



ENGINE MANAGEMENT

A SUSTAINABILITY SOLUTION

LOWER EMISSIONS AND ENHANCE SUSTAINABILITY

Delivering on H&P's committed to further sustainability efforts, the Engine Management solution helps operators reduce excess engine hours, lowering fuel consumption and reducing greenhouse gas (GHG) emissions. By targeting a minimum engine count, H&P can communicate to the driller when there are excess engines online, so that one can be safely turned off.

In addition to the environmental benefits that come with Engine Management, this solution delivers tangible financial benefits by reducing fuel consumption. Even a 4-5% fuel reduction per day can translate into a savings of \$300/day depending on baseline engine practices. That is \$110,000 per year on just one rig.

A BETTER OUTCOME

H&P helps determine a baseline of the engine load in order to help operators evaluate the value of optimizing the engine count and load. Together, performance goals will be determined to help further sustainability measures and deliver a better ESG outcome.

Engine Load Optimization

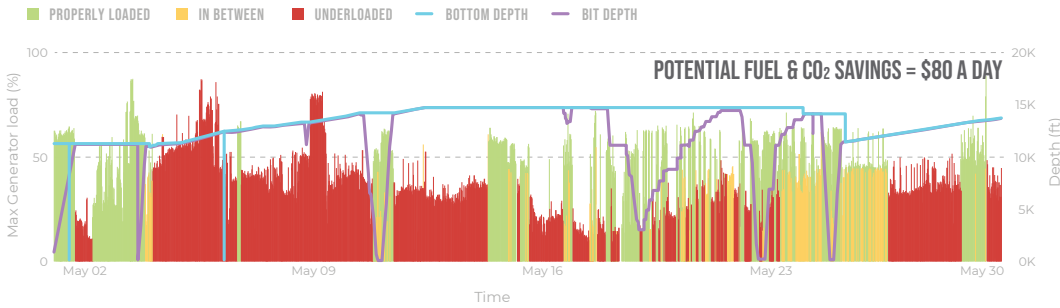
For any given rig activity there is an optimal prescribed engine count based on a typical power consumption to help protect against power shortage and excess fuel consumption. H&P communicates a high-level recommendation to enable rig personnel to make better engine management decisions. Additionally, communicating an engine roadmap helps to align wellsite personnel towards the goal of reducing fuel and emissions.

Engine Roadmap

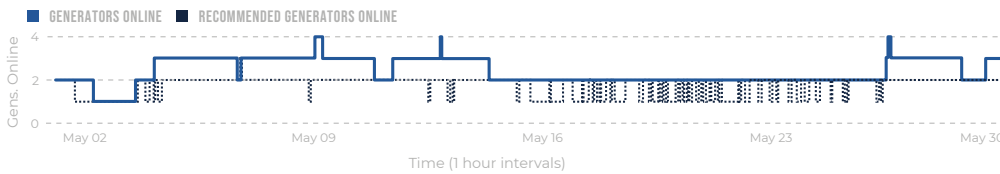
- Helps identify opportunities to optimize engine hours, fuel, and related GHG emissions
- Raises awareness and aligns goals for reducing excess engine hours during well construction

PROOF POINTS

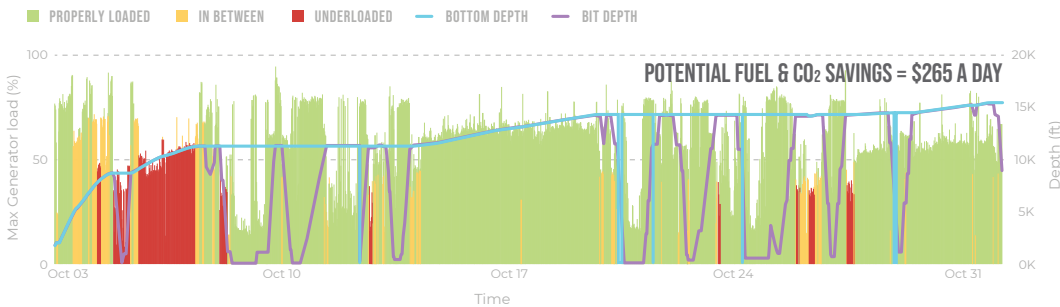
MAY 2021 - ENGINE CONTROL DISABLED - GENERATOR LOAD AND DEPTH BY TIME



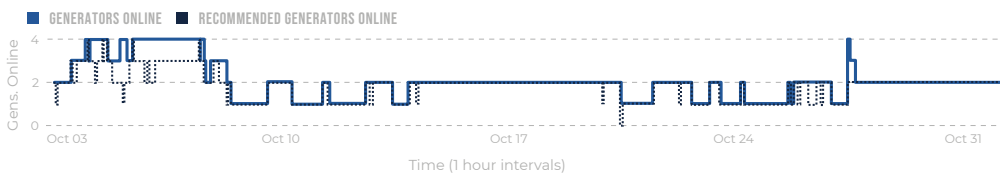
AVERAGE GENERATORS ONLINE BY TIME



OCTOBER 2021 - ENGINE CONTROL ENABLED - GENERATOR LOAD AND DEPTH BY TIME



AVERAGE GENERATORS ONLINE BY TIME



MAY 2021

- Potential fuel savings: **2,690 gallons diesel**
- Potential carbon savings: **24.8 T CO₂e**

OCTOBER 2021

- Potential fuel savings: **863 gallons diesel**
- Potential carbon savings: **8 T CO₂e**

ACTUAL BENEFIT

- Actual fuel savings: **1,827 gallons diesel**
- Actual carbon savings: **16.8 T CO₂e**

Carbon sequestered by



CONTACT US

For more information on how our Engine Management sustainability solution can help you achieve better drilling outcomes, contact an H&P sales representative today or contact us through our website at helmerichpayne.com/contact.

It's time to follow through on your drilling performance potential.