



**PERFORMANCE  
UNDER  
PRESSURE**

**OIL ANALYSIS REPORT**

**WEAR  
CONTAMINATION  
FLUID CONDITION**

**ABNORMAL  
MARGINAL  
MARGINAL**

Machine Id  
**CATERPILLAR EMD 3406**  
Component  
**Diesel Engine**  
Fluid  
**ROYAL PURPLE MOTOR OIL 15W40 (10 GAL)**

**RECOMMENDATION**

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>RP025631</b>	RP034964	RP034973
Sample Date		Client Info		<b>12 May 2007</b>	05 Apr 2007	02 Mar 2007
Machine Age	hrs	Client Info		<b>11922</b>	11036	10224
Oil Age	hrs	Client Info		<b>886</b>	812	2536
Filter Age	hrs	Client Info		<b>886</b>	812	885
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

**WEAR**

The copper level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m		<b>56</b>	43	55
Chromium	ppm	ASTM D5185m		<b>3</b>	2	7
Nickel	ppm	ASTM D5185m		<b>1</b>	<1	1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m		<b>8</b>	7	16
Lead	ppm	ASTM D5185m		<b>3</b>	4	14
Copper	ppm	ASTM D5185m		<b>▲ 171</b>	53	26
Tin	ppm	ASTM D5185m		<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

There is a trace of moisture present in the oil.

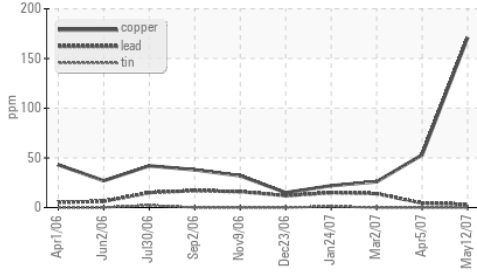
Silicon	ppm	ASTM D5185m		<b>11</b>	10	11
Potassium	ppm	ASTM D5185m		<b>0</b>	0	0
Fuel		WC Method		<b>&lt;1.0</b>	<1.0	<1.0
Water	%	ASTM D6304		<b>▲ 0.12</b>	NEG	▲ 0.102
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.6</b>	0	0.9
Nitration	Abs/cm	*ASTM D7624		<b>13.</b>	3.	15.
Sulfation	Abs/.1mm	*ASTM D7415		<b>40.</b>	14.	54.
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual		<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

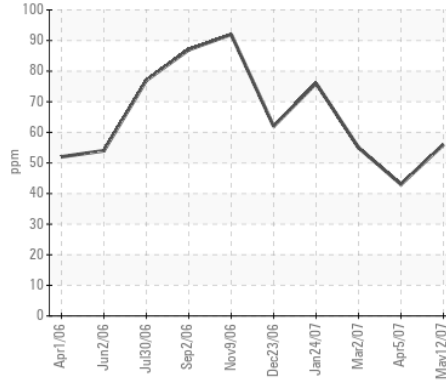
The oil viscosity is higher than normal.

Sodium	ppm	ASTM D5185m		<b>10</b>	10	19
Boron	ppm	ASTM D5185m		<b>2</b>	2	2
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>130</b>	122	138
Manganese	ppm	ASTM D5185m		<b>1</b>	1	1
Magnesium	ppm	ASTM D5185m		<b>3465</b>	3181	3787
Calcium	ppm	ASTM D5185m		<b>7084</b>	6511	7497
Phosphorus	ppm	ASTM D5185m		<b>972</b>	988	1023
Zinc	ppm	ASTM D5185m		<b>1695</b>	1562	1737
Oxidation	Abs/.1mm	*ASTM D7414		<b>25.</b>	6.	29.
Base Number (BN)	mg KOH/g	ASTM D2896		<b>26.3</b>	27.9	25.8
Visc @ 100°C	cSt	ASTM D445		<b>▲ 18.00</b>	16.79	▲ 21.4

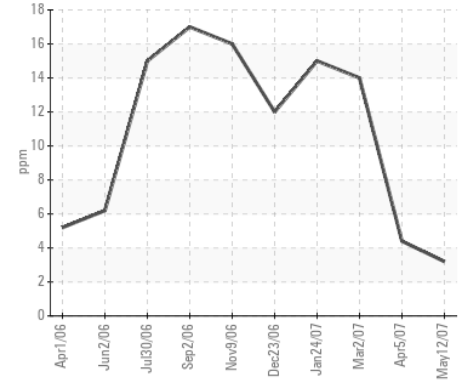
▲ Non-ferrous Metals



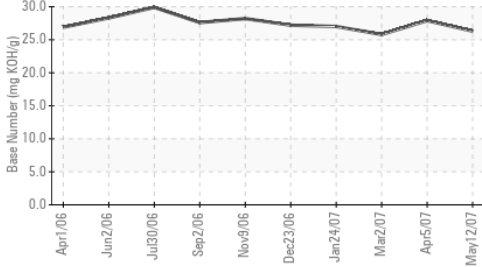
Iron (ppm)



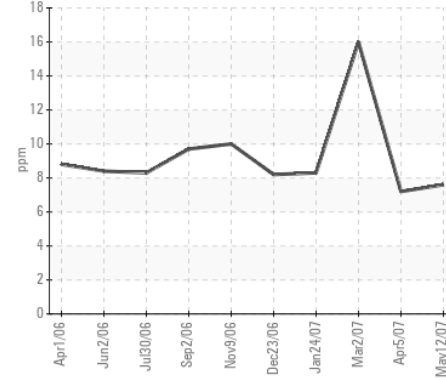
Lead (ppm)



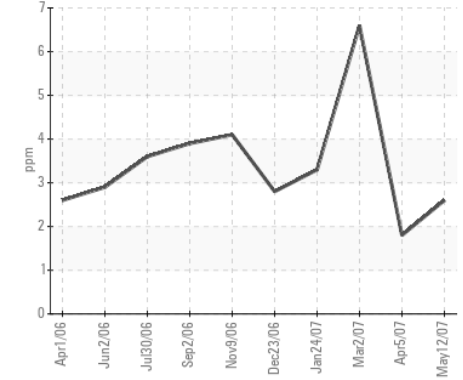
Base Number



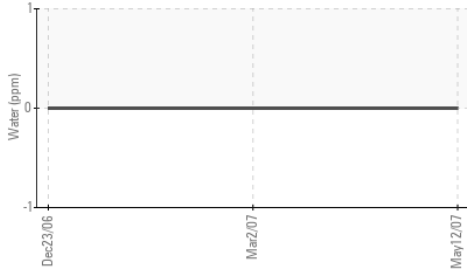
Aluminum (ppm)



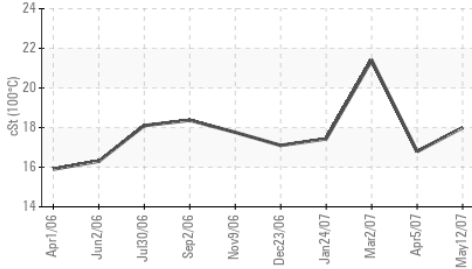
Chromium (ppm)



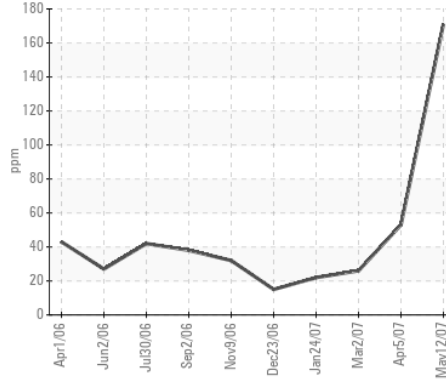
Water (KF)



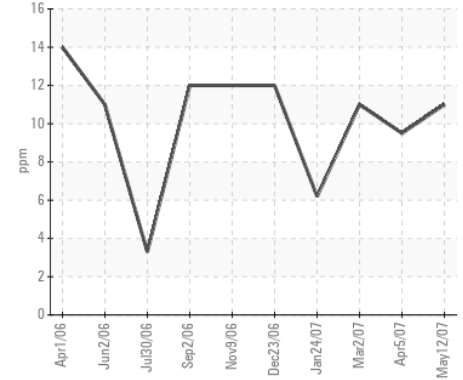
Viscosity @ 100°C



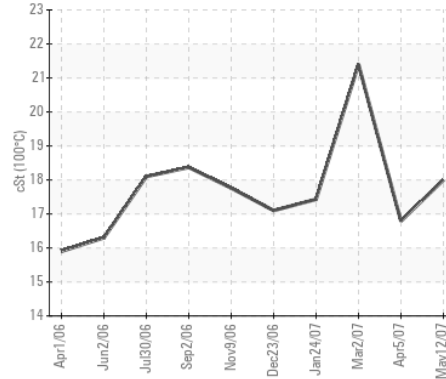
▲ Copper (ppm)



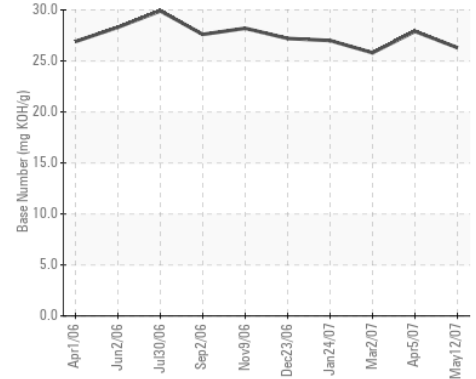
Silicon (ppm)



▲ Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : RP025631  
**Lab Number** : 01963086  
**Unique Number** : 4111781  
**Test Package** : MOB 2 ( Additional Tests: KF )

**Received** : 21 May 2007  
**Tested** : 23 May 2007  
**Diagnosed** : 23 May 2007 - Doug Bogart

**OILMAX S.A.S.**  
 AV 6 DICIEMBRE Y GASPAR CANTERO  
 QUITO-ECUADOR,

Contact: DANNY BARREIRO  
 oilmax.ec@gmail.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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