# Enhancement of Chemostratigraphy Laboratory Efficiency through Implementation of a Laboratory Information Management System

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## ABSTRACT

During 2015-2016, a management system evaluation was applied in the Chemostratigraphy Laboratory (inorganic geochemistry analysis using X-ray fluorescence and inductively-coupled plasma technologies) at the Exploration Core Laboratory (ECL). This review considered all aspects of the laboratory operations, including the organizational structure, processes and procedures. The aim was to assure the best in-house practices for accurate, reliable and timely results. A breakdown of processes, sample workflows, bottlenecks, root cause analysis and comparison with established industry best practices were used to calibrate and test the laboratories functionality. An immediate recommendation was the implementation of a laboratory information management system (LIMS). This employs the computerized collection of all information related to the acquisition and archiving of data. The LIMS software was deployed as a pilot project in the Chemostratigraphy Laboratory in March 2017. The immediate benefits of its implementation were on efficiency and productivity. Time spent on sample logging, tasks assignment and daily reports has been improved by 20%. Communication among ECL teams has also been improved by providing a single point of access to all chemostratigraphic analytical activities. On productivity, laboratory sample throughput has been increased by 10%. With ongoing implementation, the functionality is being expanded within the Chemostratigraphy Laboratory to include project progress tracking, maintaining materials inventories, instrument calibrations and preventive maintenance plans. Within the wider ECL, this pilot project is being used as a reference to scope deployment throughout the ECL to make more efficient use of the resources (from lab personnel, instruments and other lab investments to software).