



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
Store 9 - Marietta
Machine Id
FREIGHTLINER 56

Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (10 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. 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		LEC0045796	LEC0043175	LEC0040149
Sample Date		Client Info		02 Jan 2024	29 Jul 2023	03 May 2023
Machine Age	mls	Client Info		616564	605931	595340
Oil Age	mls	Client Info		10000	10000	10000
Filter Age	mls	Client Info		10000	10000	10000
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

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

Iron	ppm	ASTM D5185m	>80	28	26	24
Chromium	ppm	ASTM D5185m	>5	<1	1	1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	6	4	3
Lead	ppm	ASTM D5185m	>30	▲ 34	▲ 36	26
Copper	ppm	ASTM D5185m	>150	1	2	2
Tin	ppm	ASTM D5185m	>5	1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

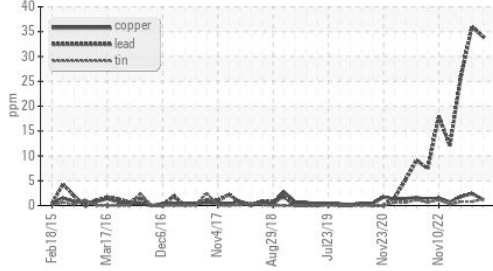
Silicon	ppm	ASTM D5185m	>120	7	8	8
Potassium	ppm	ASTM D5185m	>20	5	6	6
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	1.4	1.2	1
Nitration	Abs/cm	*ASTM D7624	>20	12.9	12.3	11.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	29.6	26.9	25.7
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

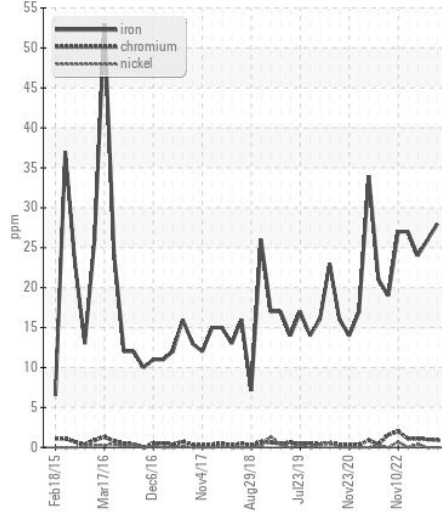
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<1	3	0
Boron	ppm	ASTM D5185m	316	161	146	153
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	1.2	130	128	140
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	24	699	661	631
Calcium	ppm	ASTM D5185m	2292	1557	1657	1662
Phosphorus	ppm	ASTM D5185m	1064	746	704	699
Zinc	ppm	ASTM D5185m	1160	890	886	896
Sulfur	ppm	ASTM D5185m	4996	2516	2882	2727
Oxidation	Abs/.1mm	*ASTM D7414	>25	24.4	22.1	21.8
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	7.0	7.8	6.0
Visc @ 100°C	cSt	ASTM D445	15.7	14.2	14.2	14.0

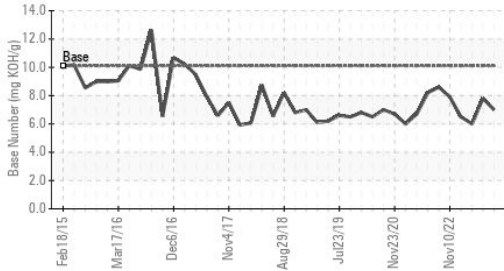
▲ Non-ferrous Metals



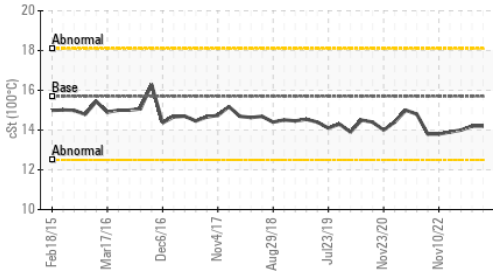
Ferrous Alloys



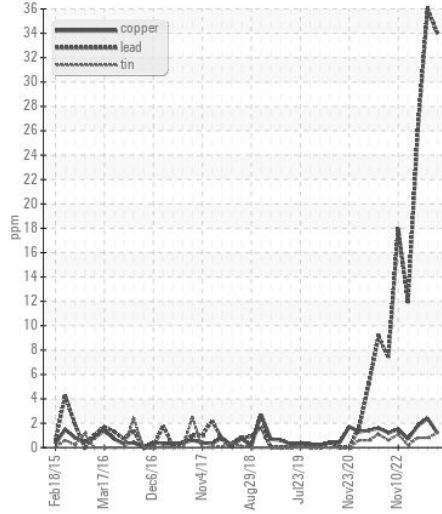
Base Number



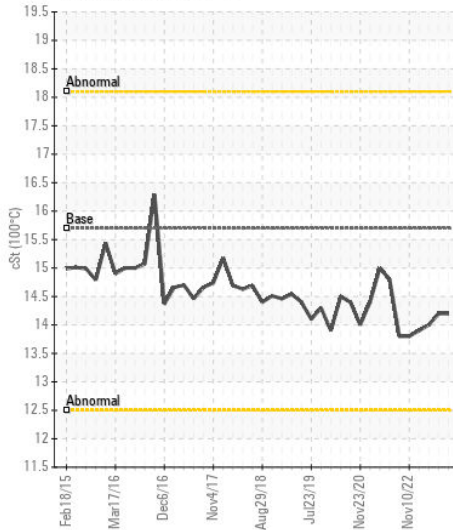
Viscosity @ 100°C



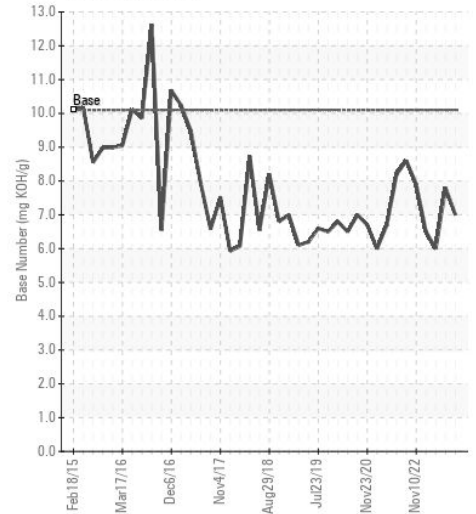
▲ Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0045796 **Received** : 16 Jan 2024
Lab Number : 06060813 **Diagnosed** : 17 Jan 2024
Unique Number : 10832195 **Diagnostician** : Jonathan Hester
Test Package : CONST (Additional Tests: TBN)

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)

HALL DRILLING LLC
 PO BOX 249
 ELLENBORO, WV
 US 26346

Contact: CHRIS PETROVICH
 chrispetrovich@halldrilling.com
 T: (304)869-3404
 F: (304)869-3408