FM Conway Limited, Asphalt Plant at Plots 6 & 7, North Quay Road, Newhaven, East Sussex, BN9 0AB
Environmental Permit Application
Effluent Risk Screening Calculations
Based on EA Guidance, 'Surface Water Polution Risk Assessment for your Environmental Permit', Gov.UK, Last updated 9 April 2025

RFR = River flow upstream of discharge
BC = Concentration of pollutant upstream of discharge
EFR = Flow of discharge
RC = Concentration of pollutant in discharge
RCa = RC as % EQSa TEST 1
PC = Process contribution
PCa = PC as % EQSa TEST 2
PEC = Predicted environmental concentration downstream of discharge
LDS = Low Dilution Scenario (river flow rate is less than 10 times the effluent discharge flow rate) = Result of Steps 1 to 5 at Test 3
dPEC = Difference in concentration between BC and PEC
EQSa = Environmental Quality Standard, lower limit
PECa = dPEC as % EQSa TEST 3
EQSb = Environmental Quality Standard, upper limit
PECb = dPEC as % EQSb
PEC>EQS? TEST 4

Arsenic

Parameter	Units	Value	Source	
RFR	l/s	480	Q95 on River Ouse at Newhaven	
BC	ug/l	10	Water quality sampling, May 2025, location 'Ouse Upstream'. Concentrations are at the LOD, the LOD has been assumed.	
EFR	l/s	48	2 year Critical Storm. 120 minute summer. Discharge Volume (345.8 m3 over 120 minutes = 48 l/s) at Page 6 of Causeway File: Storm 2.pfd Aug 25	
RC	ug/l	4	Water quality sampling, July 2025, location 'Interceptor 2'. Concentrations are at the LOD, the LOD has been assumed.	
RCa (TEST 1)	%	16.0000	RCa = RC / EQSa * 100	<10% Target
PC	ug/l	0.3639	PC = (EFR * RC) / (EFR + RFR)	
PCa (TEST 2)	%	1.4555	PCa = PC / EQSa * 100	<4% Target
PEC LDS	ug/l	9.4542	PEC LDS = ((EFR * RC) + (RFR * BC)) / (EFR + RFR)	
dPEC	ug/l	-0.5458	dPEC = PEC - BC	
dPECa (TEST 3)	%	-2.1832	dPECa = dPEC / EQSa * 100	<10% Target
PEC>EQS? (TEST 4)		0.3782		<1 Target
EQSa	ug/l	25.0000	Annual Average EQS Arsenic	
dPECa (TEST 3)	%	-2.1832	dPECa = dPEC / EQSa * 100	<10% Target

Boron

Parameter	Units	Value	Source	
RFR	l/s	480	Q95 on River Ouse at Newhaven	
BC	ug/l	4630	Water quality sampling, May 2025, location 'Ouse Upstream'. Where concentrations are at the LOD, the LOD has been assumed.	
EFR	l/s	48	2 year Critical Storm. 120 minute summer. Discharge Volume (345.8 m3 over 120 minutes = 48 l/s) at Page 6 of Causeway File: Storm 2.pfd Aug 25	
RC	ug/l	3160	Water quality sampling, July 2025, location 'Interceptor 2'. Where concentrations are at the LOD, the LOD has been assumed.	
RCa (TEST 1)	%	45.1429	RCa = RC / EQSa * 100	<10% Target
PC	ug/l	287.4598	PC = (EFR * RC) / (EFR + RFR)	
PCa (TEST 2)	%	4.1066	PCa = PC / EQSa * 100	<4% Target
PEC LDS	ug/l	4496.2766	PEC LDS = ((EFR * RC) + (RFR * BC)) / (EFR + RFR)	
dPEC	ug/l	-133.7234	dPEC = PEC - BC	
dPECa (TEST 3)	%	-1.9103	dPECa = dPEC / EQSa * 100	<10% Target
PEC>EQS? (TEST 4)		0.6423		<1 Target
EQSa	ug/l	7000.0000	Annual Average EQS Boron	
dPECa (TEST 3)	%	-1.9103	dPECa = dPEC / EQSa * 100	<10% Target

Cadmium

Parameter	Units	Value	Source	
RFR	l/s	480	Q95 on River Ouse at Newhaven	
BC	ug/l	0.019	EA water quality sampling, LOD value, 10 Dec 2024, location 'Ouse at Barcombe Mills'. ('Ouse Upstream' May 2025 was below LOD)	
EFR	l/s	48	2 year Critical Storm. 120 minute summer. Discharge Volume (345.8 m3 over 120 minutes = 48 l/s) at Page 6 of Causeway File: Storm 2.pfd Aug 25	
RC	ug/l	0.2	Water quality sampling, July 2025, location 'Interceptor 2'. Concentrations at the LOD. Laboratory reporting limit has been assumed. Recommend repeat sample to confirm <0.2 ug/l.	
RCa (TEST 1)	%	100.0000	RCa = RC / EQSa * 100	<10% Target
PC	ug/l	0.0182	PC = (EFR * RC) / (EFR + RFR)	
PCa (TEST 2)	%	9.0968	PCa = PC / EQSa * 100	<4% Target
PEC LDS	ug/l	0.0355	PEC LDS = ((EFR * RC) + (RFR * BC)) / (EFR + RFR)	
dPEC	ug/l	0.0165	dPEC = PEC - BC	
dPECa (TEST 3)	%	8.2326	dPECa = dPEC / EQSa * 100	<10% Target
PEC>EQS? (TEST 4)		0.1773		<1 Target
EQSa	ug/l	0.2000	Annual Average EQS Cadmium	
dPECa (TEST 3)	%	8.2326	dPECa = dPEC / EQSa * 100	<10% Target

Chromium III

Parameter	Units	Value	Source	
RFR	l/s	480	Q95 on River Ouse at Newhaven	
BC	ug/l	0.5	EA water quality sampling, LOD value, 25 Nov 2024, location 'Ouse at Barcombe Mills'. ('Ouse Upstream' May 2025 was below LOD)	
EFR	l/s	48	2 year Critical Storm. 120 minute summer. Discharge Volume (345.8 m3 over 120 minutes = 48 l/s) at Page 6 of Causeway File: Storm 2.pfd Aug 25	
RC	ug/l	4.9	Water quality sampling, July 2025, location 'Interceptor 2'. Maximum recorded to date. Recommend repeat sample to reporting limit <0.2 ug/l.	
RCa (TEST 1)	%	15.3125	RCa = RC / EQSb * 100	<10% Target
PC	ug/l	0.4457	PC = (EFR * RC) / (EFR + RFR)	
PCa (TEST 2)	%	1.3930	PCa = PC / EQSb * 100	<4% Target
PEC LDS	ug/l	0.9003	PEC LDS = ((EFR * RC) + (RFR * BC)) / (EFR + RFR)	
dPEC	ug/l	0.4003	dPEC = PEC - BC	
dPECa (TEST 3)	%	1.2508	dPECa = dPEC / EQSb * 100	<10% Target
PEC>EQS? (TEST 4)		0.0281		<1 Target
EQSb	ug/l	32.0000	Maximum allowable concentration environmental quality standard (micrograms per litre)	
dPECb (TEST 3)	%	1.2508	dPECb = dPEC / EQSb * 100	<10% Target

Copper

Parameter	Units	Value	Source	
RFR	l/s	480	Q95 on River Ouse at Newhaven	
BC	ug/l	0.08	EA water quality sampling, BLM value, 25 Nov 2024, location 'Ouse at Barcombe Mills'. ('Ouse Upstream' May 2025 was below LOD)	
EFR	l/s	48	2 year Critical Storm. 120 minute summer. Discharge Volume (345.8 m3 over 120 minutes = 48 l/s) at Page 6 of Causeway File: Storm 2.pfd Aug 25	
RC	ug/l	0.56	Water quality sampling, July 2025, location 'Interceptor 2'. Bioavailability calc using DOC data from Denton Sewer (I2 Lab Sample Number 508736)	
RCa (TEST 1)	%	14.8936	RCa = RC / EQSa * 100	<10% Target
PC	ug/l	0.0509	PC = (EFR * RC) / (EFR + RFR)	
PCa (TEST 2)	%	1.3548	PCa = PC / EQSa * 100	<4% Target
PEC LDS	ug/l	0.1237	PEC LDS = ((EFR * RC) + (RFR * BC)) / (EFR + RFR)	
dPEC	ug/l	0.0437	dPEC = PEC - BC	
dPECa (TEST 3)	%	1.1613	dPECa = dPEC / EQSa * 100	<10% Target
PEC>EQS? (TEST 4)		0.0329		<1 Target
EQSa	ug/l	3.7600	Annual Average EQS Bioavailable Copper	
dPECa (TEST 3)	%	1.1613	dPECa = dPEC / EQSa * 100	<10% Target

Lead

Parameter	Units	Value	Source	
RFR	l/s	480	Q95 on River Ouse at Newhaven	
BC	ug/l	0.03	EA water quality sampling, BLM value, 25 Nov 2024, location 'Ouse at Barcombe Mills'. ('Ouse Upstream' May 2025 was below LOD)	
EFR	l/s	48	2 year Critical Storm. 120 minute summer. Discharge Volume (345.8 m3 over 120 minutes = 48 l/s) at Page 6 of Causeway File: Storm 2.pfd Aug 25	
RC	ug/l	0.97	Water quality sampling, July 2025, location 'Interceptor 2'. Bioavailability calc using DOC data from Denton Sewer (I2 Lab Sample Number 508736)	
RCa (TEST 1)	%	74.6154	RCa = RC / EQSa * 100	<10% Target
PC	ug/l	0.0882	PC = (EFR * RC) / (EFR + RFR)	
PCa (TEST 2)	%	6.7876	PCa = PC / EQSa * 100	<4% Target
PEC LDS	ug/l	0.1155	PEC LDS = ((EFR * RC) + (RFR * BC)) / (EFR + RFR)	
dPEC	ug/l	0.0855	dPEC = PEC - BC	
dPECa (TEST 3)	%	6.5777	dPECa = dPEC / EQSa * 100	<10% Target
PEC>EQS? (TEST 4)		0.0889		<1 Target
EQSa	ug/l	1.3000	Annual Average EQS Bioavailable Lead	
dPECa (TEST 3)	%	6.5777	dPECa = dPEC / EQSa * 100	<10% Target
EQSb	ug/l	14.0000	Maximum allowable concentration environmental quality standard (micrograms per litre)	
dPECb (TEST 3)	%	0.6108	dPECb = dPEC / EQSb * 100	<10% Target

Nickel

Parameter	Units	Value	Source	
RFR	l/s	480	Q95 on River Ouse at Newhaven	
BC	ug/l	0.69	EA water quality sampling, BLM value, 25 Nov 2024, location 'Ouse at Barcombe Mills'. ('Ouse Upstream' May 2025 was below LOD)	
EFR	l/s	48	2 year Critical Storm. 120 minute summer. Discharge Volume (345.8 m3 over 120 minutes = 48 l/s) at Page 6 of Causeway File: Storm 2.pfd Aug 25	
RC	ug/l	2.34	Water quality sampling, July 2025, location 'Interceptor 2'. Bioavailability calc using DOC data from Denton Sewer (I2 Lab Sample Number 508736)	
RCa (TEST 1)	%	27.2093	RCa = RC / EQSa * 100	<10% Target
PC	ug/l	0.2129	PC = (EFR * RC) / (EFR + RFR)	
PCa (TEST 2)	%	2.4752	PCa = PC / EQSa * 100	<4% Target
PEC LDS	ug/l	0.8401	PEC LDS = ((EFR * RC) + (RFR * BC)) / (EFR + RFR)	
dPEC	ug/l	0.1501	dPEC = PEC - BC	
dPECa (TEST 3)	%	1.7453	dPECa = dPEC / EQSa * 100	<10% Target
PEC>EQS? (TEST 4)		0.0977		<1 Target
EQSa	ug/l	8.6000	Annual Average EQS Bioavailable Nickel	
dPECa (TEST 3)	%	1.7453	dPECa = dPEC / EQSa * 100	<10% Target
EQSb	ug/l	34.0000	Maximum allowable concentration environmental quality standard (micrograms per litre)	
dPECb (TEST 3)	%	0.4415	dPECb = dPEC / EQSb * 100	<10% Target

Zinc

Parameter	Units	Value	Source	
RFR	l/s	480	Q95 on River Ouse at Newhaven	
BC	ug/l	4.5	EA water quality sampling, average for Oct, Nov & Dec 2024, location 'Ouse at Barcombe Mills'. ('Ouse Upstream' May 2025 was below LOD)	
EFR	l/s	48	2 year Critical Storm. 120 minute summer. Discharge Volume (345.8 m3 over 120 minutes = 48 l/s) at Page 6 of Causeway File: Storm 2.pfd Aug 25	
RC	ug/l	10.84	Water quality sampling, July 2025, location 'Interceptor 2'. Bioavailability calc using DOC data from Denton Sewer (I2 Lab Sample Number 508736)	
RCa (TEST 1)	%	159.4118	RCa = RC / EQSa * 100	<10% Target
PC	ug/l	0.9861	PC = (EFR * RC) / (EFR + RFR)	
PCa (TEST 2)	%	14.5014	PCa = PC / EQSa * 100	<4% Target
PEC LDS	ug/l	5.0767	PEC LDS = ((EFR * RC) + (RFR * BC)) / (EFR + RFR)	
dPEC	ug/l	0.5767	dPEC = PEC - BC	
dPECa (TEST 3)	%	8.4815	dPECa = dPEC / EQSa * 100	<10% Target
PEC>EQS? (TEST 4)		0.7466		<1 Target
EQSa	ug/l	6.8000	Annual Average EQS Bioavailable Zinc	
dPECa (TEST 3)	%	8.4815	dPECa = dPEC / EQSa * 100	<10% Target

Mercury

Parameter	Units	Value	Source	
RFR	l/s	480	Q95 on River Ouse at Newhaven	
BC	ug/l	0.01	EA water quality sampling, Monthly 2024, location 'Ouse at Barcombe Mills'.Concentrations are at the LOD, the LOD has been assumed.	
EFR	l/s	48	2 year Critical Storm. 120 minute summer. Discharge Volume (345.8 m3 over 120 minutes = 48 l/s) at Page 6 of Causeway File: Storm 2.pfd Aug 25	
RC	ug/l	0.04	Water quality sampling, July 2025, location 'Interceptor 2'. Concentrations at the LOD. Laboratory reporting limit has been assumed. Recommend repeat sample to confirm <0.04 ug/l.	
RCa (TEST 1)	%	57.1429	RCa = RC / EQSa * 100	<10% Target
PC	ug/l	0.0036	PC = (EFR * RC) / (EFR + RFR)	
PCa (TEST 2)	%	5.1982	PCa = PC / EQSa * 100	<4% Target
PEC LDS	ug/l	0.0127	PEC LDS = ((EFR * RC) + (RFR * BC)) / (EFR + RFR)	
dPEC	ug/l	0.0027	dPEC = PEC - BC	
dPECa (TEST 3)	%	3.8986	dPECa = dPEC / EQSa * 100	<10% Target
PEC>EQS? (TEST 4)		0.1818	Worst case versus MAC. No AA EQS.	<1 Target
EQSa	ug/l	0.0700	Maximum allowable concentration environmental quality standard (micrograms per litre)	
dPECa (TEST 3)	%	3.8986	dPECa = dPEC / EQSa * 100	<10% Target

Benzo(a)pyrene

Parameter	Units	Value	Source	
RFR	l/s	480	Q95 on River Ouse at Newhaven	
BC	ug/l	0.01	Water quality sampling, May 2025, location 'Ouse Upstream'. Concentrations are at the LOD, the LOD has been assumed.	
EFR	l/s	48	2 year Critical Storm. 120 minute summer. Discharge Volume (345.8 m3 over 120 minutes = 48 l/s) at Page 6 of Causeway File: Storm 2.pfd Aug 25	
RC	ug/l	0.01	Water quality sampling, July 2025, location 'Interceptor 2'. Concentrations are at the LOD, the LOD has been assumed.	
RCa (TEST 1)	%	37.0370	RCa = RC / EQSa * 100	<10% Target
PC	ug/l	0.0009	PC = (EFR * RC) / (EFR + RFR)	
PCa (TEST 2)	%	3.3692	PCa = PC / EQSa * 100	<4% Target
PEC LDS	ug/l	0.0100	PEC LDS = ((EFR * RC) + (RFR * BC)) / (EFR + RFR)	
dPEC	ug/l	0.0000	dPEC = PEC - BC	
dPECa (TEST 3)	%	0.0000	dPECa = dPEC / EQSa * 100	<10% Target
PEC>EQS? (TEST 4)		0.3704	Worst case versus MAC. No AA EQS.	<1 Target
EQSa	ug/l	0.0270	Maximum allowable concentration environmental quality standard (micrograms per litre)	
dPECa (TEST 3)	%	0.0000	dPECa = dPEC / EQSa * 100	<10% Target