



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

Machine Id  
**FREIGHTLINER 219**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 10W30 (10 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LW0009395</b>	LW0008955	LW0007417
Sample Date		Client Info		<b>17 Jun 2024</b>	05 Mar 2024	20 Jul 2023
Machine Age	mls	Client Info		<b>996273</b>	936740	836638
Oil Age	mls	Client Info		<b>59533</b>	50000	778000
Filter Age	mls	Client Info		<b>25000</b>	25000	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	<b>67</b>	73	57
Chromium	ppm	ASTM D5185m	>5	<b>5</b>	7	6
Nickel	ppm	ASTM D5185m	>2	<b>4</b>	5	5
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	4
Silver	ppm	ASTM D5185m	>3	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>30	<b>19</b>	27	13
Lead	ppm	ASTM D5185m	>30	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>150	<b>5</b>	6	8
Tin	ppm	ASTM D5185m	>5	<b>0</b>	1	<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 oil.

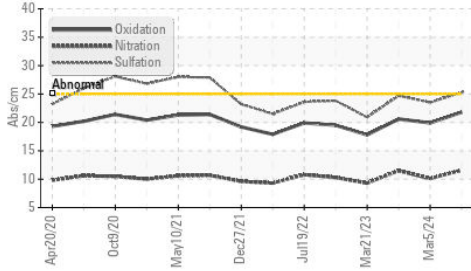
Silicon	ppm	ASTM D5185m	>20	<b>7</b>	8	8
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	3	3
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>1.4</b>	1.1	1.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>11.6</b>	10.1	11.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>25.3</b>	23.5	24.7
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**

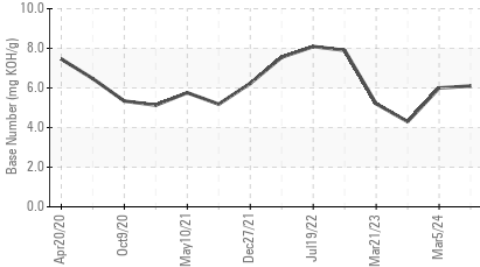
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	3
Boron	ppm	ASTM D5185m	2	<b>3</b>	3	3
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	50	<b>67</b>	64	49
Manganese	ppm	ASTM D5185m	0	<b>1</b>	1	<1
Magnesium	ppm	ASTM D5185m	950	<b>1089</b>	1026	864
Calcium	ppm	ASTM D5185m	1050	<b>1273</b>	1158	1159
Phosphorus	ppm	ASTM D5185m	995	<b>1150</b>	1130	1004
Zinc	ppm	ASTM D5185m	1180	<b>1476</b>	1313	1227
Sulfur	ppm	ASTM D5185m	2600	<b>3111</b>	2924	2769
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>21.8</b>	19.9	20.6
Base Number (BN)	mg KOH/g	ASTM D2896		<b>6.1</b>	6.0	4.3
Visc @ 100°C	cSt	ASTM D445	12.00	<b>12.4</b>	11.9	12.5

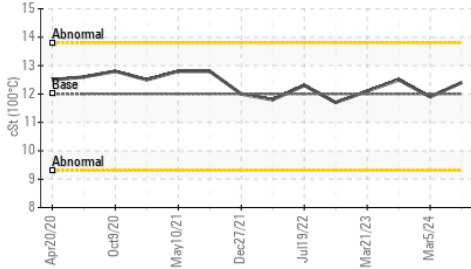
**FT-IR (Direct Trend)**



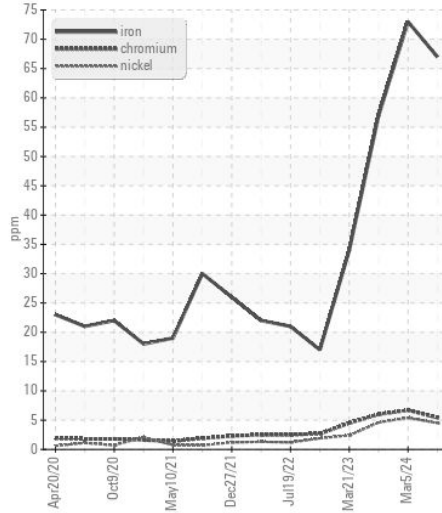
**Base Number**



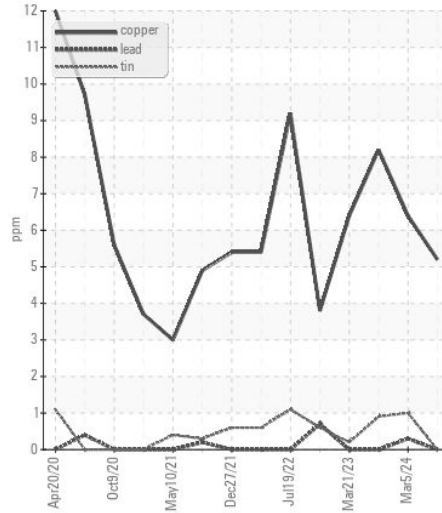
**Viscosity @ 100°C**



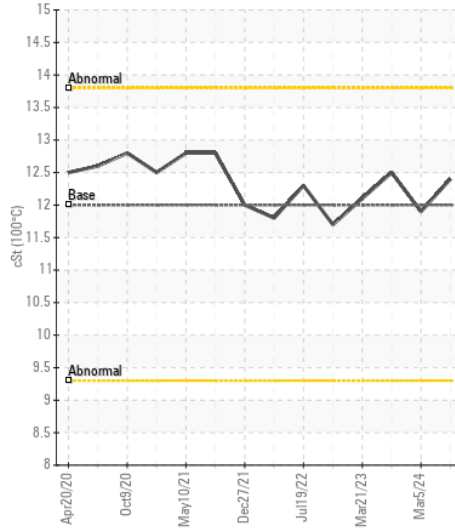
**Ferrous Alloys**



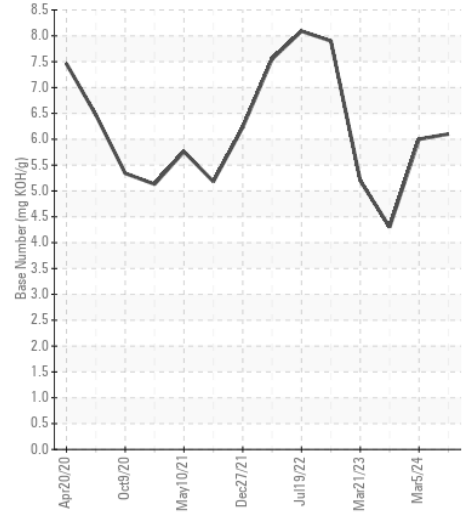
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : LW0009395

**Lab Number** : 06217920

**Unique Number** : 11096117

**Test Package** : FLEET

**Received** : 24 Jun 2024

**Tested** : 25 Jun 2024

**Diagnosed** : 25 Jun 2024 - Don Baldrige

**LIV TRANSPORTATION, INC**

9809 INDUSTRIAL DRIVE

BRIDGEVIEW, IL

US 60455

Contact: CHRIS BIELECKI

CHRIS@LIVTRANSPORTATION.COM

T:

F:

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)