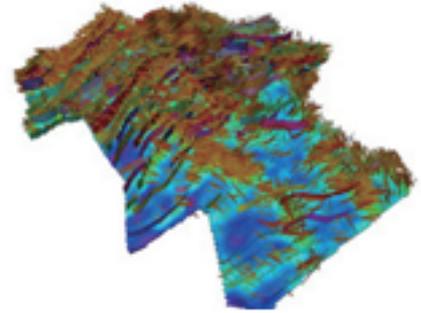


Sweet Spot Services

Sweet spot service is a key content of Anton geological engineering services. The sweet spot is determined by combination of geological, reservoir and engineering characteristics. Anton provides quantitative parameters to optimize the development plan of the block and the engineering design of the oil/gas well, supports the real-time tracking and adjustment of the implementation of engineering measures, and the development of middle-term and long-term production schedule and production performance analysis and evaluation. And Anton provides important suggestions for the construction and development of oil and gas blocks, and ensures the efficient development of the blocks.

Scopes of Services

- 1、 Evaluation of controlling factors of sweet spot.
- 2、 Fine 3D sweet spot modeling.
- 3、 New well tracking.
- 4、 Dynamic tracking analysis and evaluation of existing well performance.
- 5、 Optimization, real-time tracking and adjustment of drilling and fracturing operation and execution.



Service Capability and Advantages

- 1、 Provide services for worldwide oil and gas fields and clients.
- 2、 Has the capacity to carry out sweet spot services throughout oil and gas exploration and production.
- 3、 Provide services on unconventional reservoirs, including tight oil and gas, shale gas and oil, and coalbed methane.
- 4、 Anton has experienced, professional and international sweet spot service team with technical experts from international recognized E&P companies and oilfield services companies.
- 5、 Anton has 7 segments, including geology, drilling, completion, and production, etc. The technical team can provide reservoir geological research integrated with Anton's drilling, completion and production engineering to solve practical problems in field development.

Service Tracking Records

With a shale gas block in southwest China, in order to improve the overall development benefit and the construction efficiency of shale gas wells, and maximize production capacity and cumulative production of single well, Anton Sweet Spot Service provided:

- 1、 Three-dimensional comprehensive geological fine modeling: geological structure model, geomechanical model, natural fracture model, gas reservoir properties model. The offset between drilling depth of the target layer and the 3D geological model were reduced to within 2 meters.
- 2、 Real-time tracking in the horizontal well drilling process to ensure the drilling rate of the horizontal wellbore in the box of combining geological sweet spots and fracturing treatment sweet spots, which strongly supports the new well drillings.
- 3、 Real-time tracking and adjustment of hydraulic fracturing design optimization and implementation, continuous optimization of fracturing implementation.
- 4、 Analysis of the data collected in drilling, completion and fracturing operations, and continuous update and iteration of the 3D comprehensive geological model to improve the accuracy of reservoir understanding and description.
- 5、 Through comprehensive analysis and evaluation of static and dynamic data of production wells, the design and implementation drilling, completion and fracturing treatment, and production, verified the conformity of the comprehensive understanding of reservoir geology, quantified the impact of geological and engineering factors on the capacity of single well production, cumulative production and controlled reserves, identified the main controlling factors, and guided the optimization of the whole process of drilling, completion, fracturing and production.

