



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ATTENTION
FLUID CONDITION	NORMAL

Machine Id
WESTERN STAR 118787

Component
Front Diesel Engine

Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (11 GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KLMFA06552	KLMFA04305	KLMFA05818
Sample Date		Client Info		25 Feb 2013	12 Nov 2012	24 Sep 2012
Machine Age	mls	Client Info		476096	445024	412809
Oil Age	mls	Client Info		318777	287705	254890
Filter Age	mls	Client Info		318777	287705	254890
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				ATTENTION	ATTENTION	ATTENTION

WEAR

All component wear rates are normal for time on oil.

Iron	ppm	ASTM D5185m		138	114	111
Chromium	ppm	ASTM D5185m		4	2	2
Nickel	ppm	ASTM D5185m		1	1	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m		6	6	8
Lead	ppm	ASTM D5185m		2	3	4
Copper	ppm	ASTM D5185m		9	8	9
Tin	ppm	ASTM D5185m		<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

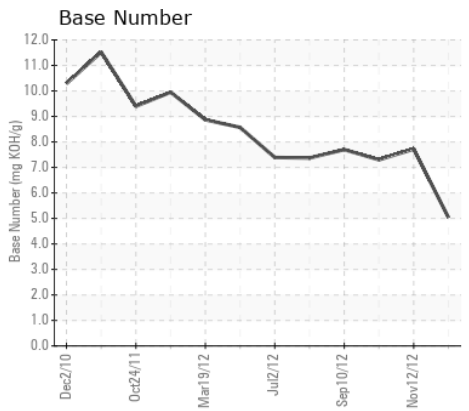
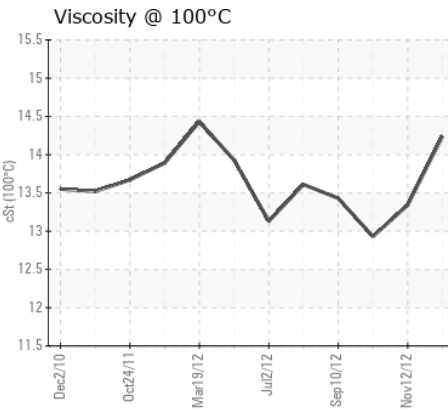
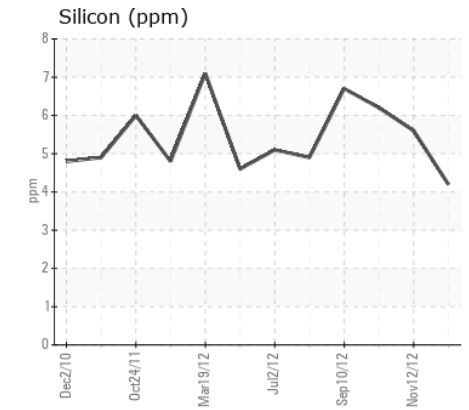
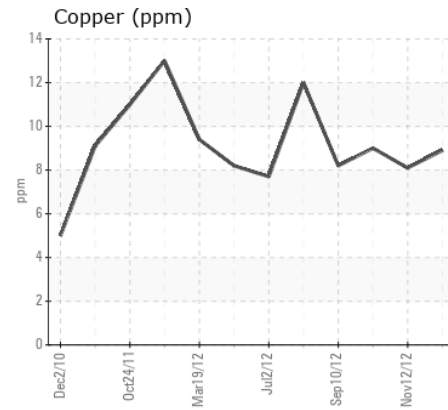
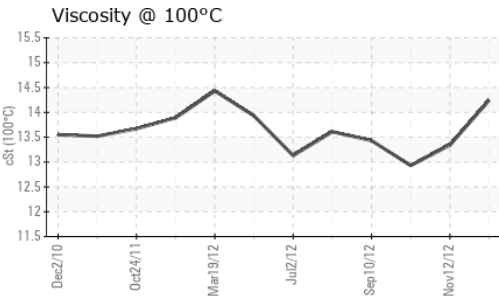
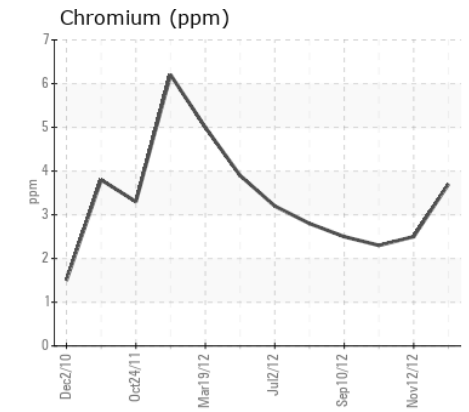
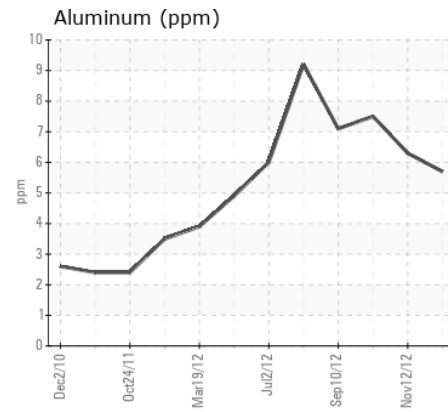
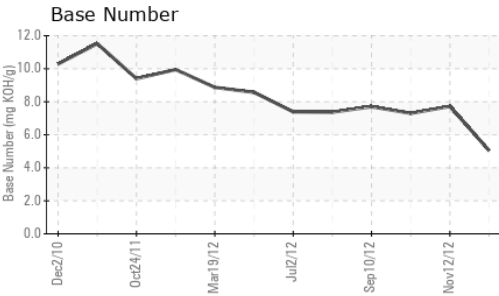
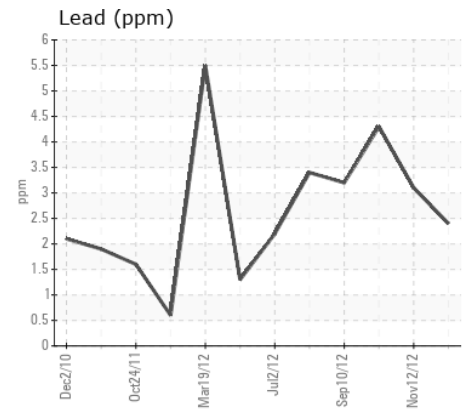
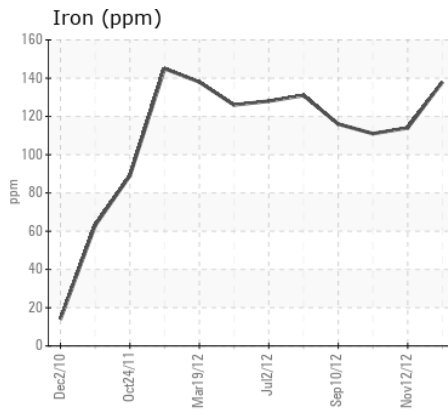
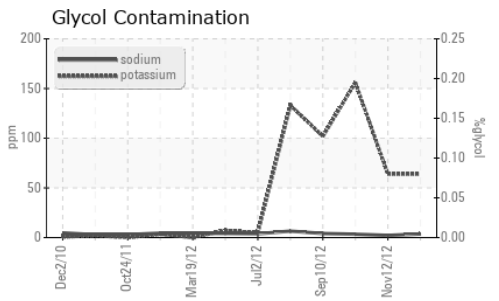
Sodium and/or potassium levels remain elevated.

Silicon	ppm	ASTM D5185m		4	6	6
Potassium	ppm	ASTM D5185m		▲ 64	▲ 64	▲ 156
Fuel		WC Method		<1.0	<1.0	<1.0
Water		WC Method		NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.8	0.5	1
Nitration	Abs/cm	*ASTM D7624		13.	8.	9.
Sulfation	Abs/.1mm	*ASTM D7415		30.	22.	26.
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 condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		4	2	3
Boron	ppm	ASTM D5185m		114	137	148
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		55	62	61
Manganese	ppm	ASTM D5185m		1	2	<1
Magnesium	ppm	ASTM D5185m		251	266	281
Calcium	ppm	ASTM D5185m		1790	1865	2093
Phosphorus	ppm	ASTM D5185m		944	1053	1159
Zinc	ppm	ASTM D5185m		1052	1117	1290
Sulfur	ppm	ASTM D5185m		3013	3218	3678
Oxidation	Abs/.1mm	*ASTM D7414		31.	18.	19.
Base Number (BN)	mg KOH/g	ASTM D2896		5.04	7.72	7.3
Visc @ 100°C	cSt	ASTM D445		14.24	13.34	12.93
Fluid Type		*In-house		SAE_ENG_DE	SAE_ENG_DE	SAE_ENG_DE



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KLMFA06552 **Received** : 01 Mar 2013
Lab Number : 03238934 **Diagnosed** : 06 Mar 2013
Unique Number : 6186539 **Diagnostician** : Don Baldrige
Test Package : MOB 2 (Additional Tests: FluidDetermination, Glycol, PQ)

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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)