

Task 2: Mapping the Moderately saline aquifer

Mapping the base of the moderately saline aquifer

moderately saline water
3000 to 10,000 mg/l TDS
(total dissolved solids)
 $R_w \sim 2.1$ to 0.66 (NaCl) @ 68°

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Task 2: Mapping the Moderately saline aquifer

Main Task

- Re-map the base of the moderately saline aquifer in the Uinta Basin, Utah

Why?

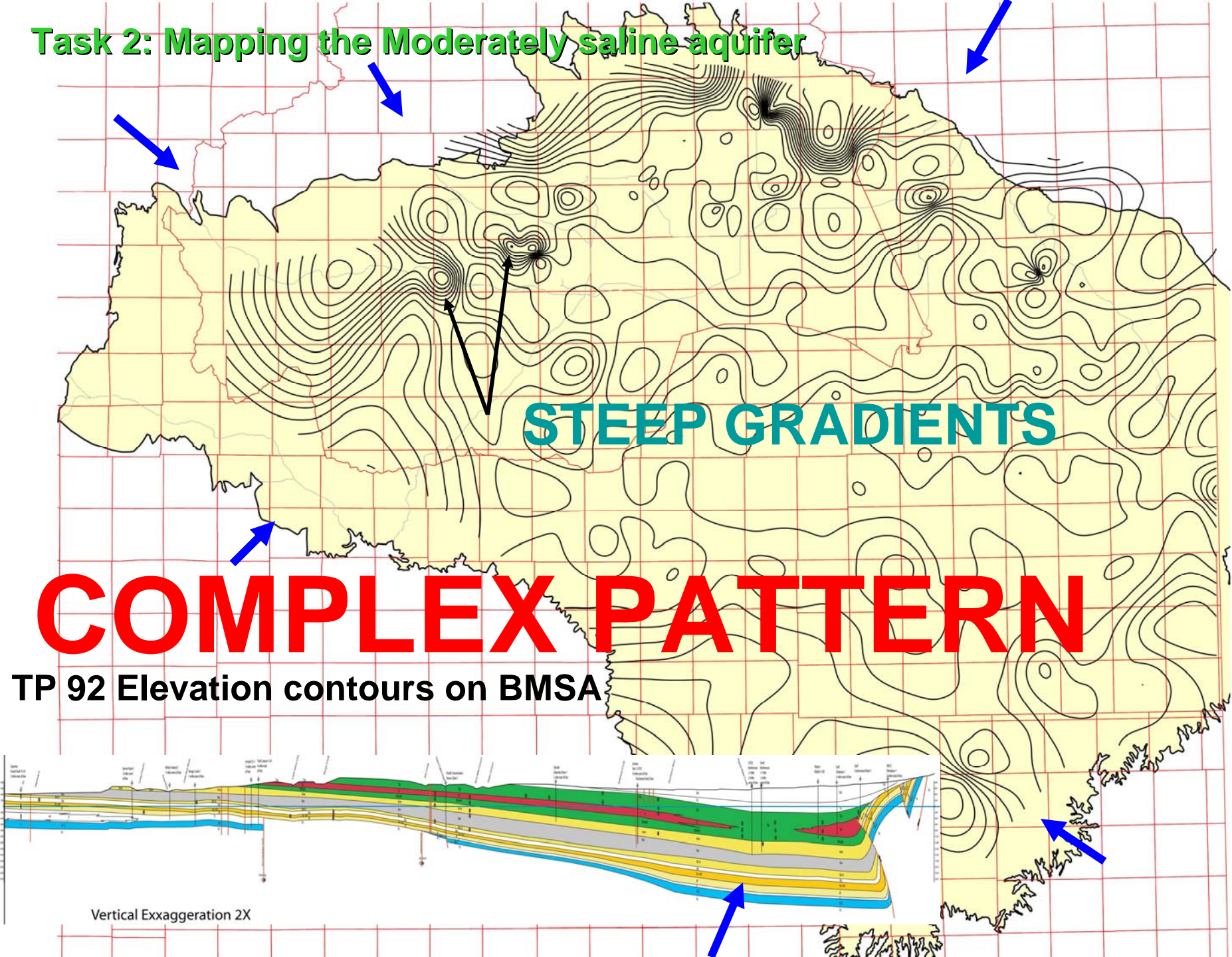
New drilling - improved mapping accuracy

New water quality data

New zones for water disposal

Detect water quality changes through time

Task 2: Mapping the Moderately saline aquifer

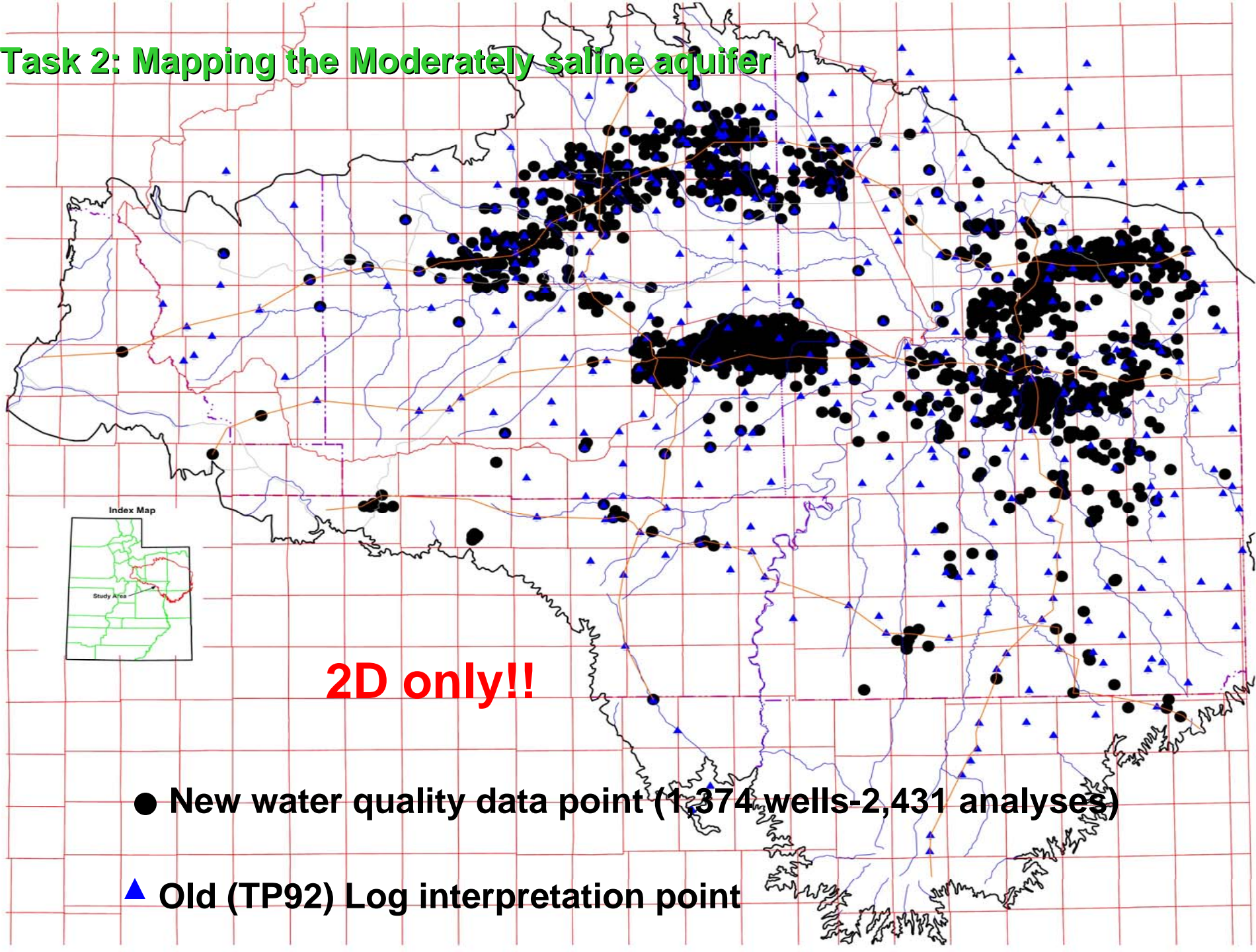


Task 2: Mapping the Moderately saline aquifer

Methods

- Integrate old data into project databases**
- Compile analyses of formation water**
- Map water data**

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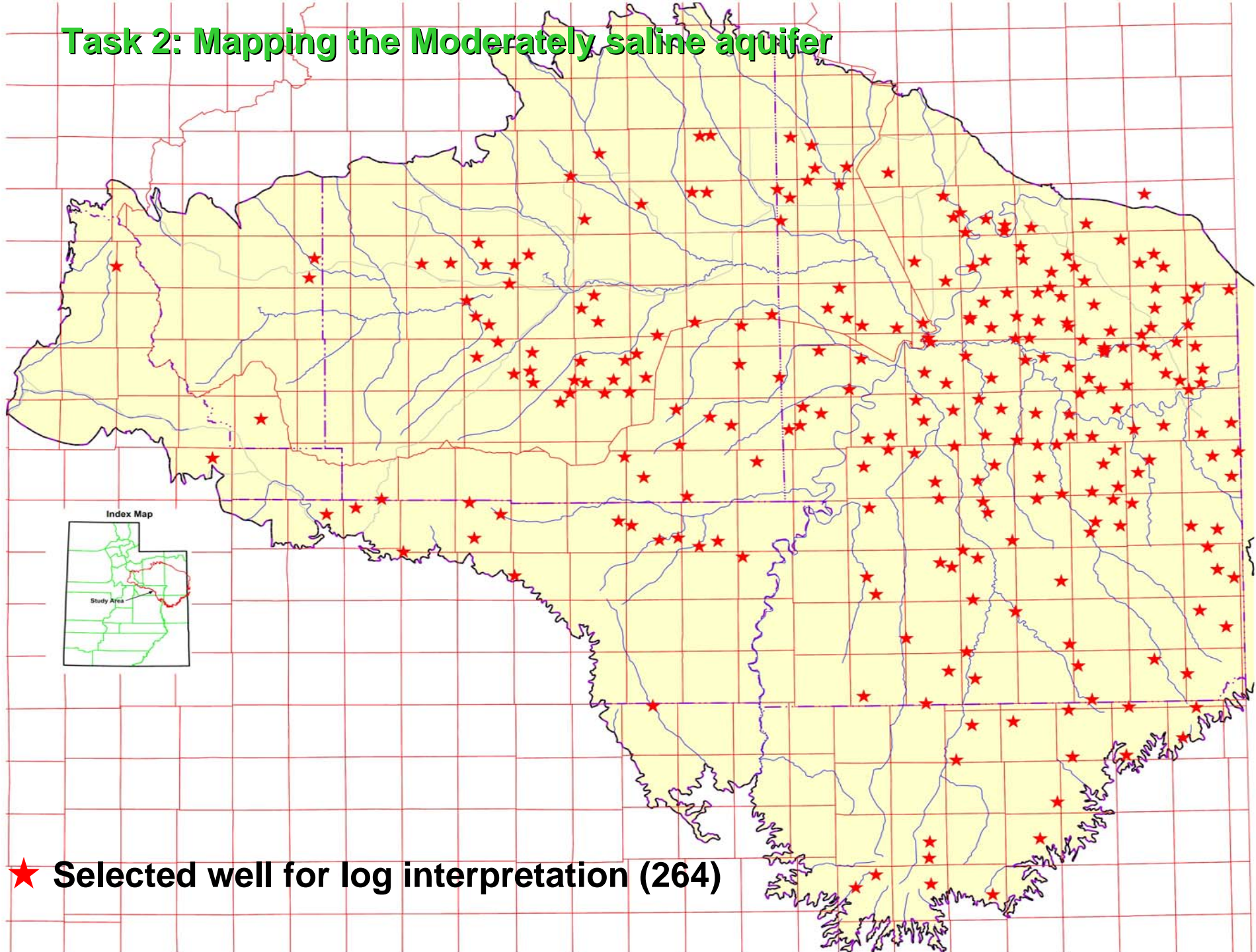


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Methods

- Integrate old data into project databases**
- Compile analyses of formation water**
- Map water data**
- Map boundary of object aquifer using geophysical logs / calculate R_w**
 - Select wells for analysis**

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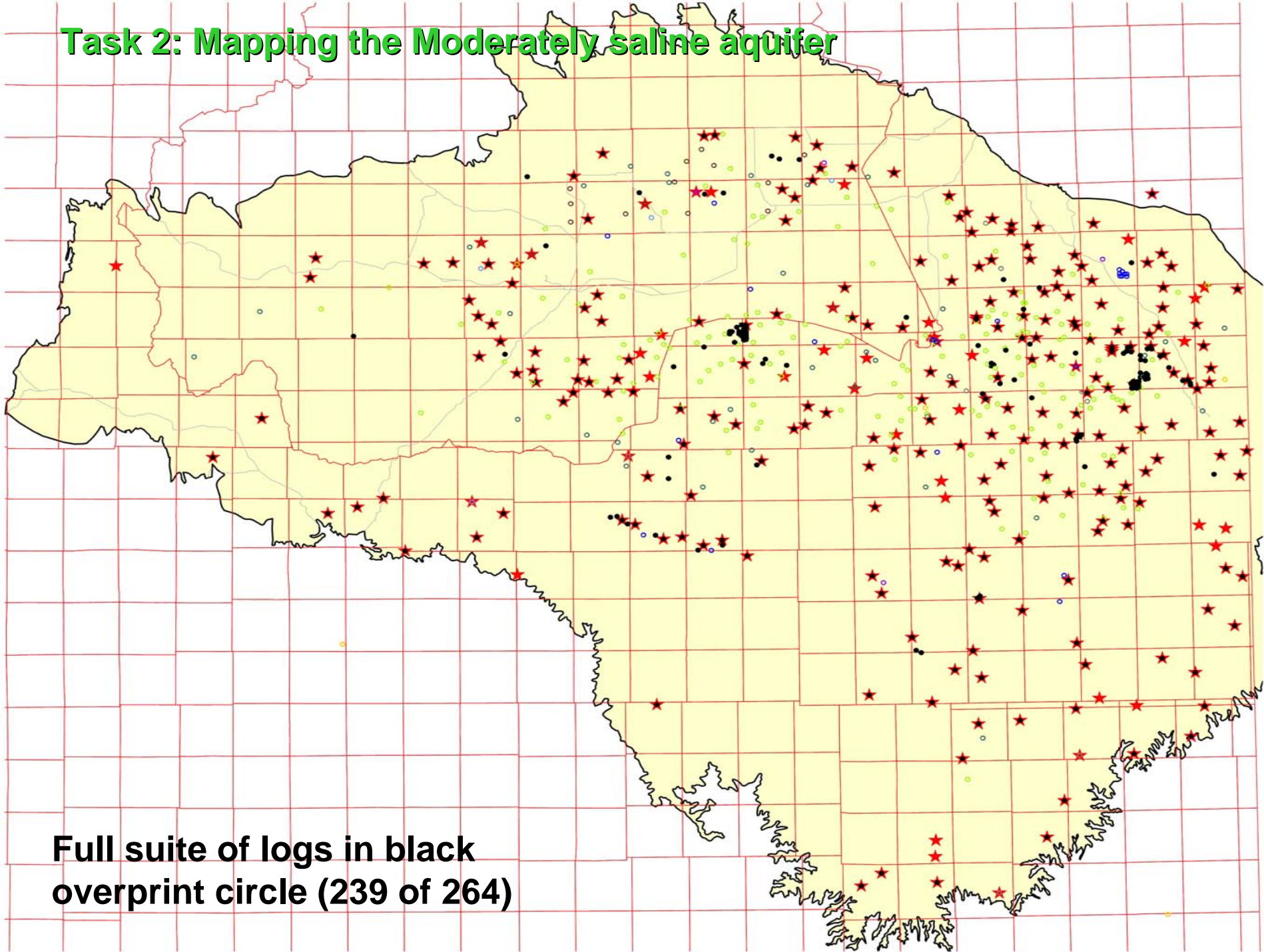


★ Selected well for log interpretation (264)

Methods

- Integrate old data into project databases
- Compile analyses of formation water
- Map water data
- Map boundary of object aquifer using geophysical logs / calculate R_w
 - Select wells for analysis
 - Collect LAS logs and/or digitize logs

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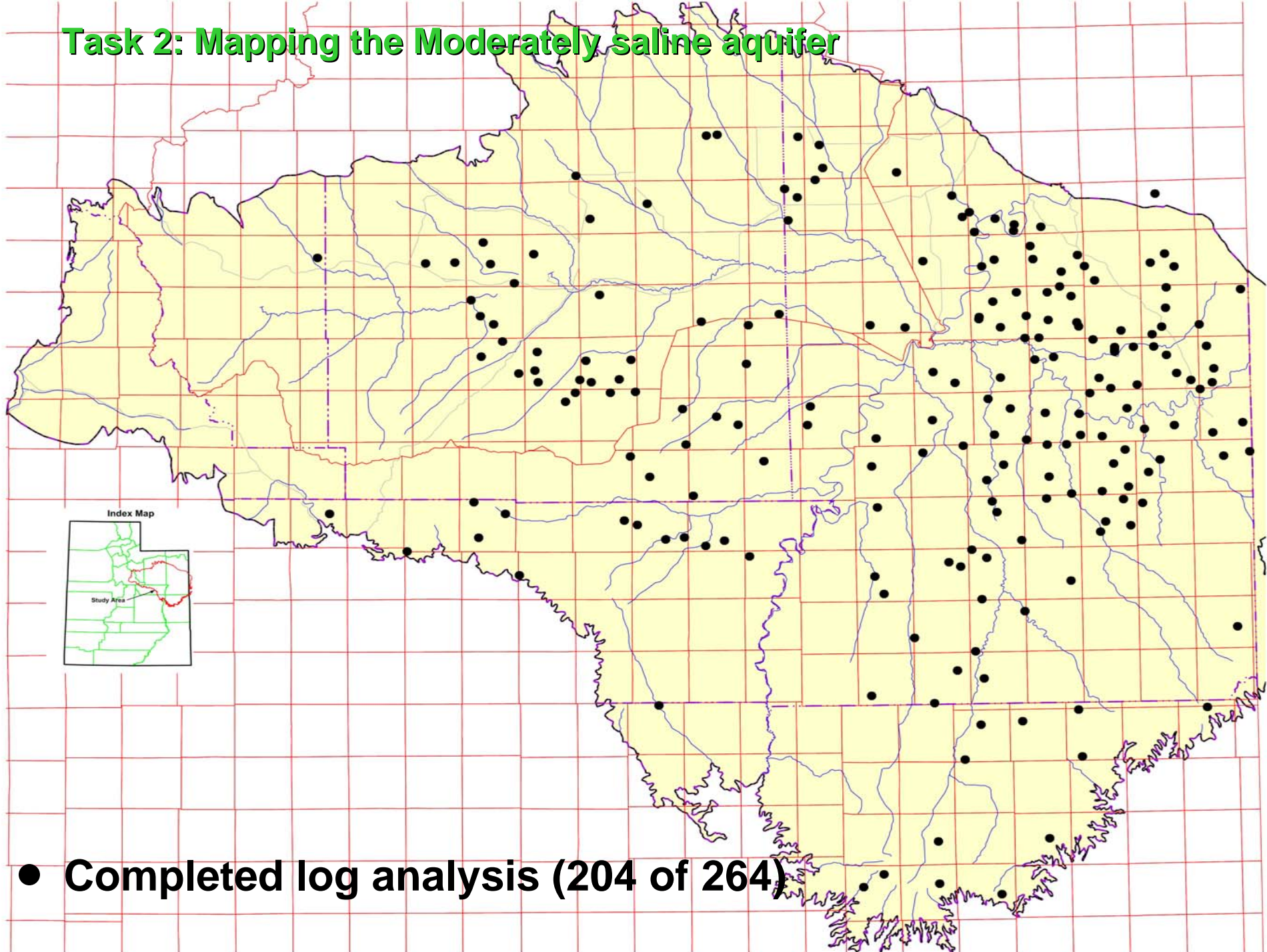


**Full suite of logs in black
overprint circle (239 of 264)**

Methods

- Integrate old data into project databases
- Compile analyses of formation water
- Map water data
- Map boundary of object aquifer using geophysical logs / calculate R_w
 - Select wells for analysis
 - Collect LAS logs and/or digitize logs
 - Log interpretation

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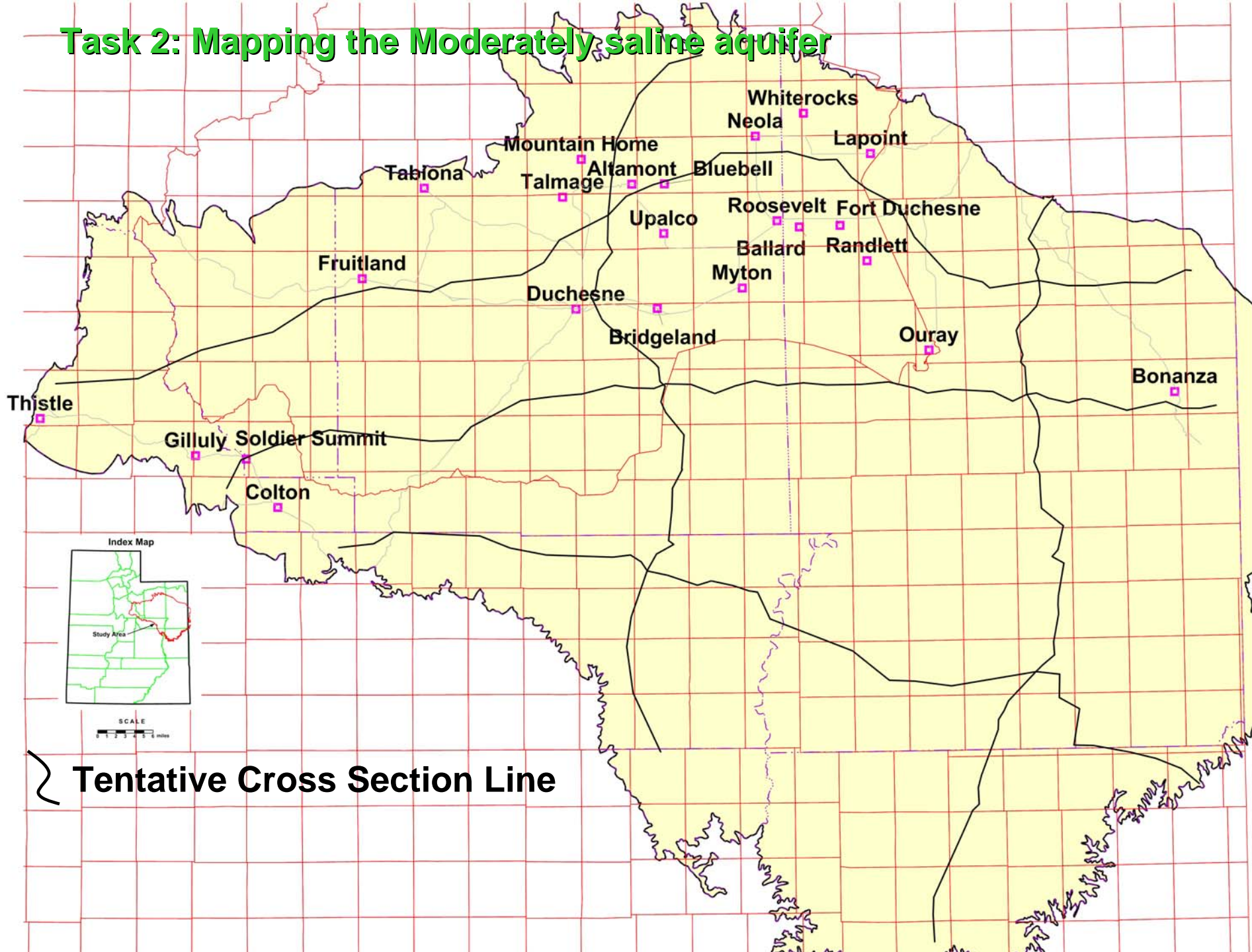


- Completed log analysis (204 of 264)

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- Integrate water chemistry data into log interpretation**
- Construct databases**
- Integrate more geology into the product by building geologic cross sections - adding the third dimension.**

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Deliverables

- Database of log interpretation parameters and water quality information
- New map of the base of the moderately saline aquifer – elevation and depth
- Geologic cross sections showing the saline water transition with identified seals and disposal zones
- Comparative study to evaluate the changes in the aquifer over the last 20 years – net change map.

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How can you help?

Glad you asked!!

- Formation water analyses:
DST, IP tests, production water
- LAS logs
- Rw values for fields, areas, formations
- Tips and pitfalls in log analysis you can share.
- Help identify “problem” areas from old study