

FIELD TECHNICIAN CHECKLIST: FDR ACCESS TUBE PROFILER

Frequency-Domain Resonator ('LUMBRICUS') Profile Verification Form

Station / Site Name: _____	Date / Time: _____
Profiler S/N: _____	Access Tube ID / Depth: _____ / _____ m
Lead Specialist: Kadeem Manning	VCO Range: 100 MHz – 300 MHz

Step	Verification Task	Target Parameter / Value	Pass	Fail
1	Access Tube Inspection	Glass fiber tube clean, dry inside, sealed bottom plug intact		
2	VCO Driver Stabilization	Monoboard computer powered on for ≥ 10 minutes		
3	Air Resonance Check	Resonant frequency peak = 230 MHz ± 2 MHz in air fixture		
4	Saturated Standard Check	Resonant frequency peak = 170 MHz ± 2 MHz in saturated vessel		
5	Diode Detector Response	Power detractor curve smooth with low signal noise		
6	Motor Drive Registration	Probe head moves smoothly up/down without cable binding		
7	Vertical Resolution Setting	Position encoder set to 3 cm step increments		
8	Tube Wall Gap Audit	No air gap between soil and glass fiber tube outer wall		
9	Profile Curve Inversion	Real permittivity (ε') and loss factor (ε'') derived correctly		
10	Profile Data Archival	Depth-moisture profile saved to datalogger memory		

Field Notes & Moisture Profile Comments:

Field Technician Sign-Off:	Prepared By: Kadeem Manning (Lead Field Specialist)
Signature: _____	Date: _____