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Well Productivity Optimization

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Abstract-Determine, optimize, implement, and follow up operational strategies, designs and engineering, to obtain efficient and maximized well intervention programs and their artificial lifting systems through the acquisition of information related with fluids, bottom hole pressures, pressure restoration factors, and optimum well operating conditions.

Keywords-Well Productivity and Production .

I. INTRODUCTION

Determine, optimize, implement, and follow up operational strategies, designs and engineering, to obtain efficient and maximized well intervention programs and their artificial lifting systems through the acquisition of information related with fluids, bottom hole pressures, pressure restoration factors, and optimum well operating conditions.

which will generate a portfolio of opportunities and actions in the wells, operational processes of intervention programs, and optimum well exploitation schemes, allowing the addition of reserves, and to maintain and/or increase the production of hydrocarbons.

With the implementation of the related services, the rate of hydrocarbon production will be achieved, rate that will be kept over time.

II. PREMISES

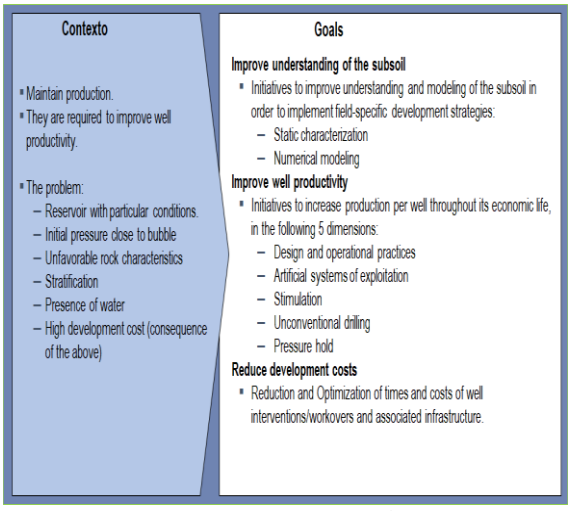

Fig 1**. CorporatePremises**

II. CONSIDERING THE PRODUCTION SYSTEMS

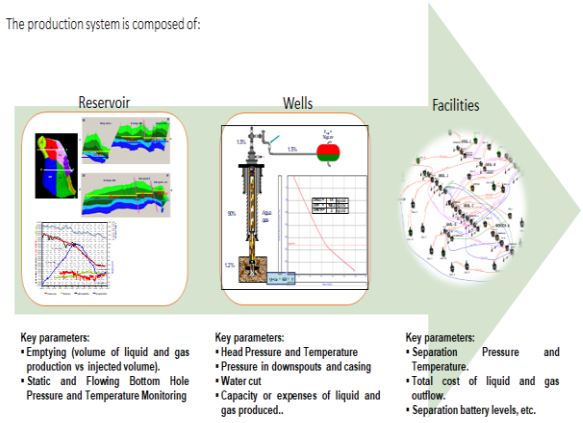

Fig 2.**Standard Process.**

IV.PROBLEM - PROPOSAL

1. Anticipation of Current and Future Conditions:

Fig 3.**Compare Situation**

2. New Scheme Proposed to Increase Productivity:

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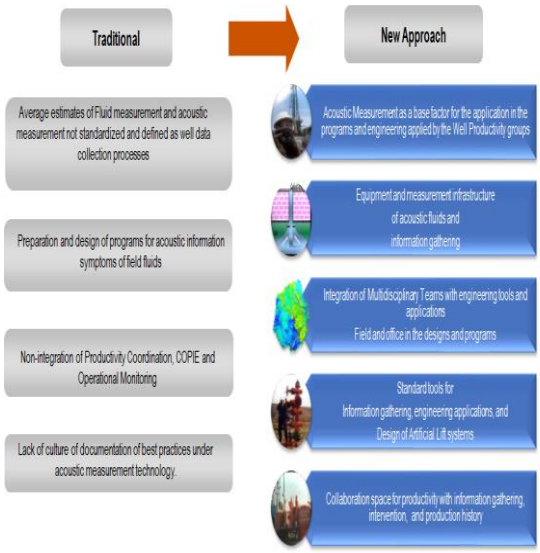

Fig 4.**Transition Process.**

V. BACKGROUND

Oil Companies have been applying partial solutions related to the measurement and applications in wells obtaining high value results to determine well fluid levels and their behavior; promoting a reliable decision making and actions that stabilize and optimize the operation, production and the life time of the wells, and their respective production artificial lift infrastructure; causing a maximization of the exploitation of hydrocarbons and an increase in production.

VI. NEW WELL PRODUCTIVITY/TESTING METHODOLOGY

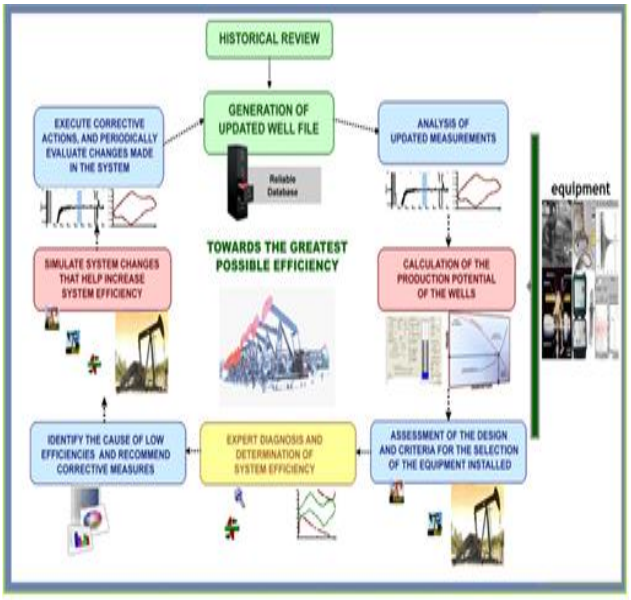

Fig 5. **Methodology Proposed**

2. Organizational Project Process:

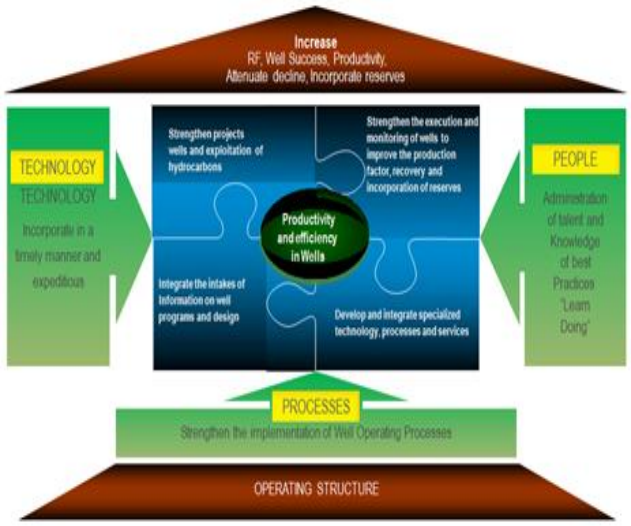

Fig 6.**Organization Diagram**

VII. RESULTS - CONCLUSIONS

- Implementation of extensive field measurement operational programs
- Have information, behavior, and reproduction of the fluids produced in wells, available for interdisciplinary groups that allow determining the actions and decision-making in wells and their artificial lift systems.
- Have support, which will allow implementing a differentiated strategy from the traditional way, with an innovative scheme that supports the best programs to optimize engineering programs, design of interventions and optimal hydrocarbon exploitation schemes.

1. Support through field fluid measurements that contribute to strategic actions such as:

- Quickly and effectively increase recoverable reserves from marginal, mature fields or fields with special production conditions.
- Contribution to maintain and increase oil production in closed wells with existing and new possibilities or producers.
- Monitor the production behavior of wells and the performance of surface units and installed downhole equipment.
- Respond to the daily needs of repetitive wells (Deferred production) in order to identify the causes of the drop in production, proposing recommendations for the optimization of the system.
- Cover the daily quota of fluid level measurement that interdisciplinary groups need to evaluate wells.
- Establishment of production well-artificial lift system operating strategies by evaluating electronic records for the generation of optimization actions.

- Monitoring of the operating conditions of subsurface equipment to predictively and proactively determine failures and their operation (system efficiency, performance, among others), and/or, depending on the case, re-design the most suitable equipment for the well.
- Measurement of surface pressures.
- Economic extension of the productive life of the well and reservoir.
- Decrease in operating costs of well interventions
- Implementation of ROI mechanisms faster.

2. Predictively and preventively, face current and future conditions and adopt new work schemes to increase well productivity to:

- Promote greater efficiency and effectiveness to maximize the Production of hydrocarbons.
- Greater certainty and reliability to determine well intervention engineering programs to increase hydrocarbon production under an economic scheme.
- Supports for the acceleration in the incorporation of production in the short and medium term.
- Performance improvement of well maintenance projects
- Optimize and generate optimal operational strategies for a set of wells or fields, which will translate into increases in daily net production contributions, minimization of operational costs and increase in the useful life of bottom and surface equipment.
- Monitoring of the production behavior of wells and the performance of surface units and installed downhole equipment.
- Respond to the daily needs of the wells (Deferred production) in order to identify the causes of production drops, proposing recommendations for the optimization of wells and production systems.
- Cover the daily requirements for measuring fluid levels required by multidisciplinary groups to evaluate wells.
- Monitoring of wells, and the operation of artificial lift and subsoil systems.

3. Technical Support for:

- Well evaluation that generates a portfolio of opportunities for the incorporation of production in operating wells, and potential in closed wells with production potential.
- Measurement and information gathering to carry out the evaluation of the wells.
- Monitor the production behavior of wells, performance of surface units, and installed downhole equipment.
- Actions for the Identification and anticipation of production drops (Deferred production) and determination of preventive actions that maintain the stable production operation of the wells.
- Static-dynamic fluid level measurements, bottom hole pressures, pressure restoration parameters, dynamometric parameters, and determination of operating conditions of wells and SAP infrastructure.
- Generation of actions that support the criteria for decision-making in the operation of the exploitation, infrastructure and measurement systems through processes.
- Measurement of surface pressures.
- Pressure Analysis (Build-Up).
- Percentage of fluid in the annular.
- Pressure at the pump inlet and bottom flowing pressures (Datum, Top, Midpoint, and Base).
- Static bottom hole pressures (Datum, Top, Midpoint and Base), in case of static levels.
- Graphs of IPR Curves.
- Dynamic and static bottom hole pressures

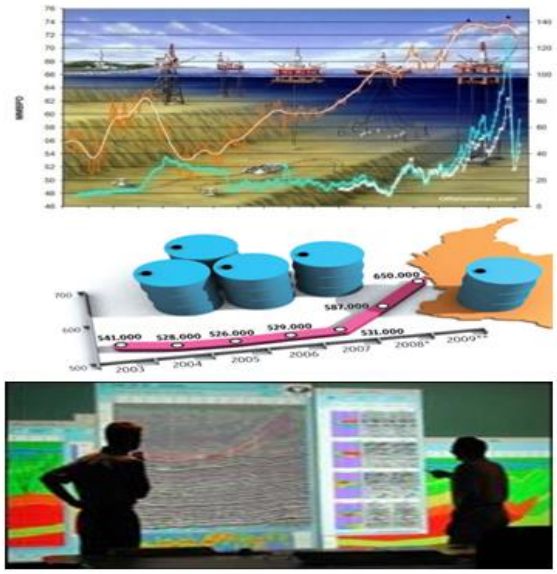

Fig 7.**Results**

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