

Basic Testing Guide

This guide and Startup Kit are designed to help new users become accustomed to the AND1100 fluorimeter and its testing procedures. The Startup Kit includes enough materials for (5) tests/calibrations. However, we highly recommend you read the entire user and sensor manuals of those specific kits prior to operating this equipment, paying attention to all danger, warning and caution statements. It is important to note that these procedures are designed **ONLY** for the Startup Kit materials. As some sensor tests deviate slightly, please refer to those sensor manuals for specific instructions.

You can also view demonstration videos of this procedure at www.andyze.com/videos

Required Materials:

AND1100 Fluorimeter

(2) Sensor Packs

(2) 1mL Syringes

(2) 5mL Buffer Vials

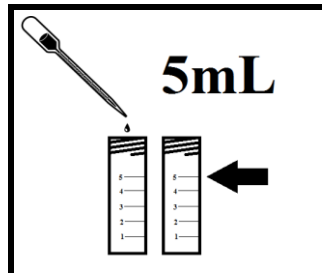
(1) Transfer Pipette

Lead Standard

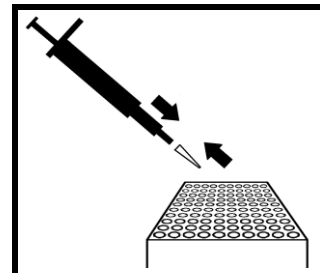
100 μ L Pipette

Pipette Tip

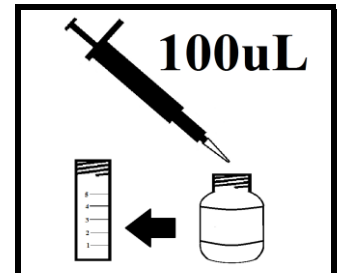
Sample Water



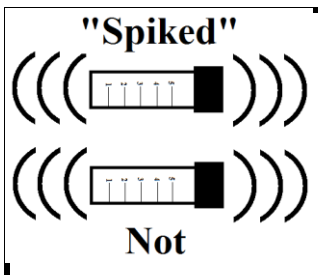
1. Fill **TWO** vials containing buffer to the 5mL mark with provided sample water using transfer pipette.



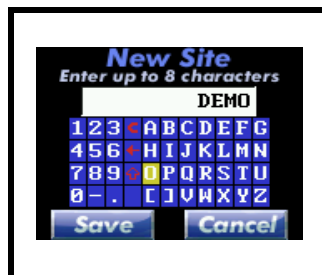
2. Place a new pipette tip onto 100uL fixed pipette



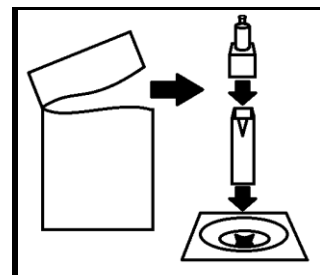
3. Using pipette, withdraw 100uL of Lead Standard and dispense the volume into **ONE** of the sample vials (now "spiked").



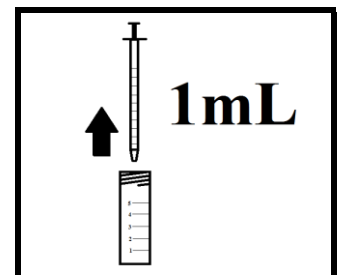
4. Screw on the green lids and shake to mix. Make note of which vial is "spiked".



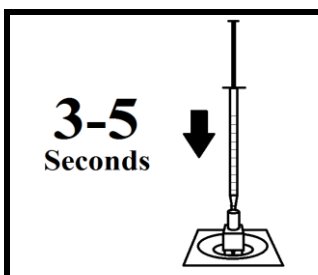
5. Press **ON/OFF** to initialize AND1100. Press **SELECT** and create a "New Site". (ex. "DEMO"). Unit will enter Site Calibration.



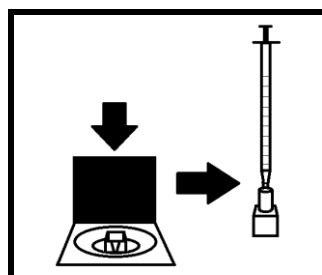
6. Open sensor pack, placing cuvette into AND1100 test chamber (triangle mark forward) and green sensor housing onto cuvette.



7. With a new syringe draw 1mL of "spiked" sample from vial.



8. Attach syringe to top of sensor housing. Over 3-5 seconds, squeeze sample into cuvette.



9. **QUICKLY** remove sensor housing and syringe, close AND1100 lid, and press Start.

Repeat Steps 6 through 9 with other vial



11. When prompted, remove cuvette to view and apply results. Discard all materials used.

12. To Verify Calibration: Repeat steps 6-9 using the "Start" button on main screen. The solution in the "Spiked" vial should result in a 21-29ppb concentration if process was done correctly.

Basic Troubleshooting Guide

Testing with the Sample Water provided with the Startup Kit or Deionized/Distilled water is an excellent method to verify the operation of the AND1100 fluorimeter and the user method, as they contain no interferences, are at a neutral pH and generally at room temperature. Any resulting numerical concentration from the “spiked” vial after site calibration (Step 12), generally indicates a properly operating fluorimeter. While a range of results are to be expected (i.e. 25ppb lead could test as 21-29ppb), concentrations outside of this range may be improved upon with the below considerations, which may be applied to any type of water sample being testing.

Important Testing Considerations

- Every water source is different, so Site Calibration is very important to compensate for any potential interference in that specific sample.
- NON-Potable samples such as environmental and industrial samples will likely need pre-treatment (filtration, dilution, pH adjustment, digestion, etc.). Refer to the ANDalyze Environmental Water Testing Solution Note (www.andalyze.com/support/downloads) and associated ANDalyze Accessory Kits.
- Consistency is important for improved accuracy. Repeat your steps as closely as possible (examples: 3-5sec injection of precisely 1mL, close lid, and press start immediately)
- Only test WATER that is 17 – 35 °C (63 – 95 °F). Cold water samples can be warmed with your hand.
- Fresh unpreserved water samples are best. Ad/Absorption, contamination, precipitation can occur over time.
- Buffer in vials will help to standardize pH, but samples outside of the 4-8 pH range need to be manually adjusted prior to placing into 5mL buffer vial.
- Test Kits are stable for 6 months stored at <23°C (74°F), <50 % R.H. away from direct sunlight and 1+ year if refrigerated (4°C/39°F). Heat can quickly degrade the sensors.
- ANDalyze kits test for soluble (dissolved), bio-available metal ions only. Other analyses, such as ICP, may measure total metals and involve a digestion process involving high concentration acid.
- All components in a sensor kit (cuvette, sensor housing, 1mL syringe, buffer vial, pipette tip) are meant to be used only once and are disposable. No special treatment required as all materials are non-hazardous.
- Kits are color coded and labeled for each metal. For example, Lead testing will use a light green sensor housing, buffer caps, and fluorimeter display.
- Test with fluorimeter on a flat surface (i.e. Inner surface of provided fluorimeter case)

Basic Troubleshooting

Observation	Potential Causes	Potential Solutions
Below Limit Result	<ul style="list-style-type: none"> • Target metal IS below minimum detection level (ex. 2pp Lead) • Water conditions affect fluorescence detection • Sensor Kit expired or degraded 	<ul style="list-style-type: none"> • Confirm temperature and pH are within range and sensor kit expiration and storage conditions • Filter sample if non-potable (0.45um Nylon filters)
Above Limit Result	<ul style="list-style-type: none"> • Target metal IS above maximum detection level (ex. 100ppb Lead) 	<ul style="list-style-type: none"> • Dilute Sample (Make sure to multiply result by dilution (ex. 25ppb with a 4x dilution is actually 100ppb)
Result Not As Expected	<ul style="list-style-type: none"> • Interference • Adsorption to Container • Organic Absorption • Incorrect 100uL pipette operation 	<ul style="list-style-type: none"> • All the above • Repeat Site Calibration • Confirm 100uL “spike” level is at line on pipette • Consistency is key!
Site Calibration Failed	<ul style="list-style-type: none"> • Fluorescence difference between “spiked” and non-spiked samples not observed • “Spiked” and non-spiked vials switched • Interference 	<ul style="list-style-type: none"> • All the above • Sample dilution (2x or 4x) may reduce interferences

If issues or concerns still persist, or if you have questions, please call or email ANDalyze at +1 217.328.0045 or info@andalyze.com.