A state-of-the-art subsurface model is the result of multiple interactive geosciences, engineering and data-management workflows, which with cross-validation and assurance, help to build a robust knowledge about reservoirs as well as a clear understanding of the uncertainties and risk associated with them.

For the past 20 years at Cayros Solutions, we have honed our extensive experience in all aspects related to subsurface modeling for development and exploration prospects in conventional and unconventional reservoirs.

**GEOLOGY**
- Surface Geology
- Sequence Stratigraphy
- Sedimentology and Depositional environment interpretation for clastics and carbonates reservoirs
- Structural Evaluation & Modeling
- Facies modeling, stochastic rock properties distribution, and other data Integration
- Geological Modeling (3D geocellular model)
- Geochemistry Modeling
- Basin Modeling
- Wellbore design
- Operational Geology support

**PETROPHYSICS**
- Advanced petrophysical Characterization in conventional and unconventional reservoirs (complex mineralogy clastics and Carbonates, tight reservoirs, shale gas, shale oil, CBM, etc.)
- Resource and reserve estimation
- Rock typing, petrofacies, and lithotypes classification. Flow units definition.
- Permeability and Porosity architecture characterization.
- Saturation Height Modeling
- Rock physics characterization
- Thin bed analysis
- Advanced core data analysis and integration.
- Formation water characterization
- Seismic rock properties
- Seismic attributes correlation
- Well planning and operations
- Well logs validation, editing, and normalization

**DATA MANAGEMENT**
- Site Assessment
- Data Mining & Database creation for all type of projects
- Data quality control & quality assurance
- DB maintenance and update

**GEOPHYSICS**
- Seismic Acquisition Design 2D/3D
- Seismic Processing support
- Special Seismic post processing
- Seismic Interpretation 2D/3D
- Seismic Attribute generation & Interpretation
- Seismic Geometric Decomposition
- Structural Evaluation & Modeling
- Probabilistic Seismic Attributes
- Velocity Modeling & Depth Conversion
- 3D AVO Inversion
- 3D/3C Seismic Inversion
- Structural Modeling & 2D/3D Restoration
- 3D Geometrical Modeling
- Seismic Attributes & Petrophysics Data Integration
- Seismic Facies & petrofacies correlation

**RESERVOIR & PRODUCTION ENGINEERING**
- Reservoir simulation
- History Matching
- Field Development Planning
- Reservoir Surveillance
- Enhanced Productivity Projects
- Production Log analysis
- Design & analysis of Hydraulic fracturing results
- Production & Artificial Lift Optimization (Wellbore to surface)
- Material Balance
- Well test Analysis
- Production Reconstruction using Neural Networks
- Evaluation for Unconventional Plays
- EOR studies
- PTA & RTA

**ECONOMICS & RISK ANALYSIS**
- Detailed Economic and Risk Analysis

**GEOMECHANICS**
- Well stability while drilling
- Static and dynamic rock properties, rock strength, and principal stresses.
- Pore pressure prediction
Our team members have worked in the most prolific basins and fields in Canada, the United States, Mexico, Colombia, Venezuela, Trinidad, Peru, Bolivia and Argentina, including both onshore and offshore projects, and conventional and unconventional reservoirs.

**COLOMBIA**
Llanos Basin, Upper Magdalena, Middle Magdalena, Lower Magdalena, Putumayo, Foothills Basin, Guajira Basin offshore

**MEXICO**
South región (Bermudez field, Litoral tabasco), Marine Region (Cantarel Complex, Region Sur Oeste & Noreste, Activo Litoral de Tabasco), North Region (Burgos, Poza Rica), Chicontepec

**PERU**
Maranon Basin, Huallaga Basin, Ucayali- Madre de Dios

**USA**
GOM and Onshore East Texas

**ARGENTINA**
Most prolific basins throughout strategic alliances with local consulting companies

**BOLIVIA**
Altiplano, Santa Cruz

**TRINIDAD & CARIBBEAN**
Colombus Basin, Deep Water T&T Offshore, Paria Golf

**CANADA**
Several conventional and unconventional reservoirs in Western Canada Sedimentary Basin

**OTHER SERVICES**
- Customized training for most petrotechnical disciplines/on-the-job training/onsite support.
- Customized technical software development in a variety of programming languages
- Data room technical advisory
- Technical personnel supply services
- Special seismic imaging post-processing workflows oriented to improve extraction of sedimentary features and fault geometry from noisy seismic data.

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