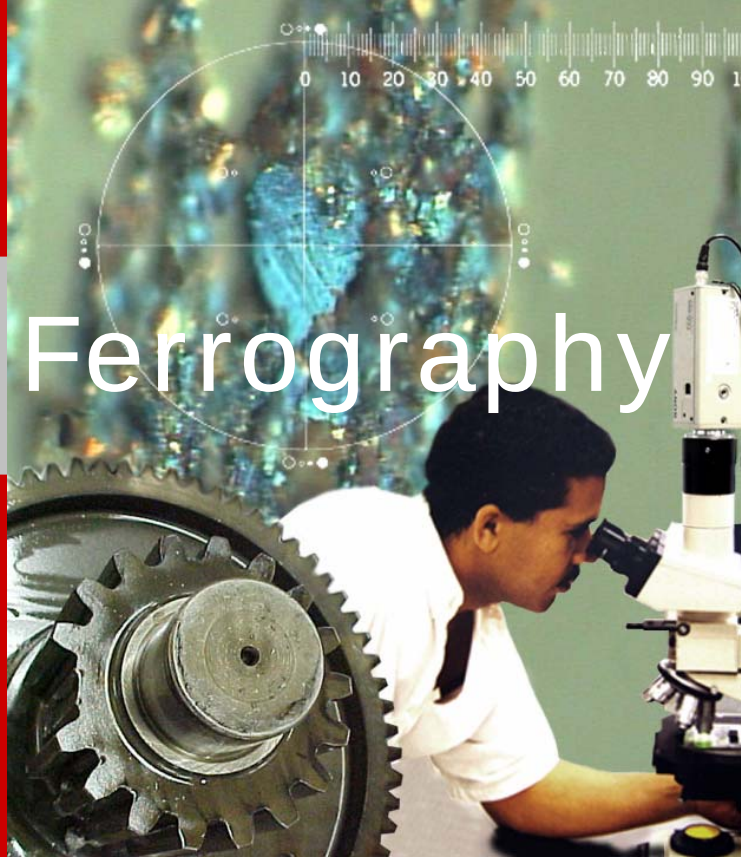
Wear Particle Analysis

Detailed Morphological Wear Particle Analysis

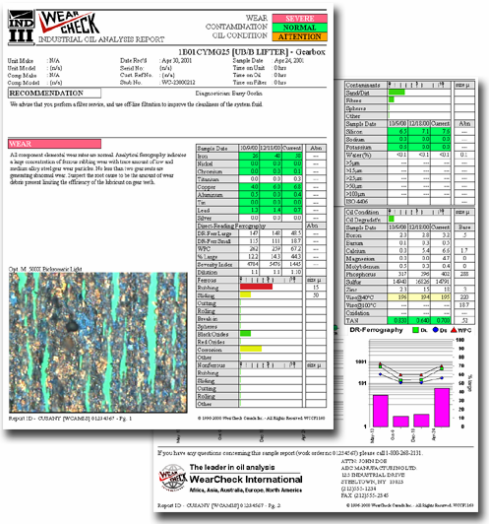
Analytical Ferrography



ANALYTICAL FERROGRAPHY GOES BEYOND THE TYPICAL PART PER MILLION WEAR ANALYSIS OF TRADITIONAL OIL ANALYSIS PROVIDING YOU WITH A DETAILED MORPHOLOGICAL ANALYSIS OF THE WEAR MODE OF YOUR EQUIPMENT.

OVERVIEW

- Goes beyond typical part per million (ppm) wear analysis.
- Provides detailed morphological analysis of wear mode present in equipment.
- Can categorize alloy types of wear particles.
- Provides the necessary information to make accurate and decisive maintenance decisions.
- WearCheck sample test kits can be easily upgraded to include analytical ferrography as either a one off of as an on-going part of your testing.



BENEFITS

Oil analysis, including Analytical Ferrography (A-Ferr), provides the greatest value for money of any maintenance monitoring technique. While most maintenance managers are familiar with the general concept of oil analysis, ferrography is oftentimes less understood.

Analytical Ferrography allows the oil analyst to go beyond the typical part per million (ppm) wear analysis of traditional oil analysis to actually determine the morphology of the wear particles present in the oil sample. A-Ferr reveals both the wear mode(s) present as well as the alloy compositions of the wear particles present. Interpretation of the ferrogram gives the analyst a clear picture of the component(s) that are wearing in the system.

In many instances A-Ferr is able to identify catastrophic wear modes, when typical ppm wear metals do not show any sign of the wear condition. A-Ferr can actually pinpoint specific component failure modes, thereby allowing maintenance to take action to avert a catastrophic equipment failure.

The WearCheck system is flexible allowing for the addition of analytical ferrography as either a one-off test on a questionable oil sample, as an automatic upgrade on any oil sample of concern, or as part of your on-going oil analysis testing package.

When utilized in conjunction with a regular oil analysis program, analytical ferrography provides the necessary information to make accurate and decisive maintenance decisions which can mean the difference between scheduled outage and repair versus costly major production losses.

WEAR CHECK

THE LEADER IN OIL ANALYSIS

Analytical Ferrography

Detailed Morphological Wear Particle Analysis

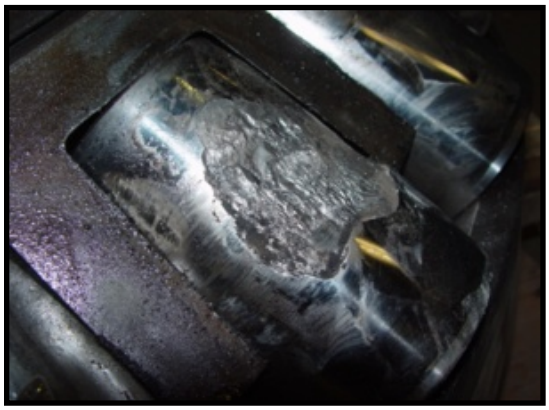
INDUSTRY EXAMPLES OF ANALYTICAL FERROGRAPHY

When utilized in conjunction with a regular oil analysis program, analytical ferrography provides the necessary information to make accurate and decisive maintenance decisions which can mean the difference between scheduled outage and repair *versus* costly major production losses.

Power Industry – Main Support Bearing

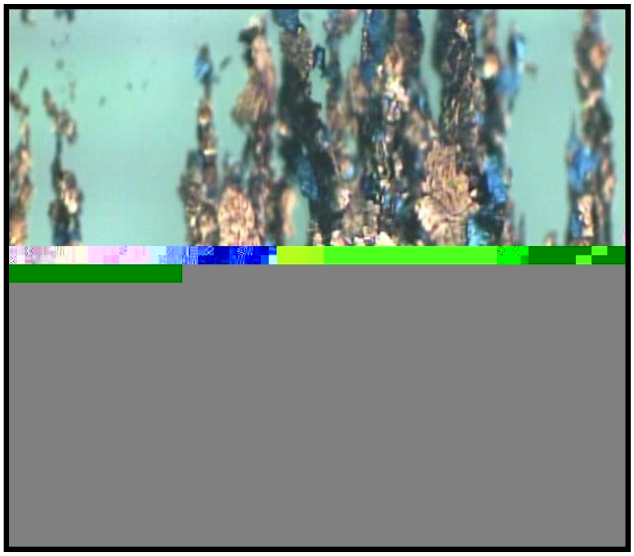
Savings: $12,500,000

Although the ppm iron level had increased only marginally in this oil sample, the analytical ferrogram clearly indicated catastrophic rolling fatigue wear. The unit was shut-down and inspection revealed a main support bearing that was weeks away from failure.



The A-Ferr was the key factor in deciding to schedule an outage for this unit, and cancel a planned outage for another unit. That would have left this plant with 2 down units when this unit failed.

Automotive Manufacturing – Assembly Line Gearbox **Cost: $15,000,000**



Aside from the analytical ferrography, no other tests indicated any abnormality with this oil sample. The A-Ferr, however, clearly showed severe gear wear, and indicated wear at the gear tooth root. This A-Ferr indicated that a catastrophic failure was imminent.

Although the A-Ferr clearly indicated that this unit was going to suffer a catastrophic failure, a maintenance decision was made to do a planned replacement of another assembly line gearbox. The result, the entire plant was shut-down for 12 hours due to this unscheduled failure.

Samples that have already been analyzed* can be upgraded to include analytical ferrography simply by phoning the laboratory and requesting this additional test.

**- Testing can only be conducted if samples are still in storage at the laboratory. Samples are typically stored for a period of 2 months prior to disposal.*

WEAR CHECK

THE LEADER IN OIL ANALYSIS

WearCheck Canada Inc. C8-1175 Appleby Line,Burlington, ON, L7L 5H9 Tel 905-569-8600 **Toll-free** 1-800-268-2131 **Fax** 905-569-8605 **URL** http://www.wearcheck.com

WC-FERROGRAPHY-2008-04-25