Unplanned shutdown prevention at major natural gas producer

CHALLENGES

The natural gas producer faced difficulties of gas well failure events that result in significant loss of natural gas production. They had limited visibility in finding out potential causes of well site shutdowns. The company's maintenance planning lacked a complete view of asset health due to the increased machine downtime and expensive repairs.

SOLUTIONS

The use of sensor signals helped the customer gain more asset visibility and classify the condition of the wells, gas lift compressors, saltwater disposal pumps, heat treaters, and other well pad devices. Neal Analytics helped the natural gas producer create data features that capture recent device behavior. We also helped them identify the markers of "Normal" and "Pre-Shutdown" statuses for well pads.

The key data input included:

- Facility pad configuration
- Unscheduled maintenance records
- Operational data
- PAD/Device level data
- Ambient weather conditions
- Facility downtime information

RESULTS

Using Neal Analytics' solution, the gas producer was able to detect potential shutdowns within a 12 to 72-hour window, which allowed them to perform predictive maintenance. They developed an approach to increase well production through unscheduled downtime production, as well as an ROI methodology for retrofitting sensors on legacy well pads.