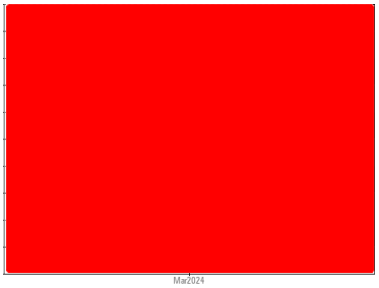
PROBLEM SUMMARY

Sample Rating Trend

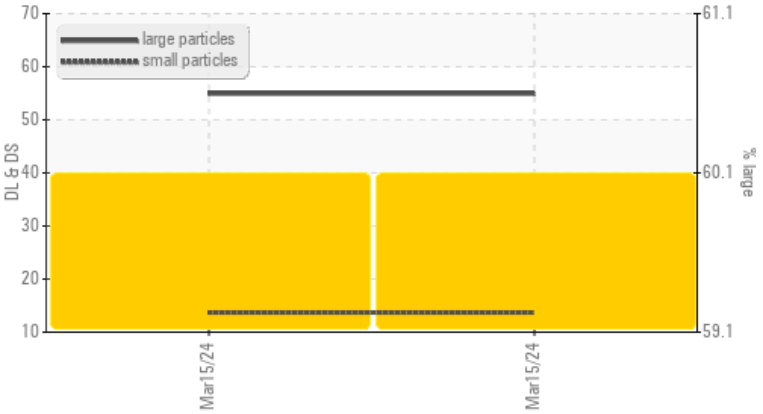


WATER

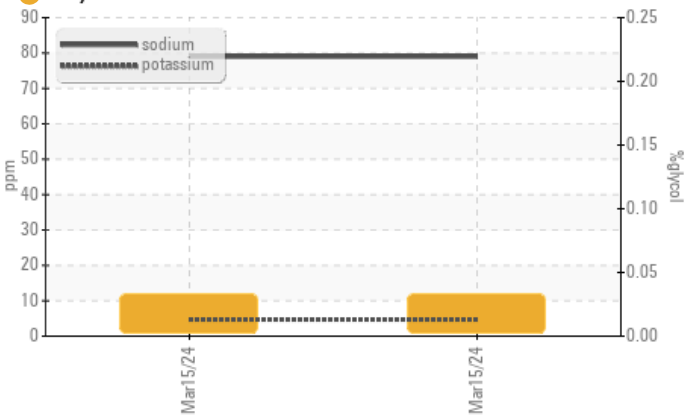
Area
[26732]
Machine Id
MCI 2107
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

COMPONENT CONDITION SUMMARY

DR Ferrography



Glycol Contamination



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. NOTE: Test values may be askew due high concentration of free water present in sample.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	---	---
Large Particles		DR-Ferr*		▲ **54.9**	---	---
Total Particles		DR-Ferr*	>---	▲ **68.6**	---	---
Large Particles Percentage	%	DR-Ferr*		▲ **60.1**	---	---
Severity Index		DR-Ferr*		▲ **2262**	---	---
Glycol	%	ASTM D7922*		▲ **0.033**	---	---
Emulsified Water	scalar	Visual*	>0.2	▲ **1%**	---	---
Free Water	scalar	Visual*		▲ **5%**	---	---

Customer Id: ONT567NOR
Sample No.: WC0907685
Lab Number: 02624208
Test Package: MOB 3

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

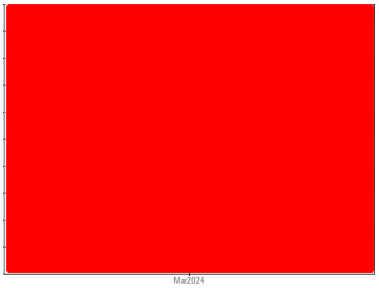
RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Flush System	---	---	?	We advise that you flush the component thoroughly before re-filling with oil.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	NOTE: Test values may be askew due high concentration of free water present in sample.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

OIL ANALYSIS REPORT

Sample Rating Trend



WATER

Area
[26732]
Machine Id
MCI 2107
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- 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. NOTE: Test values may be askew due high concentration of free water present in sample.

Wear

Large Particles, large particles percentage, severity index and total particles levels are abnormal. The ferrography results are normal indicating no abnormal wear in the system.

Contaminants

Test for glycol is positive. Light fuel dilution occurring. There is a light concentration of glycol present in the oil. There is a high concentration of water present in the oil. Excessive free water present. No other contaminants were detected in the oil.

Oil 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		**WC0907685**	---	---
Sample Date		Client Info		**15 Mar 2024**	---	---
Machine Age	kms	Client Info		**300590**	---	---
Oil Age	kms	Client Info		**0**	---	---
Oil Changed		Client Info		**N/A**	---	---
Sample Status				**SEVERE**	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	---	---

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	---	---
Iron	ppm	ASTM D5185(m)	>100	**12**	---	---
Chromium	ppm	ASTM D5185(m)	>20	**0**	---	---
Nickel	ppm	ASTM D5185(m)	>4	**0**	---	---
Titanium	ppm	ASTM D5185(m)		**0**	---	---
Silver	ppm	ASTM D5185(m)	>3	**0**	---	---
Aluminum	ppm	ASTM D5185(m)	>20	**2**	---	---
Lead	ppm	ASTM D5185(m)	>40	**0**	---	---
Copper	ppm	ASTM D5185(m)	>330	**1**	---	---
Tin	ppm	ASTM D5185(m)	>15	**0**	---	---
Antimony	ppm	ASTM D5185(m)		**0**	---	---
Vanadium	ppm	ASTM D5185(m)		**0**	---	---
Beryllium	ppm	ASTM D5185(m)		**0**	---	---
Cadmium	ppm	ASTM D5185(m)		**0**	---	---

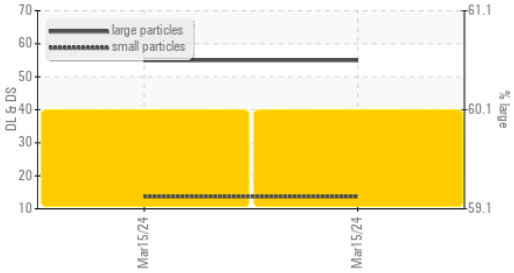
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	250	**9**	---	---
Barium	ppm	ASTM D5185(m)	10	**0**	---	---
Molybdenum	ppm	ASTM D5185(m)	100	**17**	---	---
Manganese	ppm	ASTM D5185(m)		**0**	---	---
Magnesium	ppm	ASTM D5185(m)	450	**30**	---	---
Calcium	ppm	ASTM D5185(m)	3000	**2704**	---	---
Phosphorus	ppm	ASTM D5185(m)	1150	**1014**	---	---
Zinc	ppm	ASTM D5185(m)	1350	**1345**	---	---
Sulfur	ppm	ASTM D5185(m)	4250	**3731**	---	---
Lithium	ppm	ASTM D5185(m)		**<1**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**3**	---	---
Sodium	ppm	ASTM D5185(m)		**79**	---	---
Potassium	ppm	ASTM D5185(m)	>20	**5**	---	---
Fuel	%	ASTM D7593*	>5	**1**	---	---
Glycol	%	ASTM D7922*		**0.033**	---	---

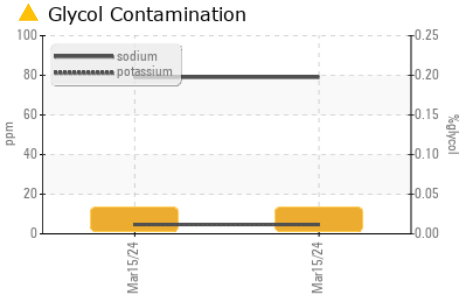
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**1.1**	---	---
Nitration	Abs/cm	ASTM D7624*	>20	**20.0**	---	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	**12.0**	---	---

OIL ANALYSIS REPORT

DR Ferrography



Glycol Contamination



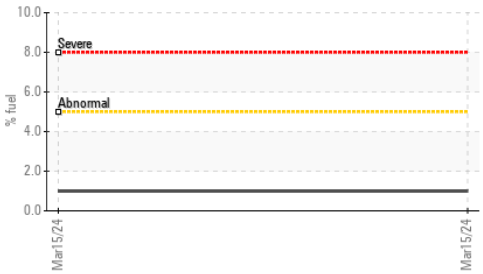
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**19.9**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896*	8.5	**8.16**	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	---	---
Yellow Metal	scalar	Visual*	NONE	**VLITE**	---	---
Precipitate	scalar	Visual*	NONE	**NONE**	---	---
Silt	scalar	Visual*	NONE	**VLITE**	---	---
Debris	scalar	Visual*	NONE	**NONE**	---	---
Sand/Dirt	scalar	Visual*	NONE	**NONE**	---	---
Appearance	scalar	Visual*	NORML	**NORML**	---	---
Odor	scalar	Visual*	NORML	**NORML**	---	---
Emulsified Water	scalar	Visual*	>0.2	▲ **1%**	---	---
Free Water	scalar	Visual*		▲ **5%**	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	**4.5**	---	---

GRAPHS

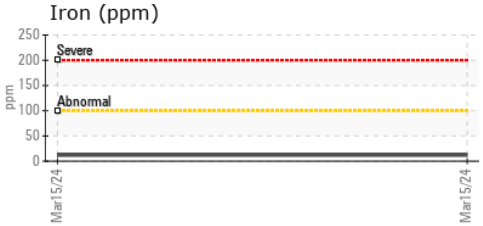
Fuel Dilution



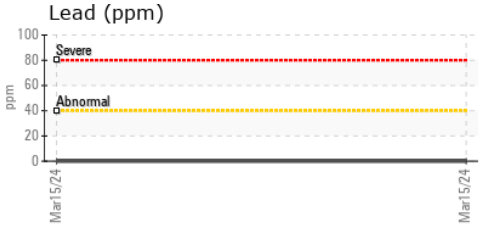
PQ

PQ

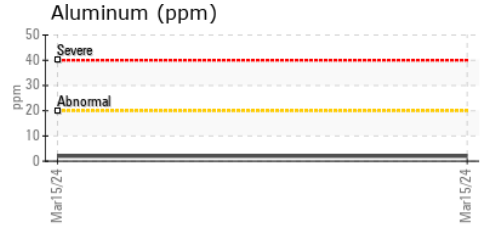
Iron (ppm)



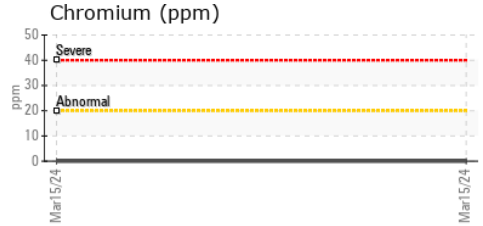
Lead (ppm)



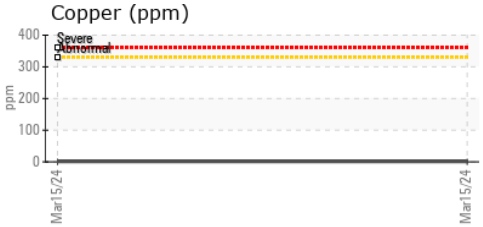
Aluminum (ppm)



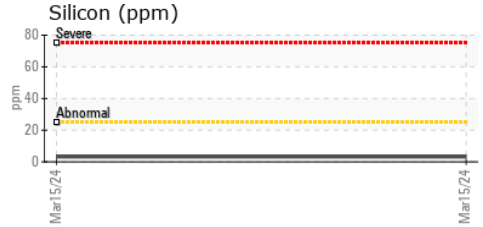
Chromium (ppm)



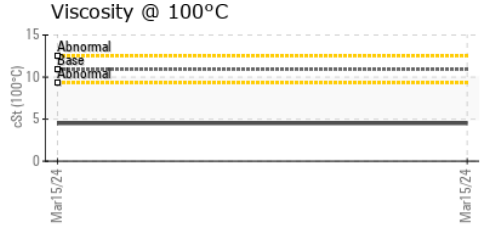
Copper (ppm)



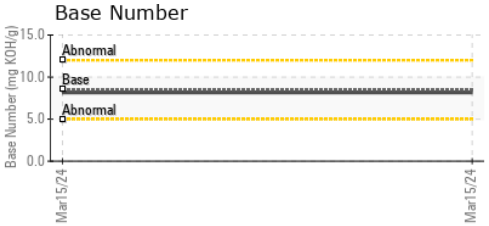
Silicon (ppm)



Viscosity @ 100°C



Base Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0907685 **Received** : 25 Mar 2024
Lab Number : 02624208 **Tested** : 26 Mar 2024
Unique Number : 5749327 **Diagnosed** : 27 Mar 2024 - Kevin Marson
Test Package : MOB 3 (Additional Tests: FuelDilution, Glycol, PercentFuel)

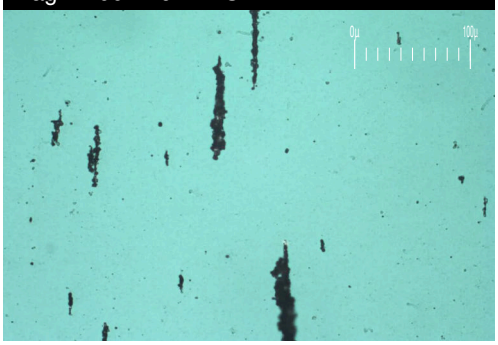
To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

ONTARIO NORTHLAND GARAGE
567 WALLACE RD
NORTH BAY, ON
CA P1A 3T3
Contact: Alexandra Pavone
Alexandra.Pavone@ontarionorthland.ca
T: (705)472-4500
F: (705)475-5028

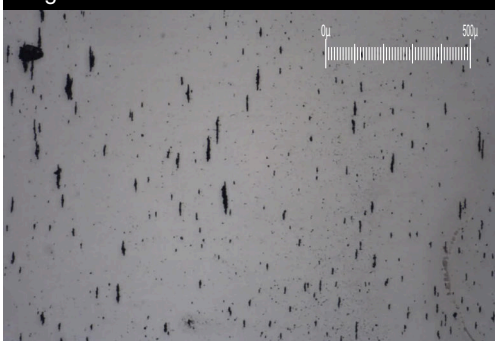
FERROGRAPHY REPORT

Area
[26732]
Machine Id
MCI 2107
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

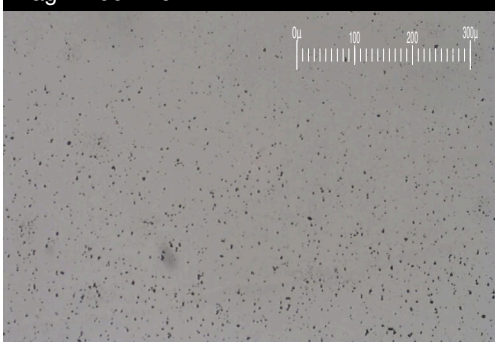
Magn: 200x Illum: BC



Magn: 50x Illum: RW



Magn: 100x Illum: RW

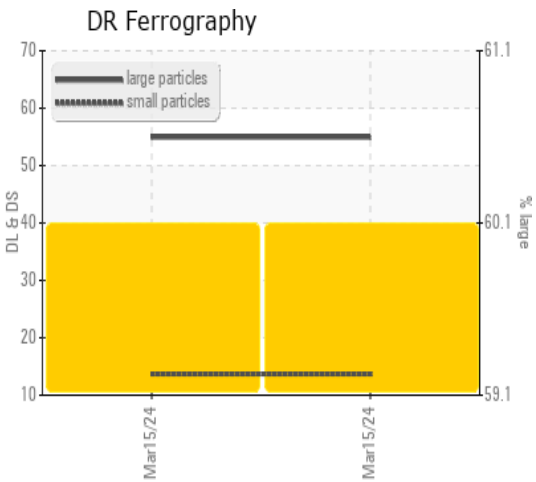


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		▲ 54.9	---	---
Small Particles		DR-Ferr*		13.7	---	---
Total Particles		DR-Ferr*	>---	▲ 68.6	---	---
Large Particles Percentage	%	DR-Ferr*		▲ 60.1	---	---
Severity Index		DR-Ferr*		▲ 2262	---	---

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		3		
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		1		
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*		1		
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*		1		
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		1		
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		2		

WEAR

Large Particles, large particles percentage, severity index and total particles levels are abnormal. The ferrography results are normal indicating no abnormal wear in the system.



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