

Ambient Monitoring Initial Report

Part of GWMA Implementation Plan

June 20, 2019



Groundwater
Management Area
(GWMA)

Monitoring Plan Requirement

WAC 173-100-100 (6) (b) requires that the GWMA Program include a monitoring system for evaluating the effectiveness of the Program.

The monitoring system is part of the implementation Section of the Program – As such, it is not required to be in place prior to completion of the Recommended Program by the GWAC.



Groundwater
Management Area
(GWMA)

Implementation Stage

Purpose of Monitoring

- Develop a network of wells to measure baseline water quality conditions representative of the GWMA.
- Track progress of water quality conditions of the GWMA overall.
- Help in evaluating the effectiveness of the Program over time.
- Was highest ranked recommended action by the GWAC.

Background

- With coordination with and approved by GWAC, a Well Location Method was developed.
- The confidence associated with calculated averages and variations are sensitive to the number of wells. Prefer 30 wells, but 20 at a minimum.



Groundwater
Management Area
(GWMA)

Implementation Stage

Well Location Method

- Initial Random Monitoring Points generated using Geographical Information System in ArcMap.
- Ranked General Well Locations selected based on points that evenly distribute well locations throughout GWMA.
- Ranked General Well Locations moved to nearest public land.
- Preliminary Drill Sites evaluated for access, safety, and feasibility.

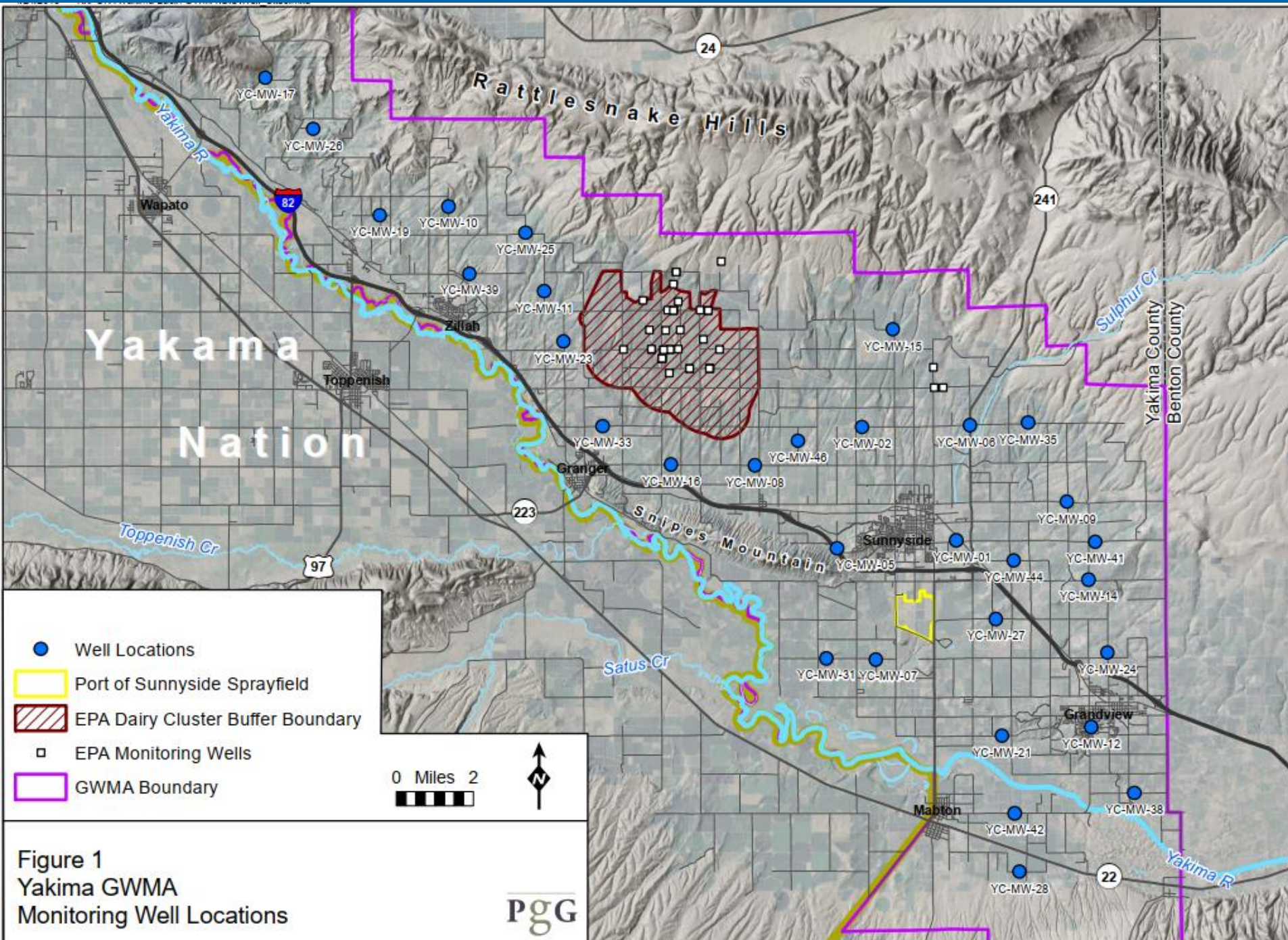
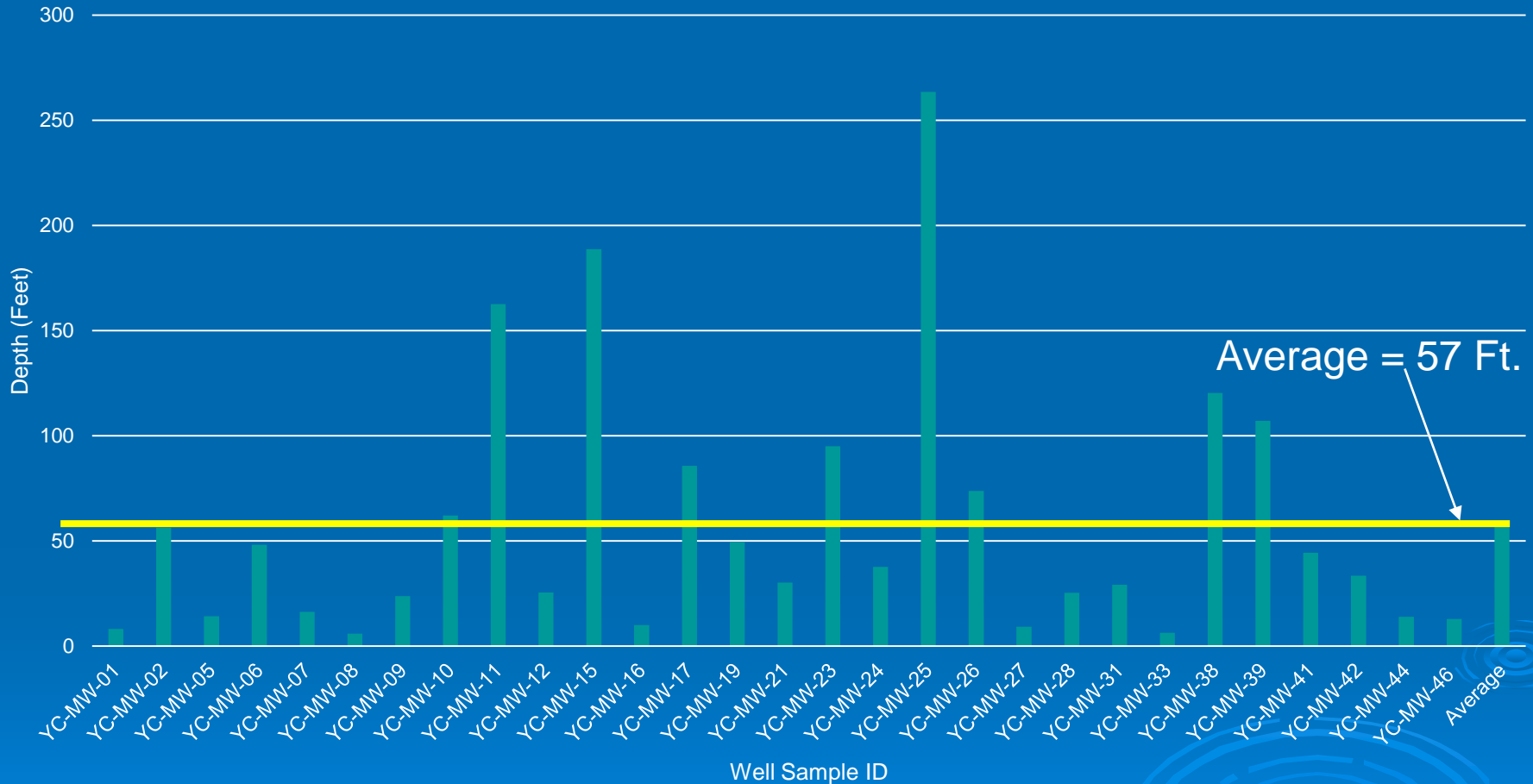


Figure 1
Yakima GWMA
Monitoring Well Locations

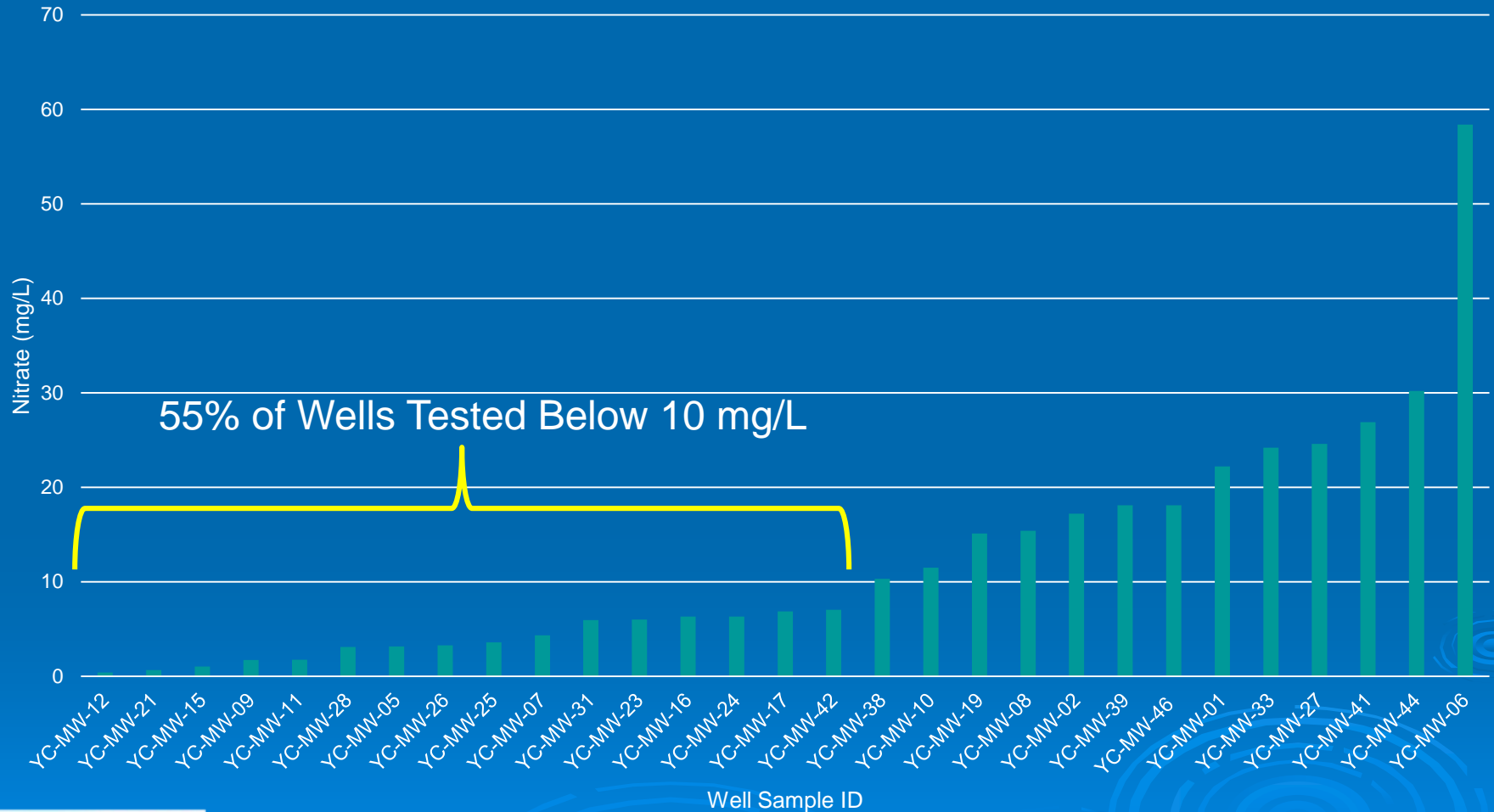
Initial Results

Depth to Water



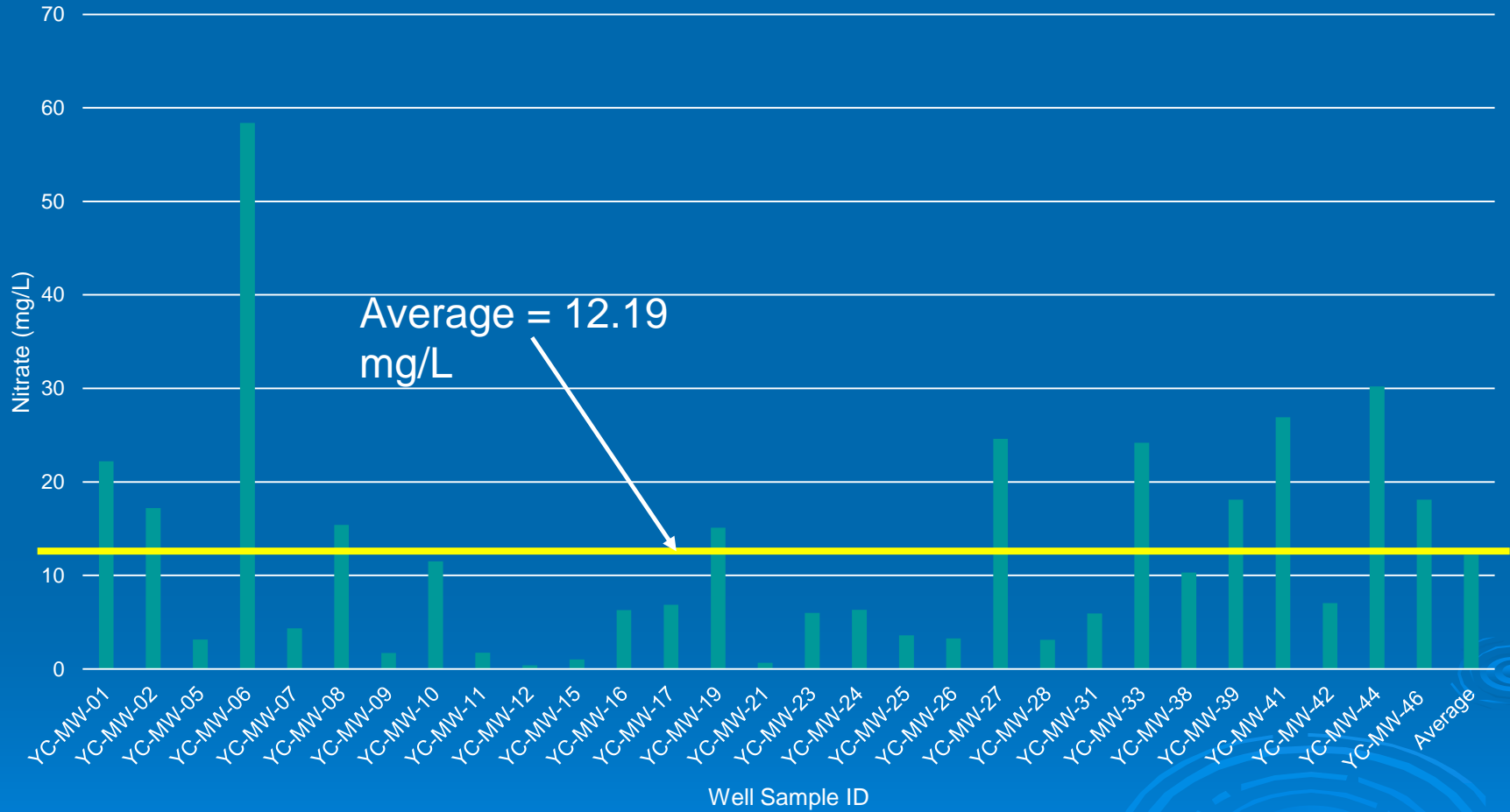
Initial Results

Nitrate Level - Sorted by Level



Initial Results

Nitrate Levels



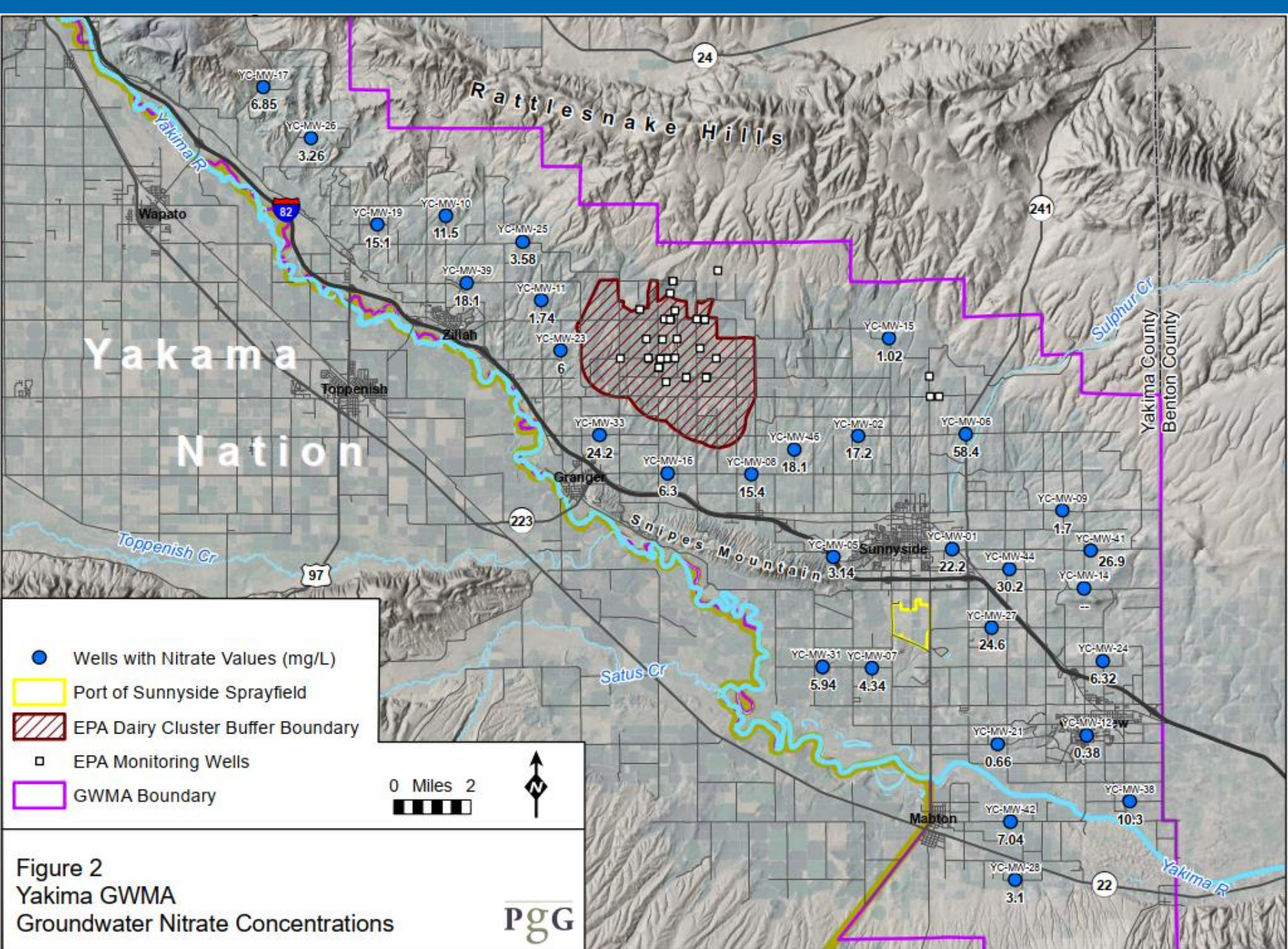


Figure 2
Yakima GWMA
Groundwater Nitrate Concentrations

Conclusions

- First test was only an initial result. A starting point observing baseline water quality conditions representative for the GWMA at late 2018/early 2019.
- A single reference point does not produce a trend line. More sample data is needed.
- Funding will need to be found to collect more sample data.