TONGA Trace Metal CTD log sheet

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| --- | --- | --- | --- | --- | --- |
| Station | 1 | Time i/w (Local) | 15:13:51 | Date (GMT) | 03/11/2019 |
| Latitude | 21° 01.39’ S | Time i/w (GMT) | 04:13:51 | Oc. Depth | 3435 |
| Longitude | 172° 10.28’ E | Time bottom (GMT) |  | Cast Depth | 3350 |
| TMR # | 3 | Time o/w (GMT) | ~ 07:30 | Chla. max (pres) | 110 |
| Weather | Sunny, no rain | | | | |

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| Ros Pos | Btl # | Depth (pres.) | Swin # | Filt Sta. | Filt End | Jerry # | Jerry (L) | dTM 60 | dFe 60 | pTM | NUTS | tHg 60 | DGM + MMHg 125 | TMeHg 250 | tHg 60 |  |  |  |  |  |  |  |  |  |  |  | Other  (single samples) |
| Filtered? | | | | | | | | X | X | X | X |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 3350 | 3 | 22:50 | 23:36 | 5 | 8.85 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | 2 | 3000 | 29 | 20:44 | 21:50 | 20 | 9.15 | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 2600 | 23 | 21:22 | 22:02 | 16 | 8.19 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | 4 | 2300 | 17 | 21:37 | 22:35 | 14 | 10.66 | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 2000 | 13 | 21:58 | 22:03 | 12 | 9.47 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | 6 | 1900 | 27 | 22:15 | 23:08 | 8 | 10.40 | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 1800 | 2 | 22:45 |  | 1 | 6.75 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | 8 | 1700 | 22 | 21:40 | 22:46 | 12 | 6.85 | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | 9 | 1500 | 25 | 20:45 | 21:44 | 23 | 9.35 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | 10 | 1250 | 21 | 21:15 | 22:08 | 19 | 9.95 | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | 11 | 1000 | 16 | 21:34 | 22:42 | 17 | 9.70 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | 12 | 850 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 700 | 14 | 22:16 | 23:12 | 11 | 8.62 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | 14 | 550 | 1 | 22:30 | 23:18 | 9 | 9.95 | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 15 | 450 | 24 | 21:07 | 21:52 | 25 | 10.80 | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | 16 | 350 | 12 | 22:45 | 23:11 | 7 | 0.75 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 | 250 | 7 |  |  | 4 | 8.55 | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | 18 | 170 | 15 | 20:45 | 21:40 | 20 |  | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 140 | 26 | 21:07 | 22:18 | 24 | 9.35 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 | 20 | 110 | 19 | 21:21 | 22:05 | 18 | 2.05 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 21 | 73 | 28 | 21:40 | 23:56 | 15 | 6.35 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 | 22 | 50 | 11 |  | 23:56 | 10 | 7.25 | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 20 | 4 | 22:25 | 23:56 | 6 | 5.82 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | 24 | 12 | 18 | 22:32 | 23:46 | 3 | 4.30 | X | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 24; 2L; Btl 11. **Open Btl**: 12. **Open Btl top**: 18. **Leaks air through top**: 5, 7, 21. **Change taps**: 2, 3, 7, 16, 17, 20, 21.  **Sampling: Air through filter**: 16, 20 **Mislabeled**: filtered samples (not filter) change 2 for 22.  **CAUTION**: Ventilation system of the van was not working | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

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| --- | --- | --- | --- | --- | --- |
| Station | 2 | Time i/w (Local) | 16:45 (GMT+12) | Date (GMT) | 05/11/2019 |
| Latitude | 20° 32.50’ S | Time i/w (GMT) | 04:45 | Oc. Depth (m) | 3406 |
| Longitude | 175° 48.41’ E | Time bottom (GMT) | 05:50 | Cast Depth (m) | 3380 |
| TMR # | 6 | Time o/w (GMT) | 07:30 | Chla. max (pres) | 105 |
| Weather | Cloudy, no rain (rain observed about 10 km W) | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swi  n # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Thiols | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | DOC | Ammonium | DON | dHg |  |
| 1 | 1 | 3444 | 35 | 16 | 23:08 | 00:03 | 7.75 |  | X | X |  | X | X | X | X | X | X | X | X |  | X | X | X | X | X |  |  |  | X |  |
| 2 | 2 | 3300 | 45 | 9 | 22:09 | 22:52 | 8.75 |  |  |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  | X |  |  | X |  |
| 3 | 3 | 3000 | 60 | 9 | 23:08 | 00:10 | 8.5 |  | X | X |  | X | X | X | X | X | X | X | X |  | X | X | X | X | X |  |  |  | X |  |
| 4 | 4 | 2700 | 43 | 16 | 21:51 | 22:50 | 9.25 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  | X |  |  | X |  |
| 5 | 5 | 2400 | 31 | 22 | 22:48 | 23:23 | 7.5 |  | X | X |  | X | X | X | X | X | X | X | X |  | X | X | X | X | X |  |  |  | X |  |
| 6 | 6 | 2100 | 42 | 1 | 22:18 | 23:03 | 9.0 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  | X |  |  | X |  |
| 7 | 7 | 1800 | 49 | 24 | 22:28 | 23:23 | 8.75 |  | X | X |  | X | X | X | X | X | X | X | X |  | X | X | X | X | X |  |  |  | X |  |
| 8 | 8 | 1500 | 33 | 7 | 22:07 | 23:01 | 9.0 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  | X | X |  | X |  |
| 9 | 9 | 1200 | 50 | 17 | 21:46 | 22:37 | 7.25 |  | X | X |  | X |  | X | X | X | X | X | X |  | X | X | X | X | X |  |  |  | X |  |
| 10 | 10 | 1000 | 47 | 11 | 21:38 | 22:26 | 9.0 |  |  |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  | X |  |  | X |  |
| 11 | 11 | 800 | 51 | 22 | 21:37 | 22:36 | 8.5 |  | X | X |  | X |  | X | X | X | X | X | X |  | X | X | X | X | X | X |  |  | X |  |
| 12 | 12 | 650 | 39 | 23 | 21:54 | 22:48 | 9.25 |  |  |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  | X |  |  | X |  |
| 13 | 13 | 550 | 37 | 13 | 22:05 | 23:01 | 6.75 |  | X | X |  | X |  | X | X | X | X | X | X |  | X | X | X | X | X |  |  |  | X |  |
| 14 | 14 | 450 | 36 | 12 | 22:38 | 23:23 | 9.25 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  | X | X |  | X |  |
| 15 | 15 | 300 | 46 | 17 | 22:54 | 23:41 | 6.75 |  | X | X |  | X |  | X | X | X | X | X | X |  | X | X | X | X | X |  | X |  | X |  |
| 16 | 16 | 200 | 38 | 21 | 23:15 | 00:02 | 8.75 |  |  |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  | X | X |  | X |  |
| 17 | 17 | 150 | 57 | 23 | 23:26 | 00:26 | 8.25 |  | X | X |  | X |  | X | X | X | X | X | X |  | X | X | X | X | X | X | X |  | X |  |
| 18 | 18 | 120 | 58 | 13 |  | 00:14 | 9.5 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  | X | X |  | X |  |
| 19 | 19 | 105 | 48 | 19 | 21:41 | 22:26 | 7.75 |  | X | X |  | X | X | X | X | X | X | X | X |  | X | X | X | X | X | X | X |  | X |  |
| 20 | 20 | 90 | 41 | 20 | 21:57 | 23:20 | 8.5 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  | X | X |  | X |  |
| 21 | 21 | 73 | 34 | 15 | 22:06 | 00:31 | 7.25 |  | X | X |  | X | X | X | X | X | X | X | X |  | X | X | X | X | X | X | X |  | X |  |
| 22 | 22 | 50 | 44 | 18 | 22:25 | 00:31 | 6.0 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  | X | X |  | X |  |
| 23 | 23 | 35 | 40 | 19 | 22:37 | 00:31 | 6.25 |  | X | X |  | X | X | X | X | X | X | X | X |  | X | X | X | X | X | X | X |  | X |  |
| 24 | 24 | 12 | 32 | 11 | 22:55 | 00:31 | 5.5 |  |  |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  | X | X |  | X |  |
| Comments | | | **Blank**: Swinnex # 19; 2L; Btl 13. **Change taps**: 5, 9, 13, 15.  Possible incorrect filtered volume (filtration tube came out of the Jerry): Btl 16  **CAUTION**: Bottles labelled as Cast 5 instead of Cast 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

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| --- | --- | --- | --- | --- | --- |
| Station | 3 | Time i/w (Local) | 07:00 (GMT-12) | Date (GMT) | 06/11/2019 |
| Latitude | 20° 31.34’ S | Time i/w (GMT) | 19:00 | Oc. Depth (m) | 1915 |
| Longitude | 179° 31.37’ W | Time bottom (GMT) | ~ 19:45 | Cast Depth (m) | 1890 |
| TMR # | 8 | Time o/w (GMT) |  | Chla. max (pres) | 60-80 |
| Weather | Sunny | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Thiols | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg |  |  |  |  |
| 1 | 1 | 1890 | 15 | 11 | 11:00 | 12:04 | 8.5 |  | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| 2 | 2 | 1800 | 19 | 24 | 11:05 | 12:23 | 10.5 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 1700 | 6 | 7 | 12:05 | 13:23 | 8.75 |  | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| 4 | 4 | 1600 | 8 | 16 | 12:15 | 13:47 | 10.43 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 1500 | 7 | 9 | 12:25 | 13:56 | 7.75 |  | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| 6 | 6 | 1300 | 1 | 11 | 12:49 | 14:40 | 7.25 |  |  |  |  | X |  | X | X | X | X | X | X | X |  | X | X |  | X |  |  |  |  |  |
| 7 | 7 | 1100 | 12 |  |  |  |  |  | X | X |  | X |  | X | X | X | X | X |  |  | X |  |  | X |  | X |  |  |  |  |
| 8 | 8 | 900 | 23 | 17 | 11:05 |  | 10.25 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | 9 | 800 | 52 | 19 | 11:00 | 12:34 | 7.5 |  | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| 10 | 10 | 650 | 54 | 1 | 11:25 | 12:47 | 9.5 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | 11 | 550 | 10 | 22 | 11:37 | 13:06 | 8.75 |  | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| 12 | 12 | 420 | 59 | 6 | 12:30 |  | 9.5 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 300 | 24 | 5 | 12:40 | 14:06 | 7.0 |  | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| 14 | 14 | 250 | 20 | 1 | 13:10 | 14:25 | 10.35 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 15 | 210 | 9 | 19 | 12:58 | 14:27 | 5.75 |  | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| 16 | 16 | 180 | 5 | 10 | 12:55 | 14:40 | 10.55 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 | 150 | 18 | 2 | 12:27 | 14:47 | 9.25 |  | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| 18 | 18 | 120 | 22 | 23 | 12:01 | 14:05 | 9.25 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 100 | 4 | 20 | 11:40 | 13:59 | 8.5 |  | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| 20 | 20 | 80 | 55 | 12 | 11:28 | 14:36 | 7.5 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 21 | 60 | 16 | 21 | 11:03 | 13:37 | 7.6 |  | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| 22 | 22 | 40 | 29 | 13 | 10:54 | 14:27 | 4.75 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 25 | 26 | 15 | 10:40 | 14:27 | 5.5 |  | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |
| 24 | 24 | 15 | 25 | 18 | 10:34 | 14:27 | 5.5 |  |  |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 53; 2L; Btl 6. **Open Btl**: 12. Bottom loosing water: 15, 24. Tap leak: 5, 9, 15 (priority 5>15>9). Gas leak: 7 (top), 21 (top). Missing data from sampled unf DGM. 2L filtered SW for David from Btl 6. | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

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| --- | --- | --- | --- | --- | --- |
| Station | 4 | Time i/w (Local) |  | Date (GMT) |  |
| Latitude |  | Time i/w (GMT) |  | Oc. Depth (m) |  |
| Longitude |  | Time bottom (GMT) |  | Cast Depth (m) |  |
| TMR # | 10 | Time o/w (GMT) |  | Chla. max (pres) |  |
| Weather |  | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Thiols | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | dHg in glass |  |  |  |
| 1 | 1 | 2202 | 33 | 15 | 16:35 | 18:00 | 7.1 |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  |  |  |  |  |
| 2 | 2 | 2100 | 48 | 20 | 17:00 | 18:35 | 9.85 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 1900 | 49 | 23 | 17:10 | 18:50 | 7.25 |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  |  |  |  |  |
| 4 | 4 | 1700 | 42 | 21 | 17:35 | 18:53 | 9.6 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 1500 | 35 | 7 | 17:40 | 19:05 | 6.75 |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  |  |  |  |  |
| 6 | 6 | 1300 | 60 | 3 | 18:05 | 19:30 | 9.5 |  |  |  |  |  |  |  | X | X | X | X |  |  | X | X | X | X |  |  |  |  |  |  |
| 7 | 7 | 1100 |  |  |  |  |  |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 | 950 | 50 | 4 | 18:05 | 19:20 | 10.35 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | 9 | 850 | 41 | 8 | 17:35 | 19:00 | 7 |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  | X |  |  |  |
| 10 | 10 | 750 | 38 | 12 | 16:30 | 18:10 | 7.25 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | 11 | 650 | 40 | 9 | 17:15 | 18:45 | 8.25 |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  |  |  |  |  |
| 12 | 12 | 550 | 46 | 19 | 17:10 | 18:30 | 10 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 450 | 32 | 1 | 16:00 | 17:20 | 7 |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  |  |  |  |  |
| 14 | 14 | 350 | 57 | 11 | 16:25 | 17:45 | 10.15 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 15 | 300 | 36 | 2 | 16:10 | 18:25 | 7.75 |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  |  |  |  |  |
| 16 | 16 | 250 | 58 | 18 | 16:40 | 18:00 | 10.25 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 | 200 | 45 | 5 | 16:50 | 18:25 | 8.25 |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  |  |  |  |  |
| 18 | 18 | 150 | 39 | 22 | 17:10 | 18:45 | 9.25 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 120 | 31 | 16 | 17:20 | 19:05 | 7.75 |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  |  |  |  |  |
| 20 | 20 | 100 | 34 | 17 | 17:40 | 19:40 | 5.75 |  |  |  |  |  |  |  | X | X | X | X |  |  | X | X | X | X |  |  |  |  |  |  |
| 21 | 21 | 90 |  |  |  |  |  |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  |  |  |  |  |
| 22 | 22 | 60 | 44 | 13 | 16:30 | 19:35 | 6.25 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 40 | 37 | 6 | 16:10 | 19:35 | 4.25 |  | X | X |  |  |  |  | X | X | X | X | X |  | X | X | X | X |  |  |  |  |  |  |
| 24 | 24 | 20 | 43 | 10 | 16:00 | 19:30 | 4.75 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # ?; 2L; Btl 10 . Open top: Btl 7; Tap broke while mixing Btl 21; Tap leak: Btl 13, 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 5 | Time i/w (Local) |  | Date (GMT) | 10/11/2019 |
| Latitude | 21° 09.278’S | Time i/w (GMT) |  | Oc. Depth (m) | 205 |
| Longitude | 175° 44.666´W | Time bottom (GMT) |  | Cast Depth (m) | 185 |
| TMR # | 12 | Time o/w (GMT) |  | Chla. max (pres) |  |
| Weather | Sunny | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | 185 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | 2 | 185 | 40 | 13 | 18:55 | 20:50 | 1.47 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  | 5 |  |  |  |  |
| 3 | 3 | 185 | 9 | 21 | 19:30 | 21:35 | 1.7 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 4 | 4 | 180 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 |  |  |  |  |
| 5 | 5 | 180 | 26 | 7 | 20:30 | 21:58 | 7 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 6 | 6 | 170 | 42 | 16 | 20:55 | 00:00 | 4 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 160 | 36 | 22 | 21:05 | 00:00 | 3.75 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 | 150 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 |  |  |  |  |
| 9 | 9 | 150 | 20 | 6 | 19:15 | 00:00 | 6.75 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 10 | 10 | 140 | 38 | 10 | 18:50 | 20:50 | 10.3 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | 11 | 130 | 51 | 4 | 19:00 | 21:10 | 6.75 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 12 | 12 | 120 | 7 | 20 | 21:15 | 23:57 | 7.25 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 110 | 49 | 8 | 21:00 | 23:17 | 7.25 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 14 | 14 | 100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10 |  |  |  |  |
| 15 | 15 | 100 | 53 | 23 | 20:30 | 00:00 | 4.4 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 16 | 16 | 90 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10 |  |  |  |  |
| 17 | 17 | 90 | 39 | 17 | 20:10 | 21:30 | 5.7 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 18 | 18 | 80 | 43 | 9 | 20:25 | 22:55 | 9.25 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 70 | 50 | 5 | 21:45 | 00:00 | 5.5 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 20 | 20 | 60 | 4 | 15 | 22:10 | 00:00 | 5 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 21 | 50 | 45 | 18 | 22:10 | 00:00 | 3 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 22 | 22 | 50 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 20 |  |  |  |  |
| 23 | 23 | 50 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 20 |  |  |  |  |
| 24 | 24 | 25 | 12 | 19 | 21:35 | 00:00 | 1.9 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 64; 2L; Btl 12. Btl 1: Open, Btl 17: leaking from bottom; Btl 5: tap leaks | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 05 (mooring) | Time i/w (Local) | 07:46 | Date (GMT) | 11/11/2019 |
| Latitude | 21° 09.518’S | Time i/w (GMT) | 19:46 | Oc. Depth (m) | 2036 |
| Longitude | 175° 54.263‘W | Time bottom (GMT) |  | Cast Depth (m) |  |
| TMR # | 14 | Time o/w (GMT) |  | Chla. max (pres) | 76 |
| Weather | Cloudy, rained last night | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | b-10 | 55 | 8 | 11:47 | 13:17 | 9.25 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 2 | 2 | b-10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 |  |  |  |  |
| 3 | 3 | 1800 | 1 | 12 | 12:25 | 13:57 | 9.25 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 4 | 4 | 1800 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 |  |  |  |  |
| 5 | 5 | 1200 | 2 | 15 | 10:45 | 12:15 | 9.3 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 6 | 6 | 1200 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 |  |  |  |  |
| 7 | 7 | 650 | 11 | 20 | 11:40 | 12:20 | 9.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 | 650 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5 |  |  |  |  |
| 9 | 9 | 450 | 5 | 22 | 11:20 | 12:51 | 9.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 10 | 10 | 210 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10 |  |  |  |  |
| 11 | 11 | 210 | 27 | 23 | 11:00 | 13:10 | 9.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 12 | 12 | 115 | 25 | 18 | 10:50 | 13:35 | 10.25 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 95 | 24x | 21 | 12:35 | 14:30 | 6 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 14 | 14 | 76 | 15 | 6 | 11:25 | 14:10 | .5 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  | 10 |  |  |  |  |
| 15 | 15 | 76 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | 16 | 60 | 3 | 16 | 11:15 | 14:21 | 7.4 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 17 | 17 | 30 | 24 | 5 | 10:45 | 14:21 | 2.9 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 18 | 18 | 15 | 52 | 19 | 10:37 | 14:21 | 3.75 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10 |  |  |  |  |
| 20 | 20 | 15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10 |  |  |  |  |
| 21 | 21 | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 | 22 | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | 24 | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 4; 2L; Btl 12. Btl 15 did not close, all parameters were taken on Btl 14 (isotope  s with PES 0.45 um filter. | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 05 (St5-V1-T2; 5.5nM) | Time i/w (Local) | 09:50 | Date (GMT) | 12/11/2019 |
| Latitude | 21° 09.521’S | Time i/w (GMT) | 21:50 | Oc. Depth (m) | 1679 |
| Longitude | 175° 50.513‘W | Time bottom (GMT) |  | Cast Depth (m) |  |
| TMR # | 16 | Time o/w (GMT) |  | Chla. max (pres) |  |
| Weather | Really cloudy, Rain 4h before | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | b-10 | 33 | 7 | 13:53 | 15:15 | 8.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 2 | 2 | 1650 | 46 | 15 | 13:30 | 15:00 | 8.6 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 3 | 3 | 1300 | 56 | 18 | 13:20 | 15:00 | 8.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 4 | 4 | 900 | 48 | 5 | 12:45 | 14:05 | 9 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 5 | 5 | 650 | 32 | 20 | 13:42 | 15:00 | 8 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 6 | 6 | 400 | 16 | 19 | 12:49 | 14:00 | 6.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 7 | 7 | 200 | 37 | 12 | 13:05 | 14:25 | 8.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 8 | 8 | 150 | 44 | 22 | 14:00 | 15:30 | 8.9 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 9 | 9 | 140 | 60 | 23 | 13:25 | 15:35 | 9.25 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 10 | 10 | 125 | 57 | 9 | 13:45 | 15:30 | 8.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 11 | 11 | 110 | 34 | 8 | 13:20 | 16:00 | 9.2 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 12 | 12 | 100 | 58 | 6 | 13:05 | 17:10 | 8.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 13 | 13 | 50 | 30 | 21 | 12:45 | 17:10 | 4.9 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 14 | 14 | 15 | 35 | 16 | 12:50 | 17:10 | 3.6 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 15 | 15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | 16 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | 18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 | 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 | 22 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | 24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 15; 2L; Btl 3 . | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 05 | Time i/w (Local) | 20:05 | Date (GMT) | 13/11/2019 |
| Latitude | 21° 09.273’S | Time i/w (GMT) | 08:05 | Oc. Depth (m) | 313 |
| Longitude | 175° 45.737‘W | Time bottom (GMT) | 08:15 | Cast Depth (m) |  |
| TMR # | 17 | Time o/w (GMT) |  | Chla. max (pres) | 75 |
| Weather | Night, cloudy | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 |  | 59 | 21 | 21:45 | 23:15 | 7.25 |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 2 | 2 |  | 18 | 18 | 23:05 | 00:30 | 6.75 |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 3 | 3 |  | 17 | 22 | 22:10 | 23:35 | 7.75 |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 4 | 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 |  | 28 | 7 | 22:50 | 23:35 | 9 |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 6 | 6 |  | 13 | 20 | 23:15 | 00:35 | 6.75 |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 7 | 7 |  | 19 | 15 | 23:15 | 00:25 | 6.5 |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 |  | 21 | 9 | 23:00 | 00:35 | 7 |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 9 | 9 |  | 6 | 8 | 22:45 | 00:25 | 7 |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 10 | 10 |  | 14 | 6 | 22:30 | 00:40 | 6.75 |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 11 | 11 |  | 29 | 23 | 22:45 | 22:55 | 7.75 |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 12 | 12 |  | 22 | 16 | 22:15 | 00:40 | 2.75 |  | X | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 13 | 13 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | 14 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | 16 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | 18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 | 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 | 22 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | 24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 27; 2L; Btl 3 . Filter of Btl 11 was not properly positioned | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 05 | Time i/w (Local) |  | Date (GMT) | 13/11/2019 |
| Latitude | 21° 09.288’S | Time i/w (GMT) |  | Oc. Depth (m) | 253 |
| Longitude | 175° 45.079‘W | Time bottom (GMT) |  | Cast Depth (m) |  |
| TMR # | 18 | Time o/w (GMT) |  | Chla. max (pres) | 80 |
| Weather | Cloudy with sun spots | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | 254 | 45 | 22 | 12:50 | 14:25 | 7.75 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 2 | 2 | 254 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 3 | 3 | 220 | 26 | 7 | 13:10 | 15:00 | 7.5 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 4 | 4 | 195 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 195 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | 6 | 195 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 7 | 7 | 195 | 49 | 23 | 13:30 | 15:00 | 6.25 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 | 185 | 23 | 19 | 13:50 | 15:30 | 8.25 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 9 | 9 | 175 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 10 | 10 | 175 | 8 | 12 | 13:50 | 15:35 | 5.5 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 11 | 11 | 160 | 40 | 8 | 12:45 | 15:25 | 8.5 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 12 | 12 | 120 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 13 | 13 | 120 | 7 | 21 | 13:05 | 15:25 | 8 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 14 | 14 | 95 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 15 | 15 | 95 | 12 | 15 | 12:40 | 14:30 | 4.8 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 16 | 16 | 80 | 39 | 9 | 11:30 | 15:15 | 6.2 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 17 | 17 | 70 | 20 | 6 | 11:10 | 15:40 | 6 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 18 | 18 | 70 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 19 | 19 | 50 | 41 | 20 | 11:40 | 15:43 | 4.25 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 20 | 20 | 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 21 | 21 | 20 | 51 | 18 | 11:50 | 12:00 | 0.73 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 22 | 22 | 20 | 42 | 16 | 10:50 | 15:45 | 2.7 | X | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 23 | 23 | 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | 24 | 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 14 ; 2L; Btl 11. Btl 15, 24: leaking from the bottom.Btl 7, 16: leaking from te top. Btl 8, swinnex possibly not well positioned  . Btl 21 is a replicate of Btl 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 6 | Time i/w (Local) | 10:50 | Date (GMT) | 15-16/11/2019 |
| Latitude | 20° 41.29’S | Time i/w (GMT) | 22:50 | Oc. Depth (m) |  |
| Longitude | 174° 22.7‘W | Time bottom (GMT) |  | Cast Depth (m) |  |
| TMR # | 20 | Time o/w (GMT) |  | Chla. max (pres) |  |
| Weather |  | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes | David Fe(II) |  |  |  |
| 1 | 1 | b-20 | 31 | 5 | 15:14 | 17:51 | 8 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 2 | 2 | 920 | 22 | 10 | 15:40 | 17:00 | 9.5 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 800 | 48 | 1 | 15:45 | 17:10 | 7.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 4 | 4 | 700 | 46 | 20 | 14:25 | 16:30 | 7.75 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  | 2L |  |  |  |
| 5 | 5 | 640 | 18 | 21 | 14:30 | 15:52 | 8 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 6 | 6 | 580 | 60 | 15 | 15:05 | 16:32 | 9.75 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 490 | 29 | 11 | 16:01 | 17:27 | 6 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 | 445 | 44 | 24 | 16:30 | 17:41 | 9.5 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | 9 | 400 | 19 | 2 | 16:07 | 17:38 | 8.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 10 | 10 | 350 | 32 | 22 | 15:20 | 17:09 | 10 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | 11 | 300 | 21 | 4 | 15:30 | 17:00 | 7.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 12 | 12 | 250 | 37 | 3 | 15:55 | 17:27 | 8.75 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 190 | 59 | 13 | 15:35 | 17:00 | 6.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 14 | 14 | 160 | 13 | 17 | 15:30 | 17:07 | 8.75 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 15 | 130 | 35 | 18 | 15:07 | 16:38 | 6.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 16 | 16 | 118 | 16 | 9 | 14:40 | 16:52 | 9.25 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 | 110 | 34 | 7 | 14:50 | 16:47 | 9.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 18 | 18 | 100 | 14 | 23 | 14:55 | 17:46 | 7.5 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 72 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 | 20 | 62 | 6 | 8 | 14:50 | 17:59 | 7.25 |  |  |  |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 21 | 21 | 55 | 58 | 16 | 14:20 | 16:40 | 6 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 22 | 22 | 40 | 55 | 12 | 14:15 | 17:57 | 6.25 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 25 | 56 | 6 | 14:20 | 17:55 | 5.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 24 | 24 | 15 | 17 | 19 | 15:15 | 16:30 | 5 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 27; 2L; Btl 4. Btl 19: leaking bottom; pH and filter show that Btl 1 closed at surface; Btl 7: leaking from the top | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 7 | Time i/w (Local) | 06:45 | Date (GMT) | 16/11/2019 |
| Latitude | 20° 30.007’S | Time i/w (GMT) | 18:45 | Oc. Depth (m) | 56XX |
| Longitude | 171° 59.924‘W | Time bottom (GMT) | 20:00 | Cast Depth (m) | 5510 |
| TMR # | 21 | Time o/w (GMT) |  | Chla. max (pres) | 145 |
| Weather | Sunny, few clouds | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes | DOC | Oxy |  |  |
| 1 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 4200 | 24 | 10 | 15:10 | 15:50 | 4 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  | X |  |  |  |
| 4 | 4 | 3900 | 41 | 1 | 15:20 | 17:05 | 9.5 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 3600 | 1 | 18 | 15:30 | 16:34 | 5.25 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 6 | 6 | 3100 | 11 | 4 | 15:55 | 17:18 | 8.5 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 2600 | 4 | 9 | 15:35 | 17:03 | 5.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 8 | 8 | 2200 | 8 | 7 | 15:25 | 16:49 | 8.25 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | 9 | 2000 | 36 | 20 | 14:56 | 16:35 | 8 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 10 | 10 | 1800 | 43 | 15 | 14:44 | 16:03 | 7.75 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | 11 | 1455 | 12 | 24 | 14:30 | 15:50 | 6.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 12 | 12 | 1400 | 20 | 2 | 14:25 | 16:15 | 9.75 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 1050 | 3 | 11 | 15:20 | 15:50 | 5.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 14 | 14 | 850 | 53 | 16 | 14:50 | 16:50 | 9 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 15 | 670 | 5 | 21 | 14:40 | 16:07 | 5.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 16 | 16 | 570 | 42 | 17 | 14:12 | 16:05 | 8.75 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 | 350 | 45 | 22 | 14:12 | 15:30 | 7.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 18 | 18 | 270 | 49 | 4 | 14:05 | 15:20 | 9 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 200 | 39 | 8 | 13:45 | 15:15 | 8.25 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 20 | 20 | 180 | 23 | 3 | 14:15 | 15:36 | 8.75 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 21 | 145 | 26 | 23 | 13:55 | 15:30 | 5.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 22 | 22 | 80 | 40 | 6 | 13:48 | 16:41 | 7.75 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 40 | 7 | 5 | 13:45 | 17:51 | 5.25 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 24 | 24 | 20 | 51 | 12 | 13:38 | 16:02 | 3 |  |  |  |  |  |  |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 24; 2L; Btl 12 . Btl 1: Open bottom; Btl 2: close at wrong depth; Btl 17: leaking top; Btl 5, 13: leaking tap; Btl 24: 2nd filter (15), start at 16:05, end time: 17:51, volume 3.0 L | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 8 | Time i/w (Local) | 10:50 | Date (GMT) | 19/11/2019 |
| Latitude | 20° 23.122’S | Time i/w (GMT) | 22:50 | Oc. Depth (m) | 5298 |
| Longitude | 166° 95.940‘W | Time bottom (GMT) | 00:10 | Cast Depth (m) | 5288 |
| TMR # | 25 | Time o/w (GMT) |  | Chla. max (pres) |  |
| Weather | Rainny | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes | Hg isotopes | Hg incub | MDM |  |
| 1 | 1 | 5288 |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  | 5 | X |  |  | X |  |
| 2 | 2 | 5288 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 3 | 3 | 5288 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 4 | 4 | 5288 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X | x4 |  |  |
| 5 | 5 | 4200 |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  | 5 | X |  |  |  |  |
| 6 | 6 | 3000 |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  | 5 | X |  |  |  |  |
| 7 | 7 | 1900 |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  | 5 | X |  |  |  |  |
| 8 | 8 | 1090 |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  | 5 | X |  |  |  |  |
| 9 | 9 | 717 |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  | X |  |
| 10 | 10 | 717 |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  | 10 | X |  |  |  |  |
| 11 | 11 | 717 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 12 | 12 | 717 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 13 | 13 | 170 |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  | X |  |  | X |  |
| 14 | 14 | 170 |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  | 10 | X |  | x4 |  |  |
| 15 | 15 | 170 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X | x8 |  |  |
| 16 | 16 | 170 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 17 | 17 | 170 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 18 | 18 | 170 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 19 | 19 | 170 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 20 | 20 | 20 |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  | 20 | X |  |  |  |  |
| 21 | 21 | 20 |  |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |
| 22 | 22 | 20 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X | x8 | X |  |
| 23 | 23 | 20 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| 24 | 24 | 20 |  |  |  |  |  |  |  |  |  | X |  |  | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| Comments | | | Btl 16: open top; Btl 4, 21: had jellyfish on the outside; Btl 9: top exploded due to high pressure | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 8 | Time i/w (Local) | 22:18 | Date (GMT) | 20/11/2019 |
| Latitude | 20° 24.431’S | Time i/w (GMT) | 10:18 | Oc. Depth (m) | 5377 |
| Longitude | 166° 35.675‘W | Time bottom (GMT) |  | Cast Depth (m) | 5360 |
| TMR # | 26 | Time o/w (GMT) |  | Chla. max (pres) | 170 |
| Weather | Sunny | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | b-10 | 37 | 23 |  | 19:45 | 5.6 | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 2 | 2 | b-10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 4900 | 2 | 2 | 17:34 | 18:40 | 0.92 | X | X | X | X | X | X | X | x2 | X | x3 | x2 | x2 | X | x2 | x2 | X | X |  |  |  |  |  |  |
| 4 | 4 | 4600 | 25 | 24 | 17:20 | 18:54 | 7.75 | X | X |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 4200 | 19 | 17 | 17:55 | 19:45 | 5.75 | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 6 | 6 | 3800 | 21 | 3 | 18:25 | 20:00 | 8.25 | X | X |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 3400 | 31 | 22 | 18:33 | 20:00 | 6.25 | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 | 2850 | 10 | 19 | 18:48 | 20:20 | 6.9 | X | X |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  | X |  |  |  |  |  |
| 9 | 9 | 2400 | 29 | 13 | 18:45 | 20:30 | 9.6 |  |  |  |  | X |  |  | X | X | X | X |  |  |  |  |  |  | X |  |  |  |  |  |
| 10 | 10 | 2400 | 43 | 11 | 17:40 | 19:45 | 4.25 | X | X | X | X | X |  | X | x2 | X | x3 | x2 | x2 | X | x2 | x2 | X | X | X |  |  |  |  |  |
| 11 | 11 | 1900 | 48 | 8 | 18:22 | 20:00 | 6.75 | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |
| 12 | 12 | 1400 | 50 | 10 | 16:50 | 18:30 | 7.1 | X | X |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 1090 | 32 | 16 | 16:50 | 18:20 | 5.5 | X | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 14 | 14 | 950 | 17 | 15 | 17:20 | 18:30 | 7.1 | X | X |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 15 | 800 | 58 | 18 | 16:50 | 18:30 | 3.75 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 16 | 16 | 750 | 27 | 21 | 17:44 | 20:33 | 7.5 | X | X |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 | 635 | 22 | 10 | 17:06 | 17:44 | 5 | X | X | X |  | X | X | X | x2 | X | x3 | x2 | x2 | X | x2 | x2 | X | X |  |  |  |  |  |  |
| 18 | 18 | 440 | 59 | 6 | 16:50 | 18:45 | 8.25 | X | X |  |  | X |  | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 370 | 33 | 5 | 16:20 | 18:20 | 6.75 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 20 | 20 | 190 | 34 | 1 | 16:45 | 18:20 | 6.75 | X | X |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 21 | 170 | 44 | 9 | 16:20 | 18:20 | 4.6 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 22 | 22 | 90 | 16 | 4 | 16:42 | 20:40 | 5.4 | X | X |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 25 | 55 | 12 | 16:20 | 20:40 | 3.9 | X | X | X |  | X |  | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 24 | 24 | 15 | 27 | 7 | 16:45 | 20:40 | 6 | X | X |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex #6 ; 2L; Btl 12. Btl 16: open top; Btl 2: wrong temp; Btl 15: tap leak; Btl 24: we had to tight the scre at the top of the safety teflon | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 10 | Time i/w (Local) | 18:50 | Date (GMT) | 24/11/2019 |
| Latitude | 19° 24.284’S | Time i/w (GMT) | 06:50 | Oc. Depth (m) | 1814 |
| Longitude | 175° 7.588‘W | Time bottom (GMT) |  | Cast Depth (m) | 1804 |
| TMR # | 29 | Time o/w (GMT) |  | Chla. max (pres) | 90 |
| Weather | Night, no rain | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | 1815 | 53 | 8 | 22:52 | 00:40 | 8.5 |  | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 2 | 2 | 1815 | 12 | 20 | 22:47 | 00:49 | 10 |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 1780 | 4 | 11 | 23:00 | 00:40 | 7.5 |  | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 4 | 4 | 1600 | 11 | 24 | 22:27 | 00:21 | 9.75 |  |  |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 1400 | 24 | 18 | 23:25 | 00:49 | 7.75 |  | X | X |  | X | X |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 6 | 6 | 1200 |  |  |  |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 1000 | 8 | 10 | 23:25 | 01:20 | 8.75 |  | X | X |  | X | X |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 | 870 | 26 | 2 | 23:50 | 01:27 | 9 |  | X | X |  |  |  |  |  |  |  |  | X | X | X | X | X | X |  |  |  |  |  |  |
| 9 | 9 | 870 | 39 | 5 | 23:40 | 01:02 | 9 |  |  |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | 10 | 740 | 7 | 21 | 22:15 | 23:45 | 9.75 |  |  |  |  | X | X |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | 11 | 650 | 45 | 23 | 22:30 | 00:08 | 8.75 |  | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 12 | 12 | 580 | 64 | 9 | 23:50 | 01:18 | 9.5 |  |  |  |  | X | X |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 460 | 36 | 6 | 23:40 | 01:11 | 11 |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | 14 | 460 | 41 | 16 | 23:15 | 00:43 | 8.25 |  | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 15 | 15 | 340 | 15a | 15 | 23:13 | 00:30 | 7.25 |  | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 16 | 16 | 260 | 40 | 1 | 23:05 | 00:30 | 10 |  |  |  |  | X | X |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 | 180 | 20 | 3 | 22:45 | 00:15 | 7.75 |  | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 18 | 18 | 135 | 5 | 22 | 22:40 | 00:14 | 9.8 |  |  |  |  | X | X |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 90 | 1 | 12 | 22:10 | 00:15 | 8.25 |  | X | X |  | X | X |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 20 | 20 | 70 | 3 | 13 | 22:25 | 01:30 | 6.75 |  |  |  |  | X | X |  | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 21 | 45 | 42 | 19 | 22:20 | 01:32 | 4.25 |  | X | X |  | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 22 | 22 | 25 | 52 | 4 | 22:10 | 01:33 | 5.25 |  |  |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 20 | 23 | 17 | 22:20 | 01:35 | 3.5 |  | X | X |  | X |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 24 | 24 | 10 | 15 | 7 | 22:15 | 01:35 | 3 |  |  |  |  | X | X | X | X | X | X | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 14; 2L; Btl 4. Btl 6, 10: leaking from the bottom; Btl 2b: tap leak | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 10-T2 | Time i/w (Local) |  | Date (GMT) | 24/11/2019 |
| Latitude | 19° 24.963’S | Time i/w (GMT) |  | Oc. Depth (m) |  |
| Longitude | 175° 3.13‘W | Time bottom (GMT) |  | Cast Depth (m) |  |
| TMR # | 30 | Time o/w (GMT) |  | Chla. max (pres) |  |
| Weather | Cloudy, covered | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | 1200 | 27 | 5 | 10:58 | 12:10 | 6.9 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 2 | 2 | 1000 | 25 | 23 | 11:12 | 12:10 | 3.5 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 870 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | 4 | 870 | 21 | 24 | 12:23 | 13:45 | 9 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 5 | 5 | 845 | 51 | 18 | 11:30 | 12:55 | 7.75 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 6 | 6 | 800 | 29 | 9 | 10:45 | 12:30 | 10.5 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 750 | 48 | 10 | 10:45 | 12.10 | 8.25 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 | 700 | 31 | 1 | 11:15 | 12:40 | 10.5 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | 9 | 680 | 28 | 11 | 12:15 | 13:30 | 8.4 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 10 | 10 | 620 | 16 | 20 | 12:35 | 14:05 | 9.75 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | 11 | 620 | 13 | 15 | 12:30 | 14:05 | 9.6 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 12 | 12 | 500 | 50 | 8 | 12:10 | 13:35 | 5.5 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 13 | 13 | 380 | 17 | 16 | 11:50 | 13:10 | 8.4 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 14 | 14 | 260 | 6 | 21 | 11:40 | 13:10 | 10.5 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 15 | 180 | 22 | 2 | 10:45 | 12:10 | 7 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 16 | 16 | 100 | 2 | 13 | 10:35 | 12:45 | 10.5 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 | 85 | 58 | 17 | 10:15 | 12:45 | 8.8 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 18 | 18 | 85 | 27x | 19 | 10:35 | 14:15 | 7.8 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 50 | 10 | 4 | 10:15 | 14:15 | 4.25 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 20 | 20 | 25 | 32 | 6 | 10:50 | 14:15 | 3.4 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 21 | 15 | 33 | 7 | 10:20 | 14:15 | 2.8 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 22 | 22 | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 | 24 | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 19; 2L; Btl 6. Btl 3: tap boke while mixing; Btl 12: few L lost for PTM | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 10 | Time i/w (Local) | 18:10 | Date (GMT) | 26/11/2019 |
| Latitude | 19° 25.426’S | Time i/w (GMT) | 06:10 | Oc. Depth (m) | 704 |
| Longitude | 174° 58.968‘W | Time bottom (GMT) |  | Cast Depth (m) | 690 |
| TMR # | 31 | Time o/w (GMT) |  | Chla. max (pres) | 85 |
| Weather | Some clouds | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | 702 | 51 | 1 | 21:35 | 23:00 | 9.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 2 | 2 | 702 |  |  |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 702 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | 4 | 702 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 650 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | 6 | 650 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 650 | 1 | 19 | 21:00 | 22:20 | 8.4 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 | 510 | 57 | 4 | 21:00 | 22:45 | 9.6 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 9 | 9 | 390 | 14 | 15 | 21:15 | 22:34 | 7.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 10 | 10 | 290 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | 11 | 270 | 12 | 10 | 22:00 | 23:15 | 8.25 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 12 | 12 | 190 | 64 | 16 | 21:35 | 23:20 | 9.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 13 | 13 | 190 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | 14 | 140 | 26 | 18 | 22:00 | 23:20 | 6.9 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 15 | 15 | 100 | 7 | 9 | 22:00 | 23:40 | 7.2 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 16 | 16 | 100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 | 75 | 14 | 21 | 21:35 | 23:45 | 6.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 18 | 18 | 65 | 11 | 8 | 21:25 | 23:45 | 5.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 19 | 19 | 60 | 3 | 6 | 21:00 | 23:50 | 5.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 20 | 20 | 40 | 36 | 24 | 21:30 | 23:50 | 3.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 21 | 21 | 35 | 4 | 7 | 21:00 | 23:55 | 3.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 22 | 22 | 25 | 24 | 11 | 21:30 | 23:59 | 3.6 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 23 | 23 | 15 | 15a | 20 | 21:00 | 00:02 | 2.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 24 | 24 | 15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 20; 2L; Btl 8.  All btls closed properly | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 10 | Time i/w (Local) | 08:10 | Date (GMT) | 26/11/2019 |
| Latitude | 19° 25.512’S | Time i/w (GMT) | 20:10 | Oc. Depth (m) | 312 |
| Longitude | 174° 57.890‘W | Time bottom (GMT) |  | Cast Depth (m) | 302 |
| TMR # | 33 | Time o/w (GMT) |  | Chla. max (pres) |  |
| Weather | Sunny, 20% clouds | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | b-10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | 2 | b-1p |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | b-10 | 41 | 18 | 11:15 | 12:43 | 8.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 4 | 4 | 270 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 270 | 23 | 21 | 10:40 | 12:10 | 8.0 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 6 | 6 | 230 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 230 | 45 | 9 | 10:45 | 12:40 | 7.25 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 | 200 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | 9 | 200 | 40 | 16 | 11:08 | 12:55 | 9.25 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 10 | 10 | 170 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | 11 | 170 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | 12 | 170 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 170 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | 14 | 170 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 15 | 170 | 42 | 1 | 11:15 | 12:45 | 7.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 16 | 16 | 140 | 43 | 10 | 11:15 | 12.50 | 9 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 17 | 17 | 100 | 5 | 11 | 11:00 | 14.14 | 8.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 18 | 18 | 100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 80 | 59 | 20 | 10:30 | 14:20 | 5.25 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 20 | 20 | 60 | 35 | 7 | 10:55 | 14:23 | 5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 21 | 21 | 40 | 46 | 24 | 10:30 | 14:23 | 4.25 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 22 | 22 | 25 | 18 | 8 | 10:55 | 14:26 | 5.5 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 23 | 23 | 15 | 15 | 6 | 10:30 | 14:18 | 5.75 |  | X | X |  |  |  |  | X | X | X | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 24 | 24 | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 39; 2L; Btl 7. Btl 1, 12, 23: Open top; Btl 2: open bottom; Btl 6, 24: leaks bottom; Btl 7: leaks top. During TMR prod, Btl 15 was leaking in the bottom and btl 2 didn’t close the bottom. Container door broke while he rosette was going down. | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 10-November | Time i/w (Local) | 18:04 | Date (GMT) | 27/11/2019 |
| Latitude | 19° 15.564’S | Time i/w (GMT) | 06:04 | Oc. Depth (m) |  |
| Longitude | 174° 53.749‘W | Time bottom (GMT) | 06:28 | Cast Depth (m) |  |
| TMR # | 34 | Time o/w (GMT) |  | Chla. max (pres) | 125 |
| Weather | 30% cloud cover, getting dark | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | 1660 | 19 | 12 | 22:55 | 00:15 | 7.75 | X | X | X |  | X | X | X | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 2 | 2 | 1580 | 6 | 17 | 22:45 | 00:35 | 10.3 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 1580 | 34 | 2 | 22.25 | 00:00 | 8.5 | X | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 4 | 4 | 1510 | 60 | 21 | 22:15 | 00:00 | 10.25 | X | X |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 1460 | 23 | 18 | 22:00 | 23:40 | 8.75 | X | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 6 | 6 | 1425 | 25 | 16 | 21:50 | 23:40 | 11.2 | X | X |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 1400 | 13 | 15 | 22:25 | 00:15 | 10.8 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | 8 | 1400 | 37 | 13 | 22:35 | 00:00 | 8.25 | X | X | X |  | X | X | X | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 9 | 9 | 1355 | 8 | 23 | 22:55 | 00:50 | 10.2 | X | X |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | 10 | 1315 | 32 | 3 | 23:05 | 00:45 | 8.75 | X | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 11 | 11 | 1305 | 54 | 0 | 23:20 | 01:00 | 10.35 | X | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 12 | 12 | 1290 | 9 | 22 | 23:10 | 01:05 | 11 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 1290 | 51 | 19 | 22:25 | 00:00 | 7.6 | X | X | X |  | X | X | X | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 14 | 14 | 1170 | 48 | 5 | 22:45 | 00:30 | 8.5 | X | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 15 | 15 | 1120 | 28 | 4 | 22:10 | 23:50 | 11.25 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | 16 | 1070 | 17 | 1 | 21.45 | 23:20 | 9 | X | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 17 | 17 | 930 | 19 | 6 | 21:45 | 23:30 | 10.25 |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 | 18 | 650 | 2 | 9 | 22:05 | 23:30 | 7.9 | X | X | X |  | X | X | X | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 19 | 19 | 370 | 56 | 10 | 21:04 | 23:03 | 7.25 | X | X | X |  | X | X | X | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 20 | 20 | 295 | 53 | 11 | 21:25 | 23:05 | 9 | X | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 21 | 21 | 205 | 27 | 20 | 21:30 | 23:05 | 9.25 |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 | 22 | 165 | 47 | 7 | 21:25 | 23:30 | 11 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 125 | 21 | 24 | 21:30 | 23:40 | 7.75 | X | X | X |  | X | X | X | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 24 | 24 | 50 | 22 | 8 | 21:20 | 01:10 | 5.25 |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 27; 2L; Btl 17. Btl 21: leaks form the top | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 11 | Time i/w (Local) | 18:17 | Date (GMT) | 29/11/2019 |
| Latitude | 19° 31.15’S | Time i/w (GMT) | 06:17 | Oc. Depth (m) |  |
| Longitude | 177° 3.165‘W | Time bottom (GMT) |  | Cast Depth (m) |  |
| TMR # | 36 | Time o/w (GMT) |  | Chla. max (pres) | 95 |
| Weather | Sunset | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | b-10 | 18 | 21 | 22:55 | 00:40 | 8 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | 2 | b-10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 1900 | 31 | 13 | 23.20 | 00:45 | 8.25 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 4 | 4 | 1700 | 23 | 24 | 23:40 | 00:53 | 8 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 1500 | 58 | 10 | 23.47 | 01:10 | 8.25 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 6 | 6 | 1330 | 33 | 12 | 22:40 | 00:10 | 8.5 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 1100 | 9 | 15 | 22:45 | 00:08 | 8.25 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 8 | 8 | 860 | 46 | 19 | 23:06 | 00:43 | 8.25 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 9 | 9 | 690 | 40 | 9 | 23.35 | 00:50 | 8.75 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | 10 | 650 | 63 | 6 | 23:45 | 01:00 | 7.5 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 11 | 11 | 570 | 43 | 7 | 00:05 | 01:16 | 8.75 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 12 | 12 | 450 | 41 | 11 | 00:10 | 01:27 | 8.25 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 320 | 3 | 16 | 23:45 | 01:07 | 8.25 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 14 | 14 | 220 | 5 | 1 | 23:35 | 00:56 | 8.25 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 15 | 200 | 39 | 18 | 23:15 | 01:10 | 9 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 16 | 16 | 170 | 22 | 4 | 23:10 | 00:28 | 9.5 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 | 120 | 35 | 2 | 22:50 | 00:47 | 8.5 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 18 | 18 | 110 | 59 | 5 | 22:45 | 00:37 | 8.5 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 95 | 42 | 17 | 22:23 | 00:00 | 6.5 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 20 | 20 | 95 | 50 | 3 | 22:15 | 00:35 | 9.25 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 21 | 70 | 60 | 0 | 22:23 | 01:30 | 6.75 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 22 | 22 | 50 | 45 | 22 | 22:15 | 01:37 | 5.6 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 25 | 4 | 23 | 22:15 | 01:38 | 2.33 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X | X |  |  |  |  |  |  |
| 24 | 24 | 15 | 32 | 8 | 22:45 | 01:40 | 3.22 |  |  |  |  |  |  |  | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 25; 2L; Btl 6. Btl 2: open bottom; Btl 10: closed ar 1m/s (leaks when mixing); Btl 7: top leaks | | | | | | | | | | | | | | | | | | | | | | | | | | | |

TONGA Trace Metal CTD log sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | 12 | Time i/w (Local) | 09:25 | Date (GMT) | 29/11/2019 |
| Latitude | 20° 42.0’S | Time i/w (GMT) | 21:25 | Oc. Depth (m) | 1989 |
| Longitude | 177° 51.23‘W | Time bottom (GMT) |  | Cast Depth (m) | 1978 |
| TMR # | 37 | Time o/w (GMT) |  | Chla. max (pres) | 100 |
| Weather | Sunny, some clouds | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ros Pos | Btl # | Depth (pres.) | Swin # | Jerry # | Filt Sta. | Filt End | Jerry (L) | Fe(II) | pH | kFe | M kFe | tHg | DGM + MMHg | TMeHg | NUTS | pTM | dTM | dFe | Humics A | Humics B | Fe Org Sp | Cu Org Sp | Nat DOM | Fe binding | dHg | Fe isotopes |  |  |  |  |
| 1 | 1 | 1978 | 31 | 21 | 13:57 | 15:25 | 9.1 |  | X | X |  |  |  |  | X | X | x2 | X | X | X | X | X | X |  |  |  |  |  |  |  |
| 2 | 2 | 1978 | 16 | 24 | 14:17 | 16:07 | 8.25 |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 3 | 1700 | 23 | 3 | 14:25 | 15:50 | 7.15 |  | X | X |  | X | X | X | X | X | x2 | X | X | X | X | X | X |  |  |  |  |  |  |  |
| 4 | 4 | 1500 | 44 | 17 | 14:45 | 16:05 | 9.1 |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 5 | 1330 | 45 | 5 | 14:30 | 16:00 | 6.5 |  | X | X |  | X | x2 | x2 | X | X | x3 | x2 | x2 | x2 | x2 | x2 | X |  |  |  |  |  |  |  |
| 6 | 6 | 1100 | 42 | 6 | 14:25 | 15:46 | 9.75 |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 950 | 9 | 9 | 14:00 | 15:25 | 8.2 |  | X | X |  | X |  | X | X | X | x2 | X | X | X | X | X | X |  |  |  |  |  |  |  |
| 8 | 8 | 900 | 40 | 23 | 13:25 | 15:25 | 10.4 |  |  |  |  | X |  | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | 9 | 720 | 18 | 8 | 13:25 | 14:50 | 9.25 |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | 10 | 650 | 37 | 16 | 13:30 | 15:25 | 6 |  | X | X |  | X | x2 | x2 | X | X | x3 | x2 | x2 | x2 | x2 | x2 | X |  |  |  |  |  |  |  |
| 11 | 11 | 570 | 1 | 15 | 14:45 | 16:30 | 8.6 |  | X | X |  | X |  | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | 12 | 450 | 5 | 4 | 14:35 | 16:09 | 9.75 |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 13 | 320 | 38 | 19 | 14:15 | 16:09 | 7.5 |  | X | X |  | X |  | X | X | X | x2 | X | X | X | X | X | X |  |  |  |  |  |  |  |
| 14 | 14 | 220 | 24 | 1 | 13:50 | 15:25 | 10.3 |  |  |  |  | X |  | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 15 | 15 | 190 | 26 | 13 | 14:05 | 16:23 | 8.75 |  | X | X |  | X | x2 | x2 | X | X | x3 | x2 | x2 | x2 | x2 | x2 | X |  |  |  |  |  |  |  |
| 16 | 16 | 125 | 55 | 2 | 14:27 | 16:20 | 10.3 |  |  |  |  | X |  | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 | 17 | 110 | 58 | 12 | 14:30 | 16:48 | 6.9 |  | X | X |  | X |  | X | X | X | x2 | X | X | X | X | X | X |  |  |  |  |  |  |  |
| 18 | 18 | 100 |  |  |  |  |  |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 19 | 100 | 15 | 0 | 13:30 | 17:30 | 6.5 |  | X | X |  |  |  | X | X | X | x2 | X | X | X | X | X | X |  |  |  |  |  |  |  |
| 20 | 20 | 80 | 35 | 22 | 13:25 | 16:20 | 9.2 |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | 21 | 70 | 41 | 10 | 13:55 | 17:33 | 6.25 |  | X | X |  | X |  | X | X | X | x2 | X | X | X | X | X | X |  |  |  |  |  |  |  |
| 22 | 22 | 50 | 50 | 18 | 13:25 | 17:25 | 6 |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| 23 | 23 | 25 | 32 | 7 | 13:35 | 17:35 | 4.75 |  | X | X |  | X | X | X | X | X | x2 | X | X | X | X | X | X |  |  |  |  |  |  |  |
| 24 | 24 | 15 | 49 | 11 | 13:25 | 17:40 | 4 |  |  |  |  | X | X | X | X | X | x2 | X |  |  |  |  |  |  |  |  |  |  |  |  |
| Comments | | | **Blank**: Swinnex # 22; 2L; Btl 3. Btl 17: bottom leaks; Btl 5, 10, 17: Intercalibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | |