



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
WESTERN STAR 118787

Component
Front Diesel Engine

Fluid
SAE 15W40 (11 GAL)

RECOMMENDATION

We advise that you check for possible coolant leak. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KLMFA13593	KLMFA12069	KLMFA13460
Sample Date		Client Info		29 Sep 2014	27 May 2014	20 Jan 2014
Machine Age	mls	Client Info		744481	716101	682878
Oil Age	mls	Client Info		561162	558782	525559
Filter Age	mls	Client Info		268385	240005	206782
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

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

Iron	ppm	ASTM D5185m	>100	▲ 149	▲ 161	116
Chromium	ppm	ASTM D5185m	>20	3	3	2
Nickel	ppm	ASTM D5185m	>2	2	1	1
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	8	9	5
Lead	ppm	ASTM D5185m	>40	20	24	4
Copper	ppm	ASTM D5185m	>330	17	16	8
Tin	ppm	ASTM D5185m	>15	0	4	1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

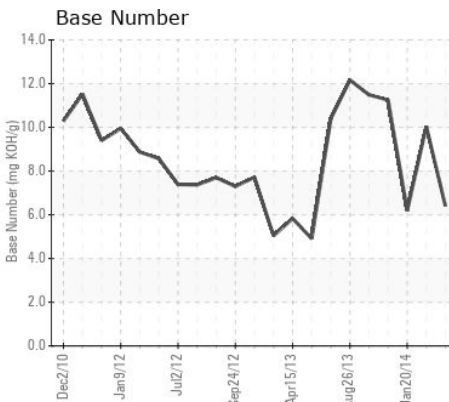
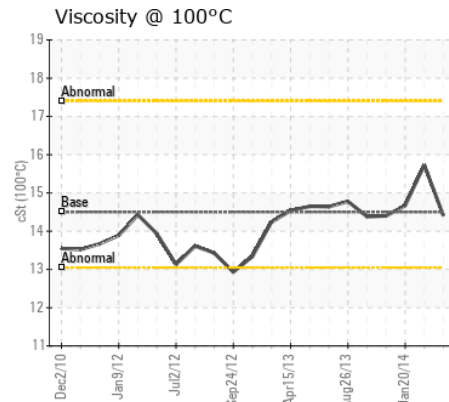
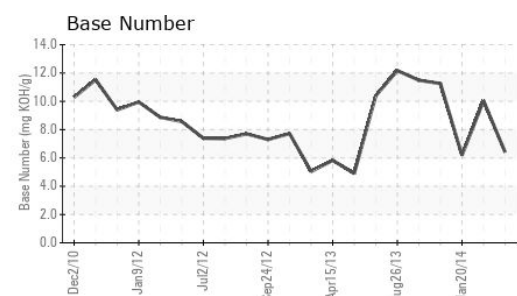
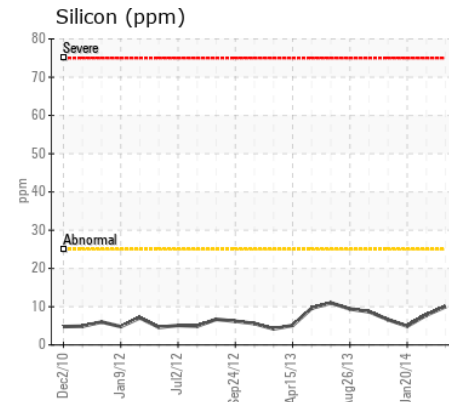
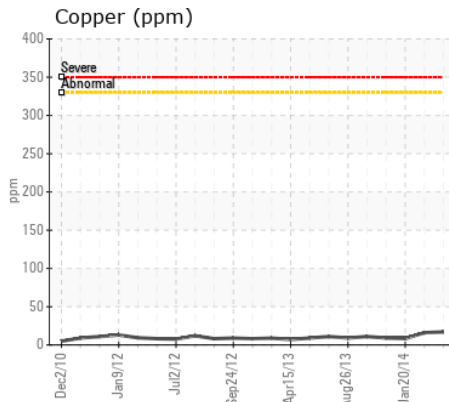
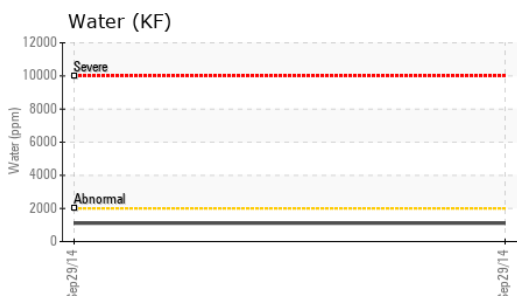
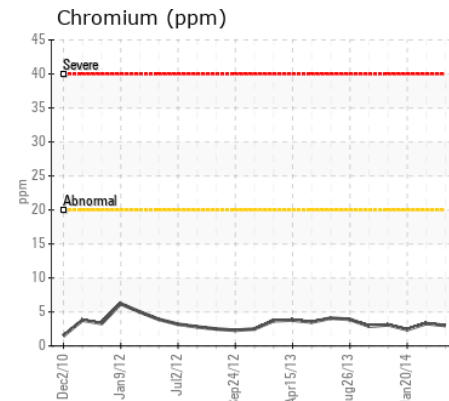
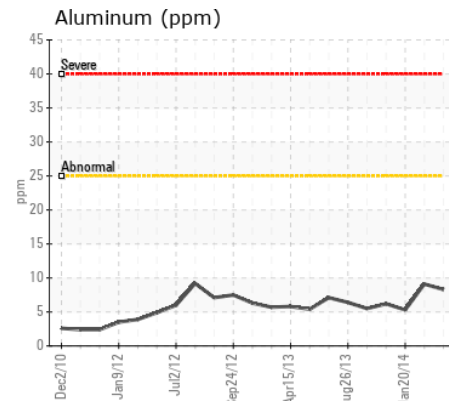
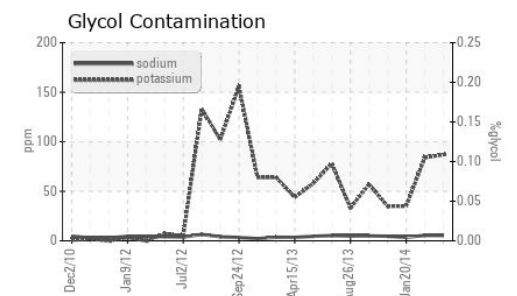
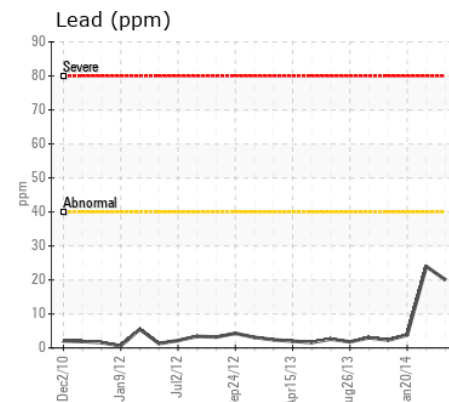
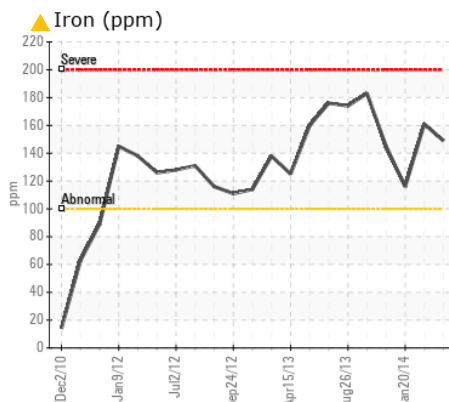
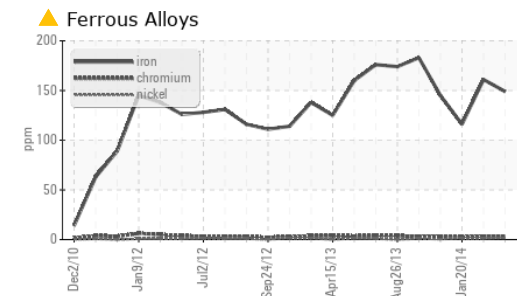
Sodium and/or potassium levels remain high. There is a trace of moisture present in the oil.

Silicon	ppm	ASTM D5185m	>25	10	8	5
Potassium	ppm	ASTM D5185m	>20	▲ 87	▲ 84	35
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water	%	ASTM D6304	>0.2	▲ 0.111	---	---
ppm Water	ppm	ASTM D6304	>2000	▲ 1110	---	---
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.5	0.2	0.5
Nitration	Abs/cm	*ASTM D7624		11.	6.	11.
Sulfation	Abs/.1mm	*ASTM D7415		23.	16.	25.
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	>0.2	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		5	6	4
Boron	ppm	ASTM D5185m		136	147	154
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		76	80	75
Manganese	ppm	ASTM D5185m		1	4	1
Magnesium	ppm	ASTM D5185m		373	350	338
Calcium	ppm	ASTM D5185m		1736	1633	1642
Phosphorus	ppm	ASTM D5185m		952	997	969
Zinc	ppm	ASTM D5185m		1232	1216	1101
Sulfur	ppm	ASTM D5185m		3182	683	3075
Oxidation	Abs/.1mm	*ASTM D7414		22.	13.	26.
Base Number (BN)	mg KOH/g	ASTM D2896		6.41	10.04	6.19
Visc @ 100°C	cSt	ASTM D445	14.5	14.41	15.73	14.67



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KLMFA13593 **Received** : 13 Oct 2014
Lab Number : 03601672 **Diagnosed** : 14 Oct 2014
Unique Number : 6779615 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: Glycol, KF, 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)