



Tti Testing Laboratories

OVER 30 YEARS OF EXCELLENCE IN QUALITY ASSURANCE



PETROLEUM DIVISION · OIL & COOLANT TESTING

Maximise plant **uptime**

Advanced oil and coolant testing by Tti Labs.

We test your fresh oil, used oil and engine coolant. You see a fault early and fix it in planned maintenance, before it stops a generator, engine or loom.

Powerhouses · Textile mills

OGRA approved laboratory

ISO/IEC 17025 · PNAC



01 Why test

03 Coolant

05 Tests by asset

02 Oil: baseline and trend

04 The savings

06 Start a programme

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www.ttilabs.net



PETROLEUM TESTING DIVISION • LAHORE

**OGRA approved.
ISO/IEC 17025 accredited.**

OGRA approved laboratory. Approved by the Oil and Gas Regulatory Authority, Pakistan, for independent quality control testing of petroleum products and lubricants.

ISO/IEC 17025 accredited. Accredited by the Pakistan National Accreditation Council (PNAC).

FRESH OIL • USED OIL • COOLANT

Find the fault in the oil or coolant, before the machine **stops**.

In a powerhouse or a textile mill, a failed engine or a stopped loom costs output every hour it stands.

Routine testing of fresh oil, used oil and engine coolant finds the fault first. It prevents major failures, cuts unplanned downtime and keeps your maintenance budget on plan.

THREE FLUIDS

Fresh oil, on arrival

Used oil, in service

Engine coolant

**One testing
programme**

WHAT YOU GET

Fewer unplanned shutdowns

No major failures

A maintenance budget on plan

Whether you run heavy-duty generator sets, industrial engines or high-speed looms, one programme protects all three fluids.



FRESH OIL AND USED OIL

Fresh oil sets the baseline. Used oil shows the change.

New oil is rarely perfectly clean, so test it on arrival. Then each used-oil sample is read against it, and wear shows early.



01 QUALITY ASSURANCE

Fresh oil analysis

Testing incoming batches establishes an accurate baseline. It verifies that the product matches OEM specifications.

- 🔄 An accurate baseline for every later sample
- 🔄 A check against OEM specifications
- 🔄 No contaminated or out-of-spec lubricant goes into multi-million-rupee machinery



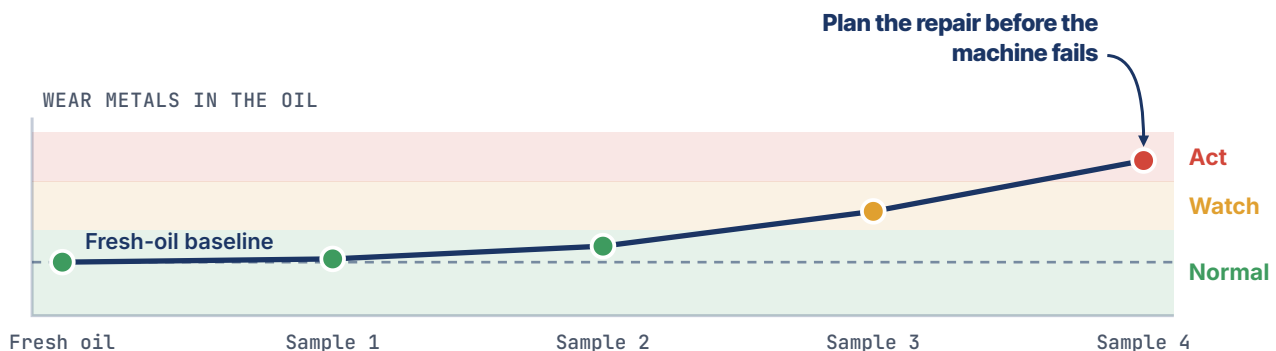
02 PREDICTIVE MAINTENANCE

Used oil analysis

In-service oil testing works as a blood test for your machinery. It shows what is happening inside, while the machine runs.

- 🔄 Tracks internal component wear
- 🔄 Monitors environmental contaminants
- 🔄 Measures fluid degradation, so you can safely extend drain intervals on actual condition, not guesswork

BASELINE, THEN TREND



COOLANT ANALYSIS

Coolant is the other half of engine health.

On heavy-duty generator sets and industrial engines, oil analysis covers half of engine health. Coolant analysis covers the rest.

WHAT HAPPENS TO COOLANT



COOLANT AND ENGINE FAILURE



of all engine failures are directly related to coolant degradation and cooling-system neglect, studies show.

WHAT Tti LABS TESTS IN YOUR COOLANT

We find pH imbalances, depletion of supplemental coolant additives (SCAs) and chloride or sulfate contamination before they trigger a catastrophic engine failure.

pH	ASTM D1287
Specific gravity and freeze point	ASTM D1122
Nitrite and nitrate depletion	Elemental analysis
Glycol percentage	Elemental analysis
Corrosive wear debris	Elemental analysis
Chloride and sulfate contamination; SCA depletion	Coolant analysis

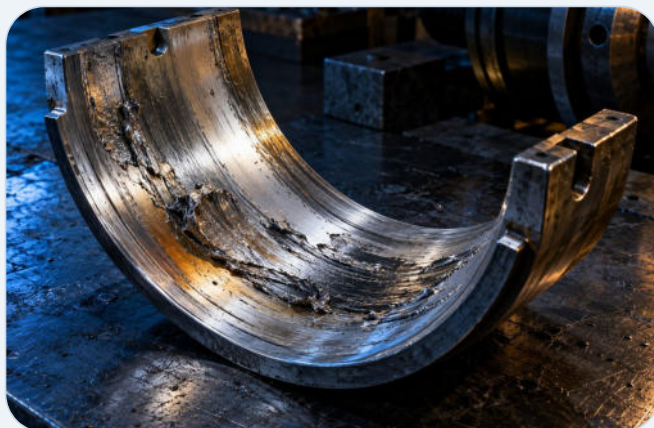
Four ways oil and coolant testing cuts costs



01

No costly production downtime

In a textile mill, an unscheduled shutdown of high-speed spinning frames or weaving looms halts the entire line. Catching oil contamination or cooling problems early prevents sudden line freezes and protects your daily output.



02

No catastrophic component failures

A destroyed turbine bearing, a generator engine block cracked by overheating or worn high-speed loom gears cost a great deal to replace. Fluid analysis catches microscopic problems early. You fix a minor issue in planned maintenance, for a fraction of the cost.



03

Longer fluid life

Replacing thousands of litres of industrial oil or coolant on an arbitrary calendar wastes money. Testing lets you safely extend drain intervals on actual condition. That lowers your procurement and disposal costs.



04

Protected product quality

In textile machinery lubrication, degraded or incorrect oil can cause overheating, friction or seal leaks that stain yarn and fabric. Clean, high-performance oil protects the machine and prevents costly defects and material waste.



FIVE ASSETS • ASTM AND ISO METHODS

Each asset fails in its own way, so each gets its own tests.

Our Lahore laboratory tests to internationally recognised ASTM and ISO methods.



Generators and turbines

Circulating and splash systems. Continuous high-heat running ages the oil in main sumps. We prevent sludge, bearing friction and governor or control-valve failures.

Kinematic viscosity

ASTM D445 • ISO 3104

Total acid number

ASTM D974



Engine cooling systems

Coolant analysis, to prevent the 30% failure risk. Elemental analysis measures nitrite and nitrate depletion, glycol percentage and corrosive wear debris.

pH

ASTM D1287

Specific gravity, freeze point

ASTM D1122



Gears, transmissions and rotary equipment

Heavy loads fatigue gear teeth. Wear metals such as iron, copper and lead show internal degradation weeks before a physical breakdown.

Elemental spectroscopy, ICP/AAS

ASTM D5185



Textile machinery centralised lubrication

Looms and spinning frames use mist, drop-feed or forced-circulation systems. Fibres, cotton dust and chemical vapours breach seals and clog narrow oil lines. We catch particles before they starve high-speed bearings.

Particle counting

ISO 4406



All lubrication systems: moisture

Water from humidity, steam leaks or wash-downs destroys lubricants. We measure it down to parts per million, to prevent emulsification, additive washout, foaming and internal rust.

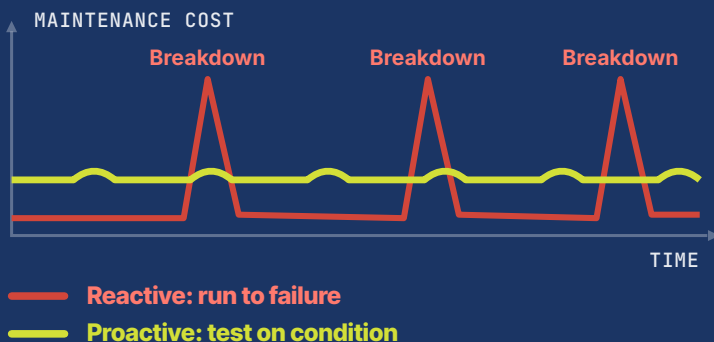
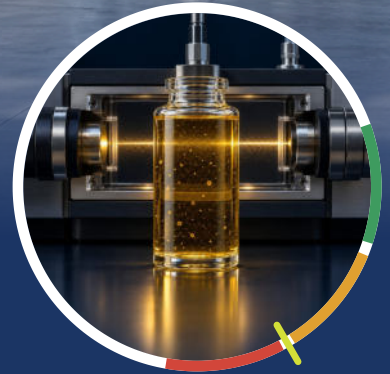
Karl Fischer titration

ASTM D6304 • ISO 12937

PROACTIVE MAINTENANCE

Test on condition, before a **breakdown**.

Do not wait for a lubrication or cooling failure to stop your lines or your power. Regular test data lets your engineers plan each repair, extend equipment life and cut operating costs.



REACTIVE

- Oil and coolant changed on the calendar
- Problems found when a machine stops
- Repairs bought in a hurry, output lost

PROACTIVE, WITH Tti LABS

- Fresh oil checked before use
- Used oil and coolant trended on condition
- Minor faults fixed in planned maintenance

SET UP YOUR SAMPLING PROGRAMME

A structured, OEM-compliant fluid and coolant sampling programme for your facility.

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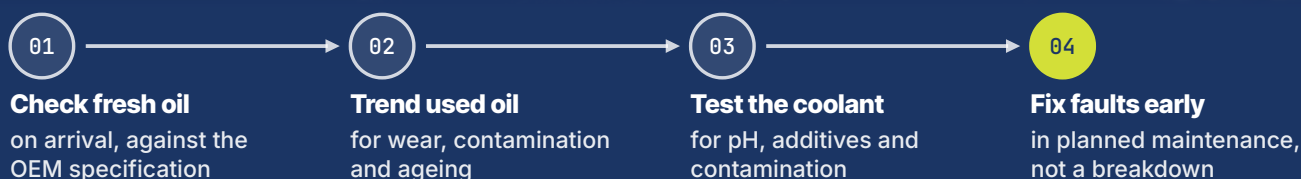
Lahore laboratory

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Maximise plant **uptime**.



OGRA approved.

Independent quality control testing of petroleum products and lubricants in Pakistan.

Accredited.

ISO/IEC 17025, accredited by PNAC (Lab 022).

Standard methods.

Internationally recognised ASTM and ISO test methods.

Close to you.

Laboratory in Lahore; offices in Karachi, Faisalabad and Sialkot. Testing since 1995.

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