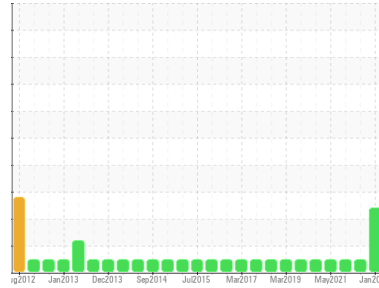




Machine Id
FREIGHTLINER 8319

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 10W30 (10 GAL)



DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
Sodium and/or potassium levels are high. Test for glycol is negative.

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.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PCA0073311	PCA0073486	PCA0051732
Sample Date	Client Info	04 Jan 2024	16 Jan 2023	21 Apr 2022
Machine Age	mls	567559	543947	512864
Oil Age	mls	23612	31288	20205
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	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

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >200	12	16	15
Chromium	ppm ASTM D5185m >6	<1	1	<1
Nickel	ppm ASTM D5185m >3	0	<1	0
Titanium	ppm ASTM D5185m >2	0	0	15
Silver	ppm ASTM D5185m >2	0	0	<1
Aluminum	ppm ASTM D5185m >50	2	2	2
Lead	ppm ASTM D5185m >10	0	<1	7
Copper	ppm ASTM D5185m >50	2	3	<1
Tin	ppm ASTM D5185m >6	0	<1	<1
Antimony	ppm ASTM D5185m	---	---	---
Vanadium	ppm ASTM D5185m	<1	0	<1
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 2	15	<1	53
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 50	35	59	34
Manganese	ppm ASTM D5185m 0	0	<1	<1
Magnesium	ppm ASTM D5185m 950	678	956	754
Calcium	ppm ASTM D5185m 1050	1306	1217	1881
Phosphorus	ppm ASTM D5185m 995	816	997	809
Zinc	ppm ASTM D5185m 1180	977	1352	926
Sulfur	ppm ASTM D5185m 2600	2695	3160	2915

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >50	4	4	3
Sodium	ppm ASTM D5185m	▲ 49	10	8
Potassium	ppm ASTM D5185m >20	▲ 57	10	2
Glycol	% *ASTM D2982	NEG	NEG	NEG

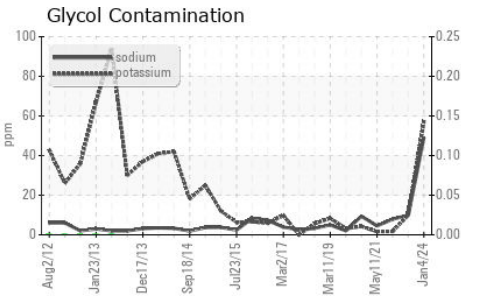
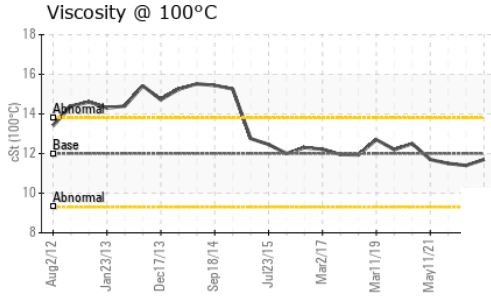
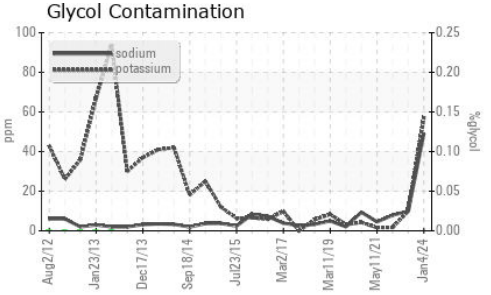
INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.1	0.2	0.1
Nitration	Abs/cm *ASTM D7624 >20	9.2	9.0	7.8
Sulfation	Abs/.1mm *ASTM D7415 >30	22.1	21.1	21.8

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	17.2	19.5	16.7
Base Number (BN)	mg KOH/g ASTM D2896	5.5	5.9	11

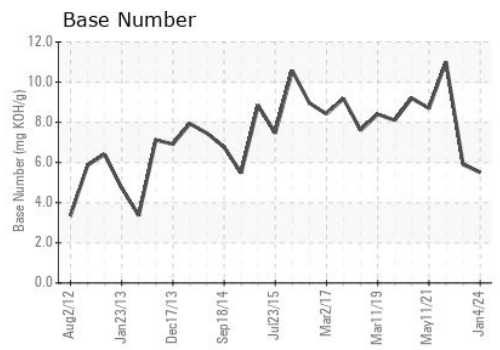
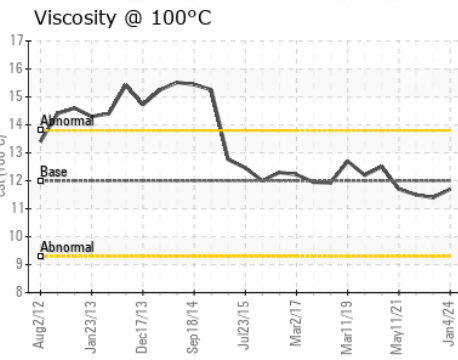
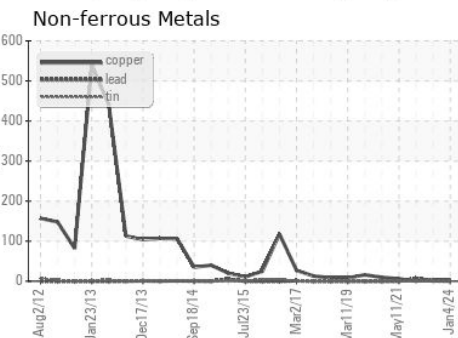
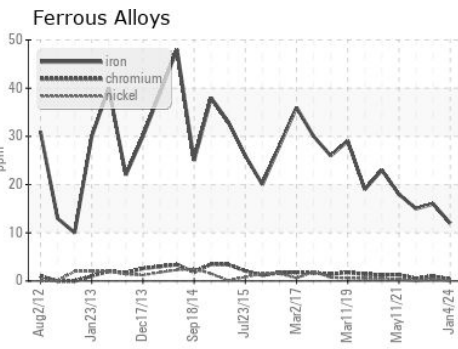
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.7	11.4

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0073311 **Received** : 16 Jan 2024
Lab Number : 06060602 **Diagnosed** : 17 Jan 2024
Unique Number : 10831984 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

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 frank.dietz@mmeinc.com
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 F: x:

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)