



# Quality Assurance / Quality Control

for Status & Trend Networks Projects

DEAR / WQMP / WMS

March 2024



- **DOCUMENTATION**  
(Sampling Manual Section 12)
- **FIELD COLLECTED BLANKS**  
(Sampling Manual Section 14)
- **FIELD AUDITS**  
(Sampling Manual Section 14)



- DOCUMENTATION
- **FIELD COLLECTED BLANKS**
- **FIELD AUDITS**



# Documentation

- Provides a complete history of any data collected from project initiation to completion.
- Includes all associated activities.
- Documentation should support a complete and independent reconstruction of the sampling event.

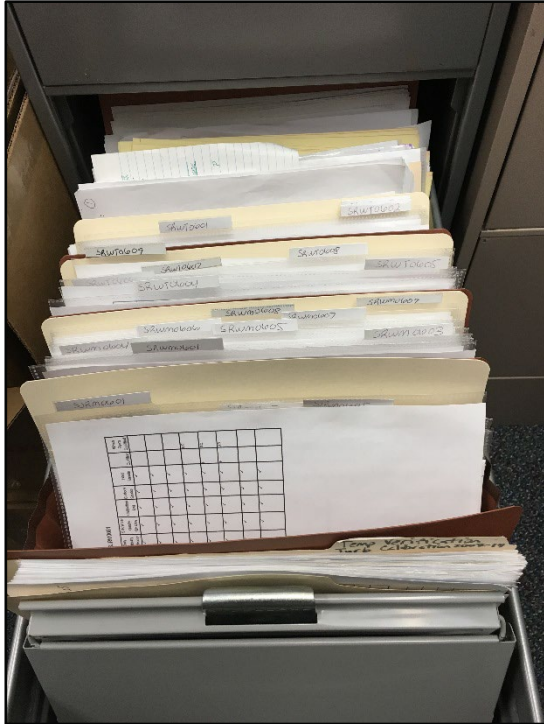
# General Documentation QA

- Do not leave spaces blank!
- Corrections: single line with initials

| PARAMETER                   | VALUE                   | QUALIFIER(S) | RESULT COMMENT |
|-----------------------------|-------------------------|--------------|----------------|
| Sample Collection Depth (m) | 0.3                     |              |                |
| Secchi Depth (m)            | <del>0.6</del> 0.5 (SS) |              |                |
| Total Depth (m)             | 5.7                     |              |                |
| Temp (°C)                   | 24.7                    |              |                |

- Use the “Comments” sections.  
**If in doubt, write it down!**

# Documentation Retention



- Status and Trend “projects” are ongoing. All records must be kept indefinitely.
- Retain paper copies – scan and distribute as needed.  
(transfer information from paper field sheets to Survey123)



# Documentation Retention

For electronic documents generated when submitting data to Survey123:

- Transfer Field Sheets and Custody Sheets from One Drive / email to a more permanent storage space.
- If edits / signatures were added remember to transfer edited version of document.



## Minimum Required Documentation for All Status & Trend Projects

- **QA Report**
- **Field Sheets**
- **Custody Sheets**
- **Calibration Log(s)**
- **Equipment Cleaning Log**
- **Equipment Maintenance Log**
- **Standards / Reagents Log**



# QA Report

## Purpose

Summarize QA activities for each project.

(Report is used by Project Manager & Data Reviewers)

## Requirements

- # of samples & blanks collected per project.
- If samples collected  $\neq$  samples scheduled, indicate why.
- Indicate if any audits were conducted.
- Describe any problems / QA issues.
- Coordination / assistance received (e.g. multiple ROCs collecting samples for a single project)

# QA Report Template

Figure 39  
Sampling  
Manual  
Page 174

## Quality Assurance Report for Status Network and Trend Network Projects

**Instructions:** Please include a completed report with each set of project paperwork sent to your Project Manager in the Watershed Monitoring Section (WMS). Multiple projects can be included in the same report if paperwork is being submitted at the same time (e.g. Surface Water and Ground Water Trend from the same month).

Name of Person Completing Report: \_\_\_\_\_ Date: \_\_\_\_\_

| Project | Number of<br>Samples<br>Scheduled | Number of<br>Samples<br>Collected* | Number of Field<br>Blanks Collected | Number of<br>Equipment<br>Blanks Collected |
|---------|-----------------------------------|------------------------------------|-------------------------------------|--------------------------------------------|
|         |                                   |                                    |                                     |                                            |
|         |                                   |                                    |                                     |                                            |
|         |                                   |                                    |                                     |                                            |
|         |                                   |                                    |                                     |                                            |

\*If number of samples collected  $\neq$  number of samples scheduled, please explain:

Were any internal audits conducted by your team during these projects? Y / N

Were any external audits conducted by WMS or other entities during these projects? Y / N

If audits were conducted, list project(s) and date(s): \_\_\_\_\_

Describe any cross-sampling or other collaborative efforts that occurred during these projects:

Describe any quality assurance issues, corrective actions, or other notable circumstances that affect data collected for these projects (e.g. equipment malfunctions, calibration verification failures, deviations from established sampling procedures):



## Minimum Required Documentation for All Status & Trend Projects

✓ QA Report

- **Field Sheets**
- **Custody Sheets**
- **Calibration Log(s)**
- **Equipment Cleaning Log**
- **Equipment Maintenance Log**
- **Standards / Reagents Log**



# Custody Sheet Cover Page

Use the most  
recent version  
Oct 2020

Lab Page 1 of \_\_\_\_

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Status & Trend Networks - Chain of Custody Form - October 2020 version

Date Shipped: \_\_\_\_\_ Collected By (Agency Code): \_\_\_\_\_

Customer: AMBIENT Sampler Names: \_\_\_\_\_

(Place RQ Label Here)

Lab Project ID (circle one): STATUS / SW-TREND /

GW-TREND / BMAP

# Coolers Shipped: \_\_\_\_\_

RQ - \_\_\_\_\_ Shipping Method (circle one): FedEx / UPS /

Project Name: \_\_\_\_\_ Greyhound / Hand Delivered

**Instructions:**

- Print this form, affix labels to form and place documentation in zipper bag taped to inside lid of cooler.
- Please return the original of this form to the lab along with sample inventory portion of field sheet for each station & blank sampled.
- Affix labels below for all samples & blanks submitted under this RQ for this collection date.

|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
|  |  |  |

Relinquished by (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

☐ ETZ  
☐ CTZ

THIS SECTION IS TO BE COMPLETED BY THE LABORATORY

Received/ Inspected By (signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ ETZ



## Minimum Required Documentation for All Status & Trend Projects

- ✓ QA Report
- ✓ Field Sheets
- ✓ Custody Sheets
- **Calibration Log(s)**
- **Equipment Cleaning Log**
- **Equipment Maintenance Log**
- **Standards / Reagents Log**

# Field Meter Calibration Log

## CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

*Boldly "X" this box if there are qualified data on this page.*

Meter ID: \_\_\_\_\_

RQ: \_\_\_\_\_

Project: \_\_\_\_\_

- Notes:** (1) Always wait for meter to stabilize before recording any readings.  
 (2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth).  
 (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

### Temperature (Quarterly) FT 1400

Date of Last Temperature Verification \_\_\_\_\_

| DO DEP SOP FT 1500 | Name | Date | Time CT-ET | Temp °C | Baro-meter mmHg | D.O. Chart mg/L | Meter D.O. mg/L | % DO | Probe Charge | Probe Gain | Pass / Fail | Lab / Field |
|--------------------|------|------|------------|---------|-----------------|-----------------|-----------------|------|--------------|------------|-------------|-------------|
| Calibr.            |      |      |            |         |                 |                 |                 |      |              |            | P / F       | L / F       |
| ICV                |      |      |            |         |                 |                 |                 |      |              |            | P / F       | L / F       |
| CCV                |      |      |            |         |                 |                 |                 |      |              |            | P / F       | L / F       |
| CCV                |      |      |            |         |                 |                 |                 |      |              |            | P / F       | L / F       |

DO Acceptance criteria from Table  $\pm 0.3$  mg/L.

**Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.

**Optical:** DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

| Spec. Cond. FT 1200 | Name | Date | Time CT-ET | Lot # | Expir. Date | Standard $\mu$ mhos/cm | Meter Reading $\mu$ mhos/cm | Pass / Fail | Lab / Field |
|---------------------|------|------|------------|-------|-------------|------------------------|-----------------------------|-------------|-------------|
| Calibr.             |      |      |            |       |             |                        |                             | P / F       | L / F       |
| ICV                 |      |      |            |       |             |                        |                             | P / F       | L / F       |
| CCV                 |      |      |            |       |             |                        |                             | P / F       | L / F       |
| CCV                 |      |      |            |       |             |                        |                             | P / F       | L / F       |

Conductivity Acceptance criteria  $\pm 5\%$

| pH DEP SOP FT 1100 | Name | Date | Time CT-ET | Lot # | Expir. Date | pH Buffer SU | Temp °C | Meter reading SU | mV | Pass / Fail | Lab / Field |
|--------------------|------|------|------------|-------|-------------|--------------|---------|------------------|----|-------------|-------------|
| Calibr.            |      |      |            |       |             | 7.           |         |                  |    | P / F       | L / F       |
| Calibr.            |      |      |            |       |             | 4.           |         |                  |    | P / F       | L / F       |
| Calibr.            |      |      |            |       |             | 10.          |         |                  |    | P / F       | L / F       |
| ICV                |      |      |            |       |             |              |         |                  |    | P / F       | L / F       |
| CCV                |      |      |            |       |             |              |         |                  |    | P / F       | L / F       |
| CCV                |      |      |            |       |             |              |         |                  |    | P / F       | L / F       |

pH Acceptance criteria  $\pm 0.2$  SU; mV pH 7 Range  $0 \pm 50$ ; mV pH 4 Range  $+180 \pm 50$ ; mV pH 10 Range  $-180 \pm 50$ ;

If mV are recorded: slope from 7 to 10 \_\_\_\_\_, slope from 4 to 7 \_\_\_\_\_ (both must be between 165 and 180 mV)

**Does meter have a depth sensor that will be used to measure total depth & sample depth?** YES / NO / NA (not surf. water project)

If YES, complete daily Calibr. & ICV below and list date of last quarterly depth verification: \_\_\_\_\_

If NO, what will be used? (circle one) **Secchi Disk Line / Sonar** Unique ID: \_\_\_\_\_; Date of last verification: \_\_\_\_\_

| Depth Sensor (Daily Calibration & ICV) | Name | Date | Time CT-ET | Calibrated Value (0.00 or Offset), meters | ICV Value, meters | Pass / Fail | Lab / Field |
|----------------------------------------|------|------|------------|-------------------------------------------|-------------------|-------------|-------------|
| Pressure mode in air                   |      |      |            |                                           |                   | P / F       | L / F       |

Report two decimal places. Round numbers  $\leq 4$  down,  $\geq 5$  up. ICV acceptance criteria  $\pm 5\%$  or  $\pm 0.05$ m, whichever is greater.

**COMMENTS:**

# Turbidity Calibration Log

(only needed for groundwater projects)

| Turbidity Calibration Log (DEP SOPs FT1000 & FT1600)<br>Regional Operations Centers                                                         |                                   |              |                                                                      |                                              |                                                                                         |                                    |                         |                |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------|----------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------|-------------------------|----------------|
| Meter ID: _____                                                                                                                             |                                   |              | Date of Last Calibration: _____                                      |                                              |                                                                                         | Project Name: _____                |                         |                |
| <b>Quarterly Calibration</b>                                                                                                                |                                   |              |                                                                      |                                              |                                                                                         |                                    |                         |                |
| Sampler Name: _____                                                                                                                         |                                   |              | Date: _____                                                          |                                              |                                                                                         | Time: _____ ETZ / CTZ (circle one) |                         |                |
| Standard Value<br>(Use Primary<br>Formazin Standards)                                                                                       | Exp. Date                         | Lot #        | Type of Information<br>Displayed During Calibration?<br>(circle one) | Value Displayed<br>NTU                       | Calibration<br>Pass / Fail<br>(circle one)                                              |                                    |                         |                |
| NTU                                                                                                                                         |                                   |              | Meter Reading / Next Value                                           |                                              | P / F                                                                                   |                                    |                         |                |
| NTU                                                                                                                                         |                                   |              | Meter Reading / Next Value                                           |                                              | P / F                                                                                   |                                    |                         |                |
| NTU                                                                                                                                         |                                   |              | Meter Reading / Next Value                                           |                                              | P / F                                                                                   |                                    |                         |                |
| NTU                                                                                                                                         |                                   |              | Meter Reading / Next Value                                           |                                              | P / F                                                                                   |                                    |                         |                |
| <b>Initial Calibration Verification (ICV)</b> (Only perform ICV immediately after quarterly calibr. Do not use < 0.1 NTU standard for ICV.) |                                   |              |                                                                      |                                              |                                                                                         |                                    |                         |                |
| Sampler Name: _____                                                                                                                         |                                   |              | Date: _____                                                          |                                              |                                                                                         | Time: _____ ETZ / CTZ (circle one) |                         |                |
| Standard Value<br>(Use A Primary<br>Formazin Standard)                                                                                      | Exp. Date                         | Lot #        | Meter Reading<br>NTU                                                 | Pass / Fail<br>(circle one)                  |                                                                                         |                                    |                         |                |
| NTU                                                                                                                                         |                                   |              |                                                                      | P / F                                        |                                                                                         |                                    |                         |                |
| <b>Secondary Gel Standard Quarterly Verification</b> (perform gel standard verification immediately after quarterly calib. and ICV)         |                                   |              |                                                                      |                                              |                                                                                         |                                    |                         |                |
| Sampler Name: _____                                                                                                                         |                                   |              | Date: _____                                                          |                                              |                                                                                         | Time: _____ ETZ / CTZ (circle one) |                         |                |
| Standard<br>Value Range<br>NTU                                                                                                              | Previous Value<br>Assigned<br>NTU | Exp. Date    | Lot #                                                                | Meter Reading<br>NTU<br>(new value assigned) | Acceptable Range, NTU<br>(Calculate using new value<br>assigned & acceptance criteria*) |                                    |                         |                |
| 0 – 10                                                                                                                                      |                                   |              |                                                                      |                                              |                                                                                         |                                    |                         |                |
| 10 – 100                                                                                                                                    |                                   |              |                                                                      |                                              |                                                                                         |                                    |                         |                |
| 100 - 1000                                                                                                                                  |                                   |              |                                                                      |                                              |                                                                                         |                                    |                         |                |
| <b>Daily Continuing Calibration Verification (CCV)</b> (required every day that meter is used)                                              |                                   |              |                                                                      |                                              |                                                                                         |                                    |                         |                |
| Date                                                                                                                                        | Time<br>(24hr)<br>CT-ET           | Sampler Name | Standard<br>Type<br>(circle one)                                     | Standard<br>Value<br>NTU                     | Exp.<br>Date                                                                            | Lot #                              | Meter<br>Reading<br>NTU | Pass /<br>Fail |
|                                                                                                                                             |                                   |              | Formazin / Gel                                                       |                                              |                                                                                         |                                    |                         | P / F          |
|                                                                                                                                             |                                   |              | Formazin / Gel                                                       |                                              |                                                                                         |                                    |                         | P / F          |
|                                                                                                                                             |                                   |              | Formazin / Gel                                                       |                                              |                                                                                         |                                    |                         | P / F          |
|                                                                                                                                             |                                   |              | Formazin / Gel                                                       |                                              |                                                                                         |                                    |                         | P / F          |
|                                                                                                                                             |                                   |              | Formazin / Gel                                                       |                                              |                                                                                         |                                    |                         | P / F          |
|                                                                                                                                             |                                   |              | Formazin / Gel                                                       |                                              |                                                                                         |                                    |                         | P / F          |
|                                                                                                                                             |                                   |              | Formazin / Gel                                                       |                                              |                                                                                         |                                    |                         | P / F          |
|                                                                                                                                             |                                   |              | Formazin / Gel                                                       |                                              |                                                                                         |                                    |                         | P / F          |
|                                                                                                                                             |                                   |              | Formazin / Gel                                                       |                                              |                                                                                         |                                    |                         | P / F          |
|                                                                                                                                             |                                   |              | Formazin / Gel                                                       |                                              |                                                                                         |                                    |                         | P / F          |
| Comments:                                                                                                                                   |                                   |              |                                                                      |                                              |                                                                                         |                                    |                         |                |

\*Acceptance Criteria: 0.1-10 NTU → ± 10 %; 11-40 NTU → ± 8 %; 41-100 NTU → ± 6.5 %; >100 NTU → ± 5 %;  
Acceptable ranges for common standards: 20 NTU (18.4 - 21.6 NTU); 100 NTU (93.5 – 106.5 NTU); 800 NTU (760 - 840 NTU)

Form Effective October 1, 2017

# Quarterly Temperature Verification Log

## Quarterly Temperature Verification Regional Operation Centers

DEP SOP FT 1400; Acceptance Criteria for Temp.  $\pm 0.5^{\circ}\text{C}$ .

Correction factor needed if acceptance criteria are exceeded.

Record all digits displayed for temperature readings. Do not round before reporting measurements.

Meter ID#: \_\_\_\_\_ Date of Last Verification: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_ ETZ / CTZ NIST Reference Device ID#: \_\_\_\_\_

Cold Bath (between  $0 - 10^{\circ}\text{C}$ ): Sonde: \_\_\_\_\_  $^{\circ}\text{C}$ ; NIST: \_\_\_\_\_  $^{\circ}\text{C}$ ; Result: Pass / Fail

Warm Bath (between  $30 - 40^{\circ}\text{C}$ ): Sonde: \_\_\_\_\_  $^{\circ}\text{C}$ ; NIST: \_\_\_\_\_  $^{\circ}\text{C}$ ; Result: Pass / Fail

Is Correction Factor Needed? Y / N If yes, describe: \_\_\_\_\_

Person Performing Verification: \_\_\_\_\_

Comments: \_\_\_\_\_

# Quarterly Depth Verification Log

(only needed for surface water projects)

## Depth Verification Regional Operation Centers

SOP - S&T Sampling Manual and ROC Training Manual.

Report two decimal places for electronic devices. Report one decimal place for manual devices.

Numbers  $\leq 4$ , are rounded down; numbers  $\geq 5$  are rounded up.

### QUARTERLY VERIFICATION OF ELECTRONIC DEVICES (SONDE, SONAR DEVICE, ETC.)

Meter / Device ID#: \_\_\_\_\_ Date of Last Verification: \_\_\_\_\_  
Date: \_\_\_\_\_ Time: \_\_\_\_\_ ETZ / CTZ Verification Location: \_\_\_\_\_  
Person Performing Verification: \_\_\_\_\_  
Reference Device: Graduated Bucket / Metal Measuring Tape / Meter Stick / Other \_\_\_\_\_  
Depth measurements: Reference Device: \_\_\_\_\_ m ; Device Being Tested: \_\_\_\_\_ m  
Result: Pass / Fail (acceptance Criteria 10%)

### 6 MONTH VERIFICATION OF MANUAL DEVICES (SECCHI DISK, WEIGHTED LINE, ETC.)

Secchi/Weighted Line ID#: \_\_\_\_\_ Date of Last Verification: \_\_\_\_\_  
Date: \_\_\_\_\_ Time: \_\_\_\_\_ ETZ / CTZ Verification Location: \_\_\_\_\_ Lab \_\_\_\_\_  
Person Performing Verification: \_\_\_\_\_  
Reference Device: Metal Measuring Tape / Meter Stick / Other \_\_\_\_\_  
Incremental markings of 0.1 m checked: YES / NO Result: Pass / Fail (acceptable criteria 10%)  
Total length of line (up to anticipated depth encountered in field) checked: YES / NO  
Total Length: indicated by line markings \_\_\_\_\_ m ; measured by reference device \_\_\_\_\_ m  
Result: Pass / Fail (acceptable criteria of 5%) Markings redone: YES / NO

# Equipment Cleaning Log

**Equipment Cleaning Log  
Regional Operation Centers**

| Equipment           | Unique ID | Date     | Time<br>(24 hr) | Location<br>(Lab /<br>Field) | Liquinox<br>Wash<br>(Y/N) | Luminox<br>Wash<br>(Y/N) | Tap<br>Water<br>Rinse<br>(Y/N) | 10%<br>HCl<br>Rinse<br>(Y/N) | DI Water<br>Rinse X3<br>(Y/N) | Other<br>(Describe) | Sampler<br>Name |
|---------------------|-----------|----------|-----------------|------------------------------|---------------------------|--------------------------|--------------------------------|------------------------------|-------------------------------|---------------------|-----------------|
| Submersible<br>pump | Diver     | 10/31/22 | 0430            | Lab                          | Y                         | N                        | Y                              | N                            | Y                             |                     | T. Riordan      |
| Van Dorn            | #1        | 4/12/19  | 1320            | Lab                          | N                         | Y                        | Y                              | Y                            | Y                             |                     | J. Burtchett    |
|                     |           |          |                 |                              |                           |                          |                                |                              |                               |                     |                 |
|                     |           |          |                 |                              |                           |                          |                                |                              |                               |                     |                 |

- For all equipment and supplies document any and all cleaning procedures
  - If groundwater pump tubing is changed before each site, document on the cleaning log, field sheet, or QA report.
- Cleaning logs can be found here [Watershed Monitoring Information Center](#)
- Contracted sampling teams may use their own cleaning logs as long as all the information is recorded



## Minimum Required Documentation for All Status & Trend Projects

- ✓ QA Report
- ✓ Field Sheets
- ✓ Custody Sheets
- ✓ Calibration Log(s)
- ✓ Equipment Cleaning Log
- **Equipment Maintenance Log**
- **Standards / Reagents Log**

# Equipment Maintenance Log

**Equipment Maintenance Log  
Regional Operation Centers**

| Equipment             | Serial #   | Unique ID # | Date    | Time  | Procedure                        | Reason               | Comments | Sampler Name      |
|-----------------------|------------|-------------|---------|-------|----------------------------------|----------------------|----------|-------------------|
| YSI                   | 06H1520 AA | Betty Boop  | 6/19/15 | 10:42 | Replace DO membrane              | Routine maintenance  |          | Natalie Ayala     |
| Ekman sediment dredge |            | 1           | 3/3/16  | 10:43 | Changed cables connecting jaws   | Old cables failed    |          | Thomas Wippick    |
| Exo 3                 | 19J105467  | Sea Cow     | 1/25/23 | 11:52 | Replaced Conductivity/Temp Probe | Replace broken probe |          | Victoria Schwartz |
|                       |            |             |         |       |                                  |                      |          |                   |
|                       |            |             |         |       |                                  |                      |          |                   |

- Specific piece(s) of equipment
- Name of person performing maintenance
- Date
- Procedure

<https://floridadep.sharepoint.com/dear/wgap/Lists/Equipment%20Maintenance%20Log/AllItems.aspx>

(Figure 26 -  
Sampling Manual)

# Standards Log

**Standard and Reagent Log  
Regional Operation Centers**

| Standard/<br>Reagent | Manufacturer | Quantity /<br>Concentration /<br>Grade | Lot #   | Date of<br>Receipt | Expiration<br>Date | Date Opened & Sampler<br>Name | Location | Date discarded<br>or verification<br>if used passed<br>expiration date |
|----------------------|--------------|----------------------------------------|---------|--------------------|--------------------|-------------------------------|----------|------------------------------------------------------------------------|
|                      | Exaxol       | pH 10                                  | 220608A | 6/20/2022          | 12/23              | 12/1/2022 RD                  |          |                                                                        |
|                      |              |                                        |         |                    |                    |                               |          |                                                                        |
|                      |              |                                        |         |                    |                    |                               |          |                                                                        |
|                      |              |                                        |         |                    |                    |                               |          |                                                                        |

- Manufacturer
- Standard value
- Lot number
- Date received
- Expiration date
- Date opened/initials

<https://floridadep.sharepoint.com/dear/wgap/Lists/Standard%20and%20Reagent%20Log/AllItems.aspx>

(Figure 25 -  
Sampling Manual)



# Documentation QA – Data Qualifiers

- Add data qualifiers when necessary (per F.A.C. 62-160).
  - Document on field sheets (Survey123).
  - Always indicate which parameter qualifiers are associated with.
  - **Always add a comment describing why qualifier is needed. (Required per SOP's)**

(Sampling Manual - Table 7, p. 134)

# Documentation QA – Data Qualifiers

Common data qualifiers added by samplers

\* All Qualifiers need to have a comment

“S” - Secchi disk visible on bottom.

“J” - Estimated value with detailed comment.

- Field meter verification failure or bracketing problem.
- Interference present that may reduce measurement accuracy.
- Deviation from standard field protocols.

“O” - Measurement scheduled but not performed.

“?” - Data are rejected and should not be used.



- **DOCUMENTATION**
- **FIELD COLLECTED BLANKS**
- **FIELD AUDITS**



# Field Blanks & Equipment Blanks

- Help identify contamination in the sampling system.
- QA Officer tracks results.
- If analytes of interest are detected (value  $\geq$  MDL) in field collected blanks, associated data will be “G” qualified if the value in the blank is  $> 10\%$  of the value in the sample.



# Field Blanks & Equipment Blanks

- Collected, preserved and submitted in same manner as an actual sample
- Analyte-free (DI) water
- Filled **on-site**
- 1 Blank collected for every 5 samples (20% frequency)
- Collect blanks to be representative of the sample collection



# Field Blanks



- Required when NO equipment used.  
(SW direct grab samples & GW wells with in-place plumbing)
- Fill sample bottles directly from DI water carboy.
- Collected on-site, in the field!

# Equipment Blanks

- Required if any equipment is used to collect samples.
- For each project, at least one equipment blank is required for each piece of equipment used.
- DI water from carboy is passed through equipment. Sample bottles filled with DI water from equipment.



# Equipment Blanks

Two types:

1. Pre-cleaned equipment blank

- Equipment cleaned in-house prior to sampling
- Blank is collected prior to sampling

2. Field-cleaned equipment blank

- Equipment cleaned in field
- Blank is collected after sampling at a site

BOTH are collected on-site in the field!

# Document Blank Collection Information on Field Sheets (Surface Water & Groundwater)

- Sample type (Field Blank or Equipment Blank)
- If Equipment Blank
  - Field-cleaned or lab-cleaned
  - Equipment ID
- Blank collection time (must be different than sample collection time for water / sediments / invert samples)
- Person responsible for collecting blank.

QA/QC Blank Collected at this station? ☐ None / ☐ Field Blank / ☐ Equip. Blank

QA/QC Blank ID: \_\_\_\_\_ Collection Time (24 hr): \_\_\_\_\_ ☐ ETZ / ☐ CTZ

Van Dorn Equip. ID / Name: \_\_\_\_\_ Cleaning: ☐ Lab-Cleaned / ☐ Field-Cleaned



# Reminders for Shared Projects

- If multiple DEP ROCs or WMD Field Offices are collecting data for a single project, each office must collect at least one blank for that project.
  - Please coordinate blank collection when performing combined sampling events.

# DI Source Blanks

- Not a field collected blank.
- Scheduled as needed, to help investigate detections in field blanks & equipment blanks.
- Collected at field lab / office, directly from DI Source used to fill large carboys.
- Do not use any carboys or equipment.





- **DOCUMENTATION**
- **FIELD COLLECTED BLANKS**
- **FIELD AUDITS**



# Field Audits

WMS QA Officer conducts field audit for each sample collection agency at least once every 18 months.

Audits are designed to promote consistency throughout the state

Managers or Team Leads encouraged to conduct internal audits.



- Narrative summary
- Checklist of items observed / discussed
- Audit summary table

[illegible]



# Field Audits

## Audit Timeline:

1. Auditor sends audit report within 90 days.
2. Sampling team completes “response” column in summary table within 45 days.
3. Auditor reviews response within 15 days.



# Field Audits

## Audit Summary Table – Example

Completed by  
Auditor

Completed  
by  
Field  
Staff

Completed  
by  
Auditor

| Finding # | SOP Reference           | Audit Finding                                                                    | Required or Suggested Corrective Action                                                                     | Response                                                                   | Approved by Auditors |
|-----------|-------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------|
| 1         | FD 4100 Sec. 2.3 & 2.5. | Date, time, and sampler name not documented for turbidity meter ICV on 1/5/2017. | Complete all sections of DEP ROC turbidity calibration log form for each calibration or verification event. | All sections of turbidity log will be filled out completely and correctly. | 12/04/2017           |

# Questions?



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