

**LAPORAN PEMANTAUAN KEMARAU  
UNTUK SEMENANJUNG MALAYSIA  
(BERDASARKAN ANALISIS HIDROLOGI)**

**30 November 2007**

**Bahagian Hidrologi dan Sumber Air  
Jabatan Pengairan dan Saliran Malaysia**

## KANDUNGAN

	MS
RINGKASAN	3
I. ANALISIS HUJAN	4
II. ANALISIS KADARALIR SUNGAI	10
III. ANALISIS STORAN EMPANGAN	11

## **Ringkasan**

Keputusan analisis keatas 41 stesen-stesen hujan sehingga bulan Oktober 2007, didapati stesen-stesen di Temerloh dan di Pekan, Pahang seperti di jadual bawah masih mengalami keadaan kering seperti bulan-bulan sebelumnya:

Purata keseluruhan jumlah hujan 3 bulan dari August hingga Oktober 2007 adalah sebanyak 681.0 mm, perbezaan sebanyak 11.3 % dengan jumlah hujan tiga bulan sebelumnya sebanyak 611.7 mm, dan 6.7 % dengan purata jangka panjang sebanyak 638.5 mm.

Bagi jumlah hujan 6 bulan dari Mei hingga Oktober 2007, purata keseluruhan adalah sebanyak 1003.8 mm, perbezaan sebanyak -19.3 % dengan jumlah hujan 6 bulan sebelumnya sebanyak 1244.4 mm, dan -9.7 % dengan purata jangka panjang sebanyak 1112.2 mm.

Daripada 10 batang sungai yang dipantau , kesemuanya merekodkan kadaralir melebihi normal pada akhir bulan November.

Kesemua paras air empangan-empangan yang dipantau melebihi aras normal pada akhir bulan November.

## I. Analisis Hujan

### a) Analisis berdasarkan Jumlah Hujan 3 Bulan

Keputusan analisis hujan untuk tempoh August hingga Oktober 2007 diterangkan di dalam Jadual 1 dan Rajah A1 hingga Rajah A2.

#### WATER RESOURCES STATUS MONITORING PROGRAM IN PENINSULAR MALAYSIA Aug,Sept,Oct 2007

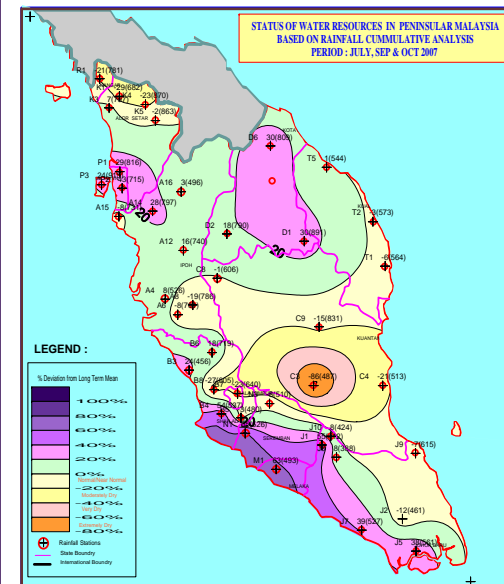
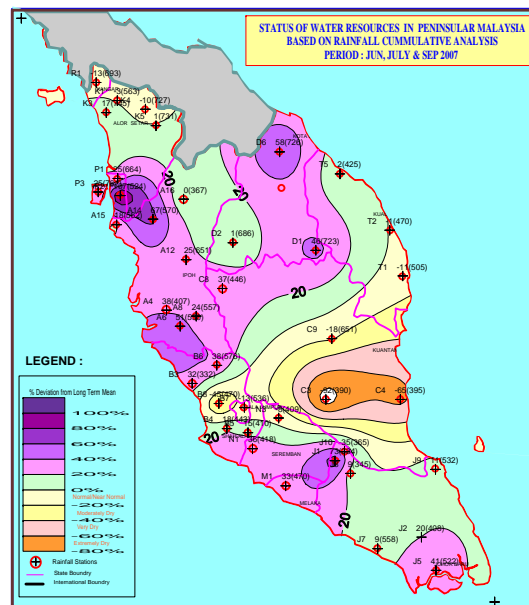
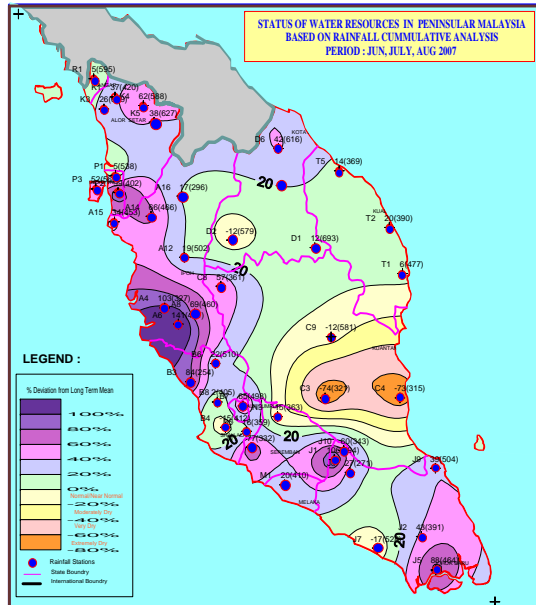
NO	NO STESEN	Aug-07	Sep-07	Oct-07	Total Rainfall	(3Mth Cum Rf)	Diff(mm)	% Dev
1	6501005 (R1)	188.00	200.0	226.5	614.50	780.5	-166.0	-21
2	6206035 (K1)	132.00	156.0	198.0	486.00	681.8	-195.8	-29
3	6103047 (K3)	222.50	354.5	275.5	852.50	796.7	55.8	7
4	061 (K4)	97.60	268.0	303.9	669.50	869.6	-200.1	-23
5	566 (K5)	188.80	330.9	324.8	844.50	862.7	-18.2	-2
6	5505033 (P1)	139.50	489.0	423.0	1051.50	815.6	235.9	29
7	5304045 (P2)	174.50	524.5	322.0	1021.00	715.4	305.6	43
8	5302003 (P3)	252.00	382.5	496.0	1130.50	914.9	215.6	24
9	4109095 (A4)	109.00	133.5	327.0	569.50	525.9	43.6	8
10	4011139 (A6)	204.00	167.0	276.0	647.00	701.0	-54.0	-8
11	4011144 (A8)	194.50	172.5	272.5	639.50	785.7	-146.2	-19
12	4511111 (A12)	244.50	247.0	369.5	861.00	739.6	121.4	16
13	5006021 (A14)	215.00	392.0	416.5	1023.50	797.1	226.4	28
14	5003028 (A15)	99.00	287.5	287.0	673.50	730.9	-57.4	-8
15	5210069 (A16)	19.00	227.5	265.0	511.50	496.1	15.4	3
16	3411017 (B3)	260.00	93.0	213.0	566.00	455.8	110.2	24
17	2917001 (B4)	179.50	233.5	412.0	825.00	536.7	288.3	54
18	2818110 (B5)	107.00	154.3	205.5	466.81	480.2	-13.4	-3
19	3516022 (B6)	163.00	356.0	327.0	846.00	719.3	126.7	18
20	3117070 (B7)	92.00	153.0	245.5	490.50	639.8	-149.3	-23
21	3115079 (B8)	63.00	79.0	299.0	441.00	605.3	-164.3	-27
22	2719001 (N1)	249.50	142.0	478.0	869.50	526.4	343.1	65
23	3023098 (N3)	127.93	136.0	204.5	468.43	510.2	-41.8	-8
24	2321006 (M1)	209.50	273.0	320.0	802.50	492.6	309.9	63
25	2526001 (J1)	172.00	148.0	316.5	636.50	411.6	224.9	55
26	2033001 (J2)	152.50	75.5	178.5	406.50	461.1	-54.6	-12
27	1437116 (J5)	284.00	248.5	240.2	772.70	560.8	211.9	38
28	1829001 (J7)	197.00	316.6	219.0	732.60	527.3	205.3	39
29	2528002 (J8)	121.00	163.5	135.0	419.50	387.9	31.6	8
30	2536168 (J9)	235.50	147.5	187.0	570.00	615.1	-45.1	-7
31	2527004 (J10)	112.96	145.0	198.0	455.96	424.1	31.8	8
32	3424081 (C3)	6.00	0.0	61.5	67.50	487.3	-419.8	-86
33	3533102 (C4)	13.50	104.0	285.5	403.00	513.1	-110.1	-21
34	4414036 (C8)	124.00	177.5	297.5	599.00	606.3	-7.3	-1
35	3930012 (C9)	73.00	293.0	338.5	704.50	831.5	-127.0	-15
36	4726001 (D1)	251.00	550.0	355.0	1156.00	890.6	265.4	30
37	4819027 (D2)	139.00	350.0	445.0	934.00	789.7	144.3	18
38	5921009 (D6)	484.50	384.0	185.0	1053.50	809.3	244.2	30
39	4234109 (T1)	169.00	105.0	256.0	530.00	564.4	-34.4	-6
40	4734079 (T2)	182.00	98.0	277.0	557.00	573.0	-16.0	-3
41	5331048 (T5)	146.00	118.0	288.0	552.00	544.4	7.6	1
	MEAN	165.71	228.69	286.61	681.0	638.5	42.5	6.7

From Long - Term record

MONTH : AUGUST 2007  
 PERIOD : JUN – AUGUST 2007

MONTH : SEPTEMBER 2007  
 PERIOD : JULY – SEPT. 2007

MONTH : OCTOBER 2007  
 PERIOD : JULY – SEPT. 2007

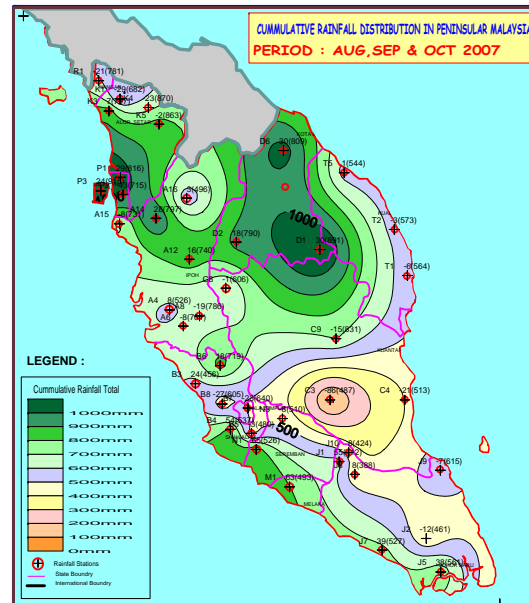
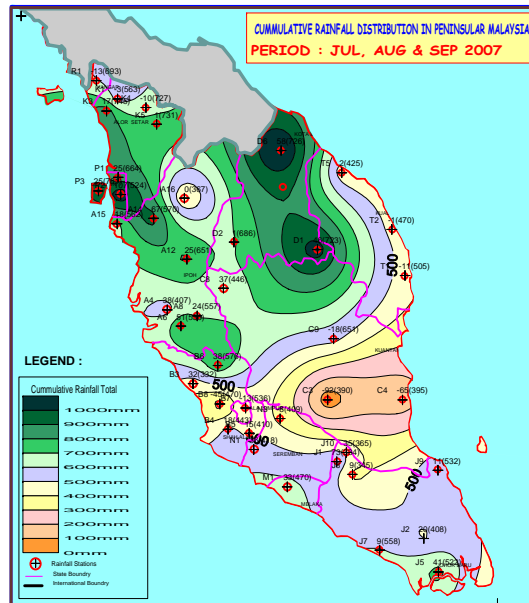
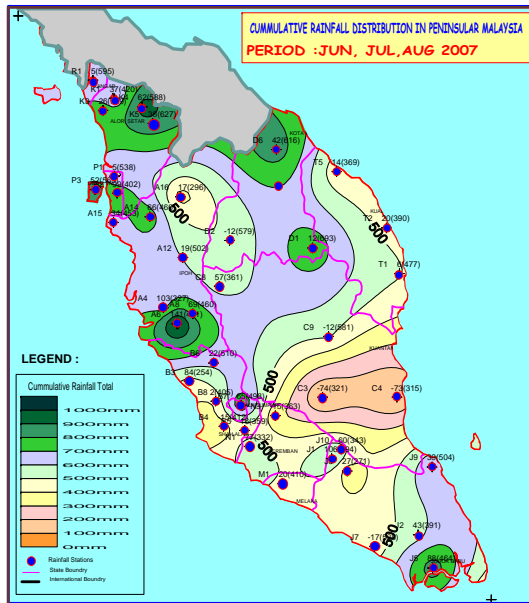


Rajah A1 : Peta Isohyet Menunjukkan Peratus Perbezaan Hujan (3 Bulan) Dengan Purata Jangka Panjang bagi Julai hingga Sept. 2007

MONTH : AUGUST 2007  
 PERIOD : JUN – AUGUST 2007

MONTH : SEPTEMBER 2007  
 PERIOD : JULY – SEPT. 2007

MONTH : OCTOBER 2007  
 PERIOD : AUG. – OCT. 2007



Rajah A2 : Peta Isohyet Menunjukkan Jumlah Hujan Kumulatif (3 Bulan) bagi Ogos hingga Oktober 2007

## b) Analisis berdasarkan Jumlah Hujan 6 Bulan

Keputusan analisis hujan untuk tempoh Mei hingga Oktober 2007 diterangkan di dalam Jadual 2 dan Rajah A3 hingga Rajah A4.

WATER RESOURCES STATUS MONITORING PROGRAM IN PENINSULAR MALAYSIA  
May, June, July, August, September & October 2007

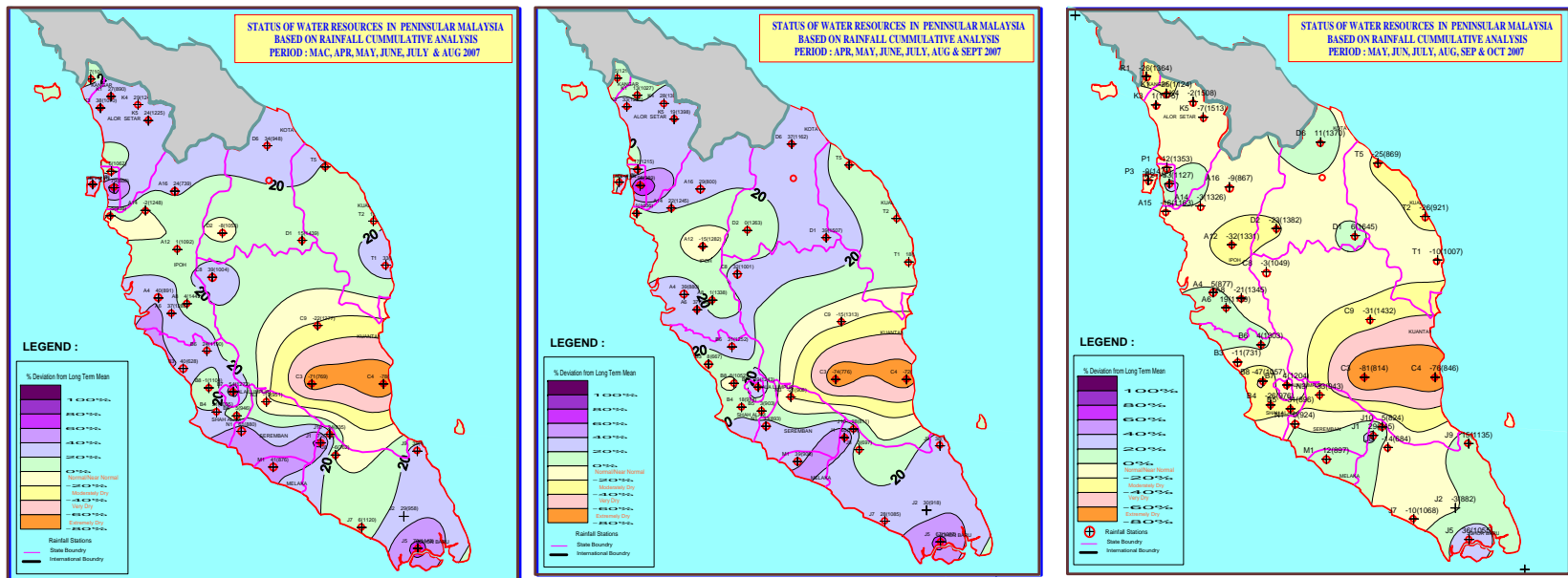
NO	NO STESEN	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Total Rainfall	(6Mth Cum Rf)	Diff(mm)	% Dev
1	6501005 (R1)	180.0	217.0	218.5	188.0	200.0	226.5	1003.50	1363.7	-360.2	-26
2	6206035 (K1)	114.0	184.5	259.0	132.0	156.0	198.0	845.50	1124.4	-278.9	-25
3	6103047 (K3)	249.5	276.0	292.0	222.5	354.5	275.5	1394.50	1374.6	19.9	1
4	061 (K4)	255.9	566.9	290.3	97.6	268.0	303.9	1478.70	1507.8	-29.1	-2
5	566 (K5)	203.6	456.5	220.7	188.8	330.9	324.8	1400.50	1513.0	-112.5	-7
6	5505033 (P1)	142.5	221.5	204.5	139.5	489.0	423.0	1197.00	1353.2	-156.2	-12
7	5304045 (P2)	174.5	240.5	384.5	174.5	524.5	322.0	1498.50	1127.5	371.0	33
8	5302003 (P3)	105.0	292.5	314.0	252.0	382.5	496.0	1346.00	1471.1	-125.1	-9
9	4109095 (A4)	122.5	236.0	319.0	109.0	133.5	327.0	920.00	877.5	42.5	5
10	4011139 (A6)	197.5	431.0	426.5	204.0	167.0	317.83	1426.00	1199.1	226.9	19
11	4011144 (A8)	118.0	258.0	323.5	194.5	172.5	379.85	1066.50	1344.5	-278.0	-21
12	4511111 (A12)	60.5	29.0	325.5	244.5	247.0	369.5	906.50	1330.7	-424.2	-32
13	5006021 (A14)	128.5	214.0	342.5	215.0	392.0	103.0	1292.00	1325.6	-33.6	-3
14	5003028 (A15)	77.0	233.0	277.0	99.0	287.5	67.0	973.50	1163.2	-189.7	-16
15	5210069 (A16)	216.5	207.0	121.5	19.0	227.5	265.0	791.50	867.1	-75.6	-9
16	3411017 (B3)	91.5	123.5	84.0	260.0	93.0	213.0	652.00	730.5	-78.5	-11
17	2917001 (B4)	138.5	61.5	111.0	179.5	233.5	412.0	724.00	976.1	-252.1	-26
18	2818110 (B5)	52.0	99.0	210.0	107.0	154.3	205.51	622.30	895.6	-273.3	-31
19	3516022 (B6)	383.5	183.5	274.0	163.0	356.0	327.0	1360.00	1302.6	57.4	4
20	3117070 (B7)	278.5	504.0	223.5	92.0	153.0	245.5	1251.00	1203.8	47.2	4
21	3115079 (B8)	75.0	233.0	115.0	63.0	79.0	299.0	565.00	1057.0	-492.0	-47
22	2719001 (N1)	198.0	158.5	178.0	249.5	142.0	478.0	926.00	924.1	1.9	0
23	3023098 (N3)	164.0	68.0	113.5	146.5	136.0	204.5	628.00	943.2	-315.2	-33
24	2321006 (M1)	238.0	139.0	141.5	209.5	273.0	320.0	1001.00	897.4	103.6	12
25	2526001 (J1)	209.5	175.0	258.0	172.0	148.0	316.5	962.50	744.5	218.0	29
26	2033001 (J2)	215.0	147.0	261.5	152.5	75.5	182.41	851.50	882.0	-30.5	-3
27	1437116 (J5)	308.0	387.5	202.0	284.0	248.5	240.2	1430.00	1054.8	375.2	36
28	1829001 (J7)	201.0	150.0	92.0	197.0	316.6	186.65	956.60	1068.2	-111.6	-10
29	2528002 (J8)	82.5	132.0	92.5	121.0	163.5	135.0	591.50	684.0	-92.5	-14
30	2536168 (J9)	459.5	258.0	208.0	235.5	147.5	187.0	1308.50	1134.7	173.8	15
31	2527004 (J10)	171.5	200.0	237.0	113.0	145.0	198.0	866.46	824.3	42.2	5.1
32	3424081 (C3)	68.5	53.5	23.5	6.0	0.00	193.09	151.50	813.8	-662.3	-81
33	3533102 (C4)	12.5	53.0	20.0	13.5	104.0	135.0	203.00	846.1	-643.1	-76
34	4414036 (C8)	273.5	134.0	308.0	124.0	177.5	282.28	1017.00	1049.2	-32.2	-3
35	3930012 (C9)	179.0	271.0	168.5	73.0	293.0	353.35	984.50	1432.1	-447.6	-31
36	4726001 (D1)	414.0	266.0	257.0	251.0	550.0	355.0	1738.00	1645.3	92.7	6
37	4819027 (D2)	202.0	170.0	203.0	139.0	350.0	445.0	1064.00	1381.6	-317.6	-23
38	5921009 (D6)	259.5	111.0	276.5	484.5	384.0	192.5	1515.50	1370.1	145.4	11
39	4234109 (T1)	298.0	162.0	177.0	169.0	105.0	256.0	911.00	1007.2	-96.2	-10
40	4734079 (T2)	120.0	99.0	186.0	182.0	98.0	277.0	685.00	921.0	-236.0	-26
41	5331048 (T5)	110.0	107.0	169.0	146.0	118.0	288.0	650.00	869.2	-219.2	-25
	MEAN	240.56	207.55	217.29	166.17	228.69	276.25	1003.8	1112.2	-108.4	-9.7

Jadual 2 : Analisis Hujan Bagi Tempoh Mei hingga Oktober 2007

MONTH : AUGUST 2007  
 PERIOD : MAC – AUGUST 2007

MONTH : SEPTEMBER 2007  
 PERIOD : APRIL – SEPT. 2007

MONTH : OCTOBER 2007  
 PERIOD : MAY – OCT. 2007



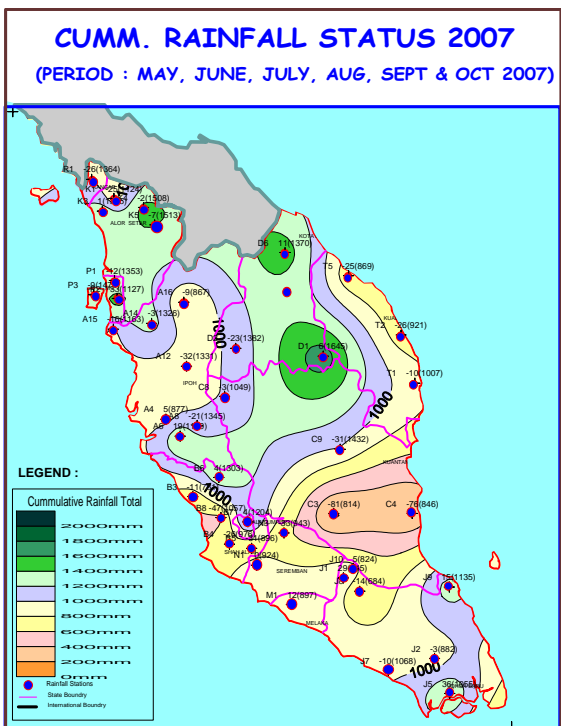
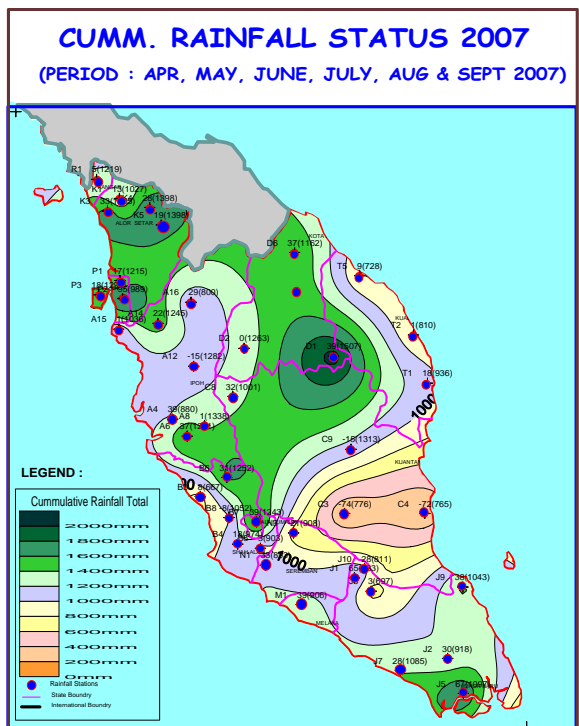
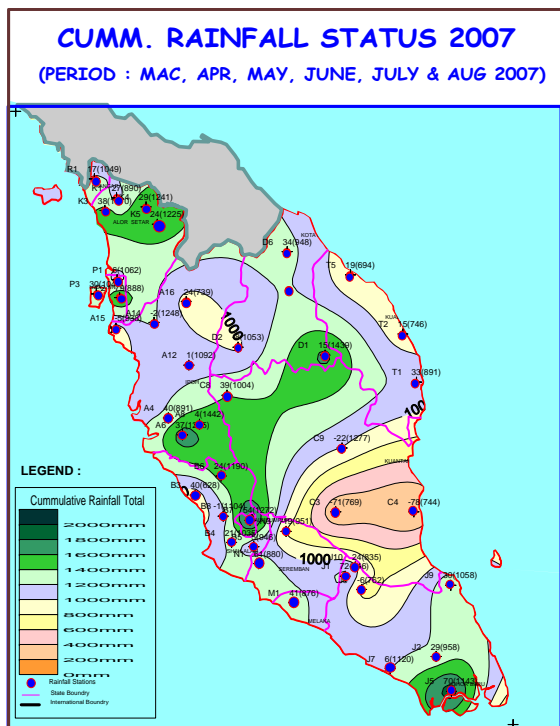
Rajah A3 : Peta Isohyet Menunjukkan Peratus Perbezaan Hujan (6 Bulan) Dengan Purata Jangka Panjang bagi Ogos hingga Oktober 2007



MONTH : AUGUST 2007  
 PERIOD : MAC - AUGUST 2007

MONTH : SEPTEMBER 2007  
 PERIOD : APRIL - SEPT. 2007

MONTH : OCTOBER 2007  
 PERIOD : MAY - OCT. 2007



Rajah A4 : Peta Isohyet Menunjukkan Jumlah Hujan Kumulatif (6 Bulan) bagi Ogos hingga Oktober 2007

## II. Analisis Kadaralir Sungai

Jadual 3 di bawah menunjukkan data luahan sungai-sungai yang dipantau pada akhir bulan November 2007.

STATION ID	NAME	STATE	LAST UPDATE	WATER LEVEL (M)	RIVER FLOW (M3/S)	DROUGHT FLOW FOR VARIOUS RETURN PERIODS(M3/S)			
						2-year	5-year	10-year	20-year
5721480	Sg.Kelantan at Kursia	Kelantan	30/11/3007 07.01	11.19	276	154	114	88	69
5606480	Sg.Muda at Syed Omar Bridge	Kedah	30/11/3007	Off-line	-	13	8	5	3
2816490	Sg.Langat at Dengkil	Selangor	28/09/2007 08.05	4.00	75	5	3	2	1
3813480	Sg.Bernam at SKC Bridge	Selangor	30/11/3007	Off-line	-	15	12	10	9
4809490	Sg.Perak at Kuala Kangsar	Perak	29/11/2007 00.44	32.47	224	66	36	22	14
5007490	Sg.Kurau @ Pondok Tanjung	Perak	25/11/3007 12.03	13.19	33.5	3.4	2.4	1.9	1.5
5206490	Sg.Kerian @ Selama	Perak	25/11/3007 07.03	9.57	20.00	10.9	7.7	6.2	4.9
3424490	Sg.Pahang @ Temerloh	Pahang	30/11/3007 07.06	26.11	818	180	125	100	80
2527490	Sg.Muar @ Buluh Kasap	Johor	30/11/3007 07.00	6.70	39.00	7.2	4.2	2.9	2.0
1737490	Sg.Johor @ Rantau Panjang	Johor	30/11/3007 07.00	3.91	24.00-	8.5	5.5	4.2	3.2

Jadual 3 : Rekod Luahan Sungai pada akhir bulan November 2007

### III. Analisis Storan Empangan

Merujuk kepada Jadual 4 dan 5 , kesemua aras air bagi empangan-empangan yang dipantau adalah melebihi aras berjaga-jaga pada akhir bulan November 2007.

STATION ID	NAME	STATE	LAST UPDATE	WATER LEVEL (M)	ALERT LEVEL (M)
3216490	Batu Dam	KL	29/11/3007-8:01	103.59	93.00
3217480	Klang Gates Dam	KL	29/11/3007 8:01	95.80	90.00
6602481	Timah Tasoh Dam	Perlis	29/11/3007 8:00	29.10	27.68
...	Bukit Merah Dam	Perak	19/11/3007 4.04	8.79	7.66
1832480	Macap Dam	Johor	29/11/3007 2.00	15.40	15.12
1931480	Sembrong Dam	Johor	27/11/3007 2.00	8.86	7.19
2030481	Bekok Dam	Johor	23/11/3007 10:00	15.61	12.50

Jadual 4 : Rekod Paras Empangan pada 30 Nov. 2007

**MAKLUMAT - MAKLUMAT PARAS EMPANGAN DAN HUJAN BULAN : NOVEMBER 2007**

Date	TASIK SUBANG DAM			KLANG GATES DAM			SG. LANGAT DAM			SG. BATU DAM			SG. SELANGOR DAM			SG. TINGGI DAM			SG. SEMENYIH		
	Rainfall (mm)	Reservoir Level (M.ODL)	Storage (%)	Rainfall (mm)	Reservoir Level (M.ODL)	Storage (%)	Rainfall (mm)	Reservoir Level (M.ODL)	Storage (%)	Rainfall (mm)	Reservoir Level (M.ODL)	Storage (%)	Rainfall (mm)	Reservoir Level (M.ODL)	Storage (%)	Rainfall (mm)	Reservoir Level (M.ODL)	Storage (%)	Rainfall (mm)	Reservoir Level (M.ODL)	Storage (%)
1-Nov-07	3.10	38.59	100.00	5.00	95.73	100.00	18.20	221.03	100.00	3.00	102.92	100.00	49.11	220.21	100.00	0.00	59.64	100.00	0.00	111.03	100.00
2-Nov-07	0.00	38.58	100.00	12.50	93.80	100.00	0.00	221.03	100.00	0.00	102.84	100.00	15.33	220.19	100.00	0.00	59.64	100.00	0.00	111.03	100.00
3-Nov-07	0.00	38.57	100.00	0.00	95.82	100.00	0.00	221.03	100.00	0.00	102.78	100.00	20.66	220.19	100.00	0.00	59.63	100.00	2.50	111.03	100.00
4-Nov-07	22.40	38.59	100.00	1.60	95.84	100.00	0.00	221.03	100.00	5.00	102.82	100.00	9.78	220.21	100.00	33.00	59.63	100.00	118.30	111.03	100.00
5-Nov-07	4.90	38.59	100.00	8.50	95.94	100.00	14.50	221.03	100.00	25.00	103.10	100.00	1.33	220.20	100.00	0.00	59.64	100.00	2.60	111.03	100.00
6-Nov-07	0.80	38.56	100.00	2.00	95.97	100.00	0.00	221.03	100.00	1.00	103.19	100.00	7.33	220.17	100.00	0.00	59.63	100.00	1.00	111.03	100.00
7-Nov-07	0.00	38.57	100.00	12.00	96.03	100.00	1.00	221.03	100.00	1.50	103.25	100.00	0.00	220.20	100.00	0.00	59.63	100.00	30.00	111.03	100.00
8-Nov-07	15.30	38.58	100.00	48.00	96.20	100.00	60.00	221.03	100.00	2.80	103.40	100.00	44.67	220.32	100.00	28.00	59.62	100.00	39.00	111.04	100.00
9-Nov-07	6.90	38.58	100.00	67.00	96.44	100.00	70.10	221.03	100.00	34.00	103.64	100.00	8.67	220.20	100.00	0.00	59.62	100.00	1.50	111.13	100.00
10-Nov-07	1.20	38.57	100.00	0.60	96.38	100.00	0.00	221.03	100.00	0.00	103.72	100.00	0.22	220.21	100.00	2.00	59.62	100.00	1.00	111.08	100.00
11-Nov-07	1.30	38.57	100.00	18.00	96.25	100.00	0.00	221.03	100.00	7.00	103.73	100.00	2.89	220.20	100.00	6.50	59.62	100.00	18.50	111.04	100.00
12-Nov-07	3.80	38.56	100.00	12.00	96.17	100.00	2.50	221.03	100.00	24.50	103.74	100.00	0.00	220.19	100.00	0.00	59.61	100.00	0.00	111.05	100.00
13-Nov-07	0.00	38.55	100.00	0.00	96.00	100.00	0.00	221.03	100.00	0.00	103.59	100.00	2.44	220.17	100.00	49.50	59.60	100.00	47.10	111.04	100.00
14-Nov-07	11.80	38.57	100.00	11.00	95.86	100.00	1.10	221.03	100.00	60.50	103.57	100.00	4.00	220.18	100.00	4.50	59.62	100.00	13.30	111.04	100.00
15-Nov-07	1.20	38.57	100.00	13.00	95.76	100.00	4.60	221.03	100.00	6.50	103.47	100.00	14.66	220.21	100.00	6.50	59.65	100.00	6.20	111.04	100.00
16-Nov-07	1.20	38.56	100.00	0.00	95.62	100.00	0.00	221.03	100.00	0.50	103.33	100.00	18.22	220.25	100.00	14.00	59.61	100.00	0.20	111.04	100.00
17-Nov-07	0.60	38.55	99.90	0.00	95.47	100.00	0.00	221.03	100.00	0.00	103.19	100.00	0.00	220.25	100.00	0.00	59.62	100.00	26.70	111.04	100.00
18-Nov-07	0.00	38.55	99.90	0.00	95.30	100.00	21.20	221.03	100.00	30.50	103.07	100.00	9.11	220.20	100.00	14.00	59.61	100.00	0.00	111.08	100.00
19-Nov-07	4.80	38.55	99.90	1.00	95.31	100.00	0.00	221.03	100.00	2.50	102.89	100.00	12.45	220.20	100.00	11.50	59.63	100.00	6.70	111.05	100.00
20-Nov-07	1.70	38.55	99.90	10.00	95.42	100.00	11.30	221.03	100.00	24.50	102.84	100.00	27.11	220.23	100.00	12.50	59.64	100.00	11.30	111.04	100.00
21-Nov-07	0.50	38.53	99.69	6.50	95.48	100.00	8.90	221.03	100.00	10.50	102.77	100.00	0.00	220.25	100.00	0.00	59.65	100.00	0.00	111.04	100.00
22-Nov-07	0.50	38.53	99.69	0.00	95.53	100.00	0.00	221.03	100.00	0.00	102.86	100.00	118.22	220.21	100.00	3.00	59.64	100.00	3.60	111.03	100.00
23-Nov-07	0.00	38.54	99.79	0.00	95.57	100.00	0.00	221.03	100.00	2.00	102.95	100.00	0.22	220.30	100.00	0.00	59.64	100.00	0.00	111.03	100.00
24-Nov-07	0.00	38.53	99.69	0.00	95.60	100.00	0.00	221.03	100.00	0.00	103.01	100.00	0.44	220.22	100.00	0.00	59.63	100.00	0.00	111.02	100.00
25-Nov-07	0.00	38.52	99.58	0.00	95.62	100.00	0.00	221.03	100.00	0.00	103.66	100.00	0.00	220.20	100.00	0.00	59.62	100.00	0.00	111.03	100.00
26-Nov-07	0.00	38.50	99.38	0.00	95.64	100.00	0.00	221.03	100.00	0.00	103.63	100.00	3.77	220.19	100.00	0.00	59.62	100.00	0.00	111.03	100.00
27-Nov-07	0.00	38.49	99.27	0.00	95.66	100.00	2.00	221.03	100.00	2.50	103.20	100.00	0.44	220.19	100.00	0.00	59.61	100.00	6.60	111.03	100.00
28-Nov-07	3.90	38.48	99.17	1.00	95.68	100.00	0.00	221.03	100.00	1.50	103.26	100.00	4.44	220.18	100.00	0.00	59.60	100.00	73.50	111.03	100.00
29-Nov-07	0.00	38.46	98.96	10.00	95.78	100.00	29.50	221.03	100.00	19.50	103.57	100.00	0.22	220.20	100.00	0.50	59.60	100.00	1.30	111.11	100.00
30-Nov-07	10.30	38.45	98.86	0.10	95.81	100.00	9.60	221.03	100.00	0.00	103.44	100.00	0.00	220.19	100.00	0.00	59.59	100.00	0.00	111.05	100.00

Jadual 5 : Rekod Hujan dan Paras Empangan Kelolaan Syabas untuk bulan November 2007