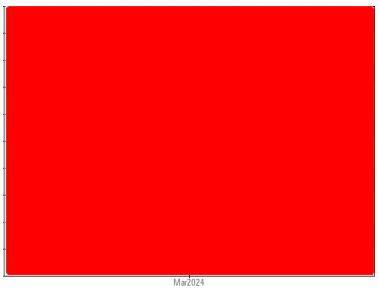
PROBLEM SUMMARY

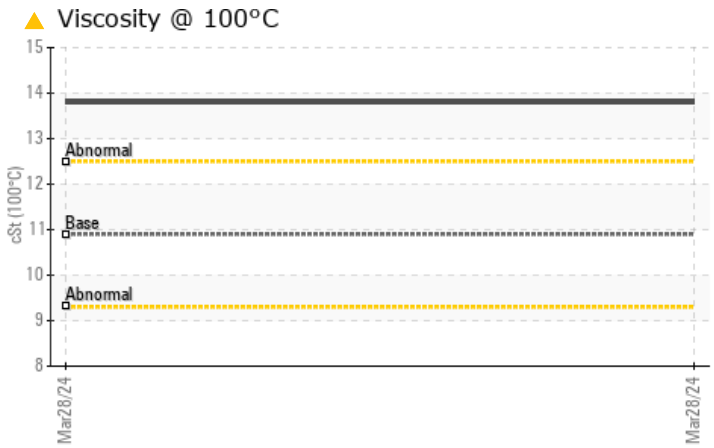
Sample Rating Trend



VISUAL METAL

Area
[27749]
Machine Id
PREVOST 1701
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for visible metal particles in the oil. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. No other corrective action is recommended at this time. (Customer Sample Comment: OIL SAMPLE POST REPOWER)

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	---	---
Ferrous Cutting	Scale 0-10	ASTM D7684*		**1**		
White Metal	scalar	Visual*	NONE	**LTMOD**	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	**13.8**	---	---

Customer Id: ONT567NOR
Sample No.: WC0916687
Lab Number: 02626375
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

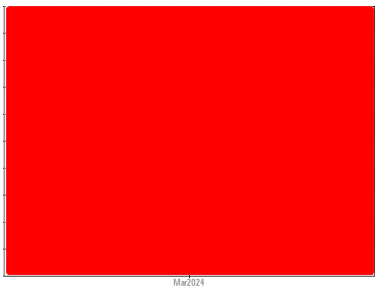
RECOMMENDED ACTIONS

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.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check For Visual Metal	---	---	?	We advise that you check for visible metal particles in the oil.

HISTORICAL DIAGNOSIS

OIL ANALYSIS REPORT

Sample Rating Trend



VISUAL METAL

Area
[27749]
Machine Id
PREVOST 1701
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check for visible metal particles in the oil. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. No other corrective action is recommended at this time. (Customer Sample Comment: OIL SAMPLE POST REPOWER)

Wear
Wear particle analysis indicates that the ferrous cutting particles are marginal. Light concentration of visible metal present. All other component wear rates are normal. Cutting wear particles are caused by either hard protuberances (mis-aligned components, etc.), or abrasives entering the system and embedding themselves in softer materials (sand, etc.), and gouging out mating surfaces.

Contaminants
There is no indication of any contamination in the oil.

Oil Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. Viscosity of sample indicates oil is within SAE 40 range, advise investigate.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0916687**	---	---
Sample Date		Client Info		**28 Mar 2024**	---	---
Machine Age	hrs	Client Info		**0**	---	---
Oil Age	hrs	Client Info		**0**	---	---
Oil Changed		Client Info		**Not Changd**	---	---
Sample Status				**SEVERE**	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	**<1.0**	---	---
Water		WC Method	>0.2	**NEG**	---	---
Glycol		WC Method		**NEG**	---	---

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	---	---
Iron	ppm	ASTM D5185(m)	>100	**3**	---	---
Chromium	ppm	ASTM D5185(m)	>20	**0**	---	---
Nickel	ppm	ASTM D5185(m)	>2	**<1**	---	---
Titanium	ppm	ASTM D5185(m)		**0**	---	---
Silver	ppm	ASTM D5185(m)	>2	**0**	---	---
Aluminum	ppm	ASTM D5185(m)	>25	**<1**	---	---
Lead	ppm	ASTM D5185(m)	>40	**0**	---	---
Copper	ppm	ASTM D5185(m)	>330	**2**	---	---
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**	---	---

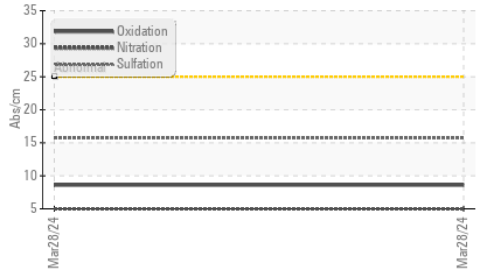
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	250	**4**	---	---
Barium	ppm	ASTM D5185(m)	10	**<1**	---	---
Molybdenum	ppm	ASTM D5185(m)	100	**2**	---	---
Manganese	ppm	ASTM D5185(m)		**0**	---	---
Magnesium	ppm	ASTM D5185(m)	450	**21**	---	---
Calcium	ppm	ASTM D5185(m)	3000	**2196**	---	---
Phosphorus	ppm	ASTM D5185(m)	1150	**848**	---	---
Zinc	ppm	ASTM D5185(m)	1350	**960**	---	---
Sulfur	ppm	ASTM D5185(m)	4250	**2884**	---	---
Lithium	ppm	ASTM D5185(m)		**<1**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**13**	---	---
Sodium	ppm	ASTM D5185(m)		**6**	---	---
Potassium	ppm	ASTM D5185(m)	>20	**9**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0**	---	---
Nitration	Abs/cm	ASTM D7624*	>20	**5.0**	---	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	**15.7**	---	---

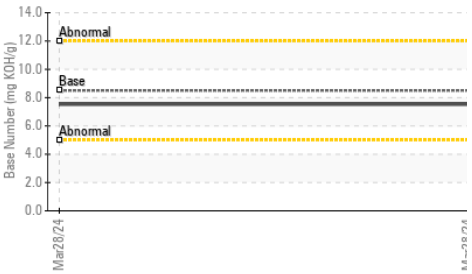
OIL ANALYSIS REPORT

FT-IR (Direct Trend)



PQ

Base Number



PQ

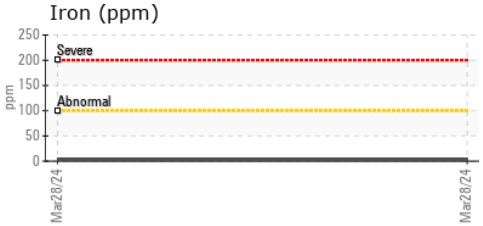
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**8.6**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896*	8.5	**7.53**	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	▲ **LTMOD**	---	---
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	**VLITE**	---	---
Appearance	scalar	Visual*	NORML	**NORML**	---	---
Odor	scalar	Visual*	NORML	**NORML**	---	---
Emulsified Water	scalar	Visual*	>0.2	**NEG**	---	---
Free Water	scalar	Visual*		**NEG**	---	---

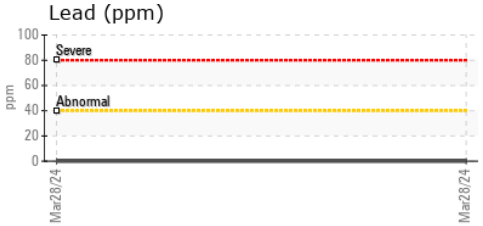
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	▲ **13.8**	---	---

GRAPHS

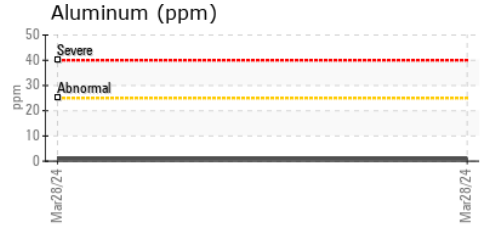
Iron (ppm)



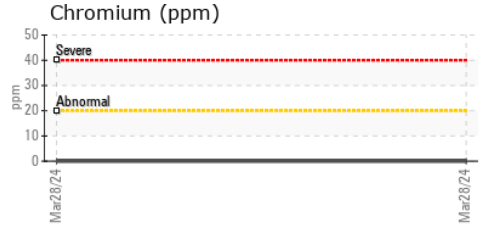
Lead (ppm)



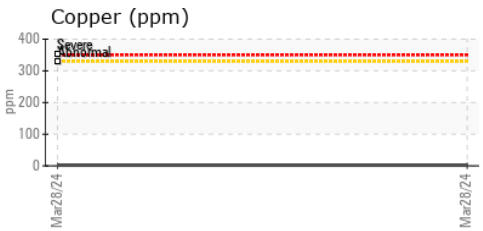
Aluminum (ppm)



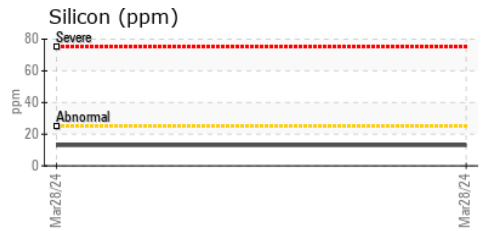
Chromium (ppm)



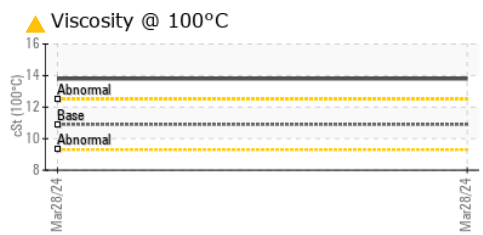
Copper (ppm)



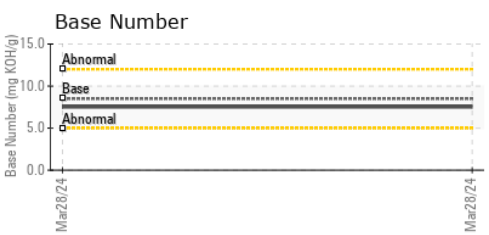
Silicon (ppm)



▲ Viscosity @ 100°C



Base Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0916687 **Received** : 03 Apr 2024
Lab Number : 02626375 **Tested** : 09 Apr 2024
Unique Number : 5759507 **Diagnosed** : 09 Apr 2024 - Kevin Marson
Test Package : MOB 3 (Additional Tests: BottomAnalysis, FILTERPATCH)

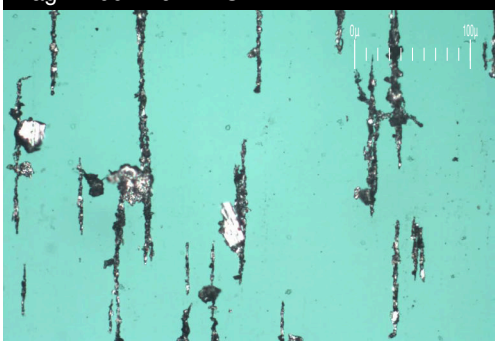
To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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

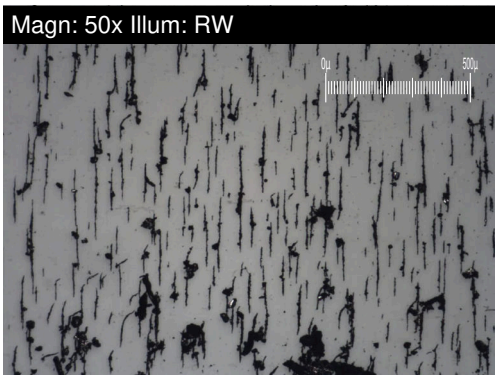
FERROGRAPHY REPORT

Area
[27749]
Machine Id
PREVOST 1701
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

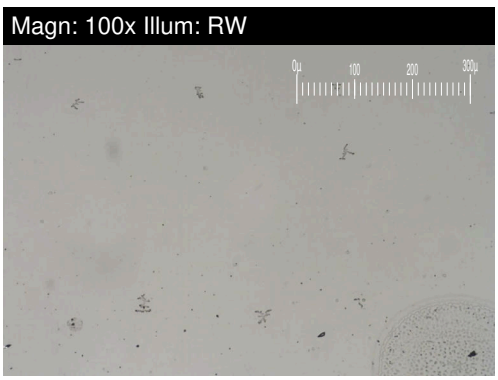
Magn: 200x Illum: BC



Magn: 50x Illum: RW



Magn: 100x Illum: RW

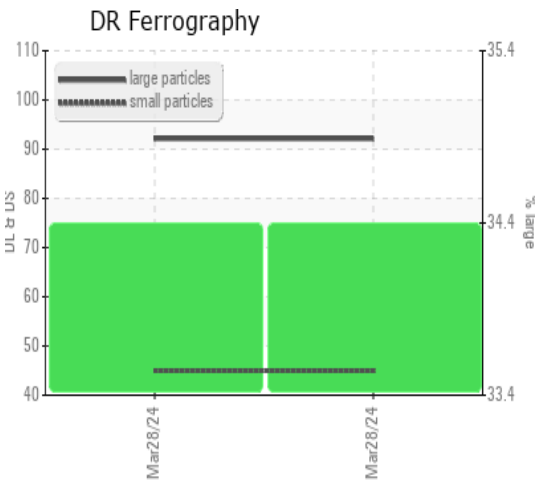


DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		**92.1**	---	---
Small Particles		DR-Ferr*		**45.0**	---	---
Total Particles		DR-Ferr*	>---	**137.1**	---	---
Large Particles Percentage	%	DR-Ferr*		**34.4**	---	---
Severity Index		DR-Ferr*		**4338**	---	---

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		**4**		
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*		**1**		
Ferrous Rolling	Scale 0-10	ASTM D7684*		**2**		
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*				
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*		**1**		

WEAR

Wear particle analysis indicates that the ferrous cutting particles are marginal. Light concentration of visible metal present. All other component wear rates are normal. Cutting wear particles are caused by either hard protuberances (mis-aligned components, etc.), or abrasives entering the system and embedding themselves in softer materials (sand, etc.), and gouging out mating surfaces.



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