ExxonMobil is the largest publicly traded international oil and gas company in the world that explores for, produces, and sells natural gas, crude oil, and petroleum products.

Internship Overview

As a drilling engineer intern, I was given a summer project pertaining to increasing the efficiency of solids control equipment on rigs. Increased efficiency decreases the volume and cost of drilling fluid and reduces waste management and environmental impact costs. I was also given the opportunity to learn about other companies within the corporation, visit drilling rigs, and gain insight into the everyday operations of a large company.

Plan of Action

- Identify key components of solids control system and their associated challenges
- Create audits for each type of solids control equipment
- Visit rig to gain operational insight and solicit input from targeted users
- Test the execution and usability of the tool

Final Product: Equipment Audit Sheets

Individual audits created for specific solids control equipment will increase SCE by equipping rig supervisors to identify common SCE limiters. The spreadsheet was introduced at the Operations Safety Leadership Seminar in order to make it available to rig supervisors.

Summer Goal: Increase Solids Control Efficiency using a Practical Audit Checklist including Remediation Guidelines

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<th>Summer Goal: Increase Solids Control Efficiency using a Practical Audit Checklist including Remediation Guidelines</th>
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<td><strong>Summer Highlights</strong></td>
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<tr>
<td>Visiting drilling rigs in East Texas and Arkansas</td>
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<td>Learning the role and challenges of the energy industry</td>
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<td>Meeting professionals and rig personnel and learning about their careers</td>
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Significance of Solids Control Efficiency

Consider a well: 17.5-in section, 3000-ft measured depth, 10% low gravity solids (LGS)

**CASE 1: 70% SCE**

\[
\text{V}_{\text{waste}} = \frac{900 \text{ bbl (rock drilled)} \times 0.3 \text{ (fraction solids not removed)}}{0.3 \text{ (LGS tolerance)}} = 2,700 \text{ bbl}
\]

**CASE 2: 80% SCE**

\[
\text{V}_{\text{waste}} = \frac{900 \text{ bbl (rock drilled)} \times 0.2 \text{ (fraction solids not removed)}}{0.1 \text{ (LGS tolerance)}} = 1,800 \text{ bbl}
\]

- For $250/bbl NAF, dilution reduction will save $250K
- Savings do not take into account Waste Management, Environmental Impact, and Reputational costs

Lessons Learned

- Textbook solutions to problems are not always the most practical solutions
- Future challenges in the energy industry and the importance of safety
- Large corporations are made up of small groups of dedicated people.