**GeoMPD** provides an innovative stand-alone solution to extract mud gas from managed pressure and underbalanced drilling operations.

Extracted gases are not compromised by the effects of the rig's own mud gas separator; affecting gas response and accuracy of the analysis.

Results from gas analysis are now able to be delivered accurately and consistently during diversion through a degassing system. This service can be provided independently without the need for a dedicated M/L unit.

### Benefits
- Real-Time reservoir characterization during MPD operations installed between the MPD Choke and the Rig Degasser with separate manifold that can be isolated from the system if required.
- Accurate hydrocarbon composition is preserved for advanced gas analysis services reducing the costs of re-drill or sidetrack.
- Precise identification of hydrocarbon changes with lithological variations giving accurate picks for TD to prevent drilling unnecessary rat hole.
- Background gas effects are minimized giving more accuracy to the final gas analysis and helping to define pore pressure gradient and back pressure values to be applied during MPD.

### Challenges and Solutions
Drilling rig mud gas separators affect the accuracy of services designed to evaluate hydrocarbons while drilling. In reservoir well sections, gases are separated out prior to reaching the mud logging gas extraction at the shale shakers. This causes the overall quantity of gases to be reduced, affects the gas composition and resolution. In non-reservoir drilling, mud gases tend of have a higher background gas reading when measured at the shakers resulting in unreliable gas analysis.

The solution developed by Adrilltech continuously samples mud from the pressurized flow line before reaching the separator. By isolating part of the mud flow prior to the rig degassing system. The mud is delivered at a constant flow, pressure and temperature ensuring that the hydrocarbon analysis results in improved time depth precision and with improved gas ratio analysis.

### Applications
It is an essential service to deliver reliable gas data during managed pressure drilling operations. It positively impacts on all the mudlogging services that analyze gas content on offshore and onshore operations.
Case History
A comparison of gas analysis values obtained using the GeoMPD service vs readings acquired after the drilling rig mud gas separator.

Specifications

<table>
<thead>
<tr>
<th>Working pressure</th>
<th>0 - 300 PSI (0 - 20 bar)</th>
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<td>@ separator</td>
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Figure 1. Observed from formation were 2 to 4 times higher while using the GeoMPD service (black curve).

Figure 2. Hydrocarbon values shown are from the mud while circulating bottoms up. Data obtained with GeoMPD (black curve) are not affected by background gases as the one sampled after the separator (blue curve).