Annex A: River Classification Scheme for Scotland

		Water Chemistry [a]					Biology				Nutrients [a]	Aesthetic Condition [d] (Contaminate)	Toxic Substances	Comments
Class	**Description**	**DO (%sat) 10%ile**	**BOD (mg/l) 90%ile**	**NH_4-N (mg/l) 90%ile**	**Fe (mg/l) Mean**	**pH %ile**	**Lab Analysed [b]**		**Bankside [c]**		**SRP (µg/l) Mean**			
							ASPT EQI	**TAXA EQI**	**ASPT**	**Field Score**				
A1	Excellent	≥ 80	≤ 2.5	0.25	≤1 [1]	5%ile≥6 95%ile ≤9	≥ 1.0	≥ 0.85	≥ 6.0	≥ 85	≤ 20	No A Minor B [e]	Complies with Dangerous Substances EQS's	Sustainable salmonid fish population. Natural Ecosystem
A2	Good	≥ 70	≤ 4	0.6	≤1	10%ile ≥5.2	≥ 0.9	≥ 0.70	≥ 5.0	≥ 70	≤ 100	Trace/Occasional A or B [f]	Complies with Dangerous Substances EQS's	Sustainable salmonid fish population. Ecosystem may be modified by human activity
B	Fair	≥ 60	≤ 6	1.3	≤ 2	10%ile <5.2	≥ 0.77	≥ 0.55	≥ 4.2	≥ 50	> 100	-	Complies with Dangerous Substances EQS's	Sustainable coarse fish population. Salmonids may be present. Impacted ecosystem.
C	Poor	≥ 20	≤ 15	9.0	> 2	-	≥ 0.50	≥ 0.30	≥ 3.0	≥ 15	-	Gross A or B [g]	> EQS for dangerous substance	Fish sporadically present. Impoverished ecosystem
D	Seriously Polluted	> 20	> 15	≥ 9.0	-	-	< 0.50	< 0.30	< 3.0	< 15	-	-	> 10 x EQS for dangerous substance	Cause of nuisance. Fauna absent or seriously restricted

Notes relating to classification scheme

a - Based on 3 years data, minimum of 12 samples, unless there has been a significant change in circumstances (eg a discharge eliminated) which justifies a 1 year assessment.

- Estimation of percentiles for more than 19 samples to be by the non-parametric Wiebull Method. Otherwise the parametric method is used, assuming DO and pH are normal distributions, and BOD and Ammonical Nitrogen are log normal.
- For pH the 5, 10 and 95 %iles must be determined from the 3 years data and compared with the class determining limits in the Classification Table. Again, where there are more than 19 samples the percentiles should be estimated by the non-parametric Wiebull Method. Otherwise, the parametric percentile estimation must be made, using the method of moments, and an assumed normal distribution.

b - RIVPACS assessment based on data for 1 year, preferably 3 samples (Spring, Summer, Autumn), minimum of 2 (Spring and Summer).

c - Based on 1 year's monitoring data, preferably 3 samples, minimum 2. The overall class to be determined from the mean field score and mean ASPT of the individual samples.

d - Aesthetic conditions to be based on 1 year's monitoring data and will be assessed and recorded during biological and/or chemical visits. The points should be representative of the general quality of the watercourse reach. Aesthetic contamination to be assessed as either discharge related (List A) or general (List B).

List A contaminants

Sewage derived litter and solids, including
- faeces
- toilet paper
- contraceptives
- sanitary towels
- tampons
- cotton buds

Oils
Non natural foam, scum or colour
Sewage fungus
Sewage or oily smells

List B contaminants

General non sewage derived litter
Builders waste
Gross litter, including
- shopping trolleys
- furniture
- motor vehicles
- road cones
- bicycles/prams

e - No List A contaminants, possibly minor List B litter present.

f - Traces of List A and /or occasional List B contamination, especially at easy access points.

g - List A contamination widespread and/or occasional conspicuous quantities, and/or gross amounts of List B contamination. Likely to be the cause of justified public complaints.