

Sarah Compton, PhD

GEOLOGIST

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SUMMARY

Geologist with 10+ years' professional experience in subsurface energy development, including conventional and unconventional (horizontal) reservoirs, as well as:

- ✓ Exploration, development, operations, pre-drill prognosis, post-drill evaluations, data matters, and regulatory submissions.
- ✓ Software experience includes GIS software, IP, Petra Petrel, and Python.
- ✓ Academic experience includes "hot rock" research in southwestern US igneous petrology and volcanic numerical modeling.

Results include:

- ✓ Exploration, evaluation and creation of a petroleum story for a \$30 million asset acquisition pitch.
- ✓ Improved allocation of \$40,000 OPEX per asset and ~840 million CAPEX through reservoir modeling.
- ✓ Producing ~\$309 million worth of BOE by managing ~\$203 million CAPEX.

WORK EXPERIENCE

Principal, Geologist, Compton Integrated Analytics, LLC

2022 – present

- Explored and evaluated a \$30 million asset performing petrophysical analyses in Petra for investors for startup E&P.
- Using AI and directing third-party developers to build software for oil and gas operators to optimize their well pad planning workflow.
- Write weekly tech and innovation newsletter for the American Association of Petroleum Geologist's Enspered newsletter and monthly Explorer articles.

Geophysical Data Processor, FractureID, Inc, now through my company

2024 – present

- Transform data from accelerometers into geomechanical properties using proprietary software.
- Analyze geomechanical results and compile post-analysis visuals and data for client delivery.

Product Manager, Intelligent Wellhead Systems

2023

- Responsible for developing edge-to-cloud IoT live video, AI/ML analytics, and audio products.
- Accurately assessed market need, communicated, and implemented best go-forward plan with diverse teams, including software developers, engineers, finance, sales, and corporate leadership.
- Pushed stalled products ahead by prioritizing features that addressed problem statements.

Associate Geologist, Geologist, Great Western Petroleum, DJ Basin

2019 – 2022

Responsible for full well-life cycle geologic data spanning permit testimony to post-drill regulatory compliance.

- Improved allocation of ~\$840 million CAPEX by analyzing production data, tying them to operational inefficiencies, including well spacing and completions, related to stress fields, subsurface fluid dynamics, and pressure interference through reservoir modeling. (see most recent publication).
- Reduced up to \$2,500/day of potential financial liability risk by working across disciplines with Sr. Regulatory Analyst to create new processes/procedures supporting regulatory compliance.
- Conducted and presented research to defend company and explain geologic convention when state regulatory agency attempted to change precedent in the grouping of geologic formations.

Operations Geologist, TerraGuidance, Permian, Haynesville

2018 – 2019

- Geosteered up to 5 laterals simultaneously for clients.
- Created Excel macro that updated redundant data fields by having the user fill out just one and clicking a button to fill the rest, reducing replication errors. Taught myself VBA to do this.

Data Analyst/Engineering Tech, Liberty Oilfield Services

2017 – 2018

- Managed and updated Excel, Access, and Tableau databases through data scraping, mining, scrubbing, and correction of state databases, proprietary data, and third party data, including regular online publication of Tableau dashboards and workbooks.

Data Transformation Analyst, IHS Markit

2016 – 2017

- Directed three data entry teams in procedures and methods to scrape, mine, scrub, and organize all well and production data matters across UT, AZ, and NV.

Contract Geologist, Palomar Natural Resources, San Juan

2015 – 2016

- Curated, created, and displayed geologic and geophysical data in Kingdom and Petra crucial to asset development including structure maps and isopachs of four zones of interest as well as petrophysical logs.

Geologist, Noble Energy, DJ Basin

2013 – 2015

- Generated \$40,000/well or more of potential savings through optimized completion strategies by analyzing fiber-optic distributed temperature survey (DTS/DAS) in custom reservoir model.
- Oversaw geologic operations associated with 24/7 drilling operations by planning well trajectory around subsurface hazards, directing vendors (3rd party steering) and engineers, and compiling pre- and post-drill evaluations and documentation.

EDUCATION

The University of Alabama, Tuscaloosa

PhD: Geology/Geodynamics

- 🎓 Dissertation topic: using linear inversions to test sensitivities to different geologic inputs on 3-D finite element models of ground deformation during the 2000 eruption of Hekla volcano in Iceland

Indiana University-Purdue University at Indianapolis

Bachelors of Science and Masters of Science: Geology, focusing on Igneous Petrology

- 🎓 MS Thesis topic: Evolution of mid-Cenozoic silicic systems in the Chocolate Mtns, Arizona

RELEVANT PUBLICATIONS

Compton, S., Baier, K., Brand, J., Barhaug, J., Faye, L., Stinson, S., (2022) Using the Relationship Between Geochemical and Pressure Data to Elucidate Produced Oil Sources and Movement in the Subsurface., URTEC conference, OnePetro.

Agarwal, K., Kegel, J., Ballard, B., Lolon, E., Mayerhofer, M., Weijers, L., Melcher, H., **Compton, S.**, Turner, P., (2019) Evolving Completion Designs to Optimize Well Productivity from a Low Permeability Oil Sandstone Turner Reservoir in the Powder River Basin—One Operator's Experience. SPE-194350-MS

Needy, S.K., et al. (2009) Mesozoic Magmatism in an Upper-to-Middle-Crustal Section Through the Cordilleran Continental Margin Arc, Eastern Transverse Ranges, California. *Crustal cross sections from the western North American Cordillera and elsewhere: Implications for tectonic and petrologic processes: Geological Society of America Special Paper*, 456, 187-218.