



# WEAR CHECK

## OIL ANALYSIS REPORT

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

Machine Id  
**KENWORTH 1056**  
 Component  
**Diesel Engine**  
 Fluid  
**VALVOLINE PREMIUM BLUE GEN2 SAE 10W30 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0837753</b>	WC0837793	WC0694157
Sample Date		Client Info		<b>24 Jan 2024</b>	07 Oct 2023	08 May 2023
Machine Age	mls	Client Info		<b>39000</b>	524355	46637
Oil Age	mls	Client Info		<b>39000</b>	38712	26000
Filter Age	mls	Client Info		<b>39000</b>	38712	26000
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	ABNORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>35</b>	39	16
Chromium	ppm	ASTM D5185m	>20	<b>2</b>	2	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>20	<b>5</b>	4	3
Lead	ppm	ASTM D5185m	>40	<b>5</b>	11	3
Copper	ppm	ASTM D5185m	>330	<b>&lt;1</b>	0	<1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
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 oil.

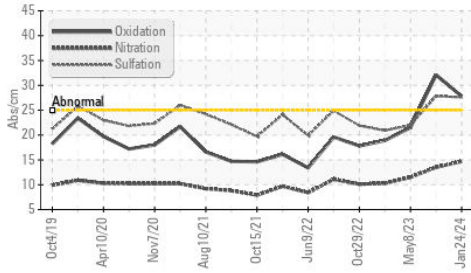
Silicon	ppm	ASTM D5185m	>25	<b>7</b>	8	6
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	2	2
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>1</b>	0	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>14.7</b>	13.5	11.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>27.6</b>	27.8	22.0
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	>0.2	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

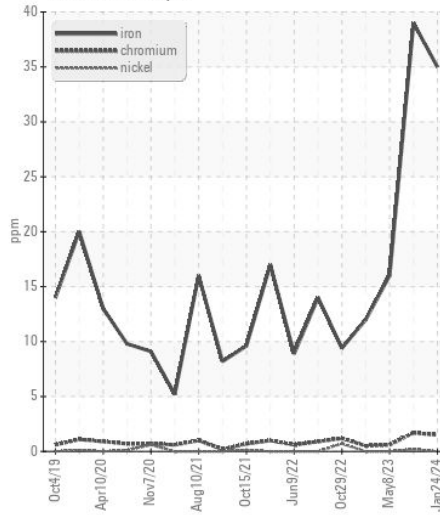
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>5</b>	3	6
Boron	ppm	ASTM D5185m		<b>21</b>	17	22
Barium	ppm	ASTM D5185m		<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m		<b>52</b>	55	64
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>761</b>	864	811
Calcium	ppm	ASTM D5185m		<b>1236</b>	1222	1295
Phosphorus	ppm	ASTM D5185m	800	<b>765</b>	717	685
Zinc	ppm	ASTM D5185m	890	<b>913</b>	942	906
Sulfur	ppm	ASTM D5185m		<b>2684</b>	2321	2739
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>27.8</b>	32.1	21.5
Base Number (BN)	mg KOH/g	ASTM D2896	11	<b>5.3</b>	▲ 3.1	6.1
Visc @ 100°C	cSt	ASTM D445	12.0	<b>11.3</b>	11.3	11.3

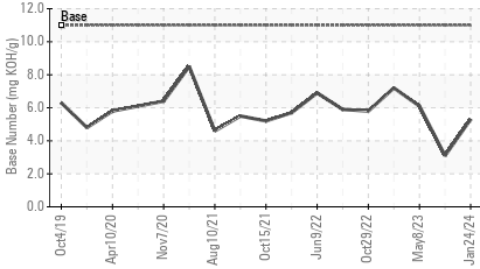
**FT-IR (Direct Trend)**



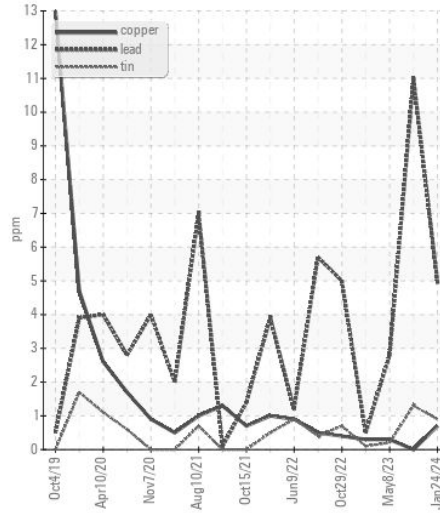
**Ferrous Alloys**



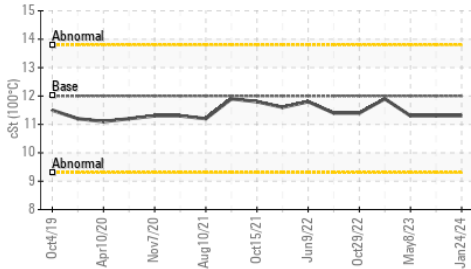
**Base Number**



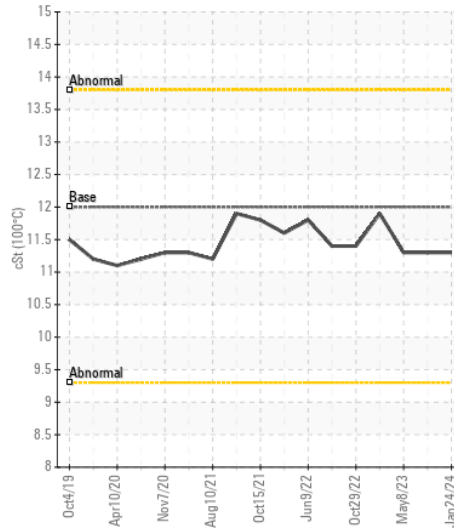
**Non-ferrous Metals**



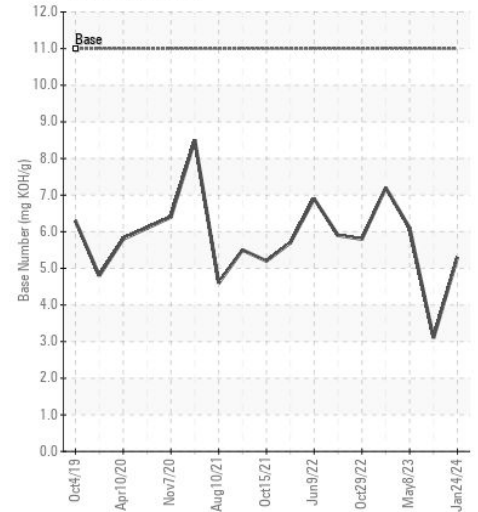
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0837753 **Received** : 10 Jul 2024  
**Lab Number** : 06231953 **Tested** : 10 Jul 2024  
**Unique Number** : 11115446 **Diagnosed** : 11 Jul 2024 - Don Baldridge  
**Test Package** : FLEET

**LIBERTY LINEHAUL WEST INC**  
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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)