PLANTERRA ENERGY

A Division of Planterra Construction LLC | Dallas, Texas

Field Assessment & Audit

Independent Technical Assessments of CAT G3600 and G3500 Infrastructure

Before committing capital to overhaul programs, parts purchases, or replacement decisions, oil and gas operators need an evidence-based picture of what they actually have on the ground. Reactive maintenance budgets are often built on assumption rather than measurement — and the cost of getting that picture wrong is measured in deferred barrels, emergency parts freight, and unplanned compressor train downtime.

Planterra Energy delivers independent, on-site technical assessments of existing CAT G3612, G3616, G3608, G3500-series, and related compression and power-generation infrastructure. The audit documents engine condition, total operating hours, top-end and in-frame component status, fuel-gas quality, lubricant trending, sour-gas exposure controls, and prioritized repair requirements — engine-by-engine, with as-found and as-left photographic evidence and a written report formatted for executive review and procurement decision-making.

Our lead technical specialist has personally conducted CAT G3600 and G3500 reliability assessments at PetroPiar, PetroBoscan, Boquerón, and Quiriquire — operating environments that span Eastern Venezuela's heavy-oil belt, the Maracaibo basin, and the sour-gas duty cycles that define Venezuelan compression operations. That field history is the difference between a generic engine inspection and an assessment grounded in how these specific engine populations behave under real Venezuelan operating conditions.

What the Audit Covers

- **Engine mechanical condition.** Cylinder condition, liner distress and bore wear, valve recession, deposits, blowby measurement, turbocharger and exhaust temperature balance, intake restriction, aftercooler performance, jacket-water control, crankcase pressure, and bearing risk indicators — captured with as-found / as-left documentation.
- **Combustion, controls, and ignition.** ADEM and ESS event review, misfire and detonation analysis, ignition timing, spark plug and coil condition, harness and grounding integrity, air-fuel ratio response, start reliability, and nuisance-trip diagnosis.
- **Fuel-gas quality.** Gas chromatography review, methane number management, Wobbe index and BTU consistency, hydrogen sulfide (H_2S) and CO_2 content, water dew point, hydrocarbon liquids carryover, fuel pressure regulation, and derate exposure from variable associated gas.

- **Lubrication and coolant analysis.** Oil sample trend analysis (TBN, TAN, oxidation, nitration, wear-metal mapping, viscosity), sour-gas oil suitability and change-interval optimization, coolant chemistry, cavitation protection, scaling, and contamination.
- **Compressor and generator interface.** Compressor unloader and valve health, alignment and coupling condition, vibration signatures, cylinder balance, AVR stability, protection-trip review, and production-deferment mapping at the train level.
- **Sour-gas HSE readiness.** H_2S work-permit discipline, fixed and personal detector coverage, rescue readiness, isolation and purge controls, and SCBA / supplied-air verification — calibrated to U.S. NIOSH exposure limits regardless of host-country variance.

Field References

Our lead technical specialist has conducted CAT G3600 and G3500 assessments and overhauls at the following Venezuelan operating environments:

- PetroPiar (Orinoco Belt heavy-oil upgrader and associated compression infrastructure).
- PetroBoscan (Western Venezuela / Maracaibo basin heavy-oil operations).
- Boquerón (Eastern Venezuela gas-handling and compression operations).
- Quiriquire (Monagas state mature-field gas compression and lift operations).

What You Receive

Every Planterra Field Assessment & Audit engagement produces a defined deliverable set, written to the standard a U.S. shareholder, lender, or counterparty procurement organization expects to see:

- Executive Summary Pack — a five-page decision document for operations leadership, with prioritized risk findings and recommended actions.
- Engine Condition Scorecards — one-page health summary per audited unit, with as-found photographic evidence and condition rating.
- Reliability Baseline Dashboard — availability baseline, downtime Pareto, trip-cause distribution, and deferred-barrel exposure.
- Failure-Mode and Bottleneck Map — root causes linked to fuel, lube, cooling, ignition, controls, the compressor train, or maintenance execution.
- 30-Day Quick-Win Plan — capital-light actions executable within current maintenance windows.
- Sour-Gas HSE Gap Report — H_2S work-control review, detector coverage, rescue readiness, and corrective actions.
- Critical Spares and Parts Strategy — prioritized BOM, lead-time risk, core management, and rebuild-quality QA/QC discipline.

Each deliverable is built to be acted on. The audit report is not the end product — the decisions it enables are.