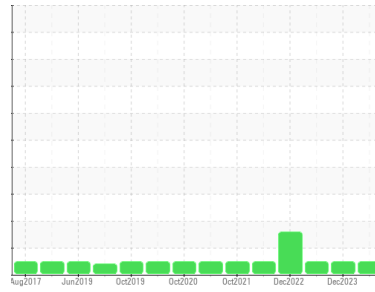




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
3000 Series
 Machine Id
Freightliner 3230
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (26 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0948288	WC0828267	WC0797624
Sample Date	Client Info			30 Jun 2024	16 Dec 2023	18 Jun 2023
Machine Age	mls Client Info			433054	255689	235118
Oil Age	mls Client Info			177395	20541	17597
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>3.0		<1.0	<1.0	<1.0
Water	WC Method	>0.2		NEG	NEG	NEG
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>75	39	63	60
Chromium	ppm	ASTM D5185(m)	>5	2	3	3
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Silver	ppm	ASTM D5185(m)	>2	<1	0	<1
Aluminum	ppm	ASTM D5185(m)	>15	5	7	6
Lead	ppm	ASTM D5185(m)	>25	<1	<1	<1
Copper	ppm	ASTM D5185(m)	>100	13	4	3
Tin	ppm	ASTM D5185(m)	>4	<1	<1	<1
Antimony	ppm	ASTM D5185(m)		0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

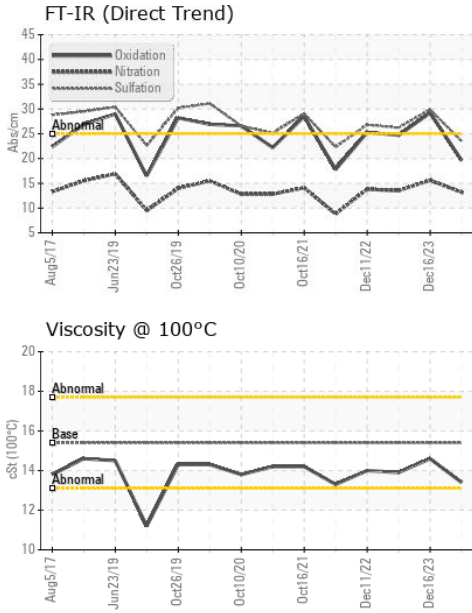
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	3	2	3
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	60	64	64
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	911	1004	1016
Calcium	ppm	ASTM D5185(m)	1070	1054	1127	1090
Phosphorus	ppm	ASTM D5185(m)	1150	862	1024	1066
Zinc	ppm	ASTM D5185(m)	1270	1149	1238	1213
Sulfur	ppm	ASTM D5185(m)	2060	2298	2601	2398
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	6	7	7
Sodium	ppm	ASTM D5185(m)		6	5	4
Potassium	ppm	ASTM D5185(m)	>20	2	2	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	0.8	1.4	1.1
Nitration	Abs/cm	ASTM D7624*	>20	13.2	15.6	13.5
Sulfation	Abs./1mm	ASTM D7415*	>30	23.5	29.9	26.2



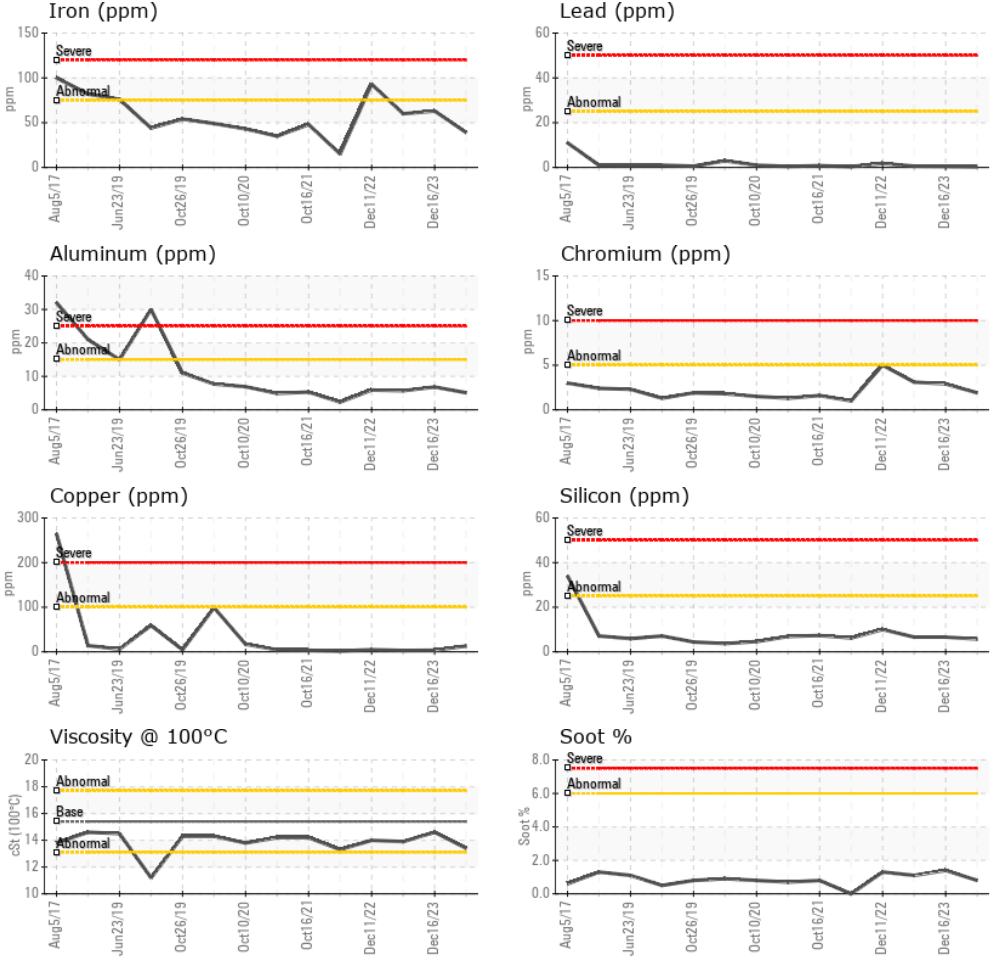
OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	19.6	29.2	24.7
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	VLITE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---
Precipitate	scalar	Visual*	NONE	NONE	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	13.4	14.6	13.9

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0948288 **Received** : 09 Jul 2024
Lab Number : **02646549** **Tested** : 09 Jul 2024
Unique Number : 5812101 **Diagnosed** : 09 Jul 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: Visual)

MANITOU LIN TRANSPORT (GARAGE)
 1335 SHAWSON DRIVE
 MISSISSAUGA, ON
 CA L4W 1C4
 Contact: Travis Spence
 tspence@manitoulintransport.com

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

T:
 F: (905)564-6361