January 2024

Assessment of Impact on the Maritime Usage Report – Volume 2

Navigation Maintenance Dredging 2026-2033

On behalf of

Port of Waterford

MALONE O'REGAN ENVIRONMENTAL

MALONE O'REGAN

QUALITY
I.S. EN ISO 9001:2015
NSAI Certified

Form ES - 04

MALONE O'REGAN ENVIRONMENTAL

[redacted]

Title: Assessment of Impact on the Maritime Usage Report – Volume 2, Navigation Maintenance Dredging 2026-2033, Port of Waterford

Job Number: E2042

Prepared By: [redacted] **Signed:** [redacted] _____

Checked By: **Signed:** _____

Approved By: **Signed:** _____

Revision Record

Issue No.	Date	Description	Remark	Prepared	Checked	Approved
01	26/01/24	ER Report – Vol 2	FINAL	AK	KOR	KOR

Assessment of Impact on the Maritime Usage Report – Volume 2

Navigation Maintenance Dredging 2026-2033

Port of Waterford

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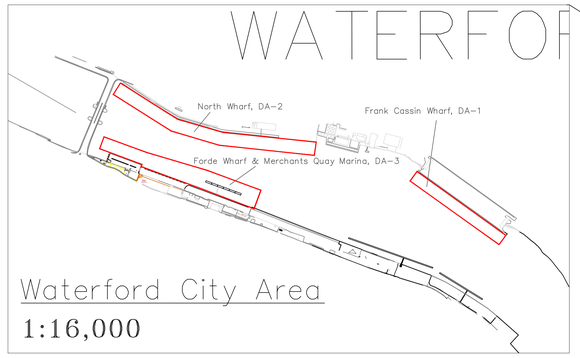
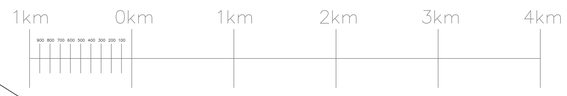
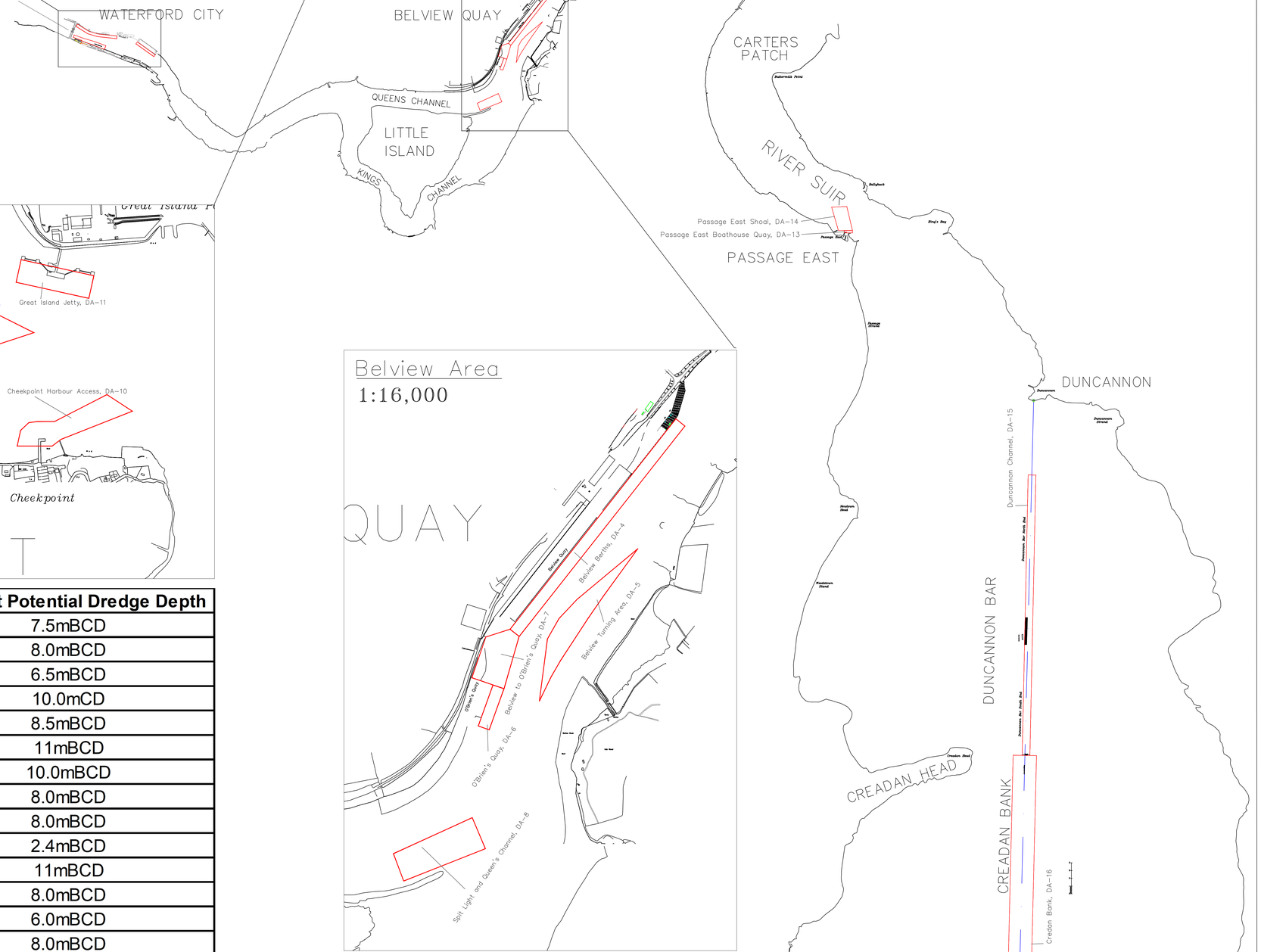
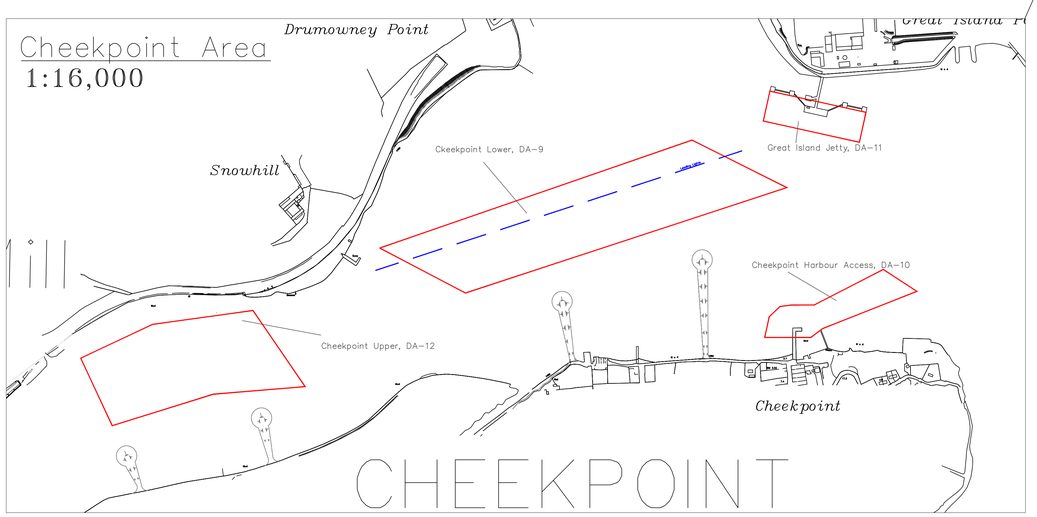
APPENDICES

APPENDIX A









Dredge Area Name	ID	Area (Ha)	Deepest Potential Dredge Depth
Frank Cassin Wharf	DA-1	0.9	7.5mBCD
North Wharf	DA-2	1.9	8.0mBCD
Forde Wharf & Merchants Quay Marina	DA-3	1.9	6.5mBCD
Belview Berths	DA-4	3.7	10.0mCD
Belview Turning Area	DA-5	2.9	8.5mBCD
O'Brien's Quay	DA-6	0.6	11mBCD
Belview to O'Brien's Quay	DA-7	2	10.0mBCD
Spit Light and Queen's Channel	DA-8	3.25	8.0mBCD
Cheekpoint Lower	DA-9	16.53	8.0mBCD
Cheekpoint Harbour Access	DA-10	2.84	2.4mBCD
Great Island Jetty	DA-11	2	11mBCD
Cheekpoint Upper	DA-12	10.25	8.0mBCD
Passage East Boathouse Quay	DA-13	0.3	6.0mBCD
Passage East Shoal	DA-14	5.8	8.0mBCD
Duncannon Channel	DA-15	36	8.0mBCD
Creadan Bank	DA-16	83	8.5mBCD

Consultant

[redacted]

Client

PORT OF WATERFORD – MAINTENANCE DREDGING

Title

FIGURE 1 – DREDGE AREA OVERVIEW

Scale : 1:60,000 (Sheet A0)

Dwg Date : January 2024

DECLG FILE NUMBER: N/A

Drg.No. 636_D@S_Application_01

Certified By: [redacted] PhD CEng FIEI

11/01/2024

APPENDIX B

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01879

Issue Version: 2

Customer: Port of Waterford, [redacted]

Customer Reference: Marine Institute Analysis

Date Sampled: 20-21-Apr-2023

Date Samples Received: 12-May-23

Test Report Date: 11-Jul-23

Condition of samples: Ambient Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditation
The results reported relate only to the sample tested
The results apply to the sample as received

[redacted]

Authorised by: [redacted]

Position: Customer Service Specialist

UKAS TESTING
1252

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01879
Issue Version 2
Customer Reference Marine Institute Analysis

		Units	%	%	%	%	%	Mg/m3
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SUB_02*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Particle Density**
MD1	MAR01879.001	Sediment	28.3	71.7	0.10	94.22	5.68	2.66
MD2	MAR01879.002	Sediment	31.4	68.6	0.36	92.40	7.24	2.65
MD3	MAR01879.003	Sediment	50.0	50.0	0.00	38.94	61.06	2.58
MD4	MAR01879.004	Sediment	11.1	88.9	–	–	–	–
MD5	MAR01879.005	Sediment	37.0	63.0	0.00	38.96	61.04	2.57
MD6	MAR01879.006	Sediment	49.4	50.6	62.72	16.85	20.43	–
MD7	MAR01879.007	Sediment	30.1	69.9	0.00	55.31	44.69	2.68
MD8	MAR01879.008	Sediment	23.5	76.5	26.85	22.63	50.51	Not Amenable
MD9	MAR01879.009	Sediment	35.7	64.3	6.76	65.11	28.13	2.63
MD10	MAR01879.010	Sediment	–	–	–	–	–	–
MD11	MAR01879.011	Sediment	4.6	95.4	46.74	38.53	14.72	Not Amenable
MD12	MAR01879.012	Sediment	41.4	58.6	0.00	60.70	39.30	2.70
MD13	MAR01879.013	Sediment	49.6	50.4	37.25	41.20	21.56	Not Amenable
MD14	MAR01879.014	Sediment	34.8	65.2	2.81	74.14	23.04	2.65
MD15	MAR01879.015	Sediment	25.8	74.2	26.34	48.56	25.10	Not Amenable
MD16	MAR01879.016	Sediment	53.3	46.7	–	–	–	–
MD17	MAR01879.017	Sediment	50.2	49.8	27.19	35.57	37.23	2.60
MD18	MAR01879.018	Sediment	52.7	47.3	0.32	46.82	52.86	2.56
		Reference Material (% Recovery)	NA	NA	NA	NA	NA	NA
		QC Blank	NA	NA	NA	NA	NA	NA

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01879
Issue Version	2
Customer Reference	Marine Institute Analysis

		Units	% m/m	%m/m
		Method No	WSLM59*	ANC*
		Limit of Detection	0.02	0.12
		Accreditation	UKAS	No
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**TOC**	**Carbonate Equivalent (%CO3)**
MD1	MAR01879.001	Sediment	<0.02	7.0
MD2	MAR01879.002	Sediment	0.38	32.6
MD3	MAR01879.003	Sediment	1.34	9.84
MD4	MAR01879.004	Sediment	0.39	9.6
MD5	MAR01879.005	Sediment	1.59	9.4
MD6	MAR01879.006	Sediment	0.94	10.1
MD7	MAR01879.007	Sediment	0.98	9.12
MD8	MAR01879.008	Sediment	0.73	17.0
MD9	MAR01879.009	Sediment	0.73	10.1
MD10	MAR01879.010	Sediment	0.85	10.6
MD11	MAR01879.011	Sediment	0.65	15.6
MD12	MAR01879.012	Sediment	0.93	11.5
MD13	MAR01879.013	Sediment	2.13	12.2
MD14	MAR01879.014	Sediment	0.78	12.0
MD15	MAR01879.015	Sediment	0.65	12.5
MD16	MAR01879.016	Sediment	2.69	13.2
MD17	MAR01879.017	Sediment	1.53	11.5
MD18	MAR01879.018	Sediment	1.49	10.1
		Reference Material (% Recovery)	94	97
		QC Blank	<0.02	<0.12

* See Report Notes

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Test Report ID MAR01879
Issue Version 2
Customer Reference Marine Institute Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ICPMS-MWSED*	ICPMS-MWSED*	ICPMS-MWSED*	ICPMS-MWSED*	ICPMS-MWSED*	ICPMS-MWSED*	ICPMS-MWSED*
		Limit of Detection	0.14	0.03	1	0.7	0.6	0.01	0.4
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic as As**	**Cadmium as Cd**	**Chromium as Cr**	**Copper as Cu**	**Lead as Pb**	**Mercury as Hg**	**Nickel as Ni**
MD1	MAR01879.001	Sediment	13.5	0.16	38.9	6.1	17.0	0.02	13.6
MD2	MAR01879.002	Sediment	13.0	0.15	33.0	5.8	15.4	<0.01	12.7
MD3	MAR01879.003	Sediment	10.1	0.28	44.1	11.4	20.4	0.06	18.5
MD4	MAR01879.004	Sediment	12.3	0.08	19.4	8.8	9.6	0.01	11.1
MD5	MAR01879.005	Sediment	10.2	0.33	47.4	13.3	21.6	0.06	19.0
MD6	MAR01879.006	Sediment	11.8	0.22	41.7	11.8	18.0	0.03	17.7
MD7	MAR01879.007	Sediment	11.4	0.23	37.9	9.3	17.5	0.03	15.7
MD8	MAR01879.008	Sediment	26.9	0.14	30.3	9.3	16.4	0.02	15.4
MD9	MAR01879.009	Sediment	29.5	0.14	26.6	7.1	20.9	0.02	11.8
MD10	MAR01879.010	Sediment	Insufficient	Insufficient	Insufficient	Insufficient	Insufficient	Insufficient	Insufficient
MD11	MAR01879.011	Sediment	27.5	0.14	27.1	7.8	21.8	<0.01	12.5
MD12	MAR01879.012	Sediment	12.8	0.21	37.7	9.3	18.7	0.03	15.3
MD13	MAR01879.013	Sediment	14.2	0.30	46.9	24.9	22.9	0.05	20.2
MD14	MAR01879.014	Sediment	22.4	0.12	28.2	15.5	24.6	0.01	12.8
MD15	MAR01879.015	Sediment	14.6	0.14	31.1	8.1	23.9	0.01	12.9
MD16	MAR01879.016	Sediment	16.6	0.31	49.8	21.3	25.0	0.02	26.1
MD17	MAR01879.017	Sediment	10.5	0.31	45.1	12.6	22.5	0.12	17.9
MD18	MAR01879.018	Sediment	12.8	0.37	54.1	14.9	28.9	0.10	20.6
Certified Reference Material 2702 (Measured Value)			49.01	1.064	336.2	119	128.6	0.546	70.88
Certified Reference Material 2702 (Certified Value)			45.3	0.817	352	117.7	132.8	0.447	75.4
Certified Reference Material 2702 (% Recovery)			104	104	103	103	99	117	102
QC Blank			<0.14	<0.03	<1	<0.7	<0.6	<0.01	<0.4

* See Report Notes

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Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01879
Issue Version	2
Customer Reference	Marine Institute Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ICPMS-MWSED*	ICPOES-MWSED*	ICPOES-MWSED*
		Limit of Detection	3.5	1750	2
		Accreditation	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Zinc as Zn**	**Aluminium as Al**	**Lithium as Li**
MD1	MAR01879.001	Sediment	65.4	33000	30.2
MD2	MAR01879.002	Sediment	58.1	31200	29.1
MD3	MAR01879.003	Sediment	75.1	41600	43.4
MD4	MAR01879.004	Sediment	24.8	47700	59.4
MD5	MAR01879.005	Sediment	74.0	43000	45.1
MD6	MAR01879.006	Sediment	68.5	35800	36.4
MD7	MAR01879.007	Sediment	68.0	37800	36.9
MD8	MAR01879.008	Sediment	50.2	17200	20.0
MD9	MAR01879.009	Sediment	55.9	26100	29.8
MD10	MAR01879.010	Sediment	Insufficient	16100	20.8
MD11	MAR01879.011	Sediment	58.5	24100	25.5
MD12	MAR01879.012	Sediment	70.1	36300	34.8
MD13	MAR01879.013	Sediment	81.0	38600	40.0
MD14	MAR01879.014	Sediment	59.7	29600	30.5
MD15	MAR01879.015	Sediment	53.0	27600	27.2
MD16	MAR01879.016	Sediment	77.9	35000	36.9
MD17	MAR01879.017	Sediment	77.4	37100	36.3
MD18	MAR01879.018	Sediment	89.0	35600	34.7
Certified Reference Material 2702 (Measured Value)			523.7	93500	99.7
Certified Reference Material 2702 (Certified Value)			485.3	84000	78.2
Certified Reference Material 2702 (% Recovery)			109	104	108
QC Blank			<3.5	<1750	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01879
Issue Version	2
Customer Reference	Marine Institute Analysis

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
MD4	MAR01879.004	Sediment	<1	<1
MD5	MAR01879.005	Sediment	<5	<5
MD6	MAR01879.006	Sediment	<5	<5
MD7	MAR01879.007	Sediment	<1	<1
MD8	MAR01879.008	Sediment	<5	<5
MD9	MAR01879.009	Sediment	<5	<5
MD11	MAR01879.011	Sediment	<1	<1
MD12	MAR01879.012	Sediment	<5	<5
MD13	MAR01879.013	Sediment	<5	<5
MD14	MAR01879.014	Sediment	<5	<5
MD15	MAR01879.015	Sediment	<1	<1
MD16	MAR01879.016	Sediment	<5	<5
MD17	MAR01879.017	Sediment	<5	<5
MD18	MAR01879.018	Sediment	<5	<5
		Certified Reference Material BCR-646 (Measured Value)	540	307
		Certified Reference Material BCR-646 (Certified Value)	770	480
		Certified Reference Material BCR-646 (% Recovery)	70	64
		QC Blank	<1	<1

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Customer Reference Marine Institute Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
MD4	MAR01879.004	Sediment	<1	<1	<1	<1	<1	<1
MD5	MAR01879.005	Sediment	2.74	2.97	8.12	38.8	47.1	48.6
MD6	MAR01879.006	Sediment	<1	<1	2.74	12.1	15.6	19.7
MD7	MAR01879.007	Sediment	1.78	3.48	11.0	38.3	41.1	45.3
MD8	MAR01879.008	Sediment	<1	<1	<1	2.44	1.77	3.06
MD9	MAR01879.009	Sediment	1.56	<1	5.07	18.0	22.3	22.0
MD11	MAR01879.011	Sediment	<1	<1	3.10	15.9	15.4	12.2
MD12	MAR01879.012	Sediment	5.78	3.85	16.7	76.7	85.7	76.7
MD13	MAR01879.013	Sediment	2.49	2.47	6.99	26.2	31.2	34.2
MD14	MAR01879.014	Sediment	4.84	4.05	11.3	39.4	41.5	47.4
MD15	MAR01879.015	Sediment	<1	<1	<1	<1	<1	<1
MD16	MAR01879.016	Sediment	<1	<1	<1	7.78	8.30	10.4
MD17	MAR01879.017	Sediment	3.26	7.91	11.3	67.0	72.5	66.4
MD18	MAR01879.018	Sediment	4.47	9.74	24.4	168	193	159
Certified Reference Material Nist 1941b (Measured Value)			36.5	56.0	120	236	225	387
Certified Reference Material Nist 1941b (Certified Value)			38.4	53.3	184	335	358	453
Certified Reference Material Nist 1941b (% Recovery)			95	105	65	70	63	85
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are available.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
* See Report Notes

Certificate of Analysis

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Test Report ID MAR01879
Issue Version 2
Customer Reference Marine Institute Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	N*
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF***	**CHRYSENE***	**DBENZAH**	**FLUORANT**	**FLUORENE**
MD4	MAR01879.004	Sediment	<1	<1	<1	<1	<1	<1
MD5	MAR01879.005	Sediment	39.1	49.3	45.2	7.33	69.2	5.42
MD6	MAR01879.006	Sediment	16.4	17.4	15.3	3.23	21.3	2.60
MD7	MAR01879.007	Sediment	28.4	39.5	39.1	6.77	59.0	3.51
MD8	MAR01879.008	Sediment	2.34	2.83	2.34	<1	4.66	1.51
MD9	MAR01879.009	Sediment	17.5	21.8	20.2	3.32	33.2	<1
MD11	MAR01879.011	Sediment	8.74	13.6	15.9	2.16	28.3	<1
MD12	MAR01879.012	Sediment	56.8	69.6	85.8	12.3	143	7.82
MD13	MAR01879.013	Sediment	28.0	30.8	30.5	5.78	50.1	4.98
MD14	MAR01879.014	Sediment	35.3	38.8	49.2	8.44	66.9	16.7
MD15	MAR01879.015	Sediment	<1	<1	<1	<1	1.52	<1
MD16	MAR01879.016	Sediment	8.75	9.36	9.19	<1	13.4	<1
MD17	MAR01879.017	Sediment	47.4	67.8	68.1	11.7	82.7	7.22
MD18	MAR01879.018	Sediment	120	152	160	30.1	187	10.2
Certified Reference Material Nist 1941b (Measured Value)			200	401	359	53.9	529	49.8
Certified Reference Material Nist 1941b (Certified Value)			307	225	399	53.0	651	85.0
Certified Reference Material Nist 1941b (% Recovery)			65	178	90	102	81	59
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are available.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
* See Report Notes

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Test Report ID MAR01879
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Customer Reference Marine Institute Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
MD4	MAR01879.004	Sediment	<1	<1	<1	<1	453
MD5	MAR01879.005	Sediment	43.7	7.13	29.3	59.1	76600
MD6	MAR01879.006	Sediment	18.2	4.29	10.5	18.4	49400
MD7	MAR01879.007	Sediment	32.9	6.40	25.1	49.8	50200
MD8	MAR01879.008	Sediment	2.37	<1	2.75	4.26	13600
MD9	MAR01879.009	Sediment	19.4	3.76	16.1	29.1	27300
MD11	MAR01879.011	Sediment	10.6	1.25	10.7	25.1	11700
MD12	MAR01879.012	Sediment	62.9	6.66	74.3	121	35500
MD13	MAR01879.013	Sediment	31.7	8.03	27.6	42.4	54300
MD14	MAR01879.014	Sediment	38.4	19.8	56.8	57.7	63900
MD15	MAR01879.015	Sediment	<1	<1	<1	1.37	4810
MD16	MAR01879.016	Sediment	9.18	2.31	7.46	11.6	30400
MD17	MAR01879.017	Sediment	55.2	9.97	33.5	73.5	51500
MD18	MAR01879.018	Sediment	132	12.0	41.6	174	80500
Certified Reference Material Nist 1941b (Measured Value)			270	519	319	421	1295~
Certified Reference Material Nist 1941b (Certified Value)			341	848	406	581	1400~
Certified Reference Material Nist 1941b (% Recovery)			79	61	79	73	93~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are available.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.
* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01879
Issue Version	2
Customer Reference	Marine Institute Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
MD4	MAR01879.004	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
MD5	MAR01879.005	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
MD6	MAR01879.006	Sediment	0.09	<0.08	<0.08	<0.08	<0.08	0.09	<0.08
MD7	MAR01879.007	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
MD8	MAR01879.008	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
MD9	MAR01879.009	Sediment	<0.08	<0.08	<0.08	0.09	<0.08	<0.08	<0.08
MD11	MAR01879.011	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
MD12	MAR01879.012	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
MD13	MAR01879.013	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
MD14	MAR01879.014	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
MD15	MAR01879.015	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
MD16	MAR01879.016	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
MD17	MAR01879.017	Sediment	<0.08	0.08	<0.08	<0.08	<0.08	<0.08	<0.08
MD18	MAR01879.018	Sediment	0.12	0.08	0.10	0.10	<0.08	0.09	<0.08
Certified Reference Material Nist 1941b (Measured Value)			2.82	5.40	4.25	3.75	3.68	5.45	2.86
Certified Reference Material Nist 1941b (Certified Value)			4.52	5.24	5.11	4.23	3.60	5.47	3.24
Certified Reference Material Nist 1941b (% Recovery)			62	103	83	89	102	100	88
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are available.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01879
Issue Version 2
Customer Reference Marine Institute Analysis

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Accreditation	UKAS	UKAS	N*	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**AHCH**	**BHCH**	**GHCH**	**DIELDRIN**	**HCB**	**DDE**	**DDT**	**DDD**
MD4	MAR01879.004	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MD5	MAR01879.005	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MD6	MAR01879.006	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MD7	MAR01879.007	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MD8	MAR01879.008	Sediment	<0.1	<0.1	<0.1	0.17	<0.1	<0.1	<0.1	<0.1
MD9	MAR01879.009	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MD11	MAR01879.011	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MD12	MAR01879.012	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MD13	MAR01879.013	Sediment	<0.1	<0.1	<0.1	0.11	<0.1	<0.1	<0.1	<0.1
MD14	MAR01879.014	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MD15	MAR01879.015	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MD16	MAR01879.016	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MD17	MAR01879.017	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.16
MD18	MAR01879.018	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.15
Certified Reference Material Nist 1941b (Measured Value)			41	22	20	38	5.64	3.64	0.79	5.03
Certified Reference Material Nist 1941b (Certified Value)			40~	40~	40~	40~	5.83	3.22	1.12	4.66
Certified Reference Material Nist 1941b (% Recovery)			103~	54~	51~	94~	97	113	71	108
QC Blank			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are available.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR01879
Issue Version 2
Customer Reference Marine Institute Analysis

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
WSLM59*	MAR01879.001-018	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
ANC*	MAR01879.001-018	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
ICPMS-MWSED*	MAR01879.001-018	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
ICPOES-MWSED*	MAR01879.001-018	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SUB_01*	MAR01879.001-018	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR01879.001-018	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR01879.005-006, .008-009, 012-014, 016-018	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/302	MAR01879.004-009, 011-018	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (GHCH) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01879.004-009, 011-018	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01879.004-009, 011-018	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR01879.004-009, 011-018	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected.However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (FLUORENE) . These circumstances should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR01879
Issue Version	2
Customer Reference	Marine Institute Analysis

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Total Organic Carbon (TOC)	Air dried and sieved to <2mm	Carbonate removal and sulphurous acid/combustion at 1600°C/NDIR.
Carbonate	Air dried and sieved to <2mm	Quantitative digestion with Hydrochloric Acid back titration with 1M Sodium Hydroxide to pH 7
Metals	Air dried and sieved to <2mm	Microwave assisted HF/Boric extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and sieved to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.
Organochlorine Pesticides (OCPs)	Air dried and sieved to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichlorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichlorodiphenyldichloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichlorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

APPENDIX C

Proposed Maintenance Dredging Tonnage 2026-2033

Conversion Rates	Insitu Density (wet t/m^3)	Conversion Rate to Dry Tonnes	Offshore Disposal Rate per day		
			Dry Tonnes	Insitu Cubic Metres	Wet Tonnes
Creadan Bank	1.7	1.08	35,000	32,407	55,093
Duncannon	1.6	0.92	35,000	38,043	60,870
Cheekpoint Lower	1.5	0.76	35,000	46,053	69,079
Belview Berths	1.5	0.76	35,000	46,053	69,079
Passage East Boathouse Quay	1.6	0.92	35,000	38,043	60,870
Passage East Shoal	1.6	0.92	35,000	38,043	60,870
Cheekpoint Harbour Access	1.5	0.76	35,000	46,053	69,079
Great Island Jetty	1.5	0.76	35,000	46,053	69,079
Cheekpoint Upper	1.5	0.76	35,000	46,053	69,079
Belview Turning Area	1.5	0.76	35,000	46,053	69,079
O'Brien's Quay	1.5	0.76	35,000	46,053	69,079
Belview to O'Brien's Quay	1.5	0.76	35,000	46,053	69,079
Spit Light and Queen's Channel	1.5	0.76	N/A	N/A	N/A
Frank Cassin Wharf	1.5	0.76	N/A	N/A	N/A
North Wharf	1.5	0.76	N/A	N/A	N/A
Forde Wharf & Merchants Quay Marina	1.5	0.76	N/A	N/A	N/A

Particle Density	2.65	t/m^3			
Water Density	1.025	t/m^3			

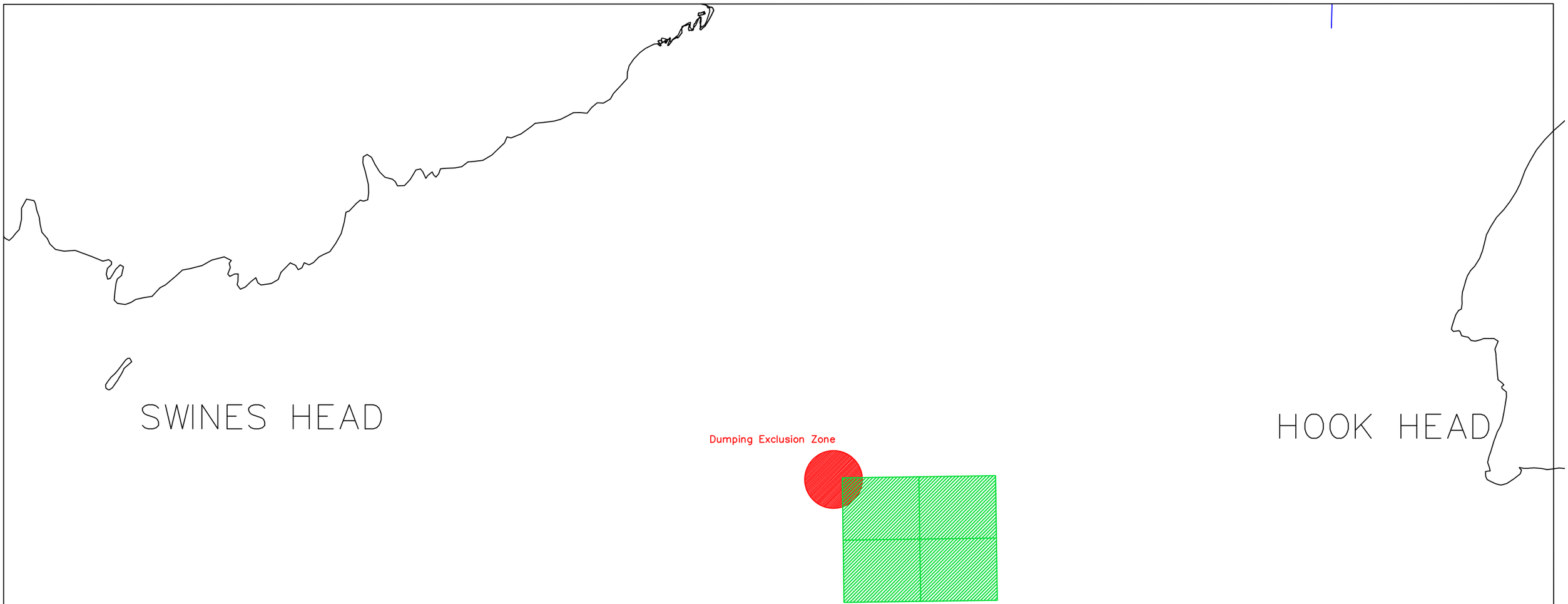
Dry Tonnage

Dredge Area Name	Method of Dredging	2026	2027	2028	2029	2030	2031	2032	2033	Total	Contingency
		(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes/year)
Creadan Bank	TSHD	0	0	0	0	0	0	0	0	**0**	175,000
	Plough	0	0	0	0	0	0	0	0	**0**	5,000
Duncannon	TSHD	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	**1,600,000**	150,000
	Plough	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	**8,000**	0
Cheekpoint Lower	TSHD	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	**1,200,000**	80,000
	Plough	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	**420,000**	27,500
Belview Berths	TSHD/Mechanical	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	**240,000**	17,500
	Plough	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	**80,000**	5,000
Passage East Boathouse Quay	TSHD/Mechanical	5,000	0	5000	0	5000	0	5000	0	**20,000**	0
	Plough	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	**8,000**	0
Passage East Shoal	TSHD/Mechanical	7,500	0	7,500	0	7,500	0	7,500	0	**30,000**	0
	Plough	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	**8,000**	0
Cheekpoint Harbour Access	TSHD/Mechanical	0	11,000	0	11,000	0	11,000	0	11,000	**44,000**	0
	Plough	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	**20,000**	2,500
Great Island Jetty	TSHD/Mechanical	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	**40,000**	5,000
	Plough	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	**16,000**	0
Cheekpoint Upper	TSHD	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	**40,000**	50,000
	Plough	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	**8,000**	0
Belview Turning Area	TSHD/Mechanical	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	**160,000**	10,000
	Plough	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	**16,000**	2,500
O'Brien's Quay	TSHD/Mechanical	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	**80,000**	5,000
	Plough	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	**8,000**	1,000
Belview to O'Brien's Quay	TSHD/Mechanical	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	**80,000**	20,000
	Plough	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	**12,000**	2,500
Spit Light and Queen's Channel	Plough	750	750	750	750	750	750	750	750	**6,000**	0
Frank Cassin Wharf	Plough	750	750	750	750	750	750	750	750	**6,000**	0
North Wharf	Plough	500	500	500	500	500	500	500	500	**4,000**	0
Forde Wharf & Merchants Quay Marina	Plough	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	**28,000**	0
Total Disposed at offshore dumping site (excl. contingency)		**442,500**	**441,000**	**442,500**	**441,000**	**442,500**	**441,000**	**442,500**	**441,000**	**3,534,000**	
Total Disposed at offshore dumping site (incl. max contingency)		**617,500**	**616,000**	**617,500**	**616,000**	**617,500**	**616,000**	**617,500**	**616,000**	**4,934,000**	
Total Dumped by Plough Dredging		**81,000**	**81,000**	**81,000**	**81,000**	**81,000**	**81,000**	**81,000**	**81,000**	**648,000**	

Wet Tonnage

Dredge Area Name	Method of Dredging	2026	2027	2028	2029	2030	2031	2032	2033	Total	Contingency
		(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes/year)
Creadan Bank	TSHD	0	0	0	0	0	0	0	0	**0**	275,463
	Plough	0	0	0	0	0	0	0	0	**0**	7,870
Duncannon	TSHD	347,826	347,826	347,826	347,826	347,826	347,826	347,826	347,826	**2,782,609**	260,870
	Plough	1,739	1,739	1,739	1,739	1,739	1,739	1,739	1,739	**13,913**	0
Cheekpoint Lower	TSHD	296,053	296,053	296,053	296,053	296,053	296,053	296,053	296,053	**2,368,421**	157,895
	Plough	103,618	103,618	103,618	103,618	103,618	103,618	103,618	103,618	**828,947**	54,276
Belview Berths	TSHD/Mechanical	59,211	59,211	59,211	59,211	59,211	59,211	59,211	59,211	**473,684**	34,539
	Plough	19,737	19,737	19,737	19,737	19,737	19,737	19,737	19,737	**157,895**	9,868
Passage East Boathouse Quay	TSHD/Mechanical	8,696	0	8,696	0	8,696	0	8,696	0	**34,783**	0
	Plough	1,739	1,739	1,739	1,739	1,739	1,739	1,739	1,739	**13,913**	0
Passage East Shoal	TSHD/Mechanical	13,043	0	13,043	0	13,043	0	13,043	0	**52,174**	0
	Plough	1,739	1,739	1,739	1,739	1,739	1,739	1,739	1,739	**13,913**	0
Cheekpoint Harbour Access	TSHD/Mechanical	0	21,711	0	21,711	0	21,711	0	21,711	**86,842**	0
	Plough	4,934	4,934	4,934	4,934	4,934	4,934	4,934	4,934	**39,474**	4,934
Great Island Jetty	TSHD/Mechanical	9,868	9,868	9,868	9,868	9,868	9,868	9,868	9,868	**78,947**	9,868
	Plough	3,947	3,947	3,947	3,947	3,947	3,947	3,947	3,947	**31,579**	0
Cheekpoint Upper	TSHD	9,868	9,868	9,868	9,868	9,868	9,868	9,868	9,868	**78,947**	98,684
	Plough	1,974	1,974	1,974	1,974	1,974	1,974	1,974	1,974	**15,789**	0
Belview Turning Area	TSHD/Mechanical	39,474	39,474	39,474	39,474	39,474	39,474	39,474	39,474	**315,789**	19,737
	Plough	3,947	3,947	3,947	3,947	3,947	3,947	3,947	3,947	**31,579**	4,934
O'Brien's Quay	TSHD/Mechanical	19,737	19,737	19,737	19,737	19,737	19,737	19,737	19,737	**157,895**	9,868
	Plough	1,974	1,974	1,974	1,974	1,974	1,974	1,974	1,974	**15,789**	1,974
Belview to O'Brien's Quay	TSHD/Mechanical	19,737	19,737	19,737	19,737	19,737	19,737	19,737	19,737	**157,895**	39,474
	Plough	2,961	2,961	2,961	2,961	2,961	2,961	2,961	2,961	**23,684**	4,934
Spit Light and Queen's Channel	Plough	1,480	1,480	1,480	1,480	1,480	1,480	1,480	1,480	**11,842**	0
Frank Cassin Wharf	Plough	1,480	1,480	1,480	1,480	1,480	1,480	1,480	1,480	**11,842**	0
North Wharf	Plough	987	987	987	987	987	987	987	987	**7,895**	0
Forde Wharf & Merchants Quay Marina	Plough	6,908	6,908	6,908	6,908	6,908	6,908	6,908	6,908	**55,263**	0
Total Disposed at offshore dumping site (excl. contingency)		**823,513**	**823,484**	**823,513**	**823,484**	**823,513**	**823,484**	**823,513**	**823,484**	**6,587,986**	
Total Disposed at offshore dumping site (incl. max contingency)		**1,098,976**	**1,098,947**	**1,098,976**	**1,098,947**	**1,098,976**	**1,098,947**	**1,098,976**	**1,098,947**	**8,791,690**	
Total Dumped by Plough Dredging		**159,165**	**159,165**	**159,165**	**159,165**	**159,165**	**159,165**	**159,165**	**159,165**	**1,273,318**	

APPENDIX D



	WGS84 Coordinates		Irish Transverse Mercator (ITM)		Area (Ha)
	Latitude	Longitude	Eastings (m)	Northings (m)	
Disposal Site	52° 07.45' N	06° 58.80' W	669785.25	597454.29	52 Hectares
	52° 07.10' N	06° 58.80' W	669794.37	596805.42	
	52° 07.10' N	06° 58.10' W	670593.21	596816.54	
	52° 07.45' N	06° 58.10' W	670583.99	597465.57	

Consultant [redacted]

Client

PORT OF WATERFORD – MAINTENANCE DREDGING

Title

FIGURE 8 – DISPOSAL AREA

Scale : 1:20000

Dwg Date : January 2024

DECLG FILE NUMBER: N/A

Drg.No 636_D@S_Application_08

Certified By: [redacted] PhD CEng FIEI

[redacted] 11/01/2024

APPENDIX E

Iascach Intíre Éireann
Inland Fisheries Ireland

Capt. [redacted]

[redacted]

13 December 2022

Re: Port of Waterford Maintenance Dredging 2026-2033

Application for Foreshore Licence and Dumping at Sea Permit

Submitted via email to: [redacted]

Dear Mr. [redacted],

Thank you for the opportunity to make a submission on this consultation document. Inland Fisheries Ireland is the statutory authority tasked under section 7(1) of the Inland Fisheries Act 2010 (No. 10 of 2010) with responsibility for the protection, management, and conservation of the inland fisheries resource. In respect of the consultation document provided IFI wish to make the following observations:

The site of the dredging works spans the surface water bodies of the Middle Suir and Lower Suir Estuaries, and Barrow Suir Nore Estuary. The current Ecological Status of the Middle Suir Estuary is *Bad*, whereas that of the Lower Suir Estuary is *Good*. The current Ecological Status of the Barrow Suir Nore Estuary is *Moderate.* All water bodies are *At Risk* of not meeting Good Status in the next WFD cycle.

The dredging works have the potential to impact on fish passage into the Nore, Suir and Barrow Rivers and their associated transitional waters. Together these catchments drain an area of over 9,000km2. Dredging is disruptive of the channel bed, disturbing its physical form and ecology by removing or destroying habitats and the species resident within or on the dredged area.

The freshwater and tidal reaches of the Barrow, Nore and Suir and Waterford Harbour are within the Lower River Suir (002137) and River Barrow and River Nore (002162) Special Areas of Conservation (SACs). Among the range of qualifying interests are migratory species including Atlantic Salmon, Sea Lamprey, River Lamprey, Twaite and Allis Shad. In addition, Smelt, listed as threatened in the *Irish Red Data Book* for Vertebrates, has significant populations in these waters. These waters are also important migratory routes for juvenile and adult European Eel, which are listed as a critically endangered species on the IUCN Red List.

Article 5 of the Surface Water Regulations (SI 272 of 2009) states that there should be no deterioration in Ecological Status. Article 28(2) of the Regulations states that a surface water body whose status is determined to be less than Good shall be restored to at least Good status. The proposed surveys / reports must demonstrate how this project would cause no deterioration to the above surface water bodies and is consistent with their restoration to good ecological status.

The dredging techniques proposed include Trailer Suction Hopper Dredging (TSHD), Plough Dredging and Mechanical Dredging. IFI's primary concern relates to the Plough Dredging at Cheek Point. Plough dredging generates elevated suspended solids levels in the water column. This can impact adversely on fish respiration, lead to abrasions and infection, result in the deposition of fines onto spawning/nursery areas; impede swimming or obstruct passage, and impair dissolved oxygen concentration in the water column. Furthermore, Cheek Point lies at the intersection of the Barrow, Nore and Suir catchments, and is a critical area for fish migration affecting a sizable portion of the total freshwater area of the country.

IFI is particularly concerned that the closed period for plough dredging does not extend to the site at Cheek Point. The document provided also states that dredging occurs at Cheek Point at least twice a year (page 6, Section 3.5). IFI would question therefore why dredging needs to take place during the period 1 March to 30 June. IFI request that in the interests of the timing and sensitivity of migratory fish species, that consideration be granted to the extension of the closed period from 1 March to 30 June to the bar at Cheek Point. Extending the closed period can serve a valuable role in reducing potential adverse impacts to the migrating fish.

Furthermore IFI question the rationale for allowing such dredging to occur during spring tides. Peak salmonid and eel migrations occur at spring tides. Migrations of eels occur on the new moon, whereas salmon migrations tend to coincide with the full moon. Both species' migrations coincide with the timing of plough dredging at the Cheek Point site.

IFI is also concerned by the final chapter in Section 5.5 (page 10) which states that bed levelling is permitted to be undertaken at all times of the year. In IFI's opinion this allowance is too ambiguous, particularly considering statement in Section 5.4 of the document (page 9) where Plough Dredging is equated with Bed Levelling. During agreed close seasons or other restricted periods IFI requests that no plough dredging / bed levelling is permitted. No general exceptions should be provided for.

The document states that in areas of restricted mobility plough dredging is required, i.e. that the plough dredger is used in areas that TSHD cannot access (Section 5.4). The bar at Cheekpoint Lower is in relatively open water. In terms of area, Cheekpoint Lower is the third largest of all dredging sites in the Port of Waterford. Therefore IFI requires further justification for why plough dredging should take place in this location.

IFI ask that consideration be given to the use of TSHD at Cheek Point, from which the release of suspended solids would be more controlled. IFI would like to see a reduction in the annual plough dredge allowance of 159,165 wet tonnes annually. This may be compensated for by an increase in TSHD if applied in sensitive areas such as Cheek Point.

With respect to TSHD, IFI requests that the overflow of dredged sediment should be minimised and documented if it occurs. Moreover, the inclusion of an additional annual contingency tonnage of 275,463 wet tonnes for Creadan Bank should be subject to the same controls and restrictions as other sites. Dredging should only be permitted by TSHD and be permitted outside of the period 1 March to 30 June.

Iascach Intíre Éireann
Inland Fisheries Ireland

With regard to environmental assessments, IFI feels that the port of Waterford should undertake the following:

- An investigation into the alternatives to Plough Dredging for Cheekpoint. In IFI's opinion this should form part of a Stage 3 Appropriate Assessment, i.e. Assessment of Alternative Solutions
- An assessment of the potential impacts on Annex II and Annex IV species of the Habitats Directive (92/43/EEC). This should include an assessment of the impact on the conservation objectives of species listed as qualifying interests in the Barrow – Nore and Lower River Suir SACs, which include Shad, Lamprey species and Atlantic Salmon. The cumulative effects of the proposed development along with other existing or approved projects should also be considered.
- The assessment of potential impacts should be extended to include the potential impacts on European Eel (*Anguilla anguilla*), currently listed as a critically endangered species on the IUCN Red List.
- Sediment chemistry analysis should be complemented by biological analysis in the proposed dredging zones to assess the physical impact of dredging on benthic flora and fauna
- The results of sediment chemistry analysis in 2023 should be shared with IFI
- In the event of the activation of the Emergency Response Procedure or the occurrence of any incident with the potential to impact surface waters directly or indirectly, the Port of Waterford should notify IFI immediately.

Should you require any clarification on the above please do not hesitate to contact me. Future correspondence including acknowledgements of this submission can be sent to [redacted] or by post to the address below.

Yours sincerely,

[redacted]

[redacted]

Fisheries Environmental Officer
South-Eastern River Basin District

[redacted]

Senior Fisheries Environmental Officer
South-Eastern River Basin District

[redacted]

[redacted]

From: Housing Fem Dau <[redacted]>
Sent: Monday 7 November 2022 16:23
To: [redacted]
Subject: RE: Port of Waterford Maintenance Dredging 2026-2033

A chara,

Thank you for your email.

The primary role of Development Applications Unit (DAU) is the coordination of the Department's heritage-related observations to referrals in the domain of planning. While DAU offers a pre-planning consultation service for developments under the planning legislation, unfortunately, we are not in a position to offer this facility for pre-applications for licences and will review/respond, where possible, when the licence application is referred to the Department by the relevant consent authority.

Le meas,

[redacted]
Executive Officer
—
Aonad na nIarratas ar Fhorbairt
Development Applications Unit
An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

Oifigí an Rialtais
Government Offices
Bóthar an Bhaile Nua, Loch Garman, Contae Loch Garman, Y35 AP90
Newtown Road, Wexford, County Wexford, Y35 AP90
—
www.tithiocht.gov.ie
www.housing.gov.ie

An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

From: [redacted]
Sent: Thursday 27 October 2022 12:01
To: Housing Manager DAU <[redacted]>
Subject: Port of Waterford Maintenance Dredging 2026-2033

Dear Sir/Madam,

The Port of Waterford seeks to submit an application for a Foreshore Licence and Dumping at Sea permit to allow maintenance dredging works to be undertaken over the coming years within the harbour. These services are vital to ensure the Port can continue to maintain its marine facilities and facilitate the provision of essential products within the region.

In advance of this, the Port of Waterford seeks input from local and national stakeholders on the proposed works to ensure the environmental assessments being undertaken are adequate and note any other comments you may have. The attached consultation document outlines the proposed works, mitigation measures and the environmental assessments being undertaken.

Should you wish to provide any feedback on the Port's maintenance dredging plans, we would appreciate your comments by the 8th of December 2022 (6 weeks).

Kind regards,

[redacted]

[redacted]

[redacted]

From: [redacted]
Sent:
To: [redacted]
Cc: [redacted]
Subject: RE: Port of Waterford Maintenance Dredging 2026-2033

Dear [redacted]

Many thanks for your consultation invitation. I very much understand the complexities of dredging and the importance of a long term strategy for the future of the Port.

The Piers and Harbours operational section of Wexford County Council have no significant comments to make re your proposal.

However I would welcome a discussion regarding the proposed training wall (near the Barrow Bridge) as part of the dredging / port masterplan.

Yours

[redacted]

[redacted] |**Senior Marine Officer | Oifigeach Sinsearach Mara**

Wexford County Council, Unit 7 Key West, Custom House Quay, Wexford, Y35 D458.
Comhairle Contae Loch Garman, Aonad 7 Key West, Cé Theach an Chustaim, Loch Garman Y35 D458

☎ 053 9122300 | ✉ [redacted] www.wexfordharbour.com

From: [redacted]
Sent: 02 November 2022 11:44
To: [redacted]
Cc: [redacted]
Subject: Port of Waterford Maintenance Dredging 2026-2033

Dear Captain [redacted],

The Port of Waterford seeks to submit an application for a Foreshore Licence and Dumping at Sea permit to allow maintenance dredging works to be undertaken over the coming years within the harbour. These services are vital to ensure the Port can continue to maintain its marine facilities and facilitate the provision of essential products within the region.

In advance of this, the Port of Waterford seeks input from local and national stakeholders on the proposed works to ensure the environmental assessments being undertaken are adequate and note any other comments you may have. The attached consultation document outlines the proposed works, mitigation measures and the environmental assessments being undertaken.

Should you wish to provide any feedback on the Port's maintenance dredging plans, we would appreciate your comments by the 14th of December 2022 (6 weeks). If you wish to meet to discuss the attached document and the Port's ongoing necessary dredging activities, we would be pleased to facilitate this.

I look forward to hearing from you.

Kind regards,

[redacted]

Port of Waterford

brings you closer

[redacted]
Harbour Master

NSAI Certified NSAI Certified

Email: [redacted] www.portofwaterford.com

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