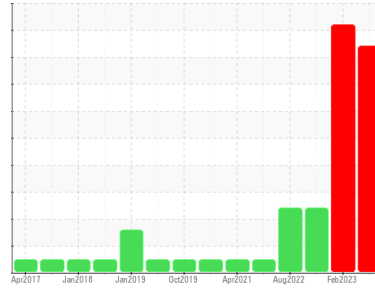




Machine Id
FREIGHTLINER 477444
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 10W30 (--- GAL)



DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. The oil 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

Test for glycol is positive. There is a high concentration of glycol present in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PCA0098938	PCA0089928	PCA0089937
Sample Date	Client Info			02 Aug 2023	17 Feb 2023	08 Feb 2023
Machine Age	mls	Client Info		234083	225794	226615
Oil Age	mls	Client Info		26961	0	0
Oil Changed	Client Info			Changed	Changed	Not Changed
Sample Status				SEVERE	SEVERE	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method		>3.0	<1.0	<1.0	<1.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>130	58	111	22
Chromium	ppm	ASTM D5185m	>10	4	▲ 14	2
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	4	6	2
Lead	ppm	ASTM D5185m	>20	1	2	<1
Copper	ppm	ASTM D5185m	>125	3	3	2
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	7	11	18
Barium	ppm	ASTM D5185m	0	0	0	2
Molybdenum	ppm	ASTM D5185m	50	78	76	68
Manganese	ppm	ASTM D5185m	0	<1	2	<1
Magnesium	ppm	ASTM D5185m	950	904	786	833
Calcium	ppm	ASTM D5185m	1050	1135	1061	1086
Phosphorus	ppm	ASTM D5185m	995	886	769	961
Zinc	ppm	ASTM D5185m	1180	1182	1020	1154
Sulfur	ppm	ASTM D5185m	2600	3369	2567	2922

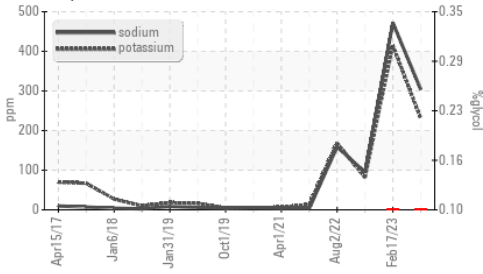
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	11	13	4
Sodium	ppm	ASTM D5185m		▲ 304	▲ 472	▲ 95
Potassium	ppm	ASTM D5185m	>20	▲ 231	▲ 415	▲ 82
Glycol	%	*ASTM D2982		● 0.10	● 0.10	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>6	0.7	1.2	0.3
Nitration	Abs/cm	*ASTM D7624	>20	13.8	17.1	7.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.6	29.0	18.8

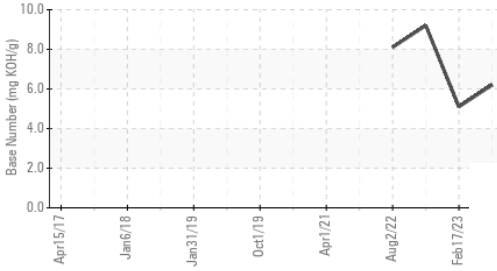
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.0	28.8	14.9
Base Number (BN)	mg KOH/g	ASTM D2896		6.2	5.1	9.2

OIL ANALYSIS REPORT

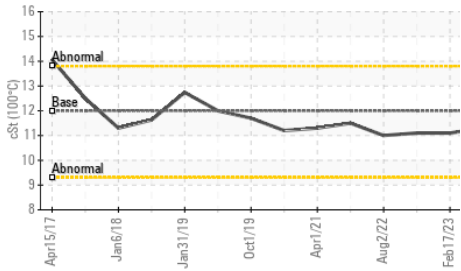
Glycol Contamination



Base Number



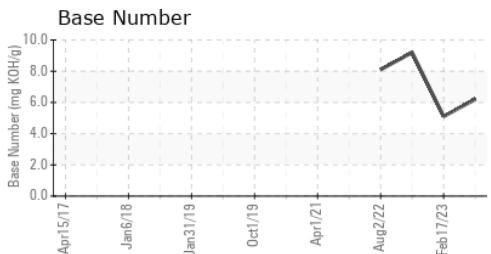
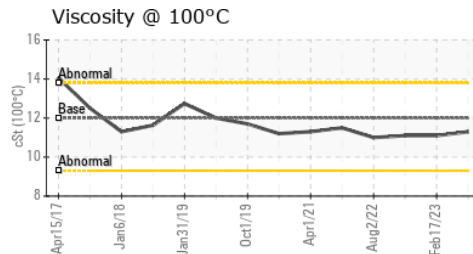
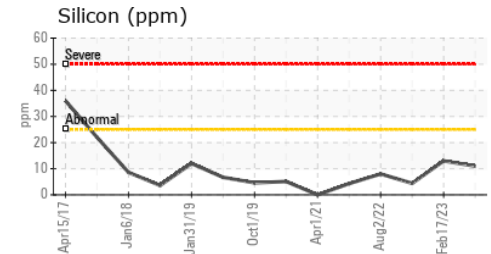
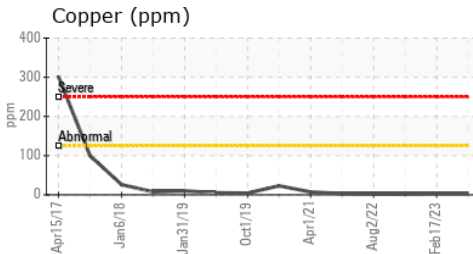
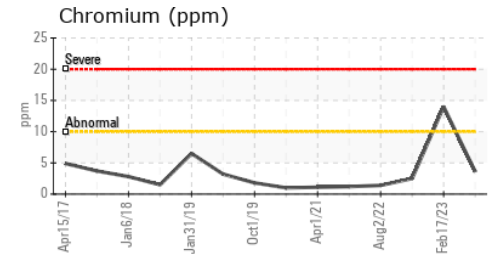
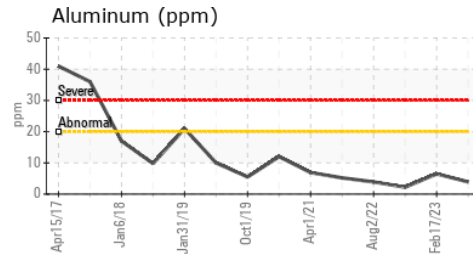
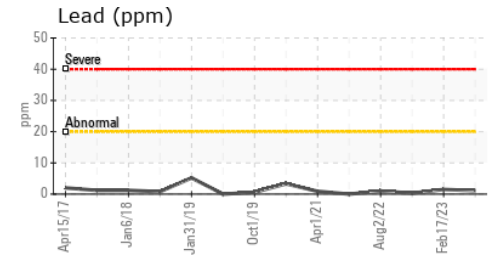
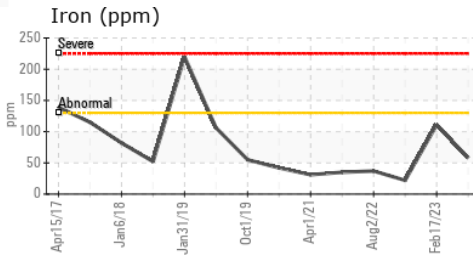
Viscosity @ 100°C



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	11.3	11.1

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0098938 **Received** : 22 Aug 2023
Lab Number : 05930594 **Diagnosed** : 24 Aug 2023
Unique Number : 10615865 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: TBN)

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 CINNAMINSON, NJ
 US 08077
 Contact: MIKE BOYER
 mboyer@millertransgroup.com
 T: (856)662-4264
 F: (856)663-4898

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)