From its base of operations in Fort McMurray, Alberta, SGS offers integrated solutions to oil sands mining and in-situ operations. SGS has the capability to provide a wide range of integrated services. Our services are diverse, from a full service laboratory to tailings management expertise to an advanced pilot testing facility for testing mining processes for ore and process optimization. SGS solutions include:

**EXPLORATION AND RESOURCE DEFINITION**
- Complete management of exploration programs and QA programs
- Geological mapping
- Layout of reference grids and topographic surveys
- Supervision of drilling and core logging
- Trenching and bulk sampling
- Core cutting, logging and sample selection
- Chemical and mineralogical analysis
- Bench-scale process testing

**GEOLOGICAL AND PROCESS MODELING**
- Block estimation of geological, assay, and process parameters.
- Construction of process models that represent plant and process conditions.
- Process simulations to obtain details of expected extraction and tailings performance.
- Reconciliation of resource block model with mined zones.

**QUALITY SYSTEMS**
Globally, SGS is at the forefront of providing quality work. Our facilities operate under internationally recognized quality standards, which consist of a documented quality system. Upon request, we can detail our full scope of our ISO/IEC 17025 accreditation for our oil sands laboratory.

**PROCESS DEVELOPMENT AND PILOTING**
- Extraction and froth treatment flowsheet development.
- Bitumen extraction technology assessment and piloting.
- Pilot testing of alternative processing methods or technologies.
- Detailed process engineering including heat and material balancing.
- Commissioning support.

**PLANT OPTIMIZATION AND ADVANCED PROCESS CONTROL**
- Pilot testing to identify optimum operating conditions and to benchmark the process performance of new ore-types.
- Pilot-scale comparison of flotation and primary separation equipment design.
- Instrumentation selection and process control engineering.
- Advanced process control systems.
- Image analysis of froths linked to automated process control system.
- Ore blending recommendations.

**MINE PLANNING**
- Identification of controls (geotechnical stability, ore/waste contacts, geological features, etc.)
- Ultimate pit design.
- Long range (maximize NPV) and short range planning (logistically and cash-flow driven).
- Communication interface between mine planning and extraction to link block processing characteristics and recommended operating conditions.
- Reconciliation of as-built mine and update ultimate pit design.
GEOTECHNICAL SERVICES
• Media stability, compaction and permeability.
• Construction product testing.
• Sediment and slurry flow and hydrology.
• Site reclamation and monitoring.

MINING EQUIPMENT AND FLEET OPTIMIZATION
• Inspection, maintenance and certification of AC and fire suppression systems.
• Comprehensive fire hazard management programs.
• Mining equipment maintenance outsourcing.

ENVIRONMENTAL SERVICES AND TAILINGS MANAGEMENT
• Air, water and soil hazard analysis.
• Environmental baseline studies, monitoring, mineralogy and auditing.
• Acid rock drainage prediction and mitigation.
• Water and effluent testing, treatment and management.
• 3-D pond surveys.
• Mine closure and tailings reclamation planning.
• Settling strategies to ensure consolidated tailings and rapid reclamation.
• Pilot testing of advanced tailings settling technologies.
• Reconciliation between claimed material and survey results.
• Wildlife deterrents.
• Industrial hygiene, silica, dust, air quality and noise analysis.
• Greenhouse gas emission verification.

MINING EQUIPMENT AND FLEET OPTIMIZATION
• Inspection, maintenance and certification of AC and fire suppression systems.
• Comprehensive fire hazard management programs.
• Mining equipment maintenance outsourcing.

INDUSTRIAL SUPPORT
• Non-destructive testing of metals and corrosion products.
• Outsourcing and on-site services.
• Testing natural, construction and industrial materials.
• Supply chain and asset integrity management.

AUDITING AND CERTIFICATION
• OHSAS 18001 Occupational Health and Safety Management Systems.
• BS EN 16001:2009 Energy Management.

CONTACT INFORMATION
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WHEN YOU NEED TO BE SURE