



Managed Oil Analysis Service

Oil Analysis

Oil analysis is a well-proven technique for monitoring difficult-to-access components in equipment that is being operated dynamically. Its strength lies in its ability to identify faults and potential failures at an early stage.

This type of analysis plays a key role within a broad-based CBM (Condition Based Maintenance) regime which utilises a variety of monitoring technologies to underpin a predictive approach to maintenance.

The PCMS Managed Service

PCMS Engineering provide a managed oil-analysis service as part of their portfolio of maintenance support and optimisation products and services.

As part of this service, PCMS process oil or grease samples through a dedicated laboratory and then analyse the results, providing trending and exception reports to clients as well as recommending any specific actions that need to be undertaken. This service is widely used across all major industrial sectors.

The Managed service covers the supply of the Oil sample kits, together with return postage and includes full analysis, reporting and trending. Typical sample turnaround is 1-3 working days.

Our experienced engineers will work alongside your managers and engineers to recommend the appropriate level of analysis, clarify relevant procedures and provide on-site training for operators.

Analytical output from the laboratory can be tailored to your exact requirements. A typical suite of reports would include:-

- Particle counts to ISO standards
- Full spectrographic analysis of wear metals, oil additives and contaminants
- Total ferrous debris, including large particles
- Viscosity
- Infrared analysis of engine samples to monitor condition and degradation
- Water Analysis
- Fuel contamination
- Anti-freeze by wet chemical analysis
- Sample examination under a microscope
- Ferrography & Wear Debris Analysis are carried out when necessary
- TAN & TBN are also available to IP177/400

In addition, bespoke analyses can be produced for coolant, diesel fuel, brake fluid, grease and transformer oil. Photographic evidence can also be included to support the findings.

Sample Results

As soon as the laboratory has analysed all samples, e-mail notification is made to nominated client users to advise that results have been uploaded to the website. Each sample which exceeds client-specified alarm or critical status is annotated with our engineer's comments and recommendations. These recommendations are based on knowledge of similar or known components, derived from years of experience in the oil-analysis field. Furthermore, any serious defect conditions discovered during analysis will be immediately notified to the nominated client interface by telephone.

Web-Based Storage & Retrieval

In addition to the expertise offered in support of the oil analysis, PCMS also underpin their service with their own easy access web-based conditioning monitoring platform, **OMEGA**.

Launched in 2008, **OMEGA (On-line Monitoring Evaluation and Graphical Analysis)**, enables multiple user-access to results and data stored in our secure data-centre, providing predictive analysis and flexible management information to organisations of all sizes.





Reports

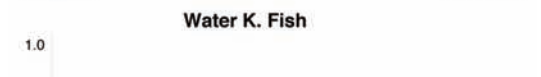
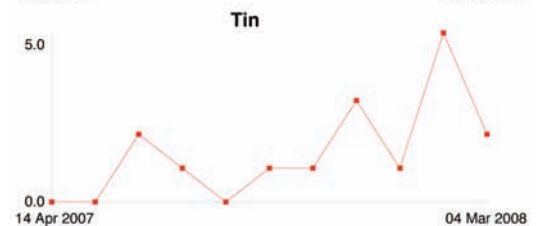
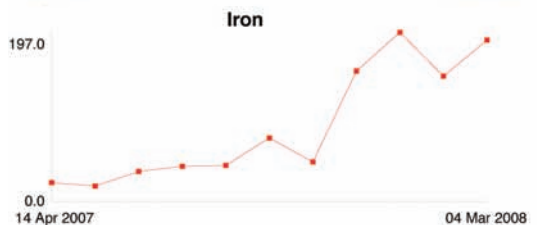
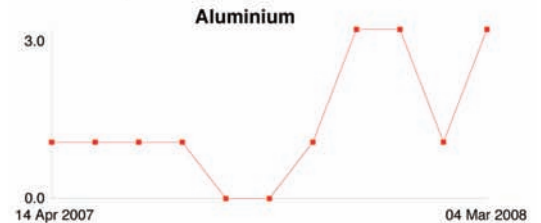
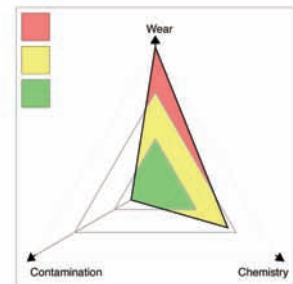
A wide range of reports and charts, analysing sample results over a period of time are directly accessible by clients on PDF format. Below is a typical example of a standard trending report.

Condition based Maintenance - Oil Sample Trend Report

Area: Train 3 **Created:** 3rd May
Equipment: Vehicle 2 **By:**
Sample Point: P3 Slave Final Drive

Sample No.	10485	10484	10483	10482	10481
Sample Date	04 Mar 2008	10 Feb 2008	14 Jan 2008	17 Dec 2007	27 Nov 2007
Sample Time	8.42	11.42	16.30	13.11	8.41
Wear	5.00	2.00	2.00	2.00	1.00
Aluminium	3.00	1.00	3.00	3.00	1.00
Chromium	1.00	0.00	1.00	1.00	0.00
Copper	7.00	5.00	8.00	7.00	3.00
FW Index	30.90	36.70	40.00	36.00	14.60
Iron	188.00	146.00	197.00	152.00	46.00
Lead	0.00	1.00	0.00	0.00	0.00
Nickel	1.00	0.00	0.00	0.00	0.00
Silver	0.00	0.00	0.00	0.00	0.00
Tin	2.00	5.00	1.00	3.00	1.00
Titanium	0.00	1.00	0.00	0.00	0.00
Visc 40C	141.90	143.90	147.50	151.10	149.70

Contamination	1.00	2.00	3.00	2.00	1.00
Boron	2.00	4.00	1.00	4.00	5.00
Silicon	30.00	22.00	33.00	26.00	5.00
Sodium	5.00	5.00	7.00	9.00	6.00
Water K. Fish	0.00	0.00	0.00	0.00	0.00
Chemistry	3.00	1.00	1.00	1.00	1.00
Calcium	7.00	7.00	10.00	11.00	6.00
Magnesium	10.00	4.00	5.00	7.00	0.00
Manganese	2.00	1.00	2.00	2.00	1.00
Molybdenum	0.00	0.00	0.00	0.00	0.00
Phosphorus	380.00	286.00	405.00	350.00	341.00
Zinc	12.00	9.00	17.00	11.00	10.00



Comments: IRON (ppm) READINGS REMAIN SLIGHTLY HIGH, INCREASE IN SILICON COULD INDICATE SEAL WEAR? WE WILL OBSERVE THE NEXT SAMPLE BEFORE MAKING FURTHER COMMENT. RESAMPLE AS NORMAL



OMEGA - Web Based Management of CBM Data

At PCMS, we understand that timely and accurate reporting of data is essential in any modern maintenance environment. We believe that powerful yet easy-to-understand visualisation of results will give insights into your business that lead directly to competitive advantage. We also know that tools that encourage collaboration between staff, departments and maintenance partners will yield continual, self-reinforcing improvements in overall maintenance efficiency.

That's why we created **OMEGA** - our next generation condition-monitoring platform.

Launched in 2008, **OMEGA (ON-line Monitoring Evaluation and Graphical Analysis)**, enables multiple user-access to results and data stored in our secure data-centre, providing predictive analysis and flexible management information to organisations of all sizes.

Key Features

Status At A Glance

After log-on the home screen automatically displays the current status of all equipment being monitored.

Current sampling status

There are currently 19159 sample results in the database, for 624 sampling points. There are 246 samples in the database flagged as newly imported. [To clear these flags, click here.](#)

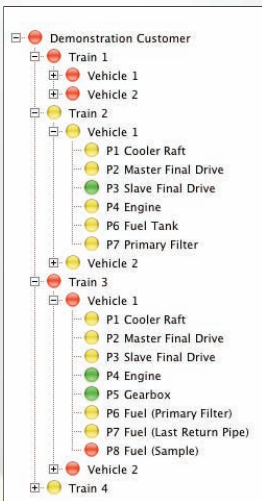
The most recent sample was taken on Thursday, 16th July 2010 at 2:20 PM
The most recent batch import took place on Wednesday, 21st July 2010 at 2:09 PM

Sample points by alarm status

Status	Alarm	Alert	Normal	Total
Sample points	2	28	594	624
Percentage	0.3%	4.5%	95.2%	100%

Sample points by tag

Contaminated Drive	104
Water in Final Drive	20
Trial Sampling Drive	6
Validation Ballcare	4



Hierarchical Data View

OMEGA allows you to navigate through your critical business assets by displaying your site details in a tree structure. By simply clicking to expand a branch in your tree, you can locate an individual sample point and get straight to the results you need. The tree is colour-coded according to the most recent sample results, so problems can be easily identified.

Detailed Results

	Wear	Contamination	Chemistry
	5.00	1.00	1.00
Comment :	IRON HAS INCREASED AGAIN, FW IS STILL SLIGHTLY HIGH BUT STABLE. WE NOW THINK THE OIL SHOULD BE CHANGED AS A PRECAUTION. RESAMPLE AS NORMAL.		
	3.00	3.00	1.00
Comment :	IRON AND FW HAVE INCREASED. SOME FINE FERROUS PARTICLES WERE FOUND BUT NOTHING TOO ALARMING. IN VIEW OF INCREASING IRON, SCHEDULE IN AN OIL CHANGE AND RESAMPLE AS NORMAL, IN THE INTERIM.		
	1.00	1.00	1.00
Comment :	GENERALLY, READINGS HAVE DECREASED. IRON HAS INCREASED BUT GIVES NO CAUSE FOR CONCERN AT THE MOMENT. WE WILL OBSERVE THE NEXT SAMPLE BEFORE FURTHER COMMENT. RESAMPLE AS NORMAL.		
	2.00	1.00	1.00
Comment :	DIRT MAYBE STARTING TO AFFECT WEAR, BUT WE'LL OBSERVE THE NEXT SAMPLE BEFORE FURTHER COMMENT. RESAMPLE AS NORMAL.		

By clicking on a sample point in the tree, you can quickly access the most recent results for your equipment. The system shows the date and time for each sample, and index values that represent levels of wear, contamination and chemical analysis. Traffic light colour coding is used so that any user can easily understand the results shown and take appropriate action.

Users can easily view the specific results of every test performed on each sample. Individual test results are shown, and traffic light alert and alarm levels can be set and applied to particular tests.



Annotate Sample Points

The system allows users to log notes against sample points - so that any relevant facts or problems can be recorded. Notes can be categorised into whatever pre-defined areas are appropriate for your business.

Sample Notes	
Category	Added By
Oil topped up	Gavin Marsden
Comment	
Evidence of slight oil leak. Oil topped up - continue to monitor.	

Integrated Charting

Users can select the test results they require and produce charts showing the change in results over a period of time.

Dynamically Create Reports

Users can create PDF reports showing the current status and history of each sample point. The system allows users to choose up to five individual tests to be charted as part of the PDF report - which also allows numeric sample results and a tri-vector plot highlighting the current sample point status. Further reports facilitate the tracking of non-sampled equipment and provide a range of search options to identify similar 'notes' or failure patterns across the database. The system also allows data to be exported to Excel in CSV format.

Why Use Web-Based Software

There's Nothing To Install

With web-based applications, there's nothing to download or install on your PC. Simply log in with your existing web-browser and the full application is ready to use. We support Internet Explorer, Safari, Firefox and Chrome.

It's Safer

With traditional desktop software, users save information on laptops, USB drives and portable hard disks. But laptops are stolen, computers are rarely backed up properly, and it's unlikely that everyone's machines are up to date with the latest security patches and anti-virus software. With our software, your information is stored on secure, up-to-date enterprise-class servers in our secure data centre.

Your Data Is Automatically Backed Up

Your information is backed up daily, with back-up copies stored in multiple locations for additional redundancy. Combined with our state-of-the-art infrastructure, we ensure that your data is completely safe.

Your Software Is Always Up To Date

With desktop software, manufacturers require you to continually download updates, software patches and bug fixes not to mention continual pressure to purchase the latest version. Our software is automatically updated so everyone is guaranteed to be using the latest version.

Centralised and Accessible

Web-based software means that your information is centralised and accessible from anywhere. You can't leave anything on the wrong computer since everything is stored in one place on the web. Your data is accessible from anywhere with internet access.