

Halliburton Brazil Technology Center

November 9th, 2018



DEEP WATER



MATURE FIELDS



UNCONVENTIONALS

HALLIBURTON

100 YEARS

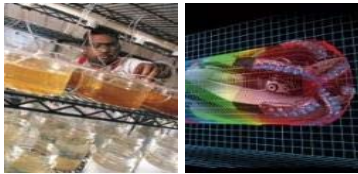


Inspired by the past. Leading into the future.

Service Delivery

HALLIBURTON

Drilling and Evaluation



Baroid

Drill Bits & Services



Sperry Drilling

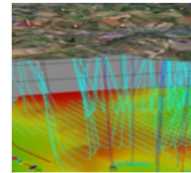
Testing & Subsea

Wireline & Perforating

Integrating All Product Service Lines

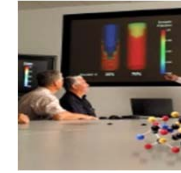


Consulting & Project Management

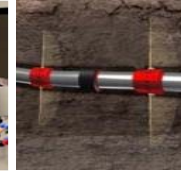


Halliburton Digital Solutions/ Landmark

Completion and Production



Cementing



Completion Tools



Production Enhancement



Artificial Lift



Multi-Chem



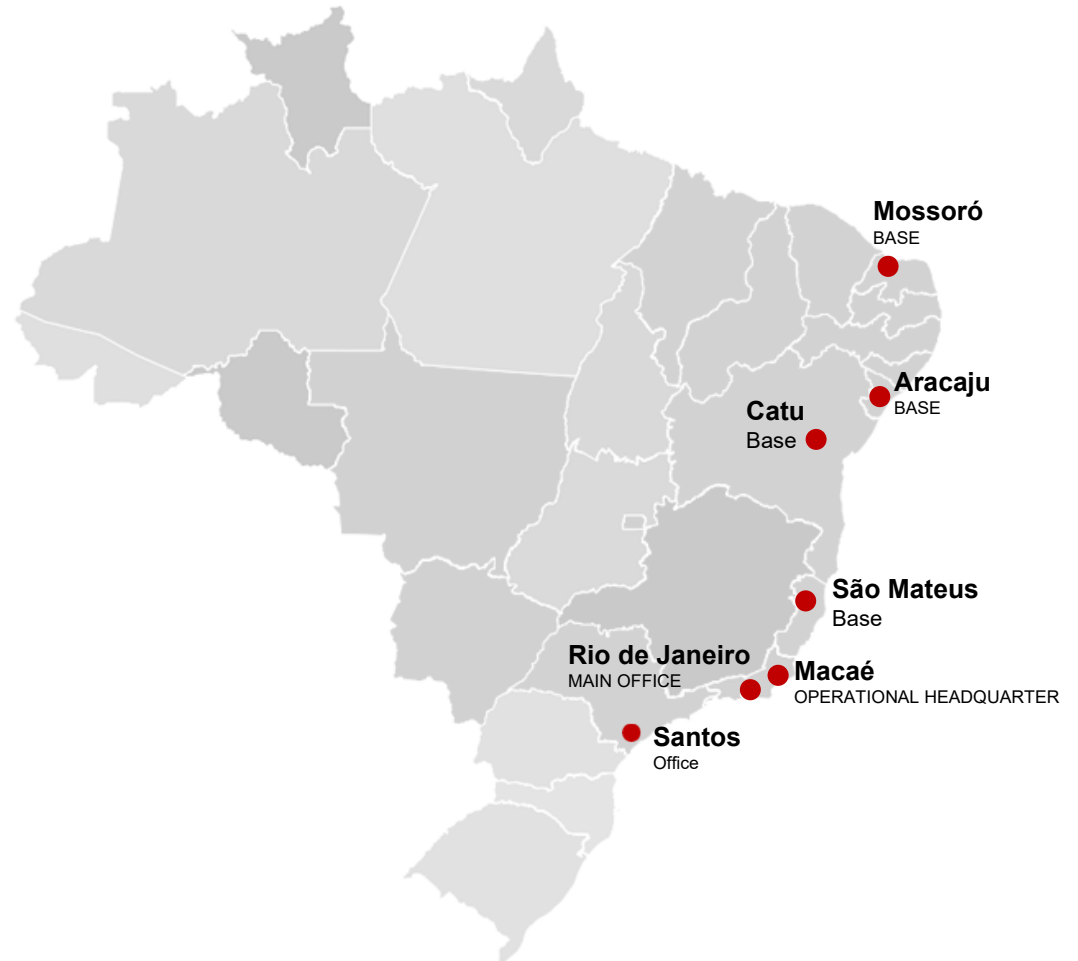
Pipeline & Process Services



Production Solutions

Halliburton Brazil

- Established in 1957



Macaé Office Building



Halliburton Brazil Technology Center

■ Inauguration: June 2013



LEED Certification Review Report

This report contains the results of the technical review of an application for LEED® certification submitted for the specified project. LEED certification is an official recognition that a project complies with the requirements prescribed within the LEED rating systems as created and maintained by the U.S. Green Building Council® (USGBC®). The LEED certification program is administered by the Green Building Certification Institute (GBCI®).

LEED NEW CONSTRUCTION & MAJOR RENOVATIONS



Certified (Silver)

CERTIFIED: 40-49, SILVER: 50-59, GOLD: 60-79, PLATINUM: 80+

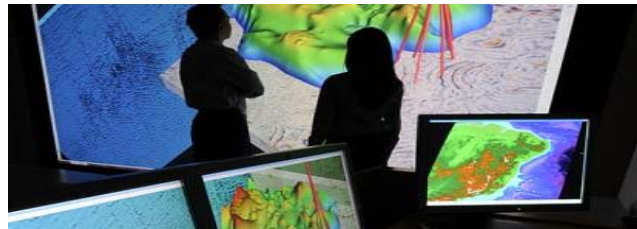
Halliburton Brazil Technology Center (HBTC)

People



- » Leveraging diversity
- » Hiring and retaining local talents

Collaboration



- » Connecting with customers locally and Brazilian universities
- » Innovation at the customer interface
- » Collaboration across disciplines and service lines.

Globalization



- » Access to HALLIBURTON technological excellence network
- » R&D Projects with Global Applications to meet market challenges.

Innovative technology developed across the Lifecycle

Innovation - Risks and Challenges

- **Collaboration with Local Universities and Research Institutes**
 - Approval process for Technology Cooperation Agreement
 - Insufficient and spread test capabilities (intensive in Logistics & Travel)
 - Sense of urgency and capacity constraints
 - Silo'ed and fragmented structure with pockets of expertise
 - Used to work with small scale research (small volumes, sizes etc.)
 - Can be expensive
 - HSE culture

- **Brazilian Supply Chain & Partners**
 - Lack of relationship with broader supply chain in country
 - Lagging in cutting edge technologies (HT electronics, advanced materials etc.)
Standardize Quality Standards (ISO vs. API vs. ABNT)
 - Legal foundation and IP protection
 - “Flick the switch” from operations to R&D mindset

Innovation - Risks and Challenges (Cont'd)

- **People**

- In general, excellent professionals are available, however new areas of knowledge are emerging and there are no professionals fully ready (lacking specialists in specific areas)
- HR Development (expensive)

- **Brazilian Logistics**

- Inefficiency (importation)
- Huge bureaucracy

- **Investments**

- » Exchange rate
- » Competition with other R&D facilities

- **Current ANP regulation**

Main R&D Collaboration Benefits

▪ Investments

- Leveraging the ANP Levy to deliver value add technology in Brazil, for Brazil, by Brazil;
- Oil Companies + Halliburton Investments
- Important investments into Brazil supply chain and academia

▪ Brazilian Supply Chain & Partners

- Work with several Universities and Technical Institutes
- Build capability within several small engineering and manufacturing companies

▪ People

- Significant number of technical staff directly employed in Brazil
- Create highly skilled employment indirectly

THANK YOU

