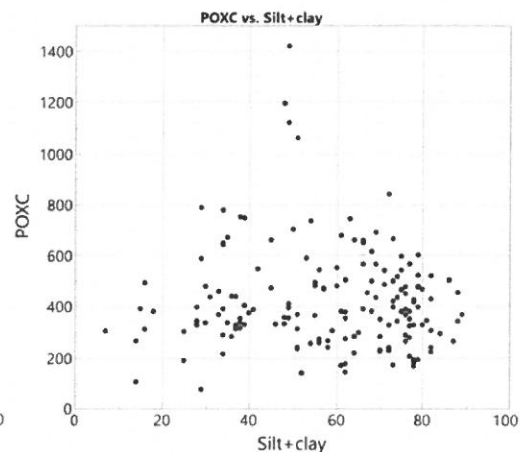
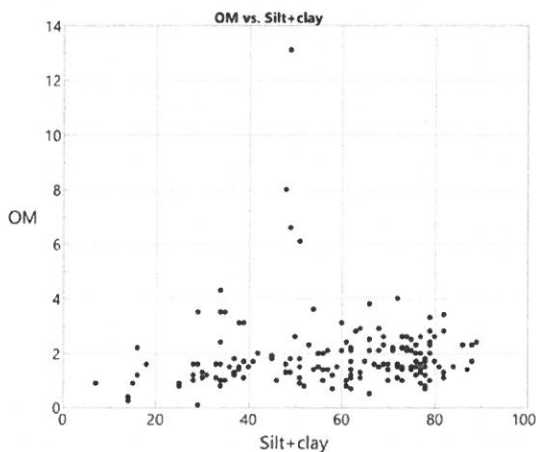


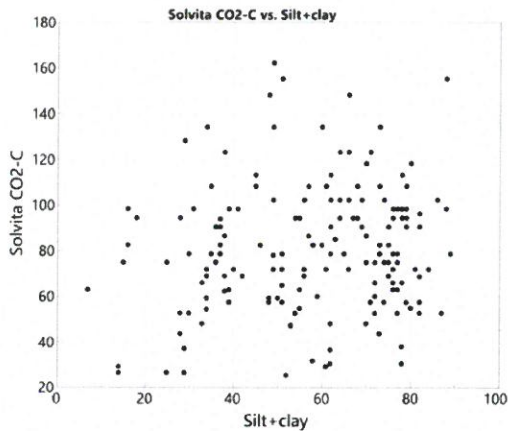
**SOIL HEALTH GRANT**  
**2018 Report**  
**NAME: Andrew McGuire**

**How did you meet the objectives outlined in project deliverables – describe:**

2018 accomplishments, Year 2 of 3:

1. Evaluate soil health tests on irrigated soils of Eastern Washington. I was able to obtain 63 soil samples from growers in 2018, mainly producing annual crops. 44 samples are from potato fields. This gives me a total of 164 samples from 2017-2018. All samples were analyzed for POXC, MinC (Solvita lab test), and total SOM, and additional NRCS soil health tests, as proposed. We also measured % sand, silt, and clay for soil characterization.
2. Establish soil health monitoring network in irrigated Eastern Washington. I added all data to the established database, including GPS coordinates, site background, and soil data. In addition, I have obtained data from two other soil health projects in the region and am in the process of adding this data to the database.
3. Analyze soil health data and distribute the results. I have analyzed the data and am in the process of reporting it to all the grower cooperators. The following graphs are included in the report that they will receive, except that in their reports, they will be able to see which data is from their fields.

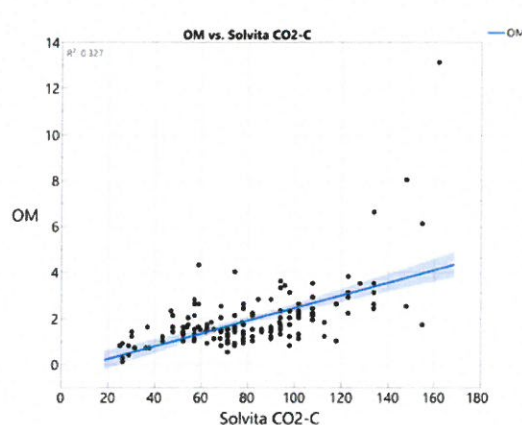
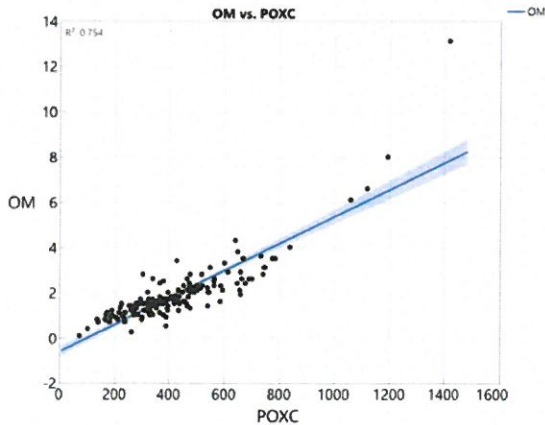




The data above shows that, as we found in 2017, none of our selected measurements are correlated with soil fines (silt+clay), nor with just clay. This is surprising given the role of fines in protecting organic matter in soils. This may be due to the relatively low levels of organic matter in our soils, or it could be management effects. It may also indicate that these soils are far below any saturation point for soil organic matter.

There are some soils with levels of all three measurements far above other soils with the same texture (silt+clay). This is probably due to management.

The graphs below show that soil organic matter in these samples was highly correlated with POXC, but not with the Solvita respiration test. Unless the POXC levels change more quickly than total SOM, adding this measurement may not be worth the extra cost.



**Is there a Fact sheet the Soil Health Committee can use to transfer and communicate the results?**

My plan is to publish a fact sheet after collecting data for another year.

**How are you using the results locally – explain how project results can be transferred and used in other places - do you envision the results from your project serving a broad audience – if so how.**

I will be sending out reports to all the grower cooperators who sent in soil samples this year. In addition, I will create a summary report to send out to our irrigated agriculture soil health email list that currently has 1037 subscribers.

I am planning a soil health conference for early December in Moses Lake and plan to use the funds allocated to this project to bring in at least one out-of-state speaker, as proposed. The conference will be focused on potato production (with assistance from the WA Potato Commission) but will be useful for other vegetable growers.

I will be presenting the results of this project at this conference, which normally attracts 120-200 participants.

**Do you feel the project is completed or would there be value added by extending your work – if so – what remains to be done and if extended how would this benefit the soil health movement.**

As proposed, this project will continue for another year. This will allow me to continue to add data to the database from different fields/crops. The result of such a large database of soil data will be a better interpretation of soil health measurements and better evaluation of which soil health measurements are of value to our region. I will also use the database to select locations for further testing, including measurement of soil physical parameters directly related to problems that growers report having with their soils, such as low infiltration rates.

**Add additional outreach information such as workshops, field demonstrations, meetings, etc. that was held (include pictures before/after and of outreach events if possible):**

Summer 2018: Presented 2017 data to ~30 farm managers from AgriNorthwest farms.

Fall 2018: email to all cooperators and to our soil health email list

December 2018: Soil health conference in Moses Lake; presentation of projects results so far.

