93.30	43.19	-1.68	154	134.32	156.36
	2nd 0.05	0.46	0.79	24.83	1.08	25.93	2.35	28.28	0.24	0.32	1.51	2.07	65.17	63.10	91.38	35.42	-8.81	0.68	117.99	118.67
	3rd 0.05	0.48	0.83	22.86	0.00	22.86	2.35	25.21	0.25	0.00	1.56	1.81	63.20	61.39	86.59	39.51	-31.89	0.94	94.22	95.15
Aug.	1st 0.05	0.35	0.23	19.82	0.00	19.82	2.35	22.17	0.07	0.00	1.16	1.23	38.07	36.84	59.02	32.71	-14.90	0.00	76.82	76.82
	2nd 0.05	0.29	0.00	17.98	0.00	17.98	2.35	20.33	0.00	0.00	0.93	0.93	28.34	27.61	47.94	29.10	-13.44	0.00	63.60	63.60
	3rd 0.05	0.28	0.00	17.67	0.00	17.67	2.35	20.02	0.00	0.00	0.92	0.92	23.80	22.88	42.89	27.60	-8.11	0.00	62.39	62.39
Sept.	1st 0.05	0.28	0.00	17.36	1.34	19.20	2.35	21.55	0.00	0.40	0.93	1.33	21.88	20.55	42.10	21.29	-5.70	0.00	57.70	57.70
	2nd 0.05	0.28	0.00	17.93	1.44	19.37	2.35	21.72	0.00	0.43	0.93	1.36	22.45	21.09	42.81	13.55	-9.59	0.00	46.77	46.77
	3rd 0.05	0.40	-1.16	18.83	0.99	19.82	2.35	22.17	0.12	0.30	0.93	1.34	20.92	19.58	41.75	14.45	-7.97	0.00	48.23	48.23
Oct.	1st 0.05	0.24	0.89	17.55	0.98	18.53	2.35	20.88	0.27	0.29	0.80	1.36	21.01	19.65	40.52	12.01	-9.82	0.00	42.72	42.72
	2nd 0.05	0.22	0.93	15.92	1.07	17.00	2.35	19.35	0.28	0.32	0.71	1.31	28.19	26.88	46.22	20.30	-0.51	0.00	66.01	66.01
	3rd 0.05	0.22	0.95	17.10	1.23	18.33	2.35	20.68	0.28	0.37	0.71	1.37	39.50	38.13	58.82	21.61	9.17	0.00	89.60	89.60
Nov.	1st 0.05	0.36	0.85	20.28	1.47	21.75	2.35	24.10	0.25	0.44	1.17	1.86	39.77	37.91	62.01	21.26	4.21	0.00	87.48	87.48
	2nd 0.05	0.36	0.85	19.93	1.47	21.40	2.35	23.75	0.26	0.44	1.17	1.86	61.97	60.11	83.86	30.59	24.59	106.53	139.03	245.56
	3rd 0.05	0.36	0.73	20.26	1.46	21.72	2.35	24.07	0.22	0.44	1.17	1.82	75.44	73.62	97.68	34.55	-3.78	330.70	128.45	459.15
Dec.	1st 0.08	0.88	2.06	37.52	1.64	39.16	2.35	41.51	0.62	0.49	2.59	4.00	49.10	45.10	86.61	39.35	55.69	325.91	181.65	507.57
	2nd 0.20	0.77	1.37	34.66	3.93	38.59	2.35	40.94	0.41	1.18	2.52	4.11	61.80	57.69	98.63	39.33	27.84	257.08	110.12	367.21
	3rd 0.22	0.87	0.40	34.41	3.85	38.26	2.35	40.61	0.12	1.16	2.84	4.12	67.59	63.47	104.08	39.33	-21.01	79.85	122.41	202.26
Total (million m ³)	3.24	17.61	29.09	861.39	49.32	910.71	74.11	984.82	8.73	14.80	57.66	81.18	1581.06	1499.88	2484.70	1153.43	56.48	4518.26	3694.61	8212.87
Total in the dry season (million m ³)	0.71	5.68	10.24	334.19	15.04	349.23	37.16	386.39	3.07	4.51	18.60	26.19	727.21	701.02	1087.42	466.14	-70.58	525.19	1482.97	2008.16

Source : Calculated by the Study Team

YEAR: 1996

	Brantas, Atas Irrigation	Net	Brantas Bawah Irrigation	Net	Return Flow from Brantas Atas Irrigation	Return Flow from Brantas Bawah Irrigation	Net Return Flow	Net	Molek Irrigation (Net)	Molek Irrigation	Net	Return Flow from Molek Irrigation	Lodagang Irrigation	Lodagang Irrigation (Net)	Net	Return Flow from Lodagang Irrigation	Warujaveng -Kerosono Irrigation (Mfrican Kiri)	Warujaveng -Kerosono Irrigation (Kiri) (Net)	Net	Tungsonoro Irrigation (Mfrican Kanan)	Net	Brantas, Kiri Kediri Irrigation	Net	Return Flow from Warujaveng -Kerosono Irrigation
Jan.	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.25	5.64	7.68	1.87	9.50	7.63	15.30	0.37	12.59	12.22	27.52	12.91	40.43	0.86	41.29	3.78
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.19	5.58	7.62	1.86	9.21	7.35	14.97	0.36	9.75	9.39	24.36	10.06	34.42	0.95	35.37	2.93
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.95	6.33	8.37	2.08	8.03	5.95	14.32	0.31	9.73	9.42	23.74	9.98	33.72	0.56	34.28	2.92
Feb.	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.54	5.91	7.97	1.96	7.70	5.74	13.71	0.30	9.74	9.44	23.15	10.00	33.15	0.56	33.71	2.92
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	7.07	6.46	8.50	2.12	7.77	5.65	14.15	0.30	9.73	9.43	21.57	9.99	33.56	0.54	34.10	2.92
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.33	5.72	7.76	1.90	7.28	5.38	13.14	0.28	9.75	9.47	22.61	10.01	32.62	0.54	33.16	2.93
Mar.	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	7.01	6.40	8.44	2.10	7.01	4.91	13.35	0.27	9.50	9.23	22.57	9.85	32.62	0.58	33.00	2.85
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	7.15	6.54	8.58	2.15	7.00	4.86	13.73	0.27	9.75	9.48	22.91	10.00	32.91	0.58	33.49	2.93
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	7.14	6.53	8.57	2.14	7.35	5.21	13.78	0.29	9.39	9.10	22.88	9.65	32.53	0.58	33.11	2.82
Apr.	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.15	5.54	7.58	1.84	8.96	7.12	14.69	0.35	8.98	8.63	23.32	9.24	32.56	0.53	33.09	2.69
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.43	5.82	7.86	1.93	8.63	6.70	14.56	0.34	8.99	8.65	23.21	9.29	32.50	0.53	33.03	2.70
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.78	6.17	8.21	2.04	8.60	6.56	14.78	0.34	8.96	8.62	23.40	9.24	32.64	0.49	33.13	2.69
May	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.05	5.43	7.47	1.81	7.05	5.24	12.71	0.27	8.96	8.69	21.39	9.23	30.62	0.41	31.03	2.60
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.50	5.89	7.93	1.95	7.00	5.05	12.98	0.27	8.96	8.69	21.67	9.22	30.89	0.15	31.04	2.69
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.56	5.94	7.98	1.97	8.47	6.50	14.49	0.33	8.97	8.64	23.13	9.23	32.36	0.15	32.51	2.69
June	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	5.78	5.17	7.21	1.74	9.00	7.26	14.48	0.35	8.47	8.12	22.60	8.25	30.85	0.15	31.00	2.54
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.23	5.62	7.66	1.87	9.00	7.13	14.79	0.35	8.01	7.66	22.45	8.10	30.55	0.15	30.70	2.40
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.21	5.60	7.64	1.86	9.00	7.14	14.77	0.35	7.45	7.10	21.87	8.13	30.00	0.15	30.15	2.26
July	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	5.56	4.95	6.99	1.67	9.50	7.83	14.82	0.37	6.73	6.36	21.18	8.32	29.50	0.15	29.65	2.02
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.30	5.69	7.73	1.89	9.50	7.61	15.34	0.37	5.13	4.76	20.10	7.89	27.99	0.15	28.14	1.54
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.14	5.52	7.56	1.84	9.50	7.66	15.22	0.37	4.89	4.52	19.74	7.04	26.78	0.15	26.93	1.47
Aug.	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	5.67	5.06	7.10	1.70	9.50	7.80	14.90	0.37	4.87	4.50	19.40	5.94	25.34	0.15	25.49	1.46
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	5.43	4.82	6.86	1.63	9.50	7.87	14.73	0.37	4.88	4.51	19.24	4.79	24.03	0.15	24.18	1.46
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	4.87	4.26	6.30	1.46	7.08	5.62	11.92	0.28	4.88	4.60	16.52	4.59	21.11	0.15	21.26	1.26
Sept.	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	5.63	5.02	7.06	1.69	6.00	4.31	11.37	0.23	4.27	4.04	15.41	5.02	20.43	0.15	20.58	1.28
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	5.57	4.96	7.00	1.67	6.00	4.33	11.33	0.23	4.45	4.22	15.41	5.05	20.59	0.15	20.74	1.34
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	5.37	4.76	6.80	1.61	6.00	4.39	11.19	0.23	4.45	4.22	15.41	5.05	20.46	0.15	20.61	1.34
Oct.	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	4.86	4.25	6.28	1.46	6.00	4.54	10.83	0.23	4.46	4.23	15.05	5.06	20.11	0.15	20.26	1.34
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	4.05	3.43	5.47	1.21	6.00	4.79	10.26	0.23	4.46	4.23	14.49	5.06	19.55	0.15	19.70	1.34
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	5.27	4.66	6.70	1.58	6.00	4.42	11.12	0.23	4.09	3.86	14.97	5.07	20.04	0.15	20.19	1.23
Nov.	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	5.98	5.37	7.41	1.79	6.00	4.21	11.61	0.23	4.47	4.24	15.85	5.08	20.93	0.15	21.08	1.34
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.53	5.92	7.96	1.96	6.00	4.04	12.00	0.23	4.46	4.23	16.23	5.07	21.30	0.15	21.45	1.34
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.40	5.79	7.83	1.92	6.00	4.08	11.91	0.23	4.47	4.24	16.15	5.08	21.23	0.15	21.38	1.34
Dec.	1st	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.36	5.74	7.78	1.91	8.93	7.02	14.81	0.35	7.14	6.79	21.60	6.32	27.92	0.27	28.19	2.12
	2nd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	5.93	5.32	7.36	1.78	8.70	6.92	14.28	0.34	10.61	10.27	24.55	10.91	35.46	0.66	36.12	3.18
	3rd	1.44	1.44	0.60	0.60	0.43	0.18	0.61	6.67	6.05	8.09	2.00	7.72	5.72	13.81	0.30	8.40	8.10	21.91	11.56	33.47	0.73	34.20	2.52
Total (million m ³)	45.60	45.60	18.88	64.48	13.68	5.66	19.34	192.09	173.40	237.70	57.81	245.76	187.96	425.66	9.58	221.44	221.86	647.52	250.55	900.02	10.85	910.88	69.69	
Total in the dry season (million m ³)	22.80	22.80	9.44	32.24	6.84	2.83	9.67	89.42	79.75	111.98	26.83	119.09	92.27	204.25	4.64	83.18	74.54	282.79	95.26	378.05	2.37	380.43	24.95	

Source: Calculated by the Study Team

Calculation of Natural Flow at the New Lengkong Dam (2/2)

Unit : m³/s

YEAR : 1996

	Return Flow from Brantas Kediri Irrigation	Return Flow from Turi- Tunggoro Irrigation	Jatimalek Irrigation (Net)	Net	Mcrotus Irrigation	Net	Industrial Water	Net	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus Irrigation	Return Flow from Turi- Tunggoro Irrigation	Return Flow from Jatimalek Irrigation	Return Flow from Mcrotus
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Source : Calculated by the Study Team

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1977

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrlip Gate	Total Utilizable Return Flow from Sutami to N.L.	New Lengkong Dam Observed Discharge	Calculated Outflow from Sutami and Lahor i=d+e+f+h-g	Miscellaneous Inflow from Sutami to N.L. j = i-c
		Sutami (*) a	Lahor b	Total c = a+b							
January	1st	58.67	-	58.67	81.50	2.35	55.69	7.21	136.57	268.89	210.22
	2nd	64.07	-	64.07	83.91	2.35	69.94	7.99	133.56	281.77	217.70
	3rd	61.39	-	61.39	85.57	2.35	69.95	8.06	308.09	457.89	396.50
February	1st	65.10	-	65.10	79.54	2.35	62.33	7.73	265.20	401.69	336.59
	2nd	57.20	-	57.20	79.02	2.35	43.93	7.41	234.58	352.47	295.26
	3rd	45.29	-	45.29	84.28	2.35	46.44	7.84	238.88	364.10	318.82
March	1st	46.78	-	46.78	84.38	2.35	45.98	7.75	257.89	382.85	336.06
	2nd	55.18	-	55.18	81.42	2.35	50.73	7.32	356.20	483.38	428.20
	3rd	52.19	-	52.19	78.77	2.35	61.70	7.20	383.09	518.71	466.52
April	1st	77.72	-	77.72	74.33	2.35	68.54	6.48	321.20	459.94	382.22
	2nd	79.70	-	79.70	72.22	2.35	62.53	6.34	212.37	343.13	263.43
	3rd	59.16	-	59.16	71.50	2.35	61.57	6.15	152.60	281.87	222.71
May	1st	60.00	-	60.00	70.77	2.35	61.62	6.18	40.32	168.87	108.87
	2nd	53.78	-	53.78	70.34	2.35	32.86	5.75	12.12	111.91	58.14
	3rd	54.95	-	54.95	65.94	2.35	33.44	5.75	9.04	105.01	50.06
June	1st	53.04	-	53.04	69.98	2.35	33.46	5.91	37.23	137.10	84.06
	2nd	49.36	-	49.36	69.93	2.35	34.51	5.84	31.83	132.77	83.41
	3rd	40.62	-	40.62	65.97	2.35	32.36	5.55	37.59	132.72	92.10
July	1st	39.33	-	39.33	54.35	2.35	33.38	4.80	0.00	85.27	45.95
	2nd	47.51	-	47.51	53.80	2.35	31.42	4.52	0.00	83.05	35.54
	3rd	44.03	-	44.03	48.97	2.35	31.22	4.41	0.00	78.13	34.10
August	1st	44.88	-	44.88	43.13	2.35	31.86	4.54	0.00	72.80	27.91
	2nd	39.56	-	39.56	41.54	2.35	32.85	4.64	0.00	72.10	32.54
	3rd	40.37	-	40.37	38.99	2.35	23.80	4.32	0.00	60.82	20.44
September	1st	43.69	-	43.69	41.68	2.35	24.67	4.55	0.00	64.16	20.46
	2nd	39.43	-	39.43	38.18	2.35	23.34	4.34	0.00	59.53	20.09
	3rd	44.14	-	44.14	36.77	2.35	27.35	3.71	0.00	62.76	18.63
October	1st	40.97	-	40.97	31.61	2.35	30.70	3.12	0.00	61.54	20.57
	2nd	39.47	-	39.47	29.73	2.35	31.60	3.07	0.00	60.62	21.15
	3rd	33.70	-	33.70	30.80	2.35	36.80	3.19	0.00	66.77	33.06
November	1st	30.71	-	30.71	24.42	2.35	37.50	3.27	0.00	61.01	30.30
	2nd	32.36	-	32.36	34.32	2.35	36.90	3.55	0.00	70.02	37.66
	3rd	33.74	-	33.74	44.55	2.35	37.20	3.94	0.00	80.16	46.42
December	1st	32.44	-	32.44	51.88	2.35	37.24	5.15	5.10	91.42	58.99
	2nd	45.35	-	45.35	57.53	2.35	39.20	5.98	34.36	127.46	82.11
	3rd	29.71	-	29.71	72.99	2.35	35.75	6.38	151.15	255.86	226.15
Total Dis (Million m ³)		1,519.07	-	1,519.07	1,874.83	74.11	1,322.20	174.78	2,934.39	6,030.75	4,511.68

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1978

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrlip Gate	Total Utilizable Return Flow from Sutami to N.L.	New Lengkong Dam Observed Discharge	Calculated Outflow from Sutami and Lahor	Miscellaneous Inflow from Sutami to N.L.
		Sutami	Lahor	Total							
		(*)									
		a	b	c = a+b	d	e	f	g	h	i = d+e+f+h-g	j = i-c
January	1st	41.31	0.00	41.31	79.81	2.35	55.69	6.41	304.98	436.41	395.10
	2nd	70.98	0.00	70.98	81.74	2.35	69.94	7.17	263.14	410.00	339.02
	3rd	58.14	0.00	58.14	86.86	2.35	69.95	7.38	302.10	453.88	395.74
February	1st	60.61	0.00	60.61	80.40	2.35	62.33	7.25	326.16	464.00	403.39
	2nd	46.33	0.00	46.33	77.28	2.35	43.93	7.09	381.14	497.61	451.28
	3rd	45.00	0.00	45.00	79.93	2.35	46.44	7.15	428.47	550.04	505.04
March	1st	48.52	0.00	48.52	81.03	2.35	45.98	6.75	258.31	380.92	332.41
	2nd	67.84	0.00	67.84	97.79	2.35	50.73	7.49	412.36	555.74	487.90
	3rd	83.92	4.62	88.55	90.94	2.35	61.70	7.37	427.74	575.36	486.81
April	1st	79.72	0.00	79.72	82.90	2.35	68.54	6.76	212.99	360.02	280.30
	2nd	70.73	0.00	70.73	83.41	2.35	62.53	7.00	261.78	403.07	332.34
	3rd	63.16	0.00	63.16	77.84	2.35	61.57	6.48	88.34	223.61	160.46
May	1st	42.32	0.01	42.32	83.78	2.35	61.62	7.06	202.94	343.63	301.30
	2nd	104.79	13.29	118.09	84.24	2.35	32.86	6.88	368.08	480.65	362.56
	3rd	93.38	5.95	99.33	88.87	2.35	33.44	6.68	314.07	432.05	332.72
June	1st	134.35	27.60	161.95	85.93	2.35	33.46	6.86	477.55	592.44	430.49
	2nd	95.23	7.52	102.74	85.30	2.35	34.51	6.72	440.28	555.71	452.97
	3rd	94.97	11.91	106.87	83.23	2.35	32.36	6.70	299.02	410.26	303.38
July	1st	133.71	16.04	149.75	86.68	2.35	33.38	6.78	540.91	656.54	506.79
	2nd	72.06	5.56	77.63	75.28	2.35	31.42	6.13	251.14	354.06	276.44
	3rd	93.01	0.00	93.01	81.57	2.35	31.22	6.27	163.07	271.93	178.93
August	1st	50.46	0.00	50.46	78.56	2.35	31.86	5.90	106.97	213.85	163.39
	2nd	69.18	0.00	69.18	81.55	2.35	32.85	5.93	80.35	191.17	121.99
	3rd	71.38	0.00	71.38	73.91	2.35	23.80	5.70	37.06	131.42	60.04
September	1st	56.21	0.00	56.21	71.97	2.35	24.67	5.43	91.19	184.75	128.54
	2nd	73.54	0.00	73.54	71.72	2.35	23.34	5.65	55.79	147.55	74.01
	3rd	74.82	0.00	74.82	69.96	2.35	27.35	5.06	72.62	167.23	92.41
October	1st	71.30	0.00	71.30	67.54	2.35	30.70	4.63	61.07	157.03	85.73
	2nd	69.60	0.00	69.60	65.56	2.35	31.60	4.42	34.31	129.40	59.80
	3rd	73.10	0.00	73.10	65.57	2.35	36.80	3.68	75.64	176.68	103.59
November	1st	78.86	0.00	78.86	75.99	2.35	37.50	5.32	73.17	183.69	104.83
	2nd	77.10	0.00	77.10	72.78	2.35	36.90	4.97	172.91	279.97	202.87
	3rd	118.87	0.00	118.87	75.77	2.35	37.20	6.00	115.18	224.50	105.64
December	1st	69.89	0.00	69.89	74.73	2.35	37.24	5.96	141.41	249.78	179.89
	2nd	76.69	0.00	76.69	78.92	2.35	39.20	6.70	302.38	416.15	339.47
	3rd	74.02	0.00	74.02	86.59	2.35	35.75	7.27	414.97	532.39	458.37
Total Dis.(Million m ³)		2,376.65	80.82	2,457.47	2,511.97	74.11	1,322.20	198.72	7,471.33	11,180.90	8,723.43

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1979

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrilip Gate f	Total Utilizable Return Flow from Sutami to N.L. g	New Lengkong Dam Observed Discharge h	Calculated Outflow from Sutami and Lahor i=d+e+f+h-g	Miscellaneous Inflow from Sutami to N.L. j = i - c
		Sutami a	Lahor (*1) b	Total c = a+b							
January	1st	136.45	0.84	137.29	85.09	2.35	55.69	7.47	594.58	730.23	592.95
	2nd	126.87	0.00	126.87	85.40	2.35	69.94	7.76	560.58	710.51	583.64
	3rd	149.37	0.00	149.37	88.43	2.35	69.95	7.58	645.92	799.06	649.69
February	1st	143.01	2.39	145.40	83.60	2.35	62.33	7.57	549.60	690.31	544.90
	2nd	136.66	4.78	141.44	85.14	2.35	43.93	7.60	535.00	658.82	517.38
	3rd	120.65	0.00	120.65	87.44	2.35	46.44	7.83	579.75	708.16	587.50
March	1st	96.54	0.00	96.54	114.65	2.35	45.98	7.63	425.80	581.15	484.61
	2nd	78.19	0.00	78.19	90.51	2.35	50.73	7.61	293.65	429.64	351.44
	3rd	67.30	0.00	67.30	91.44	2.35	61.70	7.01	318.91	467.39	400.09
April	1st	58.84	0.00	58.84	87.44	2.35	68.54	7.18	293.35	444.50	385.67
	2nd	67.02	0.00	67.02	88.83	2.35	62.53	6.95	426.00	572.76	505.74
	3rd	84.73	3.53	88.26	80.84	2.35	61.57	6.75	386.40	524.41	436.15
May	1st	95.74	7.42	103.16	103.49	2.35	61.62	6.49	542.40	703.37	600.21
	2nd	106.74	11.31	118.05	87.29	2.35	32.86	6.34	384.60	500.76	382.70
	3rd	117.75	15.19	132.95	88.69	2.35	33.44	6.65	413.18	531.01	398.06
June	1st	129.13	16.46	145.58	87.87	2.35	33.46	6.73	373.60	490.54	344.96
	2nd	89.43	3.79	93.22	85.96	2.35	34.51	6.48	257.00	373.34	280.12
	3rd	60.74	0.00	60.74	84.84	2.35	32.36	6.36	31.06	144.25	83.51
July	1st	62.43	0.00	62.43	83.85	2.35	33.38	6.18	12.98	126.37	63.94
	2nd	61.15	0.00	61.15	83.59	2.35	31.42	6.44	21.95	132.88	71.73
	3rd	64.80	0.00	64.80	81.67	2.35	31.22	6.20	1.88	110.92	46.12
August	1st	60.40	0.00	60.40	80.94	2.35	31.86	6.33	21.70	130.53	70.13
	2nd	56.87	0.00	56.87	82.62	2.35	32.85	6.09	4.48	116.21	59.34
	3rd	44.63	0.00	44.63	61.92	2.35	23.80	5.03	0.00	83.04	38.41
September	1st	51.40	0.00	51.40	52.86	2.35	24.67	4.97	0.00	74.92	23.52
	2nd	57.07	0.00	57.07	61.07	2.35	23.34	5.32	0.00	81.44	24.37
	3rd	61.14	0.00	61.14	62.04	2.35	27.35	5.48	0.00	86.26	25.12
October	1st	52.94	0.00	52.94	58.35	2.35	30.70	4.24	0.00	87.16	34.22
	2nd	37.73	0.00	37.73	43.71	2.35	31.60	3.99	0.00	73.67	35.94
	3rd	33.39	0.00	33.39	47.65	2.35	36.80	3.99	0.00	82.81	49.42
November	1st	48.01	0.00	48.01	65.22	2.35	37.50	4.85	0.76	100.98	52.96
	2nd	48.96	0.00	48.96	69.22	2.35	36.90	4.86	1.53	105.13	56.17
	3rd	55.50	0.00	55.50	76.16	2.35	37.20	5.08	2.69	113.31	57.82
December	1st	59.90	0.00	59.90	86.05	2.35	37.24	6.07	58.67	178.25	118.35
	2nd	65.73	0.00	65.73	94.16	2.35	39.20	7.86	72.64	200.50	134.76
	3rd	61.31	0.00	61.31	94.28	2.35	35.75	7.84	231.19	355.73	294.42
Total Dis.(Million m ³)		2,486.82	58.08	2,544.91	2,531.75	74.11	1,322.20	200.15	6,987.16	10,715.07	8,170.16

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrilip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1980

Unit : m³/s

Month		Outflow			Total	Total	Mrlip Gate	Total	New	Calculated	Miscellaneous
		Sutami	Lahor	Total	Irrigation	Industrial		Utilizable	Lengkong	Outflow	Inflow
		(*1)			Intake	Intake		Return	Dam	from	from
		a	b	c = a+b	Discharge from Sutami to N.L. d	Discharge from Sutami to N.L. e		Flow from Sutami to N.L. g	Observed Discharge h	Sutami and Lahor i = d+e+f+h	Sutami to N.L. j = i-c
January	1st	58.51	0.00	58.51	98.94	2.35	55.69	8.82	199.62	347.78	289.27
	2nd	55.71	0.00	55.71	95.48	2.35	69.94	8.51	316.86	476.11	420.40
	3rd	52.91	0.00	52.91	97.09	2.35	69.95	8.36	392.81	553.84	500.93
February	1st	50.11	0.00	50.11	94.16	2.35	62.33	8.59	252.91	403.16	353.06
	2nd	47.30	0.00	47.30	92.83	2.35	43.93	8.24	349.76	480.63	433.32
	3rd	44.50	0.00	44.50	97.80	2.35	46.44	6.97	456.93	596.56	552.05
March	1st	41.70	0.00	41.70	87.71	2.35	45.98	6.33	274.68	404.38	362.68
	2nd	42.89	0.00	42.89	84.60	2.35	50.73	5.69	209.60	341.60	298.71
	3rd	42.10	0.00	42.10	89.04	2.35	61.70	6.32	144.82	291.59	249.49
April	1st	41.31	0.00	41.31	105.47	2.35	68.54	6.49	129.54	299.40	258.10
	2nd	64.38	2.02	66.40	112.67	2.35	62.53	6.57	291.98	462.96	396.57
	3rd	91.75	6.38	98.13	100.54	2.35	61.57	6.28	269.80	427.99	329.85
May	1st	67.43	3.19	70.62	89.47	2.35	61.62	6.55	165.48	312.38	241.75
	2nd	43.11	0.00	43.11	85.33	2.35	32.86	5.60	17.61	132.55	89.44
	3rd	39.03	0.00	39.03	78.25	2.35	33.44	5.73	1.26	109.57	70.54
June	1st	36.23	0.00	36.23	75.18	2.35	33.46	5.39	0.00	105.61	69.38
	2nd	37.47	0.00	37.47	57.77	2.35	34.51	4.96	0.00	89.66	52.19
	3rd	37.44	0.00	37.44	56.46	2.35	32.36	4.98	0.00	86.20	48.76
July	1st	44.31	0.00	44.31	53.72	2.35	33.38	4.80	0.00	84.65	40.34
	2nd	51.18	0.00	51.18	55.60	2.35	31.42	5.18	0.00	84.19	33.02
	3rd	58.05	0.00	58.05	55.41	2.35	31.22	5.20	1.23	85.01	26.96
August	1st	51.69	0.00	51.69	71.50	2.35	31.86	5.44	2.72	103.00	51.31
	2nd	53.90	0.00	53.90	56.86	2.35	32.85	4.21	0.00	87.85	33.96
	3rd	56.11	0.00	56.11	48.34	2.35	23.80	4.21	0.00	70.28	14.18
September	1st	46.37	0.00	46.37	48.03	2.35	24.67	5.01	0.00	70.04	23.67
	2nd	48.09	0.00	48.09	45.34	2.35	23.34	4.46	0.00	66.58	18.49
	3rd	50.68	0.00	50.68	45.05	2.35	27.35	3.85	0.00	70.90	20.22
October	1st	41.97	0.00	41.97	42.25	2.35	30.70	3.56	0.00	71.73	29.76
	2nd	39.55	0.00	39.55	40.20	2.35	31.60	3.64	0.00	70.51	30.97
	3rd	39.60	0.00	39.60	36.96	2.35	36.80	2.60	0.18	73.69	34.09
November	1st	37.61	0.00	37.61	37.51	2.35	37.50	2.46	1.49	76.38	38.77
	2nd	58.66	0.00	58.66	56.80	2.35	36.90	3.21	23.37	116.21	57.54
	3rd	48.77	0.00	48.77	72.98	2.35	37.20	6.01	168.64	275.16	226.39
December	1st	49.43	0.03	49.45	75.81	2.35	37.24	6.70	380.55	489.24	439.79
	2nd	50.09	0.05	50.14	77.50	2.35	39.20	7.17	142.21	254.09	203.95
	3rd	50.75	0.08	50.83	85.36	2.35	35.75	6.66	245.55	362.36	311.53
Total Dis. (Million m ³)		1,555.25	10.15	1,565.40	2,283.81	74.31	1,326.21	179.69	3,864.24	7,368.89	5,803.49

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1981

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrilip Gate f	Total Utilizable Return Flow from Sutami to N.L. g	New Lengkong Dam Observed Discharge h	Calculated Outflow from Sutami and Lahor i=d+e+f+h-g	Miscellaneous Inflow from Sutami to N.L. j=i-c
		Sutami a	Lahor b	Total c=a+b (*1)							
January	1st	51.41	0.10	51.51	92.54	2.35	55.69	8.16	317.54	459.96	408.44
	2nd	52.07	0.13	52.20	87.12	2.35	69.94	7.62	329.50	481.28	429.08
	3rd	52.74	0.15	52.89	89.44	2.35	69.95	7.13	373.80	528.41	475.52
February	1st	53.40	0.18	53.58	93.72	2.35	62.33	7.63	348.49	499.27	445.69
	2nd	54.06	0.20	54.26	89.79	2.35	43.93	7.35	256.90	385.62	331.35
	3rd	54.72	0.23	54.95	93.28	2.35	46.44	7.55	421.51	556.04	501.09
March	1st	55.38	0.25	55.64	85.62	2.35	45.98	6.62	375.95	503.28	447.64
	2nd	56.05	0.28	56.33	87.75	2.35	50.73	6.91	266.44	400.37	344.04
	3rd	56.71	0.30	57.01	76.76	2.35	61.70	6.83	218.16	352.14	295.13
April	1st	57.37	0.33	57.70	84.32	2.35	68.54	6.36	215.50	364.35	306.65
	2nd	50.80	0.33	51.13	80.17	2.35	62.53	6.42	92.87	231.51	180.38
	3rd	49.36	0.78	50.13	83.17	2.35	61.57	6.02	166.55	307.62	257.49
May	1st	62.54	0.40	62.94	90.16	2.35	61.62	6.39	299.00	446.74	383.80
	2nd	89.25	3.44	92.70	91.69	2.35	32.86	6.94	293.18	413.14	320.44
	3rd	70.30	0.00	70.30	87.99	2.35	33.44	6.48	69.09	186.38	116.09
June	1st	67.12	0.00	67.12	86.38	2.35	33.46	6.19	27.16	143.16	76.04
	2nd	54.15	0.00	54.15	77.14	2.35	34.51	5.75	17.26	125.51	71.36
	3rd	61.69	0.00	61.69	90.33	2.35	32.36	6.20	174.54	293.39	231.70
July	1st	52.05	0.00	52.05	81.18	2.35	33.38	6.41	83.06	193.56	141.51
	2nd	94.51	3.98	98.48	76.17	2.35	31.42	6.05	193.68	297.56	199.08
	3rd	74.35	0.88	75.23	78.05	2.35	31.22	6.00	56.91	162.53	87.30
August	1st	64.19	0.00	64.19	68.64	2.35	31.86	6.24	7.38	103.99	39.81
	2nd	57.17	0.00	57.17	64.12	2.35	32.85	5.98	1.37	94.71	37.54
	3rd	73.73	0.00	73.73	73.33	2.35	23.80	5.46	20.38	114.41	40.68
September	1st	61.97	0.00	61.97	56.57	2.35	24.67	5.17	6.99	85.42	23.45
	2nd	67.68	0.00	67.68	55.39	2.35	23.34	5.04	2.71	78.75	11.07
	3rd	56.06	0.00	56.06	59.33	2.35	27.35	5.12	50.04	133.95	77.89
October	1st	62.51	0.00	62.51	49.76	2.35	30.70	4.04	97.88	176.66	114.14
	2nd	59.41	0.00	59.41	47.65	2.35	31.60	3.86	32.27	110.01	50.60
	3rd	56.30	0.00	56.30	54.41	2.35	36.80	4.67	27.50	116.38	60.08
November	1st	53.20	0.00	53.20	60.68	2.35	37.50	4.98	11.66	107.21	54.01
	2nd	54.18	0.00	54.18	72.01	2.35	36.90	5.14	111.44	217.56	163.38
	3rd	73.34	0.00	73.34	76.11	2.35	37.20	5.26	228.62	339.02	265.68
December	1st	75.64	0.00	75.64	81.12	2.35	37.24	6.20	274.73	389.24	313.60
	2nd	118.39	0.00	118.39	84.16	2.35	39.20	7.00	374.54	493.26	374.87
	3rd	136.84	0.00	136.84	86.65	2.35	35.75	7.51	253.35	370.60	233.76
Total Dis.(Million m ³)		2,057.87	10.41	2,068.28	2,444.03	74.11	1,322.20	194.86	5,283.85	8,929.32	6,861.04

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrilip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1982

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrlip Gate	Total Utilizable Return Flow from Sutami to N.L.	New Lengkong Dam Observed Discharge	Calculated Outflow from Sutami and Lahor i=d+e+f+h-g	Miscellaneous Inflow from Sutami to N.L. j= i-c
		Sutami a	Lahor b (*1)	Total c = a+b							
January	1st	119.79	0.00	119.79	89.36	2.35	55.69	8.11	395.29	534.58	414.78
	2nd	102.74	0.00	102.74	91.91	2.35	69.94	8.24	480.08	636.03	533.29
	3rd	85.69	0.00	85.69	95.87	2.35	69.95	7.91	431.03	591.33	505.64
February	1st	68.63	0.00	68.63	102.80	2.35	62.33	7.72	495.84	655.60	586.96
	2nd	70.54	0.00	70.54	97.15	2.35	43.93	7.32	421.72	557.83	487.28
	3rd	81.92	0.00	81.92	86.31	2.35	46.44	7.28	358.34	486.16	404.24
March	1st	105.75	0.00	105.75	84.50	2.35	45.98	7.32	455.44	580.96	475.21
	2nd	129.25	0.48	129.73	77.48	2.35	50.73	6.79	495.22	618.99	489.27
	3rd	66.57	0.00	66.57	75.49	2.35	61.70	5.77	237.10	370.87	304.30
April	1st	80.89	0.00	80.89	80.49	2.35	68.54	6.22	244.32	389.48	308.58
	2nd	93.84	0.00	93.84	64.68	2.35	62.53	6.01	229.64	353.19	259.35
	3rd	84.88	0.00	84.88	81.02	2.35	61.57	5.62	210.86	350.18	265.30
May	1st	53.32	0.00	53.32	74.24	2.35	61.62	3.51	77.08	211.78	158.46
	2nd	45.37	0.00	45.37	80.19	2.35	32.86	5.70	7.91	117.61	72.24
	3rd	46.58	0.00	46.58	74.74	2.35	33.44	5.29	0.27	105.51	58.92
June	1st	43.95	0.00	43.95	74.74	2.35	33.46	5.39	0.00	105.16	61.21
	2nd	41.80	0.00	41.80	66.54	2.35	34.51	5.21	0.00	98.18	56.38
	3rd	45.80	0.00	45.80	61.56	2.35	32.36	4.90	0.00	91.37	45.58
July	1st	45.64	0.00	45.64	55.52	2.35	33.38	4.51	0.00	86.74	41.09
	2nd	45.49	0.00	45.49	51.24	2.35	31.42	4.43	0.00	80.58	35.09
	3rd	74.97	0.00	74.97	67.99	2.35	31.22	5.35	5.26	101.47	26.50
August	1st	49.87	0.00	49.87	49.17	2.35	31.86	4.40	0.00	78.98	29.11
	2nd	51.38	0.00	51.38	48.52	2.35	32.85	4.15	0.00	79.57	28.18
	3rd	51.95	0.00	51.95	47.70	2.35	23.80	4.04	0.00	69.81	17.86
September	1st	44.90	0.00	44.90	39.83	2.35	24.67	3.82	0.00	63.03	18.13
	2nd	44.52	0.00	44.52	39.54	2.35	23.34	4.09	0.00	61.14	16.63
	3rd	42.26	0.00	42.26	38.83	2.35	27.35	3.56	0.00	64.97	22.71
October	1st	38.28	0.00	38.28	38.02	2.35	30.70	3.22	0.00	67.85	29.57
	2nd	38.24	0.00	38.24	38.54	2.35	31.60	2.98	0.00	69.51	31.27
	3rd	35.00	0.00	35.00	37.05	2.35	36.80	3.19	0.00	73.01	38.01
November	1st	37.57	0.00	37.57	36.21	2.35	37.50	3.53	0.00	72.53	34.97
	2nd	37.76	0.00	37.76	37.23	2.35	36.90	3.42	0.00	73.06	35.29
	3rd	35.49	0.00	35.49	29.16	2.35	37.20	3.33	0.00	65.37	29.89
December	1st	33.69	0.00	33.69	30.95	2.35	37.24	3.05	0.00	67.49	33.80
	2nd	38.17	0.00	38.17	68.51	2.35	39.20	4.90	47.90	153.06	114.89
	3rd	43.46	0.00	43.46	82.45	2.35	35.75	6.50	123.78	237.83	194.37
Total Dis. (Million m ³)		1,883.49	0.41	1,883.90	2,009.97	74.11	1,322.20	163.41	4,082.58	7,325.45	5,441.55

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1983

Unit : m³/s

Month		Outflow			Total	Total	Mrilip Gate	Total	New	Calculated	Miscellaneous Inflow from Sutami to N.L. j= i-c
		Sutami	Lahor	Total	Irrigation	Industrial		Utilizable	Lengkong	Outflow	
		(*)			Intake	Intake		Return	Dam	from	
					Discharge	Discharge		Flow	Observed	Sutami	
			from Sutami to N.L. d	from Sutami to N.L. e		from Sutami to N.L. g	Discharge h	and Lahor i=d+e+f+h-g			
		a	b	c= a+b	d	e	f	g	h	i=d+e+f+h-g	j= i-c
January	1st	55.98	0.00	55.98	88.31	2.35	55.69	7.45	309.64	448.55	392.57
	2nd	60.99	0.00	60.99	88.28	2.35	69.94	8.16	265.70	418.11	357.13
	3rd	57.76	0.00	57.76	83.90	2.35	69.95	8.24	137.94	285.89	228.13
February	1st	62.05	0.00	62.05	86.53	2.35	62.33	8.11	327.81	470.90	408.85
	2nd	95.48	0.00	95.48	81.82	2.35	43.93	8.33	296.68	416.45	320.97
	3rd	102.35	0.00	102.35	88.54	2.35	46.44	8.42	314.91	443.81	341.46
March	1st	84.82	0.00	84.82	90.01	2.35	45.98	8.19	299.65	429.79	344.97
	2nd	68.84	0.00	68.84	92.86	2.35	50.73	11.59	329.39	463.74	394.90
	3rd	74.35	0.00	74.35	87.10	2.35	61.70	7.82	352.52	495.86	421.51
April	1st	79.21	0.01	79.22	80.40	2.35	68.54	6.69	244.65	389.25	310.03
	2nd	89.53	0.72	90.24	114.06	2.35	62.53	6.48	207.71	380.18	289.94
	3rd	103.99	3.83	107.82	70.15	2.35	61.57	5.92	276.11	404.26	296.44
May	1st	132.80	7.14	139.94	73.52	2.35	61.62	6.55	457.24	588.18	448.23
	2nd	98.38	5.17	103.55	69.92	2.35	32.86	6.44	358.33	457.03	353.48
	3rd	110.24	5.55	115.79	67.99	2.35	33.44	6.30	354.68	452.16	336.37
June	1st	73.64	0.67	74.30	71.48	2.35	33.46	6.37	159.08	259.99	185.69
	2nd	72.36	1.33	73.69	76.30	2.35	34.51	6.69	103.57	210.04	136.35
	3rd	80.19	0.67	80.85	77.72	2.35	32.36	6.63	29.70	135.50	54.65
July	1st	94.45	0.00	94.45	78.18	2.35	33.38	6.65	36.35	143.60	49.15
	2nd	73.76	0.00	73.76	70.89	2.35	31.42	5.56	31.97	131.07	57.30
	3rd	44.43	0.00	44.43	56.14	2.35	31.22	4.23	0.00	85.48	41.04
August	1st	50.45	0.00	50.45	50.89	2.35	31.86	4.62	0.55	81.03	30.58
	2nd	49.55	0.00	49.55	51.08	2.35	32.85	4.57	0.00	81.71	32.16
	3rd	50.04	0.00	50.04	46.56	2.35	23.80	4.06	0.00	68.66	18.61
September	1st	44.31	0.00	44.31	44.26	2.35	24.67	3.42	0.00	67.85	23.54
	2nd	40.85	0.00	40.85	39.29	2.35	23.34	2.98	0.00	62.00	21.15
	3rd	44.01	0.00	44.01	39.67	2.35	27.35	3.49	0.00	65.88	21.86
October	1st	44.33	0.00	44.33	42.05	2.35	30.70	3.45	0.00	71.66	27.32
	2nd	42.10	0.00	42.10	44.84	2.35	31.60	2.95	11.90	87.73	45.63
	3rd	53.43	0.00	53.43	52.52	2.35	36.80	2.74	66.91	155.84	102.41
November	1st	64.29	0.00	64.29	60.20	2.35	37.50	3.92	105.40	201.53	137.24
	2nd	78.33	0.00	78.33	67.19	2.35	36.90	4.85	174.48	276.07	197.74
	3rd	103.32	0.00	103.32	70.60	2.35	37.20	5.96	237.49	341.68	238.36
December	1st	56.00	0.00	56.00	85.12	2.35	37.24	6.22	85.12	203.61	147.61
	2nd	52.53	0.00	52.53	93.53	2.35	39.20	7.04	64.08	192.11	139.58
	3rd	75.65	0.00	75.65	98.73	2.35	35.75	7.49	229.96	359.30	283.66
Total Dis.(Million m³)		2,238.53	22.16	2,260.68	2,256.95	74.11	1,322.20	190.95	5,115.51	8,577.82	6,317.14

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrilip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1984

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrlip Gate f	Total Utilizable Return Flow from Sutami to N.L. g	New Lengkong Dam Observed Discharge h	Calculated Outflow from Sutami and Lahor i = d + e + f + h + g	Miscellaneous Inflow from Sutami to N.L. j = i - c
		Sutami a	Lahor b	Total c = a + b (*1)							
January	1st	88.88	0.00	88.88	86.81	2.35	55.69	5.90	218.22	357.16	268.29
	2nd	108.00	0.00	108.00	86.42	2.35	69.94	6.04	334.36	487.02	379.03
	3rd	94.78	0.00	94.78	87.71	2.35	69.95	5.81	447.71	601.90	507.12
February	1st	99.35	6.62	105.97	84.31	2.35	62.33	5.62	602.71	746.07	640.10
	2nd	134.51	14.42	148.93	84.48	2.35	43.93	5.45	568.78	694.09	545.17
	3rd	134.97	5.77	140.73	84.27	2.35	46.44	5.41	354.07	481.72	340.98
March	1st	177.62	17.55	195.17	80.72	2.35	45.98	5.48	570.08	693.66	498.48
	2nd	155.43	8.35	163.78	65.71	2.35	50.73	5.08	404.30	518.01	354.23
	3rd	140.76	7.56	148.32	86.40	2.35	61.70	5.20	330.95	476.20	327.89
April	1st	156.92	7.77	164.69	123.69	2.35	68.54	5.57	365.17	554.18	389.49
	2nd	187.52	15.51	203.03	79.58	2.35	62.53	5.29	574.42	713.59	510.56
	3rd	137.95	4.31	142.25	117.34	2.35	61.57	4.60	231.06	407.72	265.47
May	1st	104.18	0.14	104.32	70.73	2.35	61.62	4.89	196.51	326.32	221.99
	2nd	106.66	3.69	110.35	69.85	2.35	32.86	4.71	163.10	263.45	153.10
	3rd	76.57	2.08	78.65	66.80	2.35	33.44	4.09	90.30	188.80	110.14
June	1st	68.20	0.80	69.00	71.01	2.35	33.46	4.44	27.89	130.27	61.27
	2nd	72.36	0.65	73.01	71.47	2.35	34.51	4.26	54.78	158.85	85.83
	3rd	55.43	0.00	55.43	69.09	2.35	32.36	4.09	11.33	111.04	55.61
July	1st	61.41	0.00	61.41	72.10	2.35	33.38	4.29	40.13	143.67	82.26
	2nd	55.05	0.00	55.05	67.96	2.35	31.42	4.40	1.26	98.59	43.54
	3rd	53.34	0.00	53.34	63.22	2.35	31.22	4.32	0.00	92.48	39.14
August	1st	53.36	0.00	53.36	57.31	2.35	31.86	4.09	0.00	87.43	34.08
	2nd	51.37	0.00	51.37	58.86	2.35	32.85	4.05	0.00	90.01	38.64
	3rd	62.68	0.00	62.68	66.92	2.35	23.80	3.72	11.13	100.48	37.80
September	1st	68.38	0.00	68.38	66.63	2.35	24.67	3.54	48.92	139.03	70.65
	2nd	93.73	0.00	93.73	58.57	2.35	23.34	3.05	167.04	248.25	154.52
	3rd	88.20	0.00	88.20	66.33	2.35	27.35	3.39	63.42	156.06	67.86
October	1st	91.76	0.00	91.76	63.06	2.35	30.70	3.20	129.10	222.01	130.25
	2nd	91.22	0.00	91.22	68.18	2.35	31.60	3.04	73.77	172.85	81.64
	3rd	54.49	0.00	54.49	68.99	2.35	36.80	3.02	15.28	120.41	65.92
November	1st	41.80	0.00	41.80	58.30	2.35	37.50	3.55	0.00	94.60	52.80
	2nd	38.43	0.00	38.43	54.96	2.35	36.90	3.41	4.16	94.96	56.54
	3rd	57.05	0.00	57.05	68.58	2.35	37.20	3.54	85.94	190.53	133.47
December	1st	113.35	0.00	113.35	74.63	2.35	37.24	4.12	301.70	411.80	298.45
	2nd	97.67	0.00	97.67	75.85	2.35	39.20	4.57	187.11	299.94	202.27
	3rd	61.33	0.00	61.33	80.16	2.35	35.75	5.29	279.93	392.89	331.57
Total Dis. (Million m ³)		2,916.49	82.61	2,999.10	2,350.58	74.31	1,326.21	140.93	6,079.75	9,689.93	6,690.83

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1985

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrlip Gate f	Total Utilizable Return Flow from Sutami to N.L. g	New Lengkong Dam Observed Discharge h	Calculated Outflow from Sutami and Lahor i = d + e + f + g	Miscellaneous Inflow from Sutami to N.L. j = i - c
		Sutami a	Lahor b (*1)	Total c = a + b							
January	1st	68.18	0.00	68.18	79.64	2.35	55.69	5.31	225.29	357.65	289.47
	2nd	88.87	0.00	88.87	79.29	2.35	69.94	5.85	337.82	483.55	394.68
	3rd	112.11	0.00	112.11	72.56	2.35	69.95	5.16	355.18	494.87	382.77
February	1st	79.47	0.00	79.47	70.45	2.35	62.33	5.66	379.14	508.62	429.15
	2nd	120.26	0.00	120.26	78.67	2.35	43.93	5.58	341.59	460.96	340.70
	3rd	96.73	0.00	96.73	52.44	2.35	46.44	5.20	344.66	440.70	343.97
March	1st	147.16	2.68	149.84	64.64	2.35	45.98	5.71	549.90	657.16	507.32
	2nd	133.55	5.36	138.92	53.93	2.35	50.73	4.30	347.70	450.41	311.50
	3rd	132.74	3.48	136.22	62.77	2.35	61.70	4.62	349.30	471.50	335.28
April	1st	103.24	0.12	103.36	74.08	2.35	68.54	4.80	283.02	423.19	319.83
	2nd	67.73	0.00	67.73	83.74	2.35	62.53	4.44	256.68	400.86	333.13
	3rd	94.88	0.68	95.56	85.06	2.35	61.57	4.20	304.89	449.67	354.12
May	1st	59.76	0.00	59.76	66.62	2.35	61.62	4.31	121.76	248.04	188.29
	2nd	50.38	0.00	50.38	68.53	2.35	32.86	3.93	51.86	151.68	101.30
	3rd	71.98	0.00	71.98	69.14	2.35	33.44	4.33	49.04	149.64	77.66
June	1st	94.12	3.44	97.55	73.27	2.35	33.46	4.61	275.99	380.47	282.92
	2nd	111.21	3.49	114.69	73.68	2.35	34.51	4.68	160.45	266.31	151.61
	3rd	53.25	0.00	53.25	72.02	2.35	32.36	4.12	65.16	167.77	114.52
July	1st	46.84	0.00	46.84	68.88	2.35	33.38	3.82	11.37	112.17	65.32
	2nd	56.95	0.00	56.95	64.59	2.35	31.42	3.91	27.55	122.00	65.06
	3rd	54.02	0.00	54.02	66.62	2.35	31.22	3.57	11.39	108.01	53.99
August	1st	54.35	0.00	54.35	67.54	2.35	31.86	3.75	9.76	107.77	53.42
	2nd	52.65	0.00	52.65	63.47	2.35	32.85	3.40	5.65	100.92	48.27
	3rd	60.35	0.00	60.35	61.84	2.35	23.80	3.28	2.57	87.28	26.93
September	1st	54.59	0.00	54.59	58.16	2.35	24.67	3.15	1.22	83.25	28.66
	2nd	56.01	0.00	56.01	52.18	2.35	23.34	2.92	0.00	74.95	18.94
	3rd	52.93	0.00	52.93	48.41	2.35	27.35	2.93	0.00	75.19	22.25
October	1st	45.24	0.00	45.24	42.69	2.35	30.70	2.79	0.00	72.95	27.70
	2nd	41.20	0.00	41.20	35.89	2.35	31.60	2.45	0.00	67.39	26.19
	3rd	60.96	0.00	60.96	60.46	2.35	36.80	2.56	40.37	137.42	76.46
November	1st	71.83	0.00	71.83	62.75	2.35	37.50	2.47	16.03	116.16	44.33
	2nd	50.73	0.00	50.73	56.43	2.35	36.90	2.55	0.39	93.52	42.78
	3rd	74.63	0.00	74.63	56.79	2.35	37.20	2.92	61.77	155.19	80.56
December	1st	97.18	0.00	97.18	52.94	2.35	37.24	3.52	203.33	292.35	195.16
	2nd	70.14	0.00	70.14	82.33	2.35	39.20	4.49	38.18	157.57	87.43
	3rd	85.45	0.00	85.45	102.71	2.35	35.75	6.82	129.09	263.09	177.64
Total Dis.(Million m ³)		2,427.91	16.93	2,444.84	2,094.63	74.11	1,322.20	129.65	4,650.79	8,012.08	5,567.25

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1986

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrlip Gate	Total Utilizable Return Flow from Sutami to N.L.	New Lengkong Dam Observed Discharge	Calculated Outflow from Sutami and Lahor	Miscellaneous Inflow from Sutami to N.L.
		Sutami	Lahor	Total							
		(*1)									
		a	b	c = a+b							
January	1st	100.60	10.27	110.87	81.36	2.35	55.69	5.56	377.97	511.81	400.95
	2nd	119.37	9.91	129.28	93.08	2.35	69.94	5.80	222.71	382.28	252.99
	3rd	116.92	10.06	126.98	95.32	2.35	69.95	5.88	271.49	433.22	306.24
February	1st	88.26	5.37	93.63	77.81	2.35	62.33	6.16	304.84	441.16	347.54
	2nd	110.32	9.17	119.49	63.73	2.35	43.93	6.37	474.45	578.09	458.59
	3rd	74.64	9.01	83.65	72.45	2.35	46.44	6.39	254.55	369.40	285.75
March	1st	94.12	4.45	98.57	119.85	2.35	45.98	5.91	317.33	479.60	381.03
	2nd	108.08	7.58	115.66	85.11	2.35	50.73	4.90	338.49	471.78	356.12
	3rd	130.06	10.05	140.11	67.43	2.35	61.70	4.44	522.09	649.12	509.01
April	1st	137.78	4.48	142.26	60.13	2.35	68.54	3.75	575.88	703.14	560.89
	2nd	137.53	7.45	144.98	81.46	2.35	62.53	4.65	448.62	590.31	445.33
	3rd	113.33	2.68	116.01	70.25	2.35	61.57	4.86	262.66	391.97	275.96
May	1st	63.95	0.00	63.95	64.82	2.35	61.62	4.41	70.47	194.85	130.90
	2nd	60.95	0.07	61.02	66.77	2.35	32.86	3.85	37.22	135.34	74.32
	3rd	65.31	1.10	66.41	66.43	2.35	33.44	3.92	16.02	114.31	47.90
June	1st	101.38	1.83	103.21	67.26	2.35	33.46	3.90	71.77	170.94	67.73
	2nd	101.92	3.08	105.00	68.57	2.35	34.51	4.29	160.44	261.57	156.57
	3rd	101.57	15.61	117.18	67.50	2.35	32.36	3.98	89.64	187.86	70.68
July	1st	95.80	4.77	100.57	68.42	2.35	33.38	4.25	118.27	218.16	117.59
	2nd	71.41	0.93	72.34	66.74	2.35	31.42	3.82	29.93	126.62	54.28
	3rd	59.31	0.00	59.31	66.48	2.35	31.22	4.11	15.15	111.09	51.78
August	1st	68.91	0.00	68.91	64.22	2.35	31.86	3.79	13.29	107.93	39.02
	2nd	59.14	0.00	59.14	55.40	2.35	32.85	3.66	1.15	88.09	28.95
	3rd	76.62	0.00	76.62	62.28	2.35	23.80	3.20	10.30	95.53	18.91
September	1st	71.50	0.00	71.50	59.32	2.35	24.67	3.43	20.40	103.31	31.80
	2nd	52.15	0.00	52.15	52.27	2.35	23.34	2.82	5.36	80.50	28.34
	3rd	64.69	0.00	64.69	50.97	2.35	27.35	3.15	14.12	91.64	26.95
October	1st	58.95	0.00	58.95	50.65	2.35	30.70	3.10	8.13	88.73	29.78
	2nd	73.37	0.00	73.37	49.49	2.35	31.60	2.87	76.82	157.39	84.02
	3rd	60.94	0.00	60.94	43.69	2.35	36.80	3.24	23.21	102.80	41.87
November	1st	85.03	0.00	85.03	51.53	2.35	37.50	3.26	107.73	195.85	110.82
	2nd	94.56	0.00	94.56	56.46	2.35	36.90	3.38	109.73	202.06	107.50
	3rd	108.14	0.00	108.14	58.62	2.35	37.20	3.81	171.96	266.32	158.18
December	1st	71.37	0.00	71.37	65.25	2.35	37.24	4.26	48.63	149.22	77.85
	2nd	71.88	0.00	71.88	64.45	2.35	39.20	4.60	120.07	221.46	149.59
	3rd	72.85	0.00	72.85	63.89	2.35	35.75	5.11	133.55	230.43	157.58
Total Dis. (Million m ³)		2,752.68	102.12	2,854.79	2,118.07	74.11	1,322.20	135.32	5,091.27	8,470.34	5,615.55

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1987

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrlip Gate	Total Utilizable Return Flow from Sutami to N.L.	New Lengkong Dam Observed Discharge	Calculated Outflow from Sutami and Lahor	Miscellaneous Inflow from Sutami to N.L.
		Sutami	Lahor	Total							
		(*)									
		a	b	c = a+b	d	e	f	g	h	i = d+e+f+h-g	j = i-c
January	1st	120.71	0.00	120.71	75.26	2.35	55.69	5.59	463.20	590.91	470.20
	2nd	131.90	0.00	131.90	74.09	2.35	69.94	5.50	227.90	368.78	236.88
	3rd	119.04	0.00	119.04	88.94	2.35	69.95	5.22	362.90	518.91	399.87
February	1st	124.14	0.00	124.14	77.41	2.35	62.33	5.70	385.10	521.49	397.35
	2nd	124.06	0.00	124.06	72.32	2.35	43.93	4.90	650.90	764.59	640.53
	3rd	115.69	0.00	115.69	73.14	2.35	46.44	3.26	549.90	668.57	552.88
March	1st	100.16	0.00	100.16	74.04	2.35	45.98	5.14	437.80	555.03	454.87
	2nd	84.10	0.00	84.10	82.85	2.35	50.73	5.15	229.60	360.38	276.28
	3rd	75.09	0.00	75.09	81.97	2.35	61.70	5.01	209.70	350.71	275.61
April	1st	66.09	0.00	66.09	69.19	2.35	68.54	4.75	91.00	226.32	160.24
	2nd	57.48	0.00	57.48	82.62	2.35	62.53	4.56	30.50	173.44	115.96
	3rd	57.55	0.00	57.55	82.11	2.35	61.57	3.87	39.50	181.66	124.11
May	1st	71.33	0.00	71.33	69.42	2.35	61.62	4.46	47.00	175.93	104.60
	2nd	53.54	0.00	53.54	67.72	2.35	32.86	4.23	22.80	121.50	67.96
	3rd	63.55	0.00	63.55	66.26	2.35	33.44	3.67	4.20	102.57	39.02
June	1st	94.17	0.00	94.17	71.14	2.35	33.46	4.20	23.20	125.95	31.78
	2nd	69.73	0.00	69.73	70.97	2.35	34.51	4.05	2.80	106.57	36.85
	3rd	59.74	0.00	59.74	68.55	2.35	32.36	3.70	1.30	100.86	41.12
July	1st	60.42	0.00	60.42	64.90	2.35	33.38	3.72	0.00	96.91	36.49
	2nd	53.49	0.00	53.49	64.47	2.35	31.42	3.99	0.00	94.25	40.76
	3rd	48.43	0.00	48.43	52.00	2.35	31.22	3.68	0.00	81.89	33.46
August	1st	29.49	0.00	29.49	40.65	2.35	31.86	3.14	0.00	71.73	42.24
	2nd	31.83	0.00	31.83	33.63	2.35	32.85	3.28	0.00	65.55	33.72
	3rd	33.43	0.00	33.43	30.46	2.35	23.80	2.94	0.00	53.66	20.23
September	1st	31.27	0.00	31.27	27.87	2.35	24.67	2.79	0.00	52.10	20.83
	2nd	29.78	0.00	29.78	26.60	2.35	23.34	2.45	0.00	49.84	20.05
	3rd	29.14	0.00	29.14	28.52	2.35	27.35	2.48	0.00	55.74	26.60
October	1st	36.33	0.00	36.33	27.29	2.35	30.70	2.35	0.00	57.99	21.67
	2nd	29.76	0.00	29.76	27.25	2.35	31.60	2.36	0.00	58.84	29.08
	3rd	29.75	0.00	29.75	28.04	2.35	36.80	2.35	0.00	64.84	35.08
November	1st	35.83	0.00	35.83	24.73	2.35	37.50	2.33	0.00	62.25	26.42
	2nd	36.80	0.00	36.80	25.48	2.35	36.90	2.29	0.00	62.44	25.64
	3rd	47.48	0.00	47.48	39.11	2.35	37.20	2.46	19.60	95.80	48.32
December	1st	86.94	0.00	86.94	53.59	2.35	37.24	4.75	192.20	280.63	193.70
	2nd	145.03	0.00	145.03	57.19	2.35	39.20	4.53	333.00	427.21	282.18
	3rd	141.95	0.00	141.95	57.29	2.35	35.75	5.64	222.00	311.74	169.79
Total Dis.(Million m ³)		2,205.95	0.00	2,205.95	1,799.64	74.11	1,322.20	123.29	3,901.82	6,974.49	4,768.54

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1988

		Outflow			Total	Total		Total	New	Calculated	Miscellaneous
Month		Sutami	Lahor	Total	Irrigation	Industrial	Mrlip	Utilizable	Lengkong	Outflow	Inflow
		(*1)			Discharge	Discharge	Gate	Return	Dam	from	from
					from Sutami	from Sutami		Flow	Observed	Sutami	Sutami
					to N.L.	to N.L.		from Sutami	Discharge	and	to
		a	b	c = a+b	d	e	f	to N.L.	h	Lahor	N.L.
								g	i=d+e+f+h-g		j = i-c
January	1st	99.09	0.00	99.09	70.88	2.35	55.69	4.86	56.30	180.36	81.27
	2nd	122.06	0.00	122.06	80.76	2.35	69.94	5.04	178.70	326.71	204.64
	3rd	133.77	0.00	133.77	96.70	2.35	69.95	4.97	518.90	682.92	549.15
February	1st	160.20	18.57	178.76	82.39	2.35	62.33	5.50	408.00	549.58	370.81
	2nd	143.83	3.92	147.75	104.96	2.35	43.93	5.27	237.20	383.17	235.42
	3rd	121.13	0.00	121.13	117.90	2.35	46.44	5.48	109.80	271.01	149.89
March	1st	103.48	0.00	103.48	83.41	2.35	45.98	5.51	142.20	268.43	164.95
	2nd	123.87	0.00	123.87	85.34	2.35	50.73	4.73	301.20	434.89	311.02
	3rd	135.19	0.00	135.19	78.56	2.35	61.70	4.62	253.80	391.79	256.61
April	1st	96.03	0.20	96.23	77.88	2.35	68.54	3.82	161.30	306.24	210.02
	2nd	81.05	0.00	81.05	76.49	2.35	62.53	4.20	51.40	188.57	107.52
	3rd	64.60	0.00	64.60	77.72	2.35	61.57	4.06	39.40	176.98	112.39
May	1st	84.23	1.42	85.65	76.47	2.35	61.62	4.03	132.40	268.81	183.16
	2nd	88.48	3.87	92.35	66.13	2.35	32.86	3.62	153.10	250.83	158.48
	3rd	64.08	0.73	64.81	63.99	2.35	33.44	3.73	67.10	163.14	98.33
June	1st	82.12	0.44	82.56	67.95	2.35	33.46	3.63	31.40	131.52	48.96
	2nd	68.35	0.00	68.35	75.70	2.35	34.51	3.62	15.40	124.35	56.00
	3rd	41.12	0.00	41.12	56.33	2.35	32.36	3.33	0.00	87.72	46.60
July	1st	48.27	0.00	48.27	54.49	2.35	33.38	3.13	0.00	87.10	38.82
	2nd	42.13	0.00	42.13	51.27	2.35	31.42	2.88	0.00	82.17	40.04
	3rd	41.22	0.00	41.22	47.46	2.35	31.22	2.28	0.00	78.74	37.52
August	1st	47.07	0.00	47.07	69.75	2.35	31.86	2.09	0.00	101.87	54.80
	2nd	51.47	0.00	51.47	47.34	2.35	32.85	2.54	0.00	80.00	28.52
	3rd	56.82	0.00	56.82	41.88	2.35	23.80	1.98	0.00	66.05	9.23
September	1st	47.16	0.00	47.16	40.34	2.35	24.67	2.05	0.00	65.31	18.14
	2nd	47.90	0.00	47.90	38.10	2.35	23.34	1.99	0.00	61.80	13.90
	3rd	42.96	0.00	42.96	32.42	2.35	27.35	2.16	0.00	59.96	17.00
October	1st	39.65	0.00	39.65	33.96	2.35	30.70	1.36	0.00	65.65	26.00
	2nd	56.15	0.00	56.15	39.93	2.35	31.60	1.42	0.00	72.47	16.32
	3rd	67.54	0.00	67.54	46.29	2.35	36.80	1.22	0.00	84.22	16.68
November	1st	47.07	0.00	47.07	42.96	2.35	37.50	1.81	0.00	80.99	33.92
	2nd	56.71	0.00	56.71	57.28	2.35	36.90	1.99	174.68	269.23	212.52
	3rd	49.72	0.00	49.72	69.40	2.35	37.20	3.35	58.20	163.80	114.08
December	1st	86.94	0.00	86.94	79.72	2.35	37.24	4.05	62.88	178.14	91.20
	2nd	145.03	0.00	145.03	73.40	2.35	39.20	4.35	30.00	140.60	-4.42
	3rd	141.95	0.00	141.95	92.28	2.35	35.75	8.59	135.53	257.33	115.38
Total Dis.(Million m ³)		2,575.04	25.24	2,600.29	2,101.91	74.31	1,326.21	113.55	2,942.30	6,331.18	3,730.90

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1989

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrlip Gate	Total Utilizable Return Flow from Sutami to N.L.	New Lengkong Dam Observed Discharge	Calculated Outflow from Sutami and Lahor	Miscellaneous Inflow from Sutami to N.L.
		Sutami	Lahor	Total							
		(*)									
		a	b	c = a+b	d	e	f	g	h	i = d+e+f+h-g	j = i-c
January	1st	89.33	0.00	89.33	89.66	2.35	55.69	4.74	320.80	463.76	374.43
	2nd	76.86	0.00	76.86	98.11	2.35	69.94	5.14	266.20	431.46	354.60
	3rd	53.08	0.00	53.08	107.00	2.35	69.95	4.85	199.40	373.85	320.76
February	1st	49.97	0.00	49.97	95.21	2.35	62.33	4.96	122.70	277.64	227.67
	2nd	67.45	0.00	67.45	103.20	2.35	43.93	4.91	323.50	468.07	400.63
	3rd	115.39	0.00	115.39	102.96	2.35	46.44	4.89	367.70	514.56	399.17
March	1st	130.31	0.00	130.31	96.42	2.35	45.98	4.58	255.30	395.46	265.15
	2nd	107.27	0.00	107.27	109.79	2.35	50.73	4.17	144.50	303.20	195.93
	3rd	75.62	0.00	75.62	95.68	2.35	61.70	4.18	140.00	295.55	219.94
April	1st	115.91	0.00	115.91	104.01	2.35	68.54	4.08	333.40	504.22	388.31
	2nd	80.96	0.00	80.96	94.53	2.35	62.53	3.77	157.90	313.55	232.59
	3rd	72.41	0.00	72.41	72.65	2.35	61.57	3.93	119.90	252.54	180.13
May	1st	90.98	3.62	94.60	82.57	2.35	61.62	3.27	196.90	340.17	245.57
	2nd	58.00	1.02	59.02	70.07	2.35	32.86	3.41	98.30	200.16	141.14
	3rd	76.77	0.56	77.33	66.49	2.35	33.44	3.91	162.20	260.57	183.23
June	1st	105.63	4.40	110.03	63.56	2.35	33.46	3.30	312.50	408.58	298.55
	2nd	118.31	4.70	123.01	64.29	2.35	34.51	3.69	297.90	395.36	272.35
	3rd	69.90	0.23	70.13	91.39	2.35	32.36	3.41	144.80	267.49	197.36
July	1st	65.08	0.00	65.08	70.69	2.35	33.38	2.91	75.20	178.71	113.63
	2nd	75.03	0.18	75.21	72.05	2.35	31.42	2.55	66.00	169.27	94.06
	3rd	94.13	0.17	94.30	66.90	2.35	31.22	2.43	135.80	233.84	139.54
August	1st	90.38	0.00	90.38	59.32	2.35	31.86	2.41	64.40	155.52	65.14
	2nd	62.07	0.00	62.07	53.49	2.35	32.85	1.18	19.00	106.51	44.44
	3rd	55.53	0.00	55.53	50.81	2.35	23.80	1.89	0.00	75.07	19.54
September	1st	62.02	0.00	62.02	49.19	2.35	24.67	2.21	0.00	74.00	11.97
	2nd	55.70	0.00	55.70	43.96	2.35	23.34	1.85	0.00	67.80	12.10
	3rd	51.27	0.00	51.27	37.93	2.35	27.35	1.78	0.00	65.85	14.58
October	1st	44.45	0.00	44.45	32.04	2.35	30.70	1.67	0.00	63.42	18.97
	2nd	43.99	0.00	43.99	24.83	2.35	31.60	1.50	0.00	57.28	13.29
	3rd	53.61	0.00	53.61	35.24	2.35	36.80	1.72	12.30	84.97	31.36
November	1st	127.08	0.00	127.08	34.49	2.35	37.50	1.48	131.30	204.16	77.08
	2nd	69.34	0.00	69.34	54.02	2.35	36.90	2.25	32.80	123.82	54.48
	3rd	47.06	0.00	47.06	57.94	2.35	37.20	2.61	0.00	94.88	47.82
December	1st	52.61	0.00	52.61	67.07	2.35	37.24	3.30	2.10	105.46	52.85
	2nd	52.24	0.00	52.24	60.64	2.35	39.20	3.72	15.40	113.87	61.63
	3rd	55.86	0.00	55.86	69.85	2.35	35.75	3.77	20.30	124.48	68.63
Total Dis. (Million m ³)		2,363.03	12.92	2,375.94	2,226.25	74.11	1,322.20	101.72	3,915.61	7,436.46	5,060.52

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1990

Unit : m³/s

Month		Outflow			Total	Total	Mrlip Gate	Total	New	Calculated	Miscellaneous
		Sutami	Lahor	Total	Irrigation	Industrial		Utilizable	Lengkong	Outflow	Inflow
		(*)			Intake	Intake		Return	Dam	from	from
		a	b	c = a+b	Discharge from Sutami to N.L.	Discharge from Sutami to N.L.		Flow from Sutami to N.L.	Observed Discharge	Sutami and Lahor	Sutami to N.L.
					d	e	f	g	h	i = d+e+f+h-g	j = i-c
January	1st	95.31	0.00	95.31	81.25	2.35	55.69	5.17	247.50	381.61	286.30
	2nd	105.73	0.00	105.73	81.12	2.35	69.94	5.81	151.90	299.50	193.77
	3rd	91.33	0.00	91.33	76.98	2.35	69.95	5.64	262.40	406.03	314.70
February	1st	96.79	0.00	96.79	77.46	2.35	62.33	6.17	244.60	380.57	283.78
	2nd	67.53	0.00	67.53	105.39	2.35	43.93	6.02	172.90	318.56	251.03
	3rd	59.25	0.00	59.25	94.37	2.35	46.44	5.65	372.90	510.42	451.17
March	1st	93.31	0.00	93.31	79.03	2.35	45.98	4.93	393.20	515.63	422.32
	2nd	128.26	0.00	128.26	101.84	2.35	50.73	4.65	249.20	399.46	271.21
	3rd	75.69	0.00	75.69	61.75	2.35	61.70	4.51	138.80	260.09	184.40
April	1st	73.89	0.00	73.89	92.75	2.35	68.54	4.32	77.20	236.52	162.63
	2nd	74.60	0.00	74.60	106.08	2.35	62.53	4.33	75.30	241.92	167.33
	3rd	68.34	0.00	68.34	77.06	2.35	61.57	4.49	86.00	222.49	154.15
May	1st	56.75	0.00	56.75	82.94	2.35	61.62	3.79	8.10	151.22	94.47
	2nd	54.76	0.00	54.76	82.42	2.35	32.86	3.85	65.40	179.18	124.43
	3rd	98.66	5.32	103.98	75.03	2.35	33.44	3.64	191.30	298.48	194.50
June	1st	54.85	0.15	54.99	83.60	2.35	33.46	3.87	49.60	165.14	110.14
	2nd	45.63	0.00	45.63	64.50	2.35	34.51	3.26	0.00	98.10	52.47
	3rd	54.83	0.00	54.83	73.85	2.35	32.36	3.87	38.20	142.89	88.06
July	1st	58.36	0.00	58.36	67.94	2.35	33.38	3.43	30.20	130.44	72.08
	2nd	47.78	0.00	47.78	62.93	2.35	31.42	3.18	0.00	93.53	45.75
	3rd	45.78	0.00	45.78	52.46	2.35	31.22	2.55	0.00	83.48	37.69
August	1st	41.44	0.00	41.44	50.30	2.35	31.86	2.69	0.00	81.82	40.38
	2nd	42.10	0.00	42.10	43.19	2.35	32.85	2.32	0.00	76.07	33.97
	3rd	60.41	0.00	60.41	44.32	2.35	23.80	2.47	11.50	79.50	19.08
September	1st	54.66	0.00	54.66	45.01	2.35	24.67	2.21	19.00	88.82	34.16
	2nd	59.81	0.00	59.81	50.40	2.35	23.34	2.87	18.60	91.82	32.02
	3rd	43.04	0.00	43.04	42.21	2.35	27.35	2.37	0.80	70.35	27.31
October	1st	41.57	0.00	41.57	36.19	2.35	30.70	2.17	5.20	72.27	30.70
	2nd	40.09	0.00	40.09	32.94	2.35	31.60	0.94	2.20	68.16	28.07
	3rd	43.65	0.00	43.65	39.35	2.35	36.80	1.58	2.50	79.42	35.77
November	1st	55.32	0.00	55.32	51.34	2.35	37.50	1.69	5.90	95.40	40.08
	2nd	45.36	0.00	45.36	47.30	2.35	36.90	2.20	0.00	84.35	38.99
	3rd	44.04	0.00	44.04	49.62	2.35	37.20	2.07	8.80	95.90	51.87
December	1st	47.49	0.00	47.49	70.88	2.35	37.24	2.80	20.60	128.26	80.77
	2nd	51.00	0.00	51.00	73.39	2.35	39.20	3.92	107.60	218.63	167.62
	3rd	118.33	0.00	118.33	82.83	2.35	35.75	5.84	308.60	423.69	305.36
Total Dis. (Million m ³)		2,053.95	5.18	2,059.13	2,129.24	74.11	1,322.20	114.69	2,922.85	6,333.72	4,274.59

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1991

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrlip Gate f	Total Utilizable Return Flow from Sutami to N.L. g	New Lengkong Dam Observed Discharge h	Calculated Outflow from Sutami and Lahor i=d+e+f+h-g	Miscellaneous Inflow from Sutami to N.L. j=i-c
		Sutami a	Lahor b	Total c=a+b (*1)							
January	1st	118.59	0.00	118.59	82.07	2.35	55.69	8.89	194.70	325.92	207.33
	2nd	118.85	0.00	118.85	108.91	2.35	69.94	8.22	362.80	535.77	416.92
	3rd	119.11	0.00	119.11	92.65	2.35	69.95	7.71	387.00	544.24	425.12
February	1st	119.37	0.00	119.37	96.04	2.35	62.33	7.42	331.20	484.50	365.13
	2nd	83.00	0.00	83.00	123.47	2.35	43.93	7.90	325.90	487.75	404.75
	3rd	59.24	0.00	59.24	89.76	2.35	46.44	7.96	240.00	370.59	311.35
March	1st	97.07	0.00	97.07	80.12	2.35	45.98	7.97	270.10	390.58	293.51
	2nd	65.07	0.00	65.07	113.17	2.35	50.73	7.51	160.40	319.15	254.08
	3rd	62.85	0.00	62.85	82.43	2.35	61.70	6.76	98.00	237.72	174.87
April	1st	75.83	0.00	75.83	72.86	2.35	68.54	6.65	250.20	387.30	311.47
	2nd	95.17	0.00	95.17	67.28	2.35	62.53	6.75	304.90	430.31	335.14
	3rd	98.34	0.00	98.34	65.77	2.35	61.57	6.81	364.50	487.38	389.03
May	1st	68.98	1.02	70.00	72.59	2.35	61.62	7.02	165.30	294.84	224.84
	2nd	55.12	0.37	55.49	75.76	2.35	32.86	6.13	36.20	141.04	85.55
	3rd	45.47	0.00	45.47	73.38	2.35	33.44	6.37	1.30	104.10	58.63
June	1st	41.92	0.00	41.92	65.92	2.35	33.46	6.13	0.00	95.60	53.68
	2nd	43.71	0.00	43.71	63.32	2.35	34.51	5.35	0.00	94.83	51.12
	3rd	45.76	0.00	45.76	58.10	2.35	32.36	4.61	1.60	89.81	44.04
July	1st	40.23	0.00	40.23	55.21	2.35	33.38	4.74	0.00	86.20	45.97
	2nd	37.08	0.00	37.08	51.51	2.35	31.42	4.56	0.00	80.72	43.64
	3rd	37.72	0.00	37.72	48.95	2.35	31.22	4.34	0.00	78.19	40.47
August	1st	37.89	0.00	37.89	46.90	2.35	31.86	4.36	0.00	76.74	38.85
	2nd	37.00	0.00	37.00	43.34	2.35	32.85	4.07	0.00	74.48	37.48
	3rd	38.27	0.00	38.27	42.03	2.35	23.80	4.10	0.00	64.08	25.81
September	1st	37.72	0.00	37.72	39.18	2.35	24.67	3.94	0.00	62.26	24.54
	2nd	40.02	0.00	40.02	46.88	2.35	23.34	3.98	0.00	68.59	28.57
	3rd	40.15	0.00	40.15	40.69	2.35	27.35	3.87	0.00	66.53	26.38
October	1st	49.80	0.00	49.80	49.13	2.35	30.70	4.15	0.00	78.04	28.24
	2nd	44.10	0.00	44.10	41.34	2.35	31.60	4.04	0.00	71.25	27.15
	3rd	41.23	0.00	41.23	36.64	2.35	36.80	3.98	0.00	71.81	30.58
November	1st	41.92	0.00	41.92	39.75	2.35	37.50	4.06	0.00	75.54	33.62
	2nd	63.81	0.00	63.81	65.82	2.35	36.90	4.10	1.40	102.38	38.57
	3rd	52.10	0.00	52.10	75.11	2.35	37.20	4.91	9.50	119.26	67.16
December	1st	64.92	0.00	64.92	82.58	2.35	37.24	6.02	112.60	228.75	163.83
	2nd	67.34	0.00	67.34	85.36	2.35	39.20	7.12	48.10	167.89	100.55
	3rd	63.41	0.00	63.41	91.76	2.35	35.75	7.89	122.20	244.17	180.76
Total Dis.(Million m ³)		1,967.44	1.20	1,968.64	2,155.37	74.11	1,322.20	183.93	3,283.85	6,651.60	4,682.96

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1992

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L. d	Total Industrial Intake Discharge from Sutami to N.L. e	Mrilip Gate f	Total Utilizable Return Flow from Sutami to N.L. g	New Lengkong Dam Observed Discharge h	Calculated Outflow from Sutami and Lahor i = d + e + f + g	Miscellaneous Inflow from Sutami to N.L. j = i - c
		Sutami	Lahor	Total							
		(*1)									
		a	b	c = a + b							
January	1st	60.90	0.00	60.90	99.33	2.35	55.69	10.53	194.70	341.54	280.64
	2nd	63.71	0.00	63.71	80.69	2.35	69.94	8.21	352.80	497.57	433.86
	3rd	89.30	0.00	89.30	74.09	2.35	69.95	6.24	425.60	565.75	476.45
February	1st	113.05	1.96	115.01	60.84	2.35	62.33	3.98	447.20	568.74	453.73
	2nd	142.64	8.08	150.72	86.01	2.35	43.93	6.30	436.30	562.28	411.56
	3rd	83.61	0.28	83.89	91.96	2.35	46.44	8.28	282.50	414.97	331.08
March	1st	98.61	0.37	98.98	100.15	2.35	45.98	7.67	224.00	364.81	265.83
	2nd	174.47	11.01	185.48	74.67	2.35	50.73	5.55	613.20	735.40	549.92
	3rd	116.47	7.36	123.83	68.83	2.35	61.70	3.52	308.40	437.76	313.94
April	1st	129.35	9.75	139.11	66.85	2.35	68.54	4.40	430.50	563.84	424.73
	2nd	136.92	11.06	147.98	62.65	2.35	62.53	4.99	416.70	539.24	391.26
	3rd	96.90	5.11	102.02	69.84	2.35	61.57	5.94	227.10	354.92	252.91
May	1st	75.67	2.43	78.10	75.88	2.35	61.62	6.95	70.70	203.60	125.50
	2nd	71.02	0.94	71.96	83.18	2.35	32.86	6.13	33.00	145.26	73.30
	3rd	80.33	3.03	83.37	80.25	2.35	33.44	5.94	94.40	204.50	121.13
June	1st	69.93	1.66	71.60	86.80	2.35	33.46	7.55	111.20	226.26	154.66
	2nd	53.71	0.00	53.71	81.45	2.35	34.51	7.18	7.90	119.04	65.33
	3rd	45.29	0.00	45.29	73.61	2.35	32.36	5.26	0.00	103.06	57.78
July	1st	63.12	0.47	63.59	61.85	2.35	33.38	5.00	5.90	98.48	34.89
	2nd	49.90	0.00	49.90	59.62	2.35	31.42	5.13	0.00	88.27	38.37
	3rd	50.77	0.00	50.77	56.26	2.35	31.22	5.00	0.00	84.83	34.06
August	1st	47.42	0.00	47.42	52.91	2.35	31.86	4.46	0.00	82.66	35.24
	2nd	53.11	0.00	53.11	52.39	2.35	32.85	4.57	0.00	83.02	29.91
	3rd	57.10	0.00	57.10	52.53	2.35	23.80	4.64	0.00	74.04	16.94
September	1st	68.19	0.00	68.19	42.41	2.35	24.67	3.33	55.80	121.90	53.71
	2nd	61.94	0.00	61.94	42.37	2.35	23.34	4.62	0.00	63.44	1.50
	3rd	61.57	0.00	61.57	45.87	2.35	27.35	4.41	0.00	71.16	9.60
October	1st	89.12	0.00	89.12	49.89	2.35	30.70	4.44	64.80	143.30	54.18
	2nd	90.75	0.00	90.75	52.78	2.35	31.60	4.43	34.90	117.20	26.45
	3rd	121.76	0.00	121.76	61.77	2.35	36.80	5.25	53.40	149.07	27.31
November	1st	132.79	0.00	132.79	69.11	2.35	37.50	6.43	57.70	160.23	27.44
	2nd	96.90	0.00	96.90	71.82	2.35	36.90	6.93	53.60	157.74	60.84
	3rd	114.41	0.00	114.41	81.63	2.35	37.20	6.97	150.10	264.32	149.91
December	1st	135.94	0.00	135.94	89.85	2.35	37.24	7.70	257.70	379.43	243.50
	2nd	135.89	0.00	135.89	97.95	2.35	39.20	8.60	296.50	427.40	291.51
	3rd	122.01	0.00	122.01	110.01	2.35	35.75	9.18	125.20	264.13	142.12
Total Dis.(Million m ³)		2,859.80	55.75	2,915.55	2,254.43	74.31	1,326.21	189.09	5,101.27	8,567.14	5,651.59

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrilip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1993

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrlip Gate f	Total Utilizable Return Flow from Sutami to N.L. g	New Lengkong Dam Observed Discharge h	Calculated Outflow from Sutami and Lahor i=d+e+f+h-g	Miscellaneous Inflow from Sutami to N.L. j = i - c
		Sutami a	Lahor b	Total c = a+b (*1)							
January	1st	136.21	5.14	141.35	111.93	2.35	55.69	9.92	312.75	472.80	331.45
	2nd	132.23	10.29	142.51	111.97	2.35	69.94	9.97	352.10	526.39	383.88
	3rd	147.93	12.91	160.83	110.41	2.35	69.95	9.71	423.67	596.66	435.83
February	1st	136.39	2.98	139.38	105.12	2.35	62.33	9.39	442.02	602.43	463.06
	2nd	106.47	0.10	106.57	113.06	2.35	43.93	9.40	182.99	332.93	226.36
	3rd	98.87	0.00	98.87	97.95	2.35	46.44	9.13	154.04	291.65	192.78
March	1st	92.58	0.15	92.73	108.68	2.35	45.98	9.04	93.51	241.48	148.75
	2nd	100.30	5.74	106.03	109.88	2.35	50.73	9.30	205.17	358.82	252.79
	3rd	110.75	8.26	119.01	78.76	2.35	61.70	9.33	279.56	413.04	294.03
April	1st	110.11	11.36	121.47	84.21	2.35	68.54	9.39	446.18	591.90	470.43
	2nd	134.20	8.71	142.91	80.85	2.35	62.53	9.35	400.29	536.68	393.77
	3rd	91.31	5.52	96.83	86.27	2.35	61.57	9.20	216.28	357.27	260.44
May	1st	85.27	2.87	88.14	90.52	2.35	61.62	9.32	114.99	260.15	172.02
	2nd	63.03	0.24	63.27	92.16	2.35	32.86	8.55	14.12	132.94	69.67
	3rd	62.11	0.05	62.16	87.70	2.35	33.44	8.67	9.03	123.85	61.69
June	1st	63.17	1.97	65.14	73.60	2.35	33.46	6.22	10.32	113.50	48.36
	2nd	80.64	3.29	83.94	74.59	2.35	34.51	5.48	131.48	237.45	153.51
	3rd	57.95	0.18	58.12	72.41	2.35	32.36	4.74	42.30	144.67	86.55
July	1st	46.40	0.00	46.40	64.26	2.35	33.38	4.95	0.00	95.04	48.63
	2nd	55.80	0.00	55.80	56.95	2.35	31.42	5.13	0.00	85.60	29.80
	3rd	60.41	0.00	60.41	59.16	2.35	31.22	4.84	0.00	87.88	27.47
August	1st	51.33	0.00	51.33	49.54	2.35	31.86	3.74	0.00	80.01	28.69
	2nd	50.75	0.00	50.75	50.99	2.35	32.85	4.28	0.00	81.91	31.15
	3rd	53.18	0.00	53.18	51.65	2.35	23.80	4.40	0.00	73.40	20.22
September	1st	57.32	0.00	57.32	42.92	2.35	24.67	3.96	0.00	65.98	8.65
	2nd	55.77	0.00	55.77	43.86	2.35	23.34	4.82	0.00	64.73	8.96
	3rd	55.71	0.00	55.71	44.36	2.35	27.35	4.66	0.00	69.40	13.70
October	1st	54.55	0.00	54.55	44.91	2.35	30.70	4.72	0.00	73.24	18.69
	2nd	41.20	0.00	41.20	41.83	2.35	31.60	4.62	0.00	71.15	29.96
	3rd	41.81	0.00	41.81	37.75	2.35	36.80	4.93	0.00	71.97	30.16
November	1st	41.52	0.00	41.52	32.11	2.35	37.50	4.60	0.00	67.36	25.84
	2nd	43.13	0.00	43.13	51.11	2.35	36.90	4.48	5.14	91.02	47.89
	3rd	42.86	0.00	42.86	65.70	2.35	37.20	5.04	27.85	128.05	85.19
December	1st	47.48	0.00	47.48	76.24	2.35	37.24	6.23	180.52	290.13	242.65
	2nd	51.26	0.00	51.26	78.78	2.35	39.20	8.11	104.09	216.31	165.05
	3rd	40.10	0.00	40.10	82.43	2.35	35.75	8.36	66.78	178.96	138.86
Total Dis.(Million m ³)		2,360.39	70.73	2,431.12	2,329.18	74.11	1,322.20	217.01	3,682.60	7,191.07	4,759.95

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1994

Unit : m³/s

Month		Outflow			Total Irrigation Intake Discharge from Sutami to N.L.	Total Industrial Intake Discharge from Sutami to N.L.	Mrilip Gate f	Total Utilizable Return Flow from Sutami to N.L. g	New Lengkong Dam Observed Discharge h	Calculated Outflow from Sutami and Lahor i=d+e+f+h-g	Miscellaneous Inflow from Sutami to N.L. j = i - c
		Sutami a	Lahor b (*1)	Total c = a+b							
January	1st	38.81	0.00	38.81	82.20	2.35	55.69	8.51	60.58	192.31	153.50
	2nd	81.40	0.00	81.40	75.20	2.35	69.94	7.87	293.42	433.04	351.64
	3rd	138.93	1.95	140.89	75.46	2.35	69.95	7.37	267.26	407.65	266.77
February	1st	152.90	11.42	164.31	65.98	2.35	62.33	6.34	371.60	495.92	331.60
	2nd	151.48	7.93	159.41	77.65	2.35	43.93	7.20	380.00	496.72	337.31
	3rd	117.85	0.00	117.85	92.97	2.35	46.44	7.15	288.09	422.71	304.86
March	1st	158.62	3.76	162.37	102.43	2.35	45.98	7.24	500.14	643.66	481.29
	2nd	145.31	8.05	153.35	76.11	2.35	50.73	7.32	448.03	569.89	416.54
	3rd	173.69	16.14	189.83	84.55	2.35	61.70	7.08	582.51	724.04	534.21
April	1st	121.86	8.27	130.12	83.02	2.35	68.54	7.14	260.37	407.14	277.02
	2nd	127.93	9.34	137.27	73.54	2.35	62.53	7.16	252.17	383.43	246.15
	3rd	121.57	3.90	125.47	72.05	2.35	61.57	8.17	205.88	333.68	208.21
May	1st	86.24	0.29	86.53	75.77	2.35	61.62	7.45	80.44	212.74	126.21
	2nd	77.32	0.68	78.00	70.89	2.35	32.86	5.29	43.43	144.24	66.24
	3rd	58.34	0.00	58.34	82.21	2.35	33.44	7.29	0.00	110.70	52.37
June	1st	56.87	0.00	56.87	81.22	2.35	33.46	7.23	0.00	109.80	52.93
	2nd	49.44	0.00	49.44	71.02	2.35	34.51	5.60	0.00	102.28	52.84
	3rd	44.99	0.00	44.99	63.21	2.35	32.36	5.22	0.00	92.70	47.71
July	1st	43.22	0.00	43.22	49.91	2.35	33.38	5.44	0.00	80.21	36.99
	2nd	52.77	0.00	52.77	47.76	2.35	31.42	4.54	0.00	76.99	24.22
	3rd	58.60	0.00	58.60	50.55	2.35	31.22	4.97	0.00	79.15	20.55
August	1st	51.43	0.00	51.43	47.23	2.35	31.86	4.58	0.00	76.86	25.43
	2nd	48.00	0.00	48.00	42.42	2.35	32.85	4.48	0.00	73.14	25.15
	3rd	46.31	0.00	46.31	39.70	2.35	23.80	4.42	0.00	61.42	15.12
September	1st	54.22	0.00	54.22	39.02	2.35	24.67	3.94	0.00	62.11	7.89
	2nd	52.41	0.00	52.41	39.60	2.35	23.34	4.05	0.00	61.24	8.83
	3rd	50.75	0.00	50.75	39.59	2.35	27.35	4.16	0.00	65.13	14.38
October	1st	58.63	0.00	58.63	37.39	2.35	30.70	4.26	1.10	67.28	8.65
	2nd	43.34	0.00	43.34	38.70	2.35	31.60	4.23	4.15	72.57	29.23
	3rd	38.43	0.00	38.43	33.78	2.35	36.80	4.21	0.00	68.71	30.29
November	1st	34.83	0.00	34.83	32.72	2.35	37.50	4.60	0.00	67.97	33.14
	2nd	34.96	0.00	34.96	36.40	2.35	36.90	4.71	0.00	70.93	35.98
	3rd	34.98	0.00	34.98	39.88	2.35	37.20	4.80	0.61	75.25	40.26
December	1st	40.71	0.00	40.71	61.38	2.35	37.24	5.10	15.77	111.64	70.92
	2nd	46.06	0.00	46.06	75.58	2.35	39.20	5.41	42.33	154.05	107.99
	3rd	44.11	0.00	44.11	59.82	2.35	35.75	7.26	0.00	90.66	46.55
Total Dis. (Million m ³)		2,392.90	63.52	2,456.42	1,936.18	74.11	1,322.20	185.43	3,564.21	6,711.26	4,254.84

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrilip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*1) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengong Dam

YEAR : 1995

Unit: m³/s

Month		Outflow			Total	Total	Mrlip Gate	Total	New	Calculated	Miscellaneous
		Sutami	Lahor	Total	Irrigation	Industrial		Utilizable	Lengkong	Outflow	Inflow
		(*)	Discharge from Sutami to N.L.	Discharge from Sutami to N.L.	Return Flow from Sutami to N.L.	Observed Discharge		from Sutami and Lahor			
									a	b	
January	1st	49.93	0.00	49.93	84.99	2.35	55.69	8.95	69.98	204.06	154.13
	2nd	56.22	0.00	56.22	86.59	2.35	69.94	9.53	184.62	333.97	277.75
	3rd	54.37	0.00	54.37	75.61	2.35	69.95	9.32	302.16	440.74	386.37
February	1st	88.71	0.00	88.71	74.33	2.35	62.33	8.75	459.70	589.96	501.25
	2nd	135.73	0.00	135.73	80.89	2.35	43.93	9.08	417.11	535.20	399.46
	3rd	151.07	0.00	151.07	94.75	2.35	46.44	9.33	362.62	496.84	345.77
March	1st	138.46	0.00	138.46	98.24	2.35	45.98	8.78	325.09	462.87	324.41
	2nd	102.27	0.00	102.27	101.77	2.35	50.73	8.22	476.78	623.40	521.13
	3rd	136.84	0.00	136.84	90.64	2.35	61.70	7.60	444.30	591.39	454.55
April	1st	107.55	0.01	107.57	70.55	2.35	68.54	6.87	442.72	577.29	469.72
	2nd	104.47	1.16	105.63	57.28	2.35	62.53	6.37	247.18	362.97	257.34
	3rd	87.52	1.31	88.82	68.52	2.35	61.57	6.69	69.19	194.94	106.12
May	1st	85.20	0.76	85.96	64.34	2.35	61.62	7.01	109.58	230.88	144.92
	2nd	69.39	0.38	69.77	69.18	2.35	32.86	6.95	36.15	133.59	63.81
	3rd	50.95	0.00	50.95	69.07	2.35	33.44	6.92	1.35	99.29	48.33
June	1st	60.35	0.36	60.71	71.07	2.35	33.46	6.33	8.65	109.20	48.49
	2nd	80.99	1.31	82.31	76.67	2.35	34.51	5.35	48.55	156.73	74.42
	3rd	64.37	0.48	64.84	68.87	2.35	32.36	5.14	110.19	208.63	143.79
July	1st	54.86	0.00	54.86	66.39	2.35	33.38	4.54	1.54	99.11	44.26
	2nd	61.52	0.00	61.52	58.32	2.35	31.42	4.71	0.68	88.06	26.54
	3rd	91.15	0.00	91.15	59.21	2.35	31.22	4.24	0.94	89.48	-1.67
August	1st	58.09	0.00	58.09	49.44	2.35	31.86	3.37	0.00	80.28	22.19
	2nd	51.61	0.00	51.61	43.68	2.35	32.85	2.72	0.00	76.16	24.55
	3rd	41.17	0.00	41.17	42.10	2.35	23.80	2.71	0.00	65.55	24.38
September	1st	36.76	0.00	36.76	37.14	2.35	24.67	3.11	0.00	61.05	24.29
	2nd	40.32	0.00	40.32	29.48	2.35	23.34	3.14	0.00	52.02	11.70
	3rd	35.66	0.00	35.66	30.30	2.35	27.35	3.13	0.00	56.87	21.21
October	1st	35.53	0.00	35.53	27.23	2.35	30.70	2.96	0.00	57.32	21.78
	2nd	37.27	0.00	37.27	32.61	2.35	31.60	2.08	0.00	64.47	27.21
	3rd	36.12	0.00	36.12	36.23	2.35	36.80	2.77	0.00	72.60	36.49
November	1st	48.34	0.00	48.34	39.47	2.35	37.50	3.84	0.00	75.48	27.14
	2nd	85.89	0.00	85.89	48.89	2.35	36.90	3.83	106.53	190.84	104.95
	3rd	141.31	0.00	141.31	52.81	2.35	37.20	3.80	330.70	419.26	277.95
December	1st	205.76	0.00	205.76	78.93	2.35	37.24	9.10	325.91	435.34	229.58
	2nd	147.30	0.00	147.30	78.41	2.35	39.20	9.18	257.08	367.86	220.56
	3rd	103.04	0.00	103.04	77.92	2.35	35.75	9.27	79.85	186.60	83.56
Total Dis.(Million m³)		2,555.06	4.99	2,560.04	2,002.80	74.11	1,322.20	188.46	4,518.26	7,728.91	5,168.86

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrilip gate discharge and observed discharge at New Lengong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*) Exclude tunnel discharge to Sutami reservoir.

Calculation of Miscellaneous Flow between the Sutami Dam and the New Lengkong Dam

YEAR : 1996

Unit : m³/s

Unit: m ³ /s											
Month		Outflow			Total	Total	Mrlip Gate	Total	New	Calculated	Miscellaneous
		Sutami	Lahor	Total	Irrigation	Industrial		Utilizable	Lengkong	Outflow	Inflow from Sutami to N.L.
		(*)			Intake	Intake		Return	Dam	from	
					Discharge from Sutami to N.L.	Discharge from Sutami to N.L.		Flow from Sutami to N.L.	Observed Discharge	Sutami and Lahor	
		a	b	c = a+b	d	e	f	g	h	i = d+e+f+h-g	j = i-c
January	1st	108.77	0.00	108.77	84.97	2.35	55.69	10.11	214.92	347.82	239.05
	2nd	123.37	0.00	123.37	79.52	2.35	69.94	8.38	207.51	350.92	227.56
	3rd	110.81	0.00	110.81	74.38	2.35	69.95	8.16	284.15	422.66	311.85
February	1st	88.91	0.00	88.91	77.30	2.35	62.33	7.88	255.77	389.87	300.96
	2nd	135.71	0.00	135.71	78.87	2.35	43.93	8.10	314.89	431.95	296.24
	3rd	110.38	0.00	110.38	82.60	2.35	46.44	8.03	346.25	469.61	359.23
March	1st	70.40	0.00	70.40	80.86	2.35	45.98	7.71	188.15	309.63	239.24
	2nd	109.61	0.00	109.61	80.69	2.35	50.73	8.05	289.98	415.71	306.10
	3rd	118.54	0.00	118.54	76.36	2.35	61.70	8.06	241.72	374.07	255.52
April	1st	73.33	0.00	73.33	75.08	2.35	68.54	7.66	26.97	165.27	91.94
	2nd	138.52	10.68	149.20	67.06	2.35	62.53	7.79	326.59	450.74	301.55
	3rd	97.93	3.26	101.19	67.58	2.35	61.57	7.66	177.35	301.20	200.01
May	1st	64.29	0.00	64.29	75.69	2.35	61.62	7.16	4.87	137.37	73.07
	2nd	54.43	0.00	54.43	66.82	2.35	32.86	7.11	0.00	94.92	40.50
	3rd	56.19	0.00	56.19	66.41	2.35	33.44	6.91	0.10	95.38	39.20
June	1st	54.42	0.00	54.42	62.20	2.35	33.46	6.36	0.00	91.65	37.23
	2nd	48.57	0.00	48.57	62.62	2.35	34.51	6.05	0.00	93.43	44.86
	3rd	47.40	0.00	47.40	54.35	2.35	32.36	5.88	0.00	83.18	35.78
July	1st	48.95	0.00	48.95	52.72	2.35	33.38	5.74	0.00	82.70	33.76
	2nd	59.92	0.00	59.92	50.44	2.35	31.42	5.12	0.00	79.08	19.16
	3rd	68.84	0.00	68.84	49.50	2.35	31.22	4.60	0.27	78.74	9.89
August	1st	52.73	0.00	52.73	47.58	2.35	31.86	4.50	1.05	78.34	25.61
	2nd	86.65	0.00	86.65	60.80	2.35	32.85	4.17	35.36	127.20	40.55
	3rd	51.36	0.00	51.36	48.48	2.35	23.80	4.00	0.62	71.25	19.89
September	1st	43.76	0.00	43.76	43.30	2.35	24.67	3.74	0.00	66.58	22.82
	2nd	46.67	0.00	46.67	39.65	2.35	23.34	3.81	0.00	61.53	14.87
	3rd	48.32	0.00	48.32	39.73	2.35	27.35	3.80	0.00	65.63	17.32
October	1st	57.27	0.00	57.27	44.93	2.35	30.70	3.82	5.27	79.43	22.16
	2nd	60.46	0.00	60.46	46.04	2.35	31.60	3.82	0.50	76.67	16.21
	3rd	75.83	0.00	75.83	52.61	2.35	36.80	3.73	38.99	127.02	51.19
November	1st	75.65	0.00	75.65	60.66	2.35	37.50	3.84	66.07	162.74	87.10
	2nd	75.68	0.00	75.68	62.69	2.35	36.90	3.85	121.22	219.31	143.63
	3rd	70.78	0.00	70.78	70.14	2.35	37.20	3.81	104.89	210.78	140.00
December	1st	58.17	0.00	58.17	82.26	2.35	37.24	5.36	128.17	244.67	186.50
	2nd	103.20	0.00	103.20	69.16	2.35	39.20	8.05	330.56	433.22	330.02
	3rd	47.07	0.00	47.07	79.50	2.35	35.75	7.70	18.79	128.69	81.61
Total Dis.(Million m ³)		2,405.98	12.04	2,418.02	2,030.42	74.31	1,326.21	193.54	3,244.15	6,481.55	4,063.53

Source : Inflow and outflow discharges, Irrigation and industry intake discharges, Mrlip gate discharge and observed discharge at New Lengkong dam are from PJT and DPU Pengairan. Missing data is supplemented by the Study Team.

Remarks : (*) Exclude tunnel discharge to Sutami reservoir.