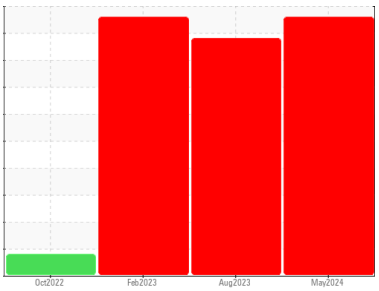
OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
INTERNATIONAL 106
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.

Wear
Aluminum ppm levels are abnormal. Piston wear is indicated.

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 as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0906249**	WC0792643	WC0727376
Sample Date		Client Info		**10 May 2024**	17 Aug 2023	21 Feb 2023
Machine Age	mls	Client Info		**164355**	0	147906
Oil Age	mls	Client Info		**0**	5000	147906
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**SEVERE**	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>2.0	**<1.0**	<1.0	▲ 3.3
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**54**	55	68
Chromium	ppm	ASTM D5185m	>20	**<1**	2	2
Nickel	ppm	ASTM D5185m	>4	**<1**	2	<1
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	1	0
Aluminum	ppm	ASTM D5185m	>20	▲ **21**	18	34
Lead	ppm	ASTM D5185m	>40	**0**	1	0
Copper	ppm	ASTM D5185m	>330	**3**	3	4
Tin	ppm	ASTM D5185m	>15	**<1**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**4**	10	18
Barium	ppm	ASTM D5185m		**0**	0	<1
Molybdenum	ppm	ASTM D5185m		**64**	76	75
Manganese	ppm	ASTM D5185m		**1**	<1	<1
Magnesium	ppm	ASTM D5185m		**865**	826	648
Calcium	ppm	ASTM D5185m		**1030**	1080	1105
Phosphorus	ppm	ASTM D5185m		**1042**	988	840
Zinc	ppm	ASTM D5185m		**1186**	1142	1004
Sulfur	ppm	ASTM D5185m		**3405**	3112	3141

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**5**	6	8
Sodium	ppm	ASTM D5185m		● **21**	▲ 67	▲ 60
Potassium	ppm	ASTM D5185m	>20	▲ **444**	▲ 1684	▲ 1624
Glycol	%	*ASTM D2982		▲ **0.10**	▲ 0.20	▲ 0.20

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.2**	0.9	2.1
Nitration	Abs/cm	*ASTM D7624	>20	**8.4**	9.0	12.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.7**	19.0	23.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**14.7**	12.5	16.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**9.8**	10.9	13.4

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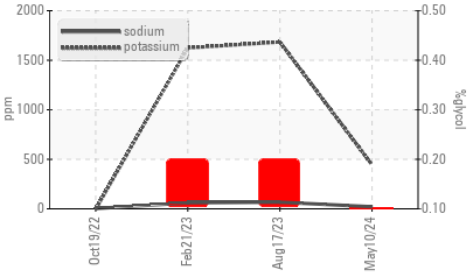
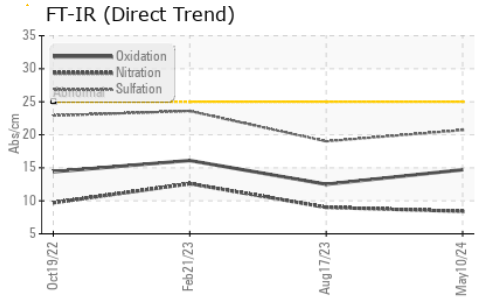
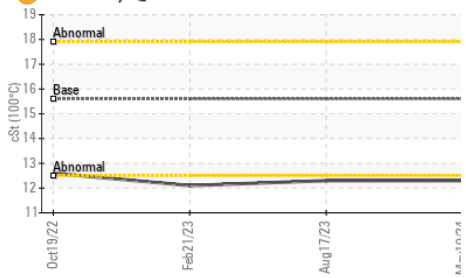
Glycol Contamination



FT-IR (Direct Trend)



Viscosity @ 100°C



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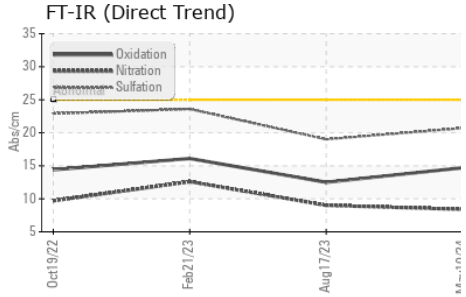
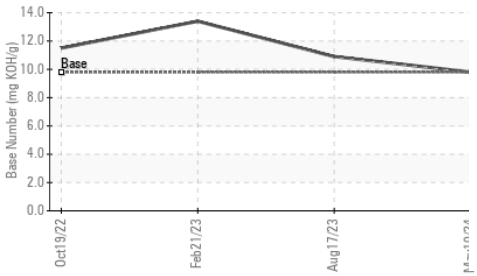


Base Number

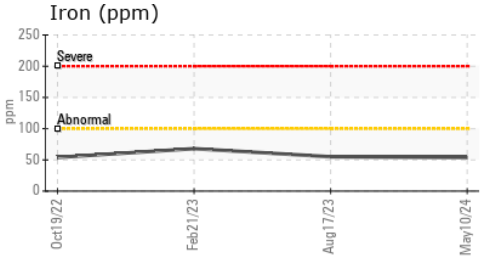


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

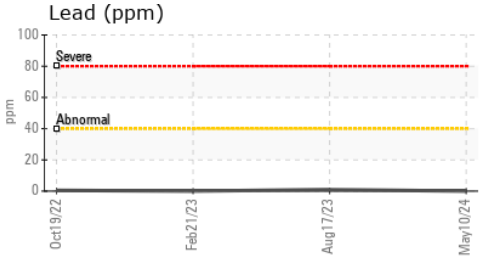
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.6	**12.3**	12.3	12.1

GRAPHS

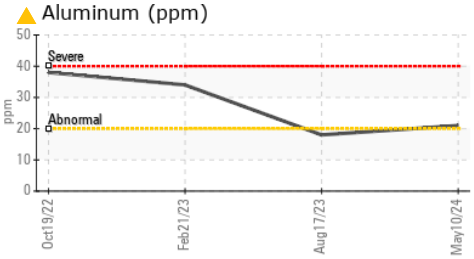
Iron (ppm)



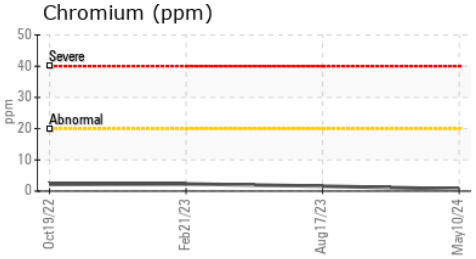
Lead (ppm)



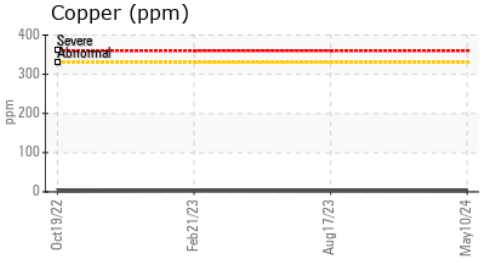
Aluminum (ppm)



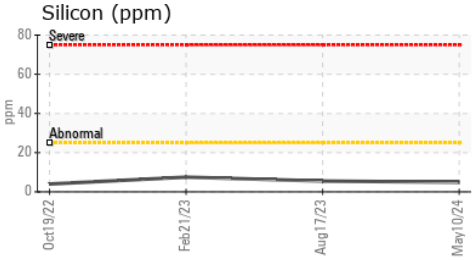
Chromium (ppm)



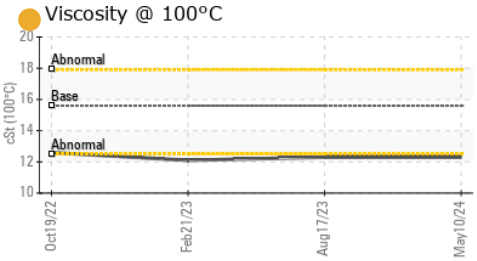
Copper (ppm)



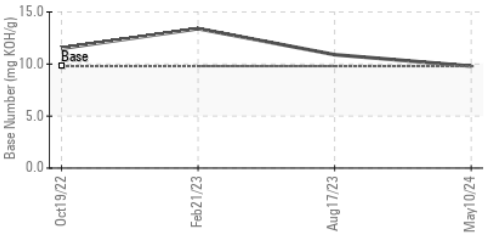
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0906249
Lab Number : 06182226
Unique Number : 11033552
Test Package : MOB 1 (Additional Tests: TBN)

Received : 16 May 2024
Tested : 20 May 2024
Diagnosed : 20 May 2024 - Wes Davis

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)

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