

UNCTAD

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Extractive Industries and Sustainable Job Creation

**PLRS a HUB for Petroleum Laboratories Analyses
Services, Research & Studies**

By

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The views expressed are those of the author and do not necessarily reflect
the views of UNCTAD.



Republic of Sudan
Ministry of Petroleum
Petroleum Labs., Research & Studies (PLRS)

PLRS a HUB for Petroleum Laboratories Analyses Services, Research & Studies

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Cubic Globe



Outlines

- **Vision**
- **Mission**
- **Main Objectives**
- **Staff**
- **Clients & Targets**
- **Upstream Labs. Services**
- **Downstream Labs. Services**
- **Water & Environment Labs. Services**
- **R & D Services**
- **PLRS R&D contribution in Sudan**
- **Technical Collaboration**



Vision

- **PLRS** aspires to be a leading R & D organization in the region with the aim of providing the technical support and know-how for the oil industry.



Mission

- **P**rovision of routine & non routine Analytical services for the Oil Industry.
- **P**rovision of consultancy services
- **C**onducting research and studies, to meet the requirements of the oil industry to increase the oil reserves, improve and enhance production, improve refining processes and product quality, solving problems arising in exploration and production and the protection of the environment.



Main Objectives

- **P**rovide analytical services, research studies and technical consultation in petroleum industry for Sudan and other regional countries.
- **P**romote collaboration with similar national and international labs, research centers and petroleum establishments to mutually benefit from experience exchange to be at the forefront of current research and oil technology developments.

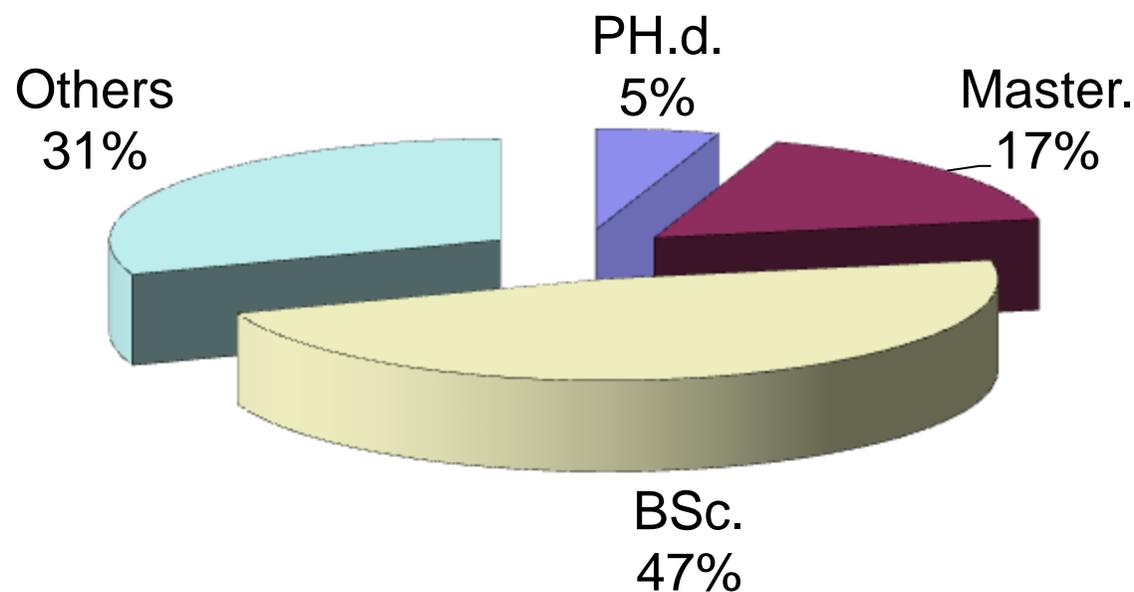


Staff

100 Permanent Employees comprising the following disciplines:

Geology, Geophysics, Petrophysics, Chemistry, Petroleum Engineering, Chemical Engineering, Lab. Technicians & other supporting disciplines.

Staff Qualification Background





PLRS Clients & Targets

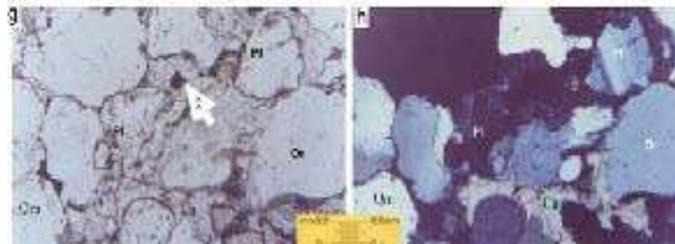
- Oil Operating Companies.
- Oil Service Companies.
- Mining Companies.
- Infrastructure Construction Companies.
- Academic Researchers.





Upstream Labs Services

- Reservoir Geology Services:
- Petrography Analysis.
- X-Ray Diffraction analysis (XRD).
- Scanning Electron Microscope (SEM) Analysis.





Upstream Labs Services

- **Reservoir Geology Services:**
 - Heavy Mineral Analysis
 - Grain Size Analysis
 - Facies Analysis
 - Biostratigraphy-Microfossils Analysis





Upstream Labs Services

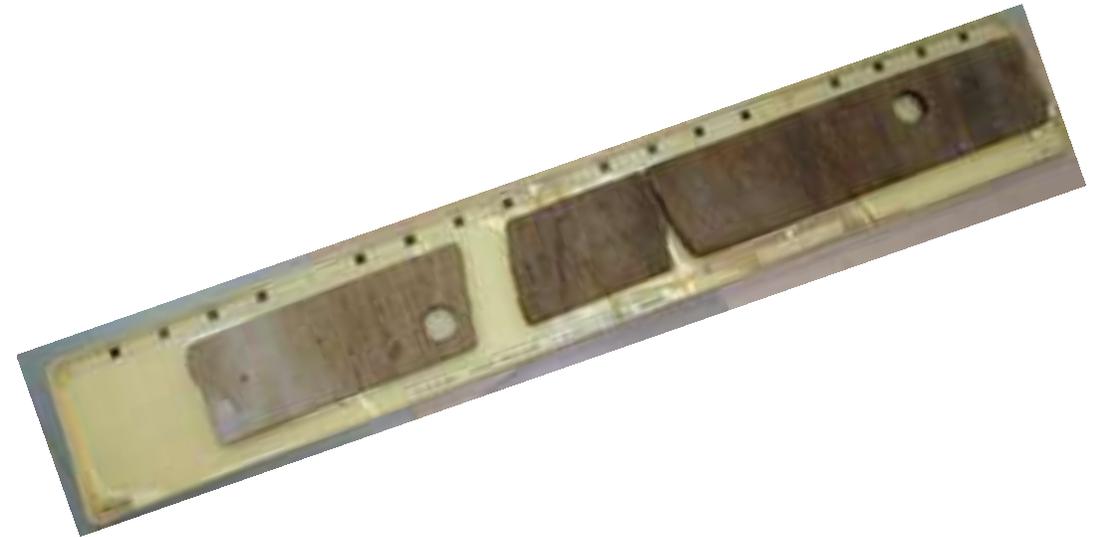
- **Source Rock & Oil Characterization Services (Geochemistry):**
 - Mother & Source Rock Analyses & Studies
 - Organic Matter Maturation, Temperature, Pressure and other Conditions
 - Analysis Of Organic Matters Origins
 - Organic Matter Classification





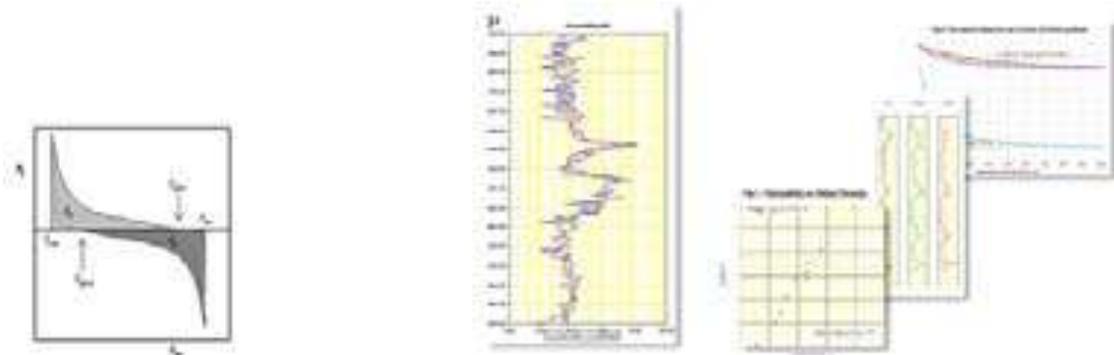
Upstream Labs Services

- **Reservoir Characterization Services (Conventional Core Analyses):**
 - Wellsite Services
 - Core Handling & Storage
 - Core Gamma Spectroscopy
 - Core Pre-screening Tests
 - Core Sample Preparation
 - Fluid Saturations



Upstream Labs Services

- Reservoir Characterization Services (**Special Core Analyses**):
 - Electrical Properties Analysis
 - Relative Permeability.
 - Capillary Pressure
 - High Pressure mercury injection
 - Wettability.





Upstream Labs Services

- Reservoir Fluid Analyses (PVT):
 - Sample Handling & Validation.
 - Compositional Analysis.
 - Subsurface or Bottom Hole Samples Analysis.
 - Surface Samples Analysis.
 - Gas Condensate Analysis.





Downstream Labs Services

- Crude Oil & Fuel Analysis :
- Crude Oils Evaluation Services.
- Gas Analysis Services.
- Crude & Fuels Analysis Services.



Downstream Labs Services

- **Lubricating oil & Greases Analyses :**
- Carry out analyses for Lubricating Oil & greases.
- Analyses for used oil to determine conditions and contamination.
- Analysis for special products such as Bitumen .



- Rheology & Oil Field Chemicals Analyses :
- Flow assurance & Rheology Analyses & studies.
- Oil Field Chemicals Analysis & Evaluation.



Differential Scanning Calorimeter (DSC)



Flow Loop Pipeline



Rheometer, HAAK



Central Analytical Labs Services

- **Chromatographic & Spectrometric Analysis :**
- **Compositional Analysis.**
- **Elemental Analysis.**





Water & Environment Labs Services

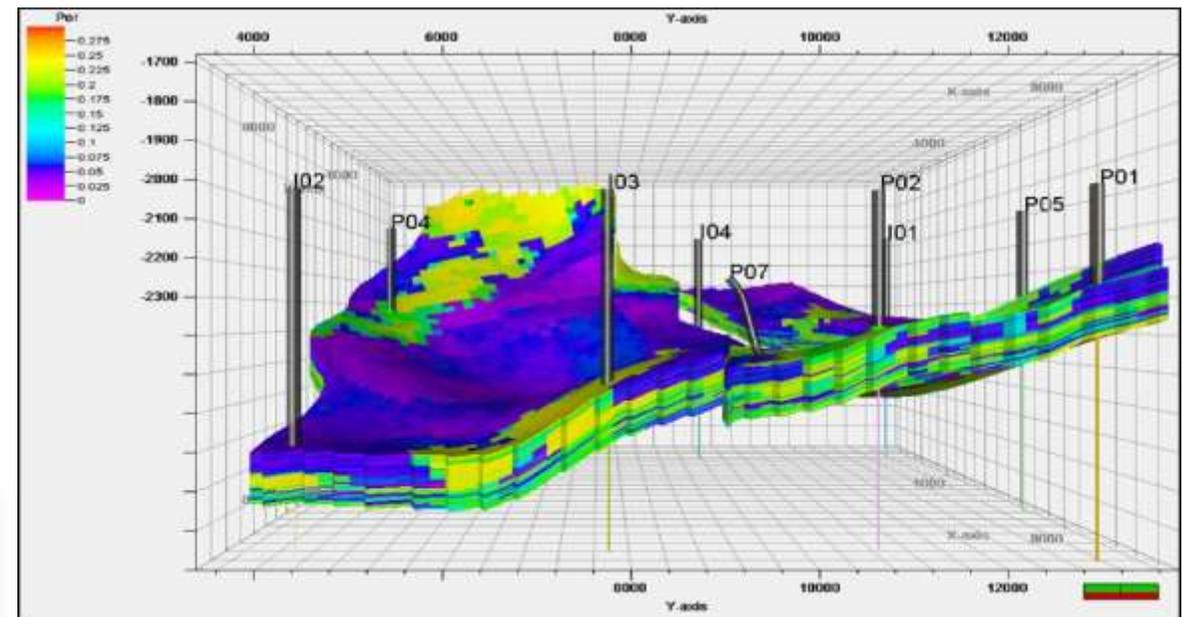
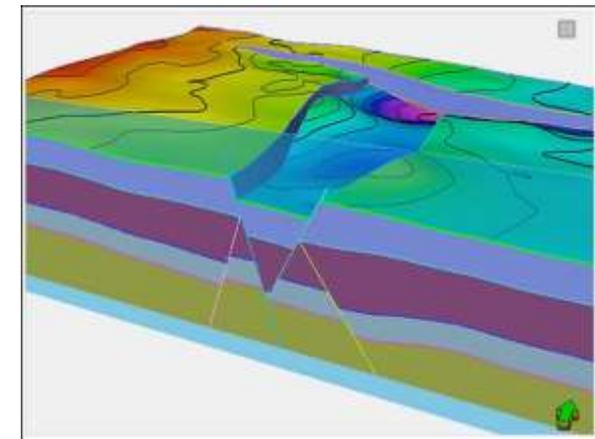
- **Water & Soil Physiochemical Analyses**
- **Microbiological Analyses**
- **Corrosion Analyses & Studies**
- **Environmental Studies**



- **G&G, FDP Work Station:**

Capable of Carrying Out full cycle G&G, FDP & FFR Studies including but not limited to:

- Seismic Interpretation
- Prospect Ranking
- Static & Dynamic Model
- Reservoir Evaluation
- Economic Evaluation
- Facilities & Production



- **Enhanced Oil Recovery Analyses & Studies (EOR):**

To perform full EOR studies to recommend the optimal EOR technique that both technically and economically viable.

- Chemical EOR Lab.
- Thermal EOR Lab.
- Formation Damage Lab.





PLRS R&D Contribution in Sudan

Examples:

- Azraq field Flow assurance study.
- Diffra Full Field Review FFR JV with Apex Reservoir (China).
- Surface Geochemistry Study Malut Basin JV with Beicip Franlab (France).
- Crude Commingling Study(s).



Technical Collaboration

- **PLRS** currently has technical collaboration relations with the following entities:

- Egyptian Petroleum Research Institute (EPRI)
- GEOSCIENCE WALES GROUP (GWL)
- Biciep-Franlab
- Panterra Geoscience
- Geo Consultants Group
- Corex Services







Thank You!

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