Status & Trend Networks
March 2016 Biocriteria / Q Meeting

QA Update and Reminders

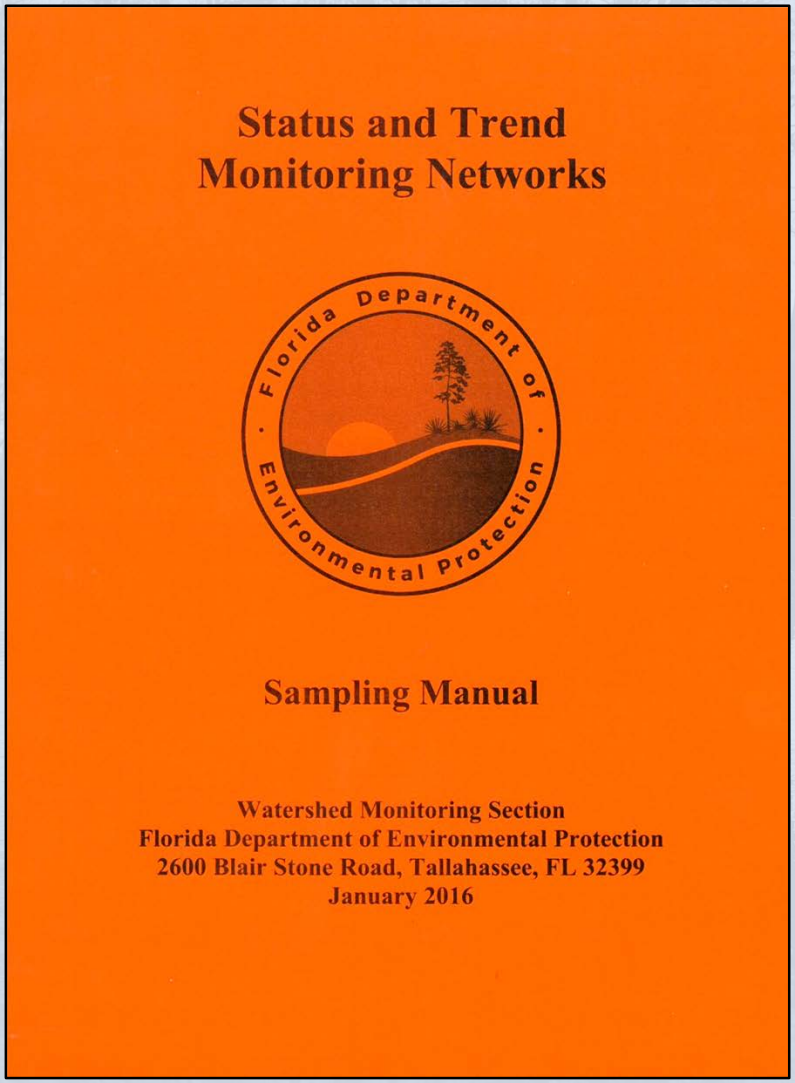
Stephanie Sunderman-Barnes
Watershed Monitoring Section QA Officer

Overview

- Updates since last Q-Meeting (March 2015)
- Reviewing clarifications included in latest Status & Trend Networks Sampling Manual
- Reminders for procedures where improved consistency is needed.

January 2016 Sampling Manual

- Hard copies of Sampling Manual available.
- Sampling Manual also posted on the Watershed Monitoring Information Center website https://fldeploc.dep.state.fl.us/status/.



Applications

Web addresses updated for all Watershed Monitoring Section (WMS) online applications

- Watershed Monitoring Information Center
  https://fldeploc.dep.state.fl.us/status/
- Generalized Water Information System (GWIS) Database Utilities
  https://fldep.dep.state.fl.us/gwis
- Trend Network Field Data Entry Application
  https://fldeploc.dep.state.fl.us/ambient/field

Applications

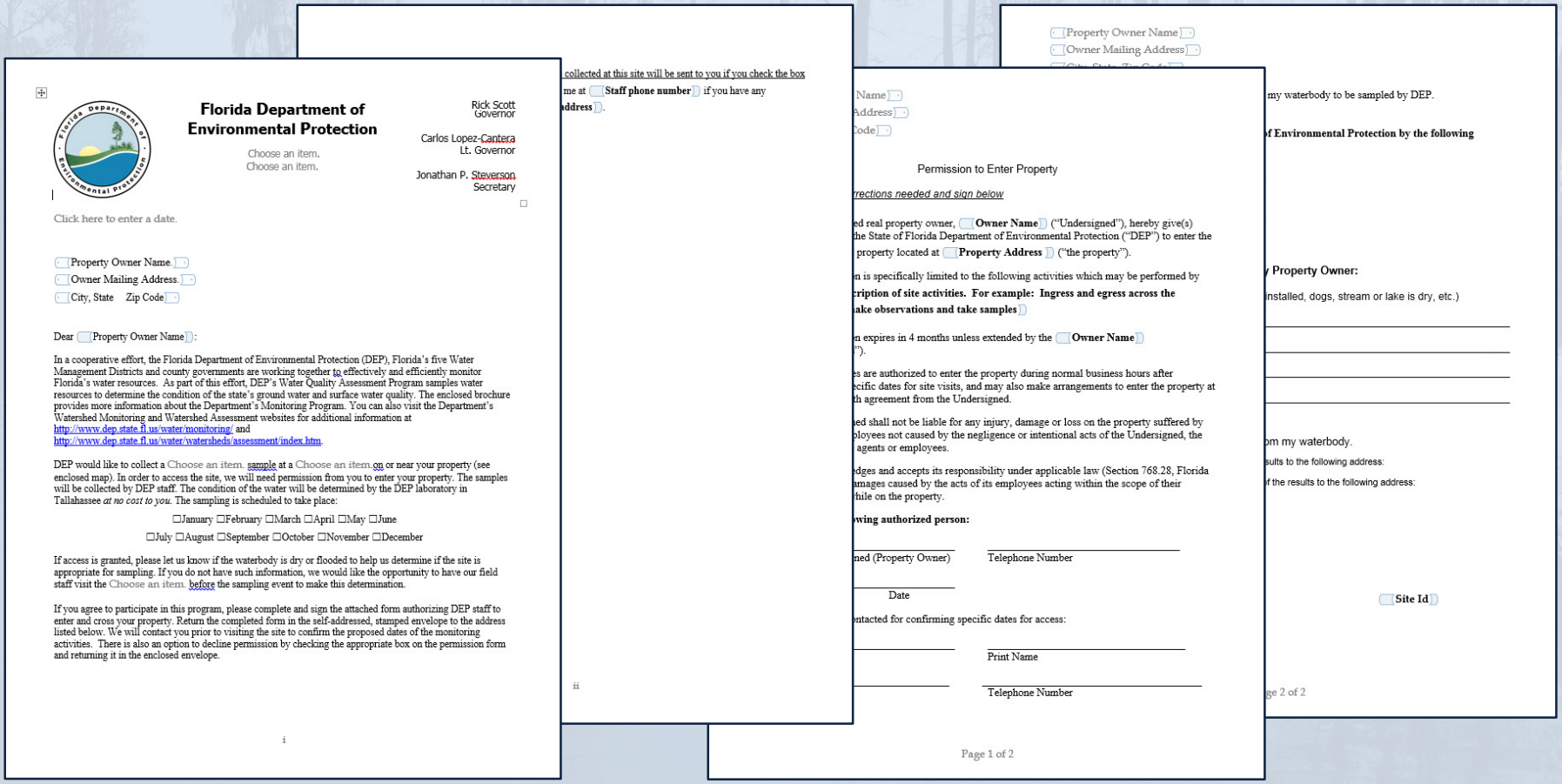
Watershed Monitoring Information Center

- Updated Manuals
  - Recon Manual (Sep. 2015)
  - GWIS Database Utilities User's Manual (Feb. 2016)
  - GPS Basics Manual (Feb. 2016)
- Updated Trimble GPS Resources
- All Forms for S&T Sampling
  - Field Sheets
  - Log Books (DEP ROC versions)
  - Permission Letter
- Presentations from Feb. 2016 training

Section 2: Project Preparation

Clarified:

DEP ROC staff must use standardized letter and legal agreement when mailing permission letters. (Figure 20)



Florida Department of Environmental Protection

Rick Scott, Governor
Carlos Lopez-Cantera, Lt. Governor
Jonathan P. Steverson, Secretary

Choose an item.
Choose an item.

Click here to enter a date.

Property Owner Name
Owner Mailing Address
City, State Zip Code

Dear Property Owner Name:

In a cooperative effort, the Florida Department of Environmental Protection (DEP), Florida's five Water Management Districts and county governments are working together to effectively and efficiently monitor Florida's water resources. As part of this effort, DEP's Water Quality Assessment Program samples water resources to determine the condition of the state's ground water and surface water quality. The enclosed brochure provides more information about the Department's Monitoring Program. You can also visit the Department's Watershed Monitoring and Watershed Assessment websites for additional information at http://www.dep.state.fl.us/water/monitoring/ and http://www.dep.state.fl.us/water/watersheds/assessment/index.htm.

DEP would like to collect a Choose an item. sample at a Choose an item. on or near your property (see enclosed map). In order to access the site, we will need permission from you to enter your property. The samples will be collected by DEP staff. The condition of the water will be determined by the DEP laboratory in Tallahassee *at no cost to you.* The sampling is scheduled to take place:

☐January ☐February ☐March ☐April ☐May ☐June
☐July ☐August ☐September ☐October ☐November ☐December

If access is granted, please let us know if the waterbody is dry or flooded to help us determine if the site is appropriate for sampling. If you do not have such information, we would like the opportunity to have our field staff visit the Choose an item. before the sampling event to make this determination.

If you agree to participate in this program, please complete and sign the attached form authorizing DEP staff to enter and cross your property. Return the completed form in the self-addressed, stamped envelope to the address listed below. We will contact you prior to visiting the site to confirm the proposed dates of the monitoring activities. There is also an option to decline permission by checking the appropriate box on the permission form and returning it in the enclosed envelope.

i

collected at this site will be sent to you if you check the box
me at **Staff phone number** if you have any
ddress.

ii

Name
Address
Code

Permission to Enter Property

rrections needed and sign below

ed real property owner, **Owner Name** ("Undersigned"), hereby give(s) the State of Florida Department of Environmental Protection ("DEP") to enter the property located at **Property Address** ("the property").

n is specifically limited to the following activities which may be performed by
cription of site activities. For example: Ingress and egress across the ake observations and take samples

n expires in 4 months unless extended by the **Owner Name** ").

es are authorized to enter the property during normal business hours after ecific dates for site visits, and may also make arrangements to enter the property at th agreement from the Undersigned.

ed shall not be liable for any injury, damage or loss on the property suffered by ployees not caused by the negligence or intentional acts of the Undersigned, the agents or employees.

edges and accepts its responsibility under applicable law (Section 768.28, Florida amages caused by the acts of its employees acting within the scope of their hile on the property.

wing authorized person:

ned (Property Owner) Telephone Number

Date

ntacted for confirming specific dates for access:

Print Name

Telephone Number

Page 1 of 2

Property Owner Name
Owner Mailing Address

my waterbody to be sampled by DEP.

f Environmental Protection by the following

Property Owner:

nstalled, dogs, stream or lake is dry, etc.)

om my waterbody.

sults to the following address:

f the results to the following address:

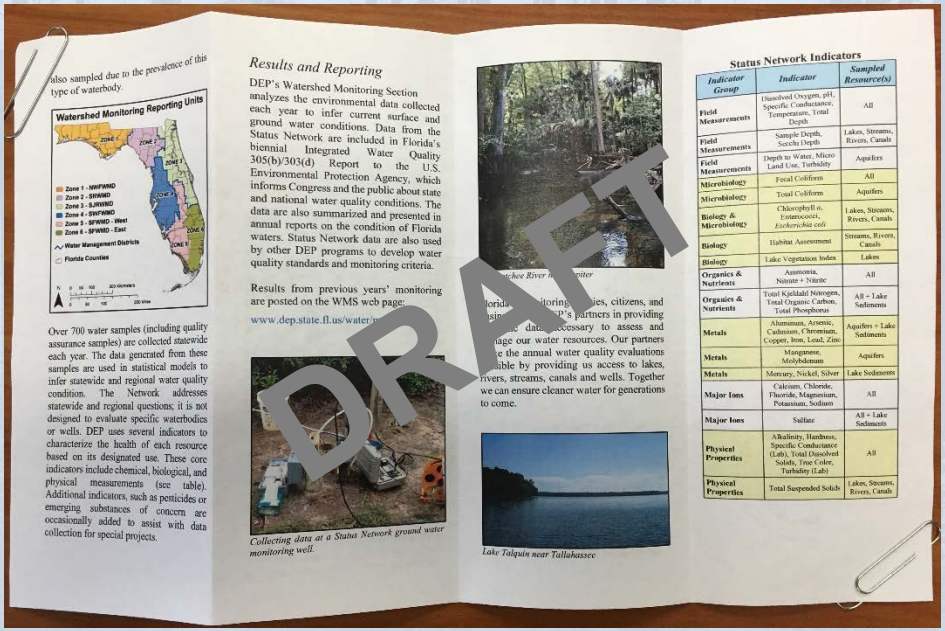
Site Id

ge 2 of 2

Section 2: Project Preparation

Coming Soon!

Updated Status Network & Trend Network Brochures



Section 3: Calibration

Added Table 6

Parameter	Number of Decimal Places To Record	Calibration / Verification Frequency	Acceptance Criteria
pH	1	Daily IC, ICV, CCV	± 0.2 SU
Specific Conductance	0	Daily IC, ICV, CCV	± 5%
Dissolved Oxygen (mg/L)	1	Daily IC, ICV, CCV	± 0.3 mg/L
Dissolved Oxygen (% Sat.)	0	N/A	N/A
Temperature	1	Quarterly CCV	± 0.5 °C
Turbidity	1 (if available)	Daily CCV; Quarterly IC, ICV, secondary standard verification	0.1 - 10 NTU: ± 10%; 11-40 NTU: ± 8%; 41-100 NTU: ± 6.5%; > 100 NTU: ± 5%
Depth	1	Daily IC, ICV (multi-parameter meters); Quarterly check (lines & electronic devices)	± 5% or ± 0.05 m ICV; ± 5% total length of line; ± 10% electronic devices & manual device increments;

Added Clarification

Section 3: Calibration

Corrected / Clarified Guidance for Maintenance Indicators:

- pH Sensors

pH Buffer	Acceptable Millivolt Response
pH 4	+180 ± 50 mV
pH 7	0 ± 50 mV
pH 10	-180 ± 50 mV

- Rapid-Pulse Dissolved Oxygen (DO) Sensors

Indicator	Acceptable Response
DO Charge	25 to 75
DO Gain	+0.7 to +1.4

- Optical Dissolved Oxygen (DO) Sensors

Indicator	Acceptable Response
DO Gain	+0.85 to +1.15

Section 3: Calibration

Clarified:

- NIST-Traceable thermometers used for quarterly temperature sensor verifications must have valid certificate for period of measurement.

Cost Savings:

- WQAP equipment coordinator performing verifications for thermometers with expired certificates as needed, using NIST-Traceable thermometer from DEP lab.

Section 3: Calibration

Quarterly Temperature Verification Log

New version for DEP ROCs - Sep. 2015.

Quarterly Temperature Verification
Regional Operation Centers

DEP SOP FT 1400; Acceptance Criteria for Temp. ± 0.5°
Correction factor needed if acceptance criteria are exceeded
Record temperature reading with only one rounded decimal figure
Numbers ≤4, are rounded down; numbers ≥ 5 are rounded up

Meter ID#:_____ Date: _____ Time: _____
Date of Last Verification: _____
Cold Bath (between 0 – 10°C): Sonde: _____°C; NIST: _____°C Result: Pass / Fail
Warm Bath (between 30 – 40°C): Sonde: _____°C; NIST: _____°C Result: Pass / Fail
Correction Factor: _____
Person Performing Verification: _____

Comments: _____

Meter ID#:_____ Date: _____ Time: _____
Date of Last Verification: _____
Cold Bath (between 0 – 10°C): Sonde: _____°C; NIST: _____°C; Result: Pass / Fail
Warm Bath (between 30 – 40°C): Sonde: _____°C; NIST: _____°C; Result: Pass / Fail
Correction Factor: _____
Person Performing Verification: _____

Comments: _____

Meter ID#:_____ Date: _____ Time: _____
Date of Last Verification: _____
Cold Bath (between 0 – 10°C): Sonde: _____°C; NIST: _____°C; Result: Pass / Fail
Warm Bath (between 30 – 40°C): Sonde: _____°C; NIST: _____°C; Result: Pass / Fail
Correction Factor: _____
Person Performing Verification: _____

Comments: _____

Page _____ *Form effective September 1, 2015*

Section 3: Calibration

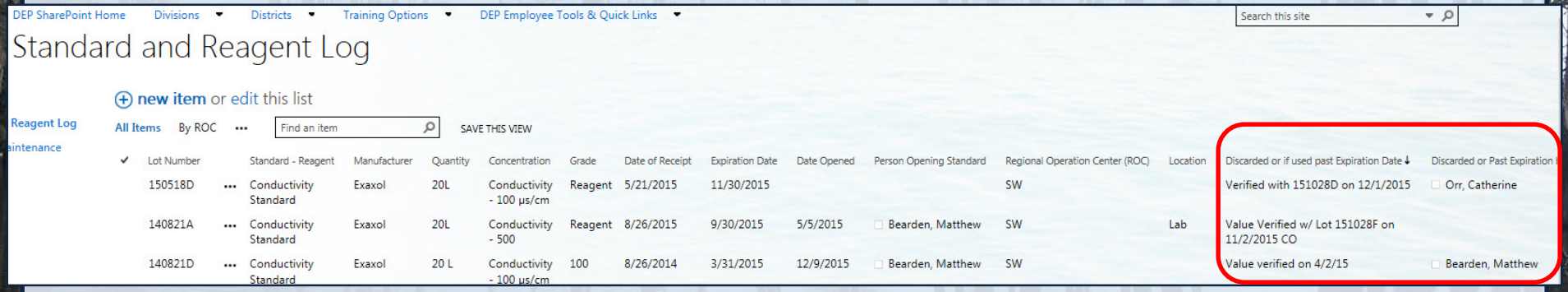
Reminder:

- All field measurements (pH, specific conductance, DO, temperature, turbidity) must be chronologically bracketed with calibration or verification data.
- End-of-day CCVs: Select standards that will quantitatively bracket all field data collected that day.
- If bracketing requirements not met, add “J” qualifier and descriptive comment to affected field data.

Section 3: Calibration

Standards Log Clarification:

Verifications for standards used after expiration date must be documented in the Standards / Reagents Log.



DEP SharePoint Home | Divisions | Districts | Training Options | DEP Employee Tools & Quick Links | Search this site

Standard and Reagent Log

new item or edit this list

Reagent Log
intenance

All Items | By ROC | Find an item | SAVE THIS VIEW

Lot Number	Standard - Reagent	Manufacturer	Quantity	Concentration	Grade	Date of Receipt	Expiration Date	Date Opened	Person Opening Standard	Regional Operation Center (ROC)	Location	Discarded or if used past Expiration Date	Discarded or Past Expiration
150518D	Conductivity Standard	Exaxol	20L	Conductivity - 100 µs/cm	Reagent	5/21/2015	11/30/2015			SW		Verified with 151028D on 12/1/2015	Orr, Catherine
140821A	Conductivity Standard	Exaxol	20L	Conductivity - 500	Reagent	8/26/2015	9/30/2015	5/5/2015	Bearden, Matthew	SW	Lab	Value Verified w/ Lot 151028F on 11/2/2015 CO	
140821D	Conductivity Standard	Exaxol	20 L	Conductivity - 100 µs/cm	100	8/26/2014	3/31/2015	12/9/2015	Bearden, Matthew	SW		Value verified on 4/2/15	Bearden, Matthew

Standard and Reagent Log
Regional Operation Centers

Standard/ Reagent	Manufacturer	Quantity/ Concentration /grade	Lot #	Date of Receipt	Expiration Date	Date Opened and Name of Person Opening Standard	Location	Day discarded or verification if used pass the expiration day and Name of Person Performing this activity

Section 4: Ground Water Sampling

Changes to Analyte List (effective Jan. 2016):

GW Trend Network

- Removed tracers.

GW Status Network

- Confined Aquifers: No changes.
- Unconfined Aquifers: Details TBA. Tentative plan is to remove tracers & pesticides.

Section 4: Ground Water Sampling

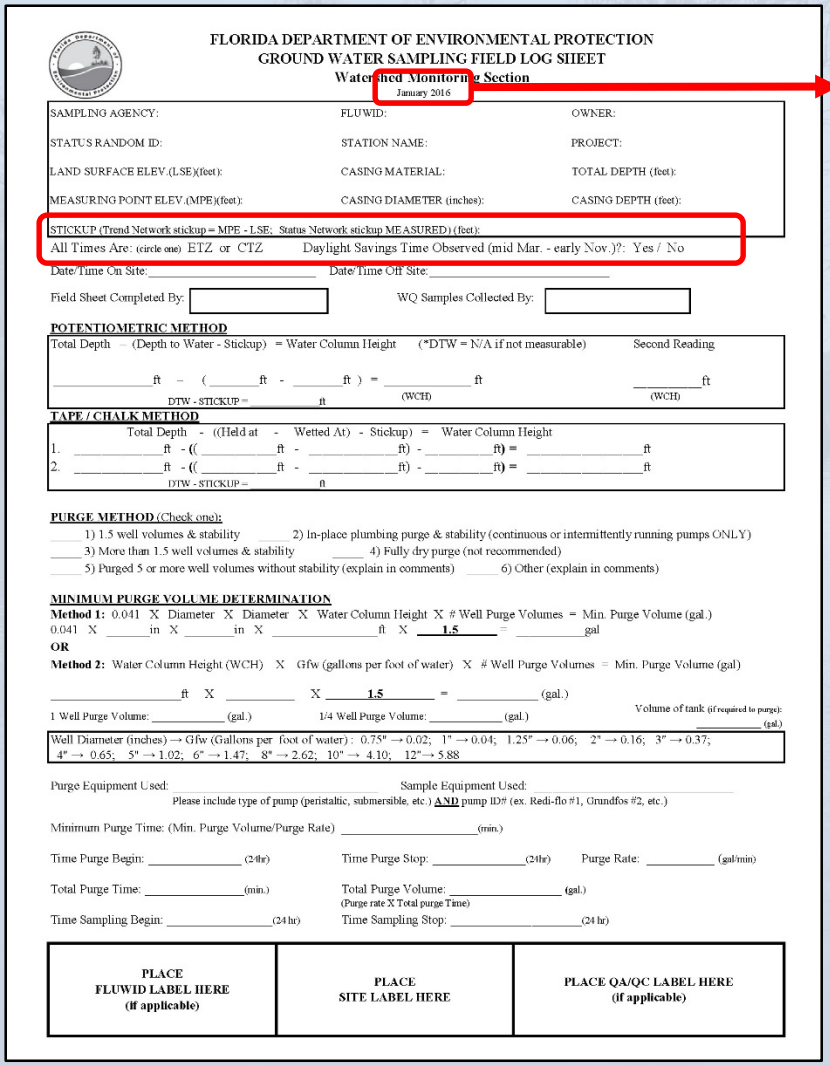
Sampling Kits (effective April 2015):

Bottle Group A = GW grab samples

Bottle Group B = Field Blanks & Equipment Blanks

Section 4: Ground Water Sampling

GW Field Sheet (Jan. 2016 version):



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
GROUND WATER SAMPLING FIELD LOG SHEET
Watershed Monitoring Section
January 2016

SAMPLING AGENCY: | FLUWID: | OWNER:

STATUS RANDOM ID: | STATION NAME: | PROJECT:

LAND SURFACE ELEV.(LSE)(feet): | CASING MATERIAL: | TOTAL DEPTH (feet):

MEASURING POINT ELEV.(MPE)(feet): | CASING DIAMETER (inches): | CASING DEPTH (feet):

STICKUP (Trend Network stickup = MPE - LSE; Status Network stickup MEASURED) (feet):

All Times Are: (circle one) ETZ or CTZ Daylight Savings Time Observed (mid Mar. - early Nov.)?: Yes / No

Date/Time On Site:_____ Date/Time Off Site:_____

Field Sheet Completed By: [ ] WQ Samples Collected By: [ ]

POTENTIOMETRIC METHOD

Total Depth – (Depth to Water - Stickup) = Water Column Height (*DTW = N/A if not measurable) Second Reading

_____ft – (_____ft - _____ft) = _____ ft _____ft
DTW - STICKUP = _____ft (WCH) (WCH)

TAPE / CHALK METHOD

Total Depth - ((Held at - Wetted At) - Stickup) = Water Column Height

1. _____ft - ((_____ft - _____ft) - _____ft) = _____ft
2. _____ft - ((_____ft - _____ft) - _____ft) = _____ft

DTW - STICKUP = _____ft

PURGE METHOD (Check one):

_____ 1) 1.5 well volumes & stability _____ 2) In-place plumbing purge & stability (continuous or intermittently running pumps ONLY)
_____ 3) More than 1.5 well volumes & stability _____ 4) Fully dry purge (not recommended)
_____ 5) Purged 5 or more well volumes without stability (explain in comments) _____ 6) Other (explain in comments)

MINIMUM PURGE VOLUME DETERMINATION

Method 1: 0.041 X Diameter X Diameter X Water Column Height X # Well Purge Volumes = Min. Purge Volume (gal.)
0.041 X _____in X _____in X _____ft X **1.5** = _____gal

OR

Method 2: Water Column Height (WCH) X Gfw (gallons per foot of water) X # Well Purge Volumes = Min. Purge Volume (gal)

_____ft X _____ X **1.5** = _____ (gal.)

1 Well Purge Volume: _____ (gal.) 1/4 Well Purge Volume: _____ (gal.) Volume of tank (if required to purge): _____ (gal.)

Well Diameter (inches) → Gfw (Gallons per foot of water): 0.75" → 0.02; 1" → 0.04; 1.25" → 0.06; 2" → 0.16; 3" → 0.37; 4" → 0.65; 5" → 1.02; 6" → 1.47; 8" → 2.62; 10" → 4.10; 12"→ 5.88

Purge Equipment Used: _____ Sample Equipment Used: _____
Please include type of pump (peristaltic, submersible, etc.) **AND** pump ID# (ex. Redi-flo #1, Grundfos #2, etc.)

Minimum Purge Time: (Min. Purge Volume/Purge Rate) _____(min.)

Time Purge Begin: _____ (24hr) Time Purge Stop: _____(24hr) Purge Rate: _____ (gal/min)

Total Purge Time: _____(min.) Total Purge Volume: _____ (gal.)
(Purge rate X Total purge Time)

Time Sampling Begin: _____(24 hr) Time Sampling Stop: _____(24 hr)

PLACE FLUWID LABEL HERE (if applicable)	PLACE SITE LABEL HERE	PLACE QA/QC LABEL HERE (if applicable)

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
GROUND WATER SAMPLING FIELD LOG SHEET
Watershed Monitoring Section
January 2016

Section 4: Ground Water Sampling

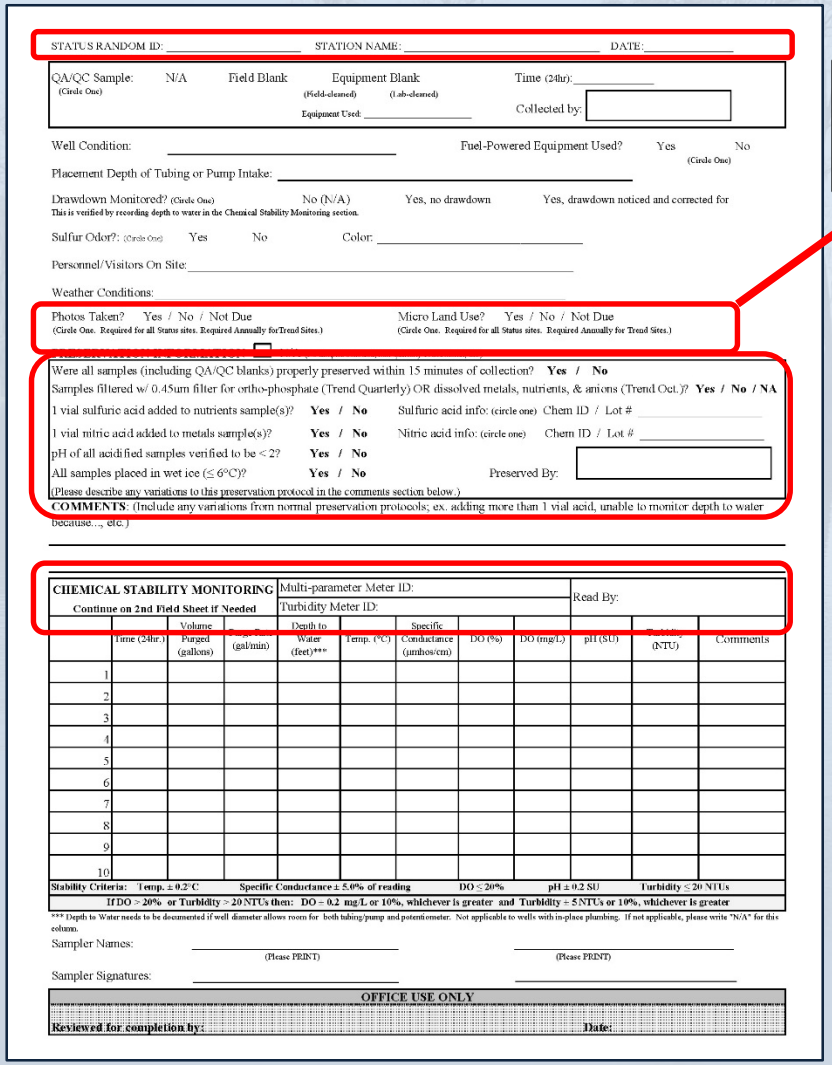
GW Field Sheet (Jan. 2016 version):

STICKUP (Trend Network stickup = MPE - LSE; Status Network stickup MEASURED) (feet):

All Times Are: (circle one) ETZ or CTZ	Daylight Savings Time Observed (mid Mar. - early Nov.)?: Yes / No

Section 4: Ground Water Sampling

GW Field Sheet (Jan. 2016 version):



STATUS RANDOM ID: _____ STATION NAME: _____ DATE: _____

QA/QC Sample: N/A Field Blank Equipment Blank Time (24hr): _____
(Circle One) (Field-cleansed) (Lab-cleansed)
Equipment Used: _____ Collected by:

Well Condition: _____ Fuel-Powered Equipment Used? Yes No
(Circle One)

Placement Depth of Tubing or Pump Intake: _____

Drawdown Monitored? (Circle One) No (N/A) Yes, no drawdown Yes, drawdown noticed and corrected for
This is verified by recording depth to water in the Chemical Stability Monitoring section.

Sulfur Odor?: (Circle One) Yes No Color: _____

Personnel/Visitors On Site: _____

Weather Conditions:

Photos Taken? Yes / No / Not Due
(Circle One. Required for all Status sites. Required Annually forTrend Sites.)

Micro Land Use? Yes / No / Not Due
(Circle One. Required for all Status sites. Required Annually for Trend Sites.)

Were all samples (including QA/QC blanks) properly preserved within 15 minutes of collection? **Yes / No**
Samples filtered w/ 0.45um filter for ortho-phosphate (Trend Quarterly) OR dissolved metals, nutrients, & anions (Trend Oct.)? **Yes / No / NA**
1 vial sulfuric acid added to nutrients sample(s)? **Yes / No** Sulfuric acid info: (circle one) Chem ID / Lot # _____
1 vial nitric acid added to metals sample(s)? **Yes / No** Nitric acid info: (circle one) Chem ID / Lot # _____
pH of all acidified samples verified to be < 2? **Yes / No**
All samples placed in wet ice (≤ 6°C)? **Yes / No** Preserved By:
(Please describe any variations to this preservation protocol in the comments section below.)

COMMENTS: (Include any variations from normal preservation protocols; ex. adding more than 1 vial acid, unable to monitor depth to water because..., etc.)

CHEMICAL STABILITY MONITORING Multi-parameter Meter ID: Read By:
Continue on 2nd Field Sheet if Needed Turbidity Meter ID:

	Time (24hr.)	Volume Purged (gallons)	Purge Rate (gal/min)	Depth to Water (feet)***	Temp. (°C)	Specific Conductance (µmhos/cm)	DO (%)	DO (mg/L)	pH (SU)	Turbidity (NTU)	Comments
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

Stability Criteria: Temp. ± 0.2°C Specific Conductance ± 5.0% of reading DO ≤ 20% pH ± 0.2 SU Turbidity ≤ 20 NTUs
If DO > 20% or Turbidity > 20 NTUs then: DO = 0.2 mg/L or 10%, whichever is greater and Turbidity = 5 NTUs or 10%, whichever is greater

*** Depth to Water needs to be documented if well diameter allows room for both tubing/pump and potentiometer. Not applicable to wells with in-place plumbing. If not applicable, please write "N/A" for this column.

Sampler Names: _____ (Please PRINT) _____ (Please PRINT)

Sampler Signatures: _____ _____

OFFICE USE ONLY

Reviewed for completion by: **Date:**

Photos Taken? Yes / No / Not Due
(Circle One. Required for all Status sites. Required Annually forTrend Sites.)

Section 4: Ground Water Sampling

GW Field Sheet (Jan. 2016 version):

PRESERVATION INFORMATION ☐ N/A (No samples collected; non-quarterly Trend month, etc.)

Were all samples (including QA/QC blanks) properly preserved within 15 minutes of collection? **Yes / No**

Samples filtered w/ 0.45um filter for ortho-phosphate (Trend Quarterly) OR dissolved metals, nutrients, & anions (Trend Oct.)? **Yes / No / NA**

1 vial sulfuric acid added to nutrients sample(s)? **Yes / No** Sulfuric acid info: (circle one) Chem ID / Lot # _____

1 vial nitric acid added to metals sample(s)? **Yes / No** Nitric acid info: (circle one) Chem ID / Lot # _____

pH of all acidified samples verified to be < 2? **Yes / No**

All samples placed in wet ice (≤ 6°C)? **Yes / No** Preserved By:

(Please describe any variations to this preservation protocol in the comments section below.)

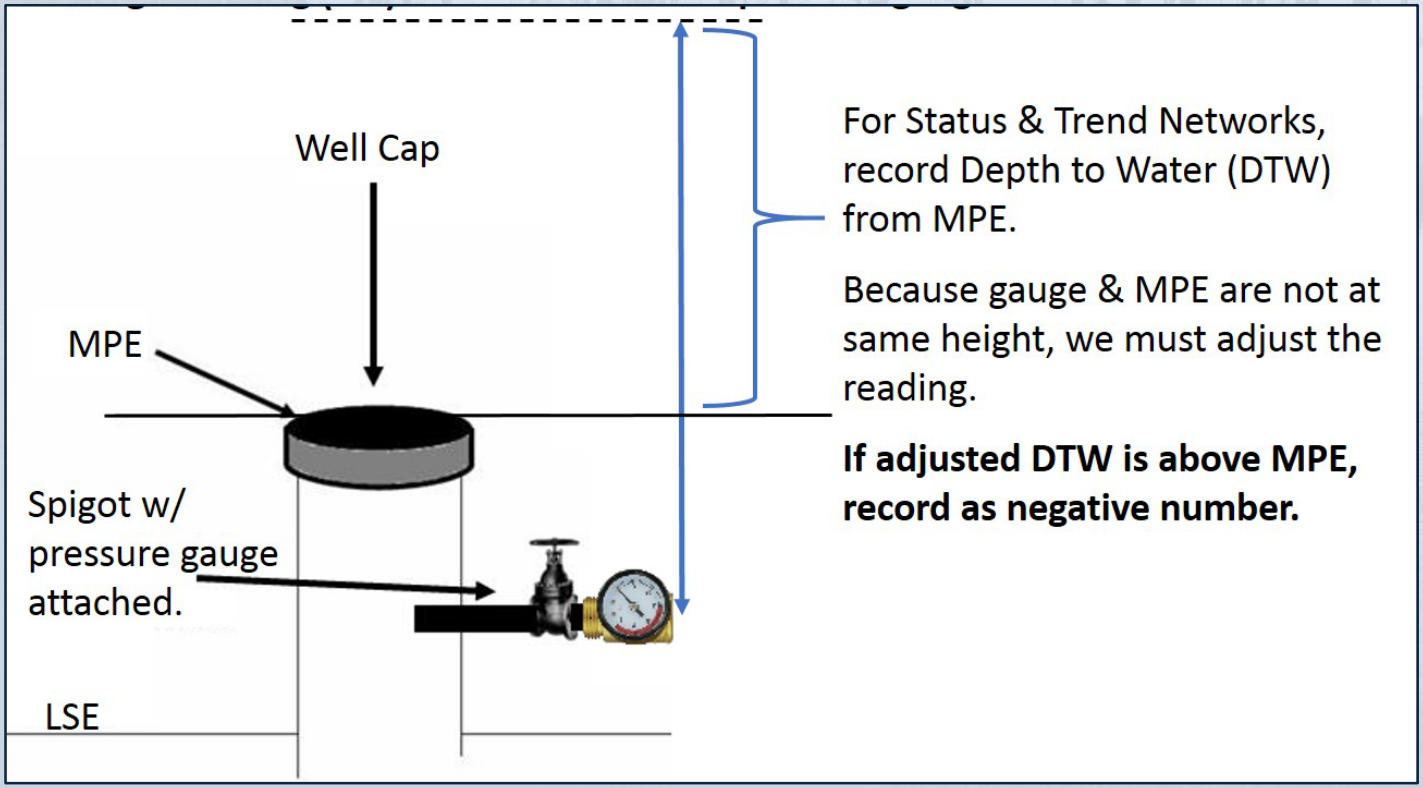
CHEMICAL STABILITY MONITORING Continue on 2nd Field Sheet if Needed	Multi-parameter Meter ID:	Read By:
	Turbidity Meter ID:	

Section 4: Ground Water Sampling

Correction:

Conversion factor for measuring depth to water with pressure gauge (artesian wells):

1 psi = 2.31 feet above gauge



(Figure 33)

Section 4: Ground Water Sampling

Clarifications:

- If total depth is measured to confirm well identity, wait at least 24hrs before collecting water quality data.
- **FLUWID Tags:** Do not double-tag wells!
  If well has a FLUWID # assigned to it & tag not present, check recon & confirm that you are at correct well, contact WMS to obtain a reprint tag w/ the old FLUWID #.
- **Submersible pumps** must have check valves.
- **Equipment construction:** All equipment that contacts sample or formation water must be constructed of materials approved for scheduled analytes. (Only Teflon / stainless steel / PE / PP / glass for extractable organics.)

Section 4: Ground Water Sampling

Reminders:

- **Photos:** Include close-up of FLUWID tag.

- **Purge method:** If uncertain that in-place pump being used frequently, use conventional purge method.
- **Wells w/ In-Place Plumbing**: If sampling after storage tank, must purge volume of tank before beginning stability measurements. (Applies to either purge method.)

Section 5: Surface Water Sampling

Changes to Analyte List (effective Jan. 2016):

SW Trend Network

- Removed tracers.

SW Status Network

- Lakes: Removed tracers.
- Flowing waters:
  - Continue tracers (1L glass bottle coded W-SUC-AA-R & W-PCP-AA-R).
  - Added 43 pesticides (W-PSNP-TQ)

    (Two 1L bottles per site; For every 10 samples, 2 extra bottles for LMS collected at 1 site).

Section 5: Surface Water Sampling

Sampling Kits:

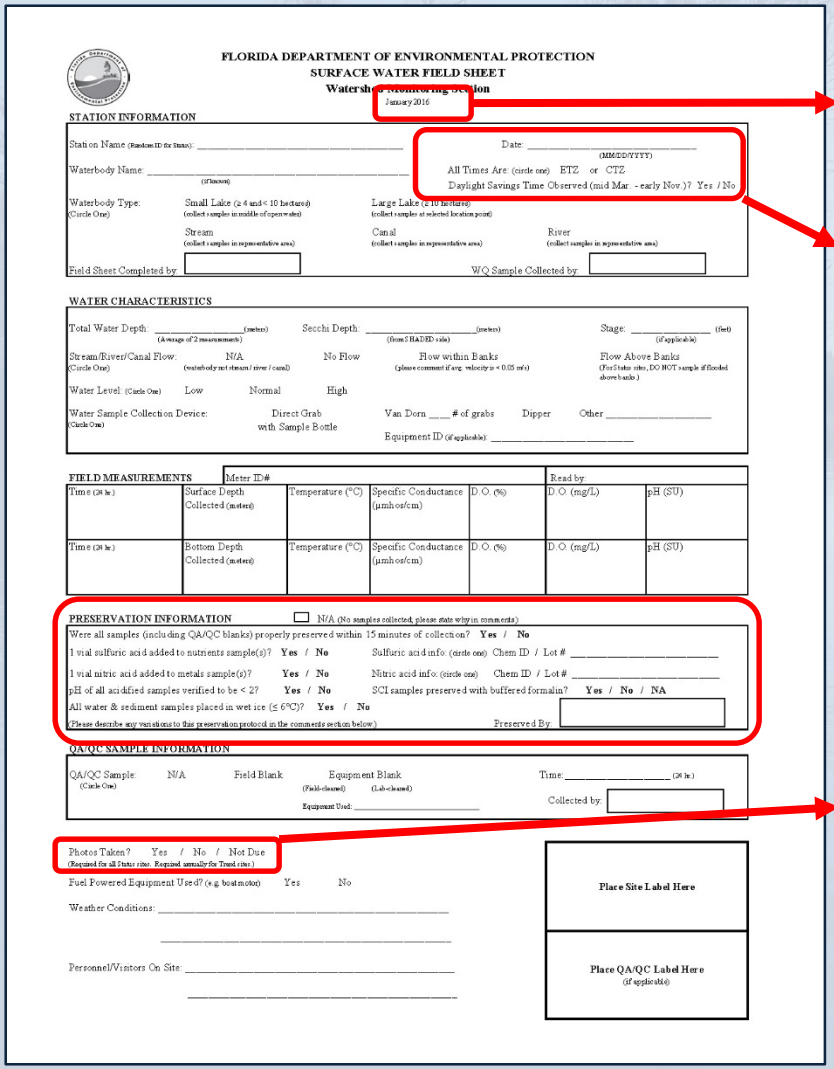
Bottle Group A = SW Grab Samples

Bottle Group B = Field Blanks & Equipment Blanks

Bottle Group C = SCI samples (SW Trend) or
Sediment Samples (Status Lakes)

Section 5: Surface Water Sampling

SW Field Sheet (Jan. 2016 version):



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
SURFACE WATER FIELD SHEET
Watershed Monitoring Section
January 2016

STATION INFORMATION

Station Name (Random ID for Trans): _____ Date: _____ (MM/DD/YYYY)

Waterbody Name: _____ (if known) All Times Are: (circle one) ETZ or CTZ

Daylight Savings Time Observed (mid Mar. - early Nov.)? Yes / No

Waterbody Type: (Circle One) Small Lake (≥ 4 and < 10 hectares) (collect samples in middle of open water) Large Lake (≥ 10 hectares) (collect samples at selected location point)

Stream (collect samples in representative area) Canal (collect samples in representative area) River (collect samples in representative area)

Field Sheet Completed by: _____ WQ Sample Collected by: _____

WATER CHARACTERISTICS

Total Water Depth: _____ (meters) (Average of 2 measurements) Secchi Depth: _____ (meters) (from S BADD side) Stage: _____ (feet) (if applicable)

Stream/River/Canal Flow: (Circle One) N/A (waterbody not stream / river / canal) No Flow Flow within Banks (please comment if avg. velocity is < 0.05 m/s) Flow Above Banks (For Trans sites, DO NOT sample if flooded above banks.)

Water Level: (Circle One) Low Normal High

Water Sample Collection Device: (Circle One) Direct Grab with Sample Bottle Van Dorn ___ # of grabs Dipper Other _____

Equipment ID (if applicable): _____

FIELD MEASUREMENTS Meter ID# Read by:

Time (24 hr.)	Surface Depth Collected (meters)	Temperature (°C)	Specific Conductance (µmhos/cm)	D.O. (%)	D.O. (mg/L)	pH (SU)
Time (24 hr.)	Bottom Depth Collected (meters)	Temperature (°C)	Specific Conductance (µmhos/cm)	D.O. (%)	D.O. (mg/L)	pH (SU)

PRESERVATION INFORMATION ☐ N/A (No samples collected, please state why in comments)

Were all samples (including QA/QC blanks) properly preserved within 15 minutes of collection? Yes / No

1 vial sulfuric acid added to nutrients sample(s)? Yes / No Sulfuric acid info: (circle one) Chem ID / Lot # _____

1 vial nitric acid added to metals sample(s)? Yes / No Nitric acid info: (circle one) Chem ID / Lot # _____

pH of all acidified samples verified to be < 2? Yes / No SCI samples preserved with buffered formalin? Yes / No / NA

All water & sediment samples placed in wet ice (≤ 6°C)? Yes / No

(Please describe any variations to this preservation protocol in the comments section below.) Preserved By: _____

QA/QC SAMPLE INFORMATION

QA/QC Sample: (Circle One) N/A Field Blank Equipment Blank (Field-cleaned) (Lab-cleaned) Time: _____ (24 hr.)

Equipment Used: _____ Collected by: _____

Photos Taken? Yes / No / Not Due (Required for all Status sites. Required annually for Trend sites.)

Fuel Powered Equipment Used? (e.g. boat motor) Yes No

Weather Conditions: _____

Personnel/Visitors On Site: _____

Place Site Label Here

Place QA/QC Label Here (if applicable)

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
SURFACE WATER FIELD SHEET
Watershed Monitoring Section
January 2016

Date: _____ (MM/DD/YYYY)

All Times Are: (circle one) ETZ or CTZ

Daylight Savings Time Observed (mid Mar. - early Nov.)? Yes / No

Photos Taken? Yes / No / Not Due

(Required for all Status sites. Required annually for Trend sites.)

Section 5: Surface Water Sampling

SW Field Sheet (Jan. 2016 version):

PRESERVATION INFORMATION ☐ N/A (No samples collected; please state why in comments.)

Were all samples (including QA/QC blanks) properly preserved within 15 minutes of collection? **Yes / No**

1 vial sulfuric acid added to nutrients sample(s)? **Yes / No** Sulfuric acid info: (circle one) Chem ID / Lot # _____

1 vial nitric acid added to metals sample(s)? **Yes / No** Nitric acid info: (circle one) Chem ID / Lot # _____

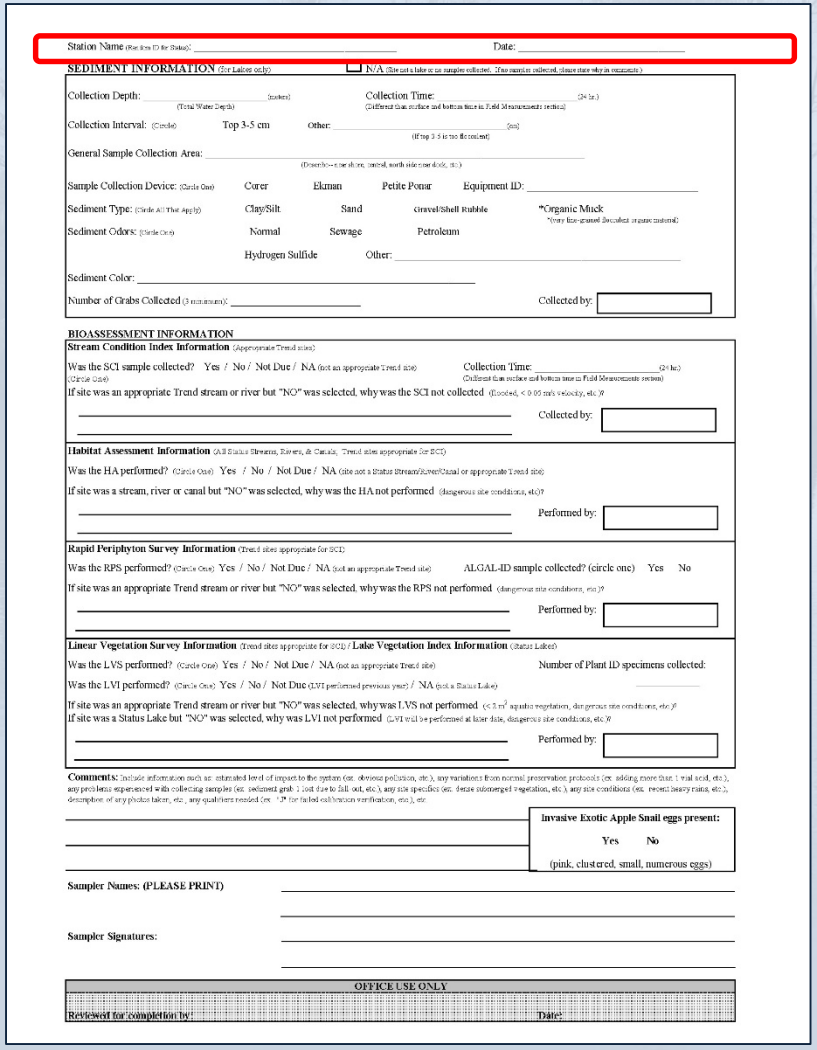
pH of all acidified samples verified to be < 2? **Yes / No** SCI samples preserved with buffered formalin? **Yes / No / NA**

All water & sediment samples placed in wet ice (≤ 6°C)? **Yes / No**

(Please describe any variations to this preservation protocol in the comments section below.) Preserved By:

Section 5: Surface Water Sampling

SW Field Sheet (Jan. 2016 version):



Station Name (Station ID for Status): _____ Date: _____

SEDIMENT INFORMATION (For Lakes only) ☐ N/A (Site not a lake or no sample collected. If no sample collected, please state why in comments.)

Collection Depth: _____ (meters) (Total Water Depth) Collection Time: _____ (24 hr.) (Different than surface and bottom time in Field Measurements section)

Collection Interval: (Circle) Top 3-5 cm Other: _____ (cm) (If top 3-5 is too flocculent)

General Sample Collection Area: _____ (Describe – ie: be shore, mid-sl, north side near dock, etc.)

Sample Collection Device: (Circle One) Corer Ekman Petite Ponar Equipment ID: _____

Sediment Type: (Circle All That Apply) Clay/Silt Sand Gravel/Shell Rubble *Organic Muck (*very fine-grained flocculent organic material)

Sediment Odors: (Circle One) Normal Sewage Petroleum Hydrogen Sulfide Other: _____

Sediment Color: _____

Number of Grabs Collected (3 minimum): _____ Collected by: _____

BIOASSESSMENT INFORMATION

Stream Condition Index Information (Appropriate Trend sites)

Was the SCI sample collected? Yes / No / Not Due / NA (not an appropriate Trend site) (Circle One) Collection Time: _____ (24 hr.) (Different than surface and bottom time in Field Measurements section)

If site was an appropriate Trend stream or river but "NO" was selected, why was the SCI not collected (flooded, < 0.05 m/s velocity, etc.)?

_____ Collected by: _____

Habitat Assessment Information (All Status Streams, Rivers, & Canals, Trend sites appropriate for SCI)

Was the HA performed? (Circle One) Yes / No / Not Due / NA (Site not a Status Stream/River/Canal or appropriate Trend site)

If site was a stream, river or canal but "NO" was selected, why was the HA not performed (dangerous site conditions, etc)?

_____ Performed by: _____

Rapid Periphyton Survey Information (Trend sites appropriate for SCI)

Was the RPS performed? (Circle One) Yes / No / Not Due / NA (not an appropriate Trend site) ALGAL-ID sample collected? (circle one) Yes No

If site was an appropriate Trend stream or river but "NO" was selected, why was the RPS not performed (dangerous site conditions, etc.)?

_____ Performed by: _____

Linear Vegetation Survey Information (Trend sites appropriate for SCI) / **Lake Vegetation Index Information** (Status Lakes)

Was the LVS performed? (Circle One) Yes / No / Not Due / NA (not an appropriate Trend site) Number of Plant ID specimens collected: _____

Was the LVI performed? (Circle One) Yes / No / Not Due (LVI performed previous year) / NA (not a Status Lake)

If site was an appropriate Trend stream or river but "NO" was selected, why was LVS not performed (< 5 m^2 aquatic vegetation, dangerous site conditions, etc.)?
If site was a Status Lake but "NO" was selected, why was LVI not performed (LVI will be performed at later date, dangerous site conditions, etc.)?

_____ Performed by: _____

Comments: Include information such as: estimated level of impact to the system (ex: obvious pollution, etc.), any variations from normal preservation protocols (ex: adding more than 1 vial acid, etc.), any problems experienced with collecting samples (ex: sediment grab 1 lost due to fall out, etc.), any site specifics (ex: dense submerged vegetation, etc.), any site conditions (ex: recent heavy rains, etc.), description of any photos taken, etc., any qualifiers needed (ex: "J" for failed calibration verification, etc.), etc.

_____

_____

_____

Invasive Exotic Apple Snail eggs present:
Yes No
(pink, clustered, small, numerous eggs)

Sampler Names: (PLEASE PRINT) _____

_____

Sampler Signatures: _____

_____

OFFICE USE ONLY

Reviewed for completion by: _____ Date: _____

Section 5: Surface Water Sampling

SW Exclusion Criteria Clarification:

EXCLUSION CATEGORY	EXCLUSION CRITERIA
Dry	Small Lake or Large Lake Depth < 1 m at Deepest Point
Dry	Random Location < 10 cm Deep
Wrong Resource / Not Part of Target Population	Current Mining Operation or Historic Mining Operation w/o Restoration
Wrong Resource / Not Part of Target Population	Random Location Lies at Outfall of DEP Permitted Facility (Site lies at Outfall Point of Effluent or in Mixing Zone)

Status Network Lakes:

If drought conditions present & wetted area of lake is < min. size for resource (< 10 ha for LL, < 4 ha for SL), exclude as "Dry – Dry during index period."

Section 5: Surface Water Sampling

Reminders:

- Use “J” value qualifier for field measurements recorded with reduced accuracy (e.g. interference from wind, current).
- Status Network Rivers / Streams / Canals:
  - Random location represents cross section of waterbody.
  - Collect data at point in cross-section that best represents system’s flow.
  - Do not move random point upstream / downstream.

Section 6: Sediment Sampling

Reminder:

Special cleaning procedure required for all sediments sampling equipment between sites, even if next site is in same waterbody. (S&T Sampling Manual page 107.)

Sections 7-10: Bioassessment

Updates / Reminders about these topics will be covered during other presentations on Wednesday.

Section 11: Sample Preservation

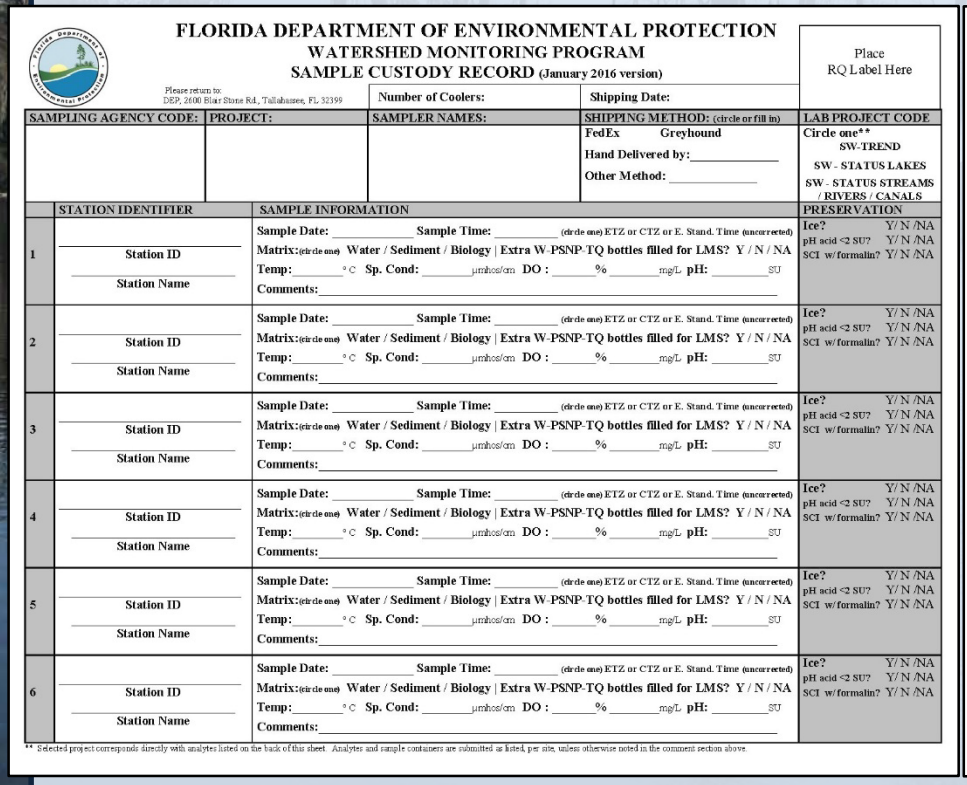
Reminders:

Brown glass bottles (tracers & pesticides)

- Limit exposure to sunlight (before & after sample collection) to prevent warming.
- Use caution when handling containers in bubble wrap bags. Bottom of bags break easily.

Section 13:
Sample Custody and Shipment

SW Custody Sheet (Jan. 2016 version)
GW Custody Sheet (Nov. 2015 version)



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATERSHED MONITORING PROGRAM
SAMPLE CUSTODY RECORD (January 2016 version)

Please return to: DEP, 2600 Blair Stone Rd., Tallahassee, FL 32399

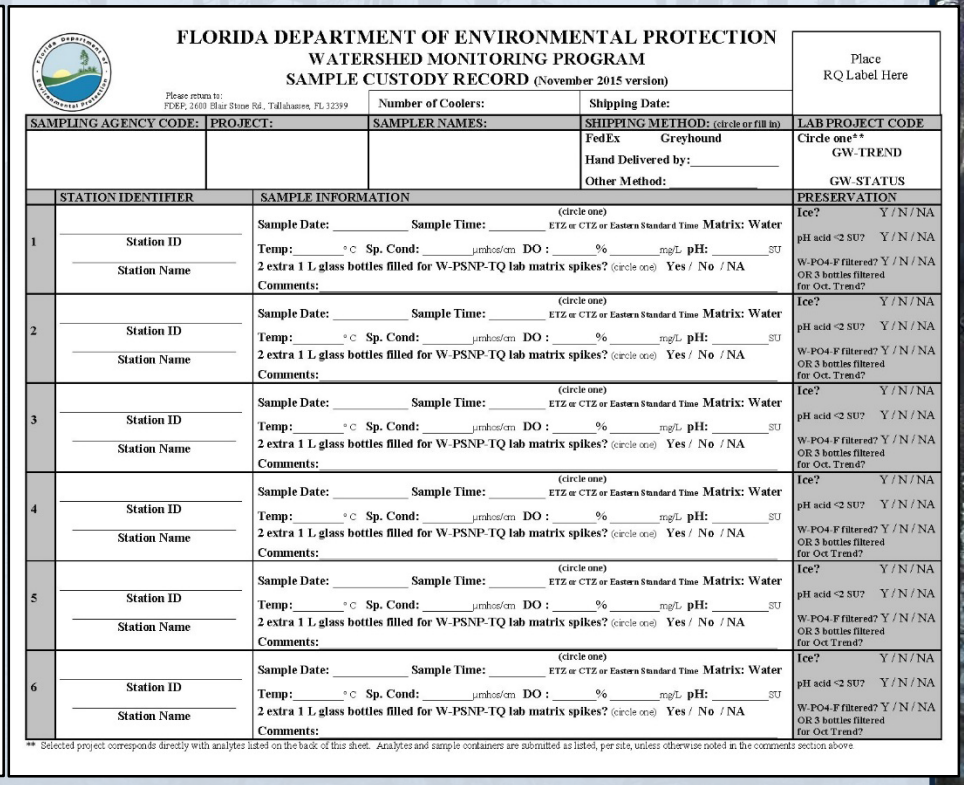
Place RQ Label Here

Number of Coolers:	Shipping Date:

SAMPLING AGENCY CODE:	PROJECT:	SAMPLER NAMES:	SHIPPING METHOD: (circle or fill in)	LAB PROJECT CODE
			FedEx Greyhound Hand Delivered by:_____ Other Method: _____	Circle one** SW-TREND SW - STATUS LAKES SW - STATUS STREAMS / RIVERS / CANALS

	STATION IDENTIFIER	SAMPLE INFORMATION	PRESERVATION
1	Station ID Station Name	Sample Date: _____ Sample Time: _____ (circle one) ETZ or CTZ or E. Stand. Time (uncorrected) Matrix: (circle one) Water / Sediment / Biology | Extra W-PSNP-TQ bottles filled for LMS? Y / N / NA Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA SCI w/formalin? Y/N/NA
2	Station ID Station Name	Sample Date: _____ Sample Time: _____ (circle one) ETZ or CTZ or E. Stand. Time (uncorrected) Matrix: (circle one) Water / Sediment / Biology | Extra W-PSNP-TQ bottles filled for LMS? Y / N / NA Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA SCI w/formalin? Y/N/NA
3	Station ID Station Name	Sample Date: _____ Sample Time: _____ (circle one) ETZ or CTZ or E. Stand. Time (uncorrected) Matrix: (circle one) Water / Sediment / Biology | Extra W-PSNP-TQ bottles filled for LMS? Y / N / NA Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA SCI w/formalin? Y/N/NA
4	Station ID Station Name	Sample Date: _____ Sample Time: _____ (circle one) ETZ or CTZ or E. Stand. Time (uncorrected) Matrix: (circle one) Water / Sediment / Biology | Extra W-PSNP-TQ bottles filled for LMS? Y / N / NA Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA SCI w/formalin? Y/N/NA
5	Station ID Station Name	Sample Date: _____ Sample Time: _____ (circle one) ETZ or CTZ or E. Stand. Time (uncorrected) Matrix: (circle one) Water / Sediment / Biology | Extra W-PSNP-TQ bottles filled for LMS? Y / N / NA Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA SCI w/formalin? Y/N/NA
6	Station ID Station Name	Sample Date: _____ Sample Time: _____ (circle one) ETZ or CTZ or E. Stand. Time (uncorrected) Matrix: (circle one) Water / Sediment / Biology | Extra W-PSNP-TQ bottles filled for LMS? Y / N / NA Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA SCI w/formalin? Y/N/NA

** Selected project corresponds directly with analytes listed on the back of this sheet. Analytes and sample containers are submitted as listed, per site, unless otherwise noted in the comment section above.



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATERSHED MONITORING PROGRAM
SAMPLE CUSTODY RECORD (November 2015 version)

Please return to: FDEP, 2600 Blair Stone Rd., Tallahassee, FL 32399

Place RQ Label Here

Number of Coolers:	Shipping Date:

SAMPLING AGENCY CODE:	PROJECT:	SAMPLER NAMES:	SHIPPING METHOD: (circle or fill in)	LAB PROJECT CODE
			FedEx Greyhound Hand Delivered by:_____ Other Method: _____	Circle one** GW-TREND GW-STATUS

	STATION IDENTIFIER	SAMPLE INFORMATION	PRESERVATION
1	Station ID Station Name	(circle one) Sample Date: _____ Sample Time: _____ ETZ or CTZ or Eastern Standard Time Matrix: Water Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU 2 extra 1 L glass bottles filled for W-PSNP-TQ lab matrix spikes? (circle one) Yes / No / NA Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA W-PO4-F filtered? Y/N/NA OR 3 bottles filtered for Oct. Trend?
2	Station ID Station Name	(circle one) Sample Date: _____ Sample Time: _____ ETZ or CTZ or Eastern Standard Time Matrix: Water Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU 2 extra 1 L glass bottles filled for W-PSNP-TQ lab matrix spikes? (circle one) Yes / No / NA Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA W-PO4-F filtered? Y/N/NA OR 3 bottles filtered for Oct. Trend?
3	Station ID Station Name	(circle one) Sample Date: _____ Sample Time: _____ ETZ or CTZ or Eastern Standard Time Matrix: Water Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU 2 extra 1 L glass bottles filled for W-PSNP-TQ lab matrix spikes? (circle one) Yes / No / NA Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA W-PO4-F filtered? Y/N/NA OR 3 bottles filtered for Oct. Trend?
4	Station ID Station Name	(circle one) Sample Date: _____ Sample Time: _____ ETZ or CTZ or Eastern Standard Time Matrix: Water Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU 2 extra 1 L glass bottles filled for W-PSNP-TQ lab matrix spikes? (circle one) Yes / No / NA Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA W-PO4-F filtered? Y/N/NA OR 3 bottles filtered for Oct Trend?
5	Station ID Station Name	(circle one) Sample Date: _____ Sample Time: _____ ETZ or CTZ or Eastern Standard Time Matrix: Water Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU 2 extra 1 L glass bottles filled for W-PSNP-TQ lab matrix spikes? (circle one) Yes / No / NA Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA W-PO4-F filtered? Y/N/NA OR 3 bottles filtered for Oct Trend?
6	Station ID Station Name	(circle one) Sample Date: _____ Sample Time: _____ ETZ or CTZ or Eastern Standard Time Matrix: Water Temp: ____ °C Sp. Cond: ____ µmhos/cm DO : ____ % ____ mg/L pH: ____ SU 2 extra 1 L glass bottles filled for W-PSNP-TQ lab matrix spikes? (circle one) Yes / No / NA Comments: _____	Ice? Y/N/NA pH acid <2 SU? Y/N/NA W-PO4-F filtered? Y/N/NA OR 3 bottles filtered for Oct Trend?

** Selected project corresponds directly with analytes listed on the back of this sheet. Analytes and sample containers are submitted as listed, per site, unless otherwise noted in the comments section above.

Section 13:
Sample Custody and Shipment

Reminder:

If preservation performed differs from requirements listed on back, describe difference in comments.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATERSHED MONITORING PROGRAM
SAMPLE CUSTODY RECORD (November 2015 version)

Please return to:
FDEP; 2600 Blair Stone Rd., Tallahassee, FL 32399

Place RQ Label Here

Number of Coolers:	Shipping Date:

SAMPLING AGENCY CODE:	PROJECT:	SAMPLER NAMES:	SHIPPING METHOD: (circle or fill in)	LAB PROJECT CODE
			FedEx Greyhound Hand Delivered by:_____ Other Method: _____	Circle one** GW-TREND GW-STATUS

	STATION IDENTIFIER	SAMPLE INFORMATION	PRESERVATION
1	_____ Station ID _____ Station Name	(circle one) Sample Date: _____ Sample Time: _____ ETZ or CTZ or Eastern Standard Time Matrix: Water Temp:_____° C Sp. Cond: _____µmhos/cm DO : _____% _____mg/L pH: _____SU 2 extra 1 L glass bottles filled for W-PSNP-TQ lab matrix spikes? (circle one) Yes / No / NA Comments:	Ice? Y / N / NA pH acid <2 SU? Y / N / NA W-PO4-F filtered? Y / N / NA OR 3 bottles filtered for Oct. Trend?

Comments required if answer to any of these questions is “No”.

Section 13:
Sample Custody and Shipment

Reminders:

- Contact WMS QA Officer if sampling will be delayed more than 2 weeks from the RQ date.
- Immediately contact WMS QA Officer and your WMS Project Manager if you receive a notification from FedEx or the lab regarding a problem with your samples.

Section 14: QA / QC

Clarification:

Field Blanks for GW Trend projects.

- Fill bottles directly from DI water carboy, in the field.
- Ortho-P cannot be filtered using in-line filter.
- Submit unfiltered bottle and **COMMENT** on Custody Sheet & Field Sheet.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATERSHED MONITORING PROGRAM
SAMPLE CUSTODY RECORD (November 2015 version)

RQ-2016-01-04-33

Please return to:
FDEP; 2600 Blair Stone Rd., Tallahassee, FL 32399

Number of Coolers: 1

Shipping Date: 01/01/2016

SAMPLING AGENCY CODE:	PROJECT:	SAMPLER NAMES:	SHIPPING METHOD: (circle or fill in)	LAB PROJECT CODE Circle one**
8034	Z9GT1601	John Doe, Jane Doe	(FedEx) Greyhound Hand Delivered by:_____ Other Method: _____	(GW-TREND) GW-STATUS

	STATION IDENTIFIER	SAMPLE INFORMATION	PRESERVATION
1	QA/QC BLANK FIELD	Sample Date: 01/01/2016 Sample Time: 09:30 (circle one) (EST) or CTZ or Eastern Standard Time Matrix: Water Temp:_____ °C Sp. Cond: _____ µmhos/cm DO: _____ % _____ mg/L pH: _____ SU 2 extra 1 L glass bottles filled for W-PSNP-TQ lab matrix spikes? (circle one) Yes / No (NA) Comments: Field blank. Ortho-P not filtered.	Ice? Y / N / NA pH acid <2 SU? Y / N / NA W-PO4-F filtered? Y / (N) / NA OR 3 bottles filtered for Oct. Trend?

Section 15: GPS Procedures

Updates:

- Collect location data with resource grade GPS / GNSS unit.
  - All Status Network sites.
  - All SW Trend sites, once per year.
- Updated GPS Basics Manual (Feb. 2016 version)
- Please use current data dictionaries
  - 2016 SW Status Network Data Dictionary
  - 2016 GW Status Network Data Dictionary

Manual & data dictionaries available at Watershed Monitoring Information Center: https://fldeploc.dep.state.fl.us/status/

Section 16: Equipment Cleaning

Clarification:

Cleaning procedure for pumps used for purging only:

- Exterior of pump & tubing that may contact formation water must be scrubbed / wiped down with sudsy water and rinsed with analyte-free water.
- Pump interior must be completely flushed with tap water or analyte-free water.

Questions?

Stephanie Sunderman-Barnes

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850-245-8517