



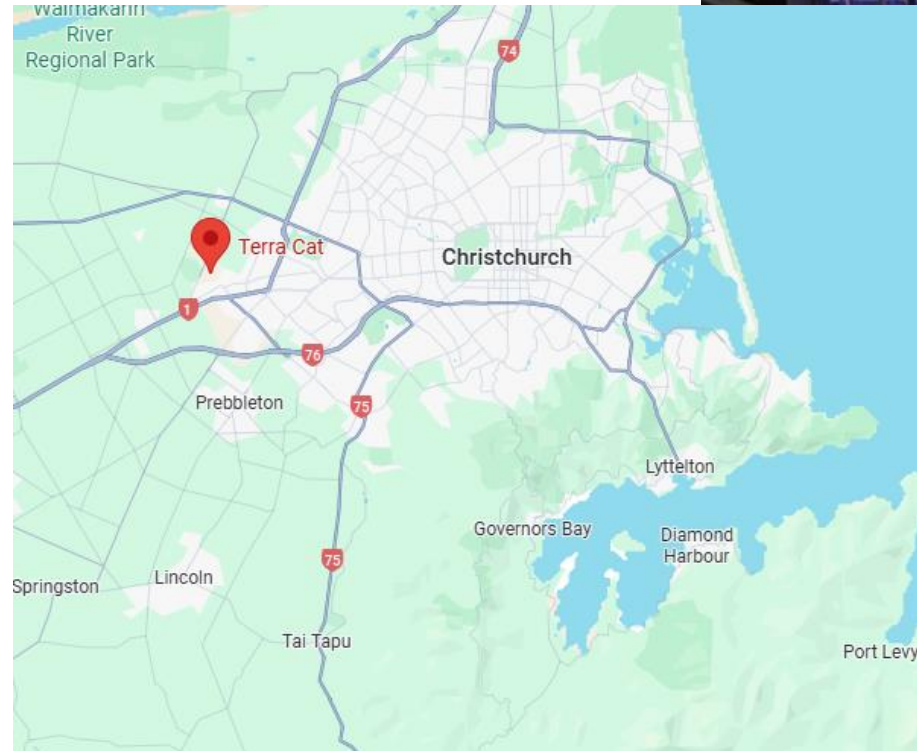
Maximising machinery Performance

The Power of Fluid Analysis

TERRA ANALYTICAL

Over 50 years of Terra Analytical

- Located in Christchurch
- ISO 9001 accredited
- Only Cat lab in NZ
- Covers a range of industries



FLUID ANALYSIS

Precision insights from every drop

We provide information that can help keep minor problems from becoming major repairs and helps to forecast equipment wear and manage your components life.

Fluids we analyse

- Oils
- Coolants
- Diesel Fuel
- Specialist fluids including Grease, Used oil fuel (UOF) and Filter analysis

LISTEN TO THE LIFEBLOOD OF YOUR MACHINE

WARNING:
YOUR FUEL TRANSFER PUMP IS LEAKING

REPAIR BEFORE FAILURE SAVINGS: **\$32,000**

FLUID ANALYSIS

A range of testing

Standard testing includes:

Elemental Analysis (*ICP-MS*) – wear metals, additives, contamination

Oil Condition (*FTIR*) – oxidation, nitration, soot, glycol

Kinematic Viscosity – fluid performance at temperature

Fuel Dilution (*GC*) – fuel leaking into oil

Particle Counting – ISO cleanliness code

Ferrous Metal Indication (*PQI*) – wear from iron-based components

Water Content – by % or ppm (*Karl Fischer*)

Additional testing available:

Total Acid/Base Number (*TAN/TBN by titration*) – oil life and corrosion risk

Elemental Analysis (*XRF*) – fast screening for additives or contaminants

Flash Point (*Mini Flash*) – fire hazard risk and fuel contamination







FLUID ANALYSIS

Turning insights into action

Using both the chemical analysis and our teams expert mechanical knowledge, an interpretation of the results can be put into real world applications

Results are given in colour codes

Your code	What it means
 No Action Required	Sample results are <u>normal</u> and no action is required.
 Monitor Component	Monitor, Proceed with Caution or Investigate
 Action Required	Action is required based on the sample results.
 URGENT Action Required	Highest level of alert on a sample. Stop, Diagnose and Repair

	Elevated Test Results	Possible Sources
Diesel Engines	Iron, chrome	Cylinder liners, piston rings
	Iron, chrome, aluminum	Cylinder liners, piston rings, aluminum piston skirt
	Lead, aluminum, iron	Lower rod and main bearings, crankshaft
	Sodium, potassium, copper	Coolant contamination
	Silicon greater than aluminum, iron, lead	Dirt, cylinder liners, piston rings, bearing overlay
	Soot, iron, lead, chrome	Soot wear on cylinder liners, piston rings, bearings
Powershift Transmissions	Silicon, iron	Wet clutch friction material and separator plates
	Aluminum, copper, iron	Torque converter
	Copper greater than lead or tin	Bronze bushing or thrust washer
Hydraulic & Steering Systems	Iron, chrome	Cylinder & rod wear
	Silicon greater than aluminum, iron, chrome	Dirt entry, pump wear, cylinder & rod wear
Differentials & Final Drives	Silicon greater than aluminum, iron, chrome, nickel	Dirt entry, gear wear, bearing wear
	Copper greater than lead or tin	Bronze bushing or thrust washer

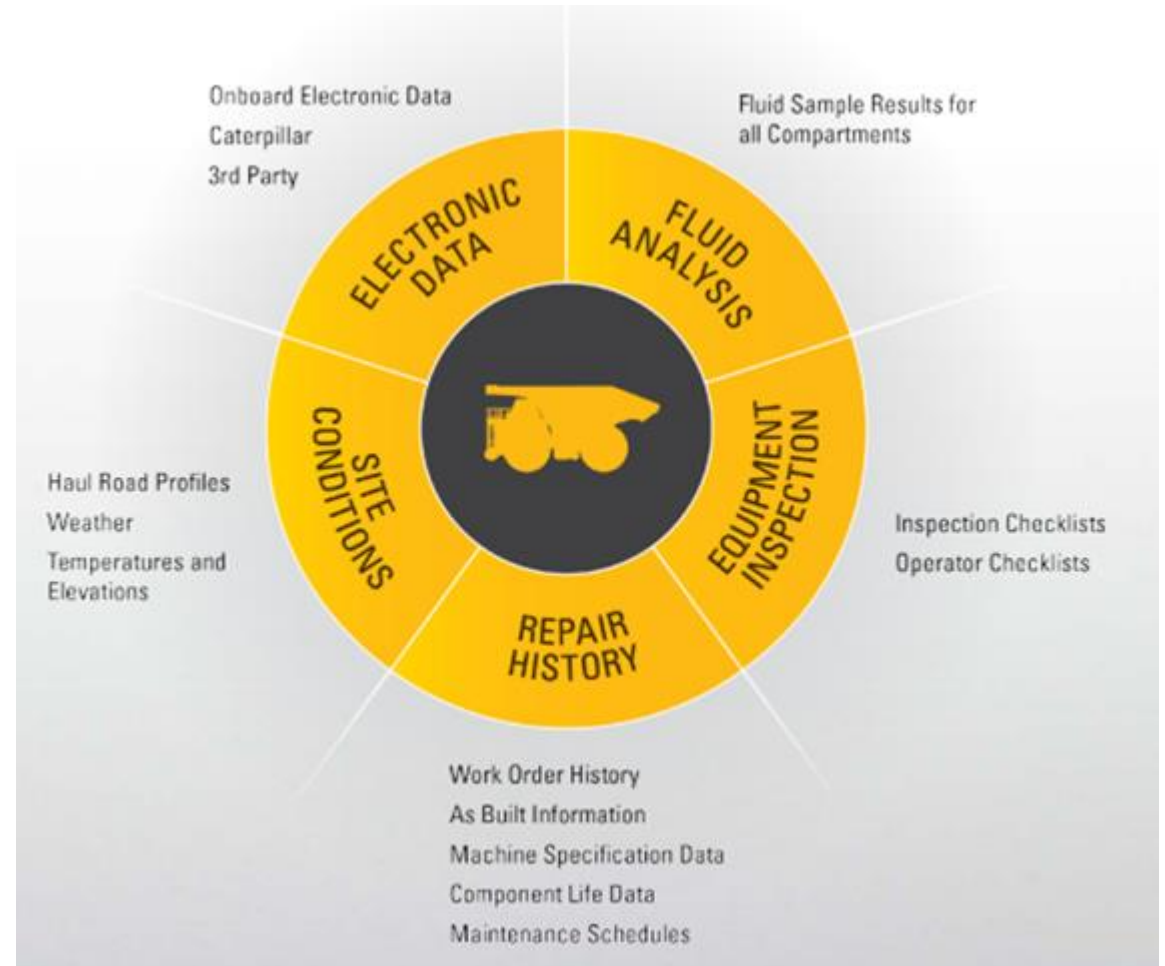
CONDITION MONITORING ANALYSIS

Beyond fluid analysis

A service that uses

- Domain expertise
- Data Analytics
- Predictive Analytics

To detect a potential failure **before** an onboard machine notification occurs



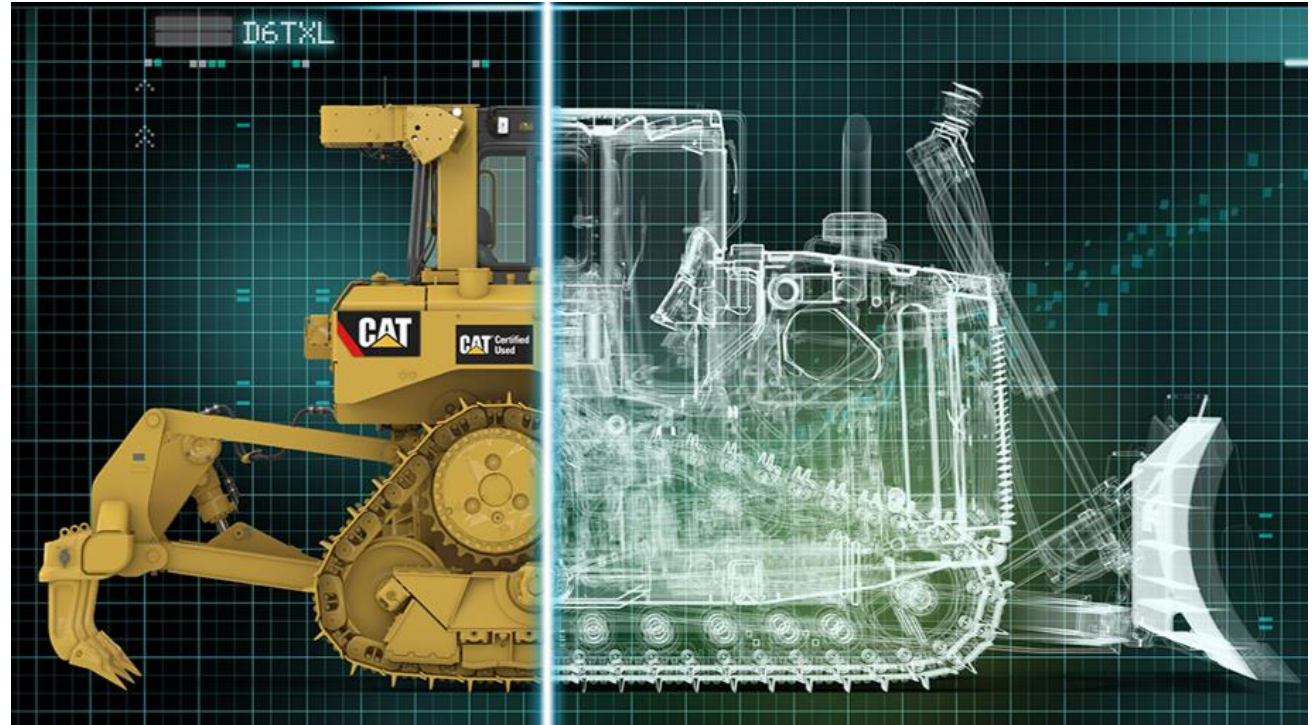
DATA ANALYTICS

Everything at your fingertips

These reports are generated and viewed on the Visionlink portal where even more data is available to:

- Cut idle time and fuel costs
- Plan maintenance
- Boost productivity
- Dynamic tools

VISIONLINK[®]





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