

# Dissolved Oxygen Analysis Log Sheet

Institute of Ocean Sciences  
Water Properties Group

Last Updated: December 2011

Oxygen Case #2

| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                            | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                                                            | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|-------------------------------------|-----------|---------|-----------|---------------|--------------|---------------------------------------------------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-35                                                         | 1       | <input checked="" type="checkbox"/> |           |         |           |               |              |                                                                     | 1       |         |               |              |          |
| Event: 1                                                                       | 2       | <input type="checkbox"/>            | 1         | 3142    | 100       |               | 1.451        | #1 had problem due to folder not being created. Sat for a long time | 2       | 3119    |               | 1.472        |          |
| Station: S1 VIP-1                                                              | 3       | <input checked="" type="checkbox"/> | 2         | 657     | 90        |               | 1.639        |                                                                     | 3       |         |               |              |          |
| Event Date (Local): April 30, 2013                                             | 4       | <input type="checkbox"/>            | 3         | 2067    | 750       |               | 3.546        | Redid standards here...                                             | 4       | 3067    |               | 3.556        |          |
| Analysis Date (Local): April 30, 2013                                          | 5       | <input type="checkbox"/>            | 4         | 3118    | 50        |               | 5.234        |                                                                     | 5       |         |               |              |          |
| Analyst: MJ                                                                    | 6       | <input type="checkbox"/>            | 5         | 621     | 36        |               | 5.621        |                                                                     | 6       |         |               |              |          |
| Stdization Date (Local): April 29, 2013                                        | 7       | <input type="checkbox"/>            | 6         | 3043    | 20        |               | 5.752        |                                                                     | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/>            | 7         | 3135    | 10        |               | 6.055        |                                                                     | 8       |         |               |              |          |
| Standard Titer: 0.7052                                                         | 9       | <input type="checkbox"/>            | 8         | 2098    | 5         |               | 7.979        |                                                                     | 9       |         |               |              |          |
| Blank Titer: 0.0025                                                            | 10      | <input type="checkbox"/>            | 9         | 2097    | 0         |               | 8.028        |                                                                     | 10      |         |               |              |          |
| THIO N: 0.14096                                                                | 11      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 11      |         |               |              |          |
| Sample Flask Water Seal? <input checked="" type="checkbox"/> Yes               | 12      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 12      |         |               |              |          |
|                                                                                | 13      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 16      |         |               |              |          |
|                                                                                | 17      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 17      |         |               |              |          |
|                                                                                | 18      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 18      |         |               |              |          |
| Notes: Thermometer was wacky!                                                  | 19      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 19      |         |               |              |          |
|                                                                                | 20      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 20      |         |               |              |          |
|                                                                                | 21      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/>            |           |         |           |               |              |                                                                     | 24      |         |               |              |          |

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Oxygen Cast #1

| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                            | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|-------------------------------------|-----------|---------|-----------|---------------|--------------|----------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/>            |           |         |           |               |              | leaky    | 1       |         |               |              |          |
| Event: 1 4                                                                     | 2       | <input checked="" type="checkbox"/> | 1         | 3142    | 396       | 6.1           | 0.865        |          | 2       |         |               |              |          |
| Station: POD2                                                                  | 3       | <input checked="" type="checkbox"/> |           |         |           |               |              | leaky    | 3       |         |               |              |          |
| Event Date (Local): May 10 <sup>th</sup> 2013                                  | 4       | <input checked="" type="checkbox"/> | 2         | 3119    | 400       | 6.1           | 1.228        |          | 4       |         |               |              |          |
| Analysis Date (Local): May 10 <sup>th</sup> 2013                               | 5       | <input type="checkbox"/>            |           |         |           |               |              | leaky?   | 5       |         |               |              |          |
| Analyst: FG                                                                    | 6       | <input checked="" type="checkbox"/> | 3         | 657     | 100       | 7.5           | 3.951        |          | 6       |         |               |              |          |
| Stdization Date (Local): May 10 <sup>th</sup>                                  | 7       | <input checked="" type="checkbox"/> | 4         | 2063    | 20        | 9.0           | 7.208        |          | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/>            |           |         |           |               |              |          | 8       |         |               |              |          |
| Standard Titer: 0.7033                                                         | 9       | <input type="checkbox"/>            |           |         |           |               |              |          | 9       |         |               |              |          |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/>            |           |         |           |               |              |          | 10      |         |               |              |          |
| THIO N: 0.14118                                                                | 11      | <input type="checkbox"/>            |           |         |           |               |              |          | 11      |         |               |              |          |
| Sample Flask Water Seal? <input checked="" type="checkbox"/> Yes               | 12      | <input type="checkbox"/>            |           |         |           |               |              |          | 12      |         |               |              |          |
|                                                                                | 13      | <input type="checkbox"/>            |           |         |           |               |              |          | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/>            |           |         |           |               |              |          | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/>            |           |         |           |               |              |          | 15      |         |               |              |          |
| NaI/NaOH                                                                       | 16      | <input type="checkbox"/>            |           |         |           |               |              |          | 16      |         |               |              |          |
| H <sub>2</sub> SO <sub>4</sub>                                                 | 17      | <input type="checkbox"/>            |           |         |           |               |              |          | 17      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 18      | <input type="checkbox"/>            |           |         |           |               |              |          | 18      |         |               |              |          |
| THIO                                                                           | 19      | <input type="checkbox"/>            |           |         |           |               |              |          | 19      |         |               |              |          |
| Notes:                                                                         | 20      | <input type="checkbox"/>            |           |         |           |               |              |          | 20      |         |               |              |          |
| 2 nisks were leaking                                                           | 21      | <input type="checkbox"/>            |           |         |           |               |              |          | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/>            |           |         |           |               |              |          | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/>            |           |         |           |               |              |          | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/>            |           |         |           |               |              |          | 24      |         |               |              |          |

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CAST # 2

| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                            | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                                          | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|-------------------------------------|-----------|---------|-----------|---------------|--------------|---------------------------------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013 - 36                                                       | 1       | <input type="checkbox"/>            | 1         | 3067    | 992       | 4.0           | 0.250        | Temperature bowing all over the place. Do not use | 1       |         |               |              |          |
| Event: 2 5                                                                     | 2       | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 2       |         |               |              |          |
| Station: POD 1                                                                 | 3       | <input checked="" type="checkbox"/> | 2         | 3118    | 400       | 5.0           | 0.896        |                                                   | 3       | 2098    |               | 1.023        |          |
| Event Date (Local): MAY 10 <sup>th</sup> 2013                                  | 4       | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 4       |         |               |              |          |
| Analysis Date (Local): MAY 10 <sup>th</sup> 2013                               | 5       | <input type="checkbox"/>            | 3         | 621     | 100       | 6.9           | 3.517        |                                                   | 5       |         |               |              |          |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 6       |         |               |              |          |
| Stdization Date (Local): MAY 10 <sup>th</sup> 13                               | 7       | <input type="checkbox"/>            | 4         | 3043    | 20        |               | 7.103        |                                                   | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 8       |         |               |              |          |
| Standard Titer: 0.7033                                                         | 9       | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 9       |         |               |              |          |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 10      |         |               |              |          |
| THIO N: 0.14118                                                                | 11      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 11      |         |               |              |          |
| Sample Flask Yes                                                               | 12      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 12      |         |               |              |          |
| Water Seal? (No)                                                               | 13      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 16      |         |               |              |          |
|                                                                                | 17      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 17      |         |               |              |          |
|                                                                                | 18      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 18      |         |               |              |          |
| Notes:                                                                         | 19      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 19      |         |               |              |          |
| No seal during                                                                 | 20      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 20      |         |               |              |          |
| 7 hr and after I                                                               | 21      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 21      |         |               |              |          |
| put it.                                                                        | 22      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/>            |           |         |           |               |              |                                                   | 24      |         |               |              |          |

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Oxygen Cast # 3

| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments    | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments                                            |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|-------------|---------|---------|---------------|--------------|-----------------------------------------------------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 3142    | 850       | 5.1           | 0.293        |             | 1       | 3043    | 5.7           | 0.364        |                                                     |
| Event: 3 6                                                                     | 2       | <input type="checkbox"/> | 2         | 2098    | 420       | 5.9           | 0.771        | 98% on yare | 2       | 3119    | 6.0           | 0.756        | H <sub>2</sub> SO <sub>4</sub> dispenser (light of) |
| Station: Barkley Hydrate                                                       | 3       | <input type="checkbox"/> | 3         | 3067    | 200       | 8.9           | 5.609        |             | 3       | 3118    | 9.00          | 5.607        | H <sub>2</sub> SO <sub>4</sub> fixed bottles        |
| Event Date (Local): 2013-05-13                                                 | 4       | <input type="checkbox"/> | 4         | 2007    | 50        | 8.2           | 6.642        |             | 4       |         |               |              |                                                     |
| Analysis Date (Local): 2013-05-16                                              | 5       | <input type="checkbox"/> | 5         | 657     | 20        | 10.2          | 6.729        |             | 5       |         |               |              |                                                     |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/> |           |         |           |               |              |             | 6       |         |               |              |                                                     |
| Stdization Date (Local): 2013-05-16                                            | 7       | <input type="checkbox"/> |           |         |           |               |              |             | 7       |         |               |              |                                                     |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> |           |         |           |               |              |             | 8       |         |               |              |                                                     |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |             | 9       |         |               |              |                                                     |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |             | 10      |         |               |              |                                                     |
| THIO N: 0.1418                                                                 | 11      | <input type="checkbox"/> |           |         |           |               |              |             | 11      |         |               |              |                                                     |
| Sample Flask Water Seal? <input checked="" type="checkbox"/> Yes               | 12      | <input type="checkbox"/> |           |         |           |               |              |             | 12      |         |               |              |                                                     |
|                                                                                | 13      | <input type="checkbox"/> |           |         |           |               |              |             | 13      |         |               |              |                                                     |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |             | 14      |         |               |              |                                                     |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |             | 15      |         |               |              |                                                     |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |             | 16      |         |               |              |                                                     |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |             | 17      |         |               |              |                                                     |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |             | 18      |         |               |              |                                                     |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |             | 19      |         |               |              |                                                     |
| Niskin 3 leaking                                                               | 20      | <input type="checkbox"/> |           |         |           |               |              |             | 20      |         |               |              |                                                     |
| * Reagent makes bubbles on the top                                             | 21      | <input type="checkbox"/> |           |         |           |               |              |             | 21      |         |               |              |                                                     |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |             | 22      |         |               |              |                                                     |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |             | 23      |         |               |              |                                                     |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |             | 24      |         |               |              |                                                     |

2 OXY  
POD 2  
1  
2013-36  
Bot 2

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments              |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|----------|---------|---------|---------------|--------------|-----------------------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> |           |         |           |               |              |          | 1       |         |               |              |                       |
| Event: 4 7                                                                     | 2       | <input type="checkbox"/> | 1         | 2063    | 900       | 4.7           | 0.251        |          | 2       | 2093    | 7.7           | 0.237        |                       |
| Station: POD 3/4                                                               | 3       | <input type="checkbox"/> |           |         |           |               |              |          | 3       |         |               |              |                       |
| Event Date (Local):                                                            | 4       | <input type="checkbox"/> | 2         | 3135    | 420       | 6.1           | 0.856        |          | 4       |         |               |              |                       |
| Analysis Date (Local): FG                                                      | 5       | <input type="checkbox"/> | 3         | 471     | 200       | 7.1           | 0.800        |          | 5       |         |               |              |                       |
| Analyst:                                                                       | 6       | <input type="checkbox"/> |           |         |           |               |              |          | 6       |         |               |              |                       |
| Stdization Date (Local):                                                       | 7       | <input type="checkbox"/> | 4         | 557     | 50        | 7.9           | 2.503        |          | 7       |         |               |              |                       |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> |           |         |           |               |              |          | 8       |         |               |              |                       |
| Standard Titer:                                                                | 9       | <input type="checkbox"/> | 5         | 371     | 20        | 10.1          | 6.254        |          | 9       | 2099    | ?             | 6.779        | it was not in the log |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |          | 10      |         |               |              |                       |
| THIO N: 0.1418                                                                 | 11      | <input type="checkbox"/> |           |         |           |               |              |          | 11      |         |               |              |                       |
| Sample Flask (Yes)                                                             | 12      | <input type="checkbox"/> |           |         |           |               |              |          | 12      |         |               |              |                       |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |          | 13      |         |               |              |                       |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |          | 14      |         |               |              |                       |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |          | 15      |         |               |              |                       |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |          | 16      |         |               |              |                       |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |          | 17      |         |               |              |                       |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |          | 18      |         |               |              |                       |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |          | 19      |         |               |              |                       |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |          | 20      |         |               |              |                       |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |          | 21      |         |               |              |                       |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |          | 22      |         |               |              |                       |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |          | 23      |         |               |              |                       |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |          | 24      |         |               |              |                       |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                         | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments                                       |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|----------------------------------|---------|---------|---------------|--------------|------------------------------------------------|
| Cruise Number: 2013 - 36                                                       | 1       | <input type="checkbox"/> | 1         | 2061    | 1001      | 4.7           | 0.272        |                                  | 1       |         |               |              |                                                |
| Event: 5                                                                       | 2       | <input type="checkbox"/> |           | —       | 1001      |               |              |                                  | 2       | 1001    |               |              |                                                |
| Station: BCH10                                                                 | 3       | <input type="checkbox"/> |           |         | 600       |               |              |                                  | 3       |         |               |              |                                                |
| Event Date (Local): 2013-05-15                                                 | 4       | <input type="checkbox"/> | 2         | 3019    | 600       | 5.6           | 0.412        | curve irregular -> clean probe   | 4       |         |               |              | 3019                                           |
| Analysis Date (Local):                                                         | 5       | <input type="checkbox"/> | 3         | 622     | 200       | 7.1           | 2.769        | curve better still irregular     | 5       |         |               |              | ! Depth in program is wrong 1001 should be 600 |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/> |           |         | 200       |               |              | change water, clean probe, flush | 6       |         |               |              |                                                |
| Stdization Date (Local):                                                       | 7       | <input type="checkbox"/> | 4         | 2073    | 100       | 7.8           | 2.732        | maybe the wrong endpoint         | 7       | 2092    | 7.9           | 4.186        | P??                                            |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> |           |         | 100       |               |              |                                  | 8       |         |               |              | Sample # in prog = 5 but should be 6           |
| Standard Titer:                                                                | 9       | <input type="checkbox"/> | 5         | 3098    | 40        | 8.3           | 6.517        |                                  | 9       |         |               |              |                                                |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         | 40        |               |              |                                  | 10      |         |               |              |                                                |
| THIO N: 0.1418                                                                 | 11      | <input type="checkbox"/> |           |         |           |               |              |                                  | 11      |         |               |              |                                                |
| Sample Flask Yes                                                               | 12      | <input type="checkbox"/> |           |         |           |               |              |                                  | 12      |         |               |              |                                                |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                                  | 13      |         |               |              |                                                |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                                  | 14      |         |               |              |                                                |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                                  | 15      |         |               |              |                                                |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                                  | 16      |         |               |              |                                                |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                                  | 17      |         |               |              |                                                |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                                  | 18      |         |               |              |                                                |
|                                                                                | 19      | <input type="checkbox"/> |           |         |           |               |              |                                  | 19      |         |               |              |                                                |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                                  | 20      |         |               |              |                                                |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                                  | 21      |         |               |              |                                                |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                                  | 22      |         |               |              |                                                |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                                  | 23      |         |               |              |                                                |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                                  | 24      |         |               |              |                                                |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                            | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments                   |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|-------------------------------------|---------|---------|---------------|--------------|----------------------------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> |           |         |           |               |              |                                     | 1       |         |               |              |                            |
| Event: 6 9                                                                     | 2       | <input type="checkbox"/> | 1         | 638     | 1154      | 5.4           | 0.335        |                                     | 2       | 3164    | 5.4           | 0.347        | hit the bottom run → above |
| Station: BCH 11                                                                | 3       | <input type="checkbox"/> |           |         |           |               |              |                                     | 3       |         |               |              | change my water            |
| Event Date (Local): 2013-05-15                                                 | 4       | <input type="checkbox"/> | 2         | 2021    | 1050      | 4.9           | 0.240        | colourful "debris" when adding NaOH | 4       |         |               |              |                            |
| Analysis Date (Local):                                                         | 5       | <input type="checkbox"/> | 3         | 1094    | 450       | 6.1           | 0.786        |                                     | 5       |         |               |              |                            |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/> |           |         |           |               |              |                                     | 6       |         |               |              |                            |
| Stdization Date (Local):                                                       | 7       | <input type="checkbox"/> | 4         | 631     | 200       | 7.2           | 2.679        | some red "debris" added with NaOH   | 7       |         |               |              |                            |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> |           |         |           |               |              |                                     | 8       |         |               |              |                            |
| Standard Titer:                                                                | 9       | <input type="checkbox"/> | 5         | 2049    | 30        | 9.3           | 15.031       |                                     | 9       |         |               |              |                            |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |                                     | 10      |         |               |              |                            |
| THIO N: 0.1418                                                                 | 11      | <input type="checkbox"/> |           |         |           |               |              |                                     | 11      |         |               |              |                            |
| Sample Flask <input checked="" type="checkbox"/> Yes                           | 12      | <input type="checkbox"/> |           |         |           |               |              |                                     | 12      |         |               |              |                            |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                                     | 13      |         |               |              |                            |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                                     | 14      |         |               |              |                            |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                                     | 15      |         |               |              |                            |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                                     | 16      |         |               |              |                            |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                                     | 17      |         |               |              |                            |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                                     | 18      |         |               |              |                            |
| Notes: Best to rinse bottle beforehand to avoid debris.                        | 19      | <input type="checkbox"/> |           |         |           |               |              |                                     | 19      |         |               |              |                            |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                                     | 20      |         |               |              |                            |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                                     | 21      |         |               |              |                            |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                                     | 22      |         |               |              |                            |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                                     | 23      |         |               |              |                            |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                                     | 24      |         |               |              |                            |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                  | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments              |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|---------------------------|---------|---------|---------------|--------------|-----------------------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 3047    | 1155      | 4.1           | 0.318        |                           | 1       |         |               |              | Take a moment before  |
| Event: 7 10                                                                    | 2       | <input type="checkbox"/> |           |         |           |               |              |                           | 2       |         |               |              | to titrate: Forget to |
| Station: BCH 12                                                                | 3       | <input type="checkbox"/> | 2         | 712     | 900       | 4.7           | 0.239        |                           | 3       |         |               |              | put the dispenser in  |
| Event Date (Local): 2013-05-15                                                 | 4       | <input type="checkbox"/> |           |         |           |               |              |                           | 4       |         |               |              | the water before to   |
| Analysis Date (Local):                                                         | 5       | <input type="checkbox"/> | 3         | 2090    | 400       | 5.9           | 1.103        |                           | 5       |         |               |              | click run now         |
| Analyst: TG                                                                    | 6       | <input type="checkbox"/> |           |         |           |               |              |                           | 6       |         |               |              |                       |
| Stdization Date (Local): 2013-05-15                                            | 7       | <input type="checkbox"/> | 4         | 1019    | 175       | 9.2           | 3.403        |                           | 7       |         |               |              |                       |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> |           |         |           |               |              |                           | 8       |         |               |              |                       |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/> | 5         | 611     | 30        | 9.5           | 7.841        | → did not work. There was | 9       | 2055    | 9.5           | 6.866        | I would use this      |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              | no curve                  | 10      |         |               |              | one instead of 611    |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |                           | 11      |         |               |              |                       |
| Sample Flask (Yes)                                                             | 12      | <input type="checkbox"/> |           |         |           |               |              |                           | 12      |         |               |              |                       |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                           | 13      |         |               |              |                       |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                           | 14      |         |               |              |                       |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                           | 15      |         |               |              |                       |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                           | 16      |         |               |              |                       |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                           | 17      |         |               |              |                       |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                           | 18      |         |               |              |                       |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |                           | 19      |         |               |              |                       |
| Bottles has been rinsed                                                        | 20      | <input type="checkbox"/> |           |         |           |               |              |                           | 20      |         |               |              |                       |
| Since the last cast                                                            | 21      | <input type="checkbox"/> |           |         |           |               |              |                           | 21      |         |               |              |                       |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                           | 22      |         |               |              |                       |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                           | 23      |         |               |              |                       |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                           | 24      |         |               |              |                       |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments               | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 690     | 1306      | 4.9           | 0.356        |                        | 1       |         |               |              |          |
| Event: 8 12                                                                    | 2       | <input type="checkbox"/> |           |         |           |               |              |                        | 2       |         |               |              |          |
| Station: BCH13                                                                 | 3       | <input type="checkbox"/> | 2         | 3038    | 850       | 5.7           | 0.281        | maybe 3 bubble         | 3       |         |               |              |          |
| Event Date (Local): 16 May 2013                                                | 4       | <input type="checkbox"/> |           |         |           |               |              |                        | 4       |         |               |              |          |
| Analysis Date (Local): 2013-05-16                                              | 5       | <input type="checkbox"/> | 3         | 510     | 550       | 5.9           | 0.475        | colorimeter show 102.9 | 5       |         |               |              |          |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/> |           |         |           |               |              | redo my zero point     | 6       |         |               |              |          |
| Stdization Date (Local): 2013-05-16                                            | 7       | <input type="checkbox"/> | 4         | 621     | 200       | 7.1           | 2.680        |                        | 7       | 1053    | 7.2           | 2.671        |          |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> |           |         |           |               |              |                        | 8       |         |               |              |          |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/> | 5         | 3209    | 50        | 9.7           | 6.877        |                        | 9       |         |               |              |          |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |                        | 10      |         |               |              |          |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |                        | 11      |         |               |              |          |
| Sample Flask (Yes)                                                             | 12      | <input type="checkbox"/> |           |         |           |               |              |                        | 12      |         |               |              |          |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                        | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                        | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                        | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                        | 16      |         |               |              |          |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                        | 17      |         |               |              |          |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                        | 18      |         |               |              |          |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |                        | 19      |         |               |              |          |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                        | 20      |         |               |              |          |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                        | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                        | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                        | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                        | 24      |         |               |              |          |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                                           | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|----------------------------------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 1064    | 500       | 5.7           | —            | The cap was upside down                            | 1       |         |               |              |          |
| Event: 9 13                                                                    | 2       | <input type="checkbox"/> |           |         |           |               |              |                                                    | 2       |         |               |              |          |
| Station: BCH5                                                                  | 3       | <input type="checkbox"/> | 2         | 631     | 350       | 6.0           | 1.191        | Bubble in H <sub>2</sub> SO <sub>4</sub> dispenser | 3       |         |               |              |          |
| Event Date (Local): 17-05-13                                                   | 4       | <input type="checkbox"/> |           |         |           |               |              |                                                    | 4       |         |               |              |          |
| Analysis Date (Local):                                                         | 5       | <input type="checkbox"/> | 3         | 2049    | 100       | 7.5           | 3.272        |                                                    | 5       |         |               |              |          |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/> |           |         |           |               |              |                                                    | 6       |         |               |              |          |
| Stdization Date (Local):                                                       | 7       | <input type="checkbox"/> | 4         | 3047    | 30        | 8.3           | 6.530        |                                                    | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> |           |         |           |               |              |                                                    | 8       |         |               |              |          |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |                                                    | 9       |         |               |              |          |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 10      |         |               |              |          |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 11      |         |               |              |          |
| Sample Flask Water Seal? <input checked="" type="checkbox"/> Yes               | 12      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 12      |         |               |              |          |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 16      |         |               |              |          |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 17      |         |               |              |          |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 18      |         |               |              |          |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 19      |         |               |              |          |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 20      |         |               |              |          |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                                                    | 24      |         |               |              |          |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|----------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 712     | 392       | 5.8           | 0.905        |          | 1       |         |               |              |          |
| Event: 10 19                                                                   | 2       | <input type="checkbox"/> |           |         |           |               |              |          | 2       |         |               |              |          |
| Station: BCH 4                                                                 | 3       | <input type="checkbox"/> | 2         | 2090    | 140       | 7.1           | 2.477        |          | 3       |         |               |              |          |
| Event Date (Local): 17-05-13                                                   | 4       | <input type="checkbox"/> |           |         |           |               |              |          | 4       |         |               |              |          |
| Analysis Date (Local):                                                         | 5       | <input type="checkbox"/> | 3         | 1019    | 90        | 8.2           | 6.558        |          | 5       |         |               |              |          |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/> |           |         |           |               |              |          | 6       |         |               |              |          |
| Stdization Date (Local):                                                       | 7       | <input type="checkbox"/> |           |         |           |               |              |          | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> |           |         |           |               |              |          | 8       |         |               |              |          |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |          | 9       |         |               |              |          |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |          | 10      |         |               |              |          |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |          | 11      |         |               |              |          |
| Sample Flask Water Seal? <input checked="" type="checkbox"/> Yes               | 12      | <input type="checkbox"/> |           |         |           |               |              |          | 12      |         |               |              |          |
| No                                                                             | 13      | <input type="checkbox"/> |           |         |           |               |              |          | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |          | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |          | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |          | 16      |         |               |              |          |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |          | 17      |         |               |              |          |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |          | 18      |         |               |              |          |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |          | 19      |         |               |              |          |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |          | 20      |         |               |              |          |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |          | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |          | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |          | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |          | 24      |         |               |              |          |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments           |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|----------|---------|---------|---------------|--------------|--------------------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 611     | 282       | 6.3           | 1.396        |          | 1       |         |               |              | 0-5-10-20-30-50    |
| Event: 11 15                                                                   | 2       | <input type="checkbox"/> | 2         | 2055    | 140       | 7.1           | 2.570        |          | 2       |         |               |              | 75-100-125-150-175 |
| Station: BCH 3                                                                 | 3       | <input type="checkbox"/> | 3         | 690     | 40        | 8.1           | 5.425        |          | 3       |         |               |              |                    |
| Event Date (Local): 17-05-13                                                   | 4       | <input type="checkbox"/> |           |         |           |               |              |          | 4       |         |               |              |                    |
| Analysis Date (Local):                                                         | 5       | <input type="checkbox"/> |           |         |           |               |              |          | 5       |         |               |              |                    |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/> |           |         |           |               |              |          | 6       |         |               |              |                    |
| Stdization Date (Local):                                                       | 7       | <input type="checkbox"/> |           |         |           |               |              |          | 7       |         |               |              |                    |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> |           |         |           |               |              |          | 8       |         |               |              |                    |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |          | 9       |         |               |              |                    |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |          | 10      |         |               |              |                    |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |          | 11      |         |               |              |                    |
| Sample Flask (Yes)                                                             | 12      | <input type="checkbox"/> |           |         |           |               |              |          | 12      |         |               |              |                    |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |          | 13      |         |               |              |                    |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |          | 14      |         |               |              |                    |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |          | 15      |         |               |              |                    |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |          | 16      |         |               |              |                    |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |          | 17      |         |               |              |                    |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |          | 18      |         |               |              |                    |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |          | 19      |         |               |              |                    |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |          | 20      |         |               |              |                    |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |          | 21      |         |               |              |                    |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |          | 22      |         |               |              |                    |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |          | 23      |         |               |              |                    |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |          | 24      |         |               |              |                    |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|----------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> |           |         |           |               |              |          | 1       |         |               |              |          |
| Event: 12 16                                                                   | 2       | <input type="checkbox"/> | 1         | 3038    | 202       | 6.8           | 1.939        |          | 2       |         |               |              |          |
| Station: BCH2                                                                  | 3       | <input type="checkbox"/> | 2         | 510     | 130       | 7.3           | 2.659        |          | 3       |         |               |              |          |
| Event Date (Local): 17-05-13                                                   | 4       | <input type="checkbox"/> |           |         |           |               |              |          | 4       |         |               |              |          |
| Analysis Date (Local):                                                         | 5       | <input type="checkbox"/> |           |         |           |               |              |          | 5       |         |               |              |          |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/> | 3         | 621     | 30        | 8.5           | 4.431        |          | 6       |         |               |              |          |
| Stdization Date (Local):                                                       | 7       | <input type="checkbox"/> |           |         |           |               |              |          | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> |           |         |           |               |              |          | 8       |         |               |              |          |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |          | 9       |         |               |              |          |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |          | 10      |         |               |              |          |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |          | 11      |         |               |              |          |
| Sample Flask                                                                   | 12      | <input type="checkbox"/> |           |         |           |               |              |          | 12      |         |               |              |          |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |          | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |          | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |          | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |          | 16      |         |               |              |          |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |          | 17      |         |               |              |          |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |          | 18      |         |               |              |          |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |          | 19      |         |               |              |          |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |          | 20      |         |               |              |          |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |          | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |          | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |          | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |          | 24      |         |               |              |          |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                               | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments                        |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|----------------------------------------|---------|---------|---------------|--------------|---------------------------------|
| Cruise Number: 2013-30                                                         | 1       | <input type="checkbox"/> | 1         | 2025    | 94        | 7.7           | 1.274        | Bubble formed in tube during titration | 1       |         |               |              |                                 |
| Event: 13 17                                                                   | 2       | <input type="checkbox"/> |           |         |           |               |              |                                        | 2       |         |               |              |                                 |
| Station: EPD                                                                   | 3       | <input type="checkbox"/> | 2         | 569     | 70        | 7.9           | 1.222        |                                        | 3       | 2059    | 7.9           | 0.513        |                                 |
| Event Date (Local): 17-05-13                                                   | 4       | <input type="checkbox"/> |           |         |           |               |              |                                        | 4       |         |               |              |                                 |
| Analysis Date (Local):                                                         | 5       | <input type="checkbox"/> | 3         | 2020    | 10        | 10.1          | 1.212        |                                        | 5       |         |               |              | Bottle may have some dirt crown |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/> |           |         |           |               |              |                                        | 6       |         |               |              | RM                              |
| Stdization Date (Local):                                                       | 7       | <input type="checkbox"/> |           |         |           |               |              |                                        | 7       |         |               |              |                                 |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> |           |         |           |               |              |                                        | 8       |         |               |              |                                 |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |                                        | 9       |         |               |              |                                 |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |                                        | 10      |         |               |              |                                 |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |                                        | 11      |         |               |              |                                 |
| Sample Flask Yes                                                               | 12      | <input type="checkbox"/> |           |         |           |               |              |                                        | 12      |         |               |              |                                 |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                                        | 13      |         |               |              |                                 |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                                        | 14      |         |               |              |                                 |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                                        | 15      |         |               |              |                                 |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                                        | 16      |         |               |              |                                 |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                                        | 17      |         |               |              |                                 |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                                        | 18      |         |               |              |                                 |
|                                                                                | 19      | <input type="checkbox"/> |           |         |           |               |              |                                        | 19      |         |               |              |                                 |
| Notes: Folger Deep Platform                                                    | 20      | <input type="checkbox"/> |           |         |           |               |              |                                        | 20      |         |               |              |                                 |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                                        | 21      |         |               |              |                                 |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                                        | 22      |         |               |              |                                 |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                                        | 23      |         |               |              |                                 |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                                        | 24      |         |               |              |                                 |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                            | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                        | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments                                                |
|--------------------------------------------------------------------------------|---------|-------------------------------------|-----------|---------|-----------|---------------|--------------|---------------------------------|---------|---------|---------------|--------------|---------------------------------------------------------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/>            | 1         | 2016    | 93        | 7.9           | 0.61         | Dosage Rate Jumped to 0.008     | 1       |         |               |              | Noticed bubbles in H <sub>2</sub> SO <sub>4</sub> disp. |
| Event: 14 18                                                                   | 2       | <input type="checkbox"/>            |           |         |           |               |              | Reset colorimeter after sample  | 2       |         |               |              |                                                         |
| Station: EFF-15                                                                | 3       | <input type="checkbox"/>            | 2         | 147     | 75        | 7.8           | —            | Vge bubble appears, seem to be  | 3       |         |               |              | from the decompression                                  |
| Event Date (Local): 05-17-13                                                   | 4       | <input type="checkbox"/>            |           |         |           |               |              |                                 | 4       |         |               |              |                                                         |
| Analysis Date (Local): 05-18-13                                                | 5       | <input type="checkbox"/>            | 3         | 1050    | 50        | 8.3           | 3.918        | ⚠ Depth is wrong in prog → = 50 | 5       |         |               |              | Station = EFF 15                                        |
| Analyst: FG + KD                                                               | 6       | <input type="checkbox"/>            |           |         |           |               |              |                                 | 6       |         |               |              |                                                         |
| Stdization Date (Local):                                                       | 7       | <input checked="" type="checkbox"/> | 4         | 663     | 30        | 9.0           | 5.100        |                                 | 7       |         |               |              |                                                         |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input checked="" type="checkbox"/> |           |         |           |               |              |                                 | 8       |         |               |              |                                                         |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/>            | 5         | 2032    | 20        | 9.4           | 5.718        |                                 | 9       |         |               |              |                                                         |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 10      |         |               |              |                                                         |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 11      |         |               |              |                                                         |
| Sample Flask Water Seal? <input checked="" type="checkbox"/> Yes               | 12      | <input type="checkbox"/>            | 6         | 2014    | 10        | 9.8           | 6.507        |                                 | 12      |         |               |              |                                                         |
|                                                                                | 13      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 13      |         |               |              |                                                         |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input checked="" type="checkbox"/> | 7         | 1054    | 5         | 10.3          | 7.184        |                                 | 14      | 2043    | 10.3          | 7.181        |                                                         |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 15      |         |               |              |                                                         |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/>            | 8         | 745     | 0         | 10.6          |              |                                 | 16      |         |               |              |                                                         |
|                                                                                | 17      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 17      |         |               |              |                                                         |
|                                                                                | 18      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 18      |         |               |              |                                                         |
| Notes:                                                                         | 19      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 19      |         |               |              |                                                         |
| The room was getting colder. T° changed.                                       | 20      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 20      |         |               |              |                                                         |
| We closed the doors.                                                           | 21      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 21      |         |               |              |                                                         |
|                                                                                | 22      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 22      |         |               |              |                                                         |
|                                                                                | 23      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 23      |         |               |              |                                                         |
|                                                                                | 24      | <input type="checkbox"/>            |           |         |           |               |              |                                 | 24      |         |               |              |                                                         |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                            | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments             | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|-------------------------------------|-----------|---------|-----------|---------------|--------------|----------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/>            | 1         | 2019    | 103       | 7.8           | 2.408        |                      | 1       |         |               |              |          |
| Event: 19                                                                      | 2       | <input type="checkbox"/>            | 2         | 3121    | 75        | 8.0           | 2.567        |                      | 2       |         |               |              |          |
| Station: EFF-14                                                                | 3       | <input type="checkbox"/>            | 3         | 632     | 50        | 8.5           | 3.317        |                      | 3       |         |               |              |          |
| Event Date (Local): MAY 17, 2013                                               | 4       | <input type="checkbox"/>            | 4         | 468     | 30        | 9.0           | 5.326        |                      | 4       |         |               |              |          |
| Analysis Date (Local): 18-05-2013                                              | 5       | <input type="checkbox"/>            | 5         | 3040    | 20        | 9.2           | 5.695        |                      | 5       |         |               |              |          |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/>            | 6         | 639     | 10        | 10.0          | 6.675        |                      | 6       |         |               |              |          |
| Stdization Date (Local): 16-05-2013                                            | 7       | <input type="checkbox"/>            | 7         | 205     | 5         | 10.3          | 7.227        |                      | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input checked="" type="checkbox"/> | 8         | 620     | 0         | 11.5          | 7.810        | curve very irregular | 8       | 2040    | 11.5          | 7.751        |          |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/>            |           |         |           |               |              |                      | 9       |         |               |              |          |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/>            |           |         |           |               |              |                      | 10      |         |               |              |          |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/>            |           |         |           |               |              |                      | 11      |         |               |              |          |
| Sample Flask (Yes)                                                             | 12      | <input type="checkbox"/>            |           |         |           |               |              |                      | 12      |         |               |              |          |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/>            |           |         |           |               |              |                      | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/>            |           |         |           |               |              |                      | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/>            |           |         |           |               |              |                      | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/>            |           |         |           |               |              |                      | 16      |         |               |              |          |
|                                                                                | 17      | <input type="checkbox"/>            |           |         |           |               |              |                      | 17      |         |               |              |          |
|                                                                                | 18      | <input type="checkbox"/>            |           |         |           |               |              |                      | 18      |         |               |              |          |
|                                                                                | 19      | <input type="checkbox"/>            |           |         |           |               |              |                      | 19      |         |               |              |          |
| Notes: Start to follow event from CTD log                                      | 20      | <input type="checkbox"/>            |           |         |           |               |              |                      | 20      |         |               |              |          |
|                                                                                | 21      | <input type="checkbox"/>            |           |         |           |               |              |                      | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/>            |           |         |           |               |              |                      | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/>            |           |         |           |               |              |                      | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/>            |           |         |           |               |              |                      | 24      |         |               |              |          |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                        | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments          |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|---------------------------------|---------|---------|---------------|--------------|-------------------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 2056    | 99        | 7.7           | 2.220        |                                 | 1       | 3075    | 7.8           | 2.319        | *imp 3075 is not  |
| Event: 20                                                                      | 2       | <input type="checkbox"/> | 2         | 611     | 75        | 7.9           | 2.550        |                                 | 2       |         |               |              | a valid number, I |
| Station: EFF-13                                                                | 3       | <input type="checkbox"/> | 3         | 631     | 50        | 8.3           | 3.671        |                                 | 3       |         |               |              | pick 302.9        |
| Event Date (Local): MAY 18, 2013                                               | 4       | <input type="checkbox"/> | 4         | 2049    | 30        | 8.9           | 5.582        |                                 | 4       |         |               |              |                   |
| Analysis Date (Local): 2013-05-18                                              | 5       | <input type="checkbox"/> | 5         | 3047    | 20        | 9.6           | 7.035        | The curve didn't appear. Redo   | 5       |         |               |              |                   |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/> | 6         | 510     | 10        | 10.3          | 7.625        | curve still going crazy my zero | 6       |         |               |              |                   |
| Stdization Date (Local): 2013-05-16                                            | 7       | <input type="checkbox"/> | 7         | 1012    | 5         | 11.1          | 8.007        |                                 | 7       |         |               |              |                   |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> | 8         | 2055    | 0         | 11.4          | 8.015        |                                 | 8       |         |               |              |                   |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |                                 | 9       |         |               |              |                   |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |                                 | 10      |         |               |              |                   |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |                                 | 11      |         |               |              |                   |
| Sample Flask Yes                                                               | 12      | <input type="checkbox"/> |           |         |           |               |              |                                 | 12      |         |               |              |                   |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                                 | 13      |         |               |              |                   |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                                 | 14      |         |               |              |                   |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                                 | 15      |         |               |              |                   |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                                 | 16      |         |               |              |                   |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                                 | 17      |         |               |              |                   |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                                 | 18      |         |               |              |                   |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |                                 | 19      |         |               |              |                   |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                                 | 20      |         |               |              |                   |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                                 | 21      |         |               |              |                   |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                                 | 22      |         |               |              |                   |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                                 | 23      |         |               |              |                   |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                                 | 24      |         |               |              |                   |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments               | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 690     | 90        | 7.9           | 2.900        |                        | 1       |         |               |              |          |
| Event: 21                                                                      | 2       | <input type="checkbox"/> | 2         | 3142    | 75        | 7.9           | 2.567        |                        | 2       |         |               |              |          |
| Station: CFF12                                                                 | 3       | <input type="checkbox"/> | 3         | 621     | 50        | 8.1           | 2.728        |                        | 3       |         |               |              |          |
| Event Date (Local): MAY 18, 2013                                               | 4       | <input type="checkbox"/> | 4         | 712     | 30        | 8.7           | 5.248        |                        | 4       |         |               |              |          |
| Analysis Date (Local):                                                         | 5       | <input type="checkbox"/> | 5         | 3088    | 20        | 9.2           | 6.907        |                        | 5       | 2090    | 9.3           | 6.928        |          |
| Analyst: FG                                                                    | 6       | <input type="checkbox"/> | 6         | 1053    | 10        | 10.1          | 8.403        |                        | 6       |         |               |              |          |
| Stdization Date (Local): 2013-05-16                                            | 7       | <input type="checkbox"/> | 7         | 3209    | 5         | 11.4          | 8.369        | ?                      | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.0098782                                                  | 8       | <input type="checkbox"/> | 8         | 715     | 0         | 11.9          | 8.207        | ? very irregular curve | 8       |         |               |              |          |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |                        | 9       |         |               |              |          |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |                        | 10      |         |               |              |          |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |                        | 11      |         |               |              |          |
| Sample Flask Yes                                                               | 12      | <input type="checkbox"/> |           |         |           |               |              |                        | 12      |         |               |              |          |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                        | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                        | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                        | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                        | 16      |         |               |              |          |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                        | 17      |         |               |              |          |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                        | 18      |         |               |              |          |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |                        | 19      |         |               |              |          |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                        | 20      |         |               |              |          |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                        | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                        | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                        | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                        | 24      |         |               |              |          |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                    | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments                                                           |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|-----------------------------|---------|---------|---------------|--------------|--------------------------------------------------------------------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 3111    | 85        | 7.9           | 2.121        |                             | 1       |         |               |              |                                                                    |
| Event: 22                                                                      | 2       | <input type="checkbox"/> | 2         | 2065    | 75        | 8.0           | 2.283        |                             | 2       |         |               |              |                                                                    |
| Station: EFF-11                                                                | 3       | <input type="checkbox"/> | 3         | 3009    | 50        | 8.3           | 2.187        | 3067 should be 3009 in prog | 3       | 3190    | 8.4           | 2.279        |                                                                    |
| Event Date (Local): May 18, 2013                                               | 4       | <input type="checkbox"/> | 4         | 2086    | 30        | 8.7           | 3.963        | sample ID was marked as 63  | 4       |         |               |              |                                                                    |
| Analysis Date (Local):                                                         | 5       | <input type="checkbox"/> | 5         | 2088    | 20        | 9.3           | 6.783        |                             | 5       |         |               |              |                                                                    |
| Analyst: FRANCOISE / KAREN                                                     | 6       | <input type="checkbox"/> | 6         | 5196    | 10        | 10.1          | 8.176        |                             | 6       |         |               |              |                                                                    |
| Stdization Date (Local):                                                       | 7       | <input type="checkbox"/> | 7         | 2064    | 5         | 11.6          | 8.887        |                             | 7       |         |               |              |                                                                    |
| KIO <sub>3</sub> N: 0.0098792                                                  | 8       | <input type="checkbox"/> | 8         | 1094    | 0         | 12.7          | 8.355        |                             | 8       | 3043    | 12.8          | 8.236        | slight delay after adding H <sub>2</sub> SO <sub>4</sub> → ~ 2 min |
| Standard Titer: 0.7073                                                         | 9       | <input type="checkbox"/> |           |         | 0         |               |              |                             | 9       |         |               |              |                                                                    |
| Blank Titer: 0.0017                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |                             | 10      |         |               |              |                                                                    |
| THIO N: 0.14038                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |                             | 11      |         |               |              |                                                                    |
| Sample Flask Yes                                                               | 12      | <input type="checkbox"/> |           |         |           |               |              |                             | 12      |         |               |              |                                                                    |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                             | 13      |         |               |              |                                                                    |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                             | 14      |         |               |              |                                                                    |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                             | 15      |         |               |              |                                                                    |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                             | 16      |         |               |              |                                                                    |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                             | 17      |         |               |              |                                                                    |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                             | 18      |         |               |              |                                                                    |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |                             | 19      |         |               |              |                                                                    |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                             | 20      |         |               |              |                                                                    |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                             | 21      |         |               |              |                                                                    |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                             | 22      |         |               |              |                                                                    |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                             | 23      |         |               |              |                                                                    |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                             | 24      |         |               |              |                                                                    |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                                | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|-----------------------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 2098    | 92        | 7.9           | 1.985        | Bubble just above stir bar              | 1       |         |               |              |          |
| Event: 23                                                                      | 2       | <input type="checkbox"/> | 2         | 3119    | 75        | 7.9           | 2.028        |                                         | 2       |         |               |              |          |
| Station: EFF-10                                                                | 3       | <input type="checkbox"/> | 3         | 3067    | 50        | 8.1           | 2.359        | transmissivity < 60? No visible bubbles | 3       | 3118    | 8.3           | 2.101        |          |
| Event Date (Local): May 18, 2013                                               | 4       | <input type="checkbox"/> | 4         | 2007    | 30        | 8.7           | 4.506        |                                         | 4       |         |               |              |          |
| Analysis Date (Local): May 19, 2013                                            | 5       | <input type="checkbox"/> | 5         | 657     | 20        | 9.2           | 6.859        |                                         | 5       |         |               |              |          |
| Analyst: K Douglas                                                             | 6       | <input type="checkbox"/> | 6         | 2063    | 10        | 9.9           | 8.083        |                                         | 6       |         |               |              |          |
| Stdization Date (Local): May 19 2013                                           | 7       | <input type="checkbox"/> | 7         | 2097    | 5         | 12.3          | 8.317        |                                         | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.098716                                                   | 8       | <input type="checkbox"/> | 8         | 3135    | 0         | 12.7          | 8.536        | Bubbles transmissivity < 50             | 8       |         |               |              |          |
| Standard Titer: 0.7040                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |                                         | 9       |         |               |              |          |
| Blank Titer: 0.0027                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |                                         | 10      |         |               |              |          |
| THIO N: 0.14124                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |                                         | 11      |         |               |              |          |
| Sample Flask Yes                                                               | 12      | <input type="checkbox"/> |           |         |           |               |              |                                         | 12      |         |               |              |          |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                                         | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                                         | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                                         | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                                         | 16      |         |               |              |          |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                                         | 17      |         |               |              |          |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                                         | 18      |         |               |              |          |
|                                                                                | 19      | <input type="checkbox"/> |           |         |           |               |              |                                         | 19      |         |               |              |          |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                                         | 20      |         |               |              |          |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                                         | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                                         | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                                         | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                                         | 24      |         |               |              |          |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                            | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                         | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|-------------------------------------|-----------|---------|-----------|---------------|--------------|----------------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/>            | 1         | 471     | 62        | 8.3           | 2.959        | transmissivity < 40, weird curve | 1       |         |               |              |          |
| Event: 24                                                                      | 2       | <input type="checkbox"/>            | 2         | 557     | 50        | 8.4           | 1.988        |                                  | 2       |         |               |              |          |
| Station: EFF-09                                                                | 3       | <input checked="" type="checkbox"/> | 3         | 371     | 30        | 8.6           | 4.506        |                                  | 3       |         |               |              |          |
| Event Date (Local): 18-May-2013                                                | 4       | <input type="checkbox"/>            | 4         | 2099    | 20        | 9.2           | 6.981        |                                  | 4       |         |               |              |          |
| Analysis Date (Local): 19-MAY-2013                                             | 5       | <input type="checkbox"/>            | 5         | 2061    | 10        | 10.2          | 8.554        |                                  | 5       |         |               |              |          |
| Analyst: KD                                                                    | 6       | <input type="checkbox"/>            | 6         | 3019    | 5         | 11.3          | 9.248        |                                  | 6       |         |               |              |          |
| Stdization Date (Local): 19-MAY-2013                                           | 7       | <input type="checkbox"/>            | 7         | 622     | 0         | 12.4          | 8.841        |                                  | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.0098716                                                  | 8       | <input type="checkbox"/>            |           |         |           |               |              | 8                                |         |         |               |              |          |
| Standard Titer: 0.7040                                                         | 9       | <input type="checkbox"/>            |           |         |           |               |              | 9                                |         |         |               |              |          |
| Blank Titer: 0.0027                                                            | 10      | <input type="checkbox"/>            |           |         |           |               |              | 10                               |         |         |               |              |          |
| THIO N: 0.14124                                                                | 11      | <input type="checkbox"/>            |           |         |           |               |              | 11                               |         |         |               |              |          |
| Sample Flask Yes                                                               | 12      | <input type="checkbox"/>            |           |         |           |               |              | 12                               |         |         |               |              |          |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/>            |           |         |           |               |              | 13                               |         |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/>            |           |         |           |               |              | 14                               |         |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/>            |           |         |           |               |              | 15                               |         |         |               |              |          |
| NaI/NaOH                                                                       | 16      | <input type="checkbox"/>            |           |         |           |               |              | 16                               |         |         |               |              |          |
| H <sub>2</sub> SO <sub>4</sub>                                                 | 17      | <input type="checkbox"/>            |           |         |           |               |              | 17                               |         |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 18      | <input type="checkbox"/>            |           |         |           |               |              | 18                               |         |         |               |              |          |
| THIO                                                                           | 19      | <input type="checkbox"/>            |           |         |           |               |              | 19                               |         |         |               |              |          |
| Notes:                                                                         | 20      | <input type="checkbox"/>            |           |         |           |               |              | 20                               |         |         |               |              |          |
|                                                                                | 21      | <input type="checkbox"/>            |           |         |           |               |              | 21                               |         |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/>            |           |         |           |               |              | 22                               |         |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/>            |           |         |           |               |              | 23                               |         |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/>            |           |         |           |               |              | 24                               |         |         |               |              |          |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                                                        | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments                                                                            |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|-----------------------------------------------------------------|---------|---------|---------------|--------------|-------------------------------------------------------------------------------------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 2073    | 84        | 8.1           | 2.077        |                                                                 | 1       |         |               |              |                                                                                     |
| Event: 25                                                                      | 2       | <input type="checkbox"/> | 2         | 2092    | 75        | 8.0           | 2.073        |                                                                 | 2       |         |               |              |                                                                                     |
| Station: EFF-08                                                                | 3       | <input type="checkbox"/> | 3         | 3098    | 50        | 8.3           | 1.651        | This Niskie has leaked on other casts<br>→ may explain results? | 3       | 638     | 8.4           | 2.989        | Noisy curve, selected last<br>endpoint + added 1mL<br>for overtitration → new value |
| Event Date (Local): May 18, 2013                                               | 4       | <input type="checkbox"/> | 4         | 3164    | 30        | 8.9           | 5.617        |                                                                 | 4       |         |               |              |                                                                                     |
| Analysis Date (Local): May 19, 2013                                            | 5       | <input type="checkbox"/> | 5         | 2027    | 20        | 9.2           | 7.018        |                                                                 | 5       |         |               |              | -0.584                                                                              |
| Analyst: KD                                                                    | 6       | <input type="checkbox"/> | 6         | 3035    | 10        | 9.8           | 8.248        |                                                                 | 6       |         |               |              |                                                                                     |
| Stdization Date (Local): May 19, 2013                                          | 7       | <input type="checkbox"/> | 7         | 3037    | 5         | 11.5          | 9.320        |                                                                 | 7       |         |               |              |                                                                                     |
| KIO <sub>3</sub> N: 0.0098716                                                  | 8       | <input type="checkbox"/> | 8         | 3033    | 0         | 12.9          | 7.779        |                                                                 | 8       |         |               |              |                                                                                     |
| Standard Titer: 0.7040                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 9       |         |               |              |                                                                                     |
| Blank Titer: 0.0027                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 10      |         |               |              |                                                                                     |
| THIO N: 0.14124                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 11      |         |               |              |                                                                                     |
| Sample Flask Yes                                                               | 12      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 12      |         |               |              |                                                                                     |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 13      |         |               |              |                                                                                     |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 14      |         |               |              |                                                                                     |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 15      |         |               |              |                                                                                     |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 16      |         |               |              |                                                                                     |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 17      |         |               |              |                                                                                     |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 18      |         |               |              |                                                                                     |
|                                                                                | 19      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 19      |         |               |              |                                                                                     |
| Notes:                                                                         | 20      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 20      |         |               |              |                                                                                     |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 21      |         |               |              |                                                                                     |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 22      |         |               |              |                                                                                     |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 23      |         |               |              |                                                                                     |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 24      |         |               |              |                                                                                     |

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| Cruise and Analysis Information                                                |                                | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                                        | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|--------------------------------|-----------|---------|-----------|---------------|--------------|-------------------------------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number:                                                                 | 2013-36                        | 1         | 3032    | 116       | 7.9           | 2.135        |                                                 | 1       |         |               |              |          |
| Event:                                                                         | 26                             | 2         | 3022    | 100       | 8.0           | 2.124        |                                                 | 2       |         |               |              |          |
| Station:                                                                       | EFF-07                         | 3         | 3023    | 75        | 7.9           | 2.092        |                                                 | 3       |         |               |              |          |
| Event Date (Local):                                                            | May 18, 2013                   | 4         | 2059    | 50        | 8.5           | 1.415        | Bubbles in H <sub>2</sub> SO <sub>4</sub> Disp. | 4       |         |               |              |          |
| Analysis Date (Local):                                                         | May 19, 2013                   | 5         | 3014    | 30        | 8.6           | 3.995        |                                                 | 5       |         |               |              |          |
| Analyst:                                                                       | KD                             | 6         | 3018    | 20        | 8.9           | 6.584        |                                                 | 6       |         |               |              |          |
| Stdization Date (Local):                                                       | May 19, 2013                   | 7         | 3020    | 10        | 9.9           | 8.779        |                                                 | 7       |         |               |              |          |
| KIO <sub>3</sub> N:                                                            | 0.0098716                      | 8         | 3021    | 5         | 10.9          | 9.641        | Noisy Curve                                     |         | 3084    | 11.0          | 9.653        |          |
| Standard Titer:                                                                | 0.7040                         | 9         | 3028    | 0         | 12.8          | 8.231        |                                                 |         |         |               |              |          |
| Blank Titer:                                                                   | 0.0027                         | 10        |         |           |               |              |                                                 | 10      |         |               |              |          |
| THIO N:                                                                        | 0.14124                        | 11        |         |           |               |              |                                                 | 11      |         |               |              |          |
| Sample Flask                                                                   | Yes                            | 12        |         |           |               |              |                                                 | 12      |         |               |              |          |
| Water Seal?                                                                    | No                             | 13        |         |           |               |              |                                                 | 13      |         |               |              |          |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 14        |         |           |               |              |                                                 | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 15        |         |           |               |              |                                                 | 15      |         |               |              |          |
|                                                                                | H <sub>2</sub> SO <sub>4</sub> | 16        |         |           |               |              |                                                 | 16      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | KIO <sub>3</sub>               | 17        |         |           |               |              |                                                 | 17      |         |               |              |          |
|                                                                                | THIO                           | 18        |         |           |               |              |                                                 | 18      |         |               |              |          |
| Notes:                                                                         |                                | 19        |         |           |               |              |                                                 | 19      |         |               |              |          |
|                                                                                |                                | 20        |         |           |               |              |                                                 | 20      |         |               |              |          |
|                                                                                |                                | 21        |         |           |               |              |                                                 |         |         |               |              |          |
|                                                                                |                                | 22        |         |           |               |              |                                                 | 22      |         |               |              |          |
|                                                                                |                                | 23        |         |           |               |              |                                                 | 23      |         |               |              |          |
|                                                                                |                                | 24        |         |           |               |              |                                                 | 24      |         |               |              |          |

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| Cruise and Analysis Information                                                |                                | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments              | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|--------------------------------|-----------|---------|-----------|---------------|--------------|-----------------------|---------|---------|---------------|--------------|----------|
| Cruise Number:                                                                 | 2013-36                        | 1         | 2084    | 146       | 8.0           | 2.137        |                       | 1       |         |               |              |          |
| Event:                                                                         | 27                             | 2         | 2086    | 125       | 8.1           | 2.155        |                       | 2       |         |               |              |          |
| Station:                                                                       | EFF-08                         | 3         | 396     | 100       | 7.9           | 2.111        |                       | 3       |         |               |              |          |
| Event Date (Local):                                                            | 18 May, 2013                   | 4         | 2069    | 75        | 7.9           | 2.044        |                       | 4       |         |               |              |          |
| Analysis Date (Local):                                                         | 19 MAY 2013                    | 5         | 3034    | 50        | 8.1           | 1.580        |                       | 5       |         |               |              |          |
| Analyst:                                                                       | KD                             | 6         | 2035    | 30        | 8.7           | 2.709        |                       | 6       | 552     | 8.7           | 2.697        |          |
| Stdization Date (Local):                                                       | 19 May 2013                    | 7         | 3007    | 20        | 8.7           | 5.870        |                       |         |         |               |              |          |
| KIO <sub>3</sub> N:                                                            | 0.0048716                      | 8         | 3010    | 10        | 9.8           | 8.708        | Noisy curve           | 8       |         |               |              |          |
| Standard Titer:                                                                | 0.7040                         | 9         | 708     | 5         | 10.3          | 9.572        |                       | 9       |         |               |              |          |
| Blank Titer:                                                                   | 0.0027                         | 10        | 3104    | 0         | 12.7          | 7.826        | Red line did not draw | 10      |         |               |              |          |
| THIO N:                                                                        | 0.14124                        | 11        |         |           |               |              |                       | 11      |         |               |              |          |
| Sample Flask                                                                   | Yes                            | 12        |         |           |               |              |                       |         |         |               |              |          |
| Water Seal?                                                                    | No                             | 13        |         |           |               |              |                       | 13      |         |               |              |          |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 14        |         |           |               |              |                       | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 15        |         |           |               |              |                       | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | H <sub>2</sub> SO <sub>4</sub> | 16        |         |           |               |              |                       | 16      |         |               |              |          |
|                                                                                | KIO <sub>3</sub>               | 17        |         |           |               |              |                       | 17      |         |               |              |          |
|                                                                                | THIO                           | 18        |         |           |               |              |                       | 18      |         |               |              |          |
| Notes:                                                                         |                                | 19        |         |           |               |              |                       | 19      |         |               |              |          |
|                                                                                |                                | 20        |         |           |               |              |                       | 20      |         |               |              |          |
|                                                                                |                                | 21        |         |           |               |              |                       | 21      |         |               |              |          |
|                                                                                |                                | 22        |         |           |               |              |                       | 22      |         |               |              |          |
|                                                                                |                                | 23        |         |           |               |              |                       | 23      |         |               |              |          |
|                                                                                |                                | 24        |         |           |               |              |                       | 24      |         |               |              |          |

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| Cruise and Analysis Information                                                |                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments            | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|--------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|---------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         |                                | 1       | <input type="checkbox"/> | 1         | 3040    | 197       | 8.0           | 1.602        |                     | 1       |         |               |              |          |
| Event: 28                                                                      |                                | 2       | <input type="checkbox"/> | 2         | 2025    | 175       | 8.0           | 2.768        | transmissivity < 40 | 2       |         |               |              |          |
| Station: EFF-05                                                                |                                | 3       | <input type="checkbox"/> | 3         | 647     | 150       | 7.9           | 2.095        |                     | 3       |         |               |              |          |
| Event Date (Local): May 12, 2013                                               |                                | 4       | <input type="checkbox"/> | 4         | 2016    | 125       | 8.1           | 1.595        |                     | 4       |         |               |              |          |
| Analysis Date (Local): May 19, 2013                                            |                                | 5       | <input type="checkbox"/> | 5         | 569     | 100       | 8.1           | 1.500        |                     | 5       |         |               |              |          |
| Analyst: KD                                                                    |                                | 6       | <input type="checkbox"/> | 6         | 2020    | 75        | 8.0           | 1.721        |                     | 6       |         |               |              |          |
| Stdization Date (Local): May 19, 2013                                          |                                | 7       | <input type="checkbox"/> | 7         | 668     | 50        | 8.1           | 1.445        |                     | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.0093716                                                  |                                | 8       | <input type="checkbox"/> | 8         | 1050    | 30        | 8.7           | 3.096        |                     | 8       |         |               |              |          |
| Standard Titer: 0.7040                                                         |                                | 9       | <input type="checkbox"/> | 9         | 2032    | 20        | 9.1           | 6.653        |                     | 9       |         |               |              |          |
| Blank Titer: 0.0027                                                            |                                | 10      | <input type="checkbox"/> | 10        | 2043    | 10        | 9.7           | 9.548        |                     | 10      |         |               |              |          |
| THIO N: 0.14124                                                                |                                | 11      | <input type="checkbox"/> | 11        | 745     | 5         | 10.9          | 9.871        |                     | 11      | 690     | 11.2          | 9.711        |          |
| Sample Flask                                                                   | Yes                            | 12      | <input type="checkbox"/> | 12        | 1054    | 0         | 12.9          | 8.189        |                     |         |         |               |              |          |
| Water Seal?                                                                    | No                             | 13      | <input type="checkbox"/> |           |         |           |               |              |                     |         |         |               |              |          |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 14      | <input type="checkbox"/> |           |         |           |               |              |                     | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 15      | <input type="checkbox"/> |           |         |           |               |              |                     | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | H <sub>2</sub> SO <sub>4</sub> | 16      | <input type="checkbox"/> |           |         |           |               |              |                     | 16      |         |               |              |          |
|                                                                                | KIO <sub>3</sub>               | 17      | <input type="checkbox"/> |           |         |           |               |              |                     | 17      |         |               |              |          |
|                                                                                | THIO                           | 18      | <input type="checkbox"/> |           |         |           |               |              |                     | 18      |         |               |              |          |
| Notes:                                                                         |                                | 19      | <input type="checkbox"/> |           |         |           |               |              |                     | 19      |         |               |              |          |
|                                                                                |                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                     | 20      |         |               |              |          |
|                                                                                |                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                     | 21      |         |               |              |          |
|                                                                                |                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                     | 22      |         |               |              |          |
|                                                                                |                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                     | 23      |         |               |              |          |
|                                                                                |                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                     | 24      |         |               |              |          |

# Dissolved Oxygen Analysis Log Sheet

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                     | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|------------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         |         |                          |           | 2065    | 31        | 9.5           | —            | Big bubbles                  | 1       | 390     | 9.5           | 7.744        |          |
| Event: 29                                                                      |         |                          |           | 2014    | 20        | 9.7           | 8.487        | curve did a peak             |         |         |               |              |          |
| Station: EFF01                                                                 |         |                          |           | 3009    | 10        | 10.9          | 8.447        | leaking slightly             |         |         |               |              |          |
| Event Date (Local): May 18, 2013                                               | 4       | <input type="checkbox"/> |           | 2088    | 5         | 12.2          | 8.864        |                              | 4       |         |               |              |          |
| Analysis Date (Local): 2013-05-19                                              | 5       | <input type="checkbox"/> |           | 1094    | 0         | 11.0          | 9.185        | Taken from thermosalinograph |         |         |               |              |          |
| Analyst: FG                                                                    |         |                          |           |         |           |               |              | Big bubble in the probe      |         |         |               |              |          |
| Stdization Date (Local): 2013-05-19                                            | 7       | <input type="checkbox"/> |           |         |           |               |              | Bad result                   | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.0098716                                                  | 8       | <input type="checkbox"/> |           |         |           |               |              |                              | 8       |         |               |              |          |
| Standard Titer: 0.7040                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |                              | 9       |         |               |              |          |
| Blank Titer: 0.0027                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |                              | 10      |         |               |              |          |
| THIO N: 0.14124                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |                              |         |         |               |              |          |
| Sample Flask <input checked="" type="checkbox"/> Yes                           | 12      | <input type="checkbox"/> |           |         |           |               |              |                              | 12      |         |               |              |          |
| Water Seal? No                                                                 | 13      | <input type="checkbox"/> |           |         |           |               |              |                              | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                              | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                              | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                              |         |         |               |              |          |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                              | 17      |         |               |              |          |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                              | 18      |         |               |              |          |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |                              | 19      |         |               |              |          |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                              |         |         |               |              |          |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                              | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                              | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                              | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                              | 24      |         |               |              |          |

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                            | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) |
|--------------------------------------------------------------------------------|---------|-------------------------------------|-----------|---------|-----------|---------------|--------------|----------|---------|---------|---------------|--------------|
| Cruise Number: 2013-36                                                         | 1       | <input checked="" type="checkbox"/> | 1         | 3142    | 67        | 8.3           | 0.211        |          | 1       |         |               |              |
| Event: 30                                                                      | 2       | <input checked="" type="checkbox"/> | 2         | 621     | 50        | 8.4           | 0.068        |          | 2       |         |               |              |
| Station: EFF 02                                                                | 3       | <input checked="" type="checkbox"/> | 3         | 3038    | 30        | 8.9           | 3.179        |          | 3       | 2090    | 8.9           | 3.263        |
| Event Date (Local): May 18, 2013                                               | 4       | <input checked="" type="checkbox"/> | 4         | 1053    | 20        | 9.6           | 8.987        |          | 4       |         |               |              |
| Analysis Date (Local): May 19, 2013                                            | 5       | <input checked="" type="checkbox"/> | 5         | 3209    | 10        | 10.3          | 9.298        |          | 5       |         |               |              |
| Analyst: FG                                                                    | 6       | <input checked="" type="checkbox"/> | 6         | 715     | 5         | 11.8          | 9.144        |          | 6       |         |               |              |
| Stdization Date (Local): 2013-05-19                                            | 7       | <input checked="" type="checkbox"/> | 7         | 3111    | 0         | 9.7           | 8.353        |          | 7       |         |               |              |
| KIO <sub>3</sub> N: 0.0098716                                                  | 8       | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 8       |         |               |              |
| Standard Titer: 0.7040                                                         | 9       | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 9       |         |               |              |
| Blank Titer: 0.0027                                                            | 10      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 10      |         |               |              |
| THIO N: 0.14124                                                                | 11      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 11      |         |               |              |
| Sample Flask Water Seal? <input checked="" type="checkbox"/> Yes               | 12      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 12      |         |               |              |
|                                                                                | 13      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 13      |         |               |              |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 14      |         |               |              |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 15      |         |               |              |
| NaI/NaOH                                                                       | 16      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 16      |         |               |              |
| H <sub>2</sub> SO <sub>4</sub>                                                 | 17      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 17      |         |               |              |
| NOTE NEW BATCH IN LOG BOOK                                                     | 18      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 18      |         |               |              |
| THIO                                                                           | 19      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 19      |         |               |              |
| Notes:                                                                         | 20      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 20      |         |               |              |
|                                                                                | 21      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 21      |         |               |              |
|                                                                                | 22      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 22      |         |               |              |
|                                                                                | 23      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 23      |         |               |              |
|                                                                                | 24      | <input checked="" type="checkbox"/> |           |         |           |               |              |          | 24      |         |               |              |

# Dissolved Oxygen Analysis Log Sheet

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                             | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|--------------------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         |         |                          | 1         | 2049    | 118       | 8.3           | 1.152        | irregular curve                      | 1       |         |               |              |          |
| Event: 31                                                                      |         |                          | 2         | 510     | 75        | 8.3           | 1.201        | "                                    |         |         |               |              |          |
| Station: EFF03                                                                 |         |                          | 3         | 631     | 50        | 8.3           | 0.811        | slight leak                          | 3       |         |               |              |          |
| Event Date (Local): May 18 2013                                                |         |                          | 4         | 3047    | 30        | 8.4           | 0.284        | increase speed magnet → better curve | 4       |         |               |              |          |
| Analysis Date (Local): May 19 2013                                             |         |                          | 5         | 611     | 20        | 8.8           | 3.131        |                                      | 5       |         |               |              |          |
| Analyst: FG                                                                    |         |                          | 6         | 712     | 10        | 9.5           | 9.035        |                                      | 6       |         |               |              |          |
| Stdization Date (Local): May 19, 2013                                          |         |                          | 7         | 2055    | 5         | 10.2          | 9.838        |                                      |         |         |               |              |          |
| KIO <sub>3</sub> N: 0.0098716                                                  | 8       | <input type="checkbox"/> | 8         | 2033    | 0         | 11.8          | 9.556        |                                      | 8       |         |               |              |          |
| Standard Titer: 0.7040                                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |                                      | 9       |         |               |              |          |
| Blank Titer: 0.0027                                                            | 10      | <input type="checkbox"/> |           |         |           |               |              |                                      | 10      |         |               |              |          |
| THIO N: 0.14124                                                                | 11      | <input type="checkbox"/> |           |         |           |               |              |                                      | 11      |         |               |              |          |
| Sample Flask Water Seal? <input checked="" type="checkbox"/> Yes               | 12      | <input type="checkbox"/> |           |         |           |               |              |                                      | 12      |         |               |              |          |
|                                                                                | 13      | <input type="checkbox"/> |           |         |           |               |              |                                      | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                                      | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                                      | 15      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 16      | <input type="checkbox"/> |           |         |           |               |              |                                      |         |         |               |              |          |
|                                                                                | 17      | <input type="checkbox"/> |           |         |           |               |              |                                      | 17      |         |               |              |          |
|                                                                                | 18      | <input type="checkbox"/> |           |         |           |               |              |                                      | 18      |         |               |              |          |
| Notes:                                                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |                                      | 19      |         |               |              |          |
|                                                                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                                      |         |         |               |              |          |
|                                                                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                                      | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                                      | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                                      | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                                      | 24      |         |               |              |          |

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boat

| Cruise and Analysis Information                                                |                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                                                                                                | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|--------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|---------------------------------------------------------------------------------------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number:                                                                 | 2013-36                        | 1       | <input type="checkbox"/> | 1         | 468     | 53        | 8.6           | 1.089        | transmissivity spiked to 150%. sample did not turn colorless. REZEROED COLORIMETER PRIOR TO THIS SAMPLE | 1       |         |               |              |          |
| Event:                                                                         | 32                             | 2       | <input type="checkbox"/> | 2         | 496     | 50        | 8.5           | 1.272        |                                                                                                         | 2       |         |               |              |          |
| Station:                                                                       | ETFOA                          | 3       | <input type="checkbox"/> | 3         | 638     | 30        | 8.7           | 7.846        |                                                                                                         | 3       |         |               |              |          |
| Event Date (Local):                                                            | 2013-05-18                     | 4       | <input type="checkbox"/> | 4         | 632     | 20        | 9.3           | 3.906        | slight leak                                                                                             | 4       | 3121    | 9.3           | 7.835        |          |
| Analysis Date (Local):                                                         | 2013-05-19                     | 5       | <input type="checkbox"/> | 5         | 2015    | 10        | 10            | 9.453        |                                                                                                         | 5       |         |               |              |          |
| Analyst:                                                                       | KD                             | 6       | <input type="checkbox"/> | 6         | 2040    | 5         | 11.4          | 9.689        |                                                                                                         | 6       |         |               |              |          |
| Stdization Date (Local):                                                       | 2013-05-19                     | 7       | <input type="checkbox"/> | 7         | 2019    | 0         | 11.8          | 8.566        |                                                                                                         | 7       |         |               |              |          |
| KIO <sub>3</sub> N:                                                            | 0.0098716                      | 8       | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 8       |         |               |              |          |
| Standard Titer:                                                                | 0.7040                         | 9       | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 9       |         |               |              |          |
| Blank Titer:                                                                   | 0.0027                         | 10      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 10      |         |               |              |          |
| THIO N:                                                                        | 0.14124                        | 11      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 11      |         |               |              |          |
| Sample Flask                                                                   | Yes                            | 12      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 12      |         |               |              |          |
| Water Seal?                                                                    | No                             | 13      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 13      |         |               |              |          |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 14      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 15      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 15      |         |               |              |          |
|                                                                                | H <sub>2</sub> SO <sub>4</sub> | 16      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 16      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | KIO <sub>3</sub>               | 17      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 17      |         |               |              |          |
|                                                                                | THIO                           | 18      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 18      |         |               |              |          |
| Notes:                                                                         |                                | 19      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 19      |         |               |              |          |
|                                                                                |                                | 20      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 20      |         |               |              |          |
|                                                                                |                                | 21      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 21      |         |               |              |          |
|                                                                                |                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 22      |         |               |              |          |
|                                                                                |                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 23      |         |               |              |          |
|                                                                                |                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                                                                                                         | 24      |         |               |              |          |

# Dissolved Oxygen Analysis Log Sheet

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| Cruise and Analysis Information                                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                      | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments |
|--------------------------------------------------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|-------------------------------|---------|---------|---------------|--------------|----------|
| Cruise Number: 2013-36                                                         | 1       | <input type="checkbox"/> | 1         | 2063    | 1478      | 3.8           | 0.772        | curve in stairs               | 1       |         |               |              |          |
| Event: 33                                                                      | 2       | <input type="checkbox"/> | 1         | 2077    | 1478      |               |              | Flasks were outside and it is | 2       |         |               |              |          |
| Station: BCH-15                                                                | 3       | <input type="checkbox"/> | 2         | 2077    | 900       | 4.4           | 0.261        | very cold.                    | 3       |         |               |              |          |
| Event Date (Local): May 19, 2013                                               | 4       | <input type="checkbox"/> | 2         |         | 900       |               |              |                               | 4       |         |               |              |          |
| Analysis Date (Local):                                                         | 5       | <input type="checkbox"/> | 3         | 3135    | 400       | 5.9           | 1.061        |                               | 5       |         |               |              |          |
| Analyst:                                                                       | 6       | <input type="checkbox"/> | 3         |         | 400       |               |              |                               | 6       |         |               |              |          |
| Stdization Date (Local):                                                       | 7       | <input type="checkbox"/> | 4         | 2098    | 200       | 7.0           | 3.265        |                               | 7       |         |               |              |          |
| KIO <sub>3</sub> N: 0.00987126                                                 | 8       | <input type="checkbox"/> | 4         |         | 200       |               |              |                               | 8       |         |               |              |          |
| Standard Titer:                                                                | 9       | <input type="checkbox"/> | 5         | 2007    | 50        | 8.0           | 6.711        |                               | 9       |         |               |              |          |
| Blank Titer:                                                                   | 10      | <input type="checkbox"/> | 5         |         | 50        |               |              |                               | 10      |         |               |              |          |
| THIO N:                                                                        | 11      | <input type="checkbox"/> | 6         | 2064    | 20        | 10.1          | 6.912        | Bubble in the probe.          | 11      |         |               |              |          |
| Sample Flask Water Seal? <input checked="" type="checkbox"/> Yes               | 12      | <input type="checkbox"/> | 6         |         | 20        |               |              | Bad curve, Do not consider    | 12      |         |               |              |          |
| No                                                                             | 13      | <input type="checkbox"/> |           |         |           |               |              | this point.                   | 13      |         |               |              |          |
| Reagent Change? MnCl <sub>2</sub>                                              | 14      | <input type="checkbox"/> |           |         |           |               |              |                               | 14      |         |               |              |          |
| (Please circle reagent that was changed prior to sampling and standardization) | 15      | <input type="checkbox"/> |           |         |           |               |              |                               | 15      |         |               |              |          |
| NaI/NaOH                                                                       | 16      | <input type="checkbox"/> |           |         |           |               |              |                               | 16      |         |               |              |          |
| H <sub>2</sub> SO <sub>4</sub>                                                 | 17      | <input type="checkbox"/> |           |         |           |               |              |                               | 17      |         |               |              |          |
| NOTE NEW BATCH IN LOG BOOK                                                     | 18      | <input type="checkbox"/> |           |         |           |               |              |                               | 18      |         |               |              |          |
| KIO <sub>3</sub>                                                               | 19      | <input type="checkbox"/> |           |         |           |               |              |                               | 19      |         |               |              |          |
| THIO                                                                           | 20      | <input type="checkbox"/> |           |         |           |               |              |                               | 20      |         |               |              |          |
| Notes:                                                                         | 21      | <input type="checkbox"/> |           |         |           |               |              |                               | 21      |         |               |              |          |
|                                                                                | 22      | <input type="checkbox"/> |           |         |           |               |              |                               | 22      |         |               |              |          |
|                                                                                | 23      | <input type="checkbox"/> |           |         |           |               |              |                               | 23      |         |               |              |          |
|                                                                                | 24      | <input type="checkbox"/> |           |         |           |               |              |                               | 24      |         |               |              |          |

# Dissolved Oxygen Analysis Log Sheet

Last Updated: December 2011

Institute of Ocean Sciences  
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| Cruise and Analysis Information                                                |                                | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments                                    |
|--------------------------------------------------------------------------------|--------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|----------|---------|---------|---------------|--------------|---------------------------------------------|
| Cruise Number: 2013-36                                                         |                                |         |                          | 1         | 3043    | 1416      | 3.4           | 0.621        |          | 1       | 657     | 3.6           | 0.610        | Bubbles from H <sub>2</sub> SO <sub>4</sub> |
| Event: 34                                                                      |                                |         |                          |           |         |           |               |              |          |         |         |               |              |                                             |
| Station: BCH 14                                                                |                                |         |                          | 2         | 3118    | 900       | 4.5           | 0.237        |          | 3       |         |               |              |                                             |
| Event Date (Local): May 19, 2013                                               |                                |         |                          |           |         |           |               |              |          | 4       |         |               |              |                                             |
| Analysis Date (Local):                                                         |                                | 5       | <input type="checkbox"/> | 3         | 3019    | 400       | 5.9           | 1.019        |          | 5       |         |               |              |                                             |
| Analyst:                                                                       |                                | 6       | <input type="checkbox"/> |           |         |           |               |              |          | 6       |         |               |              |                                             |
| Stdization Date (Local):                                                       |                                | 7       | <input type="checkbox"/> | 4         | 3067    | 100       | 7.5           | 4.433        |          |         |         |               |              |                                             |
| KIO <sub>3</sub> N: 0.0098716                                                  |                                | 8       | <input type="checkbox"/> |           |         |           |               |              |          | 8       |         |               |              |                                             |
| Standard Titer:                                                                |                                | 9       | <input type="checkbox"/> | 5         | 3119    | 40        | 8.2           | 6.813        |          | 9       |         |               |              |                                             |
| Blank Titer:                                                                   |                                | 10      | <input type="checkbox"/> |           |         |           |               |              |          | 10      |         |               |              |                                             |
| THIO N:                                                                        |                                | 11      | <input type="checkbox"/> |           |         |           |               |              |          |         |         |               |              |                                             |
| Sample Flask                                                                   | Yes                            | 12      | <input type="checkbox"/> |           |         |           |               |              |          |         |         |               |              |                                             |
| Water Seal?                                                                    | No                             | 13      | <input type="checkbox"/> |           |         |           |               |              |          | 13      |         |               |              |                                             |
| Reagent Change?                                                                | MnCl <sub>2</sub>              | 14      | <input type="checkbox"/> |           |         |           |               |              |          | 14      |         |               |              |                                             |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                       | 15      | <input type="checkbox"/> |           |         |           |               |              |          | 15      |         |               |              |                                             |
|                                                                                | H <sub>2</sub> SO <sub>4</sub> | 16      | <input type="checkbox"/> |           |         |           |               |              |          |         |         |               |              |                                             |
| NOTE NEW BATCH IN LOG BOOK                                                     | KIO <sub>3</sub>               | 17      | <input type="checkbox"/> |           |         |           |               |              |          | 17      |         |               |              |                                             |
|                                                                                | THIO                           | 18      | <input type="checkbox"/> |           |         |           |               |              |          | 18      |         |               |              |                                             |
| Notes:                                                                         |                                | 19      | <input type="checkbox"/> |           |         |           |               |              |          | 19      |         |               |              |                                             |
|                                                                                |                                | 20      | <input type="checkbox"/> |           |         |           |               |              |          | 20      |         |               |              |                                             |
|                                                                                |                                | 21      | <input type="checkbox"/> |           |         |           |               |              |          | 21      |         |               |              |                                             |
|                                                                                |                                | 22      | <input type="checkbox"/> |           |         |           |               |              |          | 22      |         |               |              |                                             |
|                                                                                |                                | 23      | <input type="checkbox"/> |           |         |           |               |              |          | 23      |         |               |              |                                             |
|                                                                                |                                | 24      | <input type="checkbox"/> |           |         |           |               |              |          | 24      |         |               |              |                                             |

# Dissolved Oxygen Analysis Log Sheet

Last Updated: December 2011

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| Cruise and Analysis Information                                                |                                         | Nisk ID | Nisk Int                 | Sample ID | Flask 1 | Depth (m) | Draw T 1 (°C) | OXY 1 (mL/L) | Comments                                                        | Nisk ID | Flask 2 | Draw T 2 (°C) | OXY 2 (mL/L) | Comments                                                                                                  |
|--------------------------------------------------------------------------------|-----------------------------------------|---------|--------------------------|-----------|---------|-----------|---------------|--------------|-----------------------------------------------------------------|---------|---------|---------------|--------------|-----------------------------------------------------------------------------------------------------------|
| Cruise Number:                                                                 | 2013-36                                 |         |                          | 1         | 3033    | 709       | 5.2           | 0.369        | give a irregular curve in stain                                 | 1       |         |               |              |                                                                                                           |
| Event:                                                                         | 35                                      |         |                          | 2         | 3035    | 500       | 5.6           | 0.659        |                                                                 | 2       |         |               |              |                                                                                                           |
| Station:                                                                       | BCH 7                                   |         |                          | 3         | 3037    | 300       | 6.1           | 1.921        | Full of bubbles! Don't consider this ship is moving a lot curve | 3       |         |               |              | sample  in stain again |
| Event Date (Local):                                                            | May 20, 2013                            |         |                          | 4         | 3018    | 109       | 7.5           | 3.655        |                                                                 |         |         |               |              |                                                                                                           |
| Analysis Date (Local):                                                         | May 21                                  |         |                          | 5         | 3084    | 50        | 7.7           | 6.024        |                                                                 | 5       |         |               |              |                                                                                                           |
| Analyst:                                                                       | FG                                      | 6       | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 6       |         |               |              |                                                                                                           |
| Stdization Date (Local):                                                       |                                         | 7       | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 7       |         |               |              |                                                                                                           |
| KIO <sub>3</sub> N:                                                            | 0.0098716                               | 8       | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 8       |         |               |              |                                                                                                           |
| Standard Titer:                                                                |                                         | 9       | <input type="checkbox"/> |           |         |           |               |              |                                                                 |         |         |               |              |                                                                                                           |
| Blank Titer:                                                                   |                                         | 10      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 10      |         |               |              |                                                                                                           |
| THIO N:                                                                        |                                         | 11      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 11      |         |               |              |                                                                                                           |
| Sample Flask Water Seal?                                                       | <input checked="" type="checkbox"/> Yes | 12      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 12      |         |               |              |                                                                                                           |
|                                                                                | No                                      | 13      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 13      |         |               |              |                                                                                                           |
| Reagent Change?                                                                | MnCl <sub>2</sub>                       | 14      | <input type="checkbox"/> |           |         |           |               |              |                                                                 |         |         |               |              |                                                                                                           |
| (Please circle reagent that was changed prior to sampling and standardization) | NaI/NaOH                                | 15      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 15      |         |               |              |                                                                                                           |
|                                                                                | H <sub>2</sub> SO <sub>4</sub>          | 16      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 16      |         |               |              |                                                                                                           |
| NOTE NEW BATCH IN LOG BOOK                                                     | KIO <sub>3</sub>                        | 17      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 17      |         |               |              |                                                                                                           |
|                                                                                | THIO                                    | 18      | <input type="checkbox"/> |           |         |           |               |              |                                                                 |         |         |               |              |                                                                                                           |
| Notes:                                                                         |                                         | 19      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 19      |         |               |              |                                                                                                           |
|                                                                                |                                         | 20      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 20      |         |               |              |                                                                                                           |
|                                                                                |                                         | 21      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 21      |         |               |              |                                                                                                           |
|                                                                                |                                         | 22      | <input type="checkbox"/> |           |         |           |               |              |                                                                 |         |         |               |              |                                                                                                           |
|                                                                                |                                         | 23      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 23      |         |               |              |                                                                                                           |
|                                                                                |                                         | 24      | <input type="checkbox"/> |           |         |           |               |              |                                                                 | 24      |         |               |              |                                                                                                           |