ZoneTrak G Near-bit Gamma Service
Optimize well placement with real-time reservoir navigation

The ZoneTrak™ G near-bit gamma service provides early formation identification, geostopping, and geosteering capabilities while drilling. The rapid identification of geological targets, formation bed boundaries, and potential trouble zones enables operators to efficiently reach the most productive zones with reduced well construction risks.

Formation evaluation quality
The ZoneTrak G service, from Baker Hughes, a GE company (BHGE), uses a short sub equipped with two scintillation gamma ray detectors that provide high statistical repeatability and service reliability. The service delivers formation evaluation quality single and dual gamma ray measurements up to 500 API, along with azimuthal gamma ray, gamma image, and drilling dynamics (in most sizes).

Optimized reservoir exposure when geosteering
The gamma ray sensors close proximity to the bit enable the identification of a formation change much sooner than with other LWD services positioned further uphole in the BHA, particularly when modular motors are used.

The ZoneTrak G service measures formation gamma rays and generates a borehole gamma image directly behind the bit (tool size-dependent). These images, together with our Reservoir Navigation Services (RNS), provide an efficient geosteering process to maximize reservoir exposure. The borehole image interpretation also provides critical information for structural analysis, such as formation boundaries, fault identification, and dip picking.

Applications
- Geosteering
  - Enhanced well placement
- Geostopping
  - Top of productive reservoirs
  - Top of coring sections
  - Casing point selections
  - High-risk zones

Features and benefits
- Near-bit gamma ray
  - Detects early formation changes
  - Saves rig time compared to cuttings circulation to verify bed boundaries
- Two scintillation gamma ray detectors
  - Ensures data confidence
  - Improves statistical accuracy
  - Acquires formation evaluation quality measurements
- Azimuthal gamma ray measurements (tool size-dependent)
  - Offers imaging up to 16 sectors
  - Optimizes well placement when used with real-time RNS
  - Provides high-quality gamma images for structural evaluation and dip picking
- Display gamma ray and gamma images using the WellLink™ service
  - Provides real-time data visualization
  - Facilitates faster remote decisions while drilling
Geostopping applications reduce risk and save rig time

The early zone identification delivered by the ZoneTrak G service facilitates accurate casing-point selection, minimizing exposure to wellbore stability problems, while saving valuable rig time by eliminating the circulation of cuttings to confirm target zone entry. The service also enables selecting the optimal stopping point for coring, without missing the top of the reservoir.

The ZoneTrak G service is especially suited for applications where low formation resistivity contrast does not allow the use of the ZoneTrak™ R at-bit resistivity service.

Flexible deployment

The ZoneTrak G service is available in 4½ in., 6½ in., and 9½ in. sizes and can be run with the AutoTrak™ family of rotary steerable systems (RSS). Special versions of the 6½ in. and 9½ in. service allow them to be run above conventional motor systems or directly above the bit.

To learn more about the ZoneTrak G service and how it can help you optimize the placement of your wells and reduce your risk, contact your BHGE representative or visit bhge.com.

### Tool and Measurement Specifications

<table>
<thead>
<tr>
<th>Tool size/AutoTrak version</th>
<th>4½ in./GT4-G</th>
<th>4½ in./eXact</th>
<th>6½ in.</th>
<th>9½ in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borehole size</td>
<td>5¾ to 6¼ in. (146 to 171 mm)</td>
<td>5¾ to 6¼ in. (149 to 171 mm)</td>
<td>8½ to 9¼ in. (213 to 251 mm)</td>
<td>12¼ to 18¼ in. (311 to 464 mm)</td>
</tr>
<tr>
<td>Maximum temperature</td>
<td>257°F (125°C)</td>
<td>302°F (150°C)</td>
<td>257°F (125°C)</td>
<td>302°F (150°C)</td>
</tr>
<tr>
<td>Maximum pressure</td>
<td>20,000 psi (1380 bar)</td>
<td>30,000 psi (2070 bar)</td>
<td>30,000 psi (2070 bar)</td>
<td>25,000 psi (1725 bar)</td>
</tr>
<tr>
<td>Gamma ray measurements</td>
<td>Single gamma ray</td>
<td>Single gamma ray</td>
<td>Single gamma ray</td>
<td>Single gamma ray</td>
</tr>
<tr>
<td>Drilling dynamics</td>
<td>VSS and RPM</td>
<td>VSS from AutoTrak</td>
<td>No</td>
<td>VSS and RPM</td>
</tr>
<tr>
<td>Tool configuration</td>
<td>4½ in. AutoTrak GT4-G with ZoneTrak G service</td>
<td>4½ in. AutoTrak eXact with ZoneTrak G service</td>
<td>AutoTrak RSS sub²</td>
<td>AutoTrak RSS sub²</td>
</tr>
<tr>
<td>Measure point from downhole shoulder of tool</td>
<td>From bottom of AutoTrak 5.74 ft (1.75 m)</td>
<td>From bottom of AutoTrak 10.35 ft (3.15 m)</td>
<td>ZoneTrak G AutoTrak sub 1.73 ft (0.53 m)</td>
<td>ZoneTrak G AutoTrak sub 2.10 ft (0.64 m)</td>
</tr>
</tbody>
</table>

1 High pressure available on request
2 BHGE modular connection up and down
3 BHGE modular connection up, bit box connection down

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