



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**WESTERN STAR 118787**

Component  
**Front Diesel Engine**

Fluid  
**SAE 15W40 (11 GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KLMFA07629</b>	KLMFA06601	KLMFA07630
Sample Date		Client Info		<b>26 Aug 2013</b>	15 Jul 2013	03 Jun 2013
Machine Age	mls	Client Info		<b>591715</b>	563041	533981
Oil Age	mls	Client Info		<b>434396</b>	405722	376662
Filter Age	mls	Client Info		<b>115619</b>	86945	57885
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status				<b>NORMAL</b>	ABNORMAL	NORMAL

## WEAR

All component wear rates are normal for time on oil.

Iron	ppm	ASTM D5185m		<b>174</b>	176	160
Chromium	ppm	ASTM D5185m		<b>4</b>	4	4
Nickel	ppm	ASTM D5185m		<b>0</b>	<1	1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185m		<b>6</b>	7	5
Lead	ppm	ASTM D5185m		<b>2</b>	3	2
Copper	ppm	ASTM D5185m		<b>9</b>	11	9
Tin	ppm	ASTM D5185m		<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

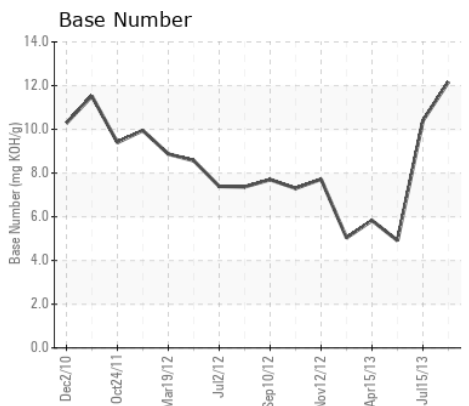
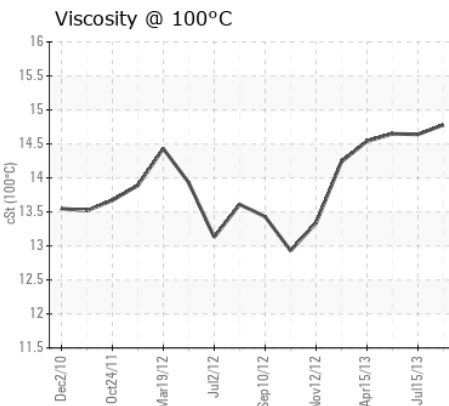
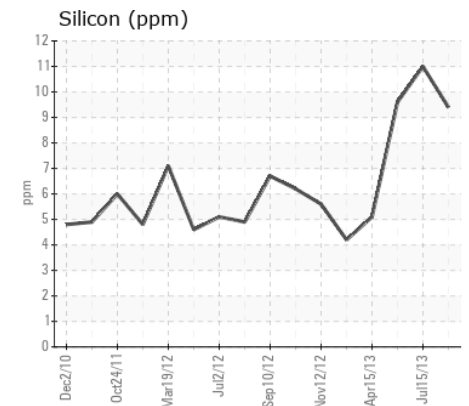
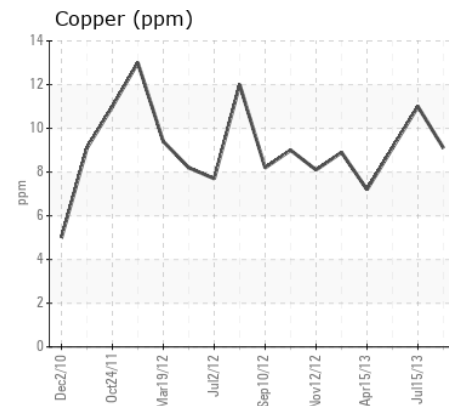
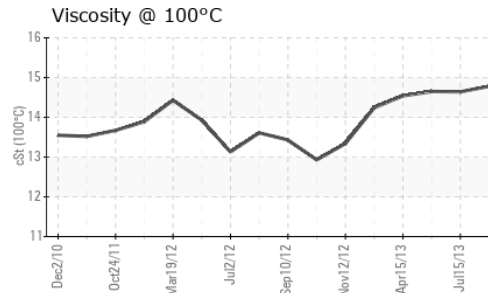
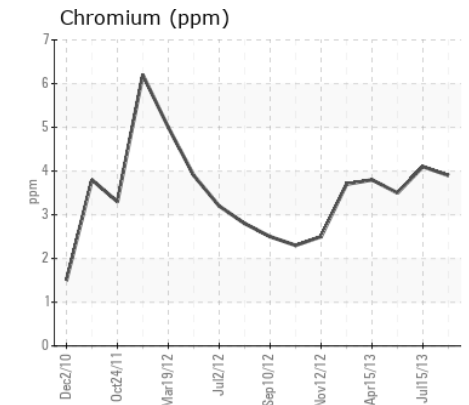
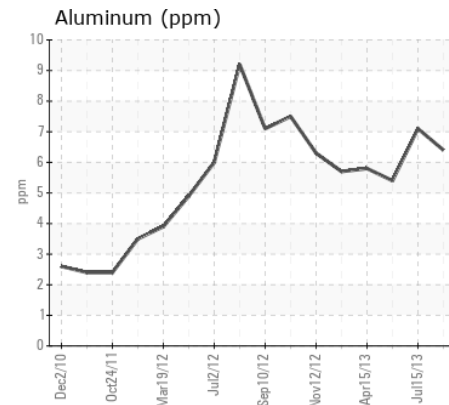
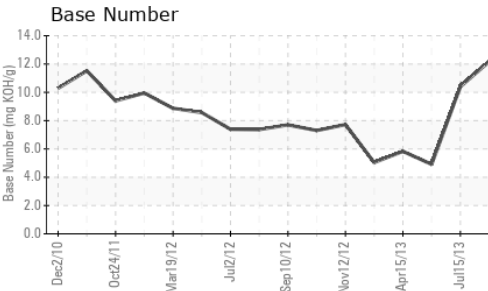
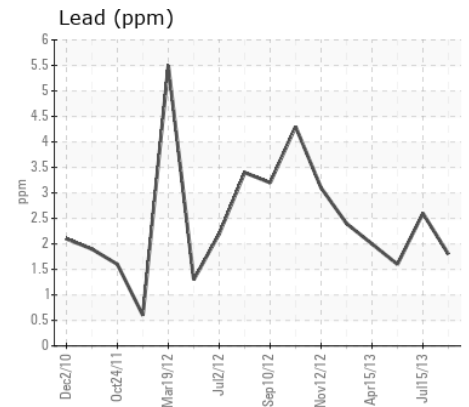
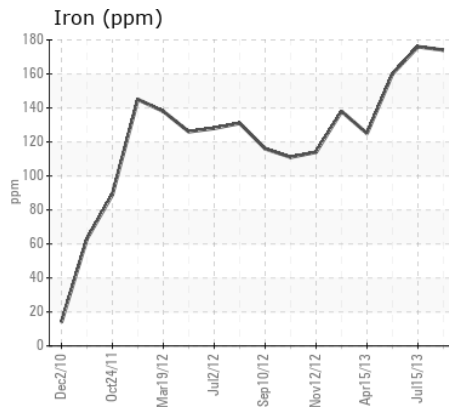
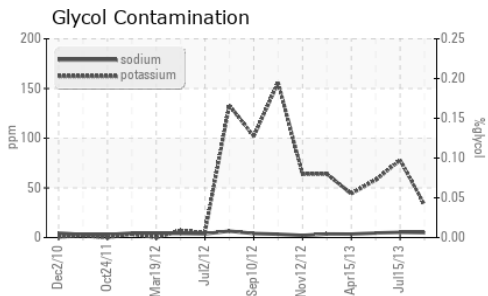
There is no indication of any contamination in the component.

Silicon	ppm	ASTM D5185m		<b>9</b>	11	10
Potassium	ppm	ASTM D5185m		<b>33</b>	▲ 78	58
Fuel		WC Method		<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method		<b>NEG</b>	NEG	NEG
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.1</b>	0.3	0.9
Nitration	Abs/cm	*ASTM D7624		<b>4.</b>	6.	13.
Sulfation	Abs/.1mm	*ASTM D7415		<b>14.</b>	17.	29.
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 condition of the oil is suitable for further service. The TBN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		<b>5</b>	5	5
Boron	ppm	ASTM D5185m		<b>110</b>	93	102
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>82</b>	78	74
Manganese	ppm	ASTM D5185m		<b>1</b>	1	1
Magnesium	ppm	ASTM D5185m		<b>351</b>	339	333
Calcium	ppm	ASTM D5185m		<b>1670</b>	1642	1656
Phosphorus	ppm	ASTM D5185m		<b>984</b>	976	992
Zinc	ppm	ASTM D5185m		<b>1222</b>	1215	1123
Sulfur	ppm	ASTM D5185m		<b>3837</b>	3467	4210
Oxidation	Abs/.1mm	*ASTM D7414		<b>8.</b>	12.	31.
Base Number (BN)	mg KOH/g	ASTM D2896		<b>12.17</b>	10.4	4.91
Visc @ 100°C	cSt	ASTM D445		<b>14.78</b>	14.64	14.65
Fluid Type		*In-house		<b>*SAE_ENG_DE</b>	SAE_ENG_DE	*SAE_ENG_DE



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KLMFA07629 **Received** : 09 Sep 2013  
**Lab Number** : 03353534 **Diagnosed** : 11 Sep 2013  
**Unique Number** : 6376286 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 2 ( Additional Tests: FluidDetermination, Glycol, 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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