# Soil moisture sensing

I just had this exchange with Decagon Devices -- the manufacturer of our soil moisture probes. In short, iron content will affect the probe response, so our gravimetric sampling is needed.

Hi Steve,
Whoa! Unusual minerology can have some strange affects on our probes. The probes emit an electromagnetic field that primarily detects water in soils, but iron is definitely going to affect the electrical properties of the soil. I think that you should be able to account for this with a custom calibration (http://www.decagon.com/education/calibrating-ech2o-soil-moisture-sensors-13393-04-an/). We have seen some strange things like this in volcanic soils. It isn't easy to tell what the exact effect it will have on a given soil, so it is definitely best to calibrate. I have cc'd Doug, one of our R&D scientists, who may have more to add on this topic.
Regards,
Chris Chambers

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| **How can we help you?** | We now have several EC-5 probes in and around the Arizona Meteor Crater. We are seeing large shifts from the default calibration (offsets of -2 to +10 % vol). I don't believe that this soil is very saline, however it does have a large iron content. (A magnet picks up dirt!) Does it make sense to you that iron in the soil would affect the EC-5 calibration? If so, would you expect an offset, gain, or other calibration shift?<br><br>Thanks...Steve |

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