

TABLE 3.7(25)

Table with 30 columns (AG-AZ) and 45 rows of data. Columns include AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH. Data values are numerical, with some cells containing '0'.

TABLE 3.7(26)

Table with 30 columns (A-Y) and 45 rows of data. Columns include A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF. Data values are numerical, with some cells containing '0'.





TABLE 3.7

Table with columns: AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH. Rows contain numerical data points for various categories from 46 to 88.

TABLE 3.7 (30)

Table with columns: WKA SNO, SUNGAI, DT, TIME, COL, TUR, COND, PHL, BOD, COD, ALN, AN, NAN, NO2, TN, CL, F, CN, ISO4, P, HARD, SS, U, V, W, X, Y, Z, AA, AB, AC. Rows contain detailed environmental data for various locations from 1 to 39.







TABLE 3.7<sup>(3)</sup>

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
46	KEDAH 05	5806614	MUDA	8/28/92	1920928	1230	70.000	0.000	0.000	6.000	2.000	30.000	0.000	0.090	0.750	0.000	0.000	4.000	0.000	0.000	0.000	0.000	19.000	0.2100	10.000	130.000
47	KEDAH 05	5806614	MUDA	9/13/92	1920913	1250	40.000	0.000	0.000	6.000	1.000	20.000	0.000	0.120	0.300	0.000	0.000	3.000	0.000	0.000	0.000	0.000	23.000	0.0500	10.000	70.000
48	KEDAH 05	5806614	MUDA	11/7/92	1921107	1540	60.000	0.000	0.000	6.000	1.000	15.000	0.000	0.180	0.250	0.000	0.000	3.000	0.000	0.000	0.000	0.000	3.000	0.2000	15.000	35.000
49	KEDAH 05	6007608	MUDA	4/20/92	1920420	1040	15.000	0.000	0.000	6.000	1.000	30.000	0.000	0.310	0.200	0.000	0.000	3.000	0.000	0.000	0.000	0.000	17.000	0.2900	20.000	15.000
50	KEDAH 05	6007608	MUDA	5/25/92	1920525	1230	40.000	0.000	0.000	6.000	1.000	20.000	0.000	0.030	0.050	0.000	0.000	5.000	0.000	0.000	0.000	0.000	18.000	0.5900	20.000	10.000
51	KEDAH 05	6007608	MUDA	6/14/92	1920614	1105	10.000	0.000	0.000	6.000	1.000	15.000	0.000	0.130	0.200	0.000	0.000	7.000	0.000	0.000	0.000	0.000	28.000	0.2500	15.000	20.000
52	KEDAH 05	6007608	MUDA	7/25/92	1920725	1220	10.000	0.000	0.000	6.000	1.000	20.000	0.000	0.020	0.150	0.000	0.000	3.000	0.000	0.000	0.000	0.000	13.000	0.1300	25.000	20.000
53	KEDAH 05	6007608	MUDA	8/28/92	1920828	1030	70.000	0.000	0.000	6.000	2.000	30.000	0.000	0.040	0.350	0.000	0.000	30.000	0.000	0.000	0.000	0.000	16.000	0.2000	20.000	70.000
54	KEDAH 05	6007608	MUDA	9/13/92	1920913	1115	35.000	0.000	0.000	6.000	1.000	20.000	0.000	0.050	0.300	0.000	0.000	2.000	0.000	0.000	0.000	0.000	30.000	0.0600	15.000	30.000
55	KEDAH 05	6007608	MUDA	11/7/92	1921107	1330	60.000	0.000	0.000	6.000	1.000	15.000	0.000	0.030	0.150	0.000	0.000	15.000	0.000	0.000	0.000	0.000	6.000	0.0000	15.000	15.000

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TABLE 3.7<sup>(3)</sup>

WKAS\_92.DBF

1	DS	AA	AB	AS	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU		
2	115.000	135.000	0.000	0.00000000	0.000	-2.00000	0.0000	0.00000	0.00000	-2.00000	0.00000	0.00000	0.00000	-2.00000	0.00000	-2.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
3	85.000	125.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
4	135.000	225.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
5	30.000	70.000	-2.000	-2.00000000	0.000	-2.00000	0.00000	0.00000	0.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	DO	TEMP
6	230.000	455.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
7	70.000	95.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
8	100.000	120.000	0.000	0.00000000	0.000	-1.00000	0.00000	0.00000	0.00000	2.00000	-1.01000	0.01000	0.00000	0.60000	0.03000	2.00000	0.00000	0.05000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
9	100.000	150.000	0.000	0.00000000	0.000	-1.00000	0.00000	0.00000	0.00000	2.00000	-1.00000	-1.00000	0.00000	0.40000	-1.00000	3.00000	0.00000	-1.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
10	70.000	165.000	0.000	0.00000000	0.000	-1.00000	0.00000	0.00000	0.00000	2.00000	-1.01000	-1.01000	0.00000	0.60000	-1.01000	5.00000	0.00000	-1.01000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
11	40.000	75.000	-2.000	-2.00000000	0.000	-1.00000	0.00000	0.00000	0.00000	2.00000	-1.00000	-1.01000	0.00000	0.25000	-1.01000	1.00000	0.00000	-1.01000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
12	70.000	325.000	0.000	0.00000000	0.000	-1.00000	0.00000	0.00000	0.00000	2.00000	-1.00000	-1.01000	0.00000	0.60000	-1.01000	1.00000	0.00000	-1.01000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
13	55.000	90.000	0.000	0.00000000	0.000	-1.00000	0.00000	0.00000	0.00000	5.00000	-1.00000	-1.01000	0.00000	0.60000	-1.00000	2.00000	0.00000	-1.00100	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
14	80.000	115.000	0.000	0.00000000	0.000	-2.00000	0.00000	0.00000	0.00000	-2.00000	0.00000	-1.01000	0.00000	-2.00000	0.00000	-2.00000	0.00000	-1.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
15	95.000	130.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
16	270.000	450.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
17	35.000	65.000	-2.000	-2.00000000	0.000	-2.00000	0.00000	0.00000	0.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	DO	TEMP
18	125.000	265.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
19	70.000	100.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
20	45.000	70.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
21	275.000	290.000	0.000	0.00000000	0.000	-2.00000	0.00000	0.00000	0.00000	-2.00000	0.00000	0.00000	0.00000	-2.00000	0.00000	-2.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
22	105.000	120.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
23	120.000	25.000	-2.000	-2.00000000	0.000	-2.00000	0.00000	0.00000	0.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	DO	TEMP
24	30.000	55.000	-2.000	-2.00000000	0.000	-2.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
25	165.000	420.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
26	60.000	70.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
27	30.000	90.000	0.000	0.00000000	0.000	-2.00000	0.00000	0.00000	0.00000	-2.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
28	75.000	90.000	0.000	0.00000000	0.000	-2.00000	0.00000	0.00000	0.00000	-2.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
29	0.000	0.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
30	100.000	130.000	0.000	0.00000000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	DO	TEMP
31	50.000	80.000	-2.000	-2.00000000	0.000	-2.00000	0.00000	0.00000	0.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	-2.00000	DO	TEMP
32	100.000	295.000	0.000	0.00000000	0.00																				



TABLE 3.7(34)

AV	AW	AX	AY	AZ	EA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO
46	-2.000	6.900	168.000	30.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
47	-2.000	6.900	26.000	40.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
48	-2.000	4.000	-2.000	30.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
49	0.000	7.100	17.000	70.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	-2.000	7.100	17.000	70.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
51	0.000	7.200	33.000	50.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
52	-2.000	7.900	22.000	60.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
53	-2.000	7.300	87.000	40.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
54	-2.000	7.400	15.000	50.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	-2.000	6.980	-2.000	90.000	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 3.7(40)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1	NEGERI WKA	SNO	SUNGAI SMP	DATE IDT	TIME	ICD	TUR	L	COND	PHL	BOO	COO	ALN	AN	INAN	NO2	TN	CL	F	CI	SO2	SOA	P	HARD	SS	DS
2	KEDAH OS	5009609	KETL	3/8/93	930308	1300	10	000		7.000	1.000	30.000		0.300	0.100	4.000			4.000			3.000	0.1700	50.000	35.000	85.000
3	KEDAH OS	5504602	MUDA	3/9/93	930309	1445	70	000		7.000	1.000	20.000		0.050	0.300				4.000			9.000	0.1500	15.000	50.000	65.000
4	KEDAH OS	5505603	MUDA	3/9/93	930309	1300	70	000		7.000	1.000	20.000		0.300	1.100				3.000			8.000	0.0900	15.000	50.000	50.000
5	KEDAH OS	5506604	MUDA	3/9/93	930309	1145	60	000		7.000	1.000	20.000		0.070	0.350				4.000			4.000	0.1700	25.000	50.000	50.000
6	KEDAH OS	5606607	GERUNG	3/9/93	930309	1045	70	000		7.000	24.000	130.000		4.900	0.250				6.000			9.000	0.2800	30.000	65.000	65.000
7	KEDAH OS	5607606	TAWAR	3/8/93	930308	1450	60	000		7.000	1.000	55.000		1.900	1.700				4.000			12.000	0.8900	15.000	65.000	70.000
8	KEDAH OS	5608605	KETL	3/8/93	930308	1420	10	000		7.000	1.000	30.000		0.140	0.200				4.000			3.000	0.1800	40.000	40.000	70.000
9	KEDAH OS	5706610	MUDA	3/9/93	930309	1010	40	000		7.000	2.000	30.000		0.060	0.250				5.000			3.000	0.1700	15.000	20.000	45.000
10	KEDAH OS	5806614	MUDA	3/8/93	930308	1140	15	000		7.000	1.000	30.000		0.100	0.050				4.000			4.000	0.5300	10.000	40.000	50.000
11	KEDAH OS	6007608	MUDA	3/8/93	930308	1015	10	000		7.000	1.000	20.000		0.040	0.050				10.000			1.000	0.9000	20.000	35.000	65.000
12	KEDAH OS	5505603	MUDA	5/23/93	930812	1215				7.000	1.000	20.000		0.410	0.800										60.000	40.000
13	KEDAH OS	5609609	KETL	5/24/93	930812	1230				7.000	1.000	15.000		0.100	0.250										60.000	130.000
14	KEDAH OS	6007608	MUDA	5/24/93	930812	1000				7.000	1.000	10.000		0.080	0.350										5.000	80.000
15	KEDAH OS	5706610	GERUNG	5/23/93	930717	11030				7.000	2.000	5.000		0.120	0.400										35.000	85.000
16	KEDAH OS	5606607	GERUNG	5/23/93	930717	1105				7.000	1.000	85.000		0.680	0.350										65.000	50.000
17	KEDAH OS	5504602	MUDA	5/23/93	930717	1300				7.000	1.000	10.000		0.130	0.250										70.000	15.000
18	KEDAH OS	5506604	MUDA	5/24/93	930717	1430				7.000	1.000	10.000		0.120	0.250										35.000	110.000
19	KEDAH OS	5607606	TAWAR	5/24/93	930717	1345				7.000	1.000	5.000		0.430	0.500										10.000	95.000
20	KEDAH OS	5608605	KETL	5/24/93	930717	1320				7.000	2.000	15.000		0.280	0.200										15.000	195.000
21	KEDAH OS	5806614	MUDA	5/24/93	930717	1115				7.000	1.000	25.000		0.080	0.250										50.000	105.000
22	KEDAH OS	5806614	MUDA	7/19/93	930821	1115	70	000		7.000	2.000	10.000		0.070	0.200				10.000			16.000	0.3300	10.000	25.000	130.000
23	KEDAH OS	5608605	KETL	7/19/93	930821	1355	70	000		7.000	2.000	10.000		0.410	0.250				9.000			14.000	0.4200	26.000	135.000	85.000
24	KEDAH OS	5609609	KETL	7/19/93	930821	1420	70	000		6.500	2.000	10.000		0.460	0.500				8.000			14.000	0.5200	10.000	35.000	90.000
25	KEDAH OS	5506604	MUDA	7/19/93	930821	1500	70	000		6.500	2.000	10.000		0.050	0.250				8.000			14.000	0.7300	12.000	40.000	145.000
26	KEDAH OS	5504602	MUDA	7/20/93	930821	1410	70	000		7.000	1.000	15.000		0.120	0.250				9.000			12.000	0.6600	10.000	40.000	115.000
27	KEDAH OS	5607606	MUDA	7/20/93	930821	1130	30	000		7.000	2.000	10.000		0.570	0.150				18.000			3.000	0.6600	14.000	25.000	55.000
28	KEDAH OS	5706610	GERUNG	7/20/93	930821	11045	30	000		7.000	1.000	1.000		0.040	0.150				4.000			7.000	0.0800	14.000	35.000	40.000
29	KEDAH OS	5505603	MUDA	8/16/93	931105	1015	70	000		7.000	3.000	10.000		0.100	0.600				13.000			1.000	0.0500	14.000	35.000	50.000
30	KEDAH OS	5609609	KETL	8/15/93	931105	1030	70	000		7.000	4.000	20.000		0.800	0.450				16.000			2.000	0.4300	48.000	35.000	80.000
31	KEDAH OS	6007608	MUDA	8/15/93	931105	1030	70	000		7.000	2.000	5.000		0.030	0.200				18.000			42.000	0.0500	18.000	70.000	100.000
32	KEDAH OS	5506604	MUDA	8/15/93	930916	1530	40	000		7.000	2.000	15.000		0.050	0.250				12.000			5.000	0.0500	16.000	70.000	100.000
33	KEDAH OS	5607606	TAWAR	8/15/93	930916	1440	40	000		7.000	3.000	15.000		0.480	0.600				11.000			2.000	0.9400	18.000	30.000	55.000
34	KEDAH OS	5608605	KETL	8/15/93	930916	1400	70	000		7.000	2.000	20.000		0.190	1.000				13.000			4.000	0.1800	32.000	30.000	70.000
35	KEDAH OS	5606607	MUDA	8/15/93	930916	1620	70	000		7.000	136.000	150.000		9.000	0.600				28.000			50.000	11.8000	34.000	25.000	225.000
36	KEDAH OS	5806614	MUDA	8/15/93	930916	1145	70	000		7.000	2.000	10.000		0.050	0.350				17.000			1.000	0.0500	12.000	10.000	65.000
37	KEDAH OS	5504602	MUDA	8/16/93	930916	1120	50	000		7.000	2.000	15.000		0.030	0.300				12.000			2.000	1.8000	13.000	25.000	55.000
38	KEDAH OS	5706610	GERUNG	8/15/93	930916	1655	5	000		7.000	1.000	1.000		0.030	0.100				11.000			3.000	0.0500	12.000	75.000	75.000
39	KEDAH OS	5505603	MUDA	9/29/93	931118	1315				7.000	1.000	5.000		0.170	0.300										30.000	
40	KEDAH OS	5609609	KETL	9/28/93	931118	1300				7.000	3.000	2.000		0.200	0.100										15.000	
41	KEDAH OS	6007608	MUDA	9/28/93	931118	1030				7.000	1.000	2.000		0.040	0.200										80.000	
42	KEDAH OS	5806614	MUDA	9/28/93	931105	1200				7.000	2.000	15.000		0.130	0.350										95.000	
43	KEDAH OS	5608605	KETL	9/28/93	931105	1400				7.000	1.000	5.000		0.500	0.100										70.000	
44	KEDAH OS	5607606	TAWAR	9/28/93	931105	1430				7.000	1.000	1.000		2.600	0.650										70.000	
45	KEDAH OS	5706610	MUDA	9/29/93	931105	1045				7.000	1.000	5.000		0.120	0.200										45.000	



TABLE 3.7(41)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
46	KEDAH 05	5606607 MUDA	9/29/93 931105 1115							21.000	30.000	14.000	0.850				0.000								80.000	
47	KEDAH 05	5506604 MUDA	9/29/93 931105 1200							1.000	10.000	0.100	0.150												60.000	
48	KEDAH 05	5504602 MUDA	9/29/93 931105 1400							1.000	5.000	0.170	0.200									10.000	1.3000		90.000	
49	KEDAH 05	5606611 MERBOK	9/22/93 931118 1300 50.000							20.000	85.000	20.800	3.200									5.000	17.5000		15.000	
50	KEDAH 05	5606610 MERBOK	9/22/93 931118 1315 70.000							7.000	2.000	10.000	0.130	0.250			14.000				16.000	0.6600	11.000	60.000	85.000	
51	KEDAH 05	5505603 MUDA	7/20/93 930914 1230 70.000							7.000	3.000	40.000	0.380	0.300			10.000				12.000	0.7100	35.000	80.000	190.000	
52	KEDAH 05	5609609 KETIL	7/19/93 930914 1000 70.000							7.000	2.000	50.000	0.150	0.250			13.000				17.000	0.9000	14.000	435.000	165.000	
53	KEDAH 05	6007608 MUDA	7/19/93 930914 1000 0.000							7.000	2.000	5.000	0.260	0.600											15.000	
54	KEDAH 05	5706610 JERUNG	11/10/93 931211 1325							7.000	3.000	10.000	1.800	1.300											50.000	
55	KEDAH 05	5606607 JERUNG	11/10/93 931211 1510							7.000	2.000	10.000	0.370	0.300											15.000	
56	KEDAH 05	5504602 MUDA	11/10/93 931211 1510							7.000	2.000	10.000	0.170	0.350											15.000	
57	KEDAH 05	5505603 MUDA	11/10/93 931211 1430							7.000	2.000	15.000	0.200	0.300											25.000	
58	KEDAH 05	5506604 MUDA	11/10/93 931211 1225							7.000	2.000	1.000	1.300	0.600											15.000	
59	KEDAH 05	5607606 TAWAR	11/10/93 931211 1155							7.000	1.000	15.000	0.120	0.650											40.000	
60	KEDAH 05	5608605 KETIL	11/10/93 931211 1130							7.000	2.000	5.000	0.200	0.250											65.000	
61	KEDAH 05	5609609 KETIL	11/9/93 931211 1505							7.000	1.000	5.000	0.270	0.300											55.000	
62	KEDAH 05	5606614 MUDA	11/9/93 931211 1400							7.000	1.000	5.000	0.150	0.600											70.000	
63	KEDAH 05	6007608 MUDA	11/9/93 931211 1230							7.000	1.000	35.000														

TABLE 3.7(42)

1	TS	OG	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
2	120.000																				5.900	29.000	7.000	2.000	95.000	
3	115.000																				4.600	31.000	6.400	20.000	68.000	
4	100.000																				4.800	31.000	6.600	18.000	68.000	
5	100.000																				4.600	28.000	6.800	11.000	85.000	
6	130.000	70.000																			5.200	28.000	7.000	25.000	100.000	
7	135.000																				6.100	30.000	7.100	2.000	30.000	
8	110.000																									
9	65.000																				5.800	30.000	6.600	10.000	73.000	
10	90.000																				5.000	27.000	7.100	1.000	120.000	
11	100.000																				6.300	30.000	6.200		50.000	
12	100.000																				0.02000	6.500	29.000	6.500	100.000	
13	190.000																				0.030000	6.600	29.000	6.700	60.000	
14	85.000																				0.010000	6.600	29.000	6.700	60.000	
15	120.000																				6.200	27.000	6.400		55.000	
16	115.000																				5.000	28.000	5.600		45.000	
17	85.000																				5.600	29.000	6.300		45.000	
18	145.000																				6.100	29.000	6.300		90.000	
19	105.000																				6.400	29.000	6.400		60.000	
20	210.000																				6.400	29.000	6.700		100.000	
21	155.000																				6.500	29.000	6.600		50.000	
22	155.000																				7.200	29.000	6.300		60.000	
23	220.000																				6.300	27.000	6.600		80.000	
24	125.000																				3.800	26.000	5.400		50.000	
25	185.000																				6.400	26.000	5.800		50.000	
26	155.000																				6.600	28.000	6.500		50.000	
27	80.000																				6.200	27.000	5.400		70.000	
28	75.000																				7.300	26.000	6.200		50.000	
29	85.000																				6.100	29.000	6.200		60.000	
30	115.000																				7.000	28.000	6.600		130.000	
31	170.000																				6.800	28.000	6.300		190.000	
32	170.000																				7.500	29.000	6.300		60.000	
33	65.000																				7.200	28.000	6.400		60.000	
34	100.000																				6.800	29.000	6.600		105.000	
35	250.000																				1.600	29.000	4.900		5.000	
36	75.000																				7.500	29.000	5.500		75.000	
37	80.000																				6.600	30.000	5.300		60.000	
38	150.000	0.000																			6.700	28.000	5.700		45.000	
39																					8.000	28.000	6.400		40.000	
40																					7.300	26.000	8.000		115.000	
41																					7.700	26.000	7.300		55.000	
42																					7.300	27.000	6.500		40.000	
43																					6.400	25.000	8.100		95.000	
44																					6.400	26.000	6.000		50.000	
45																					6.400	26.000	6.000		40.000	

TABLE 3.17(43)

	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
46																			3,600	27,000	5,700			140,000	
47																			6,900	27,000	6,300			40,000	
48																			6,500	28,000	6,400			40,000	
49																			4,800	29,000	6,000			130,000	
50																			4,600	29,000	7,100			750,000	
51	145,000			0.01000	0.01000	0.01000	0.01000					0.01000	1.00000		0.01000				6,600	27,000	5,400			70,000	
52	270,000			0.01000	0.01000	0.01000	0.01000					0.02000	5.00000		0.01000				7,500	26,000	6,600			100,000	
53	600,000			0.01000	0.01000	0.04000						0.09000	2.00000		0.01000				6,800	26,000	6,800			70,000	
54																			5,800	25,000	5,500			40,000	
55																			5,500	26,000	5,200			50,000	
56																			5,900	27,000	6,100			40,000	
57																			5,200	27,000	6,200			40,000	
58																			5,500	26,000	6,500			50,000	
59																			6,800	25,000	6,500			40,000	
60																			7,000	25,000	7,100			80,000	
61																			6,400	27,000	7,400			90,000	
62																			5,900	27,000	7,100			40,000	
63																			7,300	26,000	7,200			50,000	

TABLE 3.17(44)

	BA	BB	BC	BD	BE	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV					
1	COIFORM/ALX	TKN/STK	AL	PEST	ALDRIN	DIELDRI	PCB	DOT	BHC	ORGANO	CL	ORGANO	CL	ORGANO	P	DOE	WQ	WQ	WQ	WQ	INDEX	BOO	INDEX	AN	INDEX	SS
2																	2	62.2	96.1	69.0	77.2					
3																	2	72.4	96.1	95.3	68.7					
4																	2	72.4	96.1	63.0	68.7					
5																	2	72.4	96.1	93.2	68.7					
6																	4	12.9	31.5	0.2	62.8					
7																	3	42.0	96.1	9.4	62.8					
8																	2	62.2	96.1	85.8	74.4					
9																	2	62.2	91.8	94.2	85.7					
10																	2	62.2	96.1	90.0	74.4					
11																	2	72.4	96.1	96.3	77.2					
12																	2	72.4	96.1	60.7	65.0					
13																	2	79.1	96.1	90.0	65.0					
14																	1	85.8	96.1	92.1	94.3					
15																	2	92.4	91.8	87.9	77.2					
16																	3	26.2	96.1	43.3	62.8					
17																	2	85.8	96.1	86.8	60.7					
18																	2	85.8	96.1	87.9	77.2					
19																	2	92.4	96.1	59.2	91.4					
20																	2	79.1	91.8	71.1	88.6					
21																	2	67.3	96.1	92.1	68.7					
22																	1	85.8	91.8	93.2	82.9					
23																	3	85.8	91.8	60.7	39.1					
24																	2	85.8	91.8	57.0	77.2					
25																	2	85.8	91.8	95.3	74.4					
26																	2	79.1	96.1	87.9	74.4					
27																	2	85.8	91.8	49.7	82.9					
28																	1	97.7	96.1	96.3	77.2					
29																	2	85.8	87.4	90.0	77.2					
30																	3	72.4	83.1	37.2	77.2					
31																	2	92.4	91.8	97.3	60.7					
32																	2	79.1	91.8	95.3	60.7					
33																	2	79.1	87.4	55.6	91.4					
34																	2	72.4	91.8	80.6	80.1					
35																	4	9.5	0.1	0.0	82.9					
36																	1	85.8	91.8	95.3	91.4					
37																	2	79.1	91.8	97.3	82.9					
38																	2	97.7	96.1	97.3	58.7					
39																	-2	92.4	96.1	82.7	80.1					
40																	-2	96.4	87.4	79.5	88.6					
41																	-2	96.4	96.1	96.3	85.7					
42																	-2	79.1	91.8	86.8	56.8					
43																	-2	92.4	96.1	54.2	51.3					
44																	-2	97.7	96.1	3.9	60.7					
45																	-2	92.4	96.1	87.9	71.5					

TABLE 3.7 (43)

BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	
46															-2.00	NA		-2	62.2	36.4	0.0	56.8
47															-2.00	NA		-2	85.8	96.1	90.0	65.0
48															-2.00	NA		-2	79.1	96.1	82.7	74.4
49															-2.00	NA		-2	92.4	96.1	82.7	53.1
50															-2.00	NA		-2	26.2	38.2	0.0	88.6
51															85.18	Slightly Clean	2	85.8	91.8	86.8	65.0	
52															71.03	Slightly Polluted	3	53.2	87.4	63.0	56.8	
53															63.75	Slightly Polluted	3	45.4	91.8	84.8	5.2	
54															88.94	Slightly Clean	2	92.4	91.8	73.2	88.6	
55															70.45	Slightly Polluted	3	85.8	87.4	10.7	68.7	
56															85.75	Slightly Clean	2	85.8	91.8	63.8	88.6	
57															89.34	Slightly Clean	2	85.8	91.8	82.7	88.6	
58															86.14	Slightly Clean	2	79.1	91.8	79.5	82.9	
59															80.97	Slightly Clean	2	97.7	96.1	19.9	88.6	
60															86.99	Slightly Clean	2	79.1	96.1	87.9	74.4	
61															84.73	Slightly Clean	2	92.4	91.8	79.5	62.8	
62															78.93	Slightly Clean	2	92.4	96.1	38.7	67.2	
63															78.99	Slightly Clean	2	57.5	96.1	84.8	60.7	

TABLE 3.7 (46)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD		
NEGERI	WKA	SNO	SUNGAI	SMP_DATE	DT	TIME	COL	TUR	L	COND	PH	IBOD	COD	ALN	AN	NaN	NO2	TN	Cl	F	CI	SO2	SO4	P	HARD	SS	DS	TS	OG	PHE	
1	KEDAH	05	5505603	MUDA	6/25/94	940824	1030					1.000	15.000		0.120																65.000
2	KEDAH	05	5608603	NAKSAH	3/8/94	940530	1045					2.000	5.000		5.000																35.000
3	KEDAH	05	5608602	TAWAR	6/26/94	940824	1300					1.000	15.000		1.100																55.000
4	KEDAH	05	5608603	NAKSAH	6/26/94	940824	1425					1.000	20.000		0.970																65.000
5	KEDAH	05	5608601	TAWAR	3/8/94	940530	1125					1.000	15.000		0.050																20.000
6	KEDAH	05	5706610	JERLING	3/7/94	940530	1220					38.000	125.000		11.100																35.000
7	KEDAH	05	5706607	JERLING	3/7/94	940530	1200					1.000	5.000		0.060																20.000
8	KEDAH	05	6007608	MUDA	3/8/94	940530	1500					1.000	5.000		0.100																15.000
9	KEDAH	05	5609609	KETIL	3/8/94	940530	1220					1.000	2.000		0.120																10.000
10	KEDAH	05	5505604	MUDA	3/7/94	940530	1320					1.000	25.000		0.450																30.000
11	KEDAH	05	5505603	MUDA	3/7/94	940530	1040					1.000	2.000		0.600																25.000
12	KEDAH	05	5706610	JERLING	6/25/94	940824	1300					41.000	425.000		15.600																150.000
13	KEDAH	05	5706607	JERLING	6/25/94	940824	1230					1.000	5.000		0.180																45.000
14	KEDAH	05	5608602	TAWAR	3/8/94	940530	1145					1.000	3.000		6.900																25.000
15	KEDAH	05	6007608	MUDA	6/26/94	940824	1015					1.000	15.000		0.310																65.000
16	KEDAH	05	5609609	KETIL	6/26/94	940824	1200					1.000	25.000		0.220																115.000
17	KEDAH	05	5505604	MUDA	6/25/94	940824	1400					1.000	15.000		0.360																55.000
18	KEDAH	05	5608601	TAWAR	6/26/94	940824	1325					1.000	10.000		0.180																50.000



TABLE 3.7 (47)

	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL			
1	MBAS	AS	B	CA	CD	CR	CJ	FE	PB	MG	MN	HG	NI	NA	ZN	DO	TEMP	SAL	PH	TUR	COND	COLI	COLIFORM	ALK	TKN	SI	K	AL	PEST	ALDRIN	DIELDRIN	PCB	DDT	BHC			
2																7.800	27.000	0.000	7.600																		
3																4.000	24.000		7.100																		
4																7.000	21.000	0.000	6.800																		
5																6.200	23.000	0.000	6.600																		
6																6.200	23.000		7.600																		
7																3.900	24.000		6.300																		
8																7.400	23.000		6.800																		
9																6.400	25.000		7.600																		
10	0.100															7.900	25.000		7.600																		
11																7.700	24.000		7.300																		
12																1.100	25.000	0.000	5.600																		
13																7.400	23.000	0.000	6.400																		
14																6.600	24.000		7.300																		
15																7.700	22.000		6.600																		
16																7.400	22.000		6.500																		
17																7.200	25.000	0.000	6.500																		
18																7.500	21.000	0.000	6.600																		
19																																					

TABLE 3.7 (48)

	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	
1	ORGANO_C	ORGANO_P	DDE	WQI	WQI_RATING	RV	CLASS	INDEX_COD	INDEX_BOD	INDEX_AN	INDEX_SS
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											

TABLE 3.8 Water Quality Records by MADA ①

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.1.14	92.1.14	92.1.14	92.1.14	92.1.14
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Nil	Brownish	Nil	Brownish	Brownish
Odor	Nil	Nil	Nil	Nil	Nil
PH	6	6	5.5	6	5.5
Conductivity	50	50	50	50	50
BOD5	<1	1	1	1	1
COD	20	20	20	20	15
Ammonia Nitrogen	<0.1	<0.1	0.1	0.1	0.1
Nitrate Nitrogen	0.3	0.25	<0.1	<0.1	0.1
Total dried solid	40	30	50	60	40
Suspended dried solid					
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Floride					
Chloride Cl	2	4	4	5	2
Ferrous Fe					
Manganese Mg					
Aluminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA ②

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.1.28	92.1.28	92.1.28	92.1.28	92.1.28
Turbidity	Clear	Clear	Clear	Clear	Slightly clou.
Sediments	Brownish	Brownish	Nil	Nil	Nil
Odor	Nil	Nil	Nil	Nil	Nil
PH	6	6	6	6	6
Conductivity	50	50	40	50	50
BOD5	1	1	1	1	1
COD	20	20	20	20	20
Ammonia Nitrogen	<0.1	<0.1	0.12	0.1	0.1
Nitrate Nitrogen	0.3	0.25	<0.1	<0.1	<0.1
Total dried solid					
Suspended dried solid					
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Floride					
Chloride Cl	3	4	4	5	1
Ferrous Fe					
Manganese Mg					
Aluminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA (3)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.2.25	92.2.25	92.2.25	92.2.25	92.2.25
Turbidity	Clear	Slightly clou.	Clear	Clear	Clear
Sediments	Brownish	Brownish	Brownish	Brownish	Brownish
Odor					
PH	6.5	6	6	7	6.5
Conductivity	50	60	60	50	50
BOD5	1	<1	<1	<1	<1
COD	20	20	20	20	25
Ammonia Nitrogen	<0.1	<0.1	<0.1	0.1	0.1
Nitrate Nitrogen	0.25	0.25	<0.1	<0.1	<0.1
Total dried solid	40	76	55	50	40
Suspended dried solid					
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Floride					
Chloride Cl	3	2	2	3	2
Ferrous Fe					
Manganese Mg					
Aluminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.9 Water Quality Records by MADA (4)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.3.24	92.3.24	92.3.24	92.3.24	92.3.24
Turbidity	Clear	Clear	Clear	Slightly clou.	Clear
Sediments	Brownish	Brownish	Brownish	Brownish	Brownish
Odor					
PH	7	7	7	6.5	7
Conductivity	60	50	50	60	50
BOD5	<1	<1	<1	<1	1
COD	10	10	15	15	15
Ammonia Nitrogen	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate Nitrogen	0.2	0.25	<0.1	<0.1	0.1
Total dried solid	160	45	60	125	168
Suspended dried solid					
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Floride					
Chloride Cl	1	6	3	4	3
Ferrous Fe					
Manganese Mg					
Aluminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)



TABLE 3.8 Water Quality Records by MADA, ⑤

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.4.8	92.4.8	92.4.8	92.4.8	92.4.8
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Greyish	Nil	Brownish	Brownish	Nil
Odor					
PH	6	6	6.5	6	6
Conductivity	50	50	50	60	50
BOD5	1	1	<1	<1	1
COD	20	20	15	20	20
Ammonia Nitrogen	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate Nitrogen	0.15	0.15	0.25	0.3	0.45
Total dried solid	260	225	185	220	305
Suspended dried solid	25	20	30	40	70
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Florride					
Chloride Cl	5	4	4	3	3
Ferrous Fe					
Manganese Mg					
Alminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA, ⑥

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.4.21	92.4.21	92.4.21	92.4.21	92.4.21
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Greyish	Greyish	Brownish	Brownish	Nil
Odor					
PH	7	7	7	6	7
Conductivity	30	30	40	40	30
BOD5	1	1	1	1	1
COD	20	20	20	20	20
Ammonia Nitrogen	<0.1	<0.1	0.1	0.1	<0.1
Nitrate Nitrogen	0.25	0.2	0.15	<0.1	<0.1
Total dried solid	80	140	130	140	90
Suspended dried solid	20	60	52	55	12
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Florride					
Chloride Cl	3	5	3	2	3
Ferrous Fe					
Manganese Mg					
Alminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA, (7)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.05.05	92.05.05	92.05.05	92.05.05	92.05.05
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Greyish	Greyish	Brownish	Brownish	Greyish
Odor					
PH	6.5	6.5	6	6	6
Conductivity	40	40	50	40	40
BOD5	<1	<1	1	<1	1
COD	15	15	20	20	20
Ammonia Nitrogen	<0.1	<0.1	1.27	0.64	<0.1
Nitrate Nitrogen	0.15	0.15	<0.1	0.1	<0.1
Total dried solid	50	60	80	70	50
Suspended dried solid	15	15	15	10	5
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Florride					
Chloride Cl	3	4	3	4	6
Ferrous Fe					
Manganese Mg					
Alminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phasphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA, (8)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.06.09	92.06.09	92.06.09	92.06.09	92.06.09
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Brownish	Greyish	Brownish	Brownish	Nil
Odor					
PH	7	7	7	7	7
Conductivity	30	40	20	50	20
BOD5	<1	<1	<1	<1	<1
COD	25	20	25	20	20
Ammonia Nitrogen	0.02	0.02	0.02	0.2	0.04
Nitrate Nitrogen	0.5	0.2	0.1	0.01	0.01
Total dried solid	60	70	180	60	70
Suspended dried solid	30	25	155	30	40
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Florride					
Chloride Cl	8	9	5	7	5
Ferrous Fe					
Manganese Mg					
Alminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phasphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA, ⑨

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.07.07	92.07.07	92.07.07	92.07.07	92.07.07
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Greyish	Greyish	Brownish	Brownish	Greyish
Odor					
PH	6	6	6.5	6	6
Conductivity	50	49	50	55	41
BOD5	<1	<1	<1	1	<1
COD	20	20	30	20	20
Ammonia Nitrogen	0.07	0.09	0.11	0.2	0.05
Nitrate Nitrogen	0.2	0.15	0.05	0.02	0.01
Total dried solid	55	65	85	95	70
Suspended dried solid	30	25	25	40	25
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Floride					
Chloride Cl	2	3	4	2	3
Ferrous Fe					
Manganese Mg					
Alminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA, ⑩

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.08.04	92.08.04	92.08.04	92.08.04	92.08.04
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Brownish	Brownish	Brownish	Greyish	Nil
Odor					
PH	6	6	6	6	6
Conductivity	50	60	50	60	30
BOD5	<1	<1	1	<1	<1
COD	20	20	20	20	25
Ammonia Nitrogen	0.41	0.38	0.08	0.18	0.02
Nitrate Nitrogen	0.05	0.05	0.05	0.05	0.01
Total dried solid	85	90	100	150	105
Suspended dried solid	75	30	40	40	25
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Floride					
Chloride Cl	4	4	3	4	3
Ferrous Fe					
Manganese Mg					
Alminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)



TABLE 3.8 Water Quality Records by MADA, (11)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.08.18	92.08.18	92.08.18	92.08.18	92.08.18
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Brownish	Brownish	Brownish	Brownish	Nil
Odor					
PH	7	7	6	6.5	7
Conductivity	60	70	50	50	50
BOD5	<1	<1	<1	<1	<1
COD	15	20	20	25	20
Ammonia Nitrogen	1.1	0.9	0.05	0.06	0.02
Nitrate Nitrogen	0.05	0.05	0.05	0.05	0.05
Total dried solid	125	95	125	95	65
Suspended dried solid	30	40	25	15	20
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Floride					
Chloride Cl	16	4	42	4	6
Ferrous Fe					
Manganese Mg					
Alminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA, (12)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.09.01	92.09.01	92.09.01	92.09.01	92.09.01
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Brownish	Greyish	Greyish	Brownish	Nil
Odor					
PH	7	7	7	7	6.5
Conductivity	60	50	50	50	40
BOD5	1	1	<1	<1	<1
COD	20	20	15	15	15
Ammonia Nitrogen	0.8	0.12	0.1	0.02	0.05
Nitrate Nitrogen	0.05	0.6	0.1	0.02	0.05
Total dried solid	75	40	120	145	205
Suspended dried solid	25	10	30	50	50
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Floride					
Chloride Cl	3	3	3	2	3
Ferrous Fe					
Manganese Mg					
Alminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA (13)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.09.15	92.09.15	92.09.15	92.09.15	92.09.15
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Brownish	Brownish	Greyish	Brownish	Nil
Odor					
PH	6.5	6	7	7	6.5
Conductivity	60	60	50	50	80
BOD5					1
COD	15	15	20	20	15
Ammonia Nitrogen	1.2	1.8	0.02	0.02	0.1
Nitrate Nitrogen	0.1	0.3	0.2	0.05	0.05
Total dried solid	55	65	60	50	50
Suspended dried solid	25	20	25	20	10
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Fluoride					
Chloride Cl	3	4	3	3	4
Ferrous Fe					
Manganese Mg					
Aluminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA (14)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.10.06	92.10.06	92.10.06	92.10.06	92.10.06
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Brownish	Brownish	Brownish	Greyish	Nil
Odor					
PH	7	7	7	7.5	7.5
Conductivity	100	50	50	40	40
BOD5	1	<1	<1	<1	<1
COD	15	15	15	20	15
Ammonia Nitrogen	0.2	0.34	0.17	0.07	0.03
Nitrate Nitrogen	0.15	0.05	0.01	0.15	0.01
Total dried solid	125	100	110	140	45
Suspended dried solid	70	40	40	40	10
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Fluoride					
Chloride Cl	4	4	3	3	4
Ferrous Fe					
Manganese Mg					
Aluminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA (15)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.10.19	92.10.19	92.10.19	92.10.19	92.10.19
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Greyish	Brownish	Brownish	Greyish	Greyish
Odor					
PH	6	6	6	6	6
Conductivity	40	50	40	40	40
BOD5	<1	1	3	1	1
COD	15	20	15	15	15
Ammonia Nitrogen	0.1	0.1	0.01	0.01	0.07
Nitrate Nitrogen	0.1	0.1	0.01	0.01	0.01
Total dried solid					
Suspended dried solid					
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Floride					
Chloride Cl	3	3	5	3	4
Ferrous Fe					
Manganese Mg					
Aluminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA (16)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.11.02	92.11.02	92.11.02	92.11.02	92.11.02
Turbidity	Clear	Clear	Clear	Clear	Clear
Sediments	Brownish	Nil	Nil	Brownish	Nil
Odor					
PH	6.5	6	6	6.5	6
Conductivity	60	70	70	60	60
BOD5	<1	<1	1	1	<1
COD	10	10	15	10	10
Ammonia Nitrogen	0.07	0.05	0.04	0.05	0.05
Nitrate Nitrogen	0.45	0.85	0.05	0.05	0.01
Total dried solid	75	75	205	85	70
Suspended dried solid	35	25	20	35	15
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Floride					
Chloride Cl	4	3	3	4	3
Ferrous Fe					
Manganese Mg					
Aluminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phosphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA (17)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.11.17	92.11.17	92.11.17	92.11.17	92.11.17
Turbidity	Clear	Clear	Clear	Slightly clou.	Clear
Sediments	Brownish	Nil	Greyish	Brownish	Nil
Odor					
PH	6.5	6.5	6.5	6	6
Conductivity	50	60	50	50	50
BOD5	<1	<1	<1	<1	1
COD	15	20	20	15	15
Ammonia Nitrogen	0.03	0.02	0.1	0.05	0.03
Nitrate Nitrogen	0.6	0.8	0.1	0.2	0.15
Total dried solid	50	45	45	75	45
Suspended dried solid	20	10	25	35	10
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected
Floride					
Chloride Cl	3	3	3	3	5
Ferrous Fe					
Manganese Mg					
Alminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	Not detected
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	Not detected
Sodium Na					
Dissolved Oxygen DO					
Phasphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.8 Water Quality Records by MADA (18)

Location	F. Pedu Dam Right V notch	F/1. Pedu Dam Left V notch	G. Muda Dam Reservoir	H. Muda dam Outfall	E. Pedu dam Reservoir
Sampling Date	92.12.01	92.12.01	92.12.01	92.12.01	92.12.01
Turbidity	Clear	Clear	Clear	Slightly clou.	
Sediments	Brownish	Greyish	Brownish	Brownish	
Odor					
PH	5.5	5.5	6	6	
Conductivity	50	60	50	50	
BOD5	<1	<1	<1	<1	
COD	15	15	20	20	
Ammonia Nitrogen	0.02	0.02	0.69	0.16	
Nitrate Nitrogen	0.2	0.2	0.01	0.05	
Total dried solid	55	65	55	60	
Suspended dried solid	25	30	25	25	
Sucrose	Not detected	Not detected	Not detected	Not detected	
Floride					
Chloride Cl	3	2	7	2	
Ferrous Fe					
Manganese Mg					
Alminium Al					
Arsenic As	Not detected	Not detected	Not detected	Not detected	
Sulphate SO4					
Paraquate	Not detected	Not detected	Not detected	Not detected	
Sodium Na					
Dissolved Oxygen DO					
Phasphate PO4					

Nnit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.9 Water Quality Records by MADA  
(1994, Pedu Dam, Left V Notch)

Location	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch		
Sampling Date	94.1.4	94.1.25	94.02.09	94.02.23	94.03.09	94.3.23	94.4.06	94.4.20	94.05.04	94.05.18	94.6.07
Turbidity											
Sediments											
Odor											
PH	6.5	6.5	6.5	6.5	5.5	5	5	5	6	5.5	5.5
Conductivity	50	50	40	55	50	50	60	35	40	55	50
Total solid	180	115	125	80	50	50	60	180	65	50	55
Dissolved solid	140	85	40	70	25	25	45	110	35	30	35
Suspended solid	40	30	85	10	25	25	15	70	30	20	20
Chloride	12	18	13	9	10	10	12	8	11	12	8
Arsenic	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
COD	10	2	5	2	15	5	10	20	5	5	5
BOD5	<1	<1	<1	<1	<1	<1	1	1	<1	<1	1
Ammonia Nitrogen	0.01	0.04	0.01	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.01
Nitrate Nitrogen	0.3	0.3	0.1	0.1	0.2	0.4	0.3	0.01	0.35	0.65	0.25
Paraquat	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte
Sucrose	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte

Unit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.9 ②

F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch	F. Pedu Dam Left V notch
94.6.21	94.07.06	94.07.19	94.8.9	94.08.25	94.09.07	94.09.21	94.10.12	94.10.26	94.11.09
5.5	5.5	5.5	6	5.5	6	5.5	5.5	5.5	6
50	55	55	55	55	45	55	55	55	55
40	90	40	60	55	50	50	55	60	60
20	50	25	35	40	30	40	40	40	40
20	40	15	25	15	20	10	15	20	20
8	5	4	5	5	6	7	6	5	5
<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
10	5	5	5	10	3	5	5	1	5
<1	2	<1	<1	1	<1	<1	<1	<1	1
0.03	0.04	0.02	0.2	0.02	0.04	0.2	0.1	0.15	0.1
0.55	0.9	0.8	0.3	0.3	0.2	0.2	0.2	0.1	0.4
Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte
Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte	Not detecte



TABLE 3.10 Water Quality Records by MADA (1994, Muda reservoir)

Location	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir
Sampling Date	94.1.4	94.1.25	94.02.08	94.02.22	94.03.08	94.3.22	94.4.05	94.4.19	94.05.03	94.05.17	94.6.07
Turbidity											
Sediments											
Odor											
PH	6.5	6.5	6.5	6.5	5.5	5	5.5	5	6	7	6
Conductivity	45	40	40	50	50	40	50	50	30	50	50
Total solid	125	140	150	40	65	65	65	170	65	60	60
Dissolved solid	80	105	25	30	30	35	50	110	10	45	45
Suspendesolid	45	35	125	10	35	30	15	60	55	15	15
Chloride	8	11	11	13	10	10	22	9	9	10	9
Arsenic	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
COD	10	10	65	5	5	15	45	15	15	5	10
BOD5	1	1	1	1	1	2	1	1	1	1	1
Ammonia Nitrogen	0.21	0.67	0.11	0.02	0.01	0.04	0.01	0.15	0.01	0.04	0.15
NitrateNitrogen	0.05	0.1	0.01	0.05	0.01	0.05	0.01	0.01	0.05	0.05	0.05
Paraquat	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected
Sucrose	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected

Unit is mg/l except PF and Conductivity(umhos/cm)

TABLE 3.10 (2)

Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir	Muda Reservoir
94.6.21	94.07.05	94.07.19	94.8.9	94.08.23	94.09.06	94.10.11	94.10.25	94.11.08		
5.5	5.5	5.5	6.5	7	6	5.5	6	5.5	5.5	5.5
50	50	50	56	50	50	45	45	40	45	45
60	100	50	70	60	55	55	45	45	50	50
20	55	30	40	35	35	30	30	30	30	30
40	45	20	30	25	20	25	15	20	20	20
7	4	3	6	4	6	5	8	6	4	4
<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
5	15	15	10	10	5	10	10	10	10	10
1	<1	1	1	1	1	1	1	1	1	1
0.07	0.02	0.03	0.25	0.02	0.04	0.05	0.02	0.15	0.05	0.05
0.05	0.01	0.1	0.05	0.05	0.1	0.1	0.1	0.1	0.5	0.5
Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected
Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected

*POTENTIAL WATER POLLUTION SOURCES*

TABLE 4.1 Live Stock Census of Kedah State (only major livestock)

District	Buffalo	Cow	Dairy Cattle	Goat	Sheep	Pig
PENDANG	1,502	15,067	4	2,933	2,138	546
SIK	1,357	3,763	0	907	575	91
P. TERAP	7,640	9,103	46	2,617	1,997	86
YAN	98	4,126	19	2,327	1,218	0
B. BARU	470	4,340	27	1,180	800	166
K. SETAR	3,550	15,951	240	6,610	7,170	190
K. PASU	2,371	13,535	831	4,204	4,490	0
K. MUDA	2,932	15,299	2,889	4,073	4,073	1,017
KULIM	1,245	9,027	634	4,000	3,419	1,668
LANGKAWI	3,190	2,650	0	350	500	0
BALING	2,668	15,899	116	4,656	3,304	79
TOTAL	27,023	108,760	4,756	33,857	29,684	3,843

(Data source : Veterinary Department.)

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TABLE 4.2

USAGE OF PESTICIDES AGAINST TYPICAL PADDY PESTS

(1/2)

PADDY PEST	PESTICIDES		THE RATES OF USING (gm, ml, kg, l)*	REMARKS
	General Name	Trade Name		
A. PADDY DISEASES 1. Karah daun dan tangkai (Pyricularia oryzae)	edifenphos	Hinosan 50 EC	500 ml/ha	MADA paddy varieties that can sufficient from this disease. If still happened, so following this :- i. Leaf sprayer Use 'edifenphos' and blasticidin-s' when disease happened exceeding 20% and environment is suitable for spreading the disease. ii. 'Karah' rice barn controlling If the area has a disease record, spray a week before a paddy stalk riped and do it 3 or 4 times in 2 weeks (a paddy stalk riped) iii. Change to sufficient paddy variety
	blasticidin-s	Bla-S-EC	500 ml/ha	
2. Hawar Seludang (Rhizoctonia solani)	pencycuron	Monceren 25 WP	500 gm/ha	The sprayed should do at maximum spread level and 10 days after lesion (disease omen) size reach 20% from relative lesion high (RLH). Example: If the height is 100cm, so lesion size is 5cm.
	mepronil	Basitac WP	500 gm/ha	
	flutolanil	Moncut 50 WP	1 liter/ha	

(Data Source : MADA)

TABLE 4.2

USAGE OF PESTICIDES AGAINST TYPICAL PADDY PESTS

(2/2)

PADDY PEST	PESTICIDES		THE RATES OF USING (gm, ml, kg, l)*	REMARKS
	General Name	Trade Name		
B. PEST OF RICE 1. 'Pangorek Batang' Worm 'Pangorek batang kuning' worm (Scirpophaga incertulus) 'Pangorek batang kepala hitam' worm (Chilo suppressalis) 'Pangorek batang merah jambu' worm (Sesamia inferens)	endosulfan	Acmaron 35 EC Acmaron 3 G or 5 G Thiodan 5 G	1 l/ha 30 kg/ha or 20 kg/ha 20 kg/ha	A cluster of eggs survey is important to control 'pangorek batang' worm. Poison controlling must do when there are 2 cluster of eggs before diparasit
	carbofuran	Furadan 2 G or 3 G	50 kg/ha or 30 kg/ha	
	cartap	Padan 4 G	25 kg/ha	
2. Lompat Pokok Bena perang (Nilaparvata lugens) Bena belakang putih (Sogatella furcifera)	BPMC	Osbac EC or Dust 20 Bassa 50 EC or Dust Hopcin 50 EC	1 l/ha or 30 kg/ha 1 l/ha or 30 kg/ha 1 l/ha	
	MIPC propoxur MTMC + phenthoate buprofezin + MIPC	Mipcin 50 WP Unden 50 WP or Dust Sogalex Dust 22 Applaud 50 WP Broadox WP Sogalex M Dust	1 kg/ha 1 kg/ha or 30 kg/ha 30 kg/ha 200 gm/ha 750 kg/ha 30 kg/ha	
	etofenprox	Trebon 10 EC or Dust	1 kg/ha or 30 kg/ha	
	imidacloprid	Confidor 200 SL	125 - 175 ml/ha	
	carbaryl	Sevin 85 WP	590 gm/ha	
3. Lompat Daun Bena hijau (Nephotettix spp)	BPMC	Osbac EC or Dust 20 Bassa 50 EC or Dust Hopcin 50 EC	1 l/ha or 30 kg/ha 1 l/ha or 30 kg/ha 1 l/ha	Poison monitoring should not carry out if not happen red virus disease. *Note: If paddy age exceeding 50 days, use motor spray pump to make sure the poison is effectiveness
	MIPC propoxur MTMC + phenthoate buprofezin + MIPC	Mipcin 50 WP Unden 50 WP or Dust Sogalex Dust 22 Applaud 50 WP Broadox WP Sogalex M Dust	1 kg/ha 1 kg/ha or 30 kg/ha 30 kg/ha 200 gm/ha 750 kg/ha 30 kg/ha	
	etofenprox	Trebon 10 EC or Dust	1 kg/ha or 30 kg/ha	
	imidacloprid	Confidor 200 SL	125 - 175 ml/ha	
	carbaryl	Sevin 85 WP	590 gm/ha	
4. 'Panghisap Buah dan Batang Pokok Padi' Kesing (Leptocoris oratorius) Kepinding (Nezara viridula) Kutu bruang (Scotinophara coarctata)	BPMC	Bassa 50 EC or Dust Hopcin 50 EC Unden 50 WP or Dust	1 l/ha or 30 kg/ha 1 l/ha 1 l/ha	'Kesing' and 'Kepinding'
	fenitron	Lebaycid 50 EC	1 l/ha	
	acephate carbaryl alphacypermethrin	Orthene 75 S WP Sevin 85 WP Fastac 20 EC	650 gm/ha 590 gm/ha 250 ml/ha	
5. Worm eat leaf 'Gulung daun' worm (Chaphalocoris medinalis) 'Layar' worm (Nymphula depunctalis) 'Ratus' worm (Spodoptera mauritia)	carbaryl	Sevin 85 WP	590 gm/ha	
	acephate	Orthene 75 S WP	650 gm/ha	
	fenitron	Sumithion 50 EC	1 l/ha	
	cartap	Padan 50 EC	1 l/ha	
6. Kutu Trips (Stenochastothrips biformis)	carbaryl	Sevin 85 WP	590 gm/ha	
	acephate	Orthene 75 S WP	650 gm/ha	
	fenitron	Sumithion 50 EC	1 l/ha	
	cartap	Padan 50 EC	1 l/ha	
C. RAT Ricefield rat (Rattus argentiventer) Large bandicoot rat (Bandicota indica)	brodifacoum coumatetralyl chlorofacinone bromadiolone	Malikus Racumin Draff EC or Bat Ebor 401 Bromawac	1 piece / station 25 gm/ hole 100 ml / 5 kg bait 1 piece / station 1 piece / station	
	warfarin	Takumin Yasomin	25 gm/ hole 1 piece / station	

TABLE 4.3 METHOD OF USING FERTILIZER FOR PADDY

CHOSEN	FERTILIZATION LEVEL	THE TYPE OF FERTILIZER	RATES (relung)	USING TIME
If water stagnant, 2 weeks after 80% paddy seeded	Fertilization 1	Mixed fertilizer	3 bags	15 to 20 days after seeding
	Fertilization 2	Urea	1 bag	45 to 55 days after seeding
	Fertilization 3	Urea or additional fertilizer	1 bag	75 to 85 days after seeding
If water stagnant, a month after 80% paddy seeded	Fertilization 1	Mix fertilizer	3 bags	45 to 55 days after seeding
	Fertilization 2	Urea or additional fertilizer	1 bag	75 to 85 days after seeding

(Data Source : MADA)

TABLE 4.4 METHOD OF USING PESTICIDES FOR PADDY

The type of poison	Mixed rate ml/galon	A number of sprayer for relung	Poison utilization time	The types of weed can controled
Satunil	150 ml. mixed by 3 galon water	5 barrels	5 to 7 days after seeding	Sambau misan, sambau padi burung, rumput miang dan rumput colok china
Facet	26 -28 gm mixed by 3 galon water	5 barrels	7 to 14 days after seeding	Sambau misan dan sambau padi burung
Arrosolo	300 ml. mixed by 3 galon water	5 barrels	10 to 15 days after seeding	Sambau misan, sambau padi burung, rumput miang dan rumput colok china
Sakkimol	90 ml. mixed by 3 galon water	3 barrels	10 to 15 days after seeding	Sambau misan sahaja
Ordram	10 kg for 1 relun	1 barrel	10 to 15 days after seeding	Sambau misan sahaja
Eplam D	10 kg for 1 relun	1 barrel	10 to 15 days after seeding	Sambau misan, sambau padi burung dan rumput miang
Whip S	23 ml. mixed by 3 galon water	6 barrels	25 to 35 days after seeding	Sambau misan, sambau padi burung, rumput miang dan rumput colok china
Rumputox	1 kg. for 1 relung	2 begs	21 days after seeding	Rumput daun lebar dan rusiga
Basmi 311	60 gm. mixed by 3 galon water	1 barrel	7 to 14 days after seeding	Rumput daun lebar dan rusiga

(Data Source : MADA)

TABLE 4.5

PARAMETER LIMITS FOR WATERCOURSE DISCHARGE OF EFFLUENT FROM PRESCRIBED PREMISES OCCUPIED OR USED FOR THE PRODUCTION OF PALM OIL OR ITS ASSOCIATED PRODUCTS

PARAMETERS	LIMITS OF DISCHARGE FOR PERIOD 1-1-1984 AND THEREAFTER
Biochemical Oxygen Demand (BOD) 3-day, 30 C; mg/l	100
Chemical Oxygen Demand (COD) ; mg/l	-
Total Solids ; mg/l	-
Suspended Solids ; mg/l	400
Oil and Grease ; mg/l	50
Ammoniacal Nitrogen ; mg/l	150*
Total Nitrogen ; mg/l	200*
pH	5.0 - 9.0
Temperature C	45

\* Value of filtered sample

Source : Environmental Quality (Prescribed Premises) (Palm Oil) Regulations 1977  
Second Schedule



TABLE 4.6

PARAMETER LIMITS FOR WATERCOURSE DISCHARGE  
OF EFFLUENT FROM PRESCRIBED PREMISES  
OCCUPIED OR USED FOR THE PRODUCTION OF  
CONCENTRATED LATEX OR ITS ASSOCIATED PRODUCTS

PARAMETERS	LIMITS OF DISCHARGE FOR PERIOD 1-4-1983 AND THEREAFTER
Biochemical Oxygen Demand (BOD) 3-day, 30 C; mg/l	100 (50*)
Chemical Oxygen Demand (COD) ; mg/l	400
Total Solids ; mg/l	-
Suspended Solids ; mg/l	150 (100*)
Ammoniacal Nitrogen ; mg/l	300
Total Nitrogen ; mg/l	350
pH	6 - 9

\* This additional limit is the arithmetic mean value determined on the basis of a minimum of four samples taken at least once a week for four weeks consecutively.

Source : Environmental Quality (Prescribed Premises)  
(Raw Natural Rubber) Regulations 1977  
Third Schedule

TABLE 4.7 LIST OF FACTORIES /SOURCES OF WATER POLLUTION IN MUDA RIVER BASIN

No.	Name & Address of Factories	Types of Production	Quantity & Quality of Effluent Discharged	Treatment of Effluent	Name of Stream to which the Effluent is Discharged
1.	Getah Batu Pekaka Estisie Factory Batu 21, Jalan kulim - Baling Kuala Ketil, Kedah.	Latex Concentrate - 8 MT/Day	Q = 122 M <sup>3</sup> /Day - BOD <sub>5 day @ 20°C</sub> = 69ppm COD = 292ppm TN = 42ppm AN = 33ppm SS = 113ppm	Biological / Ponding System (anaerobic & Fautative ponds)	Sg.Sedim / Sg.Muda
2.	Lubok Segintah Estate SMR Factory Kuala Ketil, Kedah.	SMR - L 4 MT/Day	Q = 120 M <sup>3</sup> /Day BOD <sub>5 day @ 20°C</sub> = 45ppm COD = 280ppm TN = 24ppm AN = 4ppm SS = 200ppm	Biological / Ponding System (anaerobic & aerobic ponds)	Sg.Muda
3.	Euroma Rubber Ind. Sdn. Bhd. Lot 45 & 46, Mukim Bagan Sena 09010 Labu Besar, Kulim, Kedah.	SMR - 10/20 - 20 MT/Day	Q = 200 M <sup>3</sup> /Day BOD <sub>5 day @ 20°C</sub> = 42ppm COD = 158ppm TN = 34ppm AN = 24ppm SS = 5ppm	Biological / Ponding System (anaerobic & aerobic ponds)	Sg.Sedim / Sg.Muda
4.	Getah Felda Teloi Timur Factory 09300 Kuala Ketil, Kedah.	i) Latex Concentrate 21 MT/Day ii) SMR Block - 44 MT/Day	Q = 900 M <sup>3</sup> /Day BOD <sub>5 day @ 20°C</sub> = 49ppm COD = 150ppm TN = 143ppm AN = 131ppm SS = 50ppm	Biological / Ponding System (anaerobic, Fautative and aerobic ponds)	Sg. Telok Nyior / Sg.Muda

TABLE 4.7 (2)

No.	Name & Address of Factories	Types of Production	Quantity & Quality of effluent Discharged	Treatment of effluent	Name of Stream to which the effluent is Discharged
5.	Sungai Tawar Latex Co. Sdn. Bhd. Kg. Dara, Sg Tawar Kuala Ketil, Kedah.	i) Latex Concentrate 23 MT/Day ii) SMR - 10 - 6 MT/Day	Q = 200 M <sup>3</sup> /Day BOD <sub>5 day @ 20°C</sub> = 95ppm COD = 330ppm TN = 96ppm AN = 94ppm SS = 35ppm	Biological / Ponding System (anaerobic & aerobic ponds)	Sg. Tawar / Sg. Ketil/Sg. Muda
6.	Getah Martec Bhd. Kuala Pegang, Baling, Kedah.	SMR Block Rubber - 56 MT/Day	Q = 720 M <sup>3</sup> /Day BOD <sub>5 day @ 20°C</sub> = 24ppm COD = 85ppm TN = 53ppm AN = 33ppm SS = 180ppm	Biological / Ponding System (anaerobic, Fautative and aerobic ponds)	Sg. Ketil/ Sg. Muda
7.	Getah Martec Bhd. Factory Kampung Pasir, Jeniang, Gurun, Kedah.	i) Latex Concentrate - 32 MT/Day ii) Skim Blok - 5 MT/Day	Q = 630 M <sup>3</sup> /Day BOD <sub>5 day @ 20°C</sub> = 65ppm COD = 225ppm TN = 118ppm AN = 96ppm SS = 136ppm	Biological / Ponding System (anaerobic, Fautative and aerobic ponds)	Sg. Muda
8.	Baderoch Estate Rubber Factory Kuala Ketil, Kedah.	i) Latex Concentrate - 6 MT/Day ii) SMR Block Rubber - 4 MT/Day	Q = 120 M <sup>3</sup> /Day BOD <sub>5 day @ 20°C</sub> = 180ppm COD = 4741ppm TN = 465ppm AN = 420ppm SS = 840ppm	Row effluent - > holding pond - > land disposal	Disposed on Land (Sg.Kejal /Sg.Sedim/Sg.Muda)
9.	Kuala Ketil Estate Rubber Factory 09300 Kuala Ketil Kedah Danulaman	i) Latex Concentrate - 10 MT/Day ii) SMR - Block Rubber - 11 MT/Day	Q = 150 M <sup>3</sup> /Day BOD <sub>5 day @ 20°C</sub> = 34ppm COD = 128ppm TN = 29ppm AN = 4ppm SS = 140ppm	Biological / Ponding System (anaerobic & aerobic ponds)	Sg.Sedim/Sg.Muda

TABLE 4.7 (3)

No.	Name & Address of Factories	Types of Production	Quantity & Quality of Effluent Discharged	Treatment of Effluent	Name of Stream to which the Effluent is Discharged
10.	Tong Huat Rubber Factory Sdn. Bhd. Sungai Division, U.P. Estate 08000 Sungai Petani.	i) Latex Concentrate - 12 MT/Day ii) SMR - Block Rubber - 50 MT/Day	Q = 500 MT/Day BOD = 20ppm COD = 104ppm TN = 54ppm AN = 64ppm SS = 36ppm	Biological / Ponding System (anaerobic & aerobic ponds)	Sg. Jerung / Sg. Muda
11.	Getah Padang Meiha Plantation Factory, Padang Serai, Kulim, Kedah Darulaman.	i) Latex Concentrate - 7 MT/Day ii) SMR - Block Rubber - 3 MT/Day	Q = 460 MT/Day BOD = 10ppm COD = 80ppm TN = 31ppm AN = 26ppm SS = 10ppm	Biological / Ponding System (anaerobic & aerobic ponds)	Sg. Jemerd / Sg. Sediri / Sg. Muda
12.	Ladang Pinang Tunggal Rubber Factory, Jalan Kuala Keli, Sg. Petani, Kedah Darulaman.	i) Latex Concentrate - 9 MT/Day ii) Skm - Block Rubber - 2 MT/Day	Q = 160 MT/Day BOD = 19ppm COD = 81ppm TN = 20ppm AN = 11ppm SS = 20ppm	Biological / Ponding System (anaerobic & aerobic ponds)	Sg. Muda
13.	Tadico Co. Sdn. Bhd. (Palm Oil Mill) Padang Serai, Kedah	Crude Palm Oil - 60 MT/Day	Q = 150 MT/Day BOD = 403ppm COD = 1200ppm SS = 744ppm O&G = 23ppm	Biological / Ponding System Disposal on Land (anaerobic & facultative and aerobic ponds)	Sg. Karangan / Sg. Sediri / Sg. Muda
14.	Selaikawan Palm Oil Factory Sdn. Bhd. 93A, Kg. Batu Puteh Karang, Kulim, Kedah.	Crude Palm Oil - 100 MT/Day	Q = 264 MT/Day BOD = 26ppm COD = 214ppm SS = 26ppm O&G = 7.6ppm	Biological / Ponding System (anaerobic & facultative and aerobic ponds)	Sg. Karangan / Sg. Sediri / Sg. Muda
15.	Penta Textile Sdn. Bhd. Lot 2475, Carok Padang, Sik, Kedah.	Textile / Towel	Q = 30 MT/Day BOD = 50ppm COD = 100ppm SS = 100ppm O&G = 10ppm	Biological / Ponding System (anaerobic & aerobic ponds)	Sg. Muda

TABLE 4

No.	Name & Address of Factories	Types of Production	Quantity & Quality of Effluent Discharged	Treatment of Effluent	Name of Stream to which the Effluent is Discharged
16.	Chin Soon Huat Sdn. Bhd. No. 91, Sungai Karang Padang Serai Kedah Darulaman (Tapioca Factory)	Tepung Ubi & Sagu - 50 MT/Day	Q = 50 MT/Day	Biological / Ponding System (Sedimentation and aerobic ponds)	Sg. Karangan / Sg. Sediri / Sg. Muda

Note : BOD - Biochemical Oxygen Demand

COD - Chemical Oxygen Demand

TN - Total Nitrogen

SS - Suspended Solids

O&G - Oil and Grease

Docu. 4.1

**QUESTIONNAIRES  
TO FACTORIES/BREEDING FARMS  
IN MUDA RIVER BASIN**

(with reference numbers for preparation of summary)

JICA Study Team for Comprehensive Management Plan of Muda river basin needs some data/information on factories/livestock-breeding-farms located in the Muda river basin as one of necessary data for the study.

Please prepare the answers to the following questionnaires.  
(Please write down with clear block letters)  
(Rough figures are accepted if the detailed data are not available)

Your name:

Your position & section:

Name of your factory:

Full Address/Location:

Tel. No. :

Q1 Products

<u>Common name</u>	<u>Specific name</u>	<u>Annual Production</u> (Quantity)
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Q2 Annual Sales and Benefit (RM)

<u>Annual Sales</u>	<u>Benefit</u>
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Q3 Process of Major Production (Please explain in a flow diagram)

Q4 Treatment of Solid Waste

(1)Quantity

<u>Name of Waste</u>	<u>Quantity(Year/month/day)</u>	<u>% of Treatment</u>
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(2)Disposal/Treatment system

(Please explain briefly the treatment system of waste )

Q5 Treatment of Effluent(Waste water/Drainage water)

(1) Quantity of Effluent(year/month/day)

(2) Drainage/Treatment System(Diagram if possible)

(3) Percentage of Un-Treated Quantity

(How much of the total effluent is drained without sufficient treatment ?)

(4) Water Quality of Effluent  
(if you have any data)

(5) Name of Stream to which the effluent is drained  
(Names of tributary stream and main stream)

Q6 Environmental Activities  
(Please describe the activities ,other than the treatment mentioned above), for environmental conservation/protection taken by your factory/farm/company , if any)

Q7 Do you know "Love River ( Cintai Lah Sungai Kita)" campaign by DID/JPS ?

Please select one of the following.

- 1. ( ) Yes, I know.
- 2. ( ) Yes, but I don't know the detail.
- 3. ( ) No, I have never heard the name.

Q8 There are some factories (rubber, oil palm, etc.) and livestock breeding farms(big, chicken, etc.) located nearby tributaries of Muda river.

The drainage water of factories is actually more or less polluted ,although each factory has treatment facilities(Settling basin etc.)and the water quality of tributary located downstream side of factory is gradually improved by dilution in the further downstream.

Do you think that the factories are considered as pollution sources of Muda river? Please select one of the following.

- 1. ( ) Surely Yes.(pollution source)
- 2. ( ) More or less ,Yes.
- 3. ( ) More or less ,No.
- 4. ( ) No.( not pollution source)

If you select "No"or "More or less , No.", Please describe the reason below.

( )

( )  
( )  
( )  
( )

Q9 Which do you think is the serious pollution sources to water quality of Muda river ?  
Please select from the following(no limit of selected numbers).

- 1. ( ) Rubber factories
- 2. ( ) Oil-palm factories
- 3. ( ) Timber processing factories
- 4. ( ) Pig breeding farms
- 5. ( ) Pumping stations
- 6. ( ) Town/village(Drainage water)
- 7. ( ) Disposal of garbage/rubbish
- 8. ( ) Sand mining
- 9. ( ) Others( )

Q10 Please describe your comments on the matter of this questionnaire, if any.

( )  
( )  
( )  
( )  
( )  
( )  
( )  
( )

Thank you.



**LIST OF FACTORIES**  
which answered to the Questionnaires

No. 1

Name of person  
(who filled in the papers) : S. P. Mah  
Position/Section (of the person) : Estate Manager  
Name of Factory : Selame ? Factory  
Location/Address (of the factory) : 09800 Serdang , Kedah  
Tel. Number (of the factory) : 04 - 4077245

No. 2

Name of person  
(who filled in the papers) : Lai Ah Choy  
Position/Section (of the person) : Asst. Engineer  
Name of Factory : Setiakawan Palm Oil Mill  
Location/Address (of the factory) : 98 - A Batu Putih,  
Mk. Padang Cina,  
09700 Kulim, Kedah  
Tel. Number (of the factory) : 04 - 4056121 / 122

No. 3

Name of person  
(who filled in the papers) : Teh Sar Moh Nee  
Position/Section (of the person) : Estate Manager  
Name of Factory : Ladang Pelam  
Location/Address (of the factory) : Ladang Pelam,  
09009 Kulim , Kedah  
Tel. Number (of the factory) : 04 - 4057227

No. 4

Name of person  
(who filled in the papers) : Khor Kim Tong  
Position/Section (of the person) : Executive Director  
Name of Factory : Taclico Company SDN. BHD.  
Location/Address (of the factory) : Lot 20, 21 & 29, Mk. Padang  
09400 Padang Serai  
Tel. Number (of the factory) : 4855-602

No. 5

Name of person  
(who filled in the papers) : ?  
Position/Section (of the person) : Thye Group Estate Manager  
Name of Factory : Boontong Estate Sdn. Bhd.  
Thye Group Estates  
Location/Address (of the factory) : P. O. box 20,  
08007 Sungai Petani ,Kedah  
Tel. Number (of the factory) : ?

No. 6

Name of person  
(who filled in the papers) : Loh Chin Kiang  
Position/Section (of the person) : Factory Manager  
Name of Factory : Plantation Latex (m) SDN  
BHD  
Location/Address (of the factory) : P.O.Box 1, 08007 SG Petani,  
Kedah River Side Factory,  
08100 Bedong, Kedah  
Tel. Number (of the factory) : 04-4582001

No. 7

Name of person  
(who filled in the papers) : HJ Zainal B Omar  
Position/Section (of the person) : Senior Manager  
Name of Factory : Mardec Baling  
Location/Address (of the factory) : Mardec BHD  
09110 Koala Pegang  
Baling, Kedah  
Tel. Number (of the factory)

No. 8

Name of person  
(who filled in the papers) : Gan Hock Teng  
Position/Section (of the person) : Manager  
Name of Factory : Lee Latex (PTE) Ltd.,  
Location/Address (of the factory) : P.O.Box 204, 08100 Bedong,  
Kedah  
Tel. Number (of the factory) : 04-4584121/2/3

No. 9

Name of person (who filled in the papers) : Cheng Weng Seah  
 Position/Section (of the person) : Manager  
 Name of Factory : Tai Teong Rubber Factory Sdn. Bhd.  
 Location/Address (of the factory) : 1460, Simpang Tiga, 13300 Tasek Glugor, S. Perai.  
 Tel. Number (of the factory) : 04 - 5731235 & 5731213

No. 10

Name of person (who filled in the papers) : Wong Mok  
 Position/Section (of the person) : Clark  
 Name of Factory : Sungai Tawar Latex Co. Sdn. Bhd.  
 Location/Address (of the factory) : Sungai Tawar Estate, Bhg. 2, 09310 Kuala Ketil Kedah D/A  
 Tel. Number (of the factory) : 04 - 4766217, 011 - 455586

No. 11

Name of person (who filled in the papers) : Ding Toy Huah  
 Position/Section (of the factory) : Manager Plantation  
 Name of Factory : Bertam Estate Rubber Factory.  
 Location/Address (of the factory) : Bertam Estate, 13200 Kepala Batas, Seberang Perai Utara.  
 Tel. Number : 04 - 5751095

No. 12

Name of person (who filled in the papers) : Wai Wai Mun  
 Position/Section (of the factory) : Estate Manager  
 Name of Factory : Padang Meiha Estate  
 Location/Address (of the factory) : 09400, Padang Serai, Kedah Darulaman.  
 Tel. Number : 04 - 4855212

DOCU. 4.3 Summary of Answer to Questionnaires to Factories(Q7-Q9)

Que.No.	1	2	3	4	5	6	7	8					Total
Q7													
1		*	*			*	*						4
2	*			*				*					3
3													
Q8													
1						*							1
2	*		*	*			*	*					5
3		*											1
4													
Q9													
1							*						1
2						*	*						2
3													
4						*	*						2
5													
6	*					*	*						3
7	*			*		*	*						4
8	*			*									2
9	*		*	*									3

Note: Factory No.5 returned the questionnaire papers without answers.

Note: Factories No.9 ~ No.12 are not included in this summary but their answer are taken into account for the planning.

DOCU. 4.4

SUMMARY OF ANSWERS BY FACTORIES  
TO THE QUESTIONNAIRES (2)  
(WRITTEN ANSWERS)

Q1 Products

Factory No.1

- Standard Malaysian Rubber (SMR)
- Production completely ceased on Nov.1,1994 due to lack of material.

Factory No.2

<u>Common name</u>	<u>Specific name</u>	<u>Annual Production (Quantity)</u>
Crude palm oil		36,000 metric ton
Palm Kernel		12,000 metric ton

Factory No.4

<u>Common name</u>	<u>Specific name</u>	<u>Annual Production (Quantity)</u>
Crude Palm oil		17,000 metric ton
Palm Kernal		4,000 metric ton

Factory No.6

<u>Common name</u>	<u>Specific name</u>	<u>Annual Production (Quantity)</u>
MGLX, MG 30/49 PA57, PA80, SPR881 ADS, SP20/40/50	Megapoly Latex, Megapoly 30, Megapoly 49, Propoly 57/80, Super Poly Rubber Smoked Sheet/Air Dried Sheet, Super Poly 20/40/50	2750 mt

Factory No.7

<u>Common name</u>	<u>Specific name</u>	<u>Annual Production (Quantity)</u>
1. Later Concentrate	L•A/H•A	8000
2. SKIM		900

3. SMR 10	500
4. SMR 20	12700
5. 20 CV	1200

Factory No.8

<u>Common name</u>	<u>Specific name</u>	<u>Annual Production (Quantity)</u>
CENTRIFUGED LATEX 60% DRC	-	10,500 M/TONS.

Q2 Annual Sales and Benefit (RM)

Factory No.1

- Not applicable - Production has ceased.

Factory No.2

<u>Annual Sales</u>	<u>Benefit</u>
RM 75 million	RM million

Factory No.4

<u>Annual Sales</u>	<u>Benefit</u>
\$20,000,000.00	

Factory No.6

<u>Annual Sales</u>	<u>Benefit</u>
RM 13,750,000.00	

Factory No.7

<u>Annual Sales</u>	<u>Benefit</u>
50 Millions	1.5 Millions

Factory No.8

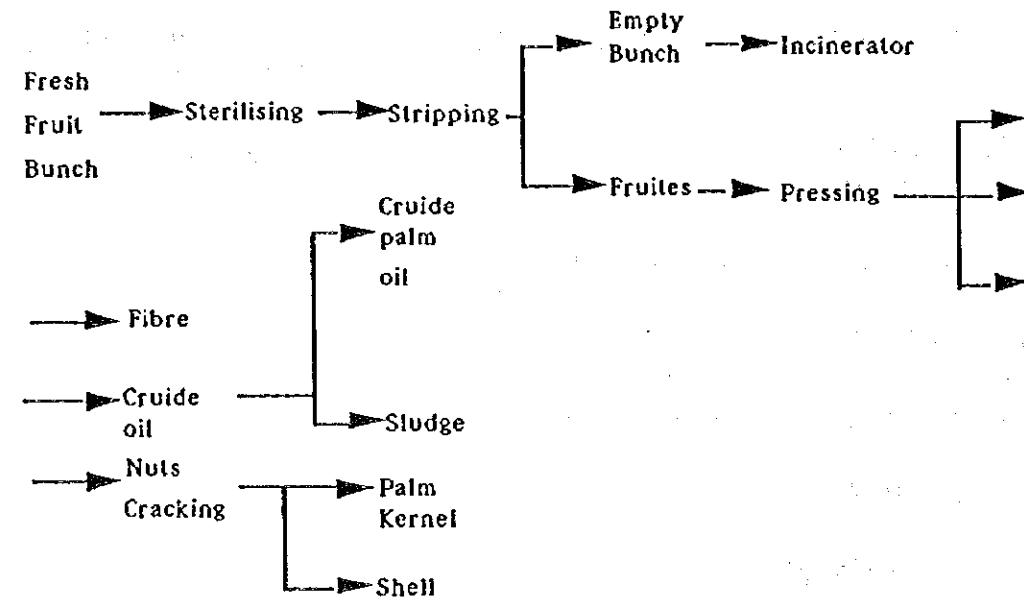
<u>Annual Sales</u>	<u>Benefit</u>
RM21,652,452	-

Q3 Process of Major Production (Please explain in a flow diagram)

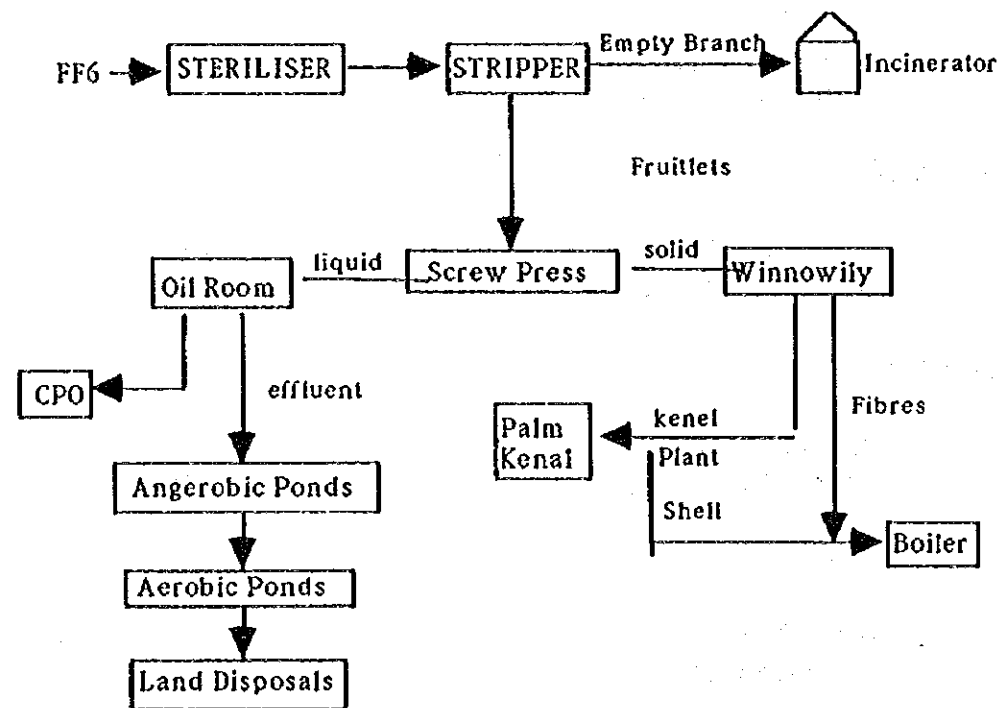
**Factory No.1**

- Not applicable - Production has ceased.

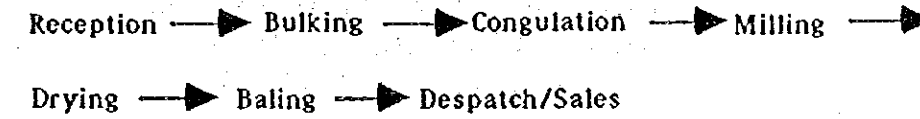
**Factory No.2**



**Factory No.4**



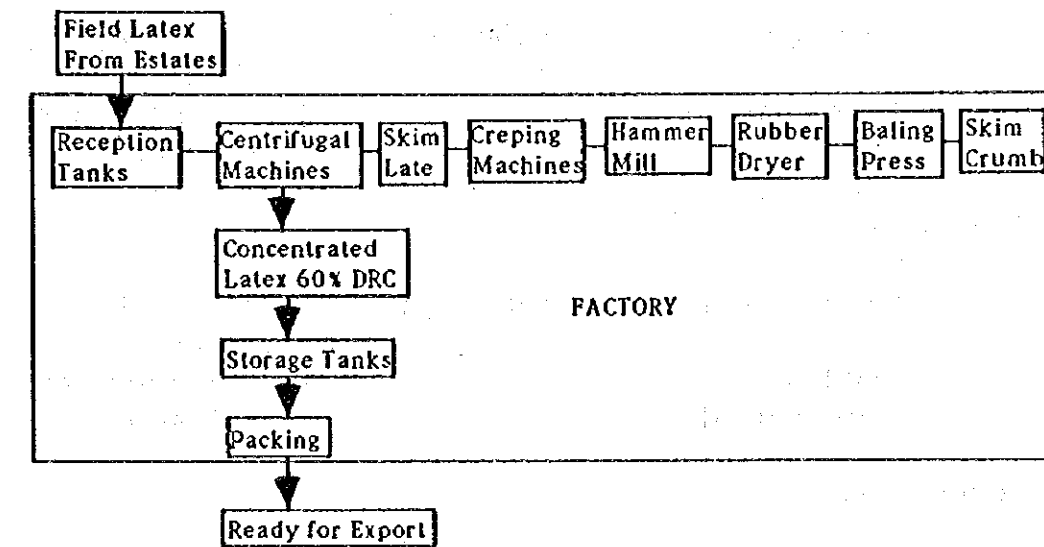
**Factory No.6**



**Factory No.7**

1. Latex Concentrate Production (Appendix 1)
2. Skim Production (Appendix 2)
3. SMR 20 Production (Appendix 3)
4. 20 CV Production (Appendix 4)

**Factory No.8**



**Q4 Treatment of Solid Waste**

**(1)Quantity**

**Factory No.1**

Nil.

**Factory No.2**

Name of Waste	Quantity(Year/month/day)	% of Treatment
Empty bunch	40,000 mt/year	100% burnt
Fibre	24,000 mt/year	100% burnt
Shell	12,000 mt/year	sold

Factory No.4

<u>Name of Waste</u>	<u>Quantity(Year/month/day)</u>	<u>% of Treatment</u>
Empty bunch	23,000/1900/120	100%

Factory No.6

<u>Name of Waste</u>	<u>Quantity(Year/month/day)</u>	<u>% of Treatment</u>
Vulcanise Rubber	6,000/500/20	0.6%

Factory No.7

<u>Name of Waste</u>	<u>Quantity(Year/month/day)</u>	<u>% of Treatment</u>
1. Sludge		Nil
2. Earth/Barks/Dirt Debris		Nil

Factory No.8

<u>Name of Waste</u>	<u>Quantity(Year/month/day)</u>	<u>% of Treatment</u>
SLUDGE	365/30/1 KGS	100%

(2) Disposal/Treatment system  
(Please explain briefly the treatment system of waste )

Factory No.2

Empty Bunch are burnt in Incinerator and sold as fertilizer.  
Fibre is burnt as fuel for boiler.  
Shell is sold as fuel for boiler.

Factory No.4

Incinerator — Branch Ash —> Fertiliser

Factory No.6

Local Sale/Land Disposal

Factory No.7

Refer Q5 (2)

Factory No.8

We dispose off our factory effluent with the help of rubber traps, drainage system, composting pond and finally aeration & air blower system before discharging into the river.

Q5 Treatment of Effluent(Waste water/Drainage water)

(1) Quantity of Effluent(year/month/day)

Factory No.1

Not applicable - Production has ceased. When the factory was in operation, the effluent was treated by anaerobic and aerobic ponding system.

Factory No.2

120,000 mt / year

Factory No.4

1,080,000/3600/114 m<sup>3</sup>

Factory No.6

90,000/7,500/250 cubic meters

Factory No.7

1. Latex Concentrate/Skim Plant	1500 <sup>3</sup> m
2. SMR Plant	3500 <sup>3</sup> m

Factory No.8

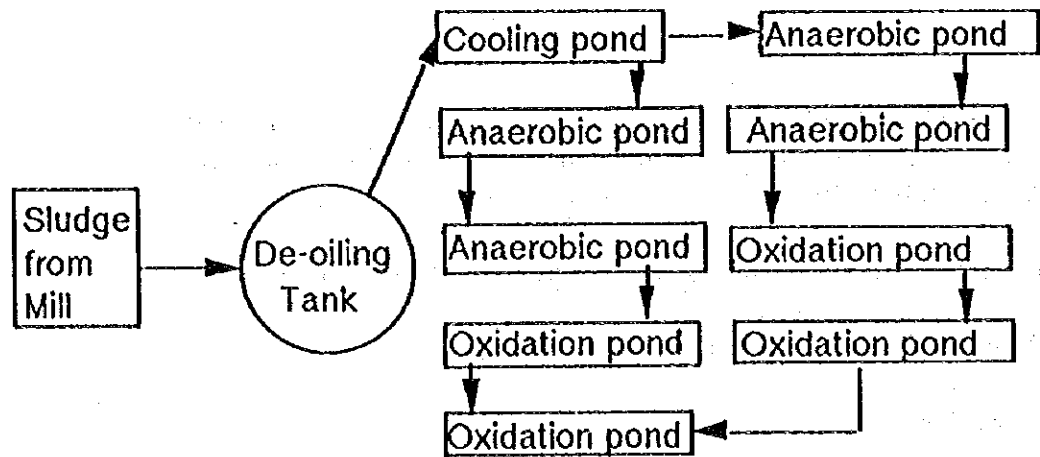
180,000/15,000/600 CUBIC METRES

(2) Drainage/Treatment System(Diagram if possible)

Factory No.2

Sludge from Mill flow to a de-oiling tank where remnants of oil is recovered, then flow to a cooling pond where the sludge is cooled, then follow by anaerobic action where waste is breakdown by anaerobic bacteria and finally to oxidation pond.

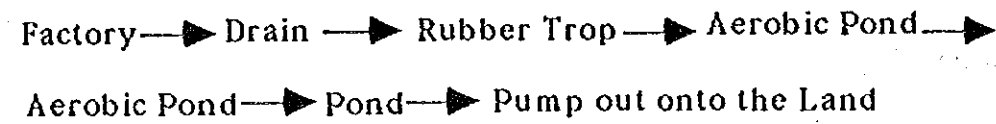




Factory No.4

Treatment Consists of two oil traps followed by a storage ditch, three anaerobic ditches with retention time of 30 days each, One aerobic ditch with a retention time of 15 days and two facultative polishing ditches with 15 days retention time each. The final discharge is through sprinkle system for land application.

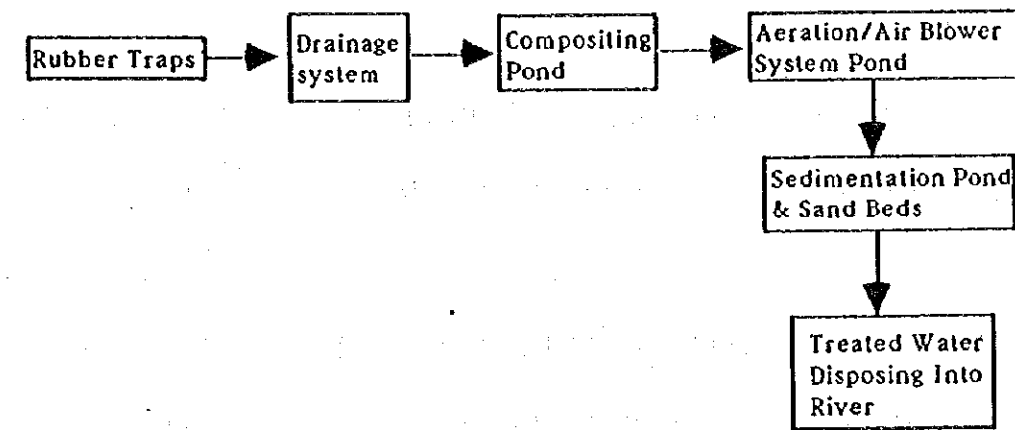
Factory No.6



Factory No.7

- 1. Latex Concentrate/Skim (Appendix 5)
- 2. SMR Plant (Appendix 6)

Factory No.8



**(3) Percentage of Un-Treated Quantity**  
(How much of the total effluent is drained without sufficient treatment ?)

Factory No.1

All effluent was treated.

Factory No.2

None.

Factory No.4

Nil

Factory No.6

Nil

Factory No.7

Nil

Factory No.8

0 %

**(4) Water Quality of Effluent**  
(if you have any data)

Factory No.1

Water quality of effluent meet the parameters imposed by

Department of Environment.

Factory No.2

Data as per Union Lab. Sdn. Bhd. tested on 2/12/94  
(Detail as per list attached)

Factory No.4

BOD(3days, 30C)	100 - 250	Total Nitrogen: 200 -250
COD(mg/l)	700 -1000	Ammoniacal Nitrogen - 150
Total Solid (mg/l)	2000	
Oil & Grease (mg/l)	20	

Factory No.6

Attached

Factory No.7

- |                     |            |
|---------------------|------------|
| 1. Concentrate/Skim | Appendix 7 |
| 2. SMR              | Appendix 8 |

Factory No.8

pH	7.20	Ammonical Nitrogen	209
B.O.D.	29	Total Nitrogen	297
C.O.D.	112		
Total Solid	1644		
Susp Solid	43		

(5)Name of Stream to which the effluent is drained  
(Names of tributary stream and main stream)

Factory No.1

Sungai Salleh(?) , Sungai Kedah

Factory No.2

Sungai Karangan

Factory No.6

Nil

Factory No.7

1. Concentrate/Skim
2. SMR

Factory No.8

SUNGEI TOH PAWANG/SUNGEI BONGKOH

**Q6 Environmental Activities**

(Please describe the activities ,other than the treatment mentioned above), for environmental conservation/protection taken by your factory/farm/company , if any)

Factory No.1

Soil and moisture conservation terraces, planting legume covers, maintenance of streams and drains.

Factory No.3

Practice good husbandry or improve agro-management practices.

Factory No.4

Used 3-phase decanter system to reduce solid waste to effluent pouds.

Factory No.6

Nil

Factory No.7

1. Please refer Appendix 9

**Q8** There are some factories (rubber, oil palm, etc.) and livestock breeding farms(big, chicken, etc.) located nearby tributaries of Muda river.

The drainage water of factories is actually more or less polluted ,although each factory has treatment facilities(Settling basin etc.)and the water quality of

tributary located downstream side of factory is gradually improved by dilution in the further downstream.

Do you think that the factories are considered as pollution sources of Muda river?

If you select "No" or "More or less, No.", Please describe the reason below.

Factory No.2

Factory have treatment ponds to treat effluent.

Q9 Which do you think is the serious pollution sources to water quality of Muda river ?  
Please select from the following (no limit of selected numbers).

Factory No.1

Rice fields , surface run-off water.

Factory No.3

Not sure which tributaries are feeding into Muda River.

Factory No.4

Land cleaning

Q10 Please describe your comments on the matter of this questionnaire, if any.

Factory No.1

Factories and farming activities in State Kedah (surrounding area) would unlikely contribute towards the pollution problems of Muda River Basin.

Factory No. 2

All industries , township & villages contribute more or less some pollution. However , our factory try to reduce/improve effluent quality.

Factory No. 6

He is a good idea to seek opinion and views from others on this matter. We wish to emphasize here that not only the Muda River but all the rivers in our country should be clean at all time, so that the future generation will have a longer and healthier life.