Field Sampling Practices that Prevent Compliance Failures

Lessons learned from Florida drinking and wastewater water systems

FRWA Annual Conference | Katie Strothman | Eurofins Environment Testing

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Florida drinking water compliance: 2024 at a glance

4,965

active public water systems

2,198

systems with at least one violation

15,888

total violations reported

The issue is usually not effort. It is relying on memory for work that needs a repeatable system.

Set up the system before the sample is due.

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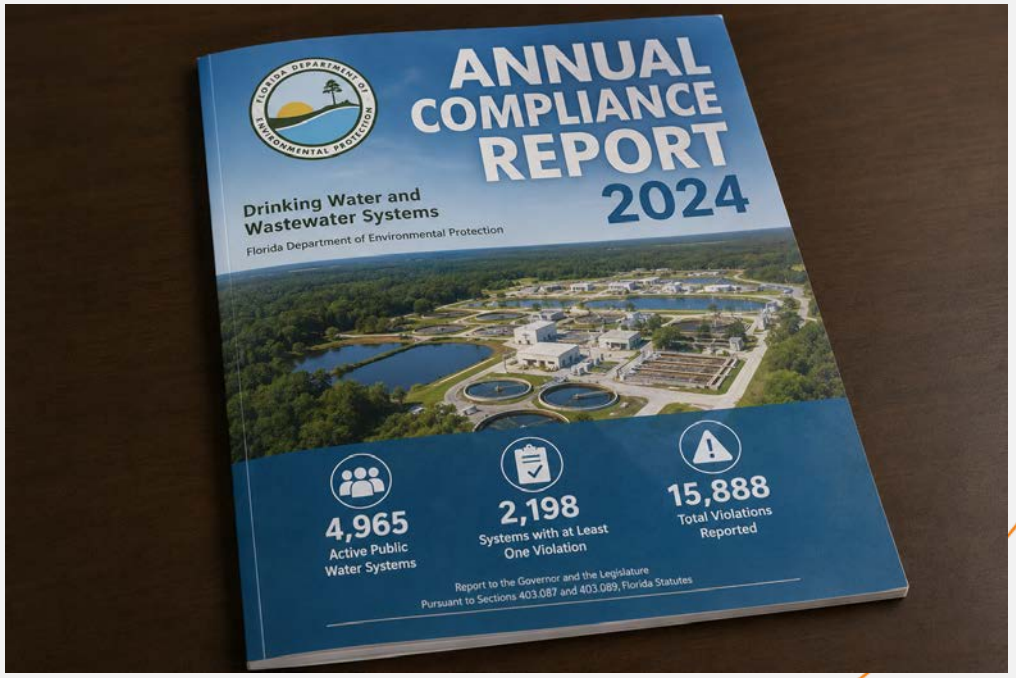
Highest compliance pressure points

Monitoring/reporting issues create the most operator follow-up

8,309	2,773	2,576	1,272	389
Chemical/Rad M/R	RTCR monitoring	Ground Water Rule	DBP M/R	Lead & Copper M/R

What operators can do

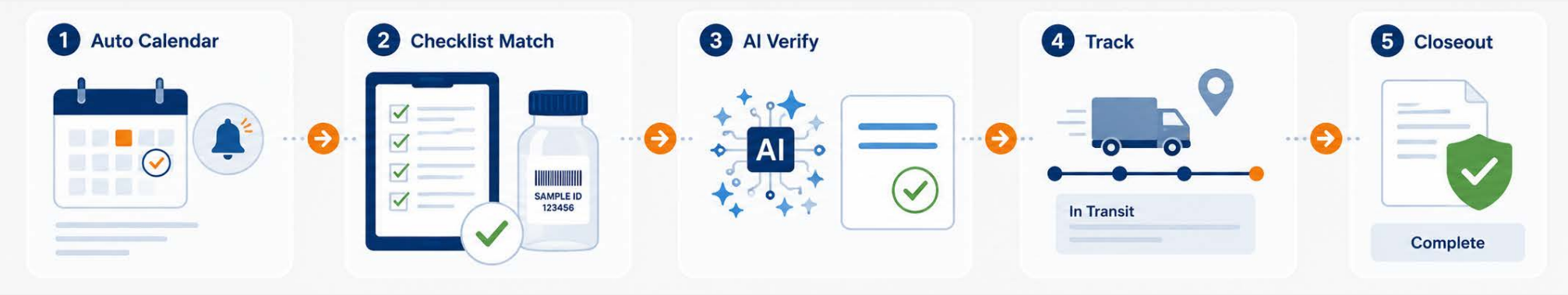
- Put every sampling window on one master calendar.
- Assign a backup before vacations and emergencies.
- Track lab receipt and reporting closeout; collection alone is not complete.



Source: Florida DEP Annual Compliance Report 2024; Ch. 62-550, F.A.C. monitoring/reporting sections.

Compliance workflow: the sample is only one step

PERMIT | CALENDAR | PREPARE | **SAMPLE** | DOCUMENT | SHIP | VERIFY



The goal is fewer surprises: make the right action easy, visible, and repeatable.

References: Permit, FDEP SOPs, Florida rules, and approved methods control final requirements.

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KNOW YOUR PERMIT

Turn permit conditions into field tasks.

The permit is the roadmap

Do not leave sampling requirements buried in a binder or inbox

WHAT
parameters

WHERE
sample points

WHEN
frequency

HOW
method/SOP

WHO
owner

PROOF
records

Pull these six items from every permit condition and convert them into tasks.

References: Ch. 62-550, F.A.C.; Ch. 62-555, F.A.C.; DEP SOPs effective 5/20/2026.

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Build a one-page permit worksheet

Simple enough to review monthly

Requirement	Where	When	Who	Proof
Bacteriological	Distribution	Monthly	Ops	COC + report
Nitrate	Entry point	Annual	Ops/Lab	Lab report
DBP	Approved sites	Quarterly	Ops	COC + temp
Calibration	Field	Each use	Sampler	Logbook

If it is in the permit, it needs a line on the worksheet and a place on the calendar.

References: 62-550.500, 62-550.512-.520, 62-550.720, 62-550.730, F.A.C.; FDEP DEP SOPs.

Schedule the work before the due date

The due date is not the planning date

60 days	30 days	14 days	7 days	1 day
review permit	order bottles	assign route	check meters	pack cooler

Every recurring requirement needs one owner and one backup before the month starts.

References: Ch. 62-550, F.A.C.; FDEP Annual Compliance Report 2024 monitoring/reporting themes.

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PREPARE BEFORE YOU LEAVE

Most failures are set up before the truck leaves the plant.

Five-minute pre-departure check

Make the routine short enough to actually use

1	2	3	4	5
Requirement	**Bottles**	**Equipment**	**Cooler**	**Handoff**

References: FM 1000 Field Planning and Mobilization; FS 1000 General Sampling; FD 1000 Documentation; FT 1000 Field Measurement.

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Wrong bottle = preventable failure

The lab may not be able to repair incorrect container, preservative, or volume

Microbiology: sterile bottle and dechlorination when required.

Metals/nutrients: correct preservation and cooling.

VOC/DBP: careful fill; avoid headspace where required.

Match bottle order, COC, and permit before leaving.

Read the bottle labels before the route, not after the sample is collected.

References: FS 1000; FS 2300 Drinking Water Sampling; method-specific preservation and holding-time requirements.

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Field instruments need acceptable checks

A field result is only defensible when calibration/verification passes.

Instrument ID
unique meter/test kit used

Acceptance criteria
pH ±0.2 SU; chlorine CCV within 10%

Reading/time
at sample, within method timing

Pass/fail + action
failed check needs corrective action

Do not report field data from an unchecked or failed instrument.

References: FT 1100; FT 2000; FT 1000; FD 1000.

Plan the cooler before the first bottle is filled

- Enough ice, but do not freeze unless required.
- Bottles upright and protected.
- COC in sealed dry bag.
- Lab hours, courier, and short holds confirmed.

Cooler condition is part of sample integrity.

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SAMPLING TECHNIQUE

FDEP FS 2300 simplified into field steps

Right location | Right flow | Right bottle | Right proof

References: FDEP DEP-SOP-001/01 FS 2300 Drinking Water Sampling, Effective May 2026; FS 1000; FD 1000; FT 1000/2000.

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Step 1: Pick the approved sample point

Do not decide at the tap.

1

Use the assigned point

For compliance, use the point designated by the permit, monitoring plan, or regulator.

2

If not specified

FS 2300 points to an accessible location near the supply line or an outside spigot for residences.

3

Know the sample type

Routine, repeat, trigger, entry point, source, distribution, and lead/copper can require different sites.

4

Document alternates

Write where, why, and who approved it if the normal location was not used.

Wrong location = compliance problem.

References: FS 2320(1); FS 2310; FD 1000.

Step 2: Reject taps that create doubt

Convenient is not always representative.

1

Avoid attachments

Hoses, filters, softeners, adapters, and devices can bias the sample unless allowed.

2

Avoid poor conditions

Dirty aerator, leaking tap, unstable flow, biofilm, or splashback create questions.

3

Use cold water when required

Lead/copper compliance samples use a cold-water tap.

4

Stop before filling

If the tap raises doubt, use an approved alternate and document it.

Sample the system, not the faucet.

References: FS 2310(1.1.1); FS 2320(1); FD 1000.

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Good Tap vs Bad Tap

GOOD TAP

Clean outlet
No buildup or discoloration

No attachments
No hoses, adapters, or filters

Cold water tap
Use a routine cold water tap

Stable flow
Smooth, steady water flow

BAD TAP

Attachments
Hoses, adapters, or filters present

Dirty outlet
Buildup, corrosion, or debris

Splashback
Water splashes from faucet

Questionable condition
Leaks, damage, or poor upkeep

Step 3: Prepare the tap and flush

Inspect the outlet, flush to representative water, then set the right flow.

1

Inspect the outlet

If the tap is dirty, leaking, splash-prone, or unstable, use another approved point or document the condition.

2

Remove attachments when needed

Remove hoses, aerators, filters, screens, and adapters when the plan/SOP requires a clean open outlet.

3

Flush to representative water

Supply systems: flush 2 to 5 minutes. Then reduce flow to about 500 mL/min (roughly a 1/8-inch stream) for most samples.

4

Special case: VOCs

For VOCs, reduce flow to ≤100 mL/min and minimize aeration. Do not disinfect or flame by habit unless special requirements call for it.

Flush enough for representative water — then control the flow before filling.

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Step 4: Set flow before filling

Flow rate is technique.

1

Most samples

Reduce flow to about 500 mL/min or less; roughly a 1/8-inch stream.

2

VOC samples

Reduce flow to about 100 mL/min or less and minimize aeration.

3

Control the cap

Do not touch the inside of cap, bottle mouth, or container.

4

Tilt the bottle

Let water fall onto the inside surface. Do not shake while filling.

Slow down before opening the bottle.

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VOC Fill: Correct vs Incorrect

CORRECT

- low flow
- no aeration
- no headspace
- check after inversion

INCORRECT

- high flow
- splashing
- turbulence
- bubble = recollect

Bacteriological samples

Sterile bottle, clean handling, residual proof.

1

Confirm bottle

Use the sterile lab bottle. Do not rinse. Confirm dechlorination if chlorine is present.

2

Control hands/cap

Open only when ready. Do not touch inside cap or bottle mouth. Do not set cap down.

3

Fill to slightly above mark

Use a smooth stream; fill to lab mark and leave required headspace.

4

Close and cool

Cap promptly; document time, location, residual, collector, COC, and cooler details.

Common misses: cap, residual, time, temp.

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Bacteriological Bottle Handling

Follow these steps to protect sample integrity.

1 Use sterile bottle — do not rinse.

2 Do not touch inside of cap or bottle.

3 Fill to line / leave required headspace.

4 Cap promptly, document, and cool.

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Residual chlorine: DPD calibration + measurement

1

Use method in range

DEP recommends DPD colorimetric for 0.2 to 4.0 mg/L residual chlorine; test grab samples within 15 minutes.

2

Calibrate with standards

Initial calibration: blank + at least two standards bracketing sample range; calibration curve r ≥ 0.995.

3

Verify within 10%

ICV and CCV standards must read within 10% of known value. If CCV fails, troubleshoot and recalibrate before samples.

4

Read sample correctly

Rinse cuvette, zero if colored/turbid, add DPD, mix, wait required time, read before maximum time, rinse 3–5x.

Failed verification means affected chlorine data may need qualification.

Use FT 2000 acceptance criteria and required timing.

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pH calibration

Use FT 1100 acceptance criteria and required timing.

1

Use bracketing buffers

Use at least two buffers that bracket expected pH. Use pH 7 first unless manufacturer instructions say otherwise.

2

Acceptance = ±0.2 SU

ICV and CCV must be within ±0.2 pH units of the buffer value; some programs may be stricter.

3

Frequency + slope

CCV after samples and no more than 24 hours from previous verification. Weekly slope must be >90% if applicable.

4

Measure within 15 minutes

Fresh sample, clean cup, swirl electrode, wait for stable pH/temperature, record to sensor resolution.

Slope <90% or failed ±0.2 check = repair/replace/recalibrate before reporting.

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VOC samples

Low flow, no aeration, no headspace.

1

Use correct vials

Use lab VOC vials/preservative. Keep capped until ready.

2

Reduce flow

FS 2300 calls for about 100 mL/min or less for VOCs.

3

Fill gently

Low steady stream. Avoid splash, turbulence, and trapped air.

4

Invert and check

After capping, check for bubbles/headspace. Recollect if needed.

VOC rule: no bubbles.

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Lead and copper are different

Do not use the normal flushing habit.

1

Use correct tap

Compliance samples use a cold-water kitchen or bathroom tap designated for the program.

2

Six-hour stagnation

Collect after water has not been used for at least six hours unless event instructions say otherwise.

3

Do not flush / do not remove aerator

FS 2300 says do not flush/purge, do not remove aerators, and do not rinse the container.

4

Match the event type

Routine first-draw, unknown-line 1st/5th liter, school/childcare, and lead-service-line events are not the same. Follow the specific event instructions.

Know the Pb/Cu event before sampling: routine, unknown line 1st/5th, schools/childcare, or lead service line.

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PFAS sampling: FS 2300 essentials

For PFAS, the blank, handling, and avoid-list are part of the sample.

1

Follow FS 2011 and the lab kit

Use lab-provided bottles, preservative, PFAS-free water, intermediate devices, packing, preservation, and holding-time instructions. Do not substitute supplies.

2

Avoid PFAS contamination sources

Keep food wrappers, waterproof/stain-resistant items, cosmetics, sunscreen, lotions, markers, and treated rain gear away from the sample area.

3

Collect a field blank

FS 2300 requires a field blank with each PFAS sample set collected from the same site and time.

4

Use clean gloves / no rinse

Use new powderless nitrile gloves. Do not rinse the field blank container. Do not touch inside the cap or container. Do not flush preservative.

PFAS blanks show whether the field process contaminated the sample.

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Groundwater: purge volume + stability criteria

Do not sample until the purge record and the last 3 readings support it.

How much to purge

Record water level, flow rate, purge start/stop, and total gallons. At minimum, purge the pump/tubing/flow-cell equipment volume; continue until stable or follow the permit/work plan.

Equipment volume formula

V = pump volume + tubing volume + flow-cell volume. Tubing volume uses ID + tubing length. Record the calculation, not just “purged.”

Stability: last 3 readings

pH: ±0.2 SU
Temp: ±0.2 °C
Specific conductance: ±5%
Use the same meter set and record times/readings.

More stability checks

DO: all ≤20% saturation OR ±0.2 mg/L / ±10%
Turbidity: all ≤20 NTU OR ±5 NTU / ±10%
ORP: record trend if used.

When it still will not stabilize

Do not hide it. Document low yield, dry well, excessive turbidity, drawdown, equipment issues, and who approved the sampling decision.

Operator takeaway: “stable” means documented last-three-readings criteria, not just enough water in the bottle.

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PFAS wastewater: HB 1019 + EPA 1633 discipline

For PFAS, the sample process is part of the result.

1

HB 1019 driver

Effective 7/1/2026. Certain public entities disposing domestic wastewater biosolids and treated effluent must conduct quarterly PFAS sampling and submit results to DEP.

2

Where to collect

Use the permitted/reporting stream: treated effluent and/or biosolids disposal point. Do not swap to a convenient tap without approval.

3

Method/matrix

EPA 1633A covers aqueous, solids, biosolids, and tissue by LC-MS/MS. Tell the lab the matrix and solids level before the event.

4

Clean handling

Use the lab kit. Avoid PFAS contact sources: waterproof/stain-resistant gear, food wrappers, lotions/sunscreen, markers, and unapproved tubing/materials.

5

QC/records

Field blanks/equipment blanks, bottle lot, site, time, sampler, cooler, and custody need to tell one clean story.

Operator takeaway: PFAS sampling fails quietly — prevent contamination before the bottle opens.

References: CS/CS/HB 1019 (2026) / Ch. 2026-158; EPA Method 1633A; FDEP FS 2400/FS 1000/FQ 1000 as applicable.

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Reclaimed/pathogens: calendar the exact rule event

Annual routine monitoring, seasonal Crypto/Giardia, and biannual routes are not the same.

Annual / routine reclaimed

Permit + Ch. 62-600/62-610 control routine reclaimed water points. Many annual parameters are composite unless listed as grab or permit says otherwise.

Crypto/Giardia collection

Use EPA 1623.1. Collect in 10 L plastic carboys or other container that meets DQOs. Record volume and submit on the Pathogen Monitoring form.

Shipping criteria

Ship the day collected. Lab must receive within 24 hours. Maintain 0-10 °C from collection until filtration. Do not freeze.

Season / quarterly route

For applicable Part V projects: quarterly sampling; intervals not >3 months. Calendar Feb 28, May 28, Aug 28, Nov 28 due dates. Peak-flow sampling generally falls Aug-Oct where required.

Biannual route

Some upstream Class I projects sample once each two-year period; interval not >2 years; results due by Nov 28 of even-numbered years. Put this on the long-range compliance calendar.

Operator takeaway: pathogen samples fail by timing, volume, temperature, or late delivery — not just collection technique.

References: Rule 62-610.568, F.A.C.; FDEP Pathogen Monitoring Form 62-610.300(3)(a)4; FDEP FS 2400 FS 50 and FS 70.

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Grab vs composite: annuals are often composites

Use the permit first; use grab only for the short list or when conditions require it.

COMPOSITE: common for permit/annual monitoring

Use when the permit asks for an average over time, the wastewater flow is continuous, mass loading is needed, or results must line up with average flow.

Time composite: only if flow is steady. Flow-proportional: when flow varies or is unknown.

Autosampler: ≥100 mL per aliquot; keep cooled if required; inspect tubing, power, ice/refrigeration, and security.

GRAB: short list / “moment in time”

Preferred for parameters that change quickly or are affected by compositing:

- pH, temperature, specific conductance
- residual chlorine, DO/dissolved gases
- oil & grease, TRPH, total phenols
- microbiological parameters
- cyanide, un-ionized ammonia
- field-filtered dissolved constituents
- VOCs — never field-composite

Rule of thumb: most routine wastewater annual chemistry may be composite, but the grab short-list stays grab unless the permit specifically says otherwise.

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Bottle order and fill rules

Collect in a sequence that reduces mistakes and cross-contamination.

1

Clean to dirty

When possible, collect cleaner/low-risk samples before dirty/high-risk locations so you do not carry contamination forward.

2

Unpreserved to preserved

Keep unpreserved and preserved bottles separated. Do not rinse bottles that contain preservative.

3

VOC/DBP exception

Follow no-headspace and method-specific fill instructions. Do not shake VOC/DBP containers.

4

Separate matrices

Keep drinking water, wastewater, blanks, duplicates, and different matrices clearly separated on the COC and in the cooler.

The label controls the habit. Do not “fix” a bottle after collection.

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Label, bag, cool, protect

Finish the bottle before the next one.

1

Cap and dry

Cap securely and dry exterior with clean paper towel.

2

Label and seal

Label/seal when required. **Bottle label and COC must match**.

3

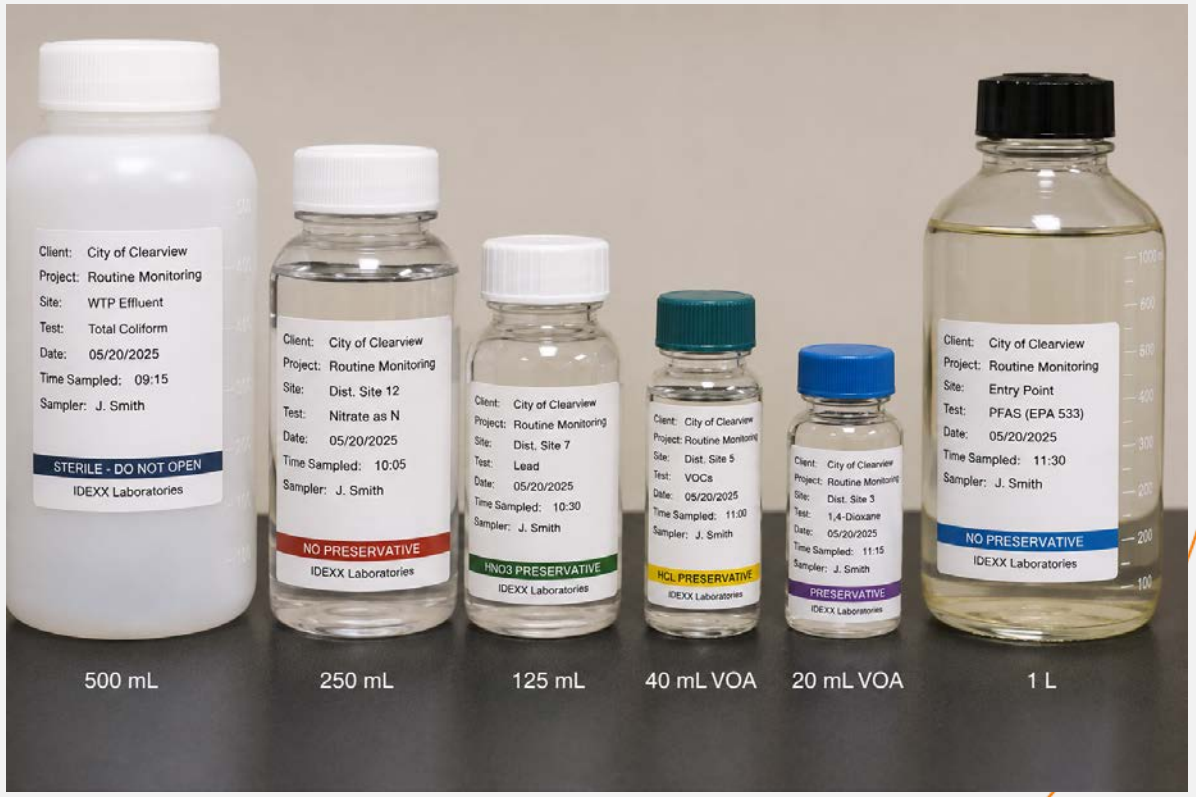
Bag the bottle

Place in plastic sample bag when required; keep paperwork dry.

4

Cool correctly

Cool to 4 C where required; do not let meltwater rise above containers.



Bottle, COC, cooler, time: one story.

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The 30-second sample check

Before the cooler closes.

1 **Location**

Approved and specific.

2 **Bottle/technique**

Correct container, preservative, fill rule.

3 **Field data**

Residual, pH/field result, time, equipment ID, initials.

4 **COC/cooler**

Labels match COC; signatures, times, cooling, and transport are ready.

Catch it while still at the tap.

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The 8 sampling problems to control every route

- Wrong location
- Wrong bottle
- Missing residual
- Missing collection time
- Label mismatch
- Warm cooler
- Holding time exceeded
- VOC headspace

Control these eight and most field-created sample failures become preventable.

References: FS 2300; FS 1000; FD 1000; FT 2000; method/lab instructions for bottle, preservation, holding time, and receipt criteria.

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DOCUMENTATION, CUSTODY & TRANSPORT

A good sample still needs a defensible record.

The field record defends the sample

- Exact location / permit ID
- Collection date and time
- Collector name or initials
- Field results, units, and equipment
- Preservation, cooling, and COC link
- Conditions and exceptions

Could another operator defend this sample six months from now?

References: FD 1000 Documentation Procedures; FS 2300; FT 2000; Rule 62-160.240, F.A.C.

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Holding time starts at collection

- Write the actual collection time.
- Know the shortest holding time in the bottle set.
- Plan delivery before sampling.
- Do not collect a sample you cannot get to the lab on time.

The clock does not start when the lab opens the cooler.

References: FDEP Holding Time Calculations page; FS 1000; FS 2300; Rule 62-160.700, F.A.C.

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The 60-second cooler close-out

- Bottles labeled
- COC complete
- Times match
- Preservation checked
- Temperature plan
- Seal/tracking

This is the last cheap place to catch the mistake.

References: FD 1000; FS 1000; FS 2300; applicable method requirements.

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INSIDE THE LABORATORY

What sample receiving sees when the cooler arrives.

Sample receiving is a checkpoint — not a rescue mission

- Bottle matches COC.
- Date/time are complete.
- Temperature and ice are acceptable.
- Preservative and bottle type are correct.
- Signatures and custody are complete.

Make every sample easy to accept, defend, and report.

References: FD 1000, FS 1000, FS 2300, FT 2000, LD 1000; 62-160, F.A.C.; lab instructions.

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Why samples get held, rejected, or qualified

Warm cooler	Holding time	Wrong bottle
COC gaps	Label mismatch	Preservation issue

A perfect analysis cannot repair a broken collection or delivery process.

References: FD 1000, FS 1000, FS 2300, FT 2000, LD 1000; 62-160, F.A.C.; lab instructions.

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FLORIDA DEFICIENCIES

Turn violation patterns into prevention systems.

What the compliance reports are really telling us

Report categories are symptoms. Deficiencies are the failed controls behind them.

FDEP report pressure point	What usually failed at the plant	Prevention control to teach
Chemical/Rad M/R	Annual, quarterly, triennial, or 6-year sample missed or reported late	Permit worksheet + calendar + lab receipt/report closeout
RTCR / GWR	Routine, repeat, triggered, or source sample not collected on time	Preassigned bacti sites + repeat/trigger plan + backup sampler
DBP M/R	TTHM/HAA5 window missed, wrong site, or late lab delivery	DBP site map + quarterly reminder + bottle/hold-time check
Lead & Copper	Wrong tap, flushed tap, aerator removed, or wrong event type	Event-specific instructions: routine, school/childcare, unknown line, 1st/5th liter, LSL
Public Notice / CCR	Notice late, certification missing, or report not retained	Closeout log: report received, notice sent, certification filed
High / unusual result	Resample panic without checking field conditions	Review tap, flow, bottle, preservation, cooler, hold time, and qualifiers

The report shows the symptom. The field system fixes the cause.

References: FDEP Annual Compliance Reports 2024/2025, Ch. 62-550, F.A.C., FDEP SOPs FS 2300, FD 1000, FT 1100/2000.

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Use Florida deficiency data to prioritize controls

1

Monitoring/reporting

Build the calendar and closeout tracker before the month starts.

2

Sample integrity

Use the field routine for location, flow, bottle, residual, COC, cooling, and delivery.

3

Follow-up events

Have repeat, trigger, assessment, notice, and reporting steps assigned before an event occurs.

4

Operator takeaway

Use the data to decide which controls deserve time first.

Focus effort where violations and follow-up are most likely.

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Use FDEP deficiency data correctly

The report tells you where pressure is highest; the field system fixes the local control failure.

FDEP REPORT CATEGORY	COMMON FIELD / CONTROL FAILURE	PREVENTION CONTROL TO TEACH
Chemical/Rad M/R	Sample missed, wrong window, or reporting closeout not verified	Permit worksheet + master calendar + lab receipt/report tracker
RTCR / GWR	Routine, repeat, triggered, or source sample steps not assigned in advance	Preassigned sites + repeat/trigger map + backup sampler
DBP M/R	Wrong site/window, bottle issue, or late delivery	Quarterly site map + bottle/hold-time check + route reminder
Lead & Copper	Normal flushing habit applied to a first-draw/event-specific sample	Event-specific resident instructions + collection checklist
Public Notice / CCR	Notice/certification/record retention not closed out	Closeout log: issued, certified, filed, retained

Use “usually failed” as an operator teaching bridge — not as a quote from the report.

References: Florida DEP Annual Compliance Report 2024; Ch. 62-550, F.A.C.; FS 2300; FD 1000; FT 1100/2000.

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When a sample problem happens

Do not just resample. Fix the step that failed.

1

Identify failed step

Location, tap, flow, bottle, residual, COC, temperature, holding time, or follow-up.

2

Document what happened

When found, who was notified, what sample was affected, and what decision was made.

3

Correct the issue

Call lab/supervisor/regulator as needed, recollect if appropriate, and meet trigger/reporting requirements.

4

Prevent repeat

Change checklist, route sheet, bottle order, training, or calendar that allowed the issue.

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Microbiology and groundwater: timing and follow-through

2,773

RTCR major monitoring violations

1,251

systems with RTCR major monitoring violations

94.8%

GWR violations: routine samples not collected

- Have a repeat/triggered sampling plan before a positive result.
- Know where to sample, who samples, and who confirms closeout.
- Collected is not complete until lab receipt and follow-up are confirmed.

Source: FDEP Annual Compliance Report 2024 RTCR and Ground Water Rule sections/Tables.

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Program-specific schedules are easy to lose

Chemical/Rad
master calendar

DBPs
site list + window

Lead/Copper
sampling pool + instructions

CCR/Public Notice
certification + closeout

Annual, quarterly, triennial, and six-year cycles need reminders years in advance.

Sources: FDEP Annual Compliance Report 2024 Tables 4-9 and CCR/Public Notice sections; Ch. 62-550, F.A.C.

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What operators should do next

1

Make sampling technique a field habit

Use the expanded field-risk checklist for bacteriological, VOC, PFAS, and residual chlorine work.

2

Keep proof with the sample

Location, time, residual, bottle, preservation, COC, cooler, and lab receipt need to tell one story.

3

Fix the weak spot after every issue

Do not just resample. Update the checklist, calendar, route, bottle order, or training step that failed.

Monday morning goal: make the next compliance sample easier to collect, defend, and close out.

One improvement per system is better than ten ideas no one owns.

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Field sampling checklist

1 · BEFORE YOU LEAVE

- ☐ Sample schedule and route confirmed
- ☐ Correct bottles, preservatives, and labels packed
- ☐ Cooler with ice or packs ready
- ☐ Chain-of-custody forms printed
- ☐ Site access and keys confirmed

2 · AT THE TAP

- ☐ Correct sample location for the route
- ☐ Flush the line and confirm representative flow
- ☐ Measure and record chlorine residual
- ☐ Right bottle for each analyte, no headspace in VOC vials
- ☐ Label on every bottle matches the chain-of-custody
- ☐ Record collection time for each sample

3 · BEFORE THE COOLER CLOSES

- ☐ Chain-of-custody signed and timed
- ☐ All bottles labeled and accounted for
- ☐ Cooler cold and samples on ice
- ☐ Holding time noted for each analyte
- ☐ Delivery or courier arranged in time
- ☐ Note or photo any anomaly for the record

THE 8 TO CONTROL EVERY ROUTE: missing residual · missing time · wrong location · wrong bottle · holding time · label mismatch · VOC headspace · warm cooler

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At-the-tap checklist

A printable field check operators can use before the bottle is filled and before the cooler closes.

1. Before opening bottle

- [ ] Approved point/site
- [ ] Tap condition acceptable
- [ ] Attachments handled per SOP
- [ ] Flow set correctly

2. Fill correctly

- [ ] Correct bottle/preservative
- [ ] No rinse unless required
- [ ] No cap/bottle-mouth contact
- [ ] VOC/DBP no-headspace rule

3. Prove the sample

- [ ] Collection date/time
- [ ] Exact location/permit ID
- [ ] Field result + equipment ID
- [ ] Collector initials

4. Close out

- [ ] Label matches COC
- [ ] Residual/pH recorded if needed
- [ ] Cooler/ice plan ready
- [ ] Delivery within hold time

Field rule: stop and fix the issue while you are still at the tap.

References: FS 2300; FS 1000; FD 1000; FT 1000/1100/2000; applicable method and lab instructions.

Annuals: composites first, grabs for the short list

Many annual permit events are 24-hour composites unless the permit, method, or analyte requires a grab.

Use composite when the permit needs an average

1. **Continuous discharge**

   Composite represents the average over the monitoring period.

2. **Mass loading / average concentration**

   Use flow-proportional when flow varies or when mass loading matters.

3. **Annual permit monitoring**

   Treat as composite unless permit/method says grab.

4. **Sampler controls**

   Minimum 100 mL per aliquot; keep cooled if required; line purges after each draw.

Collect grabs for the short list

- pH
- Temperature
- Residual chlorine
- Specific conductance
- Dissolved oxygen / gases
- Microbiology
- Oil & grease
- VOCs — never field composite
- Cyanide
- TRPHs / phenols
- Un-ionized ammonia
- Field-filtered dissolved analytes

If the permit specifically calls for a composite on an item in the short list, follow the permit and document the basis.

Strategy: build annual bottle kits as “composite set + grab exception set” so operators do not miss the special bottles.

References: FDEP FS 2400 FS20-FS22; FS 2400 §§2.4.1, 2.8, 2.9, 2.10; FS 2400 FS30 §2.1.1.6-2.1.1.8.

Questions?

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