

Appendix 6

List of pan concentrate sample  
in the Segama area



Ser. No.	Sample No.	Coordinates		Topographic Map Sheet	Name of Stream	Weight (g)	Order	Width (m)	Flow *1	Size *2
		N	E							
1	P074	1453.70	4705.45	Kuamut	S. Laburawan	< 1	4	4.0	4	1
2	P069	1456.55	4710.25	Kuamut	S. Anbial	< 1	3	2.0	4	1
3	P068	1453.00	4714.80	Kuamut	S. Anbial	< 1	3	6.0	4	1
4	Y060	1456.65	4717.45	Kuamut	S. Kuamut	< 1	4	4.0	3	2
5	Y058	1454.15	4719.60	Kuamut	S. Malog	< 1	3	5.0	3	1
6	Y059	1454.20	4719.85	Kuamut	S. Malog	< 1	4	7.0	3	1
7	Y057	1456.20	4720.00	Kuamut	S. Malog	< 1	3	6.0	3	3
8	Y061	1457.75	4721.35	Kuamut	S. Kuamut	< 1	3	5.0	3	1
9	C053	1459.35	4724.00	Kuamut	S. Sangitan	20	4	10.0	2	1
10	C054	1460.20	4724.30	Kuamut	S. Kuamut	1	3	5.0	2	1
11	C055	1459.80	4725.20	Kuamut	S. Kuamut	4	3	5.0	2	1
12	Y055	1462.70	4725.35	Kuamut	S. Kuamut	< 1	3	4.0	2	4
13	C052	1453.85	4725.55	Kuamut	S. Sangitan	14	3	5.0	2	1
14	C048	1453.80	4726.00	Kuamut	S. Sangitan	26	4	5.0	2	1
15	Y056	1461.35	4726.40	Kuamut	S. Buyun	< 1	3	4.0	3	3
16	Y051	1466.50	4727.15	Kuamut	S. Miniog	< 1	4	10.0	1	4
17	Y050	1470.85	4727.55	Kuamut	S. Kuamut	< 1	3	8.0	1	4
18	C051	1453.25	4728.50	Kuamut	S. Sangitan	24	3	3.0	2	1
19	C050	1453.15	4728.55	Kuamut	S. Sangitan	21	4	5.0	2	1
20	Y052	1465.15	4729.10	Kuamut	S. Miniog	9	2	8.0	3	2
21	Y053	1465.30	4729.30	Kuamut	S. Miniog	9	2	10.0	3	2
22	P066	1473.55	4730.35	Kuamut	S. Kuamut	< 1	3	1.5	4	1
23	C049	1452.70	4730.40	Kuamut	S. Sangitan	12	4	5.0	2	1
24	P067	1475.45	4733.55	Sungai Malua	S. Naping	< 1	2	3.0	3	1
25	G052	1456.75	4735.50	Sungai Malua	S. Malubuk	10	4	10.0	3	1
26	G051	1457.65	4736.00	Sungai Malua	S. Malubuk	8	5	10.0	2	1
27	G050	1457.70	4736.15	Sungai Malua	S. Malubuk	10	2	3.0	3	1
28	Y049	1470.60	4736.25	Sungai Malua	S. Malubuk	4	3	8.0	3	3
29	Y048	1470.70	4736.45	Sungai Malua	S. Malubuk	4	5	40.0	3	3
30	G048	1460.80	4736.60	Sungai Malua	S. Malubuk	4	3	3.0	4	1
31	Y047	1469.15	4737.80	Sungai Malua	S. Malubuk	< 1	2	5.0	3	3
32	C047	1476.70	4737.50	Sungai Malua	S. Malubuk	21	5	15.0	2	1
33	G046	1462.80	4738.40	Sungai Malua	S. Malubuk	5	5	10.0	4	1
34	K042	1452.40	4738.40	Sungai Malua	S. Malubuk	4	2	4.0	3	1
35	G047	1462.80	4738.60	Sungai Malua	S. Malubuk	4	3	6.0	4	1
36	C045	1467.70	4740.20	Sungai Malua	S. Malubuk	75	5	10.0	2	1
37	C046	1468.05	4740.35	Sungai Malua	S. Malubuk	2	4	5.0	2	1
38	N075	1458.80	4741.15	Sungai Malua	S. Malubuk	6	3	10.0	3	3
39	N064	1475.35	4746.05	Sungai Malua	S. Malua	5	3	5.0	2	2
40	N066	1467.55	4746.80	Sungai Malua	S. Malua	6	4	20.0	4	3
41	K036	1464.10	4746.85	Sungai Malua	S. Malua	5	4	10.0	3	2
42	N065	1467.60	4746.95	Sungai Malua	S. Malua	7	3	5.0	3	1
43	G041	1461.05	4747.35	Sungai Malua	S. Malua	3	3	10.0	3	1
44	G042	1460.85	4747.60	Sungai Malua	S. Malua	6	3	6.0	4	1
45	G043	1461.10	4747.70	Sungai Malua	S. Malua	7	3	5.0	3	1
46	N062	1474.35	4750.25	Sungai Malua	S. Malua	16	4	20.0	2	2
47	N061	1474.50	4750.40	Sungai Malua	S. Malua	14	2	5.0	1	3
48	N060	1473.25	4750.70	Sungai Malua	S. Malua	4	2	5.0	2	2
49	N100	1452.20	4752.10	Sungai Malua	S. Berseh	75	3	8.0	3	2
50	N071	1478.50	4755.40	Sungai Malua	S. Latangan	46	3	10.0	4	1

Stream flow\*1: none(0), puddle(1), slow(2), moderate(3), fast(4)

Grain size\*2: coarse-grained(1), medium-grained(2), fine-grained(3), clayey(4)

Ser. No.	Sample No.	Coordinates		Topographic Map Sheet	Name of Stream	Weight (g)	Order	Width (m)	Flow *1	Size *2
		N	E							
51	N070	1477.85	4756.70	Sungai Malua	S. Latangan	13	3	5.0	2	3
52	P025	1453.50	4756.90	Sungai Malua	S. Danum	31	4	6.0	4	2
53	P017	1464.00	4758.00	Sungai Malua	S. Bilong	8	3	5.0	3	1
54	G044	1466.65	4759.85	Sungai Malua	S. Bilong	2	3	3.0	2	1
55	G045	1464.90	4762.50	Sungai Bole	S. Bilong	25	4	6.0	3	1
56	P026	1453.85	4764.15	Sungai Bole	S. Danum	5	4	12.0	4	1
57	N080	1467.70	4764.50	Sungai Bole	S. Klingkawang	5	3	8.0	3	2
58	Y028	1457.40	4765.15	Sungai Bole	S. Segama	31	5	25.0	3	3
59	P021	1457.45	4765.40	Sungai Bole	S. Tarangan	< 1	3	4.0	3	2
60	N055	1472.50	4767.45	Sungai Bole	S. Belang	< 1	3	12.0	2	3
61	G037	1472.90	4769.05	Sungai Bole	S. Segama	< 1	2	4.0	3	1
62	G034	1460.30	4771.85	Sungai Bole	S. Bole	50	5	20.0	2	1
63	J042	1470.90	4772.35	Sungai Bole	S. Bole Kechil	< 1	3	2.0	2	1
64	C041	1465.30	4773.85	Sungai Bole	S. Todto	7	2	5.0	2	1
65	C040	1465.15	4774.00	Sungai Bole	S. Bole	359	5	10.0	2	1
66	C044	1470.55	4774.50	Sungai Bole	S. Bole	57	5	10.0	2	1
67	G036	1454.90	4775.15	Sungai Bole	S. Bole	48	5	5.0	2	1
68	G035	1455.05	4775.20	Sungai Bole	S. Bole	46	2	3.0	3	1
69	P057	1469.70	4778.30	Sungai Bole	S. Longlata	< 1	3	1.0	4	1
70	P056	1470.00	4780.15	Sungai Bole	S. Lakanoy	75	3	8.0	3	2
71	J038	1453.60	4783.40	Sungai Bole	S. Kawag	393	2	7.0	2	1
72	J039	1453.45	4784.15	Sungai Bole	S. Kawag	12	3	7.0	2	1
73	G030	1458.10	4784.25	Sungai Bole	S. Kawag	33	4	9.0	3	1
74	K023	1458.15	4784.45	Sungai Bole	S. Kawag	21	3	8.0	3	1
75	K025	1460.95	4784.65	Sungai Bole	S. Kawag	48	4	15.0	3	3
76	P027	1478.10	4785.20	Sungai Bole	S. Koyah	4	3	2.5	2	2
77	Y039	1474.55	4785.85	Sungai Bole	S. Koyah	67	1	4.0	2	2
78	G025	1462.60	4786.60	Sungai Bole	S. Kawag	287	3	5.0	4	1
79	Y041	1479.25	4787.00	Sungai Bole	S. Koyah	19	4	3.0	3	2
80	K026	1463.30	4787.05	Sungai Bole	S. Kawag	8	4	15.0	3	2
81	P010	1456.75	4789.85	Mansuli	S. Kawag	14	3	3.0	2	1
82	G026	1459.75	4791.85	Mansuli	S. Gibong	62	3	5.0	4	1
83	K022	1464.60	4784.90	Mansuli	S. Segama	6	2	5.0	2	1
84	J033	1464.50	4795.40	Mansuli	S. Dapalak	88	3	3.0	2	1
85	N019	1464.45	4799.40	Mansuli	S. Pongrakan	55	2	1.0	3	3
86	K011	1453.35	4801.35	Mansuli	S. Taliwas	200	4	10.0	2	1
87	K010	1453.95	4802.30	Mansuli	S. Taliwas	42	3	6.0	2	2
88	C031	1466.85	4804.00	Mansuli	S. Merisuri	18	3	10.0	2	2
89	N067	1465.60	4805.70	Mansuli	S. Upak	87	2	8.0	1	3
90	P004	1452.95	4808.65	Mansuli	S. Sepagaya	4	3	5.0	3	1
91	C019	1458.35	4811.20	Mansuli	S. Taliwas	127	4	10.0	4	2
92	C017	1461.85	4813.20	Mansuli	S. Taliwas	40	4	5.0	3	2
93	K005	1454.00	4815.35	Mansuli	S. Sepagaya	25	1	5.0	2	2
94	P075	1440.20	4710.65	Gunong Moritok	S. Pasogod	< 1	2	5.0	4	2
95	P076	1440.35	4712.00	Gunong Moritok	S. Imbak	< 1	5	10.0	4	1
96	P070	1449.60	4712.35	Gunong Moritok	S. Laburawan	< 1	4	7.0	4	1
97	P071	1448.95	4712.65	Gunong Moritok	S. Nagasan	< 1	3	6.0	3	2
98	J056	1440.55	4715.00	Gunong Moritok	S. Imbak	2	4	3.0	2	1
99	G055	1430.45	4716.50	Gunong Moritok	S. Imbak	5	3	15.0	3	1
100	C057	1438.35	4719.30	Gunong Moritok	S. Imbak	3	4	10.0	2	1

Stream flow\*1: none(0), puddle(1), slow(2), moderate(3), fast(4)

Grain size\*2: coarse-grained(1), medium-grained(2), fine-grained(3), clayey(4)

Ser. No.	Sample No.	Coordinates		Topographic Map Sheet	Name of Stream	Weight (g)	Order	Width (m)	Flow *1	Size *2
		N	E							
101	K051	1437.70	4722.45	Gunong Moritok	S. Imbak	5	5	8.0	2	1
102	K052	1437.00	4724.65	Gunong Moritok	S. Imbak	3	4	5.0	4	1
103	C056	1450.90	4725.65	Gunong Moritok	S. Sangitan	3	4	5.0	2	1
104	K056	1441.60	4727.95	Gunong Moritok	S. Imbak	7	4	5.0	3	2
105	K050	1439.00	4738.85	Ulu Segama	S. Danum	7	3	6.0	2	2
106	K039	1451.40	4739.60	Ulu Segama	S. Malubuk	6	4	5.0	4	1
107	N083	1445.00	4740.45	Ulu Segama	S. Karang	5	3	4.0	3	1
108	N081	1446.00	4742.70	Ulu Segama	S. Karang	2	3	10.0	3	3
109	N082	1445.90	4742.90	Ulu Segama	S. Danum	6	4	10.0	2	3
110	K049	1447.35	4743.35	Ulu Segama	S. Danum	4	3	7.0	3	2
111	N092	1443.90	4743.60	Ulu Segama	S. Danum	60	2	6.0	1	1
112	K047	1447.65	4747.30	Ulu Segama	S. Danum	5	2	10.0	3	1
113	K048	1447.40	4747.20	Ulu Segama	S. Danum	10	4	15.0	2	3
114	N096	1446.90	4753.15	Ulu Segama	S. Danum	8	2	10.0	3	1
115	Y063	1432.30	4746.10	Ulu Segama	S. Segama	25	4	7.0	4	1
116	Y064	1432.05	4746.10	Ulu Segama	S. Beestone	14	4	5.0	3	1
117	P053	1439.55	4749.00	Ulu Segama	S. Beatrice	10	3	4.0	3	2
118	P052	1439.60	4750.15	Ulu Segama	S. Beatrice	17	3	3.0	3	1
119	K045	1445.75	4751.45	Ulu Segama	S. Danum	6	3	6.0	3	2
120	K046	1446.00	4751.45	Ulu Segama	S. Danum	12	4	15.0	3	3
121	P051	1437.75	4751.50	Ulu Segama	S. Beatrice	7	4	5.0	4	1
122	P050	1437.45	4751.85	Ulu Segama	S. Segama	28	5	8.0	3	1
123	J048	1434.80	4752.10	Ulu Segama	S. Segama	67	5	6.0	2	1
124	J049	1434.65	4752.45	Ulu Segama	S. Surprise	58	4	4.0	2	1
125	Y046	1429.85	4752.85	Ulu Segama	S. Surprise	9	4	5.0	3	2
126	J053	1431.90	4753.70	Ulu Segama	S. Surprise	102	3	4.0	2	1
127	P048	1440.00	4755.80	Ulu Segama	S. Segama	14	3	4.0	4	2
128	J047	1438.65	4757.50	Ulu Segama	S. Segama	73	2	3.0	2	1
129	J046	1435.75	4758.70	Ulu Segama	S. Segama	46	5	10.0	2	1
130	J045	1434.70	4761.15	Sungai Ulu Bole	S. Segama	61	5	10.0	2	1
131	J044	1434.60	4761.35	Sungai Ulu Bole	S. Rashida	137	4	3.0	2	1
132	K033	1443.75	4763.00	Sungai Ulu Bole	S. Segama	10	3	8.0	3	3
133	K032	1443.70	4763.25	Sungai Ulu Bole	S. Segama	60	5	7.0	4	3
134	P028	1450.05	4753.50	Sungai Ulu Bole	S. Purut	7	3	5.0	4	1
135	Y070	1437.00	4764.40	Sungai Ulu Bole	S. Segama	51	5	30.0	4	2
136	K034	1440.30	4764.50	Sungai Ulu Bole	S. Segama	4	3	7.0	3	1
137	P043	1437.15	4764.85	Sungai Ulu Bole	S. Beruang	30	4	6.0	4	2
138	P044	1436.45	4766.10	Sungai Ulu Bole	S. Pasir	11	4	5.0	4	1
139	P029	1448.95	4766.25	Sungai Ulu Bole	S. Segama	33	5	25.0	4	2
140	P037	1431.35	4768.15	Sungai Ulu Bole	S. Begonia	13	3	6.0	4	2
141	P036	1431.45	4768.50	Sungai Ulu Bole	S. Mabok	12	3	5.0	3	2
142	Y045	1447.35	4772.70	Sungai Ulu Bole	S. Bole	25	3	4.0	2	2
143	N021	1440.65	4773.95	Sungai Ulu Bole	S. Ulu Bole	38	3	5.0	3	2
144	K029	1440.70	4774.20	Sungai Ulu Bole	S. Ulu Bole	67	2	3.0	3	3
145	J028	1440.70	4774.85	Sungai Ulu Bole	S. Ulu Bole	30	2	3.0	2	1
146	G010	1451.40	4774.95	Sungai Ulu Bole	S. Bole	5	3	4.0	3	1
147	G005	1449.85	4776.30	Sungai Ulu Bole	S. Bole	95	5	9.0	2	1
148	K020	1443.90	4776.70	Sungai Ulu Bole	S. Ulu Bole	55	3	8.0	3	1
149	K019	1444.00	4776.85	Sungai Ulu Bole	S. Ulu Bole	88	4	7.0	3	1
150	Y022	1445.45	4777.20	Sungai Ulu Bole	S. Juak	84	4	8.0	2	2

Stream flow\*1: none(0), puddle(1), slow(2), moderate(3), fast(4)

Grain size\*2: coarse-grained(1), medium-grained(2), fine-grained(3), clayey(4)

Ser. No.	Sample No.	Coordinates		Topographic Map Sheet	Name of Stream	Weight (g)	Order	Width (m)	Flow *1	Size *2
		N	E							
151	K027	1435.90	4781.90	Sungai Ulu Bole	S. Juak	80	3	10.0	4	1
152	J015	1443.05	4782.70	Sungai Ulu Bole	S. Juak	161	4	7.0	2	1
153	J022	1437.30	4783.90	Sungai Ulu Bole	S. Juak	94	4	5.0	2	1
154	J023	1437.20	4784.15	Sungai Ulu Bole	S. Sinsulog	8	2	4.0	2	1
155	K018	1441.50	4787.50	Sungai Ulu Bole	S. Juak	9	4	6.0	2	3
156	K017	1441.55	4787.60	Sungai Ulu Bole	S. Juak	149	3	6.0	2	3
157	C023	1442.50	4790.45	Silam	S. Lunkasa	40	3	3.0	2	1
158	G017	1441.80	4791.10	Silam	S. Lunkasa	99	2	3.0	2	1
159	G004	1437.05	4793.30	Silam	S. Takun	< 1	3	4.0	3	1
160	G003	1436.90	4793.50	Silam	S. Takun	4	3	5.0	3	1
161	G016	1432.45	4794.55	Silam	S. Takun	1	3	5.0	3	1
162	Y014	1445.75	4798.30	Silam	S. Diwata	206	3	6.0	3	2
163	P002	1434.00	4798.40	Silam	S. Dadong Kechil	1	2	1.5	1	1
164	G002	1437.00	4798.55	Silam	S. Sabahan	4	4	5.0	3	1
165	K009	1450.75	4799.10	Silam	S. Taliwas	91	3	5.0	2	1
166	C010	1439.25	4800.95	Silam	S. Divatu	19	3	20.0	2	4
167	Y009	1443.85	4801.20	Silam	S. Diwata	149	3	12.0	3	2
168	P001	1435.15	4801.25	Silam	S. Dadong Kechil	2	2	10.0	2	4
169	G001	1436.65	4801.55	Silam	S. Sabahan	4	4	5.0	2	1
170	Y003	1443.70	4802.25	Silam	S. Diwata	7	2	4.0	3	1
171	Y001	1440.80	4804.90	Silam	S. Diwata	60	3	10.0	2	2
172	K004	1444.41	4807.50	Silam	---	7	2	2.0	3	1
173	J006	1445.50	4808.25	Silam	---	2	2	4.0	2	1
174	J001	1447.70	4810.25	Silam	---	9	2	2.0	2	1
175	C003	1449.25	4810.60	Silam	---	5	2	2.0	2	1

Stream flow\*1: none(0), puddle(1), slow(2), moderate(3), fast(4)

Grain size\*2 : coarse-grained(1), medium-grained(2), fine-grained(3), clayey(4)

Appendix 7

Results of qualitative mineral examination  
of pan concentrates in the Segama area





Ser. No.	Sample No.	Native gold	Magnetite	Chromite	Spinel	Hematite	Ilmenite	Leucosene	Rutile	Brookite	Anatase	Cassiterite	Scheelite	Pyrite	Goethite	Chalcopyrite	Bornite	Olivine	Augite	Hypersthene	Hornblende	Actinolite	Clinozoisite	Tourmaline	Garnet	Zircon	Monazite	Quartz	Plagioclase	Clastics	Calcite
1	P074		1	3			1	Tr											Tr	Tr						Tr		85	10		
2	P069		Tr												Tr											Tr		00	Tr		
3	P068		1	Tr			Tr		Tr						Tr					Tr					Tr		00	Tr			
4	Y060		2	1			Tr	Tr	Tr						1										Tr	4	92	1			
5	Y058		3	1			4	Tr	Tr						Tr					Tr					Tr	Tr	82	Tr			
6	Y059	Tr	9	4			10	Tr	Tr						1					Tr					Tr	1	73	1			
7	Y057		5	1			6		Tr						Tr					Tr					Tr	Tr	84	3			
8	Y061		3				1							3	Tr					Tr				Tr	Tr	Tr	78	Tr		Tr	
9	C053		23	12			23								Tr				6	9	Tr		2		Tr	Tr	16	9			
10	C054		10	19			13	Tr	Tr	Tr				4	Tr										Tr	Tr	53	Tr			
11	C055		12	37	Tr		25	Tr	Tr						Tr				Tr						2	1	20	3		Tr	
12	Y055		2	Tr			Tr								Tr				Tr	Tr	Tr				Tr	Tr	98	Tr			
13	C052		24	24			23	Tr						Tr	Tr			Tr	2	3	Tr				Tr	Tr	20	4			
14	C048		28	3			13	Tr						Tr	Tr				Tr	Tr					Tr	Tr	53	Tr		Tr	
15	Y056		13	1			5	Tr	Tr			Tr		Tr	Tr				Tr	Tr					Tr	Tr	77	Tr		Tr	
16	Y051		11	1			15	Tr	Tr					Tr	Tr				Tr	Tr		1	Tr		Tr	Tr	71	1			
17	Y050		2	Tr			Tr								Tr				Tr	Tr							93	5			
18	C051		18	1			34	Tr							Tr				2	6							34	5			
19	C050		33	4			29	Tr							1			Tr	1	10	Tr		1		Tr	Tr	17	4			
20	Y052		8	50			22	Tr	Tr					Tr	Tr										Tr	Tr	20	Tr			
21	Y053		20	15			34	Tr	Tr					Tr	Tr				Tr	Tr	Tr				1	Tr	29	1			
22	P066						3								Tr												48	Tr	49		
23	C049		12	4			33								Tr			Tr	3	21	Tr		2		Tr		13	10		97	
24	P067						3								Tr												Tr				
25	G052		22	4			42		Tr						2				5	12			Tr				8	5			
26	G051		31	5			32	Tr	Tr					Tr	1				5	8	Tr		Tr		Tr	Tr	14	4			
27	G050		19	5			25	Tr							3				11	6			Tr		Tr	Tr	24	6			
28	Y049		15	50			17	Tr	Tr						Tr				Tr	Tr					Tr	Tr	15	2			
29	Y048		19	11			15	Tr	Tr						Tr				2	7			1		Tr	Tr	42	2			
30	G048		28	43	Tr		21	Tr	Tr						Tr				1	1	Tr		Tr		Tr	Tr	5	1			
31	Y047		7	7			5	Tr	Tr						Tr				Tr	1	Tr	Tr					80				
32	C047		11	15			23	Tr							Tr				11	12	3	Tr	Tr		Tr		20	5			
33	G046		38	12			44	Tr							Tr				1	3	1	Tr	Tr		Tr	Tr	1	Tr			
34	K042		19	37			35								Tr				Tr	5	1	Tr	Tr				2	1			
35	G047		15	36			21	Tr						Tr	Tr				3	1	5		2		Tr	Tr	4	13			
36	C045		25	14			28	Tr	Tr					Tr	1				3	11	2		Tr		Tr	Tr	4	12			
37	C046		25	6			7	Tr	Tr					Tr	Tr				Tr		Tr				Tr	15	Tr	46	Tr		
38	N075		13	18		10	23		Tr					Tr	2				1	3	8		1		Tr		8	13			
39	N064		21	11			17	Tr	Tr					Tr	Tr				Tr	Tr			Tr		Tr	1	10	Tr	40		
40	N066		14	33		Tr	22	Tr	Tr					Tr	1				Tr	3	Tr		1		Tr	Tr	22	Tr			
41	K036		14	17		Tr	27	Tr							1				3	4	Tr		Tr		Tr	Tr	31	3			
42	N065		13	71			8	Tr	Tr					Tr	Tr				Tr	Tr					Tr	Tr	8	Tr			
43	G041		10	11		Tr	4							Tr	1				2	3	Tr	Tr			Tr	Tr	66	3			
44	G042		15	37	Tr		16	Tr	Tr					Tr	2				1	2	Tr				Tr	Tr	26	1			
45	G043		14	24			12		Tr					Tr	2				1	1			Tr		Tr	Tr	46				
46	N062		19	40	Tr		23	Tr						Tr	Tr				2	2	Tr	Tr	1	Tr	Tr	Tr	10	2			
47	N061		11	57			27	Tr	Tr					Tr	Tr				Tr	Tr					Tr	Tr	4	Tr			
48	N060		17	6			15	Tr						Tr	Tr				1	1	Tr	Tr	Tr	Tr	Tr	Tr	57	3			
49	N100		24	5			30								1				1	39	Tr				Tr	Tr	Tr	Tr			
50	N071		20	44			26	Tr	Tr						Tr				Tr	Tr					Tr	Tr	10	Tr			

Ser. No.	Sample No.	Native gold	Magnetite	Chromite	Spinel	Hematite	Ilmenite	Leucosene	Rutile	Brookite	Anatase	Cassiterite	Scheelite	Pyrite	Goethite	Chalcopyrite	Bornite	Olivine	Augite	Hypersthene	Hornblende	Actinolite	Clinzoisite	Tourmaline	Garnet	Zircon	Monazite	Quartz	Plagioclase	Clastics	Calcite	
51	N070		23	42			27		Tr	Tr	Tr			Tr	Tr				Tr	Tr	Tr		Tr		Tr	Tr	8	Tr				
52	P025		23	8			23		Tr	Tr	Tr			Tr	Tr				6	19	Tr		6		Tr	Tr	12	3				
53	P017		16	48			35								Tr				Tr	1	Tr		Tr		Tr	Tr	Tr	Tr	4			
54	G044		8	7			14								Tr				Tr	Tr					Tr	Tr	66	4				
55	G045		15	30			30								Tr				3	5			Tr		Tr	Tr	16	1				
56	P026		30	3			22								1	33			1	33	1		Tr		Tr	Tr	4	6				
57	N080		16	11		Tr	26		Tr	Tr	Tr			Tr	3				1	Tr		Tr		Tr	Tr	37	6					
58	Y028	Tr	52	29			15	Tr						Tr	Tr				1	4	Tr	Tr	1		Tr	Tr	1	Tr				
59	P021		4	1			5								Tr				4	4							69	13				
60	N055		35	3		Tr	15							Tr	Tr									Tr			47					
61	G037		82	1			1	Tr						Tr	Tr									Tr		Tr	Tr	16				
62	G034		34	25			37								Tr				Tr	Tr			2		Tr	Tr	Tr	1				
63	J042		13	1			27	1	Tr						1				Tr	Tr			Tr		Tr	8	49	Tr				
64	C041		17	51			29	Tr						Tr	1			Tr	Tr	Tr			Tr		Tr	1	Tr	Tr	Tr			
65	C040		43	11			45								Tr			Tr	Tr	Tr		Tr	1	Tr	Tr	Tr	Tr	Tr	Tr			
66	C044		17	25			53	Tr							Tr			Tr	Tr	Tr		Tr	2	Tr	Tr	Tr	Tr	Tr	Tr			
67	G036		42	21			33	Tr							Tr			Tr	Tr	Tr		Tr	2	Tr	Tr	Tr	Tr	Tr	Tr			
68	G035		76	1			17								1			Tr	Tr	Tr		Tr	1				1	1				
69	P057		8	2			3								Tr			2	Tr	Tr		3	1		Tr	Tr	53	28				
70	P056		67	4			18											6	2	2	1		1		Tr	Tr	1	Tr				
71	J038		35	19			40								Tr	Tr			1	1	1		1				1	1				
72	J039		67	4			27							Tr	Tr			Tr		Tr			1		Tr	Tr	Tr	Tr	1	1		
73	G030		50	11			34								Tr	Tr			1	Tr	1		1		Tr	Tr	1	1				
74	K023		52	9			29								Tr	Tr			1	Tr	2		5		Tr	Tr	1	1				
75	K025		59	9			24								Tr	Tr			1	Tr	3		3		Tr	Tr	1	Tr				
76	P027		21	28			12	Tr							1			Tr	Tr	Tr			Tr		3	5	26	1				
77	Y039		5	76			14							Tr	Tr			Tr	Tr	Tr			Tr		Tr	Tr	4	9	2			
78	G025		75	2			3								Tr			2	2	1			4		Tr	Tr	Tr	9	2			
79	Y041		10	60			23	Tr	Tr					Tr	Tr			Tr	Tr	Tr		1	Tr		1	2	3	Tr				
80	K026		53	3			16								Tr	Tr			1	1	7		9		Tr	Tr	8	2				
81	P010		59	13			22		Tr						1				Tr	Tr	Tr		2		Tr	Tr	2	1				
82	G026		77	6			3								Tr				Tr	Tr	Tr		2		Tr	Tr	10	1				
83	K022		58	10			14								Tr				Tr	Tr	Tr	Tr	2		Tr	Tr	10	1				
84	J033		65	5			8								Tr				1	2	6		5		Tr	Tr	5	3				
85	N019		56	2			2								1					22			9		Tr	Tr	7	1				
86	K011		26	19			52											1	1	Tr	Tr		1		Tr	Tr	Tr	Tr	Tr			
87	K010		64	8			27							Tr	Tr			Tr	Tr	Tr			Tr		Tr	Tr	Tr	Tr	Tr			
88	C031		16	54			21		Tr		Tr				Tr			Tr	Tr	Tr			Tr		Tr	1	8	Tr				
89	N067		24	7			6													34			11				12	6				
90	P004		26	46			7							Tr	1				5	1	3	Tr	4		Tr		5	2				
91	C019		63	21			14		Tr						Tr	Tr			Tr	Tr	Tr		1		Tr	1	Tr	Tr	Tr			
92	C017		46	22			30							Tr	Tr				Tr	Tr	Tr		1		Tr	1	Tr	Tr	Tr			
93	K005		20	40			32		Tr						1	Tr			1	Tr	1	Tr	3		Tr	Tr	2	Tr				
94	P075						Tr	Tr						Tr	2				Tr	Tr							95	3				
95	P076			3			10		Tr						2				Tr	1	Tr	Tr	3			79	2					
96	P070			2			Tr							Tr	Tr				Tr	Tr		Tr	3		Tr	Tr	95	3				
97	P071		10	9		Tr	6							Tr	1				1	2	1	Tr	Tr			67	3					
98	J056		17	26		Tr	6	Tr	Tr					Tr	2				Tr				Tr		Tr	Tr	46	3				
99	G055		8	8			9	Tr	Tr					11	14										Tr	Tr	50	Tr				
100	C057		14	9			16	Tr	Tr	Tr				21	4												14	Tr				

Ser. No.	Sample No.	Native gold	Magnetite	Chromite	Spinel	Hematite	Ilmenite	Leucosene	Rutile	Brookite	Anatase	Cassiterite	Scheelite	Pyrite	Goethite	Chalcopyrite	Bornite	Olivine	Augite	Hypersthene	Hornblende	Actinolite	Clinozoisite	Tourmaline	Garnet	Zircon	Monazite	Quartz	Plagioclase	Clastics	Calcite
101	K051		33	35		Tr	8	Tr	Tr		Tr			Tr	14			6	Tr	Tr	2			Tr	Tr		7	5		Tr	
102	K052		25	56			2		Tr					Tr	11			2	Tr	2	Tr	Tr		Tr	Tr		2	Tr			
103	C056		17	21			12		Tr						Tr		Tr	Tr	3	Tr	Tr	Tr		1	Tr		46	Tr		Tr	
104	K056		23	36			33		Tr		Tr			1	2		2	Tr	Tr	Tr	Tr	Tr		Tr	Tr		3	Tr		Tr	
105	K050		41	3			32							1	1		4	Tr	10	6	Tr			Tr	Tr		2	Tr			
106	K039		64	1			8							1	1		3	2	8	3				Tr	Tr		7	3			
107	N083		40	2			3	Tr						Tr	2		3	Tr	26	12				Tr	Tr		2	10			
108	N081		47	3			29	Tr	Tr					Tr	2		1	1	9	6				Tr	Tr		2	2			
109	N082	Tr	43	30		Tr	18	Tr						Tr	Tr		4	Tr	1	2				Tr	Tr		1	1			
110	K049		35	41			13	Tr						Tr	Tr		1	1	1	1	Tr			1	Tr		5	2			
111	N092		4	83			12	Tr	1	Tr	Tr			Tr	Tr		Tr	Tr	Tr	Tr	Tr			Tr	Tr		Tr	Tr			
112	K047		21	1			12								Tr				1	65				Tr	Tr		Tr	Tr			
113	K048		40	19			33							Tr	2		1	Tr	1	4	Tr	Tr	Tr	Tr	Tr		Tr	Tr			
114	N096		40	21			29	Tr	Tr					Tr	Tr		1	Tr	2	7				Tr	Tr		Tr	Tr			
115	Y063		67	21	Tr		2	Tr	Tr					Tr	3		1	Tr	Tr	1	Tr			2			1	2			
116	Y064		69	4			8	Tr	1					Tr	1		1	1	Tr	1				Tr	3		9	2			
117	P053		18	43			22	Tr			Tr			Tr	2		2	2	2	Tr				Tr	Tr		9	Tr			
118	P052		39	33			4							Tr	Tr		4	3	Tr	4				Tr	Tr		11	2			
119	K045		80	1			18		Tr					Tr	Tr		Tr	Tr	Tr	1				Tr	Tr		Tr	Tr			
120	K046		30	52			2	Tr			Tr			Tr	Tr		5	2	1	8				Tr	Tr		Tr	Tr			
121	P051		17	5			3	Tr							Tr		3	4	1	2				Tr			65	Tr			
122	P050		36	5			2	Tr							1		3	2	Tr	1				Tr			50	Tr			
123	J048		66	13			6	Tr	Tr						1		1	2	Tr	2				1	Tr		7	1			
124	J049		48	42			1							Tr	Tr		1	3	Tr	Tr					Tr	1	3	2			
125	Y046		19	56			16	Tr							Tr		Tr	3	1					Tr		1	2	2			
126	J053		32	38			14								Tr		3	2	1	Tr				Tr			4	6			
127	P048		62	7			2								1		2	11		9				Tr	Tr		2	4			
128	J047		61	5			3		Tr						1		1	8		10				Tr	Tr		5	6			
129	J046		58	16	Tr		5		Tr						1		1	6	Tr	2				Tr	Tr		4	6			
130	J045		62	12			10	Tr							1		2	2	Tr	2				1	Tr		2	6			
131	J044		56	2			16								Tr		1	5		19							Tr	1			
132	K033		56	10			9								1		2	1		3						1	5	12			
133	K032		77	11			9		Tr						Tr		Tr	1	Tr	1				Tr	Tr	1	Tr	1			
134	P028		62	6			10		Tr						Tr		Tr	8	Tr	1		1		Tr	Tr	Tr	1	11			
135	Y070		57	17			5								Tr		Tr	4	Tr	6				Tr	Tr		5	6			
136	K034		62	3			6								Tr		2	3	1	1				Tr	Tr	Tr	1	21			
137	P043		56	5			16		Tr						Tr		Tr	2	Tr	17				Tr	Tr	Tr	Tr	3			
138	P044		95	1			4		Tr						Tr		Tr	Tr	Tr					Tr	Tr	Tr	Tr	Tr			
139	P029		56	12			8		Tr						Tr		1	6	Tr	9				Tr	Tr		1	7			
140	P037		32	38			20		1						Tr			1		6				Tr	Tr		Tr	1			
141	P036		19	55			25		Tr											Tr				Tr			Tr	Tr			
142	Y045		53	29			13								Tr		1	2	Tr	Tr				Tr	Tr	Tr	Tr	2			
143	N021		59	3			10								Tr		Tr	4	1	3				Tr			Tr	20			
144	K029		56	3			12		Tr						Tr		Tr	5	Tr	8				Tr			Tr	14			
145	J028		39	5			35								Tr		Tr	7	Tr	5				Tr			2	7			
146	G010		25	5			65		Tr						Tr			1	1	Tr				Tr			Tr	3			
147	G005		31	10			29								Tr		1	13	Tr	9					Tr	Tr	1	6			
148	K020		50	6			10								Tr		Tr	10	1	12							1	10			
149	K019		44	7			12								Tr		1	10	1	22							1	2			
150	Y022		17	47			36		Tr						Tr			Tr	Tr	Tr				Tr	Tr		Tr	Tr			

Ser. No.	Sample No.	Native gold	Magnetite	Chromite	Spinel	Hematite	Ilmenite	Leucosene	Rutile	Brookite	Anatase	Cassiterite	Scheelite	Pyrite	Goethite	Chalcopyrite	Bornite	Olivine	Augite	Hypersthene	Hornblende	Actinolite	Clinozoisite	Tourmaline	Garnet	Zircon	Monazite	Quartz	Plagioclase	Clastics	Calcite	
151	K027	45	46				4								Tr				1	1	1						Tr	2				
152	J015	15	57				18												3	1	2		1	Tr	Tr		Tr	1	2			
153	J022	40	16				9								Tr			18	1	2			2				Tr	2	10			
154	J023	12	68				19	Tr	Tr		Tr			Tr	Tr			Tr	Tr	Tr				Tr	Tr	1	Tr	1	Tr			
155	K018	53	32				14		Tr						Tr			Tr	Tr		Tr											
156	K017	29	19				20								Tr			1	17	Tr	2		Tr			Tr		2	10			
157	C023	61	7				2								Tr			19	2	1	Tr		Tr				Tr	2	6			
158	G017	38	49				13	Tr									Tr	Tr	Tr		2		Tr		Tr		Tr	Tr	Tr			
159	G004	Tr	8				Tr		Tr		Tr			Tr	Tr			Tr			Tr					Tr		92	Tr			
160	G003	33	9				26		Tr						3			3	5	Tr	2		5			Tr		5	9			
161	G016	Tr	74				Tr		Tr		1			Tr	9				3	Tr	Tr		Tr					16	Tr			
162	Y014	76	4				16								Tr		Tr	3	Tr	Tr				Tr	Tr		Tr	Tr	1			
163	P002	9	50				10	1	1		3			Tr	Tr			2	4	1	1			Tr	Tr	5	21	Tr				
164	G002	16	32				31	Tr	Tr		Tr				Tr			4	1	1	4			Tr	Tr		2	11				
165	K009	39	5				40								Tr			10	Tr	4	Tr			Tr	Tr		Tr	2	2			
166	C010	14	Tr				20	Tr							5			55	Tr	Tr	Tr						Tr	1	5			
167	Y009	79	6				11								Tr		Tr	2	Tr	Tr	1					Tr	Tr	Tr	1			
168	P001	10	6						Tr					Tr				19		Tr	Tr					Tr	Tr	7	58			
169	G001	19	28				31	Tr	Tr		Tr				Tr			2	4	4	1		1		Tr	Tr	Tr	1	13			
170	Y003	53	28				11	Tr	Tr					Tr	Tr			Tr							Tr	Tr		2	6			
171	Y001	Tr	66	16			18								Tr			Tr	Tr	Tr					Tr			Tr	Tr			
172	K004	Tr	52	29			10								Tr			1	1	Tr				Tr	Tr		Tr	Tr	6			
173	J005	Tr	55	27			2		Tr						Tr			Tr	3	1	2	Tr	Tr	Tr	Tr		Tr	3	13			
174	J001	Tr	14	58			2								Tr			Tr	1	2	Tr		Tr	Tr	Tr		Tr	4	16			
175	C003	Tr	82	13			3		Tr						Tr			Tr	Tr	Tr					Tr		Tr	4	2			

Appendix 8

Analytical results of rock geochemical  
samples in the Segama area



List of Geochemical Analysis ( 1 )

Ser. Sample No.	As ppm	Au pbb	Ba ppm	Co ppm	Cr ppm	Cu ppm	Hg pbb	K %	Mg %	Mn ppm	Nb ppm	Na %	Ni ppm	Pb ppm	S %	Sb ppm	Sr ppm	Ti %	U ppm	W ppm	Zn ppm
1 K037	11	1	224	28	26	8	10	1.04	3.7	125	1	76	19	6	.033	2.5	76	.17	1.4	194	28
2 N101	21	1	59	25	17	60	10	.79	1.72	3234	2	3.59	17	2	.089	7.2	97	.61	1.4	10	94
3 N097	1	1	10	53	636	94	10	.02	8.12	425	1	1.45	334	2	.124	2	88	.13	2	41	92
4 G054	1	1	433	24	35	8	11	.53	.52	189	1	.55	25	10	.066	2.0	41	.20	1.8	170	29
5 N074	9	1	186	24	43	12	10	.97	.71	829	1	.91	22	2	.052	1.4	38	.18	1.4	127	33
6 N079	1	1	145	41	190	50	10	.79	3.91	1984	1	4.25	127	2	.054	18.4	195	1.32	2	6	108
7 J040	1	1	483	42	21	173	10	1.28	2.40	2481	1	2.64	12	2	.188	5.6	279	.93	2	19	161
8 N011	1	1	90	50	10	21	10	.02	.01	1094	1	.01	10	6	.007	1.3	13	.01	8	408	21
9 N015	1	1	322	22	17	10	10	1.18	1.32	783	2	3.19	9	2	.033	1.8	485	.29	8	141	55
10 J034	4	2	383	24	7	3	10	.80	.33	5	1	4.24	3	2	.032	2	795	.10	2	205	23
11 N068	1	1	72	23	28	59	10	.22	2.39	623	1	4.15	10	2	.045	2.2	1216	.38	2	34	89
12 J009	1	1	81	30	43	26	10	.24	3.98	1128	1	2.44	30	2	.059	2	848	.47	2	13	96
13 J010	1	3	217	28	30	81	10	.37	2.71	1267	1	3.15	25	2	.052	2.2	736	.42	2	34	99
14 C032	1	3	104	34	79	29	10	.58	3.61	652	1	3.17	51	2	.053	2	715	.25	2	29	76
15 C030	3	1	466	16	49	53	18	.88	1.82	361	1	1.03	49	4	.025	4.5	185	.32	4	6	84
16 N044	13	1	370	70	10	36	47	2.04	4.99	489	5	1.97	15	5	.076	4.6	199	.22	2.0	88	52
17 N089	1	1	31	45	273	70	10	.51	4.88	1282	1	2.80	81	2	.145	4.6	120	.84	2	26	102
18 K043	1	1	127	53	108	41	10	.18	4.03	849	1	3.04	138	2	.101	9.1	282	1.87	6	9	122
19 N091	1	1	27	32	518	39	10	.24	6.34	5	1	1.62	357	2	.074	3.1	391	.02	2	21	55
20 N088	2	1	128	32	78	19	25	1.57	1.21	293	1	1.13	40	8	.557	4.4	122	.08	2	72	69
21 N086	1	1	76	27	31	9	10	.56	.59	449	1	76	18	5	.027	4.4	122	.08	1.0	223	30
22 N084	1	1	16	47	360	80	10	.47	5.28	1053	1	2.61	103	2	.161	5.0	199	.72	2	88	97
23 K040	1	1	10	58	552	74	10	.01	10.25	218	1	1.57	604	2	.105	2	116	.04	2	16	103
24 N095	13	1	44	37	41	8	33	.18	.26	5	1	.27	26	4	.104	2	15	.04	4	382	18
25 P031	3	1	98	24	34	8	10	.63	.45	418	1	2.98	39	9	.058	2.0	81	.17	1.4	224	30
26 P080	1	1	30	40	290	57	10	.05	4.93	855	1	2.46	103	2	.147	5.8	118	.72	2	11	88
27 P041	1	1	50	38	10	24	10	.20	3.36	1237	1	2.46	8	2	.105	1.9	524	.54	2	38	90
28 K031	1	1	38	54	200	1	10	.17	4.87	1046	1	2.90	80	2	.049	7.3	219	.89	2	13	74
29 Y033	11	1	35	35	19	7	10	.20	.22	2183	1	.31	13	2	.100	2	46	.08	4	317	18
30 N022	1	1	35	46	99	98	10	.44	3.76	1582	1	2.96	56	2	.087	7.1	159	1.38	2	7	114
31 N020	15	1	186	21	30	9	10	.89	.54	216	1	.81	16	7	.022	2.6	85	.19	1.2	161	33
32 J014	1	1	33	48	240	30	10	.16	5.17	1050	1	2.53	111	2	.072	1.8	332	.78	2	123	108
33 J012	1	3	10	45	1107	58	10	.06	6.89	339	1	1.53	207	2	.101	2	162	.16	2	93	72
34 J013	1	1	32	29	22	67	10	.23	2.92	274	1	1.93	27	2	.128	2	514	.43	2	44	59
35 J027	1	1	24	40	118	66	10	.12	4.18	1392	1	2.89	41	2	.177	9.6	246	1.00	2	19	100
36 N012	7	1	161	32	39	9	10	.76	.42	191	1	.64	28	3	.013	2	49	.23	2.0	255	34
37 J024	9	1	10	98	2721	4	10	.03	21.78	861	1	.04	2148	2	.009	2	5	.02	2	8	196
38 J020	1	1	272	54	176	67	10	.58	4.07	1341	1	2.76	166	2	.078	4.0	380	2.24	8.8	12	123
39 C033	6	1	111	28	68	9	10	.69	5.2	101	1	.77	25	15	.016	2.9	56	2.20	1.4	201	38
40 N004	5	1	10	109	2016	3	10	.01	21.30	827	1	.01	15	7	.009	2	28	.01	2	1044	16
41 C035	16	1	71	107	27	31	10	.21	.14	474	1	.02	2391	2	.009	2	28	.05	1.0	2	201
42 N013	9	3	68	61	30	35	10	.05	.02	678	1	.01	11	2	.009	2	18	.02	6	595	10
43 G013	1	1	45	39	151	37	10	.09	4.30	1313	1	2.87	52	2	.090	5.8	159	1.18	2	45	97
44 G014	1	1	78	16	166	44	10	.13	1.07	1333	1	3.63	112	2	.055	5.3	79	.33	8	303	61
45 G015	1	1	114	23	39	11	10	.79	.67	357	1	1.01	20	5	.019	4.4	53	.11	1.6	209	39
46 C008	1	1	26	49	151	64	10	.12	4.00	1078	1	2.54	86	2	.035	9.6	93	.66	2	14	92
47 Y017	2	1	10	117	2795	1	10	.07	23.95	1167	1	.12	2329	6	.018	2	4	.01	2	42	218
48 Y002	1	1	10	40	149	39	22	.07	4.53	1230	1	2.41	80	2	.056	2.7	91	.68	2	6	103
49 Y004	1	1	12	104	2041	6	11	.04	22.00	1097	1	1.2	2056	2	.030	2	20	.02	2	7	190
50 N052	1	1	10	130	2368	2	10	.01	23.87	1065	1	.02	2409	2	.025	2	13	.02	2	2	220
51 N053	1	1	10	108	2526	13	10	.01	21.89	968	1	.03	2168	2	.025	2	3	.01	2	2	191





**A p p e n d i x 9**

List of soil geochemical sample  
in the Segama area



Ser. No.	Sample No.	Coordinates N E	1/50,000 Topo. Sheet	Rock of Basement	Geol. Unit	Depth (cm)	Color	G. #1	S. #2	T. #3	H. #4	Vegetation
1	Y054	1462.85	Kuamut	ultramafic rock	Ub	25	Y.B.	R	C	M	D	Secondary forest
2	Y029	1455.00	Sungai Bole	ultramafic rock	Ub	20	Y.	R	C	M	D	Primary forest
3	P023	1458.25	Sungai Bole	ultramafic rock	Ub	30	B.	F	S	M	W	Secondary forest
4	C038	1466.25	Sungai Bole	ultramafic rock	Ub	20	D.B.	R	C	M	D	Primary forest
5	C043	1467.90	Sungai Bole	ultramafic rock	Ub	20	D.B.	R	C	M	D	Primary forest
6	P059	1468.70	Sungai Bole	basic rock	Ub	30	Y.B.	R	S	F	D	Secondary forest
7	P058	1468.70	Sungai Bole	basic rock	Ub	30	B.	F	S	M	D	Secondary forest
8	P060	1471.30	Sungai Bole	ultramafic rock	Ub	30	B.	R	S	M	D	Secondary forest
9	P061	1468.50	Sungai Bole	ultramafic rock	Ub	30	B.	R	S	M	D	Secondary forest
10	N050	1451.85	Sungai Bole	dunite	Ub	30	D.B.	R	C	M	W	Secondary forest
11	N033	1452.55	Mansuli	serpentinite	Ub	30	B.	R	C	M	W	Secondary forest
12	N032	1452.15	Mansuli	serpentinite	Ub	30	B.	R	C	M	W	Secondary forest
13	N037	1454.25	Mansuli	serpentinite	Ub	30	D.B.	R	C	M	W	Secondary forest
14	N036	1453.75	Mansuli	serpentinite	Ub	30	B.	R	C	M	W	Secondary forest
15	P013	1454.10	Mansuli	serpentinite	Ub	30	B.	M	S	F	D	Primary forest
16	P012	1453.40	Mansuli	serpentinite	Ub	30	B.	R	S	F	D	Primary forest
17	K013	1454.25	Mansuli	peridotite	Ub	5	G.B.	F	C	S	W	Primary forest
18	P054	1442.65	Ulu Segama	basic rock	Ub	30	Y.B.	F	S	S	W	Primary forest
19	P049	1442.90	Ulu Segama	ultramafic rock	Ub	30	D.B.	F	S	S	W	Primary forest
20	J042	1432.15	Sungai Ulu Bole	ultramafic rock	Ub	30	D.B.	R	C	M	D	Secondary forest
21	J043	1432.15	Sungai Ulu Bole	ultramafic rock	Ub	30	D.B.	R	C	M	D	Secondary forest
22	G006	1450.65	Sungai Ulu Bole	serpentinite	Ub	20	Y.B.	R	C	M	D	Primary forest
23	G007	1450.55	Sungai Ulu Bole	serpentinite	Ub	30	B.	R	C	M	D	Primary forest
24	J016	1441.55	Sungai Ulu Bole	serpentinite	Ub	40	D.B.	R	C	M	D	Secondary forest
25	J018	1445.45	Sungai Ulu Bole	serpentinite	Ub	35	D.B.	R	S	M	D	Secondary forest
26	Y019	1448.50	Sungai Ulu Bole	peridotite	Ub	15	Y.B.	R	C	F	D	Primary forest
27	J017	1445.45	Sungai Ulu Bole	serpentinite	Ub	30	D.B.	R	S	M	D	Secondary forest
28	N034	1451.85	Sungai Ulu Bole	dunite	Ub	30	Y.B.	R	C	M	W	Secondary forest
29	N035	1451.85	Sungai Ulu Bole	dunite	Ub	30	D.B.	R	C	M	W	Secondary forest
30	Y023	1450.80	Silam	peridotite	Ub	20	Y.	R	C	M	D	Primary forest

\*2 Grain size: Sandy (S), Clayey (C)

\*4 Humidity: Dry (D), Wet (W)

\*1 Gravel: Many (M), Few (F), Rare or none (R)

\*3 Topography: Steep (S), Moderate (M), Flat (F)

Ser. No.	Sample No.	Coordinates N E	1/50,000 Topo. Sheet	Rock of Basement	Geol. Unit	Depth (cm)	Color	G. *1	S. *2	T. *3	H. *4	Vegetation
31	G021	1439.90	Silam	ultramafic rock	Ub	30	B.	R	S	M	D	Primary forest
32	G020	1439.95	Silam	ultramafic rock	Ub	20	B.	R	C	M	D	Primary forest
33	G018	1438.85	Silam	ultramafic rock	Ub	20	P.Y.	C	C	M	W	Primary forest
34	G019	1439.10	Silam	ultramafic rock	Ub	25	P.B.	C	C	M	W	Primary forest
35	C028	1445.25	Silam	ultramafic rock	Ub	20	B.	F	C	M	D	Primary forest
36	C029	1445.20	Silam	ultramafic rock	Ub	20	B.	F	C	M	D	Primary forest
37	P034	1450.10	Silam	peridotite	Ub	30	B.	R	S	M	W	Primary forest
38	C026	1445.10	Silam	peridotite	Ub	20	D.B.	M	C	S	D	Primary forest
39	P033	1450.10	Silam	peridotite	Ub	30	B.	R	S	M	W	Primary forest
40	C025	1445.10	Silam	peridotite	Ub	30	B.	R	C	S	D	Primary forest
41	Y011	1444.30	Silam	basic rock	Ub	20	Y.B.	F	C	M	D	Primary forest
42	Y013	1445.70	Silam	basalt	KPCs	15	Y.B.	R	C	F	D	Primary forest
43	Y015	1446.10	Silam	ultramafic rock	Ub	10	Y.	M	C	S	D	Primary forest
44	Y016	1445.90	Silam	ultramafic rock	Ub	10	Y.	M	C	S	D	Primary forest
45	Y018	1445.20	Silam	basalt	KPCs	20	Y.B.	F	C	M	D	Primary forest
46	Y007	1444.90	Silam	ultramafic rock	Ub	20	B.	F	C	M	W	Primary forest
47	Y008	1444.90	Silam	ultramafic rock	Ub	10	B.	M	S	S	W	Primary forest
48	Y006	1445.60	Silam	peridotite	Ub	10	B.	M	S	S	W	Primary forest
49	Y005	1445.55	Silam	peridotite	Ub	10	B.	M	S	S	W	Primary forest
50	N038	1450.80	Silam	serpentinite	Ub	30	D.B.	M	S	M	W	Secondary forest
51	K001	1445.10	Silam	peridotite	Ub	20	Y.B.	F	C	S	D	Primary forest
52	P008	1450.05	Silam	ultramafic rock	Ub	30	D.B.	M	S	M	W	Primary forest
53	K002	1445.10	Silam	peridotite	Ub	20	Y.B.	R	C	S	D	Primary forest
54	P007	1450.05	Silam	ultramafic rock	Ub	20	B.	M	S	M	W	Primary forest
55	N031	1451.05	Silam	serpentinite	Ub	30	Y.B.	R	C	F	W	Secondary forest
56	K006	1445.70	Silam	peridotite	Ub	5	Y.B.	R	C	M	D	Primary forest
57	K007	1445.75	Silam	peridotite	Ub	5	G.	F	C	S	D	Primary forest
58	P005	1450.00	Silam	basic rock	Ub	20	B.	F	S	M	D	Primary forest
59	J004	1446.90	Silam	serpentinite	Ub	30	B.	M	S	S	D	Secondary forest
60	P006	1450.10	Silam	basic rock	Ub	20	B.	F	S	M	D	Primary forest

\*1Gravel: Many (M), Few (F), Rare or none (R)  
 \*\*Topography: Steep (S), Moderate (M), Flat (F)  
 \*\*Grain size: Sandy (S), Clayey (C)  
 \*\*Humidity: Dry (D), Wet (W)

Ser. No.	Sample No.	Coordinates		1/50,000 Topo. Sheet	Rock of Basement	Geol. Unit	Depth (cm)	Color	G. #1	S. #2	T. #3	H. #4	Vegetation
		N	E										
61	J005	1447.05	4808.25	Silam	serpentinite	Ub	30	D.B.	R	C	M	D	Secondary forest
62	J007	1445.95	4808.75	Silam	serpentinite	Ub	30	D.B.	R	S	M	D	Secondary forest
63	N040	1445.75	4808.75	Silam	dunite	Ub	30	D.B.	R	C	M	W	Secondary forest
64	J008	1447.10	4808.85	Silam	serpentinite	Ub	40	D.B.	R	S	M	D	Secondary forest
65	J002	1448.25	4809.15	Silam	serpentinite	Ub	30	D.B.	R	C	S	D	Secondary forest
66	N029	1449.90	4808.25	Silam	serpentinite	Ub	30	B.	F	C	S	W	Secondary forest
67	J003	1448.55	4809.35	Silam	serpentinite	Ub	40	B.	F	C	M	W	Secondary forest
68	N027	1449.90	4809.90	Silam	serpentinite	Ub	30	D.B.	F	C	S	W	Secondary forest
69	N039	1447.25	4809.90	Silam	serpentinite	Ub	30	B.	R	C	M	W	Secondary forest
70	N028	1450.00	4810.25	Silam	serpentinite	Ub	30	D.B.	F	C	S	W	Secondary forest
71	C005	1449.10	4810.40	Silam	peridotite	Ub	20	Y.B.	R	C	M	W	Primary forest
72	C004	1449.40	4810.50	Silam	peridotite	Ub	20	P.B.	R	C	M	D	Primary forest
73	N025	1450.70	4811.90	Silam	serpentinite	Ub	30	B.	F	C	S	W	Secondary forest
74	N026	1450.45	4811.65	Silam	serpentinite	Ub	30	D.B.	F	C	S	W	Secondary forest

\*1Gravel: Many (M), Few (F), Rare or none (R)

\*2Grain size: Sandy (S), Clayey (C)

\*3Topography: Steep (S), Moderate (M), Flat (F)

\*4Humidity: Dry (D), Wet (W)



Appendix 10

Analytical results of soil geochemical  
samples in the Segama area





Ser. No.	Sample No.	Al %	Co ppm	Cr ppm	Fe %	Ni ppm	Pt ppb
1	C004	1.43	243	4471	3.20	2208	10
2	C005	1.13	280	4628	3.07	2129	10
3	K001	1.89	30	372	1.25	162	5
4	K002	1.37	116	1836	1.74	1302	5
5	J002	.97	155	3291	2.20	1874	5
6	J003	1.12	115	2046	1.96	1821	5
7	J004	1.90	36	116	1.53	41	10
8	J005	.59	463	4892	2.52	2142	30
9	J007	.31	501	3312	4.84	2083	25
10	J008	1.68	57	565	1.62	163	10
11	P005	2.61	52	347	2.15	121	5
12	P006	.89	141	5745	1.87	1501	15
13	K006	.66	161	3364	1.77	1726	15
14	K007	1.66	32	245	1.28	153	5
15	Y005	.47	230	3509	2.49	2351	10
16	Y006	.51	219	4232	2.98	3083	15
17	Y007	.44	365	6068	3.33	3705	15
18	Y008	.45	221	6734	1.57	1314	15
19	P007	.65	389	9920	2.55	2710	25
20	P008	.73	446	17305	2.13	2093	15
21	Y011	1.18	110	2000	2.33	1401	5
22	Y013	1.45	95	1719	1.83	961	4
23	Y015	.49	160	2896	2.22	2295	5
24	Y016	.55	201	3457	1.73	1460	5
25	Y018	.62	236	4350	2.35	2434	10
26	G006	2.09	32	119	1.33	42	5
27	G007	2.27	42	188	1.84	61	5
28	P012	2.02	38	181	1.50	59	5
29	P013	.60	288	5250	2.07	2130	15
30	Y019	2.04	81	518	2.35	138	5
31	Y023	2.39	94	434	2.55	155	5
32	K013	2.02	46	143	1.86	54	5
33	C025	.49	224	4790	2.58	2260	10
34	C026	.53	262	3024	2.84	3132	25
35	C028	1.22	197	3258	2.79	1790	15
36	C029	1.14	181	3094	2.55	1544	10
37	J016	1.71	223	3412	3.52	1792	20
38	J017	2.01	114	1360	2.84	1063	5
39	J018	2.05	101	1205	2.66	941	5
40	Y029	1.40	27	233	1.17	78	5
41	P023	2.31	58	329	2.14	114	5
42	G018	2.99	56	756	1.32	364	5
43	G019	1.68	137	2027	2.46	1709	5
44	G020	.90	487	8815	4.14	2971	20
45	G021	.82	718	5809	2.53	2457	20
46	P034	1.65	83	1160	1.98	346	5
47	P033	1.53	68	813	1.97	277	10
48	C038	1.71	27	230	1.04	181	5
49	C043	1.54	33	223	1.36	94	5
50	N025	.52	185	4500	3.12	3328	15
51	N026	.53	158	3623	3.07	3700	10
52	N027	.77	168	4108	3.33	3322	10
53	N028	.49	169	3971	3.15	3516	15
54	N029	.57	173	4042	3.10	3321	10
55	N031	1.52	26	78	1.01	36	5
56	N032	2.43	36	233	1.93	152	5
57	N033	1.86	213	3036	3.27	2126	10
58	N034	3.07	50	504	3.72	192	5
59	N035	1.30	255	9336	8.03	5313	15
60	N036	.54	654	6680	3.92	4098	10
61	N037	.48	195	4770	3.15	2513	20
62	N038	.38	300	3476	3.88	4490	30
63	N039	2.04	35	204	1.61	74	5
64	N040	.47	223	1388	4.16	1946	20
65	N050	1.80	380	5873	7.48	3725	35
66	J042	2.24	69	358	2.64	78	5
67	J043	2.13	70	270	2.53	61	5
68	P049	1.16	297	4035	2.82	1953	20
69	P054	1.89	41	159	1.79	61	5
70	P058	1.52	36	257	1.43	101	5
71	P059	.88	13	156	.68	60	5
72	P060	1.30	24	177	1.02	74	5
73	P061	1.38	23	185	1.10	75	5
74	Y054	1.04	52	693	1.13	322	5



Appendix 11

List of sample for stream sediment  
geochemical survey in the Semporna area

## 1. Introduction

The first part of the paper discusses the

methodology used in the study.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow <sup>1</sup> / <sub>2</sub>	Flow Size <sup>2</sup> / <sub>2</sub>	Color
1	PAF01	Sungai Tiagau	S. Gukuan	siltstone	N <sub>2</sub> TJ	1	2.0	2	4	B.
2	PAF02	Sungai Tiagau	S. Gukuan	---	N <sub>2</sub> TJ	1	5.0	4	1	B.
3	PAF03	Sungai Tiagau	S. Gukuan	---	N <sub>2</sub> TJ	1	3.0	4	1	B.
4	PAF04	Sungai Tiagau	S. Gukuan	---	N <sub>2</sub> TJ	1	2.0	3	1	B.
5	PAF05	Sungai Tiagau	S. Gukuan	---	N <sub>2</sub> TJ	2	7.0	4	1	B.
6	PAF06	Sungai Tiagau	---	siltstone	N <sub>2</sub> TJ	2	4.0	1	3	Y.B.
7	PAF07	Sungai Tiagau	---	siltstone	N <sub>2</sub> TJ	2	4.0	1	3	D.B.
8	PAF08	Sungai Tiagau	---	siltstone	N <sub>2</sub> TJ	1	2.5	2	4	D.B.
9	PAF09	Sungai Tiagau	---	siltstone	N <sub>2</sub> TJ	1	3.0	1	3	D.B.
10	PAF10	Sungai Tiagau	S. Gukuan	s.s./silt.	N <sub>2</sub> TJ	1	1.5	3	2	L.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow <sup>1</sup> / <sub>2</sub>	Flow Size <sup>2</sup> / <sub>2</sub>	Color
41	PAH01	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	2.0	3	3	L.B.
42	PAH02	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	3.0	4	3	D.B.
43	PAH03	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	2.5	3	3	D.B.
44	PAH04	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	1.0	2	2	D.B.
45	PAH05	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	1.0	3	3	D.B.
46	PAH06	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	2.0	3	3	B.
47	PAH07	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	2	10.0	4	3	B.
48	PAH08	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	3.0	2	2	G.
49	PAH09	Sungai Tiagau	S. Tapie	siltstone	N <sub>2</sub> KP	1	2.0	2	3	B.
50	PAH10	Sungai Tiagau	S. Tapie	siltstone	N <sub>2</sub> KP	1	1.0	3	3	Y.B.
51	PAH11	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	3.0	3	1	Y.B.
52	PAH12	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	5.0	3	1	Y.B.
53	PAH13	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	2	10.0	4	2	Y.B.
54	PAH14	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	3.0	3	2	Y.B.
55	PAH15	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	5.0	1	2	Y.B.
56	PAH16	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	4.0	1	3	D.B.
57	PAH17	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	3.0	2	4	D.B.
58	PAH18	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	2	3.0	3	4	D.B.
59	PAH19	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	2	5.0	1	3	B.
60	PAH20	Sungai Tiagau	S. Sunagap	---	N <sub>2</sub> KP	1	2.0	2	1	Y.B.
61	PAH21	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	3	4.0	3	3	B.Y.
62	PAH22	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	3	12.0	2	3	B.Y.
63	PAH23	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	1.0	3	3	B.Y.
64	PAH24	Sungai Tiagau	S. Sunagap	---	N <sub>2</sub> KP	1	1.5	2	2	B.Y.
65	PAH25	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	3	3.0	3	3	B.Y.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow <sup>1</sup> / <sub>2</sub>	Flow Size <sup>2</sup> / <sub>2</sub>	Color
66	PAJ01	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	1	1.0	1	3	B.Y.
67	PAJ02	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	1	2.0	1	3	B.Y.
68	PAJ03	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	1	2.0	1	3	B.Y.
69	PAJ04	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	2	6.0	2	3	B.Y.
70	PAJ05	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	3	15.0	3	3	B.
71	PAJ06	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	3	15.0	3	2	B.
72	PAJ07	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	1	5.0	3	3	B.
73	PAJ08	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	1	5.0	3	3	B.
74	PAJ09	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	1	5.0	3	3	B.
75	PAJ10	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	3	12.0	1	3	B.
76	PAJ11	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	2	8.0	2	1	B.
77	PAJ12	Sungai Tiagau	S. Anjeranjermat	---	P <sub>2</sub> KI	1	1.0	2	3	B.
			S. Anjeranjermat	---	P <sub>2</sub> KI	2	5.0	2	3	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow <sup>1</sup> / <sub>2</sub>	Flow Size <sup>2</sup> / <sub>2</sub>	Color
11	PAG01	Sungai Tiagau	S. Gukuan	s.s./silt.	N <sub>2</sub> TJ	1	1.0	2	3	D.B.
12	PAG02	Sungai Tiagau	S. Gukuan	s.s./silt.	N <sub>2</sub> TJ	1	2.0	2	3	D.B.
13	PAG03	Sungai Tiagau	S. Gukuan	s.s./silt.	N <sub>2</sub> TJ	1	1.0	2	1	D.B.
14	PAG04	Sungai Tiagau	S. Gukuan	s.s./silt.	N <sub>2</sub> TJ	1	1.0	2	3	D.B.
15	PAG05	Sungai Tiagau	S. Gukuan	s.s./silt.	N <sub>2</sub> TJ	2	2.0	2	3	D.B.
16	PAG06	Sungai Tiagau	S. Tapie	---	N <sub>2</sub> TJ	1	5.0	3	3	B.
17	PAG07	Sungai Tiagau	S. Tapie	---	N <sub>2</sub> TJ	1	4.0	4	2	Y.B.
18	PAG08	Sungai Tiagau	S. Tapie	---	N <sub>2</sub> TJ	2	6.0	3	2	Y.B.
19	PAG09	Sungai Tiagau	S. Gukuan	---	P <sub>2</sub> KI	1	1.0	2	3	Y.B.
20	PAG10	Sungai Tiagau	S. Tapie	s.s./mud.	N <sub>2</sub> TJ	1	4.0	3	2	Y.B.
21	PAG11	Sungai Tiagau	S. Tapie	s.s./mud.	N <sub>2</sub> TJ	1	3.0	3	2	Y.B.
22	PAG12	Sungai Tiagau	S. Tapie	---	N <sub>2</sub> TJ	1	3.0	3	2	Y.B.
23	PAG13	Sungai Tiagau	S. Tapie	---	N <sub>2</sub> KP	1	3.0	4	3	Y.B.
24	PAG14	Sungai Tiagau	S. Tapie	---	N <sub>2</sub> KP	1	5.0	4	1	Y.B.
25	PAG15	Sungai Tiagau	S. Tapie	sandstone	P <sub>2</sub> KI	3	7.0	3	2	Y.B.
26	PAG16	Sungai Tiagau	S. Tapie	sandstone	P <sub>2</sub> KI	1	3.0	4	2	Y.B.
27	PAG17	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> TJ	2	7.0	4	2	B.
28	PAG18	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> TJ	1	3.0	4	2	B.
29	PAG19	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	2.0	3	3	B.
30	PAG20	Sungai Tiagau	S. Tiagau	siltstone	N <sub>2</sub> KP	1	2.0	2	3	B.
31	PAG21	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	2	8.0	4	2	D.B.
32	PAG22	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	2.0	3	3	D.B.
33	PAG23	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	4.0	3	3	D.B.
34	PAG24	Sungai Tiagau	S. Tiagau	siltstone	N <sub>2</sub> KP	1	1.0	2	3	D.B.
35	PAG25	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	2	8.0	3	3	B.
36	PAG26	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	2	4.5	3	3	B.
37	PAG27	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	2	7.0	3	3	D.B.
38	PAG28	Sungai Tiagau	S. Kalabakan	---	N <sub>2</sub> KP	1	3.0	2	3	D.B.
39	PAG29	Sungai Tiagau	S. Gukuan	---	N <sub>2</sub> TJ	1	1.0	2	3	D.G.
40	PAG30	Sungai Tiagau	S. Gukuan	sandstone	N <sub>2</sub> TJ	1	1.5	2	1	D.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Area: Samporna Area Grid: Pkg

Table with columns: Ser. No., Sample No., Topographic Map Sheet, Name of Stream, Geology, Geol. Unit, Order, Width (m), Flow, Size, Color. Contains data for samples Pkg15 to Pkg60.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Area: Samporna Area Grid: Pkg

Table with columns: Ser. No., Sample No., Topographic Map Sheet, Name of Stream, Geology, Geol. Unit, Order, Width (m), Flow, Size, Color. Contains data for samples Pkg01 to Pkg20.

Area: Samporna Area Grid: Pkg

Table with columns: Ser. No., Sample No., Topographic Map Sheet, Name of Stream, Geology, Geol. Unit, Order, Width (m), Flow, Size, Color. Contains data for samples Pkg21 to Pkg30.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
166	P8h01	Sungai Tiagau	S. Iapic	siltstone	NsP	2	5.0	1	4	Y.B.
167	P8h02	Sungai Tiagau	S. Iapic	siltstone	NsP	2	5.0	1	3	Y.B.
168	P8h03	Sungai Tiagau	S. Iapic	silt. / s.s.	P.KI	2	3.0	3	3	D.B.
169	P8h04	Sungai Tiagau	S. Iapic	siltstone	P.KI	2	0.5	3	3	Y.B.
170	P8h05	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	1.0	1	2	Y.B.
171	P8h06	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	1.5	2	4	D.B.
172	P8h07	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	2.0	1	2	D.B.
173	P8h08	Sungai Tiagau	S. Luasong	---	P.KI	1	3.0	2	3	B.
174	P8h09	Sungai Tiagau	S. Luasong	---	P.KI	1	4.0	0	2	B.
175	P8h10	Sungai Tiagau	S. Luasong	---	P.KI	1	2.0	0	2	B.
176	P8h11	Sungai Tiagau	S. Luasong	mod. / s.s.	P.KI	1	2.0	2	1	B.
177	P8h12	Sungai Tiagau	S. Tiagau	siltstone	P.KI	1	2.0	1	4	Y.B.
178	P8h13	Sungai Tiagau	S. Tiagau	siltstone	P.KI	1	2.0	2	3	D.B.
179	P8h14	Sungai Tiagau	S. Tiagau	siltstone	P.KI	1	3.0	1	2	D.B.
180	P8h15	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	4.0	2	2	D.B.
181	P8h16	Sungai Tiagau	S. Luasong	---	P.KI	2	3.0	2	2	B.G.
182	P8h17	Sungai Tiagau	S. Tiagau	siltstone	P.KI	3	10.0	3	3	D.B.
183	P8h18	Sungai Tiagau	S. Bekandak	siltstone	P.KI	1	3.0	1	4	D.B.
184	P8h19	Sungai Tiagau	S. Bekandak	siltstone	P.KI	1	1.0	2	3	Y.B.
185	P8h20	Sungai Tiagau	S. Luasong	siltstone	P.KI	3	10.0	3	2	R.
186	P8h21	Sungai Tiagau	S. Luasong	---	P.KI	1	2.0	3	2	B.E.
187	P8h22	Sungai Tiagau	S. Bekandak	siltstone	P.KI	2	2.5	2	3	D.E.
188	P8h23	Sungai Tiagau	S. Bekandak	siltstone	P.KI	1	1.0	2	2	D.E.
189	P8h24	Sungai Tiagau	S. Luasong	---	P.KI	1	2.0	2	2	Y.
190	P8h25	Sungai Tiagau	S. Samagas	---	NsP	1	4.0	2	2	Y.B.
191	P8h26	Sungai Tiagau	S. Samagas	---	NsP	1	2.0	2	1	Y.B.
192	P8h27	Sungai Tiagau	S. Samagas	---	NsP	2	5.0	2	2	Y.B.
193	P8h28	Sungai Tiagau	S. Samagas	---	NsP	1	2.0	2	1	D.B.
194	P8h29	Sungai Tiagau	S. Samagas	---	NsP	1	2.0	2	2	D.B.
195	P8h30	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	1.0	2	3	D.B.
196	P8h31	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	1.5	2	2	D.B.
197	P8h32	Sungai Tiagau	S. Luasong	---	P.KI	1	1.0	2	4	L.B.
198	P8h33	Sungai Tiagau	S. Luasong	---	P.KI	1	2.0	2	2	Y.G.
199	P8h34	Sungai Tiagau	S. Luasong	---	P.KI	1	2.0	2	1	L.B.
200	P8h35	Sungai Tiagau	S. Luasong	---	P.KI	1	5.0	2	1	G.
201	P8h36	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	3.0	1	3	D.B.
202	P8h37	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	2.0	2	2	B.
203	P8h38	Sungai Tiagau	S. Samagas	---	NsP	2	6.0	2	2	B.
204	P8h39	Sungai Tiagau	S. Samagas	---	NsP	1	2.0	2	3	B.
205	P8h40	Sungai Tiagau	S. Samagas	---	NsP	1	1.0	1	2	D.B.
206	P8h41	Sungai Tiagau	S. Kalabakan	maudstone	NsP	1	3.0	0	2	B.
207	P8h42	Sungai Tiagau	S. Kalabakan	---	NsP	1	2.0	0	2	Y.B.
208	P8h43	Sungai Tiagau	S. Samagas	---	NsP	2	7.0	3	2	D.B.
209	P8h44	Sungai Tiagau	S. Samagas	maudstone	NsP	1	2.0	1	2	D.B.
210	P8h45	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	1.0	2	3	D.B.
211	P8h46	Sungai Tiagau	S. Samagas	maudstone	NsP	3	5.0	2	3	D.B.
212	P8h47	Sungai Tiagau	S. Samagas	maudstone	NsP	1	1.0	2	2	D.B.
213	P8h48	Sungai Tiagau	S. Tiagau	---	P.KI	1	1.0	4	1	B.
214	P8h49	Sungai Tiagau	S. Tiagau	---	P.KI	1	2.0	3	1	B.
215	P8h50	Sungai Tiagau	S. Tiagau	---	P.KI	1	1.0	3	1	B.

\*1: none(0); puddle(1), slow(2), moderate(3), fast(4)  
 \*2: coarse grained(1), medium grained(2), fine grained(3), clayey(4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
216	P8h51	Sungai Tiagau	S. Tiagau	---	P.KI	1	1.0	4	1	B.
217	P8h52	Sungai Tiagau	S. Tiagau	---	P.KI	1	1.0	4	1	D.
218	P8h53	Sungai Tiagau	S. Luasong	siltstone	P.KI	2	5.0	3	1	L.G.
219	P8h54	Sungai Tiagau	S. Luasong	---	NsP	1	1.0	2	3	Y.B.
220	P8h55	Sungai Tiagau	S. Kalabakan	---	P.KI	1	2.0	0	1	B.
221	P8h56	Sungai Tiagau	S. Kalabakan	maudstone	P.KI	1	2.0	0	2	B.
222	P8h57	Sungai Tiagau	S. Tiagau	siltstone	P.KI	2	3.0	1	4	Y.B.
223	P8h58	Sungai Tiagau	S. Iapic	siltstone	NsP	1	2.0	2	2	Y.B.
224	P8h59	Sungai Tiagau	S. Tiagau	siltstone	P.KI	1	3.0	1	4	Y.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
225	P8j01	Sungai Tiagau	S. Kalabakan	maudstone	P.KI	1	4.0	2	2	B.
226	P8j02	Sungai Tiagau	S. Kalabakan	---	P.KI	1	1.0	2	4	B.
227	P8j03	Sungai Tiagau	S. Kalabakan	maudstone	P.KI	1	1.0	2	3	D.B.
228	P8j04	Sungai Tiagau	S. Kalabakan	maudstone	P.KI	2	3.5	3	4	D.B.
229	P8j05	Sungai Tiagau	S. Kalabakan	maudstone	P.KI	2	2.0	2	4	B.
230	P8j06	Sungai Tiagau	S. Kalabakan	---	P.KI	2	4.0	2	1	B.
231	P8j07	Sungai Tiagau	S. Kalabakan	maudstone	P.KI	2	4.0	2	3	B.
232	P8j08	Sungai Tiagau	S. Kalabakan	maudstone	P.KI	1	3.0	1	4	L.B.
233	P8j09	Sungai Tiagau	S. Kalabakan	maudstone	P.KI	1	4.0	1	3	L.B.
234	P8j10	Sungai Tiagau	S. Kalabakan	maudstone	P.KI	1	2.0	2	3	B.
235	P8j11	Sungai Tiagau	S. Kalabakan	maudstone	P.KI	1	1.5	3	3	B.
236	P8j12	Sungai Tiagau	S. Tiagau	siltstone	P.KI	1	2.0	2	2	D.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
237	PCf01	Sungai Tiagau	S. Inbok	sandstone	P.Km	1	1.5	4	2	B.
238	PCf02	Sungai Tiagau	S. Inbok	sandstone	P.Km	3	10.0	4	2	D.B.
239	PCf03	Sungai Tiagau	S. Inbok	---	P.Km	1	4.0	2	3	B.Y.
240	PCf04	Sungai Tiagau	S. Inbok	---	P.Km	2	5.0	2	3	B.Y.
241	PCf05	Sungai Tiagau	S. Inbok	---	P.Km	1	4.0	3	3	B.Y.
242	PCf06	Sungai Tiagau	S. Inbok	---	P.Km	1	2.0	3	3	B.Y.
243	PCf07	Sungai Tiagau	S. Inbok	---	P.Km	2	5.0	2	3	B.Y.
244	PCf08	Sungai Tiagau	S. Inbok	---	P.Km	1	4.0	2	3	B.Y.
245	PCf09	Sungai Tiagau	S. Inbok	---	P.Km	2	4.0	2	3	B.Y.
246	PCf10	Sungai Tiagau	S. Inbok	---	P.Km	1	1.0	2	3	B.Y.
247	PCf11	Sungai Tiagau	S. Inbok	siltstone	P.Km	1	1.0	3	3	D.B.
248	PCf12	Sungai Tiagau	S. Inbok	---	P.Km	1	2.0	2	3	B.Y.
249	PCf13	Sungai Tiagau	S. Inbok	---	P.Km	1	3.0	2	3	B.Y.
250	PCf14	Sungai Tiagau	S. Inbok	---	P.Km	1	2.0	2	3	B.Y.
251	PCf15	Sungai Tiagau	S. Inbok	---	P.Km	1	3.0	2	3	B.Y.

\*1: none(0); puddle(1), slow(2), moderate(3), fast(4)  
 \*2: coarse grained(1), medium grained(2), fine grained(3), clayey(4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Flow Size $\frac{m^3}{s}$	Color
294	PG636	Sungai Tiagau	S. Geminchau	---	P.KI	1	3.0	2	3	B.Y.
295	PG637	Sungai Tiagau	S. Geminchau	---	P.KI	1	5.0	2	3	B.Y.
296	PG638	Sungai Tiagau	S. Luasong	---	P.KI	2	7.0	2	3	B.Y.
297	PG639	Sungai Tiagau	S. Geminchau	---	P.KI	1	3.0	0	3	B.Y.
298	PG640	Sungai Tiagau	S. Geminchau	---	P.KI	3	6.0	2	3	B.Y.
299	PG641	Sungai Tiagau	S. Luasong	---	P.KI	1	3.0	4	1	B.
300	PG642	Sungai Tiagau	S. Luasong	---	P.KI	1	2.0	2	1	B.
301	PG643	Sungai Tiagau	S. Luasong	---	P.KI	2	2.0	2	1	B.
302	PG644	Sungai Tiagau	S. Luasong	---	P.KI	1	7.0	3	1	B.
303	PG645	Sungai Tiagau	S. Luasong	---	P.KI	2	5.0	2	1	B.
304	PG646	Sungai Tiagau	S. Luasong	---	P.KI	1	3.0	0	1	B.
305	PG647	Sungai Tiagau	S. Mawing	---	P.KI	1	2.5	3	2	B.Y.
306	PG648	Sungai Tiagau	S. Mawing	siltstone	P.KI	1	2.0	1	2	B.Y.
307	PG649	Sungai Tiagau	S. Geminchau	---	P.KI	1	2.0	1	3	B.Y.
308	PG650	Sungai Tiagau	S. Geminchau	---	P.KI	3	12.0	3	2	B.
309	PG651	Sungai Tiagau	S. Geminchau	---	P.KI	1	2.0	3	2	B.
310	PG652	Sungai Tiagau	S. Mawing	siltstone	P.KI	1	3.0	2	2	B.
311	PG653	Sungai Tiagau	S. Mawing	siltstone	P.KI	2	4.0	1	3	B.
312	PG654	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	1.0	2	3	B.Y.
313	PG655	Sungai Tiagau	S. Geminchau	---	P.KI	1	3.0	1	3	B.Y.
314	PG656	Sungai Tiagau	S. Geminchau	---	P.KI	1	3.0	1	3	B.Y.
315	PG657	Sungai Tiagau	S. Geminchau	---	P.KI	1	3.0	2	3	B.Y.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Flow Size $\frac{m^3}{s}$	Color
316	PG601	Sungai Tiagau	S. Luasong	s.s./silt.	P.KI	2	4.0	1	4	D.B.
317	PG602	Sungai Tiagau	S. Luasong	---	P.KI	3	5.0	0	1	B.
318	PG603	Sungai Tiagau	S. Luasong	---	P.KI	1	4.0	2	1	B.
319	PG604	Sungai Tiagau	S. Luasong	---	P.KI	1	3.0	0	1	B.
320	PG605	Sungai Tiagau	S. Mawing	---	P.KI	1	3.0	2	4	L.B.
321	PG606	Sungai Tiagau	S. Mawing	---	P.KI	1	3.0	2	1	Y.B.
322	PG607	Sungai Tiagau	S. Mawing	siltstone	P.KI	1	2.0	2	1	L.G.
323	PG608	Sungai Tiagau	S. Mawing	---	P.KI	1	3.0	2	2	B.
324	PG609	Sungai Tiagau	S. Mawing	---	P.KI	1	2.0	2	1	G.
325	PG610	Sungai Tiagau	S. Tiagau	shale	P.KI	1	3.0	2	4	B.
326	PG611	Sungai Tiagau	S. Mawing	siltstone	P.KI	1	6.0	3	2	Y.B.
327	PG612	Sungai Tiagau	S. Mawing	---	P.KI	1	1.5	2	3	Y.B.
328	PG613	Sungai Tiagau	S. Mawing	---	P.KI	1	4.0	2	3	Y.B.
329	PG614	Sungai Tiagau	S. Mawing	siltstone	P.KI	2	7.0	2	2	G.B.
330	PG615	Sungai Tiagau	S. Mawing	siltstone	P.KI	1	2.0	3	3	B.
331	PG616	Sungai Tiagau	S. Mawing	---	P.KI	1	4.0	2	1	G.
332	PG617	Sungai Tiagau	S. Mawing	---	P.KI	2	5.0	2	1	G.
333	PG618	Sungai Tiagau	S. Mawing	---	P.KI	1	3.0	2	1	L.B.
334	PG619	Sungai Tiagau	S. Mawing	---	P.KI	1	3.0	2	1	Y.B.
335	PG620	Sungai Tiagau	S. Tiagau	shale	P.KI	1	1.0	2	4	B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Flow Size $\frac{m^3}{s}$	Color
269	PG621	Sungai Tiagau	S. Geminchau	---	P.KI	1	1.0	2	3	Y.B.
270	PG622	Sungai Tiagau	S. Geminchau	---	P.KI	1	2.0	1	4	B.
271	PG623	Sungai Tiagau	S. Inbok	siltstone	P.KI	1	2.0	1	4	D.B.
272	PG624	Sungai Tiagau	S. Inbok	---	P.KI	1	2.0	2	3	Y.B.
273	PG625	Sungai Tiagau	S. Inbok	siltstone	P.KI	1	3.0	2	3	Y.B.
274	PG626	Sungai Tiagau	S. Geminchau	---	P.KI	1	3.0	3	3	B.Y.
275	PG627	Sungai Tiagau	S. Geminchau	---	P.KI	2	5.0	3	3	B.Y.
276	PG628	Sungai Tiagau	S. Inbok	---	P.KI	1	2.0	3	3	B.Y.
277	PG629	Sungai Tiagau	S. Inbok	---	P.KI	1	2.0	3	3	B.Y.
278	PG630	Sungai Tiagau	S. Inbok	---	P.KI	1	2.0	3	3	B.Y.
279	PG631	Sungai Tiagau	S. Geminchau	---	P.KI	1	1.0	2	3	Y.B.
280	PG632	Sungai Tiagau	S. Geminchau	---	P.KI	2	3.0	2	3	B.Y.
281	PG633	Sungai Tiagau	S. Geminchau	---	P.KI	1	2.0	2	3	B.Y.
282	PG634	Sungai Tiagau	S. Geminchau	---	P.KI	1	2.0	2	3	B.Y.
283	PG635	Sungai Tiagau	S. Geminchau	---	P.KI	1	3.0	2	3	B.Y.
284	PG636	Sungai Tiagau	S. Brantian	sandstone	P.KI	1	3.0	2	3	B.Y.
285	PG637	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	2.0	2	3	B.Y.
286	PG638	Sungai Tiagau	S. Luasong	sandstone	P.KI	1	2.0	2	3	B.Y.
287	PG639	Sungai Tiagau	S. Luasong	sandstone	P.KI	2	5.0	2	2	B.
288	PG640	Sungai Tiagau	S. Luasong	---	P.KI	1	4.0	1	2	B.
289	PG641	Sungai Tiagau	S. Luasong	siltstone	P.KI	1	3.0	2	3	B.
290	PG642	Sungai Tiagau	S. Luasong	---	P.KI	1	3.0	1	2	B.
291	PG643	Sungai Tiagau	S. Luasong	---	P.KI	1	2.0	2	2	B.
292	PG644	Sungai Tiagau	S. Geminchau	---	P.KI	1	3.0	2	3	B.Y.
293	PG645	Sungai Tiagau	S. Geminchau	---	P.KI	1	2.0	2	3	B.Y.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clays (4)



Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Size $\frac{mm}{\phi}$	Color
373	PD001	Sungai Unas Unas	S. Brantian	—	Ub	2	5.0	3	1	B.
374	PD002	Sungai Unas Unas	S. Brantian	—	Ub	2	10.0	4	1	R.B.
375	PD003	Sungai Unas Unas	S. Brantian	—	P.Kn	1	4.0	2	2	Y.G.
376	PD004	Sungai Tiagau	S. Brantian	—	P.Kn	1	5.0	3	1	B.
377	PD005	Sungai Unas Unas	S. Brantian	—	P.Kn	1	12.0	3	1	L.B.
378	PD006	Sungai Unas Unas	S. Brantian	—	P.Kn	2	10.0	3	1	Y.G.
379	PD007	Sungai Unas Unas	S. Brantian	—	P.Kn	1	3.0	2	1	Y.G.
380	PD008	Sungai Unas Unas	S. Brantian	—	P.Kn	1	2.0	2	1	L.B.
381	PD009	Sungai Unas Unas	S. Brantian	—	P.Kn	1	15.0	2	1	B.
382	PD010	Sungai Unas Unas	S. Brantian	—	P.Kn	1	4.0	3	2	Y.G.
383	PD011	Sungai Unas Unas	S. Brantian	—	P.Kn	3	10.0	3	1	G.
384	PD012	Sungai Unas Unas	S. Brantian	—	P.Kn	1	6.0	3	4	L.B.
385	PD013	Sungai Unas Unas	S. Brantian	—	P.Kn	1	5.0	3	2	Y.B.
386	PD014	Sungai Unas Unas	S. Brantian	—	P.Kn	1	2.0	3	1	Y.B.
387	PD015	Sungai Unas Unas	S. Brantian	—	P.Kn	1	6.0	4	1	Y.B.
388	PD016	Sungai Unas Unas	S. Brantian	—	P.Kn	1	15.0	4	1	G.
389	PD017	Sungai Unas Unas	S. Brantian	—	Ub	1	5.0	4	1	R.B.
390	PD018	Sungai Unas Unas	S. Brantian	—	Ub	1	5.0	4	1	R.B.
391	PD019	Sungai Unas Unas	S. Brantian	—	Ub	1	5.0	4	1	B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Size $\frac{mm}{\phi}$	Color
392	PDg01	Sungai Tiagau	S. Brantian	—	P.Kn	2	6.0	3	1	L.B.
393	PDg02	Sungai Tiagau	S. Brantian	—	P.Kn	1	3.0	2	4	Y.B.
394	PDg03	Sungai Tiagau	S. Brantian	—	P.Kn	1	1.0	1	2	D.B.
395	PDg04	Sungai Tiagau	S. Brantian	sandstone	P.Kn	1	3.0	2	1	Y.B.
396	PDg05	Sungai Tiagau	S. Brantian	—	P.Kn	1	5.0	2	3	L.B.
397	PDg06	Sungai Tiagau	S. Brantian	sandstone	P.Kn	1	1.0	2	2	Y.B.
398	PDg07	Sungai Tiagau	S. Brantian	—	Ub	1	2.0	1	2	L.B.
399	PDg08	Sungai Tiagau	S. Brantian	—	Ub	1	3.0	2	3	B.
400	PDg09	Sungai Tiagau	S. Gemincbau	—	Ub	3	4.0	3	2	D.B.
401	PDg10	Sungai Unas Unas	S. Brantian	—	P.Kn	2	8.0	4	1	B.
402	PDg11	Sungai Unas Unas	S. Brantian	—	P.Kn	2	10.0	4	1	B.
403	PDg12	Sungai Unas Unas	S. Brantian	—	P.Kn	2	3.0	4	1	B.
404	PDg13	Sungai Unas Unas	S. Brantian	—	P.Kn	3	15.0	3	1	L.B.
405	PDg14	Sungai Unas Unas	S. Brantian	—	P.Kn	3	10.0	4	1	L.B.
406	PDg15	Sungai Unas Unas	S. Brantian	—	P.Kn	1	5.0	4	1	W.B.
407	PDg16	Sungai Unas Unas	S. Brantian	—	Ub	1	6.0	4	1	W.B.
408	PDg17	Sungai Unas Unas	S. Brantian	—	Ub	1	5.0	4	1	R.E.
409	PDg18	Sungai Unas Unas	S. Brantian	—	P.Kn	1	6.0	4	1	R.E.
410	PDg19	Sungai Unas Unas	S. Brantian	—	P.Kn	1	6.0	4	1	B.
411	PDg20	Sungai Unas Unas	S. Brantian	—	P.Kn	1	2.0	4	1	B.
412	PDg21	Sungai Unas Unas	S. Gumbal	gabbro	Ub	1	2.0	4	1	D.E.
413	PDg22	Sungai Unas Unas	S. Gumbal	gabbro	Ub	2	5.0	2	2	B.
414	PDg23	Sungai Unas Unas	S. Gumbal	gabbro	Ub	1	2.0	4	1	D.B.
415	PDg24	Sungai Unas Unas	S. Gumbal	gabbro	Ub	1	1.0	3	2	D.B.
416	PDg25	Sungai Unas Unas	S. Brantian	—	P.Kn	3	6.0	3	2	D.E.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Size $\frac{mm}{\phi}$	Color
336	PC021	Sungai Tiagau	S. Tiagau	shale	P.KI	1	1.5	2	4	B.
337	PC022	Sungai Tiagau	S. Mawing	—	P.KI	1	2.0	2	4	G.B.
338	PC023	Sungai Tiagau	S. Mawing	—	P.KI	1	1.5	2	3	G.B.
339	PC024	Sungai Tiagau	S. Mawing	—	P.KI	1	7.0	2	2	G.
340	PC025	Sungai Tiagau	S. Mawing	sandstone	P.KI	2	6.0	3	3	Y.B.
341	PC026	Sungai Tiagau	S. Tiagau	sandstone	P.KI	1	1.5	2	3	Y.B.
342	PC027	Sungai Tiagau	S. Tiagau	—	P.KI	1	1.5	2	2	Y.B.
343	PC028	Sungai Tiagau	S. Tiagau	—	P.KI	1	2.0	2	3	B.
344	PC029	Sungai Tiagau	S. Mawing	—	P.KI	1	1.0	1	3	Y.B.
345	PC030	Sungai Tiagau	S. Mawing	shale	P.KI	2	3.0	3	3	B.
346	PC031	Sungai Tiagau	S. Mawing	siltstone	P.KI	1	2.0	2	4	G.B.
347	PC032	Sungai Tiagau	S. Mawing	shale	P.KI	1	2.0	2	4	G.B.
348	PC033	Sungai Tiagau	S. Mawing	—	P.KI	1	2.0	2	4	B.
349	PC034	Sungai Tiagau	S. Mawing	shale	P.KI	1	2.5	2	3	Y.B.
350	PC035	Sungai Tiagau	S. Mawing	—	P.KI	1	2.0	2	1	B.
351	PC036	Sungai Tiagau	S. Tiagau	siltstone	P.KI	3	4.0	2	3	B.
352	PC037	Sungai Tiagau	S. Tiagau	—	P.KI	2	3.0	3	2	Y.B.
353	PC038	Sungai Tiagau	S. Tiagau	sandstone	P.KI	1	2.0	2	2	G.B.
354	PC039	Sungai Tiagau	S. Tiagau	shale	P.KI	1	2.0	2	3	B.
355	PC040	Sungai Tiagau	S. Tiagau	—	P.KI	1	3.0	2	4	G.B.
356	PC041	Sungai Tiagau	S. Mawing	ml./s.s.	P.KI	1	2.0	2	1	B.
357	PC042	Sungai Tiagau	S. Mawing	ml./s.s.	P.KI	3	10.0	2	1	B.
358	PC043	Sungai Tiagau	S. Mawing	—	P.KI	2	4.0	2	2	B.
359	PC044	Sungai Tiagau	S. Mawing	—	P.KI	2	3.0	2	3	B.Y.
360	PC045	Sungai Tiagau	S. Mawing	—	P.KI	1	1.0	1	3	B.Y.
361	PC046	Sungai Tiagau	S. Mawing	—	P.KI	2	3.0	2	3	B.Y.
362	PC047	Sungai Tiagau	S. Mawing	—	P.KI	3	6.0	2	3	B.Y.
363	PC048	Sungai Tiagau	S. Mawing	—	P.KI	1	2.0	1	3	B.Y.
364	PC049	Sungai Tiagau	S. Mawing	—	P.KI	1	1.0	1	3	B.Y.
365	PC050	Sungai Tiagau	S. Mawing	siltstone	P.KI	1	2.0	2	1	Y.B.
366	PC051	Sungai Tiagau	S. Tiagau	—	P.KI	2	3.0	2	3	B.
367	PC052	Sungai Tiagau	S. Tiagau	shale	P.KI	1	2.5	2	3	Y.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Size $\frac{mm}{\phi}$	Color
368	PC001	Sungai Tiagau	S. Mawing	—	P.KI	1	3.0	2	4	L.B.
369	PC002	Sungai Tiagau	S. Mawing	sandstone	P.KI	1	1.0	1	2	Y.B.
370	PC003	Sungai Tiagau	S. Mawing	siltstone	P.KI	1	4.0	3	2	B.
371	PC004	Sungai Tiagau	S. Mawing	—	P.KI	1	4.0	2	2	B.
372	PC005	Sungai Tiagau	S. Mawing	—	P.KI	3	18.0	4	2	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $m^3/s$	Flow Size $mm$	Color
417	P1g26	Sungai Umas Umas	S. Brantian	sandstone	P.Kn	1	0.5	2	2	D.G.
418	P1g27	Sungai Umas Umas	S. Brantian	—	P.Kn	3	3.0	4	1	D.B.
419	P1g28	Sungai Umas Umas	S. Brantian	sandstone	P.Kn	4	14.0	2	4	C.B.
420	P1g29	Sungai Umas Umas	S. Gambai	gabbro	Ub	1	2.0	4	2	D.B.
421	P1g30	Sungai Umas Umas	S. Gumbai	gabbro	Ub	2	4.0	2	2	D.B.
422	P1g31	Sungai Umas Umas	S. Brantian	serpentine	Ub	1	2.0	3	1	B.
423	P1g32	Sungai Umas Umas	S. Brantian	pillow lava	P.Kn	1	4.0	4	1	B.
424	P1g33	Sungai Umas Umas	S. Brantian	—	P.Kn	1	4.0	3	2	B.
425	P1g34	Sungai Umas Umas	S. Tambuk	sandstone	P.Kn	1	1.0	3	2	Y.B.
426	P1g35	Sungai Umas Umas	S. Tambuk	—	Ub	1	4.0	3	2	D.G.
427	P1g36	Sungai Umas Umas	S. Bang	—	Ub	1	2.0	3	4	D.G.
428	P1g37	Sungai Umas Umas	S. Brantian	—	P.Kn	1	1.5	1	1	B.
429	P1g38	Sungai Umas Umas	S. Tambuk	sandstone	P.Kn	1	2.0	3	1	Y.B.
430	P1g39	Sungai Umas Umas	S. Tambuk	sandstone	P.Kn	1	2.0	4	1	Y.B.
431	P1g40	Sungai Umas Umas	S. Brantian	—	P.Kn	4	14.0	4	1	G.B.
432	P1g41	Sungai Umas Umas	S. Geminchau	—	P.Kn	3	20.0	2	3	D.B.
433	P1g42	Sungai Umas Umas	S. Tambuk	sandstone	P.Kn	1	1.0	2	2	D.B.
434	P1g43	Sungai Umas Umas	S. Bang	sandstone	P.Kn	2	3.0	2	3	D.B.
435	P1g44	Sungai Umas Umas	S. Bang	sandstone	P.Kn	2	2.0	2	2	D.B.
436	P1g45	Sungai Umas Umas	S. Brantian	sandstone	P.Kn	1	2.0	1	3	G.B.
437	P1g46	Sungai Umas Umas	S. Bang	sandstone	P.Kn	1	0.5	2	4	Y.B.
438	P1g47	Sungai Umas Umas	S. Bang	—	P.Kn	1	2.0	2	2	L.B.
439	P1g48	Sungai Umas Umas	S. Geminchau	sandstone	P.Kn	3	5.0	2	3	D.B.
440	P1g49	Sungai Umas Umas	S. Geminchau	sandstone	P.Kn	1	0.5	3	3	D.B.
441	P1g50	Sungai Umas Umas	S. Geminchau	sandstone	P.Kn	1	1.0	2	3	D.B.
442	P1g51	Sungai Umas Umas	S. Geminchau	sandstone	P.Kn	1	1.0	2	3	Y.B.
443	P1g52	Sungai Umas Umas	S. Brantian	—	P.Kn	1	2.0	1	4	G.
444	P1g53	Sungai Umas Umas	S. Bang	—	P.Kn	1	1.5	1	3	B.
445	P1g54	Sungai Umas Umas	S. Geminchau	sandstone	P.Kn	1	1.0	1	3	Y.B.
446	P1g55	Sungai Umas Umas	S. Brantian	—	P.Kn	1	1.0	2	3	D.G.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $m^3/s$	Flow Size $mm$	Color
447	P1h01	Sungai Tiagau	S. Mawing	—	P.Kl	1	2.0	2	1	G.
448	P1h02	Sungai Umas Umas	S. Geminchau	sandstone	P.Kn	1	1.0	2	3	D.G.
449	P1h03	Sungai Umas Umas	S. Serapi	—	P.Kn	1	0.5	2	3	B.Y.
450	P1h04	Sungai Umas Umas	S. Serapi	—	P.Kn	1	2.5	2	3	B.Y.
451	P1h05	Sungai Umas Umas	S. Serapi	—	P.Kn	1	0.5	1	3	B.Y.
452	P1h06	Sungai Umas Umas	S. Serapi	—	P.Kn	2	4.0	2	3	B.Y.
453	P1h07	Sungai Umas Umas	S. Serapi	—	P.Kn	1	0.5	1	3	B.Y.
454	P1h08	Sungai Umas Umas	S. Serapi	—	P.Kn	1	1.5	1	3	B.Y.
455	P1h09	Sungai Umas Umas	S. Serapi	—	P.Kn	2	4.0	2	3	B.Y.
456	P1h10	Sungai Umas Umas	S. Brantian	—	P.Kn	2	8.0	4	4	B.Y.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)

\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $m^3/s$	Flow Size $mm$	Color
457	P1h11	Sungai Umas Umas	S. Brantian	sandstone	P.Kn	1	2.0	3	2	B.
458	P1h12	Sungai Umas Umas	S. Brantian	—	P.Kn	1	1.0	2	3	B.Y.
459	P1h13	Sungai Umas Umas	S. Brantian	—	P.Kn	2	4.0	2	3	B.Y.
460	P1h14	Sungai Umas Umas	S. Brantian	—	P.Kn	2	4.0	2	3	B.Y.
461	P1h15	Sungai Umas Umas	S. Gita	—	P.Kn	1	0.5	2	3	B.Y.
462	P1h16	Sungai Umas Umas	S. Gita	—	P.Kn	1	2.0	2	3	B.Y.
463	P1h17	Sungai Umas Umas	S. Gita	—	P.Kn	1	0.5	1	3	B.Y.
464	P1h18	Sungai Umas Umas	S. Gita	—	P.Kn	3	2.0	2	3	B.Y.
465	P1h19	Sungai Umas Umas	S. Brantian	—	P.Kn	2	2.0	2	3	G.
466	P1h20	Sungai Umas Umas	S. Brantian	—	P.Kn	1	1.0	2	4	G.
467	P1h21	Sungai Umas Umas	S. Brantian	—	P.Kn	3	12.0	4	2	B.
468	P1h22	Sungai Tiagau	S. Mawing	—	P.Kl	1	1.5	3	3	Y.B.
469	P1h23	Sungai Umas Umas	S. Mawing	—	P.Kl	1	6.0	3	2	B.
470	P1h24	Sungai Umas Umas	S. Gita	—	P.Kn	1	1.0	2	3	B.Y.
471	P1h25	Sungai Umas Umas	S. Gita	—	P.Kn	1	2.0	2	3	B.Y.
472	P1h26	Sungai Umas Umas	S. Gita	—	P.Kn	1	1.0	2	3	B.Y.
473	P1h27	Sungai Umas Umas	S. Gita	—	P.Kn	1	3.0	2	3	B.G.
474	P1h28	Sungai Umas Umas	S. Brantian	—	P.Kn	1	1.0	2	3	B.Y.
475	P1h29	Sungai Umas Umas	S. Brantian	sandstone	P.Kn	1	2.0	2	3	B.Y.
476	P1h30	Sungai Umas Umas	S. Brantian	—	P.Kn	1	2.0	2	3	B.
477	P1h31	Sungai Tiagau	S. Mawing	—	P.Kl	2	5.0	4	3	G.
478	P1h32	Sungai Umas Umas	S. Sirad Besar	—	P.Kn	1	1.0	2	3	B.Y.
479	P1h33	Sungai Umas Umas	S. Sirad Besar	—	P.Kn	1	2.0	2	3	B.Y.
480	P1h34	Sungai Umas Umas	S. Sirad Besar	—	P.Kn	1	2.0	2	3	B.Y.
481	P1h35	Sungai Umas Umas	S. Sirad Besar	—	P.Kn	1	1.0	2	3	B.Y.
482	P1h36	Sungai Umas Umas	S. Sirad Besar	—	P.Kn	1	1.5	2	3	B.Y.
483	P1h37	Sungai Umas Umas	S. Sirad Besar	—	P.Kn	1	1.0	2	3	B.Y.
484	P1h38	Sungai Umas Umas	S. Sirad Besar	—	P.Kn	1	1.0	2	3	B.Y.
485	P1h39	Sungai Umas Umas	S. Sirad Besar	—	P.Kn	2	3.0	2	3	B.Y.
486	P1h40	Sungai Umas Umas	S. Brantian	siltstone	P.Kn	2	2.0	3	2	B.G.
487	P1h41	Sungai Umas Umas	S. Brantian	sandstone	P.Kn	1	3.5	2	2	B.G.
488	P1h42	Sungai Tiagau	S. Mawing	—	P.Kl	1	2.0	2	3	B.
489	P1h43	Sungai Umas Umas	S. Mawing	—	P.Kn	1	1.0	2	2	Y.B.
490	P1h44	Sungai Umas Umas	S. Mawing	—	P.Kn	1	1.5	3	2	L.B.
491	P1h45	Sungai Umas Umas	S. Mawing	—	P.Kn	1	1.5	3	1	L.B.
492	P1h46	Sungai Umas Umas	S. Brantian	sandstone	P.Kn	2	3.0	2	2	B.
493	P1h47	Sungai Umas Umas	S. Brantian	—	P.Kn	2	7.0	3	2	B.
494	P1h48	Sungai Umas Umas	S. Brantian	sandstone	P.Kn	4	20.0	4	3	G.
495	P1h49	Sungai Umas Umas	S. Brantian	sandstone	P.Kn	1	3.0	4	2	G.B.
496	P1h50	Sungai Umas Umas	S. Brantian	sandstone	P.Kn	1	1.0	3	3	B.G.
497	P1h51	Sungai Tiagau	S. Mawing	sandstone	P.Kl	2	3.0	2	3	B.
498	P1h52	Sungai Umas Umas	S. Serapi	sandstone	P.Kn	1	3.0	3	2	B.
499	P1h53	Sungai Umas Umas	S. Serapi	—	P.Kn	1	1.0	2	3	B.Y.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)

\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
537	PE601	Sungai Umas Umas	S. Gumbal	gabbro	Ub	1	3.0	2	3	D.B.
538	PE602	Sungai Umas Umas	S. Gumbal	gabbro	Ub	1	2.0	3	2	B.
539	PE603	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	1	1.0	3	4	D.G.
540	PE604	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	1	2.0	2	3	Y.B.
541	PE605	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	2	3.0	3	3	Y.B.
542	PE606	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	1	1.5	2	3	D.B.
543	PE607	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	1	2.0	2	3	Y.B.
544	PE608	Sungai Umas Umas	S. Muntai	---	P.Mn	1	3.0	2	2	B.
545	PE609	Sungai Umas Umas	S. Muntai	---	P.Mn	1	2.0	2	2	B.
546	PE610	Sungai Umas Umas	S. Muntai	---	P.Mn	2	5.0	3	2	B.
547	PE611	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	2	3.0	3	2	Y.B.
548	PE612	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	2	5.0	2	3	D.B.
549	PE613	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	2	8.0	3	3	Y.B.
550	PE614	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	1	1.0	3	2	D.B.
551	PE615	Sungai Umas Umas	S. Gumbal	gabbro	Ub	2	5.0	4	3	D.B.
552	PE616	Sungai Umas Umas	S. Gumbal	gabbro	Ub	2	5.0	4	3	D.B.
553	PE617	Sungai Umas Umas	S. Gumbal	gabbro	Ub	1	2.0	3	1	Y.B.
554	PE618	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	1	1.0	4	1	Y.B.
555	PE619	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	1	1.0	3	2	B.
556	PE620	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	3	8.0	4	2	D.B.
557	PE621	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	3	10.0	3	2	D.B.
558	PE622	Sungai Umas Umas	S. Muntai	---	P.Mn	2	5.0	3	3	L.B.
559	PE623	Sungai Umas Umas	S. Muntai	---	P.Mn	1	3.0	2	3	L.B.
560	PE624	Sungai Umas Umas	S. Muntai	---	P.Mn	2	6.0	3	3	L.B.
561	PE625	Sungai Umas Umas	S. Muntai	---	P.Mn	1	4.0	3	3	L.B.
562	PE626	Sungai Umas Umas	S. Muntai	---	P.Mn	1	2.0	3	4	L.G.
563	PE627	Sungai Umas Umas	S. Muntai	---	P.Mn	1	1.5	2	2	B.
564	PE628	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	1	3.0	2	3	L.B.
565	PE629	Sungai Umas Umas	S. Muntai	---	P.Mn	2	6.0	3	3	G.B.
566	PE630	Sungai Umas Umas	S. Muntai	---	P.Mn	2	4.0	2	3	L.B.
567	PE631	Sungai Umas Umas	S. Muntai	---	P.Mn	1	2.0	3	3	L.B.
568	PE632	Sungai Umas Umas	S. Muntai	---	P.Mn	1	2.0	3	3	L.B.
569	PE633	Sungai Umas Umas	S. Muntai	---	P.Mn	1	2.5	2	3	L.B.
570	PE634	Sungai Umas Umas	S. Muntai	---	P.Mn	1	2.0	2	4	G.B.
571	PE635	Sungai Umas Umas	S. Muntai	---	P.Mn	2	4.0	2	4	L.B.
572	PE636	Sungai Umas Umas	S. Muntai	---	P.Mn	1	2.0	2	3	L.B.
573	PE637	Sungai Umas Umas	S. Muntai	---	P.Mn	3	5.0	4	3	L.B.
574	PE638	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	1	4.0	3	3	L.B.
575	PE639	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	1	2.0	2	3	L.B.
576	PE640	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	2	5.0	2	2	L.B.
577	PE641	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	1	2.0	3	2	L.B.
578	PE642	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	2	4.0	3	3	L.B.
579	PE643	Sungai Umas Umas	S. Muntai	---	P.Mn	2	4.0	2	3	L.B.
580	PE644	Sungai Umas Umas	S. Muntai	---	P.Mn	1	3.0	2	3	L.B.
581	PE645	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	1	4.0	3	3	L.B.
582	PE646	Sungai Umas Umas	S. Bang	sandstone	P.Mn	1	1.0	3	3	D.B.
583	PE647	Sungai Umas Umas	S. Bang	sandstone	P.Mn	1	3.0	3	3	D.B.
584	PE648	Sungai Umas Umas	S. Bang	---	P.Mn	1	2.0	2	3	L.G.
585	PE649	Sungai Umas Umas	S. Bang	---	P.Mn	1	2.0	2	3	L.G.
586	PE650	Sungai Umas Umas	S. Bang	sandstone	P.Mn	1	4.0	3	3	L.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
500	PD101	Sungai Umas Umas	S. Brantian	---	P.Mn	1	1.0	3	3	Y.B.
501	PD102	Sungai Umas Umas	---	---	P.Kl	1	4.0	0	3	B.
502	PD103	Sungai Umas Umas	---	---	P.Kl	1	4.0	2	3	B.
503	PD104	Sungai Umas Umas	S. Kowing	---	P.Kl	1	3.0	1	4	C.
504	PD105	Sungai Umas Umas	S. Kowing	---	P.Kl	1	1.5	3	2	L.B.
505	PD106	Sungai Umas Umas	S. Kowing	---	P.Mn	1	1.5	2	3	G.B.
506	PD107	Sungai Umas Umas	S. Kowing	---	P.Mn	1	2.0	3	1	G.
507	PD108	Sungai Umas Umas	S. Kowing	---	P.Mn	1	1.0	2	3	B.
508	PD109	Sungai Umas Umas	S. Kowing	---	P.Mn	1	3.0	2	3	B.
509	PD110	Sungai Umas Umas	S. Brantian	---	P.Mn	1	3.0	2	3	B.
510	PD111	Sungai Umas Umas	S. Brantian	---	P.Mn	1	1.0	2	2	D.B.
511	PD112	Sungai Umas Umas	S. Brantian	---	N.Kp	2	5.0	4	3	Y.B.
512	PD113	Sungai Umas Umas	S. Brantian	---	P.Mn	2	3.0	4	3	Y.B.
513	PD114	Sungai Umas Umas	S. Brantian	---	P.Mn	1	2.0	3	1	B.
514	PD115	Sungai Umas Umas	S. Brantian	---	P.Mn	1	2.0	2	1	B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
515	PEF01	Sungai Umas Umas	S. Segana	sandstone	P.Mn	1	3.0	3	3	L.B.
516	PEF02	Sungai Umas Umas	S. Beeston	sandstone	P.Mn	1	1.5	3	3	L.B.
517	PEF03	Sungai Umas Umas	S. Beeston	---	P.Mn	3	2.0	2	3	L.B.
518	PEF04	Sungai Umas Umas	S. Segana	---	P.Mn	3	5.0	2	3	L.B.
519	PEF05	Sungai Umas Umas	S. Beeston	---	P.Mn	2	3.0	2	4	L.B.
520	PEF06	Sungai Umas Umas	S. Beeston	---	P.Mn	1	4.0	3	3	L.B.
521	PEF07	Sungai Umas Umas	S. Gumbal	---	P.Mn	1	2.0	4	2	D.B.
522	PEF08	Sungai Umas Umas	S. Gumbal	---	P.Mn	1	4.0	4	3	D.B.
523	PEF09	Sungai Umas Umas	S. Gumbal	---	P.Mn	1	1.5	2	3	Y.B.
524	PEF10	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	1	1.0	2	1	Y.B.
525	PEF11	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	2	4.0	3	1	Y.B.
526	PEF12	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	1	1.0	3	3	Y.B.
527	PEF13	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	1	2.0	3	3	Y.B.
528	PEF14	Sungai Umas Umas	S. Muntai	---	P.Mn	1	3.0	4	2	L.B.
529	PEF15	Sungai Umas Umas	S. Muntai	---	P.Mn	1	4.0	3	2	L.B.
530	PEF16	Sungai Umas Umas	S. Segana	---	P.Mn	2	3.0	4	3	Y.B.
531	PEF17	Sungai Umas Umas	S. Segana	sandstone	P.Mn	1	3.0	3	3	B.
532	PEF18	Sungai Umas Umas	S. Segana	---	P.Mn	2	4.0	3	2	L.B.
533	PEF19	Sungai Umas Umas	S. Segana	sandstone	P.Mn	1	3.0	3	2	L.B.
534	PEF20	Sungai Umas Umas	S. Segana	sandstone	P.Mn	1	2.0	2	3	L.B.
535	PEF21	Sungai Umas Umas	S. Muntai	---	P.Mn	1	2.0	3	3	B.
536	PEF22	Sungai Umas Umas	S. Gumbal	---	P.Mn	1	1.0	3	3	Y.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
587	PE621	Sungai Umas Umas	S. Muntai	—	P.Mn	1	0.5	3	3	B.Y.
588	PE622	Sungai Umas Umas	S. Muntai	—	P.Mn	1	1.0	3	3	B.Y.
589	PE623	Sungai Umas Umas	S. Muntai	—	P.Mn	1	0.5	3	3	B.Y.
590	PE624	Sungai Umas Umas	S. Muntai	—	P.Mn	2	4.0	3	3	B.Y.
591	PE625	Sungai Umas Umas	S. Muntai	—	P.Mn	1	1.0	2	3	B.Y.
592	PE626	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	1	3.0	4	3	Y.B.
593	PE627	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	1	4.0	3	3	Y.B.
594	PE628	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	1	2.0	4	3	Y.B.
595	PE629	Sungai Umas Umas	S. Muntai	—	P.Mn	1	2.0	2	4	L.B.
596	PE630	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	1	3.0	3	2	L.B.
597	PE631	Sungai Umas Umas	S. Muntai	sandstone	P.Mn	1	2.0	2	3	L.B.
598	PE632	Sungai Umas Umas	S. Gumbal	sandstone	P.Mn	1	1.0	4	3	D.B.
599	PE633	Sungai Umas Umas	S. Gumbal	shale	P.Mn	1	1.0	2	2	B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
630	PE321	Sungai Umas Umas	S. Umas Umas	—	P.Mn	2	4.0	4	2	B.
631	PE322	Sungai Umas Umas	S. Umas Umas	—	P.Mn	2	5.0	2	3	B.
632	PE323	Sungai Umas Umas	S. Umas Umas	—	P.Mn	2	2.0	3	3	B.
633	PE324	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	4.0	3	3	B.
634	PE325	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	1.0	2	3	G.
635	PE326	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	2.0	4	3	B.
636	PE327	Sungai Umas Umas	S. Umas Umas	—	P.Mn	3	3.0	4	2	B.
637	PE328	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	1.0	2	2	B.
638	PE329	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	3.0	4	3	B.
639	PE330	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	2.0	2	3	B.
640	PE331	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	2.0	4	1	B.
641	PE332	Sungai Umas Umas	S. Umas Umas	sandstone	P.Mn	2	4.0	4	1	B.
642	PE333	Sungai Umas Umas	S. Umas Umas	sandstone	P.Mn	2	3.0	4	1	L.B.
643	PE334	Sungai Umas Umas	S. Sibuku	—	P.Mn	2	3.5	3	2	L.B.
644	PE335	Sungai Umas Umas	S. Sibuku	—	P.Mn	1	3.0	3	2	Y.B.
645	PE336	Sungai Umas Umas	S. Sibuku	s.s./silt.	P.Mn	1	1.5	3	2	Y.B.
646	PE337	Sungai Umas Umas	S. Sibuku	sandstone	P.Mn	1	1.5	2	2	Y.B.
647	PE338	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	1.0	3	3	B.
648	PE339	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	1.0	3	3	B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
649	PEJ01	Sungai Umas Umas	S. Brantian	sandstone	P.Mn	1	2.0	3	3	B.
650	PEJ02	Sungai Umas Umas	—	sandstone	P.Mn	1	3.0	3	3	B.
651	PEJ03	Sungai Umas Umas	—	sandstone	P.Mn	2	2.0	3	2	B.
652	PEJ04	Sungai Umas Umas	S. Sibuku	sandstone	P.Mn	2	4.0	3	2	Y.B.
653	PEJ05	Sungai Umas Umas	S. Sibuku	sandstone	P.Mn	2	4.0	4	2	Y.B.
654	PEJ06	Sungai Umas Umas	S. Sibuku	sandstone	P.Mn	6	2.0	3	2	Y.B.
655	PEJ07	Sungai Umas Umas	S. Sibuku	—	P.Mn	1	2.0	2	3	B.
656	PEJ08	Sungai Umas Umas	S. Brantian	sandstone	P.Mn	1	3.0	0	3	G.
657	PEJ09	Sungai Umas Umas	—	sandstone	P.Mn	2	4.0	3	3	B.
658	PEJ10	Sungai Umas Umas	S. Sibuku	sandstone	P.Mn	3	3.0	3	3	B.
659	PEJ11	Sungai Umas Umas	S. Sibuku	sandstone	P.Mn	1	3.0	3	3	B.
660	PEJ12	Sungai Umas Umas	—	shale	P.Mn	2	2.0	3	2	B.
661	PEJ13	Sungai Umas Umas	—	shale	P.Mn	1	4.0	4	3	B.
662	PEJ14	Sungai Umas Umas	—	—	P.Mn	2	4.0	2	3	B.
663	PEJ15	Sungai Umas Umas	S. Brantian	sandstone	P.Mn	2	2.0	4	3	B.
664	PEJ16	Sungai Umas Umas	—	sandstone	P.Mn	2	3.0	4	3	B.
665	PEJ17	Sungai Umas Umas	—	sandstone	P.Mn	1	2.0	4	2	B.
666	PEJ18	Sungai Umas Umas	—	sandstone	P.Mn	1	2.0	4	3	B.
667	PEJ19	Sungai Umas Umas	—	sandstone	P.Mn	1	2.0	3	3	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
600	PEH01	Sungai Umas Umas	S. Brantian	—	P.Mn	1	1.0	2	3	B.Y.
601	PEH02	Sungai Umas Umas	S. Brantian	—	P.Mn	1	1.5	2	3	B.Y.
602	PEH03	Sungai Umas Umas	S. Brantian	—	P.Mn	1	2.0	2	3	B.Y.
603	PEH04	Sungai Umas Umas	S. Brantian	—	P.Mn	1	1.0	2	3	B.Y.
604	PEH05	Sungai Umas Umas	S. Brantian	—	P.Mn	1	1.0	2	3	B.Y.
605	PEH06	Sungai Umas Umas	S. Brantian	—	P.Mn	2	4.0	2	3	B.Y.
606	PEH07	Sungai Umas Umas	S. Brantian	—	P.Mn	2	4.0	2	3	B.Y.
607	PEH08	Sungai Umas Umas	S. Brantian	—	P.Mn	2	4.0	2	3	B.Y.
608	PEH09	Sungai Umas Umas	S. Brantian	—	P.Mn	1	0.5	3	3	B.Y.
609	PEH10	Sungai Umas Umas	S. Brantian	—	P.Mn	1	3.0	3	3	B.Y.
610	PEH11	Sungai Umas Umas	S. Brantian	—	P.Mn	1	0.5	0	3	B.Y.
611	PEH12	Sungai Umas Umas	S. Sibuku	s.s./silt.	P.Mn	1	2.0	2	3	L.B.
612	PEH13	Sungai Umas Umas	S. Sibuku	s.s./silt.	P.Mn	1	3.0	3	2	G.B.
613	PEH14	Sungai Umas Umas	S. Brantian	sandstone	P.Mn	1	1.5	1	3	L.B.
614	PEH15	Sungai Umas Umas	S. Brantian	—	P.Mn	1	1.0	3	4	Y.B.
615	PEH16	Sungai Umas Umas	S. Brantian	—	P.Mn	1	2.0	2	3	B.Y.
616	PEH17	Sungai Umas Umas	S. Brantian	—	P.Mn	3	6.0	4	3	B.Y.
617	PEH18	Sungai Umas Umas	S. Brantian	—	P.Mn	1	1.0	2	3	B.G.
618	PEH19	Sungai Umas Umas	S. Toe	—	P.Mn	1	1.0	0	3	B.Y.
619	PEH20	Sungai Umas Umas	S. Brantian	—	P.Mn	2	6.0	4	3	B.G.
620	PEH21	Sungai Umas Umas	S. Brantian	—	P.Mn	2	5.0	2	3	B.G.
621	PEH22	Sungai Umas Umas	S. Brantian	—	P.Mn	1	1.0	3	3	B.Y.
622	PEH23	Sungai Umas Umas	S. Brantian	—	P.Mn	1	4.0	2	3	B.Y.
623	PEH24	Sungai Umas Umas	S. Brantian	—	P.Mn	1	1.0	2	3	B.Y.
624	PEH25	Sungai Umas Umas	S. Brantian	—	P.Mn	1	1.0	2	3	B.Y.
625	PEH26	Sungai Umas Umas	S. Brantian	—	P.Mn	1	1.5	2	3	B.Y.
626	PEH27	Sungai Umas Umas	S. Brantian	—	P.Mn	1	2.0	4	3	B.
627	PEH28	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	3.0	1	2	G.
628	PEH29	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	1.0	4	3	B.
629	PEH30	Sungai Umas Umas	S. Umas Umas	—	P.Mn	1	2.0	3	2	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow %	Flow Size %	Color
668	PF01	Sungai Umas Umas	Umas Umas	—	P.Kn	2	3.0	3	3	B.
669	PF02	Sungai Umas Umas	Umas Umas	—	P.Kn	2	2.0	3	3	B.
670	PF03	Sungai Umas Umas	Umas Umas	—	P.Kn	2	2.0	3	3	B.
671	PF04	Sungai Umas Umas	Umas Umas	—	P.Kn	1	4.0	3	3	B.
672	PF05	Sungai Umas Umas	Umas Umas	—	P.Kn	1	4.0	3	3	B.
673	PF06	Sungai Umas Umas	Umas Umas	—	P.Kn	1	4.0	2	3	G.
674	PF07	Sungai Umas Umas	Umas Umas	—	P.Kn	1	4.0	3	3	B.
675	PF08	Sungai Umas Umas	Umas Umas	—	P.Kn	1	4.0	3	3	B.
676	PF09	Sungai Umas Umas	Umas Umas	—	P.Kn	1	1.0	3	3	B.
677	PF10	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	0	2	G.
678	PF11	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	1	2	G.
679	PF12	Sungai Umas Umas	Umas Umas	s. s. breccia	P.Kn	1	1.0	1	2	B.
680	PF13	Sungai Umas Umas	Umas Umas	s. s. breccia	P.Kn	1	2.0	1	2	B.
681	PF14	Sungai Umas Umas	Umas Umas	s. s. breccia	P.Kn	1	2.0	2	2	B.
682	PF15	Sungai Umas Umas	Umas Umas	s. s. breccia	P.Kn	1	3.0	2	2	B.
683	PF16	Sungai Umas Umas	Umas Umas	s. s. breccia	P.Kn	1	3.0	2	2	B.
684	PF17	Sungai Umas Umas	Umas Umas	s. s. breccia	P.Kn	1	7.0	2	2	B.
685	PF18	Sungai Umas Umas	Umas Umas	s. s. breccia	P.Kn	2	4.0	2	2	B.
686	PF19	Sungai Umas Umas	Umas Umas	s. s. breccia	P.Kn	1	2.0	1	2	B.
687	PF20	Sungai Umas Umas	Umas Umas	—	P.Kn	2	3.0	3	3	B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow %	Flow Size %	Color
718	PF61	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	1	1	B.
719	PF62	Sungai Umas Umas	Umas Umas	—	P.Kn	1	4.0	1	1	B.
720	PF63	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	1	1	B.
721	PF64	Sungai Umas Umas	Umas Umas	—	P.Kn	2	4.0	3	3	B.
722	PF65	Sungai Umas Umas	Umas Umas	sandstone	P.Kn	1	4.0	3	3	B.
723	PF66	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	2	2	B.
724	PF67	Sungai Umas Umas	Umas Umas	—	P.Kn	3	3.0	4	4	B.
725	PF68	Sungai Umas Umas	Umas Umas	shale, silt	P.Kn	4	15.0	4	4	B.
726	PF69	Sungai Umas Umas	Umas Umas	—	P.Kn	4	15.0	4	4	B.
727	PF70	Sungai Umas Umas	Umas Umas	sandstone	P.Kn	1	2.0	3	3	B.
728	PF71	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	2	2	B.
729	PF72	Sungai Umas Umas	Umas Umas	shale, silt	P.Kn	4	15.0	4	4	B.
730	PF73	Sungai Umas Umas	Umas Umas	shale, silt	P.Kn	1	7.0	4	4	G.B.
731	PF74	Sungai Umas Umas	Umas Umas	shale	P.Kn	1	3.0	2	2	G.B.
732	PF75	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	2	2	B.
733	PF76	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	2	2	B.
734	PF77	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	2	2	B.
735	PF78	Sungai Umas Umas	Umas Umas	—	P.Kn	1	4.0	3	3	B.
736	PF79	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	3	3	B.
737	PF80	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	3	3	B.
738	PF81	Sungai Umas Umas	Umas Umas	—	P.Kn	2	3.0	1	1	G.
739	PF82	Sungai Umas Umas	Umas Umas	—	P.Kn	1	1.5	2	2	B.
740	PF83	Sungai Umas Umas	Umas Umas	sandstone	P.Kn	1	3.0	4	4	B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow %	Flow Size %	Color
741	PF01	Sungai Umas Umas	Umas Umas	sandstone	P.Kn	1	4.0	3	2	B.
742	PF02	Sungai Umas Umas	Umas Umas	sandstone	P.Kn	1	4.0	3	2	B.
743	PF03	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	2	2	B.
744	PF04	Sungai Umas Umas	Umas Umas	—	P.Kn	1	1.0	2	2	B.
745	PF05	Sungai Umas Umas	Umas Umas	sandstone	P.Kn	3	8.0	3	2	B.
746	PF06	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	1	1	G.
747	PF07	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	1	1	G.
748	PF08	Sungai Umas Umas	Umas Umas	—	P.Kn	2	5.0	1	1	G.
749	PF09	Sungai Umas Umas	Umas Umas	—	P.Kn	1	8.0	3	1	B.
750	PF10	Sungai Umas Umas	Umas Umas	sandstone	P.Kn	1	3.0	1	1	B.
751	PF11	Sungai Umas Umas	Umas Umas	—	P.Kn	2	4.0	1	2	B.
752	PF12	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	2	2	B.
753	PF13	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	2	2	B.
754	PF14	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	2	2	B.
755	PF15	Sungai Umas Umas	Umas Umas	shale	P.Kn	2	3.0	1	2	B.
756	PF16	Sungai Umas Umas	Umas Umas	shale	P.Kn	2	4.0	1	2	B.
757	PF17	Sungai Umas Umas	Umas Umas	sandstone	P.Kn	3.0	2.0	2	3	B.
758	PF18	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	2	2	B.
759	PF19	Sungai Umas Umas	Umas Umas	—	P.Kn	2	2.0	2	2	B.
760	PF20	Sungai Umas Umas	Umas Umas	—	P.Kn	2	2.0	2	2	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow %	Flow Size %	Color
688	PF01	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	3	3	B.
689	PF02	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	3	3	B.
690	PF03	Sungai Umas Umas	Umas Umas	—	P.Kn	1	1.5	3	3	B.
691	PF04	Sungai Umas Umas	Umas Umas	—	P.Kn	2	3.0	3	3	B.
692	PF05	Sungai Umas Umas	Umas Umas	—	P.Kn	2	4.0	3	3	B.
693	PF06	Sungai Umas Umas	Umas Umas	—	P.Kn	2	8.0	3	3	B.
694	PF07	Sungai Umas Umas	Umas Umas	—	KPCS	1	2.0	1	2	G.
695	PF08	Sungai Umas Umas	Umas Umas	—	P.Kn	1	0.5	0	2	G.
696	PF09	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	2	2	G.
697	PF10	Sungai Umas Umas	Umas Umas	—	P.Kn	2	3.0	2	2	G.
698	PF11	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	0	2	G.
699	PF12	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	2	2	G.
700	PF13	Sungai Umas Umas	Umas Umas	—	P.Kn	3	8.0	2	2	B.
701	PF14	Sungai Umas Umas	Umas Umas	—	P.Kn	3	12.0	2	1	B.
702	PF15	Sungai Umas Umas	Umas Umas	—	P.Kn	1	1.0	2	3	G.
703	PF16	Sungai Umas Umas	Umas Umas	—	P.Kn	1	1.0	2	3	B.
704	PF17	Sungai Umas Umas	Umas Umas	—	Ub	1	4.0	2	3	L.B.
705	PF18	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	2	3	L.B.
706	PF19	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	2	2	G.
707	PF20	Sungai Umas Umas	Umas Umas	—	P.Kn	4	8.0	1	2	G.
708	PF21	Sungai Umas Umas	Umas Umas	—	P.Kn	1	1.0	2	3	G.
709	PF22	Sungai Umas Umas	Umas Umas	—	P.Kn	4	10.0	2	2	G.
710	PF23	Sungai Umas Umas	Umas Umas	—	P.Kn	1	1.0	3	3	G.
711	PF24	Sungai Umas Umas	Umas Umas	—	P.Kn	1	4.0	3	3	G.
712	PF25	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	2	1	B.
713	PF26	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	2	1	B.
714	PF27	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	3	1	B.
715	PF28	Sungai Umas Umas	Umas Umas	—	P.Kn	1	3.0	3	1	B.
716	PF29	Sungai Umas Umas	Umas Umas	—	P.Kn	1	4.0	3	1	B.
717	PF30	Sungai Umas Umas	Umas Umas	—	P.Kn	1	2.0	2	1	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Area: Samporna Area Grid: PGF

Table with columns: Ser. No., Sample No., Topographic Map Sheet, Name of Stream, Geology, Geol. Unit, Order, Width (m), Flow, Size, Color. Rows 806-825 and 826-828.

Area: Samporna Area Grid: PFI

Table with columns: Ser. No., Sample No., Topographic Map Sheet, Name of Stream, Geology, Geol. Unit, Order, Width (m), Flow, Size, Color. Rows 791-800 and 801-805.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Area: Samporna Area Grid: PFI

Table with columns: Ser. No., Sample No., Topographic Map Sheet, Name of Stream, Geology, Geol. Unit, Order, Width (m), Flow, Size, Color. Rows 751-770 and 771-780.

Area: Samporna Area Grid: PFI

Table with columns: Ser. No., Sample No., Topographic Map Sheet, Name of Stream, Geology, Geol. Unit, Order, Width (m), Flow, Size, Color. Rows 791-800 and 801-805.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Size	Color
849	P0121	Sungai Tingkayu	S. Iwas Iwas	sandstone	P.Kn	1	1.5	3	1	G.B.
850	P0122	Sungai Tingkayu	S. Iwas Iwas	sandstone	P.Kn	1	1.5	3	3	Y.B.
851	P0123	Sungai Tingkayu	S. Binuang	sandstone	P.Kn	1	1.0	1	2	Y.B.
852	P0124	Sungai Tingkayu	S. Binuang	sandstone	P.Kn	1	2.0	2	3	Y.B.
853	P0125	Sungai Tingkayu	S. Binuang	sandstone	P.Kn	2	4.0	3	3	Y.B.
854	P0126	Sungai Tingkayu	S. Binuang	sandstone	P.Kn	2	5.0	3	3	B.G.
855	P0127	Sungai Tingkayu	S. Binuang	shale	R.Ps	1	1.5	3	2	B.
856	P0128	Sungai Tingkayu	S. Binuang	chert	R.Ps	1	2.5	3	2	D.B.
857	P0129	Sungai Tingkayu	S. Binuang	shale	R.Ps	1	2.0	2	2	Y.B.
858	P0130	Sungai Tingkayu	S. Binuang	shale	P.Kn	1	1.0	2	2	Y.B.
859	P0131	Sungai Tingkayu	S. Binuang	sandstone	P.Kn	2	7.0	2	2	Y.B.
860	P0132	Sungai Tingkayu	S. Binuang	sandstone	P.Kn	1	1.0	2	2	Y.B.
861	P0133	Sungai Tingkayu	S. Binuang	sandstone	P.Kn	1	2.0	2	2	B.
862	P0134	Sungai Tingkayu	S. Iwas Iwas	Limestone	P.Kn	1	1.5	3	2	G.B.
863	P0135	Sungai Tingkayu	S. Iwas Iwas	Limestone	P.Kn	1	2.5	3	1	G.B.
864	P0136	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	2.0	2	2	D.B.
865	P0137	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	1.0	3	2	D.B.
866	P0138	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	2.0	4	2	D.B.
867	P0139	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	2.0	1	1	D.B.
868	P0140	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	2	3.0	3	2	D.B.
869	P0141	Sungai Tingkayu	S. Binuang	—	P.Kn	1	0.5	1	1	Y.B.
870	P0142	Sungai Tingkayu	S. Binuang	—	P.Kn	1	1.5	2	2	Y.B.
871	P0143	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	1.0	1	1	D.B.
872	P0144	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	1.5	3	2	D.B.
873	P0145	Sungai Tingkayu	S. Tingkayu	spilit	P.Kn	1	1.5	2	2	G.B.
874	P0146	Sungai Tingkayu	S. Tingkayu	sandstone	P.Kn	1	2.0	1	3	G.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Size	Color
875	P0101	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	2.0	2	3	B.
876	P0102	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	3.0	3	2	B.
877	P0103	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	2.0	2	2	B.
878	P0104	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	3.0	2	2	G.
879	P0105	Sungai Tingkayu	S. Merotai B.	—	P.Kn	2	3.0	2	2	G.
880	P0106	Sungai Tingkayu	S. Merotai B.	—	P.Kn	2	8.0	2	3	G.
881	P0107	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	2.0	2	3	G.
882	P0108	Sungai Tingkayu	S. Merotai B.	—	P.Kn	3	12.0	2	2	G.
883	P0109	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	2.0	1	3	B.
884	P0110	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	4.0	2	3	B.
885	P0111	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	0.3	0	2	Y.B.
886	P0112	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	5.0	3	3	D.B.
887	P0113	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	2.0	3	1	D.B.
888	P0114	Sungai Tingkayu	S. Merotai B.	—	P.Kn	2	8.0	3	3	D.B.
889	P0115	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	0.5	3	1	Y.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Size	Color
890	P0116	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	1.0	3	3	Y.B.
891	P0117	Sungai Tingkayu	S. Merotai B.	slate	P.Kn	2	5.0	3	2	Y.B.
892	P0118	Sungai Tingkayu	S. Merotai B.	slate	P.Kn	2	6.0	3	2	D.B.
893	P0119	Sungai Tingkayu	S. Merotai B.	tuff	P.Kn	1	1.0	2	2	D.B.
894	P0120	Sungai Tingkayu	S. Merotai B.	—	P.Kn	3	10.0	3	2	D.B.
895	P0121	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	1.0	3	3	D.B.
896	P0122	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	1.0	2	2	Y.B.
897	P0123	Sungai Tingkayu	S. Merotai B.	sandstone	P.Kn	1	2.0	3	3	Y.B.
898	P0124	Sungai Tingkayu	S. Merotai B.	sandstone	P.Kn	3	8.0	3	2	D.B.
899	P0125	Sungai Tingkayu	S. Merotai B.	—	P.Kn	3	15.0	2	4	Y.B.
900	P0126	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	2.5	3	2	Y.B.
901	P0127	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	1.0	2	3	Y.B.
902	P0128	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	2.0	2	2	Y.B.
903	P0129	Sungai Tingkayu	S. Merotai B.	—	P.Kn	2	4.0	4	3	Y.B.
904	P0130	Sungai Tingkayu	S. Merotai B.	—	P.Kn	3	20.0	2	3	D.B.
905	P0131	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	1.5	2	3	D.B.
906	P0132	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	3	8.0	2	2	Y.B.
907	P0133	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	1.5	3	2	B.
908	P0134	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	2.0	2	3	B.
909	P0135	Sungai Tingkayu	S. Merotai B.	—	P.Kn	3	5.0	3	3	D.B.
910	P0136	Sungai Tingkayu	S. Merotai B.	—	P.Kn	3	10.0	3	3	D.B.
911	P0137	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	0.5	2	3	D.G.
912	P0138	Sungai Tingkayu	S. Merotai B.	—	P.Kn	3	10.0	2	2	D.G.
913	P0139	Sungai Tingkayu	S. Merotai B.	—	P.Ku	2	5.0	3	2	P.
914	P0140	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	1.0	2	4	D.G.
915	P0141	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	3	7.0	2	2	B.
916	P0142	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	1.0	3	1	Y.B.
917	P0143	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	1.5	3	2	D.B.
918	P0144	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	3	15.0	2	2	Y.B.
919	P0145	Sungai Tingkayu	S. Merotai B.	shale	P.Kn	3	8.0	4	2	Y.B.
920	P0146	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	3	6.0	3	2	B.G.
921	P0147	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	0.5	3	3	D.B.
922	P0148	Sungai Tingkayu	S. Merotai B.	shale	P.Kn	2	2.0	3	1	B.
923	P0149	Sungai Tingkayu	S. Merotai B.	shale	P.Kn	2	5.0	3	3	D.B.
924	P0150	Sungai Tingkayu	S. Merotai B.	shale	P.Kn	1	1.0	3	2	D.B.
925	P0151	Sungai Tingkayu	S. Merotai B.	shale	P.Kn	1	1.5	2	1	D.B.
926	P0152	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	1.5	2	2	D.B.
927	P0153	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	0.5	2	3	D.B.
928	P0154	Sungai Tingkayu	S. Merotai B.	shale	P.Kn	1	1.5	2	2	D.B.
929	P0155	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	2.0	1	2	D.B.
930	P0156	Sungai Tingkayu	S. Merotai B.	shale	P.Kn	1	1.0	2	2	D.B.
931	P0157	Sungai Tingkayu	S. Merotai B.	sandstone	P.Kn	4	15.0	4	3	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
982	PGJ51	Tawau North	S. Merotai B.	---	Q <sub>2</sub>	1	2.5	3	2	B.
983	PGJ52	Tawau North	S. Merotai B.	---	P <sub>1</sub> Km	2	2.0	3	2	B.
984	PGJ53	Tawau North	S. Merotai B.	---	P <sub>1</sub> Km	1	2.0	2	1	B.
985	PGJ54	Tawau North	S. Merotai B.	---	P <sub>1</sub> Km	1	3.0	2	1	B.
986	PGJ55	Tawau North	S. Merotai B.	---	I <sub>1</sub> In	2	2.0	1	3	B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
987	PGK01	Tawau North	S. Merotai B.	---	Q <sub>2</sub>	1	1.0	3	3	B.
988	PGK02	Tawau North	S. Merotai B.	---	Q <sub>2</sub>	4	10.0	1	3	B.
989	PGK03	Tawau North	S. Merotai B.	---	Q <sub>2</sub>	5	13.0	2	4	B.G.
990	PGK04	Tawau North	S. Merotai B.	---	Q <sub>2</sub>	4	7.0	3	1	B.G.
991	PGK05	Tawau North	S. Merotai B.	---	Q <sub>2</sub>	4	14.0	2	2	B.
992	PGK06	Tawau North	S. Merotai B.	---	Q <sub>2</sub>	1	2.0	2	2	B.
993	PGK07	Tawau North	S. Merotai K.	---	I <sub>2</sub> B <sub>3</sub>	1	1.0	3	1	B.G.
994	PGK08	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	3	10.0	3	1	B.G.
995	PGK09	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	3	8.0	1	1	B.G.
996	PGK10	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	3	6.0	1	3	B.G.
997	PGK11	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	3	5.0	1	3	B.G.
998	PGK12	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	2	2.0	1	3	B.G.
999	PGK13	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	1.5	4	3	B.G.
1000	PGK14	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	2	4.0	4	3	G.
1001	PGK15	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	4.0	4	2	G.
1002	PGK16	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	2	3.0	4	2	G.
1003	PGK17	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	4.0	4	1	G.
1004	PGK18	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	0.5	2	2	G.
1005	PGK19	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	1.0	3	3	G.
1006	PGK20	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	2.0	4	3	G.
1007	PGK21	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	0.9	2	2	B.
1008	PGK22	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	0.8	3	2	B.G.
1009	PGK23	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	2	3.0	3	2	G.
1010	PGK24	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	0.5	2	4	G.
1011	PGK25	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	4.0	3	2	G.
1012	PGK26	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	3.0	4	2	G.
1013	PGK27	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	1.0	4	2	B.G.
1014	PGK28	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	1.0	4	1	B.G.
1015	PGK29	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	2	2.0	3	2	G.
1016	PGK30	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	2	2.0	4	2	G.
1017	PGK31	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	5.0	2	2	G.
1018	PGK32	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	1.0	2	3	B.G.
1019	PGK33	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	2	4.0	1	3	B.G.
1020	PGK34	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	2	1.0	4	3	B.G.
1021	PGK35	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	0.6	3	2	G.
1022	PGK36	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	2	2.0	3	2	B.
1023	PGK37	Tawau North	S. Merotai K.	---	I <sub>2</sub> B <sub>3</sub>	1	0.6	3	2	B.G.
1024	PGK38	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	0.5	1	2	B.
1025	PGK39	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	0.7	2	3	B.
1026	PGK40	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	0.6	3	2	B.
1027	PGK41	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	1	0.7	1	3	L.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
932	PGJ01	Sungai Tingkayu	S. Merotai B.	sandstone	P <sub>1</sub> Km	1	2.0	0	2	G.S.
933	PGJ02	Sungai Tingkayu	---	slate	P <sub>1</sub> Km	1	3.0	1	3	Y.B.
934	PGJ03	Sungai Tingkayu	---	slate	P <sub>1</sub> Km	1	1.0	3	3	Y.B.
935	PGJ04	Sungai Tingkayu	---	---	P <sub>1</sub> Km	2	1.0	2	3	B.
936	PGJ05	Sungai Tingkayu	S. Merotai B.	---	P <sub>1</sub> Km	4	12.0	3	2	G.B.
937	PGJ06	Sungai Tingkayu	S. Merotai B.	---	P <sub>1</sub> Km	4	7.0	3	2	G.B.
938	PGJ07	Sungai Tingkayu	S. Merotai B.	shale	P <sub>1</sub> Km	1	2.0	3	3	D.B.
939	PGJ08	Sungai Tingkayu	S. Merotai B.	shale	P <sub>1</sub> Km	1	1.0	2	3	D.B.
940	PGJ09	Sungai Tingkayu	S. Merotai B.	gabbro	I <sub>1</sub> In	1	2.0	3	2	D.B.
941	PGJ10	Tawau North	S. Merotai B.	andesite	I <sub>1</sub> In	2	4.0	2	1	B.G.
942	PGJ11	Tawau North	---	---	P <sub>1</sub> Km	1	2.0	2	1	B.
943	PGJ12	Tawau North	---	---	P <sub>1</sub> Km	2	2.0	2	1	B.
944	PGJ13	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	1	1.5	3	1	B.
945	PGJ14	Tawau North	S. Merotai B.	---	P <sub>1</sub> Km	1	0.7	2	3	Y.B.
946	PGJ15	Tawau North	S. Merotai B.	---	P <sub>1</sub> Km	2	1.0	2	3	B.
947	PGJ16	Tawau North	S. Merotai B.	---	P <sub>1</sub> Km	1	1.0	0	4	G.
948	PGJ17	Tawau North	S. Merotai B.	---	P <sub>1</sub> Km	4	20.0	3	3	Y.B.
949	PGJ18	Tawau North	S. Merotai B.	---	P <sub>1</sub> Km	1	0.5	2	3	Y.B.
950	PGJ19	Tawau North	S. Merotai B.	tuff	P <sub>1</sub> Km	2	0.5	0	4	B.
951	PGJ20	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	2	3.0	2	3	B.
952	PGJ21	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	2	1.0	3	3	B.
953	PGJ22	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	4	10.0	4	3	B.
954	PGJ23	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	2	2.0	3	3	D.B.
955	PGJ24	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	2	2.0	2	3	D.B.
956	PGJ25	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	2	3.0	2	3	B.
957	PGJ26	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	1	3.0	2	3	B.
958	PGJ27	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	2	8.0	1	3	B.G.
959	PGJ28	Tawau North	S. Merotai B.	andesite	I <sub>1</sub> Km	2	7.0	2	2	B.G.
960	PGJ29	Tawau North	S. Merotai B.	serpentinite	Ub	2	2.0	2	2	B.G.
961	PGJ30	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	1	1.0	3	1	B.
962	PGJ31	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	2	3.0	1	2	B.
963	PGJ32	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	2	2.0	2	4	B.
964	PGJ33	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	1	2.0	2	4	B.
965	PGJ34	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	3	4.0	3	1	B.
966	PGJ35	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	1	0.5	1	2	B.
967	PGJ36	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	4	12.0	3	3	B.
968	PGJ37	Tawau North	S. Merotai B.	sandstone	P <sub>1</sub> Km	2	1.0	3	2	B.
969	PGJ38	Tawau North	S. Merotai B.	---	P <sub>1</sub> Km	2	1.5	2	1	B.G.
970	PGJ39	Tawau North	S. Merotai B.	---	P <sub>1</sub> Km	2	17.0	3	1	Y.B.
971	PGJ40	Tawau North	S. Merotai B.	---	P <sub>1</sub> Km	1	1.0	2	3	Y.B.
972	PGJ41	Tawau North	S. Merotai B.	tuff	P <sub>1</sub> Km	1	0.3	1	4	D.B.
973	PGJ42	Tawau North	S. Merotai B.	---	Q <sub>2</sub>	1	2.5	3	2	Y.B.
974	PGJ43	Tawau North	S. Merotai B.	---	Q <sub>2</sub>	1	1.0	3	2	Y.B.
975	PGJ44	Tawau North	S. Merotai B.	---	Q <sub>2</sub>	1	1.0	3	1	Y.B.
976	PGJ45	Tawau North	S. Merotai B.	---	Q <sub>2</sub>	4	10.0	3	2	Y.B.
977	PGJ46	Tawau North	S. Merotai K.	---	Q <sub>2</sub>	4	15.0	2	2	D.B.
978	PGJ47	Tawau North	S. Merotai K.	---	I <sub>2</sub> B <sub>3</sub>	1	2.5	2	3	D.B.
979	PGJ48	Tawau North	S. Merotai K.	---	I <sub>2</sub> B <sub>3</sub>	3	10.0	3	1	B.
980	PGJ49	Tawau North	S. Merotai K.	---	I <sub>2</sub> B <sub>3</sub>	2	1.0	3	1	B.
981	PGJ50	Tawau North	S. Merotai K.	---	I <sub>2</sub> B <sub>3</sub>	3	7.0	3	2	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)



Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #	Size #	Color
1060	Phg01	Sungai Tingkayu	S. Tingkayu	sandstone	P.kn	2	4.0	3	2	G.B.
1061	Phg02	Sungai Tingkayu	S. Tingkayu	sandstone	P.kn	2	4.5	3	2	G.B.
1062	Phg03	Sungai Tingkayu	S. Tingkayu	sandstone	P.kn	1	3.0	3	1	G.B.
1063	Phg04	Sungai Tingkayu	S. Tingkayu	sandstone	P.kn	1	4.0	3	1	G.B.
1064	Phg05	Sungai Tingkayu	S. Tingkayu	sandstone	P.kn	1	4.0	3	2	G.B.
1065	Phg06	Sungai Tingkayu	S. Tingkayu	sandstone	P.kn	1	1.0	3	3	Y.B.
1066	Phg07	Sungai Tingkayu	S. Binauang	sandstone	P.kn	2	2.5	3	4	Y.B.
1067	Phg08	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	0.3	3	2	Y.B.
1068	Phg09	Sungai Tingkayu	S. Binauang	sandstone	P.kn	2	2.0	3	2	Y.B.
1069	Phg10	Sungai Tingkayu	S. Binauang	sandstone	Q <sub>1</sub>	2	2.0	2	3	Y.B.
1070	Phg11	Sungai Tingkayu	S. Binauang	sandstone	Q <sub>1</sub>	3	4.0	2	3	G.B.
1071	Phg12	Sungai Tingkayu	S. Binauang	sandstone	P.kn	2	2.0	2	3	Y.B.
1072	Phg13	Sungai Tingkayu	S. Binauang	sandstone	Q <sub>1</sub>	3	6.0	3	3	Y.B.
1073	Phg14	Sungai Tingkayu	S. Binauang	sandstone	Q <sub>1</sub>	3	2.0	2	3	Y.B.
1074	Phg15	Sungai Tingkayu	S. Binauang	sandstone	Q <sub>1</sub>	3	7.0	2	3	G.B.
1075	Phg16	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	2.0	2	1	L.B.
1076	Phg17	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	5.0	2	1	L.B.
1077	Phg18	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	5.0	2	1	L.B.
1078	Phg19	Sungai Tingkayu	S. Binauang	sandstone	P.kn	3	15.0	2	3	L.B.
1079	Phg20	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	5.0	2	2	L.B.
1080	Phg21	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	2.0	1	1	L.B.
1081	Phg22	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	1.0	2	3	Y.B.
1082	Phg23	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	2.0	4	1	Y.B.
1083	Phg24	Sungai Tingkayu	S. Binauang	sandstone	P.kn	2	6.0	3	2	Y.B.
1084	Phg25	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	0.5	2	3	Y.B.
1085	Phg26	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	3.0	2	2	D.B.
1086	Phg27	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	2.0	1	3	D.B.
1087	Phg28	Sungai Tingkayu	S. Binauang	sandstone	P.kn	2	3.0	3	2	D.B.
1088	Phg29	Sungai Tingkayu	S. Binauang	sandstone	P.kn	3	10.0	1	4	D.G.
1089	Phg30	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	0.5	2	4	D.G.
1090	Phg31	Sungai Tingkayu	S. Binauang	sandstone	P.kn	2	5.0	1	4	D.G.
1091	Phg32	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	1.5	1	3	Y.B.
1092	Phg33	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	1.0	1	4	Y.B.
1093	Phg34	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	0.7	2	3	D.
1094	Phg35	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	1.0	2	3	Y.B.
1095	Phg36	Sungai Tingkayu	S. Binauang	siltstone	P.kn	2	2.5	2	3	D.B.
1096	Phg37	Sungai Tingkayu	S. Binauang	siltstone	P.kn	2	5.0	2	4	D.B.
1097	Phg38	Sungai Tingkayu	S. Binauang	siltstone	P.kn	3	15.0	3	3	D.B.
1098	Phg39	Sungai Tingkayu	S. Binauang	siltstone	P.kn	1	1.5	2	2	Y.B.
1099	Phg40	Sungai Tingkayu	S. Binauang	siltstone	P.kn	1	1.5	1	3	D.B.
1100	Phg41	Sungai Tingkayu	S. Binauang	siltstone	P.kn	2	10.0	1	1	B.
1101	Phg42	Sungai Tingkayu	S. Binauang	siltstone	P.kn	2	10.0	4	1	Y.B.
1102	Phg43	Sungai Tingkayu	S. Binauang	siltstone	P.kn	3	15.0	2	3	Y.B.
1103	Phg44	Sungai Tingkayu	S. Binauang	siltstone	P.kn	2	4.0	3	3	D.B.
1104	Phg45	Sungai Tingkayu	S. Binauang	siltstone	P.kn	2	1.5	2	3	Y.B.
1105	Phg46	Sungai Tingkayu	S. Binauang	siltstone	P.kn	2	2.0	2	2	Y.B.
1106	Phg47	Sungai Tingkayu	S. Binauang	siltstone	P.kn	1	5.0	3	1	L.B.
1107	Phg48	Sungai Tingkayu	S. Kalumpang	siltstone	P.kn	1	0.6	3	2	B.
1108	Phg49	Sungai Tingkayu	S. Lumpang	siltstone	P.kn	1	2.0	2	3	Y.B.
1109	Phg50	Sungai Tingkayu	S. Kalumpang	siltstone	P.kn	1	1.0	3	2	B.
1110	Phg51	Sungai Tingkayu	S. Binauang	sandstone	P.kn	2	2.5	2	2	D.B.
1111	Phg52	Sungai Tingkayu	S. Binauang	sandstone	P.kn	1	2.5	2	2	G.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #	Size #	Color
1028	Pgn01	Tawau North	S. Merotai K.	—	Q <sub>2</sub>	2	1.0	2	3	G.
1029	Pgn02	Tawau North	S. Merotai K.	—	Q <sub>2</sub>	2	1.0	4	2	G.
1030	Pgn03	Tawau North	S. Bombalai	—	Q <sub>2</sub>	2	4.0	4	2	G.G.
1031	Pgn04	Tawau North	S. Bombalai	—	Q <sub>2</sub>	2	6.0	4	2	G.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #	Size #	Color
1032	Phf01	Sungai Tingkayu	S. Tingkayu	sandstone	P.kn	1	1.0	2	3	G.B.
1033	Phf02	Sungai Tingkayu	S. Tingkayu	sandstone	P.kn	1	2.0	2	3	B.
1034	Phf03	Sungai Tingkayu	S. Tingkayu	sandstone	P.kn	1	2.0	2	3	B.
1035	Phf04	Sungai Tingkayu	S. Tingkayu	sandstone	P.kn	4	20.0	1	3	B.
1036	Phf05	Sungai Tingkayu	S. Tingkayu	—	Ub	2	3.0	3	2	B.
1037	Phf06	Sungai Tingkayu	S. Tingkayu	—	Ub	2	2.0	2	2	B.
1038	Phf07	Sungai Tingkayu	S. Tingkayu	—	Ub	2	4.0	4	3	B.
1039	Phf08	Sungai Tingkayu	S. Tingkayu	—	Ub	2	10.0	4	3	B.
1040	Phf09	Sungai Tingkayu	S. Tingkayu	—	KPS	1	2.0	3	3	B.
1041	Phf10	Sungai Tingkayu	S. Tingkayu	—	KPS	1	2.0	3	2	B.
1042	Phf11	Sungai Tingkayu	S. Tingkayu	—	KPS	1	2.0	3	2	B.
1043	Phf12	Sungai Tingkayu	S. Tingkayu	—	KPS	2	7.0	1	2	D.B.
1044	Phf13	Sungai Tingkayu	S. Tingkayu	—	KPS	2	8.0	1	3	B.
1045	Phf14	Sungai Tingkayu	S. Tingkayu	vol. breccia	KPS	1	1.5	3	1	B.
1046	Phf15	Sungai Tingkayu	S. Tingkayu	vol. breccia	KPS	1	3.0	3	2	B.
1047	Phf16	Sungai Tingkayu	S. Tingkayu	tuff breccia	KPS	1	3.0	3	2	B.
1048	Phf17	Sungai Tingkayu	S. Tingkayu	tuff breccia	KPS	1	4.0	4	4	L.B.
1049	Phf18	Sungai Tingkayu	S. Tingkayu	—	KPS	2	5.0	3	2	G.B.
1050	Phf19	Sungai Tingkayu	S. Tingkayu	—	KPS	1	2.0	2	1	B.
1051	Phf20	Sungai Tingkayu	S. Tingkayu	sandstone	P.kn	1	2.0	2	1	B.
1052	Phf21	Sungai Tingkayu	S. Tingkayu	vol. breccia	KPS	1	4.0	3	2	B.
1053	Phf22	Sungai Tingkayu	S. Tingkayu	tuff breccia	KPS	1	2.0	3	2	Y.B.
1054	Phf23	Sungai Tingkayu	S. Tingkayu	tuff	KPS	1	1.0	3	2	L.B.
1055	Phf24	Sungai Tingkayu	S. Tingkayu	—	KPS	1	2.0	3	2	L.B.
1056	Phf25	Sungai Tingkayu	S. Tingkayu	—	KPS	2	2.0	3	2	B.
1057	Phf26	Sungai Tingkayu	S. Tingkayu	—	KPS	1	3.0	3	3	B.
1058	Phf27	Sungai Tingkayu	S. Tingkayu	—	KPS	1	3.0	3	3	B.
1059	Phf28	Sungai Tingkayu	S. Tingkayu	—	Ub	1	2.0	4	3	G.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Size	Color
1112	PH101	Sungai Tingkayu	S. Binuang	—	P.Kn	1	1.0	1	2	D.B.
1113	PH102	Sungai Tingkayu	S. Binuang	—	P.Kn	1	2.5	3	2	D.B.
1114	PH103	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	2.0	2	2	D.B.
1115	PH104	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	1.5	3	2	Y.B.
1116	PH105	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	0.5	0	4	D.B.
1117	PH106	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	2.0	1	4	Y.B.
1118	PH107	Sungai Tingkayu	S. Merotai B.	—	P.Kn	2	1.0	3	2	Y.B.
1119	PH108	Sungai Tingkayu	S. Merotai B.	basalt	I.An	1	1.0	2	1	D.B.
1120	PH109	Sungai Tingkayu	S. Merotai B.	basalt	I.An	2	5.0	2	2	D.B.
1121	PH110	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	0.5	2	4	D.B.
1122	PH111	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	2	6.0	3	1	D.B.
1123	PH112	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	2	1.0	3	1	B.
1124	PH113	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	2	4.0	3	2	D.B.
1125	PH114	Sungai Tingkayu	S. Langlein	lapilli tuff	P.Kn	1	4.0	2	3	B.Y.
1126	PH115	Sungai Tingkayu	S. Langlein	—	P.Kn	1	1.5	2	3	B.Y.
1127	PH116	Sungai Tingkayu	S. Langlein	—	P.Kn	2	3.5	2	3	B.Y.
1128	PH117	Sungai Tingkayu	S. Langlein	—	P.Kn	2	1.0	2	3	B.Y.
1129	PH118	Sungai Tingkayu	S. Langlein	—	P.Kn	3	5.0	3	3	B.Y.
1130	PH119	Sungai Tingkayu	S. Langlein	—	P.Kn	1	1.0	2	3	B.Y.
1131	PH120	Sungai Tingkayu	S. Langlein	—	P.Kn	2	2.0	2	3	B.Y.
1132	PH121	Sungai Tingkayu	S. Langlein	—	P.Kn	3	5.0	3	3	B.Y.
1133	PH122	Sungai Tingkayu	S. Langlein	—	P.Kn	3	2.0	2	3	B.Y.
1134	PH123	Sungai Tingkayu	S. Langlein	—	I.An	1	3.0	3	3	B.Y.
1135	PH124	Sungai Tingkayu	S. Langlein	—	I.An	1	2.0	2	3	B.Y.
1136	PH125	Sungai Tingkayu	S. Langlein	—	I.An	1	1.0	2	3	D.B.
1137	PH126	Sungai Tingkayu	S. Langlein	—	I.An	1	3.0	3	1	D.B.
1138	PH127	Sungai Tingkayu	S. Langlein	andesite	I.An	3	6.0	4	2	D.B.
1139	PH128	Sungai Tingkayu	S. Langlein	andesite	I.An	1	2.0	3	2	G.
1140	PH129	Sungai Tingkayu	S. Langlein	—	I.An	2	5.0	3	2	D.B.
1141	PH130	Sungai Tingkayu	S. Langlein	—	I.An	2	7.0	4	2	D.B.
1142	PH131	Sungai Tingkayu	S. Langlein	—	I.An	1	3.0	3	2	D.B.
1143	PH132	Sungai Tingkayu	S. Langlein	—	I.An	2	4.0	3	2	D.B.
1144	PH133	Sungai Tingkayu	S. Langlein	—	I.An	2	5.0	4	2	D.B.
1145	PH134	Sungai Tingkayu	S. Langlein	—	I.An	1	3.0	4	2	D.B.
1146	PH135	Sungai Tingkayu	S. Langlein	andesite	I.An	2	5.0	3	2	D.B.
1147	PH136	Sungai Tingkayu	S. Langlein	andesite	I.An	2	5.0	4	2	D.B.
1148	PH137	Sungai Tingkayu	S. Kalumpang	—	P.Kn	3	6.0	3	3	B.Y.
1149	PH138	Sungai Tingkayu	S. Kalumpang	—	P.Kn	2	6.0	3	3	B.Y.
1150	PH139	Sungai Tingkayu	S. Kalumpang	—	P.Kn	3	5.0	3	3	B.Y.
1151	PH140	Sungai Tingkayu	S. Kalumpang	—	P.Kn	2	6.0	3	3	B.Y.
1152	PH141	Sungai Tingkayu	S. Kalumpang	—	P.Kn	1	1.0	2	3	B.Y.
1153	PH142	Sungai Tingkayu	S. Kalumpang	—	I.An	2	5.0	3	1	D.B.
1154	PH143	Sungai Tingkayu	S. Kalumpang	tuff	I.An	2	4.0	3	1	D.B.
1155	PH144	Sungai Tingkayu	S. Kalumpang	—	I.An	1	1.5	3	3	B.Y.
1156	PH145	Sungai Tingkayu	S. Kalumpang	—	I.An	2	4.0	3	3	B.Y.
1157	PH146	Sungai Tingkayu	S. Kalumpang	—	I.An	1	1.0	3	3	B.Y.
1158	PH147	Sungai Tingkayu	S. Kalumpang	—	I.An	2	5.0	3	3	B.Y.
1159	PH148	Sungai Tingkayu	S. Kalumpang	—	I.An	1	4.0	3	3	B.Y.
1160	PH149	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	1.0	2	3	Y.B.
1161	PH150	Sungai Tingkayu	S. Kalumpang	—	I.An	1	2.0	3	3	B.Y.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Size	Color
1162	PH101	Sungai Tingkayu	S. Merotai B.	conglomerate	P.Kn	1	1.5	3	2	B.
1163	PH102	Sungai Tingkayu	S. Merotai B.	conglomerate	P.Kn	2	2.0	2	1	D.B.
1164	PH103	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	0.5	2	2	D.B.
1165	PH104	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	1.0	2	2	D.B.
1166	PH105	Sungai Tingkayu	S. Merotai B.	silt./cgl.	P.Kn	1	1.5	2	2	D.B.
1167	PH106	Sungai Tingkayu	S. Merotai B.	silt./cgl.	P.Kn	1	1.0	2	2	Y.B.
1168	PH107	Sungai Tingkayu	S. Merotai B.	silt./cgl.	P.Kn	2	4.0	1	2	D.B.
1169	PH108	Sungai Tingkayu	S. Merotai B.	conglomerate	P.Kn	2	3.0	4	2	Y.B.
1170	PH109	Sungai Tingkayu	S. Merotai B.	—	P.Kn	2	3.0	4	2	Y.B.
1171	PH110	Sungai Tingkayu	S. Merotai B.	—	P.Kn	1	1.0	2	3	Y.B.
1172	PH111	Sungai Tingkayu	S. Merotai B.	siltstone	P.Kn	1	1.0	4	3	D.B.
1173	PH112	Sungai Tingkayu	S. Merotai B.	andesite	I.An	1	1.5	4	2	B.
1174	PH113	Sungai Tingkayu	S. Merotai B.	andesite	I.An	2	5.0	3	1	B.
1175	PH114	Tawau North	S. Merotai B.	conglomerate	P.Kn	1	3.0	1	3	Y.B.
1176	PH115	Tawau North	S. Merotai B.	conglomerate	P.Kn	1	0.5	0	3	Y.B.
1177	PH116	Tawau North	S. Merotai B.	conglomerate	P.Kn	1	1.0	2	3	D.S.
1178	PH117	Tawau North	S. Merotai B.	conglomerate	P.Kn	1	1.0	2	3	D.S.
1179	PH118	Tawau North	S. Merotai B.	conglomerate	P.Kn	3	6.0	4	1	Y.B.
1180	PH119	Tawau North	S. Merotai B.	conglomerate	P.Kn	2	3.0	3	3	Y.B.
1181	PH120	Tawau North	S. Merotai B.	conglomerate	P.Kn	2	3.0	4	1	Y.B.
1182	PH121	Tawau North	S. Merotai B.	tfc. silt.	P.Kn	2	7.0	1	2	Y.B.
1183	PH122	Tawau North	S. Merotai B.	tfc. silt.	P.Kn	2	5.0	2	2	Y.B.
1184	PH123	Tawau North	S. Merotai B.	conglomerate	P.Kn	2	7.0	1	2	Y.B.
1185	PH124	Tawau North	S. Merotai B.	conglomerate	P.Kn	2	2.0	3	1	Y.B.
1186	PH125	Tawau North	S. Merotai B.	andesite	I.An	1	3.0	3	2	Y.B.
1187	PH126	Tawau North	S. Merotai B.	conglomerate	P.Kn	2	0.3	1	3	Y.B.
1188	PH127	Tawau North	S. Merotai B.	conglomerate	P.Kn	1	2.0	2	2	Y.B.
1189	PH128	Tawau North	S. Merotai B.	siltstone	P.Kn	1	5.0	3	2	B.
1190	PH129	Tawau North	S. Merotai B.	siltstone	P.Kn	1	3.0	3	2	B.
1191	PH130	Tawau North	S. Merotai B.	altered and.	I.An	1	2.5	3	3	B.
1192	PH131	Tawau North	S. Merotai B.	conglomerate	P.Kn	2	5.0	3	2	D.B.
1193	PH132	Tawau North	S. Merotai B.	silt./cgl.	P.Kn	2	7.0	3	2	E.
1194	PH133	Tawau North	S. Merotai B.	silt. and.	I.An	1	8.0	2	2	E.
1195	PH134	Tawau North	S. Merotai B.	andesite	I.An	1	1.0	2	3	E.
1196	PH135	Tawau North	S. Merotai B.	andesite	I.An	1	1.5	3	2	E.
1197	PH136	Tawau North	S. Merotai B.	andesite	I.An	2	5.0	3	2	D.B.
1198	PH137	Tawau North	S. Merotai B.	silt. and.	I.An	2	0.5	2	2	E.
1199	PH138	Tawau North	S. Merotai B.	andesite	I.An	1	1.0	2	2	E.
1200	PH139	Tawau North	S. Merotai B.	andesite	I.An	1	3.0	3	2	E.
1201	PH140	Tawau North	S. Merotai B.	—	I.Ba	1	0.6	3	4	D.B.
1202	PH141	Tawau North	S. Merotai K.	—	I.Ba	1	0.5	2	4	D.B.
1203	PH142	Tawau North	S. Merotai K.	—	I.Ba	1	1.0	1	3	Y.B.
1204	PH143	Tawau North	S. Merotai K.	—	I.Ba	2	10.0	3	2	Y.B.
1205	PH144	Tawau North	S. Merotai K.	andesite	I.An	1	1.0	2	3	D.B.
1206	PH145	Tawau North	S. Merotai K.	altered and.	I.An	1	4.0	2	3	Y.B.
1207	PH146	Tawau North	S. Merotai K.	altered and.	I.An	1	2.0	2	3	B.
1208	PH147	Tawau North	S. Tawau	—	I.An	1	1.0	2	2	E.
1209	PH148	Tawau North	S. Tawau	—	I.An	1	4.0	4	1	E.
1210	PH149	Tawau North	S. Tawau	—	I.An	1	4.0	4	1	E.
1211	PH150	Tawau North	S. Merotai B.	conglomerate	P.Kn	1	6.0	2	2	Y.B.
1212	PH151	Sungai Tingkayu	S. Langlein	—	I.An	1	2.0	4	1	D.B.
1213	PH152	Sungai Tingkayu	S. Langlein	—	I.An	1	3.0	4	1	D.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Flow Size	Color
1267	PHK54	Tawau North	S. Merotai K.	—	Q <sub>1</sub>	1	0.5	3	2	D.B.
1268	PHK55	Tawau North	S. Merotai K.	—	Q <sub>1</sub>	1	0.5	3	1	B.B.
1269	PHK56	Tawau North	S. Merotai K.	basalt	I <sub>2</sub> Ba	1	1.5	4	1	D.B.
1270	PHK57	Tawau North	S. Merotai K.	—	I <sub>2</sub> Ba	1	1.0	3	1	D.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Flow Size	Color
1271	PHM1	Tawau North	S. Bombalai	—	Q <sub>1</sub>	1	5.0	4	2	G.
1272	PHM2	Tawau North	S. Bombalai	—	Q <sub>1</sub>	1	3.0	2	3	G.
1273	PHM3	Tawau North	S. Bombalai	—	Q <sub>1</sub>	1	3.0	4	2	G.
1274	PHM4	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	4	10.0	4	1	G.B.
1275	PHM5	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	1	2.5	3	2	D.B.
1276	PHM6	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	1	0.3	2	2	D.B.
1277	PHM7	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	1	0.2	0	3	D.B.
1278	PHM8	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	2	8.0	3	2	D.B.
1279	PHM9	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	2	10.0	3	2	D.B.
1280	PHM10	Tawau North	S. Tawau	—	Q <sub>2</sub>	4	20.0	3	2	B.
1281	PHM11	Tawau North	S. Tawau	—	Q <sub>2</sub>	2	7.0	3	3	B.
1282	PHM12	Tawau North	S. Tawau	—	Q <sub>2</sub>	3	15.0	3	3	B.
1283	PHM13	Tawau North	S. Tawau	—	Q <sub>2</sub>	4	15.0	3	3	G.B.
1284	PHM14	Tawau North	S. Tawau	—	Q <sub>2</sub>	4	10.0	4	3	G.B.
1285	PHM15	Tawau North	S. Tawau	—	Q <sub>2</sub>	4	12.0	4	3	G.B.
1286	PHM16	Tawau North	S. Tawau	—	Q <sub>2</sub>	1	2.0	1	3	G.B.
1287	PHM17	Tawau North	S. Tajong	—	I <sub>2</sub> Ba	1	4.0	4	1	B.
1288	PHM18	Tawau North	S. Tajong	andesite	I <sub>2</sub> Ba	1	2.0	2	1	B.
1289	PHM19	Tawau North	S. Tajong	—	I <sub>2</sub> Ba	1	1.0	2	2	D.B.
1290	PHM20	Tawau North	S. Tajong	andesite	I <sub>2</sub> Ba	2	3.0	3	1	B.
1291	PHM21	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	1	10.0	4	1	G.B.
1292	PHM22	Tawau North	S. Tajong	—	Q <sub>2</sub>	1	3.0	3	2	B.
1293	PHM23	Tawau North	S. Inam	—	Q <sub>1</sub>	1	2.0	2	2	B.
1294	PHM24	Tawau North	S. Tajong	—	I <sub>2</sub> Ba	1	0.8	2	2	B.
1295	PHM25	Tawau North	S. Tajong	—	I <sub>2</sub> Ba	1	0.7	2	2	B.
1296	PHM26	Tawau North	S. Tajong	—	Q <sub>1</sub>	2	1.5	3	3	D.B.
1297	PHM27	Tawau North	S. Tajong	—	Q <sub>1</sub>	2	1.5	3	2	D.B.
1298	PHM28	Tawau North	S. Tajong	—	Q <sub>2</sub>	2	2.0	4	3	Black
1299	PHM29	Tawau North	S. Tajong	—	Q <sub>2</sub>	3	2.0	4	2	Black
1300	PHM30	Tawau North	S. Tanjung B.	—	Q <sub>1</sub>	1	3.0	2	3	Black
1301	PHM31	Tawau North	S. Kinabutan K.	—	Q <sub>1</sub>	1	0.5	2	3	Y.B.
1302	PHM32	Tawau North	S. Kinabutan K.	—	Q <sub>1</sub>	1	0.5	2	3	Y.B.
1303	PHM33	Tawau North	S. Kinabutan K.	—	Q <sub>2</sub>	1	2.0	2	3	D.G.
1304	PHM34	Tawau North	S. Kinabutan K.	—	Q <sub>2</sub>	1	2.5	2	4	G.
1305	PHM35	Tawau North	S. Kinabutan K.	—	Q <sub>2</sub>	2	2.0	3	4	Y.B.
1306	PHM36	Tawau North	S. Kinabutan K.	—	Q <sub>2</sub>	2	7.0	3	3	D.B.
1307	PHM37	Tawau North	S. Kinabutan K.	—	I <sub>2</sub> Ba	1	4.0	1	2	Y.B.
1308	PHM38	Tawau North	S. Kinabutan K.	andesite	I <sub>2</sub> Ba	1	2.0	2	2	Y.B.
1309	PHM39	Tawau North	S. Inam	andesite	I <sub>2</sub> Ba	1	1.0	4	2	Black
1310	PHM40	Tawau North	S. Inam	—	Q <sub>1</sub>	1	3.5	4	2	D.B.
1311	PHM41	Tawau North	S. Inam	—	Q <sub>1</sub>	1	3.0	3	2	D.B.
1312	PHM42	Tawau North	S. Inam	—	Q <sub>2</sub>	2	4.0	4	2	B.C.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Flow Size	Color
1214	PHK01	Tawau North	S. Tawau	andesite	I <sub>1</sub> An	1	3.0	3	2	D.B.
1215	PHK02	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	1	1.0	3	3	Y.B.
1216	PHK03	Tawau North	S. Merotai K.	—	I <sub>2</sub> Ba	1	3.0	3	2	D.B.
1217	PHK04	Tawau North	S. Merotai K.	—	I <sub>2</sub> Ba	3	6.0	2	2	G.B.
1218	PHK05	Tawau North	S. Merotai K.	—	I <sub>2</sub> Ba	2	5.0	3	2	G.B.
1219	PHK06	Tawau North	S. Merotai K.	—	I <sub>2</sub> Ba	2	3.0	3	2	D.B.
1220	PHK07	Tawau North	S. Merotai K.	vol. breccia	I <sub>2</sub> Ba	1	3.0	2	2	B.
1221	PHK08	Tawau North	S. Merotai K.	andesite	I <sub>1</sub> An	1	5.0	3	2	B.
1222	PHK09	Tawau North	S. Merotai K.	andesite	I <sub>1</sub> An	1	2.5	4	2	B.
1223	PHK10	Tawau North	S. Tawau	andesite	I <sub>1</sub> An	1	2.0	3	1	Y.B.
1224	PHK11	Tawau North	S. Tawau	andesite	I <sub>1</sub> An	1	3.0	3	1	Y.B.
1225	PHK12	Tawau North	S. Tawau	—	I <sub>1</sub> An	1	4.0	4	1	Y.B.
1226	PHK13	Tawau North	S. Tawau	—	I <sub>1</sub> An	1	3.0	4	1	Y.B.
1227	PHK14	Tawau North	S. Tawau	—	I <sub>1</sub> An	2	7.0	4	1	D.R.
1228	PHK15	Tawau North	S. Tawau	—	I <sub>1</sub> An	2	5.0	4	1	B.
1229	PHK16	Tawau North	S. Tawau	—	I <sub>1</sub> An	2	5.0	3	1	E.G.
1230	PHK17	Tawau North	S. Tawau	—	I <sub>1</sub> An	1	3.0	2	1	E.G.
1231	PHK18	Tawau North	S. Tawau	—	I <sub>1</sub> An	1	2.0	2	1	I.B.
1232	PHK19	Tawau North	S. Tawau	—	I <sub>1</sub> An	3	14.0	4	1	B.
1233	PHK20	Tawau North	S. Tawau	—	I <sub>1</sub> An	1	3.0	3	1	Y.B.
1234	PHK21	Tawau North	S. Tawau	—	I <sub>1</sub> An	3	10.0	4	1	B.
1235	PHK22	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	1	2.0	2	2	D.B.
1236	PHK23	Tawau North	S. Tawau	andesite	I <sub>1</sub> An	1	3.0	2	3	B.
1237	PHK24	Tawau North	S. Tawau	andesite	I <sub>1</sub> An	1	3.0	2	3	B.
1238	PHK25	Tawau North	S. Tawau	andesite	I <sub>1</sub> An	2	5.0	2	2	D.B.
1239	PHK26	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	2	8.0	3	2	B.
1240	PHK27	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	2	5.0	3	2	Y.B.
1241	PHK28	Tawau North	S. Tawau	basalt-and.	I <sub>2</sub> Ba	1	4.0	3	2	D.B.
1242	PHK29	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	1	4.0	3	3	Y.B.
1243	PHK30	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	1	1.0	2	3	D.B.
1244	PHK31	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	2	6.0	3	2	D.B.
1245	PHK32	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	2	7.0	2	2	D.B.
1246	PHK33	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	1	2.5	4	1	B.G.
1247	PHK34	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	1	2.5	4	1	B.G.
1248	PHK35	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	2	4.0	4	3	B.G.
1249	PHK36	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	2	6.0	4	1	B.G.
1250	PHK37	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	3	9.0	4	1	B.G.
1251	PHK38	Tawau North	S. Tawau	andesite	I <sub>1</sub> An	3	2.0	2	3	D.B.
1252	PHK39	Tawau North	S. Tawau	andesite	I <sub>1</sub> An	3	3.0	3	3	D.B.
1253	PHK40	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	1	3.0	2	2	Y.B.
1254	PHK41	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	1	4.5	3	2	B.
1255	PHK42	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	1	1.0	2	2	B.
1256	PHK43	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	1	1.5	2	2	B.
1257	PHK44	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	1	7.0	3	3	B.
1258	PHK45	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	1	0.5	1	3	B.
1259	PHK46	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	3	8.0	3	3	D.B.
1260	PHK47	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	2	6.0	2	3	D.B.
1261	PHK48	Tawau North	S. Tawau	andesite	I <sub>1</sub> An	4	15.0	3	3	D.B.
1262	PHK49	Tawau North	S. Tawau	andesite	I <sub>1</sub> An	3	16.0	3	3	D.B.
1263	PHK50	Tawau North	S. Tawau	andesite	I <sub>2</sub> Ba	1	5.0	2	2	D.B.
1264	PHK51	Tawau North	S. Tawau	vol. breccia	I <sub>2</sub> Ba	1	1.0	3	2	B.
1265	PHK52	Tawau North	S. Tawau	—	I <sub>2</sub> Ba	1	2.0	3	1	B.
1266	PHK53	Tawau North	S. Merotai K.	—	Q <sub>1</sub>	1	1.2	3	2	R.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
1313	PjF01	Sungai Tingkayu	S. Tingkayu	---	Q1	1	1.5	4	2	G.B.
1314	PjF02	Sungai Tingkayu	S. Tingkayu	---	Q1	1	2.0	4	3	Y.B.
1315	PjF03	Sungai Tingkayu	S. Tingkayu	---	Q1	1	1.0	4	3	G.B.
1316	PjF04	Sungai Tingkayu	S. Tingkayu	---	P.Kn	2	3.0	2	1	G.
1317	PjF05	Sungai Tingkayu	S. Tingkayu	---	P.Kn	2	6.0	2	2	L.G.
1318	PjF06	Sungai Tingkayu	S. Tingkayu	---	P.Kn	1	2.0	2	1	L.G.
1319	PjF07	Sungai Tingkayu	S. Tingkayu	---	P.Kn	1	5.0	2	1	L.B.
1320	PjF08	Sungai Tingkayu	S. Tingkayu	---	Q1	3	10.0	3	1	Y.B.
1321	PjF09	Sungai Tingkayu	S. Tingkayu	---	Q1	4	11.0	3	1	L.B.
1322	PjF10	Sungai Tingkayu	S. Tingkayu	---	Q1	1	2.0	2	1	Y.B.
1323	PjF11	Sungai Tingkayu	S. Tingkayu	---	Q1	4	13.0	3	2	B.
1324	PjF12	Sungai Tingkayu	S. Tingkayu	---	KPS	1	2.0	2	1	Y.B.
1325	PjF13	Sungai Tingkayu	S. Tingkayu	---	KPS	1	3.0	2	1	Y.B.
1326	PjF14	Sungai Tingkayu	S. Tingkayu	---	KPS	1	1.5	2	3	L.G.
1327	PjF15	Sungai Tingkayu	S. Tingkayu	---	KPS	2	4.0	3	3	Y.B.
1328	PjF16	Sungai Tingkayu	S. Tingkayu	---	Q1	2	3.0	3	2	B.
1329	PjF17	Mostyn	S. Tingkayu	---	Q1	4	16.0	2	2	Y.B.
1330	PjF18	Sungai Tingkayu	S. Tingkayu	---	Q1	1	2.0	2	3	Y.B.
1331	PjF19	Mostyn	S. Tingkayu	---	Q1	1	1.5	2	2	G.B.
1332	PjF20	Mostyn	S. Tingkayu	---	Q1	1	3.0	3	1	Y.B.
1333	PjF21	Mostyn	S. Tingkayu	---	Q1	1	1.0	3	2	Y.B.
1334	PjF22	Sungai Tingkayu	S. Tingkayu	---	Q1	2	8.0	3	1	L.B.
1335	PjF23	Sungai Tingkayu	S. Tingkayu	---	P.Kn	4	12.0	2	3	B.
1336	PjF24	Sungai Tingkayu	S. Tingkayu	---	P.Kn	1	2.0	2	2	Y.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color	
1337	PjG01	Sungai Tingkayu	S. Tingkayu	---	P.Kn	1	3.0	2	1	Y.B.	
1338	PjG02	Sungai Tingkayu	S. Binaung	---	Q1	2	4.0	2	3	Y.B.	
1339	PjG03	Sungai Tingkayu	S. Binaung	---	Q1	2	4.0	3	3	Y.B.	
1340	PjG04	Sungai Tingkayu	S. Binaung	---	Q1	3	5.0	2	3	L.G.	
1341	PjG05	Sungai Tingkayu	S. Binaung	---	Q1	1	1.0	1	2	3	Y.B.
1342	PjG06	Sungai Tingkayu	S. Binaung	---	Q1	1	1.0	1	2	3	Y.B.
1343	PjG07	Sungai Tingkayu	S. Binaung	---	Q1	1	2.0	2	3	Y.B.	
1344	PjG08	Sungai Tingkayu	S. Binaung	---	P.Kn	1	2.0	2	3	G.B.	
1345	PjG09	Sungai Tingkayu	S. Binaung	---	Q1	1	2.0	3	3	Y.B.	
1346	PjG10	Sungai Tingkayu	S. Binaung	---	Q1	1	2.0	2	1	L.G.	
1347	PjG11	Sungai Tingkayu	S. Binaung	---	Q1	1	1.5	2	4	Y.B.	
1348	PjG12	Sungai Tingkayu	S. Binaung	---	Q1	1	6.0	2	3	Y.B.	
1349	PjG13	Mostyn	S. Binaung	---	Q1	1	1.5	2	4	L.C.	
1350	PjG14	Sungai Tingkayu	S. Binaung	---	Q1	2	1.5	3	4	L.C.	
1351	PjG15	Sungai Tingkayu	S. Binaung	---	Q1	1	2.0	4	3	Y.B.	
1352	PjG16	Sungai Tingkayu	S. Binaung	---	P.Kn	1	1.5	3	3	L.B.	
1353	PjG17	Mostyn	S. Binaung	---	Q1	1	3.0	3	3	L.B.	
1354	PjG18	Sungai Tingkayu	S. Binaung	---	Q1	1	2.0	3	2	Y.B.	
1355	PjG19	Sungai Tingkayu	S. Binaung	---	P.Kn	1	5.0	3	2	Y.B.	
1356	PjG20	Sungai Tingkayu	S. Binaung	---	P.Kn	1	1.0	1	3	L.G.	

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
1357	PjG21	Sungai Tingkayu	S. Binaung	---	P.Kn	1	1.5	2	3	Y.G.
1358	PjG22	Sungai Tingkayu	S. Jirangku	---	P.Kn	2	1.8	3	2	B.
1359	PjG23	Sungai Tingkayu	S. Jirangku	---	P.Kn	1	1.0	3	2	B.
1360	PjG24	Sungai Tingkayu	S. Jirangku	---	P.Kn	1	1.6	3	2	B.
1361	PjG25	Sungai Tingkayu	S. Jirangku	---	P.Kn	2	4.0	3	2	B.
1362	PjG26	Sungai Tingkayu	S. Jirangku	---	P.Kn	1	1.4	3	2	B.
1363	PjG27	Sungai Tingkayu	S. Kalumpang	---	P.Kn	1	0.8	3	3	Y.B.
1364	PjG28	Sungai Tingkayu	S. Kalumpang	---	P.Kn	1	1.5	3	3	Y.B.
1365	PjG29	Sungai Tingkayu	S. Kalumpang	---	P.Kn	1	1.5	3	3	Y.B.
1366	PjG30	Sungai Tingkayu	S. Kara	---	P.Kn	2	5.0	1	1	B.
1367	PjG31	Sungai Tingkayu	S. Kara	---	P.Kn	1	0.7	2	3	B.
1368	PjG32	Sungai Tingkayu	S. Kara	---	P.Kn	1	1.0	1	4	D.G.
1369	PjG33	Sungai Tingkayu	S. Kara	---	P.Kn	2	5.0	2	2	Y.B.
1370	PjG34	Mostyn	S. Binaung	---	Q1	3	4.0	3	3	B.
1371	PjG35	Mostyn	S. Binaung	---	Q1	1	4.0	3	2	B.
1372	PjG36	Mostyn	S. Binaung	---	Q1	2	4.0	3	2	B.
1373	PjG37	Mostyn	S. Binaung	---	Q1	1	3.0	4	2	B.
1374	PjG38	Mostyn	S. Binaung	---	P.Kn	1	3.0	4	2	L.B.
1375	PjG39	Mostyn	S. Kara	---	P.Kn	1	0.5	3	4	Y.B.
1376	PjG40	Mostyn	S. Kara	---	P.Kn	2	3.0	3	3	Y.B.
1377	PjG41	Mostyn	S. Kara	---	P.Kn	1	2.0	3	3	D.B.
1378	PjG42	Mostyn	S. Kara	---	P.Kn	2	5.0	3	2	Y.B.
1379	PjG43	Mostyn	S. Kara	---	P.Kn	1	0.5	2	3	B.
1380	PjG44	Mostyn	S. Kara	---	P.Kn	2	6.0	2	3	D.B.
1381	PjG45	Mostyn	S. Kara	---	P.Kn	2	2.0	3	2	D.B.
1382	PjG46	Mostyn	S. Malati	---	Q1	3	15.0	2	2	D.B.
1383	PjG47	Mostyn	S. Kara	---	P.Kn	3	10.0	2	2	D.B.
1384	PjG48	Sungai Tingkayu	S. Binaung	---	Q1	1	1.5	2	3	Y.B.
1385	PjG49	Mostyn	S. Kara	---	P.Kn	1	0.5	2	4	D.G.
1386	PjG50	Sungai Tingkayu	S. Kara	---	P.Kn	1	1.5	1	4	D.B.
1387	PjG51	Sungai Tingkayu	S. Kara	---	P.Kn	1	1.0	2	2	B.
1388	PjG52	Sungai Tingkayu	S. Binaung	---	P.Kn	1	1.5	2	1	Y.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
1389	PjH01	Sungai Tingkayu	S. Kalumpang	---	P.Kn	4	10.0	3	3	B.Y.
1390	PjH02	Sungai Tingkayu	S. Kalumpang	---	P.Kn	2	3.5	3	2	B.
1391	PjH03	Sungai Tingkayu	S. Kalumpang	---	P.Kn	4	18.0	3	2	B.
1392	PjH04	Sungai Tingkayu	S. Jirangku	---	P.Kn	2	3.0	3	2	B.
1393	PjH05	Sungai Tingkayu	S. Binaung	---	Q1	1	1.2	3	3	B.
1394	PjH06	Sungai Tingkayu	S. Binaung	---	Q1	1	8.0	3	3	B.
1395	PjH07	Sungai Tingkayu	S. Kalumpang	---	Q1	4	1.3	3	2	B.
1396	PjH08	Sungai Tingkayu	S. Kalumpang	---	Q1	1	1.3	3	2	B.
1397	PjH09	Sungai Tingkayu	S. Bonda	---	Q1	1	1.2	3	2	B.
1398	PjH10	Sungai Tingkayu	S. Kalumpang	---	Q1	1	1.4	2	3	D.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #	Flow Size #	Color
1450	PJ101	Apas-Balang	S. Mantri	andesite	I,An	1	0.5	3	1	B, Y.
1451	PJ102	Sungai Tingkayu	S. Malati	—	I,An	1	4.0	3	2	B, Y.
1452	PJ103	Sungai Tingkayu	S. Malati	—	I,An	1	3.0	3	2	B, Y.
1453	PJ104	Sungai Tingkayu	S. Malati	—	I,An	1	4.0	3	2	B, Y.
1454	PJ105	Sungai Tingkayu	S. Malati	—	I,An	1	3.0	3	2	B, Y.
1455	PJ106	Sungai Tingkayu	S. Malati	—	I,An	2	5.0	2	2	B, Y.
1456	PJ107	Sungai Tingkayu	S. Malati	—	I,An	1	0.5	2	2	B, Y.
1457	PJ108	Sungai Tingkayu	S. Malati	—	I,An	1	2.0	3	3	B, Y.
1458	PJ109	Sungai Tingkayu	S. Malati	—	I,An	2	5.0	3	3	B, Y.
1459	PJ110	Sungai Tingkayu	S. Malati	—	I,An	1	3.0	3	3	B, Y.
1460	PJ111	Sungai Tingkayu	S. Malati	—	I,An	1	1.5	3	3	B, Y.
1461	PJ112	Sungai Tingkayu	S. Malati	—	I,An	1	1.0	2	3	B, Y.
1462	PJ113	Sungai Tingkayu	S. Malati	—	I,An	2	9.0	3	3	B, Y.
1463	PJ114	Sungai Tingkayu	S. Malati	—	I,An	1	3.0	2	3	B, Y.
1464	PJ115	Sungai Tingkayu	S. Malati	—	I,An	1	3.0	4	3	B, Y.
1465	PJ116	Sungai Tingkayu	S. Malati	—	I,An	1	1.0	2	3	B, Y.
1466	PJ117	Sungai Tingkayu	S. Malati	—	I,An	1	2.0	4	1	B, Y.
1467	PJ118	Tawau North	S. Mantri	tuff breccia	I,An	1	1.5	4	1	B, Y.
1468	PJ119	Tawau North	S. Mantri	andesite	I,An	1	0.8	4	1	B, Y.
1469	PJ120	Tawau North	S. Mantri	andesite	I,An	1	3.0	4	1	B, Y.
1470	PJ121	Tawau North	S. Mantri	andesite	I,An	1	2.3	4	1	B, Y.
1471	PJ122	Tawau North	S. Mantri	—	I,An	1	1.2	4	1	B, Y.
1472	PJ123	Tawau North	S. Mantri	—	I,An	1	2.5	4	1	B, Y.
1473	PJ124	Tawau North	S. Mantri	—	I,An	1	0.8	4	1	B, Y.
1474	PJ125	Tawau North	S. Mantri	—	I,An	1	4.0	4	1	B, Y.
1475	PJ126	Tawau North	S. Mantri	—	I,An	2	5.0	4	1	B, Y.
1476	PJ127	Apas-Balang	S. Mantri	—	I,An	1	0.6	4	1	B, Y.
1477	PJ128	Tawau North	S. Balung	—	I,An	1	1.5	4	1	B, Y.
1478	PJ129	Tawau North	S. Balung	—	I,An	1	2.5	4	1	B, Y.
1479	PJ130	Tawau North	S. Balung	—	I,An	1	2.0	4	1	B, Y.
1480	PJ131	Tawau North	S. Balung	—	I,An	1	2.5	4	1	B, Y.
1481	PJ132	Tawau North	S. Balung	—	I,An	2	8.5	4	1	B, Y.
1482	PJ133	Tawau North	S. Balung	—	I,An	1	1.0	4	1	B, Y.
1483	PJ134	Tawau North	S. Balung	—	I,An	1	1.2	4	1	B, Y.
1484	PJ135	Tawau North	S. Balung	—	I,An	1	1.5	4	1	B, Y.
1485	PJ136	Tawau North	S. Balung	—	I,An	2	8.0	4	1	B, Y.
1486	PJ137	Tawau North	S. Balung	—	I,An	1	1.2	4	1	B, Y.
1487	PJ138	Tawau North	S. Balung	—	I,An	1	1.2	4	1	B, Y.
1488	PJ139	Tawau North	S. Balung	—	I,An	1	1.2	4	1	B, Y.
1489	PJ140	Tawau North	S. Balung	—	I,An	1	1.0	3	1	B, Y.
1490	PJ141	Tawau North	S. Balung	—	I,An	1	1.0	2	3	B, Y.
1491	PJ142	Mostyn	S. Malati	—	I,An	1	0.8	3	2	B, Y.
1492	PJ143	Mostyn	S. Mantri	—	I,An	1	1.0	3	2	B, Y.
1493	PJ144	Mostyn	S. Mantri	—	I,An	1	0.8	3	2	B, Y.
1494	PJ145	Mostyn	S. Mantri	—	I,An	2	5.5	3	1	B, Y.
1495	PJ146	Mostyn	S. Mantri	—	I,An	1	0.5	3	1	B, Y.
1496	PJ147	Apas-Balang	S. Balung	—	I,An	1	2.0	3	2	B, Y.
1497	PJ148	Apas-Balang	S. Balung	—	I,An	2	7.0	4	1	B, Y.
1498	PJ149	Apas-Balang	S. Balung	—	I,An	1	0.5	3	1	B, Y.
1499	PJ150	Apas-Balang	S. Balung	—	I,An	1	0.8	3	1	B, Y.

\*1: none(0), puddle(1), slow(2), moderate(3), fast(4)  
 \*2: coarse grained(1), medium grained(2), fine grained(3), clayey(4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #	Flow Size #	Color
1398	PH11	Sungai Tingkayu	S. Kalumpang	—	Q <sub>1</sub>	1	1.3	2	3	D, B.
1400	PH12	Sungai Tingkayu	S. Kalumpang	—	Q <sub>1</sub>	2	1.0	2	3	D, B.
1401	PH13	Sungai Tingkayu	S. Kalumpang	—	Q <sub>1</sub>	2	1.8	2	3	D, B.
1402	PH14	Mostyn	S. Kalumpang	—	Q <sub>1</sub>	4	10.0	2	2	D, B.
1403	PH15	Sungai Tingkayu	S. Kalumpang	—	P,Kn	2	1.5	2	2	G, B.
1404	PH16	Sungai Tingkayu	S. Kalumpang	—	P,Kn	2	5.0	2	1	S.
1405	PH17	Sungai Tingkayu	S. Durian	—	I,An	1	4.0	3	1	D, B.
1406	PH18	Sungai Tingkayu	S. Durian	—	I,An	1	3.0	4	1	D, B.
1407	PH19	Sungai Tingkayu	S. Durian	—	I,An	1	4.0	4	1	D, B.
1408	PH20	Sungai Tingkayu	S. Malati	shale	P,Kn	1	0.5	2	2	D, B.
1409	PH21	Sungai Tingkayu	S. Durian	lapilli tuff	I,An	2	6.0	3	1	D, B.
1410	PH22	Sungai Tingkayu	S. Durian	vol. breccia	I,An	2	5.0	4	1	D, B.
1411	PH23	Sungai Tingkayu	S. Durian	vol. breccia	I,An	4	4.0	4	2	B.
1412	PH24	Sungai Tingkayu	S. Durian	—	I,An	1	4.0	4	1	D, B.
1413	PH25	Sungai Tingkayu	S. Malati	shale	P,Kn	2	1.5	2	2	D, B.
1414	PH26	Sungai Tingkayu	S. Malati	shale	P,Kn	1	2.0	3	1	B.
1415	PH27	Sungai Tingkayu	S. Malati	shale	P,Kn	1	2.0	3	3	D, B.
1416	PH28	Sungai Tingkayu	S. Malati	andesite	I,An	2	2.5	3	1	D, B.
1417	PH29	Sungai Tingkayu	S. Malati	gabbro	I,An	1	3.0	3	2	B.
1418	PH30	Sungai Tingkayu	S. Malati	fine tuff	P,Kn	1	2.0	3	2	D, B.
1419	PH31	Sungai Tingkayu	S. Malati	fine tuff	P,Kn	1	1.0	2	1	D, B.
1420	PH32	Sungai Tingkayu	S. Kalumpang	—	P,Ng	1	2.0	3	3	B, Y.
1421	PH33	Sungai Tingkayu	S. Malati	—	I,An	1	2.0	3	3	B, Y.
1422	PH34	Sungai Tingkayu	S. Malati	—	I,An	1	1.0	0	3	B, Y.
1423	PH35	Sungai Tingkayu	S. Malati	—	I,An	2	5.0	3	3	B, Y.
1424	PH36	Sungai Tingkayu	S. Malati	—	I,An	1	1.0	1	3	B, Y.
1425	PH37	Sungai Tingkayu	S. Malati	—	I,An	1	2.5	2	3	B, Y.
1426	PH38	Sungai Tingkayu	S. Malati	—	I,An	2	2.5	3	3	B, Y.
1427	PH39	Sungai Tingkayu	S. Malati	—	I,An	2	6.0	3	3	B, Y.
1428	PH40	Sungai Tingkayu	S. Malati	—	I,An	1	2.0	2	3	B, Y.
1429	PH41	Mostyn	S. Malati	—	P,Ng	3	10.0	3	2	D, B.
1430	PH42	Mostyn	S. Malati	—	Q <sub>1</sub>	3	5.5	3	2	B.
1431	PH43	Mostyn	S. Malati	—	Q <sub>1</sub>	3	5.0	3	2	B.
1432	PH44	Mostyn	S. Malati	—	P,Ng	2	0.8	2	3	B.
1433	PH45	Mostyn	S. Malati	—	P,Ng	2	8.0	4	1	B.
1434	PH46	Mostyn	S. Malati	—	P,Ng	3	0.8	3	2	B.
1435	PH47	Mostyn	S. Malati	—	P,Ng	3	8.0	3	2	B.
1436	PH48	Mostyn	S. Malati	—	I,An	1	2.0	2	2	B, Y.
1437	PH49	Mostyn	S. Malati	—	I,An	3	12.0	4	1	B, Y.
1438	PH50	Mostyn	S. Malati	—	I,An	1	2.0	2	3	B, Y.
1439	PH51	Mostyn	S. Malati	—	I,An	3	6.0	3	3	B, Y.
1440	PH52	Mostyn	S. Malati	—	I,An	3	7.0	4	3	B, Y.
1441	PH53	Mostyn	S. Malati	—	I,An	2	8.0	3	3	B, Y.
1442	PH54	Mostyn	S. Malati	—	I,An	1	2.0	2	3	B, Y.
1443	PH55	Mostyn	S. Malati	—	I,An	1	8.0	3	3	B, Y.
1444	PH56	Mostyn	S. Malati	—	I,An	2	1.0	2	3	B, Y.
1445	PH57	Mostyn	S. Malati	—	I,An	1	0.8	2	3	B, Y.
1446	PH58	Mostyn	S. Malati	—	P,Ng	1	1.0	2	3	B, Y.
1447	PH59	Sungai Tingkayu	S. Malati	—	I,An	1	2.5	2	3	B, Y.
1448	PH60	Sungai Tingkayu	S. Malati	—	I,An	1	2.5	2	3	B, Y.
1449	PH61	Sungai Tingkayu	S. Malati	—	I,An	1	3.0	3	3	B, Y.

\*1: none(0), puddle(1), slow(2), moderate(3), fast(4)  
 \*2: coarse grained(1), medium grained(2), fine grained(3), clayey(4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geol. Unit	Order	Width (m)	Flow #1	Flow #2	Color
1541	PJK41	Tawau North	S. Kinabutan B	I-An	1	2.0	2	2	B.Y.
1542	PJK42	Tawau North	S. Kinabutan B	I-An	1	1.5	2	2	B.Y.
1543	PJK43	Apas-Balang	S. Apas	I-An	3	3.0	4	2	Y.B.
1544	PJK44	Apas-Balang	S. Balung	I-An	4	10.0	4	2	Y.B.
1545	PJK45	Apas-Balang	S. Balung	I-An	1	8.0	4	2	Y.B.
1546	PJK46	Apas-Balang	S. Balung	I-An	2	5.0	4	2	Y.B.
1547	PJK47	Apas-Balang	S. Balung	I-An	1	4.0	3	3	Y.B.
1548	PJK48	Apas-Balang	S. Balung	I-An	2	6.0	4	2	Y.B.
1549	PJK49	Apas-Balang	S. Apas	I-An	2	2.0	2	4	Y.B.
1550	PJK50	Apas-Balang	S. Apas	I-An	1	3.0	2	2	Y.B.
1551	PJK51	Apas-Balang	S. Apas	I-An	2	4.0	2	2	Y.B.
1552	PJK52	Apas-Balang	S. Apas	I-An	2	3.0	2	2	Y.B.
1553	PJK53	Apas-Balang	S. Apas	I-An	2	5.0	4	2	Y.B.
1554	PJK54	Apas-Balang	S. Apas	I-An	1	1.0	3	2	D.B.
1555	PJK55	Apas-Balang	S. Apas	I-An	2	2.5	3	3	D.B.
1556	PJK56	Apas-Balang	S. Apas	I-An	2	5.5	3	2	D.B.
1557	PJK57	Apas-Balang	S. Apas	I-An	2	6.6	3	2	D.B.
1558	PJK58	Apas-Balang	S. Apas	I-An	1	0.6	2	3	B.
1559	PJK59	Tawau North	S. Tawau	I-An	2	8.0	2	3	Y.B.
1560	PJK60	Tawau North	S. Tawau	I-An	1	1.0	2	2	B.
1561	PJK61	Tawau North	S. Apas Kiri	I-An	1	2.0	3	2	B.
1562	PJK62	Tawau North	S. Apas	I-An	1	4.0	4	2	Y.B.
1563	PJK63	Tawau North	S. Apas	I-An	1	4.0	4	2	Y.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geol. Unit	Order	Width (m)	Flow #1	Flow #2	Color
1564	PJM01	Tawau North	S. Kinabutan B	I-An	3	4.0	4	2	B.Y.
1565	PJM02	Tawau North	S. Kinabutan B	I-An	2	3.0	3	2	B.Y.
1566	PJM03	Tawau North	S. Apas Kiri	I-An	1	2.0	2	2	Y.B.
1567	PJM04	Tawau North	S. Apas Kiri	I-An	1	2.0	2	2	Y.B.
1568	PJM05	Tawau North	S. Apas Kiri	I-An	2	7.0	4	1	Y.B.
1569	PJM06	Tawau North	S. Apas Kiri	I-An	1	4.0	4	1	Y.B.
1570	PJM07	Tawau North	S. Apas Kiri	I-An	3	6.0	4	1	Y.B.
1571	PJM08	Tawau North	S. Kinabutan B	I-An	1	1.0	2	3	B.Y.
1572	PJM09	Tawau North	S. Kinabutan B	I-An	2	3.0	3	3	B.Y.
1573	PJM10	Tawau North	S. Kinabutan B	I-An	3	6.0	3	3	B.Y.
1574	PJM11	Tawau North	S. Kinabutan B	I-An	2	2.0	3	3	B.Y.
1575	PJM12	Tawau North	S. Kinabutan B	I-An	3	12.0	4	2	B.
1576	PJM13	Tawau North	S. Kinabutan B	I-An	3	12.0	3	2	B.
1577	PJM14	Tawau North	S. Kinabutan B	I-An	1	3.5	2	2	B.
1578	PJM15	Tawau North	S. Kinabutan B	I-An	2	3.0	3	2	B.
1579	PJM16	Tawau North	S. Kinabutan B	I-An	2	7.0	2	2	Y.B.
1580	PJM17	Tawau North	S. Kinabutan B	I-An	2	10.0	3	2	Y.B.
1581	PJM18	Tawau North	S. Kinabutan B	I-An	2	5.0	2	2	Y.B.
1582	PJM19	Tawau North	S. Kinabutan B	I-An	1	0.5	1	3	L.B.
1583	PJM20	Tawau North	S. Kinabutan B	I-An	1	3.0	2	2	B.
1584	PJM21	Tawau North	S. Apas Kiri	I-An	1	4.0	3	3	B.
1585	PJM22	Tawau North	S. Apas Kiri	I-An	2	5.0	4	3	B.G.
1586	PJM23	Tawau North	S. Apas Kiri	I-An	2	4.0	4	3	B.
1587	PJM24	Tawau North	S. Apas Kiri	I-An	1	3.0	3	2	Y.B.
1588	PJM25	Tawau North	S. Apas Kiri	I-An	3	3.5	3	2	Y.B.
1589	PJM26	Tawau North	S. Apas Kiri	I-An	2	4.0	4	2	Y.B.
1590	PJM27	Tawau North	S. Apas Kiri	I-An	3	5.0	3	1	B.
1591	PJM28	Tawau North	S. Apas Kiri	I-An	3	7.0	3	2	B.
1592	PJM29	Tawau North	S. Apas Kiri	I-An	2	5.0	1	2	D.B.
1593	PJM30	Tawau North	S. Apas Kiri	I-An	2	8.0	3	2	Y.B.
1594	PJM31	Tawau North	S. Tawau	I-An	2	15.0	3	2	D.B.
1595	PJM32	Tawau North	S. Tawau	I-An	1	0.5	1	2	D.B.
1596	PJM33	Tawau North	S. Kinabutan B	I-An	1	3.0	4	3	B.Y.
1597	PJM34	Tawau North	S. Kinabutan B	I-An	1	3.0	4	3	B.Y.
1598	PJM35	Tawau North	S. Kinabutan B	I-An	1	2.0	4	3	B.Y.
1599	PJM36	Tawau North	S. Kinabutan B	I-An	2	4.0	4	3	B.Y.
1600	PJM37	Tawau North	S. Kinabutan B	I-An	2	4.0	4	3	B.Y.
1601	PJM38	Tawau North	S. Kinabutan B	I-An	2	4.0	4	3	B.Y.
1602	PJM39	Tawau North	S. Kinabutan B	I-An	2	3.0	4	3	B.Y.
1603	PJM40	Tawau North	S. Kinabutan B	I-An	3	4.0	4	3	B.Y.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Area: Semprorna Area Grid: P.Jm

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geol. Unit	Order	Width (m)	Flow #1	Flow #2	Size #2	Color
1584	P.Jm21	Tawau North	S. Kinabutan B	Q <sub>2</sub>	3	6.0	2	2	2	B.
1585	P.Jm22	Tawau North	S. Kinabutan B	Q <sub>2</sub>	1	1.2	2	3	3	B.
1586	P.Jm23	Tawau North	S. Kinabutan B	Q <sub>2</sub>	2	1.5	3	4	4	Y.B.
1587	P.Jm24	Tawau North	S. Kinabutan B	Q <sub>2</sub>	1	0.8	2	2	2	Y.B.
1588	P.Jm25	Tawau North	S. Kinabutan B	Q <sub>2</sub>	2	0.6	3	3	3	B.G.
1589	P.Jm26	Tawau North	---	I.Ah	2	5.0	4	1	1	B.
1590	P.Jm27	Tawau North	---	I.Ah	2	6.0	3	1	1	D.B.
1591	P.Jm28	Tawau North	---	I.Ah	2	4.5	3	2	2	B.
1592	P.Jm29	Tawau North	---	I.Ah	1	1.5	2	3	3	Y.B.
1593	P.Jm30	Tawau North	S. Membalua	I.Ah	1	2.5	3	1	1	B.
1594	P.Jm31	Tawau North	S. Membalua	I.Ah	1	2.5	2	2	2	B.
1595	P.Jm32	Tawau North	S. Membalua	I.Ah	2	5.0	3	2	2	B.G.
1596	P.Jm33	Tawau North	S. Membalua	I.Ah	2	10.0	2	4	4	B.G.
1597	P.Jm34	Tawau North	S. Membalua	I.Ah	2	6.0	2	3	3	B.
1598	P.Jm35	Apas-Balang	S. Apas Kiri	Q <sub>1</sub>	3	6.0	3	2	2	B.
1599	P.Jm36	Apas-Balang	S. Apas Kiri	I.Ah	3	12.0	3	2	2	B.
1600	P.Jm37	Apas-Balang	S. Membalua	Q <sub>1</sub>	1	5.0	2	1	1	B.
1601	P.Jm38	Apas-Balang	S. Membalua	I.Ah	2	2.5	2	2	2	B.
1602	P.Jm39	Tawau North	S. Kinabutan B	I.Ah	2	1.5	3	1	1	B.
1603	P.Jm40	Apas-Balang	S. Parit	Q <sub>1</sub>	1	0.8	3	3	3	Y.B.
1604	P.Jm41	Tawau North	S. Apas Kiri	I.Ah	1	2.0	4	2	2	Y.B.
1605	P.Jm42	Tawau North	S. Apas Kiri	I.Ah	1	5.0	4	1	1	Y.B.
1606	P.Jm43	Tawau North	S. Apas Kiri	I.Ah	1	3.0	3	1	1	Y.B.

Area: Semprorna Area Grid: PKF

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geol. Unit	Order	Width (m)	Flow #1	Flow #2	Size #2	Color
1621	PKF01	Mostyn	S. Tingkayu	Q <sub>1</sub>	2	4.0	4	1	1	Y.B.
1622	PKF02	Mostyn	S. Tingkayu	Q <sub>1</sub>	3	4.0	0	4	4	Y.B.
1623	PKF03	Mostyn	S. Tingkayu	Q <sub>1</sub>	2	7.0	2	3	3	Y.B.
1624	PKF04	Mostyn	S. Tingkayu	P.Ah	2	1.0	3	1	1	Y.B.
1625	PKF05	Mostyn	S. Tingkayu	P.Ah	2	3.0	2	4	4	Y.B.
1626	PKF06	Mostyn	S. Tingkayu	Q <sub>1</sub>	2	2.0	2	3	3	Y.B.
1627	PKF07	Mostyn	S. Tingkayu	Q <sub>1</sub>	1	2.0	4	4	4	Y.B.
1628	PKF08	Mostyn	S. Tingkayu	P.Ah	1	3.0	4	4	4	B.
1629	PKF09	Mostyn	S. Tingkayu	P.Ah	1	4.0	4	1	1	Y.B.
1630	PKF10	Mostyn	S. Tingkayu	P.Ah	4	14.0	4	2	2	Y.B.
1631	PKF11	Mostyn	S. Tingkayu	Q <sub>1</sub>	2	5.0	4	1	1	Y.B.
1632	PKF12	Mostyn	S. Tingkayu	Q <sub>1</sub>	2	5.0	4	1	1	Y.B.
1633	PKF13	Mostyn	S. Tingkayu	Q <sub>1</sub>	1	3.0	4	1	1	Y.B.
1634	PKF14	Mostyn	S. Tingkayu	KFCs	1	1.0	2	1	1	Y.B.
1635	PKF15	Mostyn	S. Tingkayu	P.Ah	1	1.0	2	1	1	Y.B.
1636	PKF16	Mostyn	S. Tingkayu	Q <sub>1</sub>	1	1.5	1	3	3	R.B.
1637	PKF17	Mostyn	S. Tingkayu	MFCs	2	3.0	2	1	1	P.B.
1638	PKF18	Mostyn	S. Tingkayu	Q <sub>1</sub>	1	1.5	2	2	2	P.B.
1639	PKF19	Mostyn	S. Tingkayu	P.Ah	1	2.0	4	2	2	Y.B.
1640	PKF20	Mostyn	S. Tingkayu	P.Ah	1	1.0	2	1	1	Y.B.

Area: Semprorna Area Grid: P.Jn

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geol. Unit	Order	Width (m)	Flow #1	Flow #2	Size #2	Color
1607	P.Jn01	Tawau North	---	Q <sub>2</sub>	1	0.3	2	2	2	B.
1608	P.Jn02	Tawau North	---	Q <sub>2</sub>	2	2.0	3	4	4	Y.B.
1609	P.Jn03	Tawau North	---	Q <sub>2</sub>	2	4.0	1	3	3	D.B.
1610	P.Jn04	Tawau North	S. Kinabutan B	Q <sub>2</sub>	3	5.0	2	3	3	B.Y.
1611	P.Jn05	Tawau North	---	Q <sub>2</sub>	2	4.0	2	3	3	Y.B.
1612	P.Jn06	Tawau North	---	Q <sub>2</sub>	2	1.5	2	3	3	D.B.
1613	P.Jn07	Tawau North	---	I.Ah	2	1.0	3	2	2	B.
1614	P.Jn08	Tawau North	---	Q <sub>1</sub>	2	0.8	3	3	3	D.B.
1615	P.Jn09	Tawau North	S. Membalua	Q <sub>1</sub>	2	4.0	3	2	2	Y.B.
1616	P.Jn10	Tawau North	S. Membalua	Q <sub>1</sub>	3	7.0	3	2	2	D.B.
1617	P.Jn11	Tawau North	---	I.Ah	2	0.5	2	3	3	D.B.
1618	P.Jn12	Apas-Balang	S. Membalua	I.Ah	3	6.0	2	3	3	B.
1619	P.Jn13	Apas-Balang	S. Membalua	Q <sub>1</sub>	3	10.0	2	2	2	W.B.
1620	P.Jn14	Apas-Balang	S. Membalua	Q <sub>1</sub>	1	1.5	3	2	2	B.

Area: Semprorna Area Grid: PKg

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geol. Unit	Order	Width (m)	Flow #1	Flow #2	Size #2	Color
1641	PKg01	Mostyn	S. Bimang	Q <sub>1</sub>	3	5.0	2	3	3	P.B.
1642	PKg02	Mostyn	S. Bimang	Q <sub>1</sub>	1	2.0	2	4	4	P.B.
1643	PKg03	Mostyn	S. Bimang	Q <sub>1</sub>	2	4.0	2	3	3	Y.B.
1644	PKg04	Mostyn	S. Bimang	P.Ah	1	4.0	3	1	1	B.
1645	PKg05	Mostyn	S. Bimang	P.Ah	1	2.0	3	1	1	B.
1646	PKg06	Mostyn	S. Bimang	Q <sub>1</sub>	1	3.0	1	4	4	Y.B.
1647	PKg07	Mostyn	S. Bimang	Q <sub>1</sub>	2	4.0	2	2	2	Y.B.
1648	PKg08	Mostyn	S. Bimang	Q <sub>1</sub>	1	4.0	3	1	1	Y.B.
1649	PKg09	Mostyn	S. Bimang	P.Ah	1	3.0	2	1	1	Y.B.
1650	PKg10	Mostyn	S. Bimang	Q <sub>1</sub>	2	4.0	3	1	1	Y.B.
1651	PKg11	Mostyn	S. Bimang	P.Ah	2	4.0	3	1	1	Y.B.
1652	PKg12	Mostyn	S. Bimang	P.Ah	1	2.0	3	1	1	Y.B.
1653	PKg13	Mostyn	S. Bimang	P.Ah	1	4.0	4	1	1	Y.B.
1654	PKg14	Mostyn	S. Bimang	P.Ah	1	3.0	4	1	1	Y.B.
1655	PKg15	Mostyn	S. Bimang	P.Ah	1	2.0	3	1	1	Y.B.
1656	PKg16	Mostyn	S. Bimang	I.Ba	1	3.0	4	1	1	Y.B.
1657	PKg17	Mostyn	S. Tingkayu	I.Ba	1	1.0	0	2	2	G.B.
1658	PKg18	Mostyn	S. Tingkayu	P.Ah	1	1.5	3	4	4	R.B.
1659	PKg19	Mostyn	S. Tingkayu	I.Ba	1	1.5	2	3	3	B.
1660	PKg20	Mostyn	S. Tingkayu	I.Ba	1	1.5	2	2	2	G.B.
1661	PKg21	Mostyn	S. Linea	P.Ah	2	2.0	4	2	2	Y.B.
1662	PKg22	Mostyn	S. Linea	P.Ah	2	3.0	4	1	1	Y.B.
1663	PKg23	Mostyn	S. Linea	P.Ah	2	5.0	3	2	2	G.
1664	PKg24	Mostyn	S. Linea	P.Ah	1	2.0	4	1	1	Y.B.
1665	PKg25	Mostyn	S. Linea	P.Ah	1	3.0	4	3	3	Y.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Size $\frac{m}{s}$	Color
1706	PKh11	Mostyn	S. Mantri	---	P.Kg	1	2.0	2	1	B.G.
1707	PKh12	Mostyn	S. Mantri	---	P.Kg	1	0.5	0	4	B.Y.
1708	PKh13	Mostyn	S. Mantri	---	P.Kg	2	3.0	2	1	B.Y.
1709	PKh14	Mostyn	S. Mantri	tfc. s.s.	P.Kg	2	1.0	2	3	Y.B.
1710	PKh15	Mostyn	S. Mantri	tfc. s.s.	P.Kg	1	1.0	2	2	D.B.
1711	PKh16	Mostyn	S. Mantri	---	P.Kg	1	0.8	2	2	D.B.
1712	PKh17	Mostyn	S. Mantri	---	P.Kg	1	1.0	2	3	Y.B.
1713	PKh18	Mostyn	S. Mantri	---	P.Kg	2	2.0	2	3	Y.B.
1714	PKh19	Mostyn	S. Mantri	---	P.Kg	1	1.0	2	3	Y.B.
1715	PKh20	Mostyn	S. Mantri	tfc. mudstone	P.Kg	1	1.0	2	3	Y.B.
1716	PKh21	Mostyn	S. Mantri	---	P.Kg	1	1.0	3	2	B.
1717	PKh22	Mostyn	S. Mantri	---	P.Kg	1	1.0	1	4	B.G.
1718	PKh23	Mostyn	S. Mantri	---	P.Kg	3	4.0	2	1	D.B.
1719	PKh24	Mostyn	S. Mantri	---	P.Kg	2	1.0	2	1	B.
1720	PKh25	Mostyn	S. Mantri	---	P.Kg	1	0.8	2	2	B.
1721	PKh26	Mostyn	S. Mantri	---	P.Kg	1	1.0	2	2	B.
1722	PKh27	Mostyn	S. Mantri	---	P.Kg	1	1.2	2	2	B.
1723	PKh28	Mostyn	S. Mantri	---	P.Kg	1	1.0	2	3	Y.B.
1724	PKh29	Mostyn	S. Mantri	---	P.Kg	3	6.0	2	2	B.
1725	PKh30	Mostyn	S. Mantri	sandstone	P.Kg	1	4.0	1	4	D.B.
1726	PKh31	Mostyn	S. Mantri	shale	P.Kg	1	2.0	1	3	Y.B.
1727	PKh32	Mostyn	S. Mantri	shale	P.Kg	1	3.0	1	4	D.B.
1728	PKh33	Mostyn	S. Mantri	---	P.Kg	1	3.0	1	3	D.B.
1729	PKh34	Mostyn	S. Mantri	---	P.Kg	1	1.0	1	3	B.Y.
1730	PKh35	Mostyn	S. Mantri	---	P.Kg	1	1.0	2	3	B.Y.
1731	PKh36	Mostyn	S. Mantri	---	P.Kg	1	2.0	3	3	B.Y.
1732	PKh37	Mostyn	S. Mantri	---	P.Kg	1	2.0	3	3	B.Y.
1733	PKh38	Mostyn	S. Mantri	---	P.Kg	1	0.7	4	1	D.B.
1734	PKh39	Mostyn	S. Mantri	---	L.An	1	1.3	4	1	D.B.
1735	PKh40	Mostyn	S. Mantri	---	L.An	1	1.0	4	1	D.B.
1736	PKh41	Mostyn	S. Mantri	---	L.An	1	0.5	3	1	D.B.
1737	PKh42	Mostyn	S. Mantri	---	L.An	2	1.5	4	1	D.B.
1738	PKh43	Mostyn	S. Mantri	---	P.Kg	1	1.8	2	2	Y.B.
1739	PKh44	Mostyn	S. Mantri	---	P.Kg	1	1.0	0	4	G.B.
1740	PKh45	Mostyn	S. Mantri	---	P.Kg	2	3.0	2	2	B.
1741	PKh46	Mostyn	S. Mantri	fine tuff	P.Kg	3	2.0	2	2	B.Y.
1742	PKh47	Mostyn	S. Mantri	---	P.Kg	4	6.0	2	3	B.Y.
1743	PKh48	Mostyn	S. Mantri	---	P.Kg	2	7.0	3	3	B.Y.
1744	PKh49	Mostyn	S. Mantri	---	P.Kg	4	10.0	3	3	B.Y.
1745	PKh50	Mostyn	S. Mantri	---	P.Kg	1	2.0	2	3	B.Y.
1746	PKh51	Mostyn	S. Mantri	---	P.Kg	2	5.0	3	3	B.Y.
1747	PKh52	Mostyn	S. Mantri	---	P.Kg	1	1.0	2	3	B.Y.
1748	PKh53	Mostyn	S. Mantri	---	P.Kg	2	6.0	3	3	B.Y.
1749	PKh54	Mostyn	S. Mantri	---	P.Kg	1	1.0	3	1	B.Y.
1750	PKh55	Mostyn	S. Mantri	---	P.Kg	2	2.0	3	3	B.Y.
1751	PKh56	Mostyn	S. Mantri	shale	P.Kg	1	2.0	2	2	B.
1752	PKh57	Mostyn	S. Mantri	---	P.Kg	1	2.0	2	3	Y.B.
1753	PKh58	Mostyn	S. Mantri	---	P.Kg	1	2.5	2	2	D.B.
1754	PKh59	Mostyn	S. Mantri	---	P.Kg	3	2.5	3	2	B.

\*1: none(0), puddle(1), slow(2), moderate(3), fast(4)  
 \*2: coarse grained(1), medium grained(2), fine grained(3), clayey(4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Size $\frac{m}{s}$	Color
1666	PKg26	Mostyn	S. Limau	---	P.Kg	3	5.0	4	1	G.
1667	PKg27	Mostyn	S. Limau	---	P.Kg	1	1.0	3	3	Y.B.
1668	PKg28	Mostyn	S. Limau	---	P.Kg	1	1.0	3	4	Y.B.
1669	PKg29	Mostyn	S. Kalumpang	---	P.Kg	1	2.5	3	2	B.G.
1670	PKg30	Mostyn	S. Kalumpang	---	P.Kg	1	0.8	3	1	B.
1671	PKg31	Mostyn	S. Kalumpang	sandstone	P.Kg	2	2.5	4	1	B.
1672	PKg32	Mostyn	S. Kalumpang	sandstone	P.Kg	1	1.0	3	1	B.
1673	PKg33	Mostyn	S. Kalumpang	---	P.Kg	2	3.8	2	2	B.G.
1674	PKg34	Mostyn	S. Kalumpang	---	P.Kg	1	0.3	2	4	D.G.
1675	PKg35	Mostyn	S. Kalumpang	tfc. silt.	P.Kg	1	0.8	4	2	B.
1676	PKg36	Mostyn	S. Kalumpang	tfc. s.s.	P.Kg	2	2.0	3	2	B.
1677	PKg37	Mostyn	S. Kalumpang	tfc. s.s.	P.Kg	1	1.0	3	4	B.
1678	PKg38	Mostyn	S. Kalumpang	tfc. silt.	P.Kg	2	1.5	4	2	B.
1679	PKg39	Mostyn	S. Kalumpang	tfc. silt.	P.Kg	2	1.7	4	2	B.
1680	PKg40	Mostyn	S. Kalumpang	tfc. s.s.	P.Kg	1	1.5	4	1	B.
1681	PKg41	Mostyn	S. Limau	---	P.Kg	1	2.0	4	3	B.
1682	PKg42	Mostyn	S. Limau	---	P.Kg	1	3.0	4	3	B.
1683	PKg43	Mostyn	S. Limau	---	P.Kg	1	5.0	3	1	Y.B.
1684	PKg44	Mostyn	S. Limau	---	P.Kg	1	4.0	2	2	Y.B.
1685	PKg45	Mostyn	S. Limau	---	P.Kg	1	2.0	2	2	Y.B.
1686	PKg46	Mostyn	S. Limau	---	P.Kg	1	2.0	2	2	Y.B.
1687	PKg47	Mostyn	S. Limau	---	P.Kg	1	1.0	0	2	Y.B.
1688	PKg48	Mostyn	S. Limau	---	P.Kg	2	5.0	2	2	Y.B.
1689	PKg49	Mostyn	S. Limau	---	P.Kg	2	4.0	2	2	Y.B.
1690	PKg50	Mostyn	S. Limau	---	P.Kg	1	2.0	4	1	B.
1691	PKg51	Mostyn	S. Limau	---	P.Kg	1	2.0	2	3	B.
1692	PKg52	Mostyn	S. Limau	---	P.Kg	1	1.0	3	2	B.
1693	PKg53	Mostyn	S. Tingkayu	---	P.Kg	1	1.0	3	2	Y.B.
1694	PKg54	Mostyn	S. Tingkayu	---	Q.	1	2.0	3	3	Y.B.
1695	PKg55	Mostyn	S. Tingkayu	---	Q.	1	2.0	2	1	R.P.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Size $\frac{m}{s}$	Color
1696	PKh01	Mostyn	S. Kalumpang	---	P.Kg	1	1.0	3	1	B.
1697	PKh02	Mostyn	S. Kalumpang	tfc. s.s.	P.Kg	1	1.0	4	1	B.
1698	PKh03	Mostyn	S. Kalumpang	tfc. s.s.	P.Kg	1	0.5	4	1	Y.B.
1699	PKh04	Mostyn	S. Kalumpang	tfc. s.s.	P.Kg	1	3.0	3	2	Y.B.
1700	PKh05	Mostyn	S. Kalumpang	tfc. s.s.	P.Kg	4	3.8	4	3	B.
1701	PKh06	Mostyn	S. Kalumpang	---	P.Kg	2	1.5	3	2	B.
1702	PKh07	Mostyn	S. Kalumpang	shale	P.Kg	1	1.2	3	2	B.
1703	PKh08	Mostyn	S. Kalumpang	---	P.Kg	1	2.0	2	3	Y.B.
1704	PKh09	Mostyn	S. Kalumpang	---	P.Kg	1	1.0	2	2	B.
1705	PKh10	Mostyn	S. Mantri	---	P.Kg	4	8.0	2	2	D.B.

\*1: none(0), puddle(1), slow(2), moderate(3), fast(4)  
 \*2: coarse grained(1), medium grained(2), fine grained(3), clayey(4)



Area: Semporna Area Grid: PKJ

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Size	Color
1755	PKJ01	Mostyn	S. Mantri	—	I,An	2	1.5	3	1	D.B.
1756	PKJ02	Mostyn	S. Mantri	—	I,An	1	0.7	2	2	D.B.
1757	PKJ03	Mostyn	S. Mantri	lapilli tuff	I,An	1	3.0	2	2	D.B.
1758	PKJ04	Mostyn	S. Mantri	lapilli tuff	I,An	1	0.8	2	2	D.B.
1759	PKJ05	Mostyn	S. Mantri	—	I,An	1	1.0	3	2	D.B.
1760	PKJ06	Mostyn	S. Mantri	andesite	I,An	3	10.0	3	1	D.B.
1761	PKJ07	Mostyn	S. Mantri	—	I,An	2	0.5	2	2	B.
1762	PKJ08	Mostyn	S. Mantri	—	Q <sub>1</sub>	1	1.0	2	2	B.
1763	PKJ09	Mostyn	S. Mantri	—	Q <sub>1</sub>	3	6.0	3	2	B.Y.
1764	PKJ10	Mostyn	S. Mantri	—	Q <sub>1</sub>	2	1.0	1	4	B.Y.
1765	PKJ11	Mostyn	S. Mantri	—	P,Ag	2	2.0	3	3	B.Y.
1766	PKJ12	Mostyn	S. Mantri	—	P,Ag	1	6.0	2	3	B.Y.
1767	PKJ13	Mostyn	S. Mantri	—	P,Ag	1	5.0	3	3	B.Y.
1768	PKJ14	Mostyn	S. Mantri	—	P,Ag	2	2.0	2	3	B.Y.
1769	PKJ15	Mostyn	S. Mantri	—	P,Ag	1	4.0	2	3	B.Y.
1770	PKJ16	Mostyn	S. Mantri	—	P,Ag	2	2.0	2	3	B.Y.
1771	PKJ17	Mostyn	S. Mantri	—	P,Ag	1	1.0	2	2	B.Y.
1772	PKJ18	Mostyn	S. Mantri	—	I,An	2	3.0	2	3	B.Y.
1773	PKJ19	Mostyn	S. Mantri	—	I,An	1	1.0	2	3	B.Y.
1774	PKJ20	Mostyn	S. Mantri	—	I,An	1	1.0	2	3	B.Y.
1775	PKJ21	Apas-Balang	S. Mantri	—	I,An	1	4.0	3	3	Y.B.
1776	PKJ22	Apas-Balang	S. Mantri	—	Q <sub>1</sub>	1	2.0	1	3	B.
1777	PKJ23	Apas-Balang	S. Mantri	—	Q <sub>1</sub>	2	0.5	2	2	D.B.
1778	PKJ24	Apas-Balang	S. Mantri	—	I,An	1	2.0	2	2	B.Y.
1779	PKJ25	Apas-Balang	S. Mantri	—	I,An	1	1.5	2	2	B.Y.
1780	PKJ26	Apas-Balang	S. Mantri	—	Q <sub>1</sub>	1	0.5	0	2	B.G.
1781	PKJ27	Apas-Balang	S. Mantri	—	Q <sub>1</sub>	2	1.5	2	2	B.Y.
1782	PKJ28	Apas-Balang	S. Mantri	—	Q <sub>1</sub>	2	3.5	2	2	B.Y.
1783	PKJ29	Apas-Balang	S. Mantri	—	I,An	3	5.5	2	2	B.
1784	PKJ30	Apas-Balang	S. Mantri	—	I,An	1	0.7	2	3	B.
1785	PKJ31	Apas-Balang	S. Mantri	—	I,An	1	1.0	3	2	R.B.
1786	PKJ32	Apas-Balang	S. Mantri	andesite	I,An	1	1.5	2	2	D.B.
1787	PKJ33	Apas-Balang	S. Mantri	—	I,An	1	0.5	4	2	B.
1788	PKJ34	Apas-Balang	S. Mantri	andesite	I,An	2	3.0	4	2	B.
1789	PKJ35	Apas-Balang	S. Mantri	tuff breccia	I,An	1	0.8	4	2	B.
1790	PKJ36	Apas-Balang	S. Mantri	tuff breccia	I,An	1	4.0	4	2	B.
1791	PKJ37	Apas-Balang	S. Mantri	tuff breccia	I,An	1	1.5	3	2	B.
1792	PKJ38	Apas-Balang	S. Mantri	andesite	I,An	3	8.0	3	2	D.B.
1793	PKJ39	Apas-Balang	S. Mantri	—	I,An	1	1.5	3	2	B.G.
1794	PKJ40	Apas-Balang	S. Mantri	—	I,An	1	0.8	4	2	B.G.
1795	PKJ41	Apas-Balang	S. Mantri	sill. and.	I,An	2	0.8	4	2	B.G.
1796	PKJ42	Apas-Balang	S. Mantri	vol. breccia	I,An	1	6.0	3	3	B.
1797	PKJ43	Apas-Balang	S. Mantri	—	Q <sub>1</sub>	3	7.5	2	2	B.
1798	PKJ44	Apas-Balang	S. Mantri	—	Q <sub>1</sub>	1	1.5	2	2	B.
1799	PKJ45	Apas-Balang	S. Mantri	—	Q <sub>1</sub>	2	2.5	3	3	Y.B.
1800	PKJ46	Apas-Balang	S. Mantri	—	Q <sub>1</sub>	1	0.7	0	3	Y.B.
1801	PKJ47	Apas-Balang	S. Mantri	—	I,An	1	1.5	3	4	B.Y.
1802	PKJ48	Apas-Balang	S. Mantri	—	I,An	1	1.5	3	4	B.Y.
1803	PKJ49	Apas-Balang	S. Mantri	—	I,An	1	10.0	4	2	B.Y.
1804	PKJ50	Apas-Balang	S. Mantri	—	I,An	1	1.5	4	2	B.Y.

\*1: nons (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Area: Semporna Area Grid: PKJ

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Size	Color
1805	PKJ51	Apas-Balang	S. Balung	—	Q <sub>1</sub>	2	2.0	2	1	B.Y.
1806	PKJ52	Apas-Balang	S. Balung	—	I,An	1	0.8	2	2	B.
1807	PKJ53	Apas-Balang	S. Balung	—	I,An	1	2.5	3	2	B.Y.
1808	PKJ54	Apas-Balang	S. Balung	—	I,An	2	3.0	2	2	B.Y.
1809	PKJ55	Apas-Balang	S. Balung	—	I,An	2	4.0	2	2	B.Y.
1810	PKJ56	Apas-Balang	S. Balung	—	I,An	2	3.0	2	2	B.Y.
1811	PKJ57	Apas-Balang	S. Mantri	—	I,An	1	4.0	2	2	B.Y.
1812	PKJ58	Apas-Balang	S. Mantri	—	I,An	1	1.2	4	1	B.
1813	PKJ59	Apas-Balang	S. Mantri	—	I,An	1	1.5	3	2	R.B.
1814	PKJ60	Apas-Balang	S. Mantri	—	I,An	1	3.0	3	2	R.B.
1815	PKJ61	Apas-Balang	S. Mantri	altered and.	I,An	1	1.2	3	2	B.
1816	PKJ62	Apas-Balang	S. Mantri	—	I,An	2	1.5	2	2	B.Y.
1817	PKJ63	Mostyn	S. Mantri	—	P,Ag	3	2.0	3	3	B.Y.

  

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Size	Color
1818	PKJ64	Apas-Balang	S. Balung	—	I,An	1	1.5	3	2	B.Y.
1819	PKJ65	Apas-Balang	S. Balung	—	Q <sub>1</sub>	1	1.5	2	2	B.Y.
1820	PKJ66	Apas-Balang	S. Balung	—	Q <sub>1</sub>	3	7.0	2	2	B.Y.
1821	PKJ67	Apas-Balang	S. Balung	—	I,An	2	3.5	2	3	B.Y.
1822	PKJ68	Apas-Balang	S. Balung	—	I,An	1	0.7	2	3	B.Y.
1823	PKJ69	Apas-Balang	S. Balung	—	I,An	2	3.5	3	3	B.Y.
1824	PKJ70	Apas-Balang	S. Balung	—	I,An	1	1.5	2	2	B.Y.
1825	PKJ71	Apas-Balang	S. Balung	—	I,An	1	4.0	3	2	B.Y.
1826	PKJ72	Apas-Balang	S. Balung	—	I,An	1	0.8	3	2	B.
1827	PKJ73	Apas-Balang	S. Balung	—	I,An	3	4.0	3	2	B.
1828	PKJ74	Apas-Balang	S. Balung	—	Q <sub>1</sub>	1	0.5	1	3	B.
1829	PKJ75	Apas-Balang	S. Balung	—	Q <sub>1</sub>	1	3.0	3	3	B.
1830	PKJ76	Apas-Balang	S. Balung	—	Q <sub>1</sub>	1	1.5	1	1	D.B.
1831	PKJ77	Apas-Balang	S. Balung	—	I,An	1	2.0	2	2	D.B.
1832	PKJ78	Apas-Balang	S. Balung	—	I,An	2	3.0	3	2	B.
1833	PKJ79	Apas-Balang	S. Balung	—	I,An	1	2.0	3	2	B.
1834	PKJ80	Apas-Balang	S. Kawa	—	Q <sub>1</sub>	1	4.5	3	2	B.
1835	PKJ81	Apas-Balang	S. Kawa	—	Q <sub>1</sub>	2	5.0	3	3	L.B.
1836	PKJ82	Apas-Balang	S. Balung	—	I,An	1	1.0	2	2	B.Y.
1837	PKJ83	Apas-Balang	S. Balung	—	I,An	1	0.5	0	2	B.Y.
1838	PKJ84	Apas-Balang	S. Balung	—	I,An	1	1.5	2	2	B.Y.
1839	PKJ85	Apas-Balang	S. Balung	—	I,An	2	1.0	2	2	B.Y.
1840	PKJ86	Apas-Balang	S. Balung	—	I,An	1	0.5	2	2	D.B.
1841	PKJ87	Apas-Balang	Kawa	—	Q <sub>1</sub>	2	3.0	3	2	B.Y.
1842	PKJ88	Apas-Balang	Kawa	—	Q <sub>1</sub>	2	3.0	3	2	B.Y.
1843	PKJ89	Apas-Balang	Kawa	—	Q <sub>1</sub>	2	3.0	3	2	B.Y.
1844	PKJ90	Apas-Balang	Kawa	—	Q <sub>1</sub>	2	1.0	2	2	B.Y.
1845	PKJ91	Apas-Balang	Gading	—	I,An	1	1.0	2	2	B.Y.
1846	PKJ92	Apas-Balang	Gading	—	Q <sub>1</sub>	1	1.0	2	2	B.Y.
1847	PKJ93	Apas-Balang	Gading	—	Q <sub>1</sub>	1	2.0	3	2	B.Y.
1848	PKJ94	Apas-Balang	Gading	—	Q <sub>1</sub>	1	2.5	3	2	B.Y.

\*1: nons (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Flow Size $\frac{m^3}{s}$	Color
1848	PKK31	Apas-Balang	S. Gading	---	IaBa	1	2.5	3	2	B.Y.
1849	PKK32	Apas-Balang	S. Gading	---	Q1	1	2.5	3	2	B.Y.
1850	PKK33	Apas-Balang	S. Gading	---	Q1	1	0.5	1	2	B.Y.
1851	PKK34	Apas-Balang	S. Gading	---	Q1	1	2.0	3	2	B.Y.
1852	PKK35	Apas-Balang	S. Gading	---	Q1	3	3.5	3	1	B.Y.
1853	PKK36	Apas-Balang	S. Gading	---	Q1	3	1.5	2	1	B.Y.
1854	PKK37	Apas-Balang	S. Gading	---	Q1	1	1.5	2	1	B.Y.
1855	PKK38	Apas-Balang	S. Gading	---	Q1	1	1.5	2	1	B.Y.
1856	PKK39	Apas-Balang	S. Gading	---	Q1	1	1.5	2	1	B.Y.
1857	PKK40	Apas-Balang	S. Apas	---	IaBa	3	6.0	3	2	B.Y.
1858	PKK41	Apas-Balang	S. Apas	---	IaBa	1	1.5	3	2	B.Y.
1859	PKK42	Apas-Balang	S. Apas	---	IaBa	3	6.0	3	2	B.Y.
1860	PKK43	Apas-Balang	S. Apas	---	IaBa	2	4.5	3	2	B.
1861	PKK44	Apas-Balang	S. Apas	---	P.Kg	2	4.0	3	2	B.
1862	PKK45	Apas-Balang	S. Apas	---	P.Kg	2	6.0	3	2	B.
1863	PKK46	Apas-Balang	S. Apas	---	P.Kg	1	0.7	2	2	B.
1864	PKK47	Apas-Balang	S. Apas	---	P.Kg	1	0.8	4	1	B.
1865	PKK48	Apas-Balang	S. Balang	---	IaBa	4	9.0	4	3	B.
1866	PKK49	Apas-Balang	S. Balang	---	IaBa	1	1.0	2	3	B.Y.
1867	PKK50	Apas-Balang	S. Terangan	---	Q1	1	4.0	3	2	B.
1868	PKK51	Apas-Balang	S. Balang	---	IaBa	1	1.5	3	1	Y.B.
1869	PKK52	Apas-Balang	S. Balang	---	IaBa	1	1.0	2	3	B.G.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Flow Size $\frac{m^3}{s}$	Color
1870	PKn01	Apas-Balang	S. Apas	---	P.Kg	2	5.0	3	2	B.
1871	PKn02	Apas-Balang	S. Apas	---	Q1	3	8.0	3	2	B.Y.
1872	PKn03	Apas-Balang	S. Apas	---	Q1	1	12.0	3	3	G.B.
1873	PKn04	Apas-Balang	S. Apas	---	Q1	4	1.0	2	3	G.B.
1874	PKn05	Apas-Balang	S. Apas	---	Q1	1	2.0	3	1	B.Y.
1875	PKn06	Apas-Balang	S. Apas	---	Q1	1	2.0	3	1	B.Y.
1876	PKn07	Apas-Balang	S. Apas	---	Q1	1	1.5	3	1	B.Y.
1877	PKn08	Apas-Balang	S. Apas Kiri	---	Q1	3	9.0	3	2	B.
1878	PKn09	Apas-Balang	S. Apas Kiri	---	Q1	3	12.0	3	2	B.
1879	PKn10	Apas-Balang	S. Apas	---	Q1	4	14.0	3	2	B.
1880	PKn11	Apas-Balang	S. Apas	andessite	IaBa	3	7.0	1	2	D.B.
1881	PKn12	Apas-Balang	S. Apas	---	Q1	1	1.0	1	2	B.Y.
1882	PKn13	Apas-Balang	S. Apas	---	Q1	1	0.5	1	2	B.G.
1883	PKn14	Apas-Balang	S. Apas	---	Q1	2	0.5	1	2	B.G.
1884	PKn15	Apas-Balang	S. Apas	---	Q1	2	2.0	1	4	G.
1885	PKn16	Apas-Balang	S. Apas	---	Q1	4	8.0	2	3	D.B.
1886	PKn17	Apas-Balang	S. Apas	---	Q1	2	2.0	2	2	B.Y.
1887	PKn18	Apas-Balang	S. Parit	---	Q1	2	1.5	2	2	B.Y.
1888	PKn19	Apas-Balang	S. Parit	---	Q1	2	1.0	2	2	B.Y.
1889	PKn20	Apas-Balang	S. Apas	---	Q2	4	15.0	2	3	B.G.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Flow Size $\frac{m^3}{s}$	Color
1890	PKn21	Apas-Balang	S. Gading	---	Q1	2	1.5	2	3	B.Y.
1891	PKn22	Apas-Balang	S. Gading	---	Q1	1	2.0	2	3	B.Y.
1892	PKn23	Apas-Balang	S. Gading	---	Q1	2	2.0	3	2	B.Y.
1893	PKn24	Apas-Balang	S. Gading	---	Q1	3	3.5	3	2	B.Y.
1894	PKn25	Apas-Balang	S. Gading	---	Q1	2	2.5	3	1	G.B.
1895	PKn26	Apas-Balang	S. Gading	---	Q1	1	1.5	2	1	B.Y.
1896	PKn27	Apas-Balang	S. Gading	---	Q1	1	1.5	1	1	B.Y.
1897	PKn28	Apas-Balang	S. Gading	---	Q1	1	1.0	2	2	B.Y.
1898	PKn29	Apas-Balang	S. Gading	---	Q1	1	1.5	2	2	B.Y.
1899	PKn30	Apas-Balang	S. Gading	---	Q1	1	2.0	2	3	B.G.
1900	PKn31	Apas-Balang	S. Gading	---	Q1	2	0.5	0	4	Y.B.
1901	PKn32	Apas-Balang	S. Gading	---	Q1	2	1.5	2	3	B.Y.
1902	PKn33	Apas-Balang	S. Gading	---	Q1	3	4.0	2	2	Y.B.
1903	PKn34	Apas-Balang	S. Gading	---	Q1	1	1.0	1	3	B.Y.
1904	PKn35	Apas-Balang	S. Gading	---	Q1	1	0.8	1	3	Y.B.
1905	PKn36	Apas-Balang	S. Apas	---	Q1	1	1.0	1	2	B.Y.
1906	PKn37	Apas-Balang	S. Gading	---	Q2	3	4.0	3	2	B.Y.
1907	PKn38	Apas-Balang	S. Gading	---	Q1	3	4.5	2	3	B.
1908	PKn39	Apas-Balang	S. Gading	---	Q1	1	1.0	2	3	Y.B.
1909	PKn40	Apas-Balang	S. Wakaba	---	Q1	1	0.5	2	3	B.G.
1910	PKn41	Apas-Balang	S. Wakaba	---	Q1	1	0.5	2	4	Y.B.
1911	PKn42	Apas-Balang	S. Wakaba	---	Q1	1	2.0	2	3	Y.B.
1912	PKn43	Apas-Balang	S. Parit	---	Q1	1	1.5	1	4	B.G.
1913	PKn44	Apas-Balang	S. Apas	andessite	Q1	4	18.0	3	2	B.
1914	PKn45	Apas-Balang	S. Apas	---	Q1	1	1.0	1	2	Y.B.
1915	PKn46	Apas-Balang	S. Wakaba	---	Q1	1	1.0	1	2	Y.B.
1916	PKn47	Apas-Balang	S. Wakaba	---	Q1	1	1.0	1	2	Y.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Flow Size $\frac{m^3}{s}$	Color
1917	PKn01	Apas-Balang	S. Parit	---	Q2	2	4.0	2	3	B.G.
1918	PKn02	Apas-Balang	S. Parit	---	Q1	1	0.5	1	3	D.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Flow Size $\frac{m^3}{s}$	Color
1919	PKn01	Mostyn	S. Tingkayu	---	P.Km	1	1.5	4	2	B.
1920	PKn02	Mostyn	S. Tingkayu	---	P.Km	3	4.0	2	3	L.B.
1921	PKn03	Mostyn	---	basalt	IaBa	3	5.0	4	2	B.
1922	PKn04	Mostyn	---	---	IaBa	2	4.0	2	1	B.
1923	PKn05	Mostyn	---	---	IaBa	3	3.0	2	2	D.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow **	Flow Size **	Color
1985	Phg26	Mostyn	---	---	KPCs	1	2.0	3	1	Y.B.
1986	Phg27	Mostyn	---	---	KPCs	2	3.0	3	1	Y.B.
1987	Phg28	Mostyn	---	---	Ub	1	2.0	3	1	P.B.
1988	Phg29	Mostyn	---	---	Ub	1	2.0	2	1	D.B.
1989	Phg30	Mostyn	S. Tingkayu	---	IaBa	2	3.0	3	4	G.B.
1970	Phg31	Mostyn	S. Tingkayu	---	KPCs	1	3.0	2	3	G.B.
1971	Phg32	Mostyn	S. Tingkayu	basalt	IaBa	1	4.0	2	2	G.
1972	Phg33	Mostyn	S. Tingkayu	---	IaBa	1	1.0	2	4	G.B.
1973	Phg34	Mostyn	S. Tingkayu	---	IaBa	1	1.5	2	3	B.
1974	Phg35	Mostyn	S. Lineau	---	IaBa	1	0.7	2	2	B.G.
1975	Phg36	Mostyn	S. Lineau	---	P.Kg	1	0.5	1	2	B.G.
1976	Phg37	Mostyn	S. Tingkayu	---	IaBa	1	4.0	1	1	D.B.
1977	Phg38	Mostyn	S. Tingkayu	---	IaBa	1	0.5	1	1	D.B.
1978	Phg39	Mostyn	S. Tingkayu	---	IaBa	1	0.4	0	2	D.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow **	Flow Size **	Color
1924	Phf06	Mostyn	S. Tingkayu	---	IaBa	1	3.0	2	1	P.B.
1925	Phf07	Mostyn	S. Tingkayu	---	IaBa	3	5.0	2	1	B.
1926	Phf08	Mostyn	S. Tingkayu	---	IaBa	2	2.0	1	2	P.B.
1927	Phf09	Mostyn	---	---	KPCs	1	2.0	2	3	P.B.
1928	Phf10	Mostyn	---	---	KPCs	1	3.0	3	1	G.B.
1929	Phf11	Mostyn	---	---	Qa	1	2.0	3	1	Y.B.
1930	Phf12	Mostyn	---	---	KPCs	1	6.0	4	1	Y.B.
1931	Phf13	Mostyn	---	---	KPCs	2	2.0	4	1	B.
1932	Phf14	Mostyn	---	---	KPCs	1	3.0	4	1	B.
1933	Phf15	Mostyn	---	---	KPCs	1	3.0	4	1	B.
1934	Phf16	Mostyn	---	---	KPCs	2	4.0	3	1	B.
1935	Phf17	Mostyn	S. Matarid	---	KPCs	3	5.0	2	1	Y.B.
1936	Phf18	Mostyn	S. Matarid	---	KPCs	3	3.0	2	1	B.
1937	Phf19	Mostyn	---	basalt	KPCs	1	1.0	3	1	B.
1938	Phf20	Mostyn	---	---	KPCs	2	4.0	3	2	B.
1939	Phf21	Mostyn	---	---	KPCs	1	1.0	2	1	B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow **	Flow Size **	Color
1979	Phh01	Mostyn	S. Lineau	---	P.Kg	3	7.0	4	3	B.
1980	Phh02	Mostyn	S. Kalumpang	---	P.Kg	2	1.5	3	3	Y.B.
1981	Phh03	Mostyn	S. Kalumpang	---	P.Kg	1	1.5	2	4	Y.B.
1982	Phh04	Mostyn	S. Kalumpang	tfc. s.s.	P.Kg	1	2.0	2	2	B.
1983	Phh05	Mostyn	S. Kalumpang	---	P.Kg	2	3.0	1	3	Y.B.
1984	Phh06	Mostyn	S. Tundong	---	P.Kg	2	2.0	2	3	G.B.
1985	Phh07	Mostyn	S. Kalumpang	---	P.Kg	1	2.0	2	2	Y.B.
1986	Phh08	Mostyn	S. Tundong	---	P.Kg	1	3.0	2	3	G.B.
1987	Phh09	Mostyn	S. Lineau	---	P.Kg	1	2.0	4	4	G.B.
1988	Phh10	Mostyn	S. Kalumpang	---	P.Kg	1	1.5	2	4	G.B.
1989	Phh11	Mostyn	S. Kalumpang	andesite	IaBa	3	5.0	2	3	B.
1990	Phh12	Mostyn	S. Kalumpang	tuff breccia	IaBa	3	4.0	3	3	B.
1991	Phh13	Mostyn	S. Kalumpang	---	P.Kg	1	1.0	3	1	G.B.
1992	Phh14	Mostyn	S. Kalumpang	---	P.Kg	1	1.5	1	3	G.B.
1993	Phh15	Mostyn	S. Kalumpang	---	IaBa	1	1.0	2	2	G.B.
1994	Phh16	Mostyn	S. Kalumpang	---	P.Kg	2	2.0	2	2	Y.B.
1995	Phh17	Mostyn	S. Kalumpang	---	P.Kg	1	1.5	3	2	Y.B.
1996	Phh18	Mostyn	S. Kalumpang	---	P.Kg	3	5.0	4	2	B.
1997	Phh19	Mostyn	S. Kalumpang	---	P.Kg	1	1.0	3	1	Y.B.
1998	Phh20	Mostyn	S. Kalumpang	fine buff	P.Kg	1	1.0	3	3	B.
2000	Phh21	Mostyn	S. Kalumpang	---	P.Kg	2	1.5	2	1	B.
2001	Phh22	Mostyn	S. Kalumpang	fine buff	P.Kg	1	1.0	2	2	C.B.
2002	Phh23	Mostyn	S. Kalumpang	---	P.Kg	3	3.0	3	2	Y.B.
2003	Phh24	Mostyn	S. Kalumpang	fine buff	P.Kg	3	5.0	1	3	B.
2004	Phh25	Mostyn	S. Kalumpang	---	P.Kg	2	2.0	3	4	B.
2005	Phh26	Mostyn	S. Lineau	---	P.Kg	1	3.0	3	1	Y.B.
2006	Phh27	Mostyn	S. Kalumpang	---	P.Kg	2	2.0	3	3	Y.B.
2007	Phh28	Mostyn	S. Kalumpang	---	P.Kg	3	4.0	3	3	B.
2008	Phh29	Mostyn	S. Kalumpang	---	P.Kg	3	2.0	2	3	B.
2008	Phh30	Mostyn	S. Kalumpang	---	P.Kg	1	0.5	2	3	B.Y.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow **	Flow Size **	Color
1940	Phg01	Mostyn	S. Lineau	---	P.Kg	1	3.0	4	3	G.B.
1941	Phg02	Mostyn	S. Lineau	---	P.Kg	3	5.0	4	3	Y.B.
1942	Phg03	Mostyn	S. Lineau	---	P.Kg	2	2.0	4	3	Y.B.
1943	Phg04	Mostyn	S. Lineau	---	IaBa	2	4.0	4	3	Y.B.
1944	Phg05	Mostyn	S. Lineau	---	IaBa	1	2.0	4	2	B.
1945	Phg06	Mostyn	S. Lineau	---	IaBa	1	1.0	3	4	Y.B.
1946	Phg07	Mostyn	S. Lineau	---	IaBa	1	2.0	3	2	Y.B.
1947	Phg08	Mostyn	S. Lineau	---	P.Kg	1	1.5	4	1	B.
1948	Phg09	Mostyn	S. Lineau	---	P.Kg	2	1.5	3	3	G.B.
1949	Phg10	Mostyn	S. Lineau	---	P.Kg	1	1.0	3	3	G.B.
1950	Phg11	Mostyn	S. Lineau	---	P.Kg	3	4.0	2	2	B.
1951	Phg12	Mostyn	S. Lineau	---	P.Kg	1	2.0	3	1	B.
1952	Phg13	Mostyn	S. Lineau	---	P.Kg	2	3.0	3	3	B.
1953	Phg14	Mostyn	S. Lineau	---	P.Kg	2	1.5	2	3	B.
1954	Phg15	Mostyn	S. Lineau	---	P.Kg	2	2.0	2	3	B.
1955	Phg16	Mostyn	S. Lineau	---	P.Kg	2	3.0	2	4	Y.B.
1956	Phg17	Mostyn	S. Lineau	---	P.Kg	1	2.0	3	3	B.
1957	Phg18	Mostyn	S. Tingkayu	---	IaBa	1	1.5	3	2	G.B.
1958	Phg19	Mostyn	S. Tingkayu	vol. breccia	IaBa	1	2.0	2	2	D.B.
1959	Phg20	Mostyn	S. Matarid	---	KPCs	1	2.0	2	1	D.B.
1960	Phg21	Mostyn	S. Matarid	---	KPCs	1	2.0	2	1	D.B.
1961	Phg22	Mostyn	S. Matarid	---	KPCs	2	2.0	2	1	B.
1962	Phg23	Mostyn	S. Matarid	---	IaBa	2	1.0	2	1	D.B.
1963	Phg24	Mostyn	---	basalt	IaBa	1	2.0	3	1	B.
1964	Phg25	Mostyn	---	---	IaBa	2	3.0	3	1	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Area: Samporna Area Grid: PMJ

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geol. Unit	Order	Width (m)	Flow <sup>+</sup> / <sub>+</sub>	Flow Size <sup>+</sup> / <sub>+</sub>	Color
2049	PMJ31	Apas-Balang	S. Tundong	P.Kg	1	1.5	2	2	G.
2050	PMJ32	Apas-Balang	S. Tundong	P.Kg	3	4.5	1	1	B.
2051	PMJ33	Apas-Balang	S. Tundong	P.Kg	2	3.5	1	1	Y.B.
2052	PMJ34	Apas-Balang	S. Tundong	P.Kg	3	5.0	3	1	Y.B.
2053	PMJ35	Apas-Balang	S. Pang Burong	I.Da	1	3.5	3	1	Y.B.
2054	PMJ36	Apas-Balang	S. Pang Burong	P.Kg	2	3.5	2	1	Y.B.
2055	PMJ37	Apas-Balang	S. Pang Burong	P.Kg	2	3.5	3	1	Y.B.
2056	PMJ38	Apas-Balang	S. Pang Burong	P.Kg	2	3.5	3	1	B.
2057	PMJ39	Apas-Balang	S. Pang Burong	P.Kg	2	5.0	2	1	Y.B.
2058	PMJ40	Mostyn	S. Pang Burong	P.Kg	3	5.0	3	1	Y.B.
2059	PMJ41	Apas-Balang	S. Pang Burong	P.Kg	2	5.0	2	2	G.B.
2060	PMJ42	Apas-Balang	S. Balung Kiri	I.An	1	6.0	4	1	B.
2061	PMJ43	Apas-Balang	S. Pang Burong	P.Kg	1	3.5	3	1	B.
2062	PMJ44	Apas-Balang	S. Pang Burong	P.Kg	1	2.0	3	2	B.
2063	PMJ45	Apas-Balang	S. Pang Burong	P.Kg	1	2.2	2	3	B.
2064	PMJ46	Apas-Balang	S. Pang Burong	P.Kg	2	4.0	2	1	B.
2065	PMJ47	Apas-Balang	S. Pang Burong	P.Kg	1	1.5	2	3	B.
2066	PMJ48	Apas-Balang	S. Pang Burong	P.Kg	3	5.0	3	2	Y.B.
2067	PMJ49	Apas-Balang	S. Pang Burong	P.Kg	1	3.0	4	1	R.B.
2068	PMJ50	Apas-Balang	S. Pang Burong	I.Da	1	1.5	2	1	Y.B.
2069	PMJ51	Apas-Balang	S. Tundong	P.Kg	1	2.0	0	2	B.
2070	PMJ52	Apas-Balang	S. Tundong	P.Kg	1	1.0	0	2	Y.B.
2071	PMJ53	Apas-Balang	S. Tundong	P.Kg	2	2.0	0	2	B.
2072	PMJ54	Mostyn	S. Tundong	P.Kg	1	2.0	2	4	R.B.
2073	PMJ55	Mostyn	S. Tundong	P.Kg	2	3.0	0	4	R.B.
2074	PMJ56	Mostyn	S. Tundong	P.Kg	2	2.0	0	4	Y.B.
2075	PMJ57	Mostyn	S. Tundong	P.Kg	2	2.0	0	3	B.
2076	PMJ58	Mostyn	S. Tundong	P.Kg	1	1.5	1	2	B.
2077	PMJ59	Mostyn	S. Tundong	P.Kg	1	1.0	1	2	G.B.
2078	PMJ60	Mostyn	S. Tundong	P.Kg	1	1.0	1	1	Y.B.
2079	PMJ61	Mostyn	S. Tundong	tfc. s.s.	2	3.0	0	2	G.B.
2080	PMJ62	Mostyn	S. Tundong	P.Kg	2	2.0	0	2	B.

Area: Samporna Area Grid: PMK

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geol. Unit	Order	Width (m)	Flow <sup>+</sup> / <sub>+</sub>	Flow Size <sup>+</sup> / <sub>+</sub>	Color
2081	PMK01	Apas-Balang	S. Balung Kiri	I.Da	1	6.0	4	1	R.B.
2082	PMK02	Apas-Balang	S. Balung Kiri	M.Bl	1	3.0	3	1	B.
2083	PMK03	Apas-Balang	S. Balung Kiri	M.Bl	1	1.0	2	2	G.B.
2084	PMK04	Apas-Balang	S. Balung Kiri	M.Bl	1	1.0	2	2	G.B.
2085	PMK05	Apas-Balang	S. Balung Kiri	M.Bl	1	4.0	2	3	B.
2086	PMK06	Apas-Balang	S. Balung Kiri	M.Bl	3	5.0	3	1	B.
2087	PMK07	Apas-Balang	S. Balung Kiri	M.Bl	1	1.0	2	4	G.B.
2088	PMK08	Apas-Balang	S. Balung Kiri	M.Bl	1	1.5	2	2	Y.B.
2089	PMK09	Apas-Balang	S. Balung Kiri	M.Bl	3	5.0	3	1	Y.B.
2090	PMK10	Apas-Balang	S. Balung Kan.	I.Da	2	3.0	4	2	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Area: Samporna Area Grid: PMK

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geol. Unit	Order	Width (m)	Flow <sup>+</sup> / <sub>+</sub>	Flow Size <sup>+</sup> / <sub>+</sub>	Color
2009	PMK31	Mostyn	S. Kalumpang	P.Kg	1	0.6	1	3	B.Y.
2010	PMK32	Mostyn	S. Kalumpang	P.Kg	1	0.6	1	3	B.Y.
2011	PMK33	Mostyn	S. Kalumpang	P.Kg	1	0.4	2	3	B.Y.
2012	PMK34	Mostyn	S. Kalumpang	P.Kg	1	0.8	2	2	B.
2013	PMK35	Mostyn	S. Kalumpang	P.Kg	1	1.5	1	2	B.
2014	PMK36	Mostyn	S. Kalumpang	P.Kg	1	1.7	2	2	P.B.
2015	PMK37	Mostyn	S. Kalumpang	P.Kg	2	2.0	2	2	B.
2016	PMK38	Mostyn	S. Kalumpang	P.Kg	1	0.5	2	2	B.
2017	PMK39	Mostyn	S. Limau	P.Kg	1	0.5	2	3	B.
2018	PMK40	Mostyn	S. Limau	P.Kg	1	0.5	2	2	P.B.

Area: Samporna Area Grid: PMJ

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geol. Unit	Order	Width (m)	Flow <sup>+</sup> / <sub>+</sub>	Flow Size <sup>+</sup> / <sub>+</sub>	Color
2019	PMJ01	Mostyn	S. Tundong	P.Kg	1	2.0	3	3	Y.B.
2020	PMJ02	Mostyn	S. Tundong	P.Kg	2	1.5	0	2	B.
2021	PMJ03	Mostyn	S. Tundong	P.Kg	1	1.0	0	3	G.B.
2022	PMJ04	Mostyn	S. Tundong	P.Kg	1	1.5	2	3	B.
2023	PMJ05	Mostyn	S. Tundong	P.Kg	2	2.0	2	3	B.
2024	PMJ06	Mostyn	S. Tundong	P.Kg	2	2.5	0	3	G.B.
2025	PMJ07	Mostyn	S. Tundong	P.Kg	1	4.0	0	3	R.G.
2026	PMJ08	Mostyn	S. Tundong	P.Kg	2	4.0	0	3	G.B.
2027	PMJ09	Mostyn	S. Tundong	P.Kg	2	4.2	0	3	B.
2028	PMJ10	Apas-Balang	S. Mantri	I.An	1	1.0	3	2	B.
2029	PMJ11	Apas-Balang	S. Mantri	I.An	2	8.0	3	2	B.
2030	PMJ12	Apas-Balang	S. Mantri	I.An	1	0.5	2	1	B.Y.
2031	PMJ13	Apas-Balang	S. Mantri	I.Da	1	1.5	4	1	B.Y.
2032	PMJ14	Apas-Balang	S. Mantri	I.Da	1	0.5	1	1	B.Y.
2033	PMJ15	Apas-Balang	S. Mantri	I.Da	2	5.0	4	2	B.Y.
2034	PMJ16	Apas-Balang	S. Mantri	I.Da	1	2.0	4	2	B.Y.
2035	PMJ17	Apas-Balang	S. Mantri	I.Da	1	1.5	2	2	B.Y.
2036	PMJ18	Apas-Balang	S. Mantri	I.Da	1	3.0	3	2	B.Y.
2037	PMJ19	Apas-Balang	S. Mantri	I.Da	1	0.5	1	2	B.Y.
2038	PMJ20	Apas-Balang	S. Mantri	I.Da	1	5.0	1	2	B.Y.
2039	PMJ21	Apas-Balang	S. Tundong	P.Kg	1	1.5	1	1	B.
2040	PMJ22	Apas-Balang	S. Tundong	P.Kg	1	1.0	0	1	Y.B.
2041	PMJ23	Apas-Balang	S. Tundong	P.Kg	1	1.2	0	1	B.
2042	PMJ24	Apas-Balang	S. Tundong	P.Kg	2	1.5	0	2	B.
2043	PMJ25	Apas-Balang	S. Tundong	P.Kg	2	4.0	0	3	G.B.
2044	PMJ26	Apas-Balang	S. Tundong	P.Kg	2	1.2	3	2	B.
2045	PMJ27	Apas-Balang	S. Tundong	P.Kg	1	4.0	4	1	G.
2046	PMJ28	Apas-Balang	S. Tundong	P.Kg	2	4.0	3	2	G.
2047	PMJ29	Apas-Balang	S. Tundong	P.Kg	1	4.0	2	2	G.
2048	PMJ30	Apas-Balang	S. Tundong	P.Kg	2	4.5	2	2	G.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow <sup>m<sup>3</sup></sup>	Flow Size <sup>m<sup>2</sup></sup>	Color
2091	PMK11	Apas-Balang	S. Balung Kan.	—	I, Da	1	1.5	2	2	B.
2092	PMK12	Apas-Balang	S. Balung Kan.	—	I, Da	2	4.0	4	4	B.
2093	PMK13	Apas-Balang	S. Balung Kan.	—	I, Da	2	2.0	3	3	B.
2094	PMK14	Apas-Balang	S. Balung Kan.	—	I, Da	3	3.0	3	2	B.
2095	PMK15	Apas-Balang	S. Balung Kan.	—	I, Da	3	4.0	3	3	B.
2096	PMK16	Apas-Balang	S. Balung Kan.	andesite	I, Da	3	2.5	2	2	B.
2097	PMK17	Apas-Balang	S. Balung Kan.	dacite	I, Da	3	2.5	3	1	B.
2098	PMK18	Apas-Balang	S. Balung	—	N, Bl	4	6.0	3	3	B.
2099	PMK19	Apas-Balang	S. Balung	—	N, Bl	1	1.0	2	3	B.
2100	PMK20	Apas-Balang	S. Balung	—	N, Bl	4	6.0	4	1	B.
2101	PMK21	Apas-Balang	S. Balung	—	N, Bl	2	1.2	2	1	B.
2102	PMK22	Apas-Balang	S. Balung	—	N, Bl	2	1.5	4	2	B.
2103	PMK23	Apas-Balang	S. Balung	—	N, Bl	2	2.0	3	2	B.
2104	PMK24	Apas-Balang	S. Balung	—	Q <sub>2</sub>	2	3.0	2	3	B.
2105	PMK25	Apas-Balang	S. Balung	—	N, Bl	1	2.0	3	2	B.
2106	PMK26	Apas-Balang	S. Balung	—	I, Da	1	2.0	3	2	B.
2107	PMK27	Apas-Balang	S. Balung	dacite	I, Da	1	2.5	2	1	B.
2108	PMK28	Apas-Balang	S. Balung	dacite	I, Da	1	1.0	3	2	B.
2109	PMK29	Apas-Balang	S. Balung	dacite	I, Da	2	3.0	3	1	B.
2110	PMK30	Apas-Balang	S. Balung	dacite	I, Da	1	2.0	2	2	B.
2111	PMK31	Apas-Balang	S. Balung	—	I, Da	2	3.0	2	3	B.
2112	PMK32	Apas-Balang	S. Balung	—	Q <sub>2</sub>	1	1.5	2	3	B.
2113	PMK33	Apas-Balang	S. Balung	—	Q <sub>2</sub>	2	3.0	3	2	B.
2114	PMK34	Apas-Balang	S. Balung	—	Q <sub>2</sub>	2	1.5	1	4	B.
2115	PMK35	Apas-Balang	S. Balung	—	Q <sub>2</sub>	3	4.0	2	3	B.
2116	PMK36	Apas-Balang	S. Balung	—	Q <sub>2</sub>	1	0.8	2	3	B.
2117	PMK37	Apas-Balang	S. Balung	dacite	I, Da	1	2.0	3	1	B.
2118	PMK38	Apas-Balang	S. Pang Burong	andisite	I, Da	1	2.0	3	2	B.
2119	PMK39	Apas-Balang	S. Balung Kan.	andisite	I, Da	1	1.5	3	2	B.
2120	PMK40	Apas-Balang	S. Pang Burong	—	I, Da	1	0.5	1	4	B.
2121	PMK41	Apas-Balang	S. Pang Burong	—	I, Da	1	1.5	3	1	B.
2122	PMK42	Apas-Balang	S. Pang Burong	—	I, Da	1	1.0	2	1	B.
2123	PMK43	Apas-Balang	S. Pang Burong	—	I, Da	1	1.5	2	1	B.
2124	PMK44	Apas-Balang	S. Pang Burong	—	I, Da	1	1.5	2	2	B.
2125	PMK45	Apas-Balang	S. Pang Burong	—	P, Ag	3	5.0	3	1	B.
2126	PMK46	Apas-Balang	S. Pang Burong	—	I, Da	1	1.5	3	1	B.
2127	PMK47	Apas-Balang	S. Jerangan	—	Q <sub>1</sub>	1	5.0	2	3	B.
2128	PMK48	Apas-Balang	S. Balung	—	Q <sub>1</sub>	4	12.0	1	6	B.
2129	PMK49	Apas-Balang	S. Burong	—	Q <sub>1</sub>	1	4.0	3	4	B.
2130	PMK50	Apas-Balang	S. Burong	—	Q <sub>1</sub>	1	2.0	3	4	B.
2131	PMK51	Apas-Balang	S. Burong	—	Q <sub>1</sub>	1	3.0	3	1	B.
2132	PMK52	Apas-Balang	S. Burong	—	Q <sub>1</sub>	1	2.0	3	1	B.
2133	PMK53	Apas-Balang	S. Burong	—	Q <sub>2</sub>	1	1.5	0	3	B.
2134	PMK54	Apas-Balang	S. Burong	—	Q <sub>2</sub>	1	1.0	3	3	B.
2135	PMK55	Apas-Balang	S. Burong	—	Q <sub>1</sub>	2	1.5	3	3	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow <sup>m<sup>3</sup></sup>	Flow Size <sup>m<sup>2</sup></sup>	Color
2136	PMK01	Apas-Balang	S. Wakaba	—	Q <sub>2</sub>	3	5.0	1	3	B.
2137	PMK02	Apas-Balang	S. Wakaba	—	Q <sub>1</sub>	3	4.0	3	2	Y.B.
2138	PMK03	Apas-Balang	S. Jerangan	—	Q <sub>1</sub>	2	4.0	2	2	B.
2139	PMK04	Apas-Balang	S. Jerangan	—	Q <sub>1</sub>	2	5.0	3	2	G.B.
2140	PMK05	Apas-Balang	S. Jerangan	—	Q <sub>1</sub>	1	1.0	3	3	R.B.
2141	PMK06	Apas-Balang	S. Balung	—	Q <sub>2</sub>	1	6.0	1	3	G.B.
2142	PMK07	Apas-Balang	S. Balung	—	Q <sub>1</sub>	1	1.0	2	3	R.B.
2143	PMK08	Apas-Balang	S. Wakaba	—	Q <sub>1</sub>	3	4.0	1	3	G.B.
2144	PMK09	Apas-Balang	S. Wakaba	—	Q <sub>1</sub>	3	3.0	3	3	G.B.
2145	PMK10	Apas-Balang	S. Wakaba	—	Q <sub>1</sub>	2	2.0	0	2	G.B.
2146	PMK11	Apas-Balang	S. Wakaba	—	Q <sub>1</sub>	1	1.5	0	3	G.B.
2147	PMK12	Apas-Balang	S. Wakaba	—	Q <sub>1</sub>	1	1.5	2	2	P.B.
2148	PMK13	Apas-Balang	S. Wakaba	—	Q <sub>1</sub>	1	2.0	1	4	P.B.
2149	PMK14	Apas-Balang	S. Burong	—	Q <sub>2</sub>	1	1.5	1	4	B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow <sup>m<sup>3</sup></sup>	Flow Size <sup>m<sup>2</sup></sup>	Color
2150	PMF01	Mostyn	—	—	—	2	4.0	3	2	G.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow <sup>m<sup>3</sup></sup>	Flow Size <sup>m<sup>2</sup></sup>	Color
2151	PMG01	Mostyn	—	—	—	1	2.0	3	1	Y.B.
2152	PMG02	Mostyn	—	—	—	1	2.0	3	2	Y.B.
2153	PMG03	Mostyn	S. Atas	—	I, Ba	1	2.0	3	1	B.
2154	PMG04	Mostyn	S. Atas	—	I, Ba	1	1.0	1	2	G.B.
2155	PMG05	Mostyn	S. Atas	—	I, Ba	1	3.0	3	1	B.
2156	PMG06	Mostyn	S. Atas	shale	—	1	4.0	2	1	B.
2157	PMG07	Mostyn	S. Atas	—	I, Ba	2	5.0	3	1	B.
2158	PMG08	Mostyn	S. Kumpang	—	I, Ba	1	2.0	2	4	G.B.
2159	PMG09	Pulau Timun Mata	S. Sepang	—	P, Ag	1	2.0	1	3	G.B.
2160	PMG10	Pulau Timun Mata	S. Sepang	—	—	2	3.0	2	1	B.
2161	PMG11	Pulau Timun Mata	S. Sepang	—	—	2	3.0	2	1	B.
2162	PMG12	Pulau Timun Mata	S. Sepang	—	—	2	3.0	3	1	B.
2163	PMG13	Pulau Timun Mata	S. Sepang	—	—	1	3.0	1	3	Y.B.
2164	PMG14	Pulau Timun Mata	S. Sepang	—	—	1	3.0	1	3	G.B.
2165	PMG15	Mostyn	S. Atas	—	—	1	1.5	2	1	Y.B.
2166	PMG16	Mostyn	—	—	—	1	0.7	3	2	D.B.
2167	PMG17	Mostyn	—	—	—	1	1.2	3	2	D.B.
2168	PMG18	Mostyn	—	tfc. s.s.	—	2	3.5	2	3	D.B.
2169	PMG19	Mostyn	S. Atas	—	I, Ba	2	2.5	2	3	R.G.
2170	PMG20	Mostyn	S. Atas	—	I, Ba	2	1.0	2	3	R.G.
2171	PMG21	Mostyn	S. Atas	—	I, Ba	1	1.0	1	1	D.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
 \*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Area: Samporna Area Grid: PNg

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Size $\frac{m}{s}$	Color
2171	PNg21	Pulau Timbun Mata	S. Atas	---	IaBa	2	4.0	2	2	D.B.
2172	PNg22	Pulau Timbun Mata	---	---	Q <sub>2</sub>	1	1.5	1	3	B.
2173	PNg23	Pulau Timbun Mata	---	---	Q <sub>2</sub>	1	1.0	2	3	Y.B.
2174	PNg24	Pulau Timbun Mata	---	---	KPS	2	4.0	3	2	D.B.
2175	PNg25	Pulau Timbun Mata	---	---	KPS	1	0.8	3	2	D.B.
2176	PNg26	Pulau Timbun Mata	---	---	KPS	2	1.2	3	1	D.B.
2177	PNg27	Pulau Timbun Mata	---	---	KPS	1	0.8	3	1	D.B.
2178	PNg28	Pulau Timbun Mata	---	---	KPS	1	1.2	3	2	D.B.
2179	PNg29	Pulau Timbun Mata	---	---	KPS	1	0.8	0	2	D.B.
2180	PNg30	Pulau Timbun Mata	---	---	Q <sub>2</sub>	1	3.5	2	4	D.B.
2181	PNg31	Pulau Timbun Mata	S. Sapang	---	Q <sub>2</sub>	1	1.5	1	3	P.B.
2182	PNg32	Pulau Timbun Mata	---	---	P.Kg	3	0.4	1	3	D.B.
2183	PNg33	Pulau Timbun Mata	S. Sapang	---	Q <sub>2</sub>	3	2.5	2	3	B.G.
2184	PNg34	Pulau Timbun Mata	S. Kalumpang	---	IaBa	1	1.5	2	2	B.G.
2185	PNg35	Mostyn	S. Kalumpang	---	Mostyn	1	0.7	2	2	B.
2186	PNg36	Pulau Timbun Mata	S. Sapang	---	KPS	1	0.8	2	2	D.B.
2187	PNg37	Pulau Timbun Mata	S. Sapang	---	KPS	1	1.0	2	2	D.B.
2188	PNg38	Mostyn	S. Atas	---	KPS	1	0.4	1	3	B.
2189	PNg39	Mostyn	S. Atas	---	KPS	1	0.5	2	2	D.B.
2190	PNg40	Mostyn	S. Atas	---	KPS	1	1.5	2	2	D.B.
2191	PNg41	Mostyn	---	---	Ub	1	1.5	3	2	D.G.
2192	PNg42	Mostyn	---	---	IaBa	1	0.7	1	2	D.G.
2193	PNg43	Mostyn	S. Kalumpang	---	IaBa	1	1.0	3	2	D.B.

Area: Samporna Area Grid: PNg

Area: Samporna Area Grid: PNg

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Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Size $\frac{m}{s}$	Color
2214	PNg21	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	0.6	2	2	R.B.
2215	PNg22	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	1.0	3	2	Y.B.
2216	PNg23	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	0.8	3	2	Y.B.
2217	PNg24	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	0.5	3	2	Y.B.
2218	PNg25	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	0.6	3	1	B.
2219	PNg26	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	1.8	2	2	Y.B.
2220	PNg27	Pulau Timbun Mata	S. Sapang	---	P.Kg	1	1.5	2	2	B.
2221	PNg28	Pulau Timbun Mata	S. Sipit Lahu.	---	P.Kg	1	0.4	3	2	D.G.
2222	PNg29	Mostyn	S. Kalumpang	---	P.Kg	1	0.5	2	2	P.B.
2223	PNg30	Mostyn	S. Kalumpang	---	IaBa	1	1.0	2	1	B.G.
2224	PNg31	Mostyn	S. Kalumpang	---	KPS	1	0.6	2	1	B.G.
2225	PNg32	Mostyn	S. Kalumpang	---	KPS	2	1.5	2	2	D.B.
2226	PNg33	Mostyn	S. Kalumpang	---	KPS	3	0.8	3	3	P.B.
2227	PNg34	Mostyn	S. Kalumpang	---	P.Kg	2	1.5	1	3	P.B.
2228	PNg35	Pulau Timbun Mata	S. Sipit Lahu.	---	KPS	1	1.0	1	1	G.
2229	PNg36	Pulau Timbun Mata	S. Sipit Lahu.	---	KPS	1	1.0	2	2	Y.B.
2230	PNg37	Pulau Timbun Mata	S. Sipit Lahu.	---	KPS	1	1.2	2	2	B.Y.
2231	PNg38	Mostyn	S. Kalumpang	basalt	IaBa	2	2.5	3	3	P.B.
2232	PNg39	Mostyn	S. Kalumpang	basalt	IaBa	1	0.5	2	2	Y.B.
2233	PNg40	Mostyn	S. Kalumpang	basalt	IaBa	1	2.0	2	3	D.B.
2234	PNg41	Mostyn	S. Kalumpang	basalt	P.Kg	2	2.0	1	2	G.
2235	PNg42	Mostyn	S. Kalumpang	---	P.Kg	2	2.5	3	2	D.B.
2236	PNg43	Mostyn	S. Kalumpang	---	IaBa	2	0.5	3	2	D.B.
2237	PNg44	Mostyn	S. Kalumpang	---	P.Kg	1	0.7	1	3	B.Y.
2238	PNg45	Mostyn	S. Kalumpang	---	P.Kg	1	0.4	2	3	Y.B.

Area: Samporna Area Grid: PNg

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Size $\frac{m}{s}$	Color
2239	PNg01	Mostyn	S. Kalumpang	---	P.Kg	1	2.0	2	1	G.
2240	PNg02	Mostyn	S. Kalumpang	---	P.Kg	1	2.0	2	1	G.
2241	PNg03	Mostyn	S. Kalumpang	---	P.Kg	1	2.0	2	1	G.
2242	PNg04	Mostyn	S. Kalumpang	---	P.Kg	2	3.0	2	1	G.
2243	PNg05	Mostyn	S. Kalumpang	---	P.Kg	4	30.0	4	1	G.
2244	PNg06	Mostyn	S. Kalumpang	---	P.Kg	1	2.0	3	1	G.
2245	PNg07	Mostyn	S. Kalumpang	---	P.Kg	2	3.0	2	1	B.
2246	PNg08	Mostyn	S. Kalumpang	---	P.Kg	1	2.0	2	2	B.
2247	PNg09	Mostyn	S. Tundong	---	P.Kg	3	5.0	2	1	B.
2248	PNg10	Mostyn	S. Tundong	---	P.Kg	1	3.0	2	2	B.
2249	PNg11	Mostyn	S. Tundong	---	P.Kg	3	5.0	3	1	Y.B.
2250	PNg12	Mostyn	S. Tundong	---	P.Kg	1	5.0	3	1	B.
2251	PNg13	Mostyn	S. Tundong	---	P.Kg	3	5.0	3	1	B.
2252	PNg14	Apas-Balang	S. Pang Burong	---	P.Kg	2	4.0	2	2	G.B.
2253	PNg15	Apas-Balang	S. Pang Burong	---	P.Kg	3	6.0	2	2	G.B.
2254	PNg16	Apas-Balang	S. Pang Burong	---	P.Kg	3	8.0	2	1	B.
2255	PNg17	Apas-Balang	S. Pang Burong	siltstone	P.Kg	2	6.0	2	3	Y.B.
2256	PNg18	Apas-Balang	S. Pang Burong	---	Q <sub>2</sub>	3	8.0	2	3	Y.B.
2257	PNg19	Apas-Balang	S. Kalumpang	s.s./silt.	P.Kg	2	6.0	3	3	B.
2258	PNg20	Apas-Balang	S. Kalumpang	s.s./silt.	P.Kg	1	0.5	2	3	B.

Area: Samporna Area Grid: PNg

Area: Samporna Area Grid: PNg

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow $\frac{m^3}{s}$	Size $\frac{m}{s}$	Color
2194	PNg01	Mostyn	S. Kalumpang	---	P.Kg	1	2.0	3	2	Y.B.
2195	PNg02	Mostyn	S. Kalumpang	tuff	P.Kg	1	3.0	3	2	Y.B.
2196	PNg03	Mostyn	S. Kalumpang	---	P.Kg	1	3.5	1	2	Y.B.
2197	PNg04	Mostyn	S. Kalumpang	---	P.Kg	3	6.0	4	1	Y.B.
2198	PNg05	Mostyn	S. Kalumpang	---	P.Kg	2	4.0	2	2	Y.B.
2199	PNg06	Mostyn	S. Kalumpang	---	P.Kg	1	3.0	2	2	Y.B.
2200	PNg07	Mostyn	S. Kalumpang	---	P.Kg	1	2.0	2	2	Y.B.
2201	PNg08	Mostyn	S. Kalumpang	---	P.Kg	1	2.0	2	2	Y.B.
2202	PNg09	Mostyn	S. Kalumpang	---	P.Kg	1	7.0	2	3	Y.B.
2203	PNg10	Mostyn	S. Kalumpang	---	P.Kg	3	3.0	3	1	Y.B.
2204	PNg11	Mostyn	S. Kalumpang	---	P.Kg	2	1.5	1	2	Y.B.
2205	PNg12	Pulau Timbun Mata	S. Sipit Lahu.	---	KPS	1	3.0	2	1	B.
2206	PNg13	Pulau Timbun Mata	S. Sipit Lahu.	---	P.Kg	1	3.0	2	1	Y.B.
2207	PNg14	Pulau Timbun Mata	S. Sipit Lahu.	---	P.Kg	1	1.0	2	1	Y.B.
2208	PNg15	Pulau Timbun Mata	S. Sipit Lahu.	---	P.Kg	2	2.0	1	2	Y.B.
2209	PNg16	Pulau Timbun Mata	S. Sipit Lahu.	s.s./silt.	P.Kg	1	2.0	2	2	B.
2210	PNg17	Mostyn	S. Kalumpang	---	P.Kg	1	1.5	1	2	Y.B.
2211	PNg18	Mostyn	S. Kalumpang	---	KPS	1	1.0	2	3	G.B.
2212	PNg19	Mostyn	S. Kalumpang	---	IaBa	2	3.0	3	3	B.
2213	PNg20	Mostyn	S. Kalumpang	tfc. s.s.	IaBa	2	5.0	4	3	Y.B.

\*1: none(0), middle(1), slow(2), moderate(3), fast(4)  
 \*2: coarse grained(1), medium grained(2), fine grained(3), clayey(4)

\*1: none(0), middle(1), slow(2), moderate(3), fast(4)  
 \*2: coarse grained(1), medium grained(2), fine grained(3), clayey(4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
2259	PNJ21	Apas-Balang	S. Kalumpang	---	P.Kg	2	4.0	2	3	B.
2260	PNJ22	Apas-Balang	S. Kalumpang	---	Q <sub>1</sub>	2	5.0	2	3	D.B.
2261	PNJ23	Apas-Balang	S. Kalumpang	---	Q <sub>2</sub>	1	0.5	1	3	B.
2262	PNJ24	Pulau Timbun Mata	S. Sipit	---	P.Kg	2	2.0	4	3	B.Y.
2263	PNJ25	Apas-Balang	S. Kalumpang	---	Q <sub>2</sub>	4	18.0	2	3	B.Y.
2264	PNJ26	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	1.0	2	3	B.Y.
2265	PNJ27	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	3.0	4	3	B.Y.
2266	PNJ28	Pulau Timbun Mata	S. Sipit	---	P.Kg	2	2.0	2	2	B.Y.
2267	PNJ29	Pulau Timbun Mata	S. Sipit	---	Q <sub>1</sub>	1	0.8	3	2	Y.B.
2268	PNJ30	Pulau Timbun Mata	S. Sipit	---	Q <sub>1</sub>	1	1.0	2	3	B.Y.
2269	PNJ31	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	1.0	2	3	B.Y.
2270	PNJ32	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	0.5	2	3	B.Y.
2271	PNJ33	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	0.8	3	2	Y.B.
2272	PNJ34	Kalumpang	---	---	Q <sub>1</sub>	1	2.5	0	2	B.Y.
2273	PNJ35	Kalumpang	---	---	Q <sub>1</sub>	2	2.0	2	2	B.Y.
2274	PNJ36	Kalumpang	---	---	Q <sub>1</sub>	1	0.5	1	2	B.Y.
2275	PNJ37	Kalumpang	---	---	Q <sub>1</sub>	1	1.0	2	2	B.Y.
2276	PNJ38	Kalumpang	---	---	Q <sub>1</sub>	1	2.0	2	1	B.Y.
2277	PNJ39	Kalumpang	---	---	Q <sub>1</sub>	1	0.5	1	1	B.Y.
2278	PNJ40	Kalumpang	---	---	Q <sub>1</sub>	1	2.0	2	2	B.Y.
2279	PNJ41	Kalumpang	---	---	Q <sub>1</sub>	1	1.5	2	3	Y.B.
2280	PNJ42	Kalumpang	---	---	Q <sub>1</sub>	1	2.5	3	3	Y.B.
2281	PNJ43	Kalumpang	---	---	Q <sub>1</sub>	1	0.8	3	2	Y.B.
2282	PNJ44	Kalumpang	---	---	Q <sub>1</sub>	1	0.8	2	3	B.G.
2283	PNJ45	Kalumpang	---	---	Y.Ba	1	3.0	2	2	B.Y.
2284	PNJ46	Apas-Balang	S. Pang Burong	---	P.Kg	1	2.0	0	2	B.
2285	PNJ47	Apas-Balang	S. Pang Burong	tuff	P.Kg	3	10.0	2	3	B.
2286	PNJ48	Apas-Balang	S. Pang Burong	---	P.Kg	1	3.0	0	3	B.
2287	PNJ49	Apas-Balang	S. Pang Burong	---	P.Kg	3	5.0	3	1	Y.B.
2288	PNJ50	Apas-Balang	S. Tundong	---	P.Kg	1	2.0	0	3	Y.B.
2289	PNJ51	Mostyn	S. Tundong	---	P.Kg	1	1.0	0	4	Y.B.
2290	PNJ52	Mostyn	S. Kalumpang	---	P.Kg	1	1.0	0	3	Y.B.
2291	PNJ53	Mostyn	S. Kalumpang	---	P.Kg	1	3.0	2	2	Y.B.
2292	PNJ54	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	0.5	2	3	Y.B.
2293	PNJ55	Pulau Timbun Mata	S. Sipit	---	P.Kg	1	0.5	2	3	Y.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
2294	PNJ01	Apas-Balang	S. Pang Burong	---	Q <sub>2</sub>	1	2.0	3	3	B.
2295	PNJ02	Apas-Balang	S. Pang Burong	---	Q <sub>2</sub>	2	1.0	1	4	Y.B.
2296	PNJ03	Apas-Balang	S. Pang Burong	andésite	P.Kg	1	3.0	3	1	R.B.
2297	PNJ04	Apas-Balang	S. Kalumpang	---	Q <sub>2</sub>	1	1.5	1	4	B.
2298	PNJ05	Kalumpang	S. Kalumpang	---	Q <sub>2</sub>	2	1.5	2	4	Y.B.
2299	PNJ06	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	1	1.0	2	3	Y.B.
2300	PNJ07	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	2	2.5	2	3	Y.B.
2301	PNJ08	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	2	2.5	2	3	Y.B.
2302	PNJ09	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	2	2.5	2	3	Y.B.
2303	PNJ10	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	1	0.5	2	2	B.Y.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
2304	PNK11	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	1	1.0	2	2	B.Y.
2305	PNK12	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	2	2.0	2	2	B.Y.
2306	PNK13	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	1	1.5	1	3	B.Y.
2307	PNK14	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	2	0.5	1	3	B.Y.
2308	PNK15	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	2	1.5	1	3	B.Y.
2309	PNK16	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	1	0.5	1	3	B.Y.
2310	PNK17	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	2	1.0	2	3	B.Y.
2311	PNK18	Apas-Balang	S. Burong	---	Q <sub>2</sub>	1	1.0	0	4	R.B.
2312	PNK19	Apas-Balang	S. Burong	---	Q <sub>2</sub>	1	1.0	2	4	R.B.
2313	PNK20	Apas-Balang	S. Payan	---	Q <sub>2</sub>	1	12.0	0	4	B.
2314	PNK21	Apas-Balang	S. Pang Burong	---	Q <sub>2</sub>	3	1.5	3	4	L.B.
2315	PNK22	Apas-Balang	S. Pang Burong	---	Q <sub>2</sub>	4	12.0	3	2	G.
2316	PNK23	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	1	0.5	2	3	B.
2317	PNK24	Kalumpang	S. Kalumpang	---	Q <sub>1</sub>	1	0.8	2	3	Y.B.
2318	PNK25	Apas-Balang	S. Pang Burong	---	P.Kg	1	0.7	0	3	B.Y.
2319	PNK26	Apas-Balang	S. Pang Burong	---	P.Kg	1	0.8	2	3	B.Y.
2320	PNK27	Apas-Balang	S. Pang Burong	---	P.Kg	1	0.5	3	2	B.
2321	PNK28	Apas-Balang	S. Payan	---	Q <sub>2</sub>	1	0.4	1	4	B.Y.
2322	PNK29	Apas-Balang	S. Pang Burong	---	Q <sub>2</sub>	1	0.8	0	3	R.B.
2323	PNK30	Apas-Balang	S. Burong	---	Q <sub>2</sub>	1	0.4	2	3	R.B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
2324	PNM01	Apas-Balang	S. Burong	---	Q <sub>2</sub>	1	1.0	1	4	B.
2325	PNM02	Apas-Balang	S. Burong	---	Q <sub>2</sub>	1	1.0	1	4	B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow #1	Size #2	Color
2326	PPG01	Pulau Timbun Mata	---	sandstone	P.Kg	1	0.6	2	2	R.B.
2327	PPG02	Pulau Timbun Mata	---	---	P.Kg	1	1.5	0	3	R.
2328	PPG03	Pulau Timbun Mata	---	---	P.Kg	1	3.0	2	3	Y.B.
2329	PPG04	Pulau Timbun Mata	---	---	RFCs	1	0.8	2	3	B.Y.
2330	PPG05	Pulau Timbun Mata	---	green rock	RFCs	1	0.3	1	3	P.B.
2331	PPG06	Pulau Timbun Mata	S. Sapang	green rock	RFCs	3	3.5	3	2	D.B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)





Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Size	Color
2430	PPJ51	Kalumpang	S. G. Gading	—	P.Kg	1	0.5	2	2	B. Y.B.
2431	PPJ52	Pulau Timbun Mata	S. Sipit	basalt	I.Ba	1	0.5	2	2	B. Y.B.
2432	PPJ53	Pulau Timbun Mata	S. Sipit	—	P.Kg	1	0.4	2	2	B. Y.B.
2433	PPJ54	Pulau Timbun Mata	S. Sipit	—	P.Kg	1	0.5	1	2	L. B.

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Size	Color
2434	PPK01	Kalumpang	S. Pirang B.	—	Q <sub>1</sub>	2	1.5	3	2	Y. B.
2435	PPK02	Kalumpang	S. Pirang B.	—	Q <sub>1</sub>	1	1.0	3	2	Y. B.
2436	PPK03	Kalumpang	S. Pirang B.	—	P.Kg	1	1.5	2	2	B. Y.
2437	PPK04	Kalumpang	S. Pirang B.	—	Q <sub>1</sub>	1	1.5	0	3	B. Y.
2438	PPK05	Kalumpang	S. Pirang B.	—	Q <sub>1</sub>	1	3.0	2	3	B. Y.
2439	PPK06	Kalumpang	S. Pirang B.	—	Q <sub>1</sub>	2	2.5	2	3	B. Y.
2440	PPK07	Kalumpang	S. Pirang B.	—	Q <sub>1</sub>	2	0.4	2	3	B. Y.
2441	PPK08	Kalumpang	S. Pirang B.	—	Q <sub>1</sub>	1	0.5	1	3	B. G.
2442	PPK09	Kalumpang	S. Pirang B.	—	Q <sub>1</sub>	1	0.5	1	3	D.
2443	PPK10	Kalumpang	S. Pirang B.	—	I.An	1	1.8	2	3	D.
2444	PPK11	Kalumpang	S. G. Gading	—	P.Kg	1	0.7	2	2	Y. B.
2445	PPK12	Kalumpang	S. G. Gading	—	P.Kg	1	0.6	2	2	Y. B.
2446	PPK13	Kalumpang	S. G. Gading	—	Q <sub>1</sub>	2	1.5	2	2	B. Y.
2447	PPK14	Kalumpang	S. G. Gading	—	I.An	1	0.6	2	2	B. Y.
2448	PPK15	Kalumpang	S. G. Gading	—	P.Kg	2	3.0	3	2	B. G.
2449	PPK16	Kalumpang	S. Timbangan	tic. mod.	P.Kg	1	6.0	3	2	B. Y.
2450	PPK17	Kalumpang	S. Timbangan	tic. mod.	P.Kg	1	0.8	1	1	B. Y.
2451	PPK18	Kalumpang	S. Timbangan	—	I.Ba	1	1.5	1	3	B. Y.
2452	PPK19	Kalumpang	S. Timbangan	—	I.Ba	1	0.2	1	3	B. Y.
2453	PPK20	Kalumpang	S. Timbangan	—	I.An	1	0.5	2	3	B. Y.
2454	PPK21	Kalumpang	S. Timbangan	—	I.Ba	1	2.0	1	4	G. B.
2455	PPK22	Kalumpang	S. Pirang B.	—	Q <sub>1</sub>	1	3.0	2	3	B. G.
2456	PPK23	Kalumpang	S. Timbangan	—	I.Ba	1	2.0	2	2	B. Y.
2457	PPK24	Kalumpang	S. Timbangan	—	I.Ba	1	1.0	2	2	B. G.
2458	PPK25	Kalumpang	S. Timbangan	—	I.Ba	2	7.0	2	2	B. Y.
2459	PPK26	Kalumpang	S. Timbangan	—	I.An	1	2.0	3	3	B. Y.
2460	PPK27	Kalumpang	S. Timbangan	—	I.An	2	2.5	2	3	Y. B.
2461	PPK28	Kalumpang	S. Timbangan	—	I.An	1	0.8	2	2	Y. B.
2462	PPK29	Kalumpang	S. Timbangan	—	I.An	1	1.2	2	2	Y. B.
2463	PPK30	Kalumpang	S. G. Gading	—	Q <sub>1</sub>	3	8.0	2	2	B.
2464	PPK31	Kalumpang	S. G. Gading	—	I.An	1	0.7	1	3	D. B.
2465	PPK32	Kalumpang	S. G. Gading	—	Q <sub>1</sub>	1	6.0	2	3	B. Y.
2466	PPK33	Kalumpang	S. G. Gading	—	Q <sub>1</sub>	1	1.0	2	2	B. Y.
2467	PPK34	Kalumpang	S. G. Gading	—	I.An	1	0.5	1	2	B.
2468	PPK35	Kalumpang	S. G. Gading	—	I.An	1	4.0	2	2	B. Y.
2469	PPK36	Kalumpang	S. G. Gading	—	Q <sub>1</sub>	2	2.0	2	2	B. Y.
2470	PPK37	Kalumpang	S. G. Gading	—	I.An	1	2.0	2	2	B. Y.
2471	PPK38	Kalumpang	S. G. Gading	—	I.An	1	1.0	2	2	B. Y.
2472	PPK39	Kalumpang	S. G. Gading	—	I.An	1	1.5	2	2	B. Y.
2473	PPK40	Kalumpang	S. G. Gading	—	I.An	1	3.0	2	2	B. Y.
2474	PPK41	Kalumpang	S. G. Gading	—	Q <sub>1</sub>	1	1.0	0	4	D. G.
2475	PPK42	Kalumpang	S. G. Gading	—	Q <sub>1</sub>	1	0.5	1	3	B. Y.
2476	PPK43	Kalumpang	S. G. Gading	—	Q <sub>1</sub>	3	4.5	1	2	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)

Ser. No.	Sample No.	Topographic Map Sheet	Name of Stream	Geology	Geol. Unit	Order	Width (m)	Flow	Size	Color
2477	PQJ01	Pulau Timbun Mata	—	—	Q <sub>1</sub>	1	4.0	2	2	B. Y.
2478	PQJ02	Pulau Timbun Mata	S. Separang	—	P.Kg	2	4.0	2	2	D. B.
2479	PQJ03	Pulau Timbun Mata	S. Separang	—	P.Kg	1	4.0	2	2	B. Y.
2480	PQJ04	Pulau Timbun Mata	S. Separang	—	P.Kg	1	3.0	2	3	B. Y.
2481	PQJ05	Pulau Timbun Mata	S. Separang	—	P.Kg	1	1.5	1	3	B. Y.
2482	PQJ06	Pulau Timbun Mata	S. Separang	—	P.Kg	3	1.0	2	2	B.
2483	PQJ07	Pulau Timbun Mata	S. Separang	—	P.Kg	3	1.5	2	2	Y. B.
2484	PQJ08	Pulau Timbun Mata	—	—	Q <sub>1</sub>	2	1.0	2	2	B. Y.
2485	PQJ09	Pulau Timbun Mata	S. Sing Sing	—	Q <sub>1</sub>	1	2.0	2	2	Y. B.
2486	PQJ10	Pulau Timbun Mata	S. Sing Sing	—	Q <sub>1</sub>	1	0.5	2	4	G.
2487	PQJ11	Kalumpang	S. Separang	—	P.Kg	3	4.5	2	2	Y. B.
2488	PQJ12	Kalumpang	S. Separang	—	P.Kg	3	4.0	2	3	Y. B.
2489	PQJ13	Kalumpang	S. Separang	—	P.Kg	2	2.5	2	2	B. Y.
2490	PQJ14	Kalumpang	S. Separang	—	P.Kg	2	3.0	2	3	B. Y.
2491	PQJ15	Kalumpang	S. Separang	—	P.Kg	2	2.0	2	2	R. B.
2492	PQJ16	Kalumpang	S. Separang	—	I.An	2	1.5	2	3	R. B.
2493	PQJ17	Kalumpang	S. Separang	—	I.An	1	2.0	2	3	B. Y.
2494	PQJ18	Kalumpang	S. Separang	—	I.Ba	1	2.0	2	2	Y. B.
2495	PQJ19	Kalumpang	S. Separang	—	I.Ba	1	2.0	4	1	B.
2496	PQJ20	Kalumpang	S. Separang	—	I.Ba	1	1.5	3	2	B.
2497	PQJ21	Kalumpang	S. Separang	—	P.Kg	2	2.0	2	3	B. Y.
2498	PQJ22	Kalumpang	S. Separang	—	I.An	1	4.0	1	3	B. Y.
2499	PQJ23	Kalumpang	S. Separang	—	I.An	1	1.5	2	3	B. Y.
2500	PQJ24	Kalumpang	S. Separang	—	I.An	1	4.0	2	3	B. Y.
2501	PQJ25	Kalumpang	—	—	Q <sub>1</sub>	1	0.5	1	4	Y. B.
2502	PQJ26	Kalumpang	S. Separang	—	I.An	1	2.0	2	3	B. Y.
2503	PQJ27	Kalumpang	S. Separang	—	I.An	1	2.0	2	3	B. Y.
2504	PQJ28	Kalumpang	S. Separang	—	P.Kg	1	1.5	2	2	B. Y.
2505	PQJ29	Kalumpang	S. Sing Sing	—	P.Kg	1	0.5	1	3	B. Y.
2506	PQJ30	Kalumpang	S. Sing Sing	—	P.Kg	1	0.5	1	3	B. Y.
2507	PQJ31	Kalumpang	S. Gading	—	I.An	1	0.5	2	2	D. B.
2508	PQJ32	Kalumpang	S. Gading	—	I.An	1	1.0	3	1	D. B.
2509	PQJ33	Kalumpang	S. Gading	—	Q <sub>1</sub>	2	1.5	2	1	D. B.
2510	PQJ34	Kalumpang	S. Gading	—	Q <sub>1</sub>	2	3.0	3	1	D. B.
2511	PQJ35	Kalumpang	S. Gading	—	I.An	1	3.0	2	3	B. Y.
2512	PQJ36	Kalumpang	S. Gading	—	I.An	1	1.0	1	3	B. Y.
2513	PQJ37	Kalumpang	—	—	Q <sub>1</sub>	1	1.0	2	2	B. G.
2514	PQJ38	Pulau Timbun Mata	S. Separang	—	P.Kg	1	0.5	1	3	Y. B.
2515	PQJ39	Kalumpang	—	—	Q <sub>1</sub>	1	0.8	2	2	Y. B.
2516	PQJ40	Kalumpang	—	—	I.An	1	0.6	2	1	D. B.
2517	PQJ41	Kalumpang	—	—	Q <sub>1</sub>	1	0.5	3	2	B.
2518	PQJ42	Kalumpang	—	—	Q <sub>1</sub>	1	0.4	2	2	Y. B.
2519	PQJ43	Kalumpang	—	—	Q <sub>1</sub>	1	1.0	0	2	B.

\*1: none (0), puddle (1), slow (2), moderate (3), fast (4)  
\*2: coarse grained (1), medium grained (2), fine grained (3), clayey (4)