Appendix 11 Road Drainage and the Water Environment

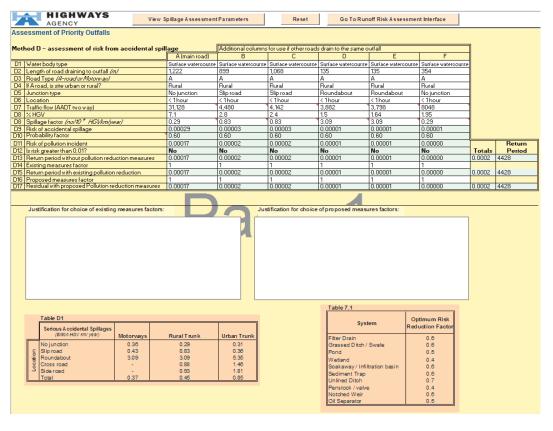
# Gaugers Burn Outfall

	Annual Average Co		Dluble - Acute Impact Copper	Zinc	Sediment - Chronic Impact					
	Copper   Step 2	0.00 ug/l - ug/l	Pass	Pass	Pass		Sediment dep Accumulating Extensive?	- San	0.19	udged as: Low flow Vel m/ Deposition Inde
OS grid reference of assess	ment point (m)	Easting	369021		North	ing	770328			
OS grid reference of outfall s	structure (m)	Easting			North	ing				
Outfall number		1		List of outfalls						
Receiving watercourse		Luther Water		cumulative assessment						
EA receiving water Detailed River Network ID				Assessor and affiliation. CP A			CP AME	AMEY		
Date of assessment		26/07/2019		Version of assessment						
Step 1 Runoff Quality	AADT >10,000 and	-30,000 ¥	Climatic region Col	er Dry 💌	Rainfall si	E Lu	inburgh (SAAR 676	40007		
	Annual 95%ile river i Impermeable road a Base Flow Index (BF Water hardness	rea drained (ha)	0.85627 Perm	er zero in Annual 95%ile leable area draining to d discharge in or within	outfall (ha)	2.359	984			No - I
For dissolved zinc only	Impermeable road a Base Flow Index (BF Water hardness	rea drained (ha) FI) Low= <50mg CaC m structure, lake d river width (m)	0.85827 Perm 0.58 Is th	eable area draining to discharge in or within the street within the street within 10 to the street wit	outfall (ha)  1 km upstrea  0m of the po	2.359 am of a pro	otected site for others, thanks	conservation	1?	Б
For dissolved zinc only For sediment impact only	Impermeable road at Base Flow Index (BF Water hardness Is there a downstrea • Tier 1 Estimated	rea drained (ha) FI) Low= <50mg CaC m structure, lake d river width (m)	0.85827 Perm 0.58 Is th	eable area draining to discharge in or within the street within the street within 10 to the street wit	outfall (ha)  1 km upstrea  0m of the po	am of a pro-	otected site for other site for othe	conservation	o v	) 0.0001
For dissolved zinc only For sediment impact only Step 3 Mitigation	Impermeable road at Base Flow Index (BF Water hardness Is there a downstrea • Tier 1 Estimated	rea drained (ha) FI) Low= <50mg CaC m structure, lake d river width (m)	0.88627 Perm 0.58 Is the control of	eable area draining to de discharge in or within the sthe velocity within 10 sing's n 0.07 Treatment for solubles (%) s	outfall (ha)  1 km upstrea  0m of the po	2.359 am of a provint of disc	otected site for other site for othe	conservation  N  Long s	o v	Б
For dissolved zinc only For sediment impact only	Impermeable road at Base Flow Index (BF Water hardness Is there a downstrea • Tier 1 Estimated	rea drained (ha)  FI)  Low= <50mg CaC+ m structure, lake d river width (m) h (m)	0.88627 Perm 0.58 Is the control of	eable area draining to a discharge in or within the sthe velocity within 10 ling's n 0.07 Treatment for solubles (%)	Om of the po  Side  Estimated  Attenuatio	2.359 am of a provint of disc slope (m/r effectiven n for stricted e ( Vs )	harge?  m)  0.5  Settlement of sediments (%	conservation  N  Long s	o v	0.0001

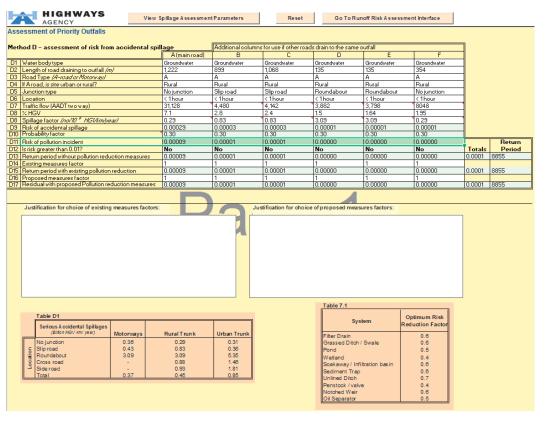
# Unnamed Watercourse adjacent to Mains of Newton

HIGHWAYS	Highways A	gency Water Risk	Assessment Too	version 1.0 Nove	mber 200	19			
AGENCY	Soluble - Acute Impact				Sediment - Chronic Impact				
	Annual Average Concentration Copper Copper Zinc			Zinc	Zinc Sediment deposition for this			sition for this site is judged a	
	Step 2 0.01	0.02 ug/l	Pass	Pass			umulating?		
	Step 3 -	- ug/l				Ext	ensive?	No - Deposition Index	
Location Details									
Road number A90				HA Area / DBFO	number	•			
Assessment type		Non-cumulative ass	ll)	Tet 10					
OS grid reference of assessr		Easting	369827		Northing		771506		
OS grid reference of outfall s	tructure (m)	Easting		List of outfal	lla in	Northing			
Outfall number				cumulative asse					
Receiving watercourse		Luther Water							
EA receiving water Detailed F	River Network ID			Assessor and aff			CP AM EY		
Date of assessment		26/07/2019		Version of asses	sment				
INOTES	Notes								
Step 1 Runoff Quality AADT >10,000 and <50,000 Climatic region Colder Dry Rainfall site Edinburgh (SAAR 878 2mm)					m)				
Step 2 River Impacts Annual 95%ile river flow (m³/s) [0.43] (Enter zero in Annual 95%ile river flow box to assess Step 1 runoff quality only)									
	rea drained (ha)	a drained (ha)  5.05208  Permeable area draining to outfall (ha)  5.86292							
	FI) 0.	0.58 Is the discharge in or within 1 km upstream of a protected site for conservation?					servation?		
For dissolved zinc only Water hardness Low = <50mg CaCO3/I									
For sediment impact only Is there a downstream structure, lake, pond or canal that reduces the velocity within 100m of the point of discharge?						No - D			
	■ Tier 1 Estimate	d river width (m)	6						
	○ Tier 2 Bed widtl	h (m)	3 Manr	ing's n 0.07	D	Side slope (m/m)	0.5	Long slope (m/m) 0.0001	
Step 3 Mitigation Estimated effectiveness									
Brief description			Treatment for Attenuation for Settlement of Predict Impact						
					solubles - restricted discharge rate ( Vs )  Show Detailed Res				
Existing measures				0	Unlimite	ed 🕶 🖸 0	D		
Proposed measures				0	Unlimite	ed • 0	D	Exit Tool	

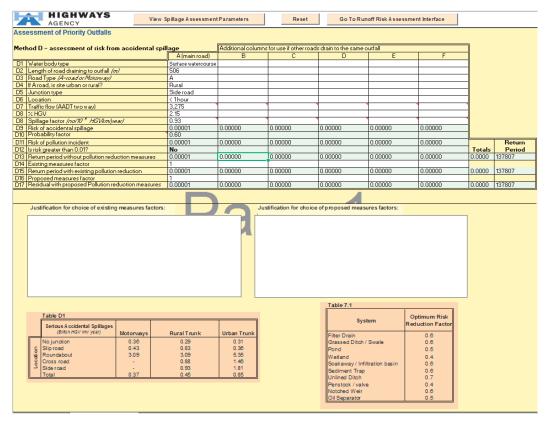
## Attenuation Basin A – Surface water



## Attenuation Basin A – Groundwater



## Attenuation Basin C- Surface Water



## Attenuation Basin C – Groundwater

