Weyerhaeuser Energy & Natural Resources
How we took 40 years of geological paper maps and went to ArcGIS Online
Energy & Natural Resources group

We manage Oil & gas, hard mineral and renewable energy agreements/assets on our land (13 million acres across the United States)

I manage all of that spatially (FlexiCadastre)

Historically the WY ENR group conducted in-house geologic reports/studies across our ownership.

40 years worth of paper took up 2 large data rooms

We only had one paper copy
First Steps- Scanning

- Assess what needs to be scanned
- 590 cabinet drawers; 118 cabinets
- Contact scanning vendors/get quotes
- Meet with management/IT/other stakeholders
- Determine your timeline (this can be difficult)
- We were not sure how long scanning would take
- Move to Seattle announced in 2014 (we had already started scanning almost a year before)
### ENR Files

| Boxes/Files/Drawers       | Seismic Logs (boxes) | Well Logs B&W (drawers) | Well Logs (Drawers)-Color | OG Studies (drawers) | HM Studies (drawers) | Seismic Lines (drawers) | Oil & Gas Lease Files | HM & Geothermal Lease Files | Surface Use Permits (drawers) | Geothermal Studies/Reports (boxes) | Tube File Maps (cabinets) | Rock Sample Cards (drawers) | Total |
|--------------------------|----------------------|-------------------------|---------------------------|----------------------|----------------------|-------------------------|------------------------|-------------------------|---------------------------------|-----------------------------|-----------------------------|--------|
| Files Scanned            | 18                   | 249                     | 17                        | 60                   | 70                   | 58                      | 30                     | 13                      | 14                             | 10                          | 36                          | 2      | 547    |
| % Complete               | 100%                 | 100%                    | 100%                      | 100%                 | 100%                 | 99%                     | 100%                   | 100%                    | 92%                            | 100%                        | 100%                        | 100%   | 95%    |

### CH Files Scanned - % complete

- Total
- Rock Sample Cards (drawers)
- Tube File Maps (cabinets)
- Geothermal Studies/Reports (boxes)
- Surface Use Permits (drawers)
- HM & Geothermal Lease Files
- Oil & Gas Lease Files
- Seismic Lines (drawers)
- HM Studies (drawers)
- OG Studies (drawers)
- Well Logs (Drawers)-Color
- Well Logs B&W (drawers)
## Status tracking

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How do we organize?

- Scanning has started! Now where are we going to put all these files?
- Due to the complexity of our files we needed 2 virtual servers
- Make friends within your IT department
- Always keep a backup (CDs)
- Due to our escalated timeline we needed to be scanning and hyperlinking simultaneously
What do we want our App to look like? Function?

- Research other Apps
- What does the end user need/want?
- Meet with geologists
- Try to keep it simple
- What problem do you need your app to solve?
- We needed a way for our geologists to search for documents and maps spatially
How do we get these in ArcGIS Online?

- Hyperlinking!
- How do we draw the polygons? One to many relationship
- Gridded tiles- small, medium, large, regional
- Maintain historical data- join table from DTS
- House all files in SDE

- Attaching done in ArcMap
- Set up all of your labels and scale ranges
- Publish map service to ArcGIS Server
- Now the fun begins!
- Configuring pop-ups is an art form; custom attribute display
## Attachments vs. Hyperlinks

![Map and Hyperlinks Example](image)

<table>
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<th>Basin</th>
<th>Title</th>
<th>Annotation</th>
<th>Authors</th>
<th>Commodities</th>
<th>Organizations</th>
<th>Regions</th>
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Challenges

- “Old-school” thinking - paradigm shift
- Scanning company doesn’t understand your data
- Time/money/budgeting
- Staying focused/motivated - multiple optimization projects happening concurrently
- “Going paperless” initiative was the biggest challenge of all
Learnings

- Take one step at a time - try not to get overwhelmed by the mountain
- Patience
- Get support from as many people as you can
- Stay organized! Set up weekly progress meetings
Questions?