EARLY WARNING SYSTEM THROUGH OIL ANALYSIS

INSPEC

Lubrication Insight for Maintenance Foresight

OILCHECK PTY LTD

100% Independant
100% Australian Owned and Operated

95 Clapham Road, Sefton NSW 2162
PH: (02) 9644 9100 FAX: (02) 9644 8565
17a Vulcan Road, Canningvale WA 6155
PH: (08) 9455 5274 FAX: (08) 9455 4069

Report Number:	998	898	713	672	
K Number Ref:					
Sample Number:	6	5	4	3	
Cust Sample ID/Job No:					
Schedule Class:	3HYD	3HYD	3HYD	3HYD	Caution values for HYDRAULIC
Date Sampled:	31/05/1999	26/04/1999	10/03/1999	10/07/1998	
Date Received:	31/05/1999	27/04/1999	15/03/1999	22/07/1998	
Hrs On Oil:	1231	1037	764	512	
Hrs On Equipment:	8284	8037	7764	7512	
Status	😐	😐	☺	☺	
VISCOSITY @ 40°C (ASTM D445) cSt	46.1	47.05	46.52	46.43	
WATER (ASTM D6304C - METHOD 2) %w/w	0.024	0.017	0.015	0.022	0.06
FTIR SCAN (JOAP)					
OXIDATION (OL1100)	11.4	10.7	10.2	10.9	18
NITRATION (OL1100)	5.5	5.3	5.0	5.3	10
TOTAL ACID NUMBER (ASTM D664)	0.83	0.84	0.63	0.84	3
RETAINED SOLIDS PPM ppm	17	113	145	149	150
METALS STANDARD (ASTM D5185)					
IRON ppm	25	14	4	14	20
CHROMIUM ppm	1	0	0	0	11
LEAD ppm	0	29	0	0	31
COPPER ppm	14	12	12	13	100
TIN ppm	0	0	0	0	11
NICKEL ppm	1	1	0	0	2
ALUMINIUM ppm	6	3	1	2	10
SILICON ppm	11 A	10 A	4	6	10
SODIUM ppm	1	2	1	3	10
POTASSIUM ppm	1	0	0	0	
BORON ppm	0	5	0	1	
CALCIUM ppm	191	44	63	62	ADDITIVE
ZINC ppm	411	410	373	409	ADDITIVE
PHOSPHORUS ppm	396	425	395	416	ADDITIVE
MOLYBDENUM ppm	5	3	2	3	ADDITIVE
PARTICLE SIZE ANALYSIS (OL1024)					
4-6 µm (c) cnts/100mL	27928	2693709	375781	554084	
6-10 µm (c) cnts/100mL	7267	1787478	96127	193514	
10-14 µm (c) cnts/100mL	3198	461592	23814	54610	
14-21 µm (c) cnts/100mL	3168	111066	7432	31652	
21-38 µm (c) cnts/100mL	976	4265	2087	7388	
38-70 µm (c) cnts/100mL	135	120	496	391	
>70 µm (c) cnts/100mL	15	0	15	45	
SAE CLASSES					
SAE CLASS >6µm (AS4059)	5	8	7	8	10
SAE CLASS >14µm (AS4059)	6	7	9	6	10
SAE CLASS >21µm (AS4059)	7	6	8	4	9
SAE CLASS >38µm (AS4059)	7	9	8	9	
SAE CLASS >70µm (AS4059)	6	7	6	5	
ISO LEVELS	16/14/13	29/28/24	26/24/21	26/25/22	

Time

REPORT NUMBER 998

DATE COMPLETE 19/08/2005

STATUS
Monitor Trend

😐

EQUIPMENT DETAILS

SERIAL NO: H12345678
ID:
PARENT EQUIPMENT: TEST RIG
COMPARTMENT: HYDRAULIC
MAKE: ACME
MODEL: ACME XYZ

OPERATION DETAILS

OIL TYPE: HYSPIN AWS
OIL GRADE: ISO 46
TOP UP (L):
LUBE CAPACITY (L):
OIL CHANGED: N
BRANCH: SYDNEY
SITE:

CUSTOMER DETAILS

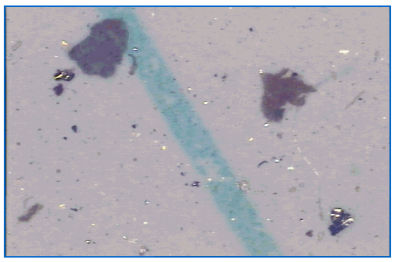
CUSTOMER CODE: 123456
NAME: SMART PTY LTD
ADDRESS: 95 CLAPHAM ROAD
SEFTON 2162 NSW

CONTACT: SERVICE MANAGER
PHONE: 61 2 9644 9100
FAX: 61 2 9644 5865

Abnormal values

X = Uncategorised abnormal value
A = Slightly elevated abnormal value
B = Elevated abnormal value
C = High abnormal value
D = Critical abnormal value

Filtergram at 60 times actual size



RESULTS OF SAMPLE ANALYSIS

Comments: 998
* Silicon is slightly elevated and may indicate dirt or gasket sealant.
* Other results are satisfactory.
* Recommend current oil be resampled at recommended intervals to monitor and assess condition.
* This report replaces 998D prevously issued on 10/20/04

Comments: 898
* Silicon is slightly elevated and may indicate dirt or gasket sealant.
* Other results are satisfactory.
* Recommend oil be resampled at manufacturers recommended intervals to monitor condition and wear.

Comments: 713
* Results are satisfactory.
* Resample at manufacturer's recommended intervals for assessment.

Comments: 672

* Resample at manufacturer's recommended intervals for assessment.

Comments: 519

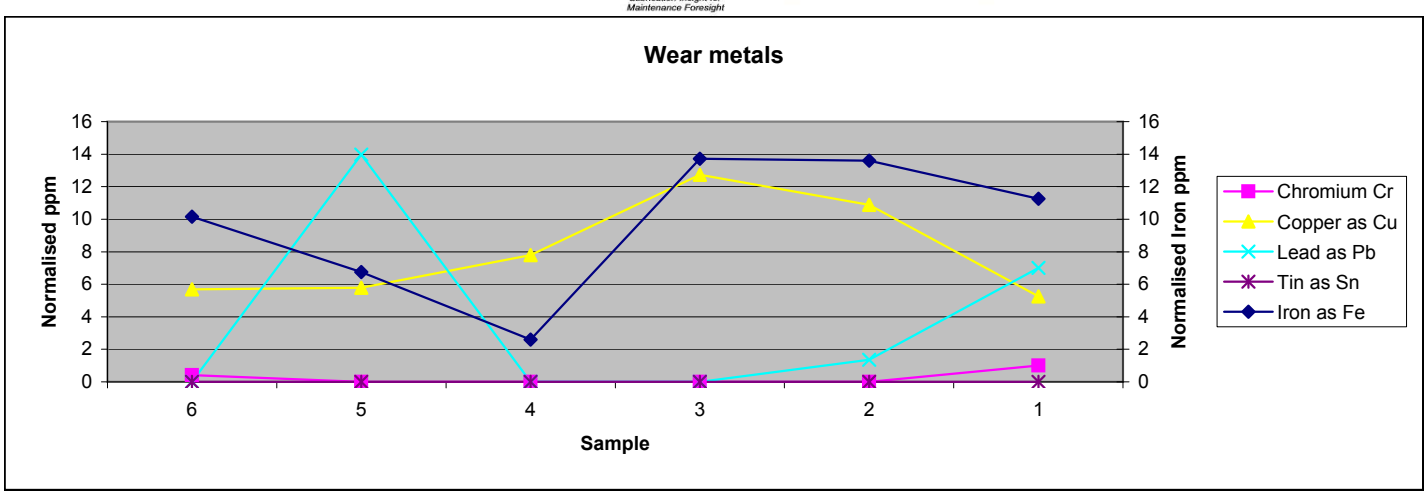
Comments: 498

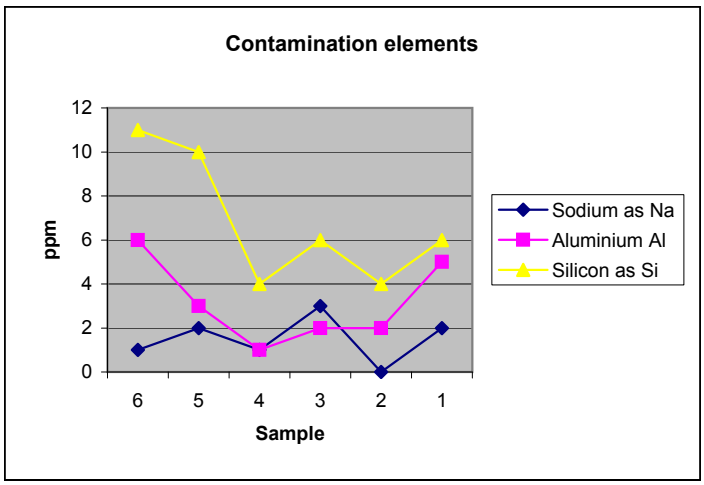
Authorised signatory

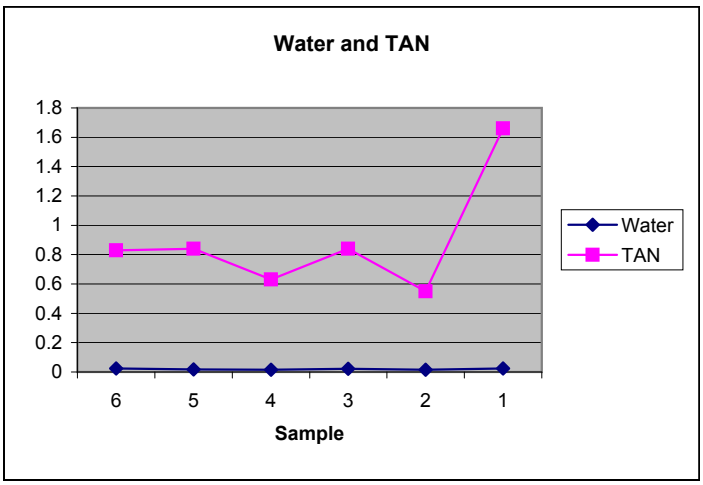
Adam Morrison
adam.m@oilcheck.com.au
Telephone 61 2 9644 9100
Sample tested as received

SMART PTY LTD
95 CLAPHAM ROAD
SEFTON 2162 NSW

OILCHECK
Lubrication Insight for Maintenance Foresight







QUALITY POLICY STATEMENT

Oilcheck Pty Ltd *is a commercial laboratory, accredited with the National Association of Testing Authorities. We specialise in the physical and chemical testing of lubricants, fuels and other petrochemical products, primarily for the purpose of condition monitoring and fault diagnosis. The service is utilised for plant and equipment from a wide range of industries.*

We are wholly Australian owned and market our products and services throughout Australia and export to a number of overseas countries.

We recognise the fact that the key to success in any organisation is the consistent satisfaction of customer requirements. Our company is committed to continually improving our quality system so as to provide products and services which meet or exceed our customers' expectations and which will conform to all regulatory requirements.

As part of this pursuit for quality, implementation and adherence to quality standards throughout the company is vital. We pay due regard to the health and safety of our staff and encourage proper respect for the environment.

The quality system conforms to the Internationally recognised quality standard AS/NZS ISO 9001:2000, "Quality management systems - Requirements". Oilcheck is also committed to comply with the requirements of ISO 17025, "General Requirements for the Competence of Testing and Calibration laboratories".

Support of our quality system by trained staff will allow for continuous improvement of our organisation and the relationship with our customers. This will ensure our position as a leader in the increasingly competitive national and international markets.

Did you know: The information that you would normally find on the back of the report has moved. We've made it easier to read and understand on the web along with other interesting information. For more information visit us on the web at
www.oilcheck.com.au/questions

Did you know: Graphed metal results are normalised, this means we are only comparing results at standard intervals i.e. 200 hours for engines, 500 hours for non-engines. This is only for trending purposes so you can compare the current results with past results. For more information visit us on the web at
www.oilcheck.com.au/questions

Did you know: It is important to fill out the sample description forms correctly. The information that you provide us with will help us to know more about your sample, and help us help you for when you get the report back. For more information visit us on the web at
www.oilcheck.com.au/questions

Did you know: If you take the sample when the oil is cold it will reduce the accuracy of the sample. The majority of the particles we are looking for fall to the bottom and may not be tested. So make sure the samples are taken at operating temperatures to get the maximum benefit out of your PROBE oil analysis
www.oilcheck.com.au/questions