



**APPENDIX Q      OPTIONAL VERDEN ROAD QUARRY EXPANSION BLUE BOOK  
SUMMARY**

## Q1. Blue Book Summary Worksheet –Sediment Basins Design for Optional Verden Road Quarry

Site Area	Sub-catchment and Location of Structure					Notes and Blue Book references
	West Ops Area			East Ops Area		
	S	NW	NE	N	S	Sediment Basin location
Total catchment area (ha)	2.7	4.7	2.6	6.19	3.67	
Disturbed catchment area (ha)	2.7	1.2	2.6	3.82	2.36	
<b>Soil analysis (enter sediment type if known, or laboratory particle size data)</b>						
Sediment Type (C, F or D) if known:	D	D	D	D	D	From Appendix C (if known)
% sand (fraction 0.02 to 2.00 mm)	N/A					Enter the percentage of each soil fraction. e.g. enter 10 for 10%
% silt (fraction 0.002 to 0.02 mm)	N/A					
% clay (fraction finer than 0.002 mm)	N/A					
Dispersion percentage	N/A					e.g. enter 10 for dispersion of 10%
% of whole soil dispersible	N/A					See Section 6.3.3(e). Auto-calculated
Soil Texture Group	D	D	D	D		Automatic calculation from above
<b>Rainfall Data</b>						
Design rainfall depth (no of days)	5	5	5	5	5	See Section 6.3.4 and, particularly, Table 6.3 on pages 6-24 and 6-25.
Design rainfall depth (percentile)	80	80	80	80	80	
x-day, y-percentile rainfall event (mm)	25.2	25.2	25.2	25.2	25.2	
Rainfall R-factor (if known)	1500	1500	1500	1500	1500	Only need to enter one or the other here
IFD: 2-year, 6-hour storm (if known)	N/A					
<b>RUSLE Factors</b>						
Rainfall erosivity (R-factor)	1500	1500	1500	1500	1500	Auto-filled from above
Soil erodibility (K-factor)	0.1	0.1	0.1	0.1	0.1	RUSLE LS factor calculated for a high rill/interrill ratio
Slope length (m)	200	110	140	144	101	
Slope gradient (%)	12.5	30.91	13.57	7.64	8.91	
Length/gradient (LS-factor)	7.54	15.41	6.61	2.84	2.71	
Erosion control practice (P-factor)	1.3	1.3	1.3	1.3	1.3	
Ground cover (C-factor)	1	1	1	1	1	
<b>Sediment Basin Design Criteria (for Type D/F basins only. Leave blank for Type C basins)</b>						
Storage (soil) zone design (no of months)	12	12	12	12	12	Minimum 2 months
Cv (Volumetric runoff coefficient)	0.35	0.35	0.35	0.35	0.35	See Table F2, page F-4 in Appendix F
<b>Calculations and Type D/F Sediment Basin Volumes</b>						
Soil loss (t/ha/yr)	1470	3006	1288	554	529	
Soil Loss Class	4	4	4	4	4	See Table 4.2, page 4-13
Soil loss (m <sup>3</sup> /ha/yr)	1130	2312	991	426	407	Conversion to cubic metres
Sediment basin storage (soil) volume (m <sup>3</sup> )	3052	2775	2576	1627	960	See Sections 6.3.4(i) for calculations
Sediment basin settling (water) volume (m <sup>3</sup> )	238	415	229	546	324	See Sections 6.3.4(i) for calculations
Sediment basin total volume (m <sup>3</sup> )	3290	3190	2805	2173	1284	

### Reference:

Landcom, (2004) and DECC, (2008). *Managing Urban Stormwater: Soils and Construction (Blue Book) (Volumes 1 and 2E – Mines and Quarries)*.