



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
FREIGHTLINER 118582

Component
Front Diesel Engine

Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (11 GAL)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KLMFA08639	KLMFA08632	KLMFA08640
Sample Date		Client Info		03 Jun 2013	22 Apr 2013	04 Feb 2013
Machine Age	mls	Client Info		1693821	1665054	1632314
Oil Age	mls	Client Info		252472	213705	180945
Filter Age	mls	Client Info		252472	213705	180945
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				SEVERE	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m		162	147	▲ 160
Chromium	ppm	ASTM D5185m		5	4	5
Nickel	ppm	ASTM D5185m		<1	1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m		8	8	9
Lead	ppm	ASTM D5185m		5	4	3
Copper	ppm	ASTM D5185m		81	84	▲ 110
Tin	ppm	ASTM D5185m		3	2	0
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

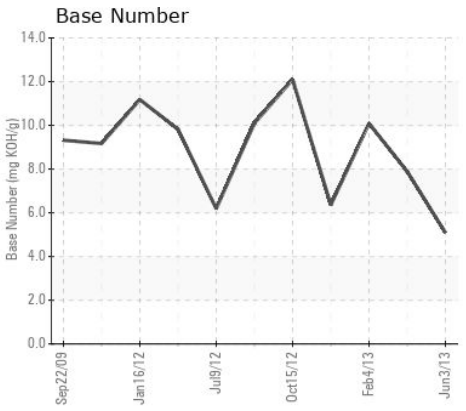
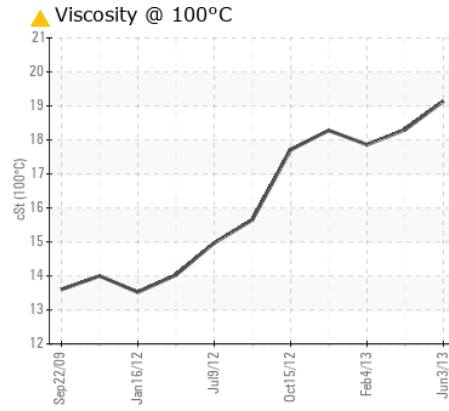
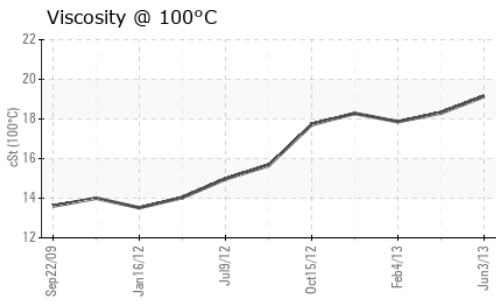
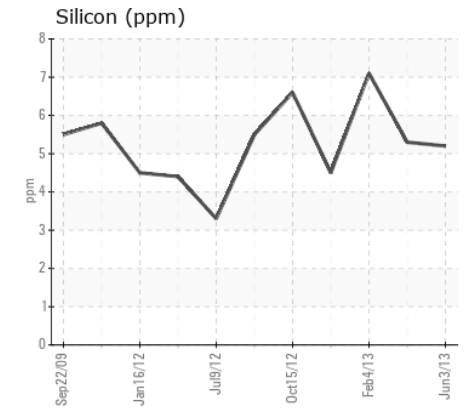
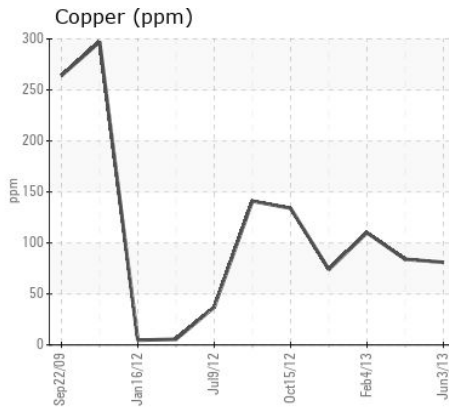
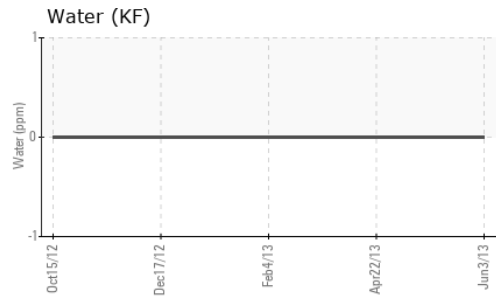
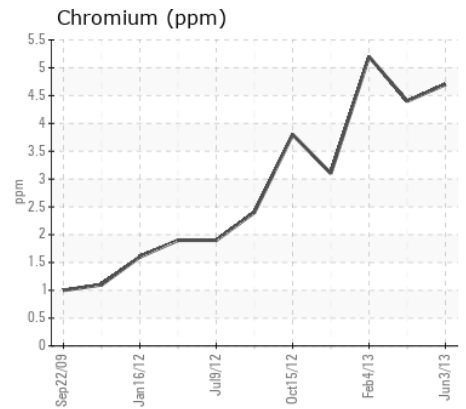
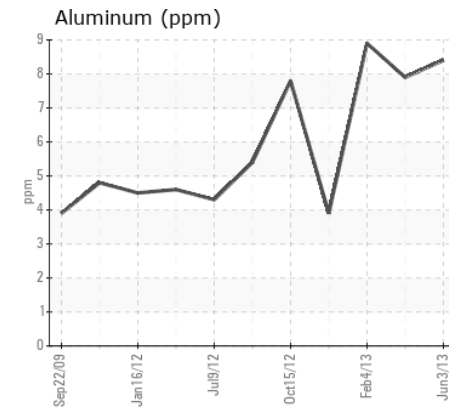
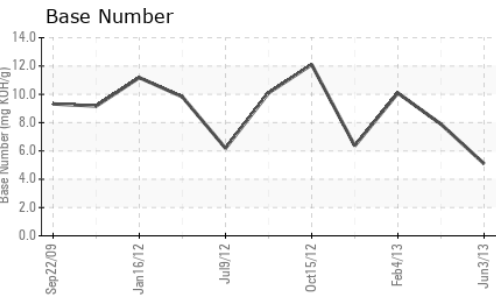
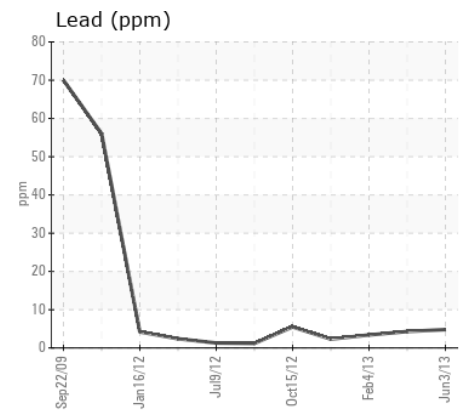
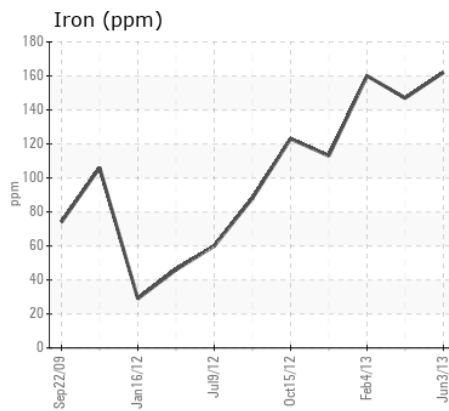
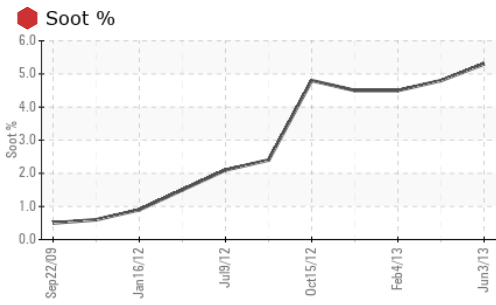
There is an abnormal amount of solids and carbon present in the oil.

Silicon	ppm	ASTM D5185m		5	5	7
Potassium	ppm	ASTM D5185m		3	3	<1
Fuel	%	ASTM D3524		0.0	<1.0	<1.0
Water	%	ASTM D6304		NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		5.3	▲ 4.8	▲ 4.5
Nitration	Abs/cm	*ASTM D7624		13.	12.	11.
Sulfation	Abs/.1mm	*ASTM D7415		30.	29.	30.
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual		NEG	NEG	NEG

FLUID CONDITION

The oil viscosity is higher than normal.

Sodium	ppm	ASTM D5185m		6	5	6
Boron	ppm	ASTM D5185m		36	52	56
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		60	52	55
Manganese	ppm	ASTM D5185m		2	1	1
Magnesium	ppm	ASTM D5185m		280	241	262
Calcium	ppm	ASTM D5185m		1935	2036	2023
Phosphorus	ppm	ASTM D5185m		994	969	1074
Zinc	ppm	ASTM D5185m		1129	1043	1301
Sulfur	ppm	ASTM D5185m		4052	4591	2843
Oxidation	Abs/.1mm	*ASTM D7414		19.	19.	18.
Base Number (BN)	mg KOH/g	ASTM D2896		5.09	7.89	10.09
Visc @ 100°C	cSt	ASTM D445		19.14	▲ 18.3	▲ 17.86
Fluid Type		*In-house		*SAE_ENG_DE	*SAE_ENG_DE	SAE_ENG_DE



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KLMFA08639 **Received** : 10 Jun 2013
Lab Number : 03300894 **Diagnosed** : 14 Jun 2013
Unique Number : 6288571 **Diagnostician** : Elizabeth Valachovic
Test Package : MOB 2 (Additional Tests: FluidDetermination, KF, PercentFuel, PQ)
 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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