

Certificate of Analysis



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

| | |
|----------------------|--|
| Test Report ID | MAR00562 |
| Issue Version | 1 |
| Customer | Able UK Ltd, Able House, Billingham Reach Industrial Estate, Haverton Hill Road, Billingham, Teeside, TS23 1PX |
| Customer Reference | MMO Sediment Analysis |
| Date Sampled | 22-Jan-20 |
| Date Received | 23-Jan-20 |
| Date Reported | 09-Mar-20 |
| Condition of samples | Cold Satisfactory |

A handwritten signature in black ink, appearing to read 'M. Hubbard'.

Authorised by: Marya Hubbard

Position: Laboratory Manager

Any additional opinions or interpretations found in this report, are outside the scope of UKAS accreditation.

This report shall not be reproduced, except in full, without the written permission of the laboratory
Results contained herewith only apply to the samples tested

Certificate of Analysis



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Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment Analysis

| | | Units | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) |
|-------------------|--------------|---------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | | Method No | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 |
| | | Accreditation | MMO | MMO | MMO | MMO | MMO | MMO | MMO |
| | | | 45mm | 31.5mm | 22.4mm | 16mm | 11.2mm | 8mm | 5.6mm |
| Client Reference: | SOCOTEC Ref: | Matrix | -5.5 | -5.0 | -4.5 | -4.0 | -3.5 | -3.0 | -2.5 |
| ASP1 0m | MAR00562.001 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ASP2 0m | MAR00562.002 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ASP3 0m | MAR00562.003 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ASP4 0m | MAR00562.004 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ASP5 0m | MAR00562.005 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ASP6 0m | MAR00562.006 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SC1 0m | MAR00562.007 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SC2 0m | MAR00562.008 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SC3 0m | MAR00562.009 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SC4 0m | MAR00562.010 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SC5 0m | MAR00562.011 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TB1 0m | MAR00562.012 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TB2 0m | MAR00562.013 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TB3 0m | MAR00562.014 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment Analysis

| | | Units | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) |
|-------------------|--------------|---------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | | Method No | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 |
| | | Accreditation | MMO | MMO | MMO | MMO | MMO | MMO | MMO |
| | | | 4mm | 2.8mm | 2mm | 1.4mm | 1mm | 707µm | 500µm |
| Client Reference: | SOCOTEC Ref: | Matrix | -2.0 | -1.5 | -1.0 | -0.5 | 0.0 | 0.5 | 1.0 |
| ASP1 0m | MAR00562.001 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ASP2 0m | MAR00562.002 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ASP3 0m | MAR00562.003 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ASP4 0m | MAR00562.004 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ASP5 0m | MAR00562.005 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ASP6 0m | MAR00562.006 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SC1 0m | MAR00562.007 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SC2 0m | MAR00562.008 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SC3 0m | MAR00562.009 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SC4 0m | MAR00562.010 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SC5 0m | MAR00562.011 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TB1 0m | MAR00562.012 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TB2 0m | MAR00562.013 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TB3 0m | MAR00562.014 | Sediment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment Analysis

| | | Units | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) |
|-------------------|--------------|---------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | | Method No | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 |
| | | Accreditation | MMO | MMO | MMO | MMO | MMO | MMO | MMO |
| | | | 353.6µm | 250µm | 176.8µm | 125µm | 88.39µm | 63µm | 44.2µm |
| Client Reference: | SOCOTEC Ref: | Matrix | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 |
| ASP1 0m | MAR00562.001 | Sediment | 0.00 | 0.00 | 0.03 | 2.68 | 4.19 | 0.38 | 2.72 |
| ASP2 0m | MAR00562.002 | Sediment | 0.00 | 0.00 | 0.09 | 2.25 | 1.05 | 0.41 | 5.30 |
| ASP3 0m | MAR00562.003 | Sediment | 0.00 | 0.00 | 0.31 | 2.53 | 0.75 | 0.97 | 6.48 |
| ASP4 0m | MAR00562.004 | Sediment | 0.01 | 0.39 | 0.82 | 4.67 | 1.73 | 1.94 | 7.76 |
| ASP5 0m | MAR00562.005 | Sediment | 0.00 | 0.06 | 1.00 | 4.88 | 2.44 | 1.27 | 7.07 |
| ASP6 0m | MAR00562.006 | Sediment | 0.00 | 0.20 | 1.51 | 5.26 | 2.96 | 1.92 | 7.94 |
| SC1 0m | MAR00562.007 | Sediment | 0.75 | 3.80 | 6.71 | 17.20 | 11.70 | 6.54 | 7.46 |
| SC2 0m | MAR00562.008 | Sediment | 0.00 | 0.00 | 0.61 | 6.81 | 4.28 | 5.72 | 9.77 |
| SC3 0m | MAR00562.009 | Sediment | 0.00 | 0.00 | 0.72 | 5.22 | 1.78 | 3.39 | 8.53 |
| SC4 0m | MAR00562.010 | Sediment | 0.00 | 0.07 | 0.46 | 5.00 | 2.20 | 2.43 | 8.21 |
| SC5 0m | MAR00562.011 | Sediment | 0.00 | 0.35 | 1.42 | 4.76 | 1.65 | 1.83 | 7.74 |
| TB1 0m | MAR00562.012 | Sediment | 0.00 | 0.00 | 0.16 | 3.00 | 1.56 | 0.57 | 5.77 |
| TB2 0m | MAR00562.013 | Sediment | 0.00 | 0.00 | 0.08 | 3.57 | 2.13 | 0.54 | 5.79 |
| TB3 0m | MAR00562.014 | Sediment | 0.00 | 0.11 | 1.32 | 4.44 | 1.69 | 1.33 | 6.85 |

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Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment Analysis

| | | Units | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) |
|-------------------|--------------|---------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | | Method No | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 |
| | | Accreditation | MMO | MMO | MMO | MMO | MMO | MMO | MMO |
| | | | 31.3µm | 22.1µm | 15.6µm | 11µm | 7.8µm | 5.5µm | 3.9µm |
| Client Reference: | SOCOTEC Ref: | Matrix | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | 7.5 | 8.0 |
| ASP1 0m | MAR00562.001 | Sediment | 8.12 | 9.03 | 9.20 | 10.84 | 10.38 | 9.39 | 7.70 |
| ASP2 0m | MAR00562.002 | Sediment | 9.40 | 10.13 | 10.78 | 11.56 | 11.28 | 9.98 | 7.62 |
| ASP3 0m | MAR00562.003 | Sediment | 9.18 | 9.95 | 10.55 | 10.92 | 10.75 | 9.89 | 7.77 |
| ASP4 0m | MAR00562.004 | Sediment | 9.36 | 10.15 | 9.87 | 9.78 | 9.54 | 8.71 | 6.79 |
| ASP5 0m | MAR00562.005 | Sediment | 9.50 | 10.06 | 9.91 | 10.29 | 9.94 | 8.77 | 6.69 |
| ASP6 0m | MAR00562.006 | Sediment | 9.71 | 9.88 | 9.10 | 9.35 | 9.04 | 8.12 | 6.41 |
| SC1 0m | MAR00562.007 | Sediment | 6.75 | 5.97 | 4.84 | 5.01 | 4.87 | 4.37 | 3.46 |
| SC2 0m | MAR00562.008 | Sediment | 10.10 | 9.79 | 8.87 | 8.99 | 8.55 | 7.38 | 5.46 |
| SC3 0m | MAR00562.009 | Sediment | 9.66 | 10.27 | 10.33 | 10.47 | 9.87 | 8.52 | 6.25 |
| SC4 0m | MAR00562.010 | Sediment | 9.60 | 10.22 | 9.93 | 9.77 | 9.50 | 8.62 | 6.61 |
| SC5 0m | MAR00562.011 | Sediment | 9.30 | 9.98 | 10.01 | 9.94 | 9.73 | 8.94 | 6.88 |
| TB1 0m | MAR00562.012 | Sediment | 9.07 | 9.87 | 10.51 | 10.77 | 10.71 | 9.92 | 7.77 |
| TB2 0m | MAR00562.013 | Sediment | 9.58 | 9.95 | 10.10 | 10.98 | 10.67 | 9.44 | 7.28 |
| TB3 0m | MAR00562.014 | Sediment | 9.15 | 9.90 | 9.98 | 10.13 | 10.05 | 9.22 | 7.16 |

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Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment Analysis

| | | Units | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) |
|-------------------|--------------|---------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | | Method No | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 |
| | | Accreditation | MMO | MMO | MMO | MMO | MMO | MMO | MMO |
| | | | 2.75µm | 1.95µm | 1.38µm | 0.98µm | 0.69µm | 0.49µm | 0.34µm |
| Client Reference: | SOCOTEC Ref: | Matrix | 8.5 | 9.0 | 9.5 | 10.0 | 10.5 | 11.0 | 11.5 |
| ASP1 0m | MAR00562.001 | Sediment | 5.65 | 3.89 | 2.97 | 2.53 | 2.24 | 2.01 | 1.78 |
| ASP2 0m | MAR00562.002 | Sediment | 5.10 | 3.14 | 2.15 | 1.77 | 1.63 | 1.52 | 1.39 |
| ASP3 0m | MAR00562.003 | Sediment | 5.21 | 3.11 | 2.05 | 1.70 | 1.60 | 1.52 | 1.38 |
| ASP4 0m | MAR00562.004 | Sediment | 4.55 | 2.76 | 1.89 | 1.60 | 1.52 | 1.46 | 1.35 |
| ASP5 0m | MAR00562.005 | Sediment | 4.48 | 2.76 | 1.89 | 1.57 | 1.46 | 1.39 | 1.29 |
| ASP6 0m | MAR00562.006 | Sediment | 4.46 | 2.89 | 2.08 | 1.73 | 1.55 | 1.42 | 1.28 |
| SC1 0m | MAR00562.007 | Sediment | 2.43 | 1.61 | 1.20 | 1.04 | 0.93 | 0.84 | 0.73 |
| SC2 0m | MAR00562.008 | Sediment | 3.52 | 2.08 | 1.41 | 1.19 | 1.11 | 1.05 | 0.95 |
| SC3 0m | MAR00562.009 | Sediment | 3.94 | 2.25 | 1.47 | 1.24 | 1.20 | 1.16 | 1.07 |
| SC4 0m | MAR00562.010 | Sediment | 4.32 | 2.60 | 1.81 | 1.55 | 1.45 | 1.37 | 1.26 |
| SC5 0m | MAR00562.011 | Sediment | 4.46 | 2.63 | 1.80 | 1.55 | 1.47 | 1.38 | 1.25 |
| TB1 0m | MAR00562.012 | Sediment | 5.18 | 3.13 | 2.15 | 1.81 | 1.69 | 1.58 | 1.42 |
| TB2 0m | MAR00562.013 | Sediment | 4.95 | 3.10 | 2.14 | 1.76 | 1.61 | 1.51 | 1.37 |
| TB3 0m | MAR00562.014 | Sediment | 4.78 | 2.89 | 1.97 | 1.65 | 1.53 | 1.43 | 1.28 |

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

Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment Analysis

| | | Units | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) | % (at 0.5phi intervals) |
|-------------------|--------------|---------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | | Method No | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 | *SUB_01 |
| | | Accreditation | MMO | MMO | MMO | MMO | MMO | MMO | MMO |
| | | | 0.24µm | 0.17µm | 0.12µm | 0.09µm | 0.06µm | 0.04µm | <0.04µm |
| Client Reference: | SOCOTEC Ref: | Matrix | 12.0 | 12.5 | 13.0 | 13.5 | 14.0 | 14.5 | >14.5 |
| ASP1 0m | MAR00562.001 | Sediment | 1.50 | 1.15 | 0.85 | 0.53 | 0.21 | 0.03 | 0.00 |
| ASP2 0m | MAR00562.002 | Sediment | 1.19 | 0.92 | 0.69 | 0.43 | 0.18 | 0.02 | 0.00 |
| ASP3 0m | MAR00562.003 | Sediment | 1.18 | 0.91 | 0.68 | 0.42 | 0.17 | 0.02 | 0.00 |
| ASP4 0m | MAR00562.004 | Sediment | 1.17 | 0.91 | 0.68 | 0.42 | 0.17 | 0.02 | 0.00 |
| ASP5 0m | MAR00562.005 | Sediment | 1.13 | 0.88 | 0.67 | 0.42 | 0.17 | 0.02 | 0.00 |
| ASP6 0m | MAR00562.006 | Sediment | 1.10 | 0.85 | 0.64 | 0.40 | 0.16 | 0.02 | 0.00 |
| SC1 0m | MAR00562.007 | Sediment | 0.62 | 0.48 | 0.36 | 0.23 | 0.09 | 0.01 | 0.00 |
| SC2 0m | MAR00562.008 | Sediment | 0.81 | 0.63 | 0.48 | 0.30 | 0.12 | 0.02 | 0.00 |
| SC3 0m | MAR00562.009 | Sediment | 0.92 | 0.72 | 0.54 | 0.34 | 0.14 | 0.02 | 0.00 |
| SC4 0m | MAR00562.010 | Sediment | 1.07 | 0.82 | 0.61 | 0.38 | 0.15 | 0.02 | 0.00 |
| SC5 0m | MAR00562.011 | Sediment | 1.05 | 0.79 | 0.58 | 0.35 | 0.14 | 0.02 | 0.00 |
| TB1 0m | MAR00562.012 | Sediment | 1.19 | 0.91 | 0.67 | 0.41 | 0.17 | 0.02 | 0.00 |
| TB2 0m | MAR00562.013 | Sediment | 1.18 | 0.92 | 0.69 | 0.44 | 0.18 | 0.02 | 0.00 |
| TB3 0m | MAR00562.014 | Sediment | 1.09 | 0.84 | 0.62 | 0.39 | 0.16 | 0.02 | 0.00 |

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Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment Analysis

| | | Units | mg/Kg (Dry Weight) | | | | | | | |
|---|--------------|--------------------|--------------------|--------------|---------------|-------------|--------------|-------------|-----------|-----------|
| | | Method No | SOCOTEC Env Chem* | | | | | | | |
| | | Limit of Detection | 0.5 | 0.04 | 0.5 | 0.5 | 0.015 | 0.5 | 0.5 | 2 |
| | | Accreditation | UKAS/MMO | UKAS/MMO | UKAS/MMO | UKAS/MMO | UKAS/MMO | UKAS/MMO | UKAS/MMO | UKAS/MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | Arsenic (As) | Cadmium (Cd) | Chromium (Cr) | Copper (Cu) | Mercury (Hg) | Nickel (Ni) | Lead (Pb) | Zinc (Zn) |
| ASP1 0m | MAR00562.001 | Sediment | 20.5 | 0.34 | 57.1 | 51.2 | 0.43 | 31.0 | 94.8 | 168.2 |
| ASP2 0m | MAR00562.002 | Sediment | 27.2 | 0.2 | 53.5 | 46.7 | 0.42 | 31.9 | 114 | 180.1 |
| ASP3 0m | MAR00562.003 | Sediment | 22.6 | 0.25 | 44.0 | 40.7 | 0.37 | 26.7 | 92.3 | 157.4 |
| ASP4 0m | MAR00562.004 | Sediment | 27.5 | 0.25 | 44.2 | 41.3 | 0.36 | 29 | 102.2 | 163.9 |
| ASP5 0m | MAR00562.005 | Sediment | 24.1 | 0.25 | 44.0 | 42.3 | 0.34 | 27.6 | 94.6 | 175 |
| ASP6 0m | MAR00562.006 | Sediment | 23.2 | 0.18 | 39.4 | 36.1 | 0.32 | 24.4 | 84.7 | 142.7 |
| SC1 0m | MAR00562.007 | Sediment | 21 | 0.13 | 20.9 | 21.9 | 0.18 | 15.2 | 46.8 | 85.7 |
| SC2 0m | MAR00562.008 | Sediment | 31.5 | 0.13 | 34.6 | 35.9 | 0.32 | 25.1 | 85 | 139.7 |
| SC3 0m | MAR00562.009 | Sediment | 28.2 | 0.15 | 38.8 | 37.8 | 0.32 | 26.5 | 89 | 150.4 |
| SC4 0m | MAR00562.010 | Sediment | 25.4 | 0.12 | 38.2 | 35.1 | 0.31 | 24.7 | 85.8 | 143.6 |
| SC5 0m | MAR00562.011 | Sediment | 9.7 | 0.33 | 60.2 | 32.1 | 0.2 | 27.8 | 64.6 | 101.6 |
| TB1 0m | MAR00562.012 | Sediment | 24.6 | 0.17 | 53.1 | 49 | 0.4 | 31 | 106.1 | 192.9 |
| TB2 0m | MAR00562.013 | Sediment | 22.7 | 0.12 | 43.9 | 39.0 | 0.35 | 26.0 | 89.3 | 148.1 |
| TB3 0m | MAR00562.014 | Sediment | 23 | 0.23 | 43.9 | 40.3 | 0.38 | 26.1 | 92 | 152.6 |
| Certified Reference Material SETOC 774 (% Recovery) | | | 102 | 93 | 99.0 | 105 | 97 | 99 | 100 | 103 |
| QC Blank | | | <0.5 | <0.04 | <0.5 | <0.5 | <0.015 | <0.5 | <0.5 | <2 |

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Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment Analysis

| | | Units | mg/Kg (Dry Weight) | |
|---|--------------|--------------------|--------------------|-------------------|
| | | Method No | ASC/SOP/301 | |
| | | Limit of Detection | 0.001 | 0.001 |
| | | Accreditation | MMO | MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | Dibutyltin (DBT) | Tributyltin (TBT) |
| ASP1 0m | MAR00562.001 | Sediment | 0.014 | <0.005 |
| ASP2 0m | MAR00562.002 | Sediment | <0.005 | <0.005 |
| ASP3 0m | MAR00562.003 | Sediment | <0.005 | <0.005 |
| ASP4 0m | MAR00562.004 | Sediment | <0.005 | <0.005 |
| ASP5 0m | MAR00562.005 | Sediment | <0.005 | <0.005 |
| ASP6 0m | MAR00562.006 | Sediment | <0.005 | <0.005 |
| SC1 0m | MAR00562.007 | Sediment | <0.005 | <0.005 |
| SC2 0m | MAR00562.008 | Sediment | <0.005 | <0.005 |
| SC3 0m | MAR00562.009 | Sediment | <0.005 | <0.005 |
| SC4 0m | MAR00562.010 | Sediment | <0.005 | <0.005 |
| SC5 0m | MAR00562.011 | Sediment | <0.005 | <0.005 |
| TB1 0m | MAR00562.012 | Sediment | 0.008 | <0.005 |
| TB2 0m | MAR00562.013 | Sediment | <0.005 | <0.005 |
| TB3 0m | MAR00562.014 | Sediment | <0.005 | <0.005 |
| Certified Reference Material BCR-646 (% Recovery) | | | 104 | 85 |
| QC Blank | | | <0.001 | <0.001 |

* See report notes

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Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment 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/MMO | UKAS/MMO | UKAS/MMO | UKAS/MMO | UKAS/MMO | UKAS/MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | ACENAPTH | ACENAPHY | ANTHRACN | BAA | BAP | BBF |
| ASP1 0m | MAR00562.001 | Sediment | 205 | 134 | 255 | 523 | 541 | 498 |
| ASP2 0m | MAR00562.002 | Sediment | 186 | 117 | 281 | 592 | 606 | 527 |
| ASP3 0m | MAR00562.003 | Sediment | 210 | 134 | 275 | 560 | 573 | 499 |
| ASP4 0m | MAR00562.004 | Sediment | 175 | 96.1 | 233 | 469 | 472 | 464 |
| ASP5 0m | MAR00562.005 | Sediment | 182 | 85.3 | 231 | 455 | 463 | 457 |
| ASP6 0m | MAR00562.006 | Sediment | 437 | 114 | 339 | 594 | 520 | 528 |
| SC1 0m | MAR00562.007 | Sediment | 123 | 43.2 | 132 | 246 | 227 | 203 |
| SC2 0m | MAR00562.008 | Sediment | 183 | 90.4 | 238 | 478 | 453 | 438 |
| SC3 0m | MAR00562.009 | Sediment | 184 | 102 | 245 | 500 | 496 | 490 |
| SC4 0m | MAR00562.010 | Sediment | 172 | 107 | 223 | 475 | 478 | 448 |
| SC5 0m | MAR00562.011 | Sediment | 160 | 66.4 | 143 | 218 | 220 | 244 |
| TB1 0m | MAR00562.012 | Sediment | 167 | 84.4 | 240 | 644 | 698 | 705 |
| TB2 0m | MAR00562.013 | Sediment | 193 | 114 | 250 | 491 | 504 | 508 |
| TB3 0m | MAR00562.014 | Sediment | 207 | 92.3 | 229 | 494 | 510 | 522 |
| Certified Reference Material CRM180013 1941b (% Recovery) | | | 70 | 87 | 64 | 65 | 60 | 87 |
| QC Blank | | | <1 | <1 | <1 | <1 | <1 | <1 |

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

Certificate of Analysis



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

Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment 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/MMO | UKAS/MMO | UKAS/MMO | MMO | MMO | MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | BENZGHIP | BEP* | BKF | C1N | C1PHEN | C2N |
| ASP1 0m | MAR00562.001 | Sediment | 508 | 523 | 236 | 3170 | 1450 | 2490 |
| ASP2 0m | MAR00562.002 | Sediment | 551 | 564 | 287 | 3250 | 1560 | 2550 |
| ASP3 0m | MAR00562.003 | Sediment | 541 | 562 | 217 | 3770 | 1680 | 3010 |
| ASP4 0m | MAR00562.004 | Sediment | 457 | 479 | 229 | 3290 | 1530 | 2640 |
| ASP5 0m | MAR00562.005 | Sediment | 452 | 470 | 219 | 3300 | 1470 | 2560 |
| ASP6 0m | MAR00562.006 | Sediment | 476 | 516 | 176 | 4370 | 2190 | 3420 |
| SC1 0m | MAR00562.007 | Sediment | 230 | 254 | 94.0 | 3510 | 1280 | 2660 |
| SC2 0m | MAR00562.008 | Sediment | 405 | 441 | 186 | 3810 | 1640 | 2990 |
| SC3 0m | MAR00562.009 | Sediment | 485 | 504 | 202 | 3960 | 1770 | 3120 |
| SC4 0m | MAR00562.010 | Sediment | 447 | 469 | 204 | 3310 | 1430 | 2570 |
| SC5 0m | MAR00562.011 | Sediment | 279 | 275 | 77.7 | 2080 | 973 | 1510 |
| TB1 0m | MAR00562.012 | Sediment | 613 | 634 | 402 | 2790 | 1320 | 2200 |
| TB2 0m | MAR00562.013 | Sediment | 484 | 502 | 177 | 3390 | 1590 | 2650 |
| TB3 0m | MAR00562.014 | Sediment | 486 | 508 | 189 | 3660 | 1600 | 2910 |
| Certified Reference Material CRM180013 1941b (% Recovery) | | | 67 | 85 | 85 | 72 | 77 | 98 |
| QC Blank | | | <1 | <1 | <1 | <1 | <1 | <1 |

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 For full analyte name see method summaries
 * See Report Notes

Certificate of Analysis



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

Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment 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 | MMO | MMO | UKAS/MMO | UKAS/MMO | UKAS/MMO | UKAS/MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | C3N | CHRYSENE | DBENZAH | FLUORANT | FLUORENE | INDPYR |
| ASP1 0m | MAR00562.001 | Sediment | 2010 | 304 | 89.0 | 986 | 339 | 372 |
| ASP2 0m | MAR00562.002 | Sediment | 2050 | 343 | 98.7 | 1150 | 300 | 411 |
| ASP3 0m | MAR00562.003 | Sediment | 2460 | 333 | 94.1 | 1040 | 356 | 386 |
| ASP4 0m | MAR00562.004 | Sediment | 2160 | 283 | 86.0 | 879 | 287 | 330 |
| ASP5 0m | MAR00562.005 | Sediment | 2070 | 279 | 83.8 | 841 | 281 | 323 |
| ASP6 0m | MAR00562.006 | Sediment | 2760 | 339 | 85.5 | 1880 | 611 | 327 |
| SC1 0m | MAR00562.007 | Sediment | 2030 | 155 | 37.8 | 451 | 216 | 130 |
| SC2 0m | MAR00562.008 | Sediment | 2460 | 279 | 78.5 | 783 | 280 | 280 |
| SC3 0m | MAR00562.009 | Sediment | 2570 | 304 | 84.1 | 867 | 311 | 340 |
| SC4 0m | MAR00562.010 | Sediment | 2080 | 276 | 85.5 | 868 | 277 | 329 |
| SC5 0m | MAR00562.011 | Sediment | 1180 | 150 | 39.9 | 445 | 293 | 130 |
| TB1 0m | MAR00562.012 | Sediment | 1790 | 377 | 119 | 1170 | 267 | 496 |
| TB2 0m | MAR00562.013 | Sediment | 2140 | 295 | 87.8 | 949 | 323 | 357 |
| TB3 0m | MAR00562.014 | Sediment | 2320 | 300 | 88.0 | 931 | 325 | 349 |
| Certified Reference Material CRM180013 1941b (% Recovery) | | | 115 | 83 | 102 | 77 | 50 | 74 |
| QC Blank | | | <1 | <1 | <1 | <1 | <1 | <1 |

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

Certificate of Analysis



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

Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment Analysis

| | | Units | µg/Kg (Dry Weight) | µg/Kg (Dry Weight) | µg/Kg (Dry Weight) | µg/Kg (Dry Weight) | mg/Kg |
|---|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------|
| | | Method No | ASC/SOP/303/304 | ASC/SOP/303/304 | ASC/SOP/303/304 | ASC/SOP/303/304 | ASC/SOP/305 |
| | | Limit of Detection | 1 | 1 | 1 | 1 | 1 |
| | | Accreditation | UKAS/MMO | MMO | UKAS/MMO | UKAS/MMO | MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | NAPTH | PERYLENE* | PHENANT | PYRENE | THC |
| ASP1 0m | MAR00562.001 | Sediment | 1040 | 150 | 1240 | 952 | 45.1 |
| ASP2 0m | MAR00562.002 | Sediment | 1060 | 163 | 1360 | 1060 | 46.8 |
| ASP3 0m | MAR00562.003 | Sediment | 1190 | 154 | 1430 | 1020 | 960 |
| ASP4 0m | MAR00562.004 | Sediment | 1110 | 133 | 1280 | 868 | 959 |
| ASP5 0m | MAR00562.005 | Sediment | 1100 | 130 | 1280 | 833 | 1120 |
| ASP6 0m | MAR00562.006 | Sediment | 1470 | 132 | 2750 | 1540 | 1320 |
| SC1 0m | MAR00562.007 | Sediment | 1100 | 52 | 1050 | 452 | 972 |
| SC2 0m | MAR00562.008 | Sediment | 1220 | 106 | 1280 | 748 | 1130 |
| SC3 0m | MAR00562.009 | Sediment | 1310 | 124 | 1410 | 859 | 935 |
| SC4 0m | MAR00562.010 | Sediment | 1060 | 126 | 1250 | 836 | 1060 |
| SC5 0m | MAR00562.011 | Sediment | 702 | 64.7 | 851 | 448 | 962 |
| TB1 0m | MAR00562.012 | Sediment | 911 | 194 | 1200 | 1120 | 1430 |
| TB2 0m | MAR00562.013 | Sediment | 1110 | 136 | 1300 | 906 | 1100 |
| TB3 0m | MAR00562.014 | Sediment | 1180 | 140 | 1320 | 894 | 916 |
| Certified Reference Material CRM180013 1941b (% Recovery) | | | 56 | 57 | 74 | 68 | 107~ |
| QC Blank | | | <1 | <1 | <1 | <1 | <1 |

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

For full analyte name see method summaries

* See Report Notes

Certificate of Analysis



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

Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment 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) | mg/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 | 0.00008 | 0.00008 | 0.00008 | 0.00008 | 0.00008 | 0.00008 | 0.00008 | 0.00008 |
| | | Accreditation | MMO | MMO | MMO | MMO | MMO | MMO | MMO | MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | PCB 101 | PCB 105 | PCB 110 | PCB 118 | PCB 128 | PCB 138 | PCB 141 | PCB 149 |
| ASP1 0m | MAR00562.001 | Sediment | 0.00097 | 0.00037 | 0.00115 | 0.00098 | 0.00024 | 0.00143 | 0.00014 | 0.00074 |
| ASP2 0m | MAR00562.002 | Sediment | 0.00073 | 0.00027 | 0.00089 | 0.00088 | 0.00013 | 0.00106 | 0.00016 | 0.00062 |
| ASP3 0m | MAR00562.003 | Sediment | 0.00072 | 0.00029 | 0.00073 | 0.00090 | 0.00013 | 0.00091 | 0.00010 | 0.00052 |
| ASP4 0m | MAR00562.004 | Sediment | 0.00065 | 0.00023 | 0.00076 | 0.00068 | 0.00014 | 0.00087 | 0.00011 | 0.00052 |
| ASP5 0m | MAR00562.005 | Sediment | 0.00071 | 0.00028 | 0.00070 | 0.00071 | 0.00016 | 0.00106 | 0.00008 | 0.00059 |
| ASP6 0m | MAR00562.006 | Sediment | 0.00149 | 0.00055 | 0.00131 | 0.00142 | 0.00033 | 0.00255 | 0.00032 | 0.00136 |
| SC1 0m | MAR00562.007 | Sediment | 0.00026 | <0.00008 | 0.00024 | 0.00023 | <0.00008 | 0.00024 | <0.00008 | 0.00025 |
| SC2 0m | MAR00562.008 | Sediment | 0.00053 | 0.00020 | 0.00052 | 0.00053 | 0.00010 | 0.00066 | 0.00010 | 0.00038 |
| SC3 0m | MAR00562.009 | Sediment | 0.00064 | 0.00022 | 0.00058 | 0.00072 | <0.00008 | 0.00089 | 0.00009 | 0.00044 |
| SC4 0m | MAR00562.010 | Sediment | 0.00065 | 0.00021 | 0.00064 | 0.00063 | <0.00008 | 0.00076 | 0.00010 | 0.00046 |
| SC5 0m | MAR00562.011 | Sediment | 0.00034 | 0.00013 | 0.00036 | 0.00040 | 0.00008 | 0.00034 | <0.00008 | 0.00029 |
| TB1 0m | MAR00562.012 | Sediment | 0.00156 | 0.00061 | 0.00192 | 0.00167 | 0.00035 | 0.00210 | 0.00027 | 0.00118 |
| TB2 0m | MAR00562.013 | Sediment | 0.00070 | 0.00027 | 0.00081 | 0.00089 | 0.00014 | 0.00101 | 0.00013 | 0.00054 |
| TB3 0m | MAR00562.014 | Sediment | 0.00082 | 0.00035 | 0.00088 | 0.00084 | 0.00014 | 0.00129 | 0.00014 | 0.00059 |
| Certified Reference Material SRM 1941b (% Recovery) | | | 69 | 82 | 80 | 79 | 92 | 125 | 97~ | 69 |
| QC Blank | | | <0.00008 | <0.00008 | <0.00008 | <0.00008 | <0.00008 | <0.00008 | <0.00008 | <0.00008 |

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

Certificate of Analysis



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

Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment 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 | ASC/SOP/302 | ASC/SOP/302 | ASC/SOP/302 | ASC/SOP/302 | ASC/SOP/302 | ASC/SOP/302 | ASC/SOP/302 |
| | | Limit of Detection | 0.00008 | 0.00008 | 0.00008 | 0.00008 | 0.00008 | 0.00008 | 0.00008 |
| | | Accreditation | MMO | MMO | MMO | MMO | MMO | MMO | MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | PCB 151 | PCB 153 | PCB 156 | PCB 158 | PCB 170 | PCB 18 | PCB 180 |
| ASP1 0m | MAR00562.001 | Sediment | 0.00020 | 0.00127 | 0.00010 | 0.00026 | 0.00023 | 0.00045 | 0.00059 |
| ASP2 0m | MAR00562.002 | Sediment | 0.00015 | 0.00101 | 0.00011 | 0.00015 | 0.00016 | 0.00033 | 0.00049 |
| ASP3 0m | MAR00562.003 | Sediment | 0.00019 | 0.00081 | 0.00007 | 0.00008 | 0.00016 | 0.00036 | 0.00047 |
| ASP4 0m | MAR00562.004 | Sediment | 0.00015 | 0.00082 | 0.00009 | 0.00011 | 0.00012 | 0.00036 | 0.00036 |
| ASP5 0m | MAR00562.005 | Sediment | 0.00019 | 0.00087 | 0.00008 | 0.00011 | 0.00015 | 0.00029 | 0.00044 |
| ASP6 0m | MAR00562.006 | Sediment | 0.00037 | 0.00235 | <0.00008 | 0.00027 | 0.00048 | 0.00067 | 0.00107 |
| SC1 0m | MAR00562.007 | Sediment | <0.00008 | 0.00029 | <0.00008 | <0.00008 | <0.00008 | 0.00016 | 0.00010 |
| SC2 0m | MAR00562.008 | Sediment | 0.00011 | 0.00068 | <0.00008 | <0.00008 | 0.00009 | 0.00027 | 0.00026 |
| SC3 0m | MAR00562.009 | Sediment | 0.00018 | 0.00077 | 0.00008 | 0.00010 | 0.00011 | 0.00029 | 0.00036 |
| SC4 0m | MAR00562.010 | Sediment | 0.00015 | 0.00076 | <0.00008 | 0.00011 | 0.00013 | 0.00033 | 0.00040 |
| SC5 0m | MAR00562.011 | Sediment | <0.00008 | 0.00046 | <0.00008 | 0.00009 | <0.00008 | 0.00030 | 0.00016 |
| TB1 0m | MAR00562.012 | Sediment | 0.00027 | 0.00181 | 0.00025 | 0.00032 | 0.00034 | 0.00040 | 0.00078 |
| TB2 0m | MAR00562.013 | Sediment | 0.00013 | 0.00097 | 0.00009 | <0.00008 | 0.00017 | 0.00033 | 0.00049 |
| TB3 0m | MAR00562.014 | Sediment | 0.00018 | 0.00094 | 0.00013 | 0.00011 | 0.00013 | 0.00035 | 0.00042 |
| Certified Reference Material SRM 1941b (% Recovery) | | | 102~ | 89 | 72 | 102~ | 83 | 75 | 86 |
| QC Blank | | | <0.00008 | <0.00008 | <0.00008 | <0.00008 | <0.00008 | <0.00008 | <0.00008 |

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

Certificate of Analysis



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

Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment 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 | ASC/SOP/302 | ASC/SOP/302 | ASC/SOP/302 | ASC/SOP/302 | ASC/SOP/302 | ASC/SOP/302 | ASC/SOP/302 |
| | | Limit of Detection | 0.00008 | 0.00008 | 0.00008 | 0.00008 | 0.00008 | 0.00008 | 0.00008 |
| | | Accreditation | MMO | MMO | MMO | MMO | MMO | MMO | MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | PCB 183 | PCB 187 | PCB 194 | PCB 28 | PCB 31 | PCB 44 | PCB 47 |
| ASP1 0m | MAR00562.001 | Sediment | 0.00013 | 0.00039 | 0.00016 | 0.00077 | 0.00089 | 0.00050 | 0.00019 |
| ASP2 0m | MAR00562.002 | Sediment | 0.00015 | 0.00033 | 0.00010 | 0.00061 | 0.00074 | 0.00041 | 0.00015 |
| ASP3 0m | MAR00562.003 | Sediment | 0.00010 | 0.00028 | 0.00010 | 0.00059 | 0.00066 | 0.00033 | 0.00014 |
| ASP4 0m | MAR00562.004 | Sediment | 0.00008 | 0.00025 | <0.00008 | 0.00051 | 0.00061 | 0.00033 | 0.00011 |
| ASP5 0m | MAR00562.005 | Sediment | 0.00010 | 0.00031 | 0.00009 | 0.00049 | 0.00057 | 0.00035 | 0.00012 |
| ASP6 0m | MAR00562.006 | Sediment | 0.00032 | 0.00068 | 0.00019 | 0.00097 | 0.00125 | 0.00068 | 0.00021 |
| SC1 0m | MAR00562.007 | Sediment | <0.00008 | 0.00009 | <0.00008 | 0.00020 | 0.00025 | 0.00013 | 0.00006 |
| SC2 0m | MAR00562.008 | Sediment | <0.00008 | 0.00023 | <0.00008 | 0.00038 | 0.00046 | 0.00033 | 0.00011 |
| SC3 0m | MAR00562.009 | Sediment | <0.00008 | 0.00024 | <0.00008 | 0.00045 | 0.00058 | 0.00029 | 0.00012 |
| SC4 0m | MAR00562.010 | Sediment | 0.00009 | 0.00026 | 0.00008 | 0.00052 | 0.00063 | 0.00038 | 0.00018 |
| SC5 0m | MAR00562.011 | Sediment | <0.00008 | 0.00010 | <0.00008 | 0.00046 | 0.00050 | 0.00023 | 0.00011 |
| TB1 0m | MAR00562.012 | Sediment | 0.00020 | 0.00056 | 0.00019 | 0.00066 | 0.00075 | 0.00065 | 0.00017 |
| TB2 0m | MAR00562.013 | Sediment | 0.00013 | 0.00037 | 0.00010 | 0.00058 | 0.00065 | 0.00039 | 0.00010 |
| TB3 0m | MAR00562.014 | Sediment | 0.00010 | 0.00022 | 0.00011 | 0.00052 | 0.00060 | 0.00041 | 0.00013 |
| Certified Reference Material SRM 1941b (% Recovery) | | | 71 | 81 | 68 | 59 | 101 | 80 | 102~ |
| QC Blank | | | <0.00008 | <0.00008 | <0.00008 | <0.00008 | <0.00008 | <0.00008 | <0.00008 |

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

Certificate of Analysis



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

Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment Analysis

| | | Units | mg/Kg (Dry Weight) | mg/Kg (Dry Weight) | mg/Kg (Dry Weight) |
|---|--------------|--------------------|--------------------|--------------------|--------------------|
| | | Method No | ASC/SOP/302 | ASC/SOP/302 | ASC/SOP/302 |
| | | Limit of Detection | 0.00008 | 0.00008 | 0.00008 |
| | | Accreditation | MMO | MMO | MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | PCB 49 | PCB 52 | PCB 66 |
| ASP1 0m | MAR00562.001 | Sediment | 0.00055 | 0.00089 | 0.00077 |
| ASP2 0m | MAR00562.002 | Sediment | 0.00044 | 0.00073 | 0.00058 |
| ASP3 0m | MAR00562.003 | Sediment | 0.00041 | 0.00068 | 0.00053 |
| ASP4 0m | MAR00562.004 | Sediment | 0.00037 | 0.00065 | 0.00044 |
| ASP5 0m | MAR00562.005 | Sediment | 0.00038 | 0.00063 | 0.00049 |
| ASP6 0m | MAR00562.006 | Sediment | 0.00073 | 0.00123 | 0.00096 |
| SC1 0m | MAR00562.007 | Sediment | 0.00016 | 0.00029 | 0.00017 |
| SC2 0m | MAR00562.008 | Sediment | 0.00028 | 0.00050 | 0.00036 |
| SC3 0m | MAR00562.009 | Sediment | 0.00033 | 0.00060 | 0.00044 |
| SC4 0m | MAR00562.010 | Sediment | 0.00042 | 0.00062 | 0.00048 |
| SC5 0m | MAR00562.011 | Sediment | 0.00031 | 0.00046 | 0.00039 |
| TB1 0m | MAR00562.012 | Sediment | 0.00054 | 0.00119 | 0.00078 |
| TB2 0m | MAR00562.013 | Sediment | 0.00043 | 0.00070 | 0.00057 |
| TB3 0m | MAR00562.014 | Sediment | 0.00040 | 0.00081 | 0.00048 |
| Certified Reference Material SRM 1941b (% Recovery) | | | 102 | 109 | 99 |
| QC Blank | | | <0.00008 | <0.00008 | <0.00008 |

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

Certificate of Analysis



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

Test Report ID MAR00562
 Issue Version 1
 Customer Reference MMO Sediment 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 | *SUB_02 | *SUB_02 | *SUB_02 | *SUB_02 | *SUB_02 | *SUB_02 | *SUB_02 |
| | | Limit of Detection | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| | | Accreditation | MMO | MMO | MMO | MMO | MMO | MMO | MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | BDE17 | BDE28 | BDE47 | BDE66 | BDE85 | BDE99 | BDE100 |
| ASP1 0m | MAR00562.001 | Sediment | 0.942 | 0.603 | 4.18 | 0.494 | 0.223 | 4.07 | 0.688 |
| ASP2 0m | MAR00562.002 | Sediment | 0.564 | 0.339 | 2.75 | 0.329 | 0.142 | 2.93 | 0.516 |
| ASP3 0m | MAR00562.003 | Sediment | 0.533 | 0.322 | 2.57 | 0.271 | 0.129 | 2.64 | 0.462 |
| ASP4 0m | MAR00562.004 | Sediment | 0.384 | 0.221 | 1.94 | 0.198 | 0.102 | 2.06 | 0.377 |
| ASP5 0m | MAR00562.005 | Sediment | 0.457 | 0.264 | 2.28 | 0.258 | 0.126 | 2.43 | 0.433 |
| ASP6 0m | MAR00562.006 | Sediment | 0.486 | 0.277 | 2.23 | 0.219 | 0.118 | 2.32 | 0.394 |
| SC1 0m | MAR00562.007 | Sediment | 0.102 | 0.0663 | 0.606 | 0.0505 | 0.0301 | 0.591 | 0.115 |
| SC2 0m | MAR00562.008 | Sediment | 0.186 | 0.124 | 1.26 | 0.0909 | 0.0673 | 1.46 | 0.275 |
| SC3 0m | MAR00562.009 | Sediment | 0.259 | 0.168 | 1.68 | 0.129 | 0.0996 | 1.98 | 0.357 |
| SC4 0m | MAR00562.010 | Sediment | 0.302 | 0.186 | 1.92 | 0.173 | 0.112 | 2.33 | 0.403 |
| SC5 0m | MAR00562.011 | Sediment | 0.448 | 0.357 | 1.77 | 0.272 | 0.0914 | 1.57 | 0.254 |
| TB1 0m | MAR00562.012 | Sediment | 0.615 | 0.403 | 4.23 | 0.356 | 0.228 | 4.95 | 0.837 |
| TB2 0m | MAR00562.013 | Sediment | 0.612 | 0.385 | 2.91 | 0.294 | 0.139 | 2.93 | 0.491 |
| TB3 0m | MAR00562.014 | Sediment | 0.538 | 0.315 | 2.59 | 0.275 | 0.130 | 2.59 | 0.462 |

* See Report Notes

Certificate of Analysis



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

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 Customer Reference MMO Sediment Analysis

| | | Units | µg/Kg (Dry Weight) | µg/Kg (Dry Weight) | µg/Kg (Dry Weight) | µg/Kg (Dry Weight) | µg/Kg (Dry Weight) |
|-------------------|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | | Method No | *SUB_02 | *SUB_02 | *SUB_02 | *SUB_02 | *SUB_02 |
| | | Limit of Detection | 0.02 | 0.02 | 0.02 | 0.02 | 0.1 |
| | | Accreditation | MMO | MMO | MMO | MMO | MMO |
| Client Reference: | SOCOTEC Ref: | Matrix | BDE138 | BDE153 | BDE154 | BDE183 | BDE209 |
| ASP1 0m | MAR00562.001 | Sediment | <0.02 | 0.857 | 0.587 | 0.997 | 71.5 |
| ASP2 0m | MAR00562.002 | Sediment | <0.02 | 0.658 | 0.454 | 0.743 | 81.7 |
| ASP3 0m | MAR00562.003 | Sediment | <0.02 | 0.557 | 0.416 | 0.660 | 101 |
| ASP4 0m | MAR00562.004 | Sediment | <0.02 | 0.440 | 0.328 | 0.550 | 94.5 |
| ASP5 0m | MAR00562.005 | Sediment | <0.02 | 0.536 | 0.373 | 0.732 | 91.7 |
| ASP6 0m | MAR00562.006 | Sediment | <0.02 | 0.478 | 0.355 | 0.558 | 91.2 |
| SC1 0m | MAR00562.007 | Sediment | <0.02 | 0.106 | 0.0883 | 0.101 | 31.9 |
| SC2 0m | MAR00562.008 | Sediment | <0.02 | 0.284 | 0.211 | 0.294 | 61.9 |
| SC3 0m | MAR00562.009 | Sediment | <0.02 | 0.394 | 0.291 | 0.372 | 83.4 |
| SC4 0m | MAR00562.010 | Sediment | <0.02 | 0.467 | 0.309 | 0.461 | 56.2 |
| SC5 0m | MAR00562.011 | Sediment | <0.02 | 0.416 | 0.194 | 0.460 | 9.64 |
| TB1 0m | MAR00562.012 | Sediment | <0.02 | 0.814 | 0.573 | 0.715 | 103 |
| TB2 0m | MAR00562.013 | Sediment | <0.02 | 0.601 | 0.418 | 0.971 | 81.8 |
| TB3 0m | MAR00562.014 | Sediment | <0.02 | 0.521 | 0.383 | 0.173 | 72.4 |

* See Report Notes

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REPORT NOTES

| Method Code | Sample ID | The following information should be taken into consideration when using the data contained within this report |
|-------------------|------------------|---|
| *SUB_01 | MAR00562.001-014 | Analysis was conducted by an approved subcontracted laboratory. |
| *SUB_02 | MAR00562.001-014 | Analysis was conducted by an approved subcontracted laboratory. |
| SOCOTEC Env Chem* | MAR00562.001-014 | Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252. |
| ASC/SOP/301 | MAR00562.001-014 | 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/303/304 | MAR00562.001-014 | Chrysene is known to coelute with Triphenylene and these peaks can not be resolved in the PAHSED UKAS accredited method. Chrysene and Triphenylene are resolved for MMO but this is currently not UKAS accredited therefore Chrysene is reported without this accreditation. |
| ASC/SOP/303/304 | MAR00562.001-010 | The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with Benzo(e)pyrene and Perylene falling below acceptable limits in the CRM. However 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. 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 | Handling Time Exceeded | N/A | N/A |
| D3 | Sample Contaminated through Damaged Packaging | N/A | N/A |
| D4 | Sample Contaminated through Sampling | N/A | N/A |
| D5 | Inappropriate Container/Packaging | N/A | N/A |
| D6 | Damaged in Transit | N/A | N/A |
| D7 | Insufficient Quantity of Sample | N/A | N/A |
| D8 | Inappropriate Headspace | N/A | N/A |
| D9 | Retained at Incorrect Temperature | N/A | N/A |
| D10 | Lack of Date & Time of Sampling | N/A | N/A |
| D11 | Insufficient Sample Details | N/A | N/A |
| D12 | Sample integrity compromised or not suitable for analysis | N/A | N/A |

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 Customer Reference MMO Sediment Analysis

| Method | Sample and Fraction Size | Method Summary |
|----------------------------------|------------------------------|---|
| Particle Size Analysis | Wet Sediment | Wet and dry sieving followed by laser diffraction analysis. |
| Metals | Air dried | 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 | Ultra-violet fluorescence spectroscopy |
| 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-Hexachlorocyclohexane |
| ANTHRACN | Anthracene | CHRYSENE | Chrysene | BHCH | beta-Hexachlorocyclohexane |
| BAA | Benzo[a]anthracene | DBENZAH | Diben[ah]anthracene | GHCH | gamma-Hexachlorocyclohexane |
| 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 | PPDDE | p,p'-Dichlorodiphenyldichloroethylene |
| BENZGHIP | Benzo[ghi]perylene | NAPTH | Naphthalene | PPDDT | p,p'-Dichlorodiphenyltrichloroethane |
| BKF | Benzo[k]fluoranthene | PERYLENE | Perylene | PPTDE | p,p'-Dichlorodiphenyldichloroethane |
| C1N | C1-naphthalenes | PHENANT | Phenanthrene | | |
| C1PHEN | C1-phenanthrene | PYRENE | Pyrene | | |