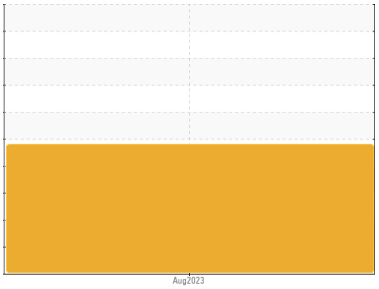
PROBLEM SUMMARY

Sample Rating Trend

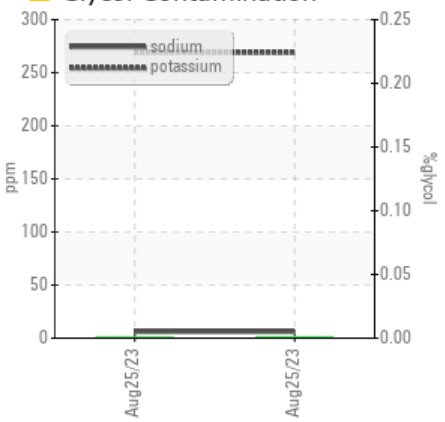


WEAR PARTICLES

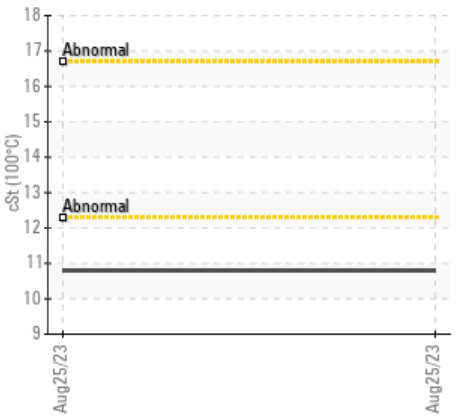
Machine Id
GMC 1GTU9CET3MZ397894
Component
Diesel Engine
Fluid
NOT GIVEN (7 LTR)

COMPONENT CONDITION SUMMARY

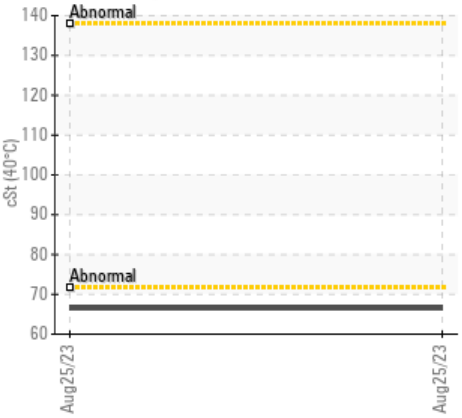
Glycol Contamination



Viscosity @ 100°C



Viscosity @ 40°C



RECOMMENDATION

We understand that this sample is for warranty/insurance purposes. We understand that corrective action has already been taken. We advise that you check for faulty combustion and a possible overheat condition. Check for low coolant level. We recommend that you drain the oil from the component if this has not already been done. Please specify the brand, type, and viscosity of the oil on your next sample. Please submit a sample of the new (unused) oil to establish a baseline.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	---	---
Ferrous Rolling	Scale 0-10	ASTM D7684*		**1**		
Potassium	ppm	ASTM D5185(m)	>20	**269**	---	---
Oxidation	Abs/.1mm	ASTM D7414*	>25	**26.4**	---	---
Visc @ 40°C	cSt	ASTM D7279(m)		**66.5**	---	---
Visc @ 100°C	cSt	ASTM D7279(m)		**10.8**	---	---

Customer Id: ROY2WOO
Sample No.: WC486638
Lab Number: 02578744
Test Package: INS

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

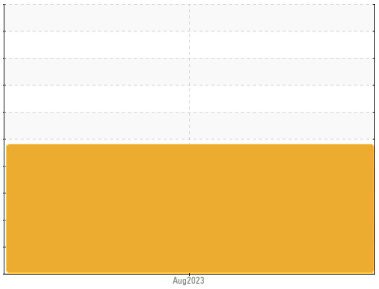
RECOMMENDED ACTIONS

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	---	---	?	Please submit a sample of the new (unused) oil to establish a baseline.
Information Required	---	---	?	Please specify the brand, type, and viscosity of the oil on your next sample.
Check Combustion	---	---	?	We advise that you check for faulty combustion and a possible overheat condition.
Check For Overheating	---	---	?	We advise that you check for faulty combustion and a possible overheat condition.

HISTORICAL DIAGNOSIS

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR PARTICLES

Machine Id
GMC 1GTU9CET3MZ397894
Component
Diesel Engine
Fluid
NOT GIVEN (7 LTR)

DIAGNOSIS

Recommendation

We understand that this sample is for warranty/insurance purposes. We understand that corrective action has already been taken. We advise that you check for faulty combustion and a possible overheat condition. Check for low coolant level. We recommend that you drain the oil from the component if this has not already been done. Please specify the brand, type, and viscosity of the oil on your next sample. Please submit a sample of the new (unused) oil to establish a baseline.

Wear Particles

Wear particle analysis indicates that the ferrous rolling particles are abnormal. The wear metal levels do not reflect the reported failure.

Contaminants

Light fuel dilution occurring. Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. No other contaminants were detected in the oil.

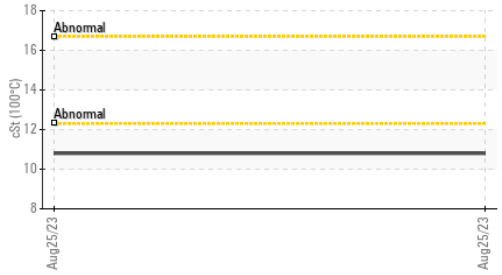
SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC486638**	---	---
Sample Date		Client Info		**25 Aug 2023**	---	---
Machine Age	kms	Client Info		**84632**	---	---
Oil Age	kms	Client Info		**0**	---	---
Oil Changed		Client Info		**N/A**	---	---
Sample Status				**ABNORMAL**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	**104**	---	---
Chromium	ppm	ASTM D5185(m)	>20	**3**	---	---
Nickel	ppm	ASTM D5185(m)	>4	**0**	---	---
Titanium	ppm	ASTM D5185(m)		**<1**	---	---
Silver	ppm	ASTM D5185(m)	>3	**<1**	---	---
Aluminum	ppm	ASTM D5185(m)	>20	**12**	---	---
Lead	ppm	ASTM D5185(m)	>40	**0**	---	---
Copper	ppm	ASTM D5185(m)	>330	**4**	---	---
Tin	ppm	ASTM D5185(m)	>15	**2**	---	---
Antimony	ppm	ASTM D5185(m)		**0**	---	---
Vanadium	ppm	ASTM D5185(m)		**<1**	---	---
Beryllium	ppm	ASTM D5185(m)		**0**	---	---
Cadmium	ppm	ASTM D5185(m)		**0**	---	---

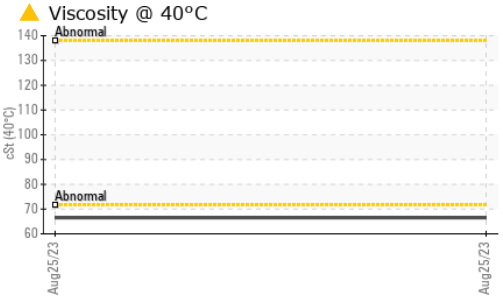
FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		**2**		
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		**1**		
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*				
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*				
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**		
Patch Weight	mg	ASTM D7684*		**4**	---	---

OIL ANALYSIS REPORT

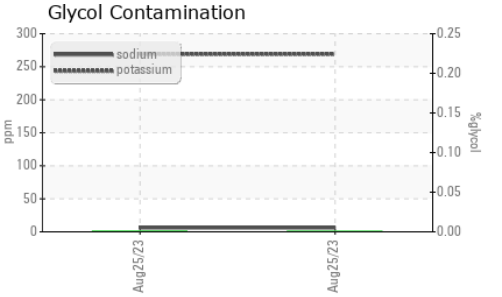
Viscosity @ 100°C



Viscosity @ 40°C

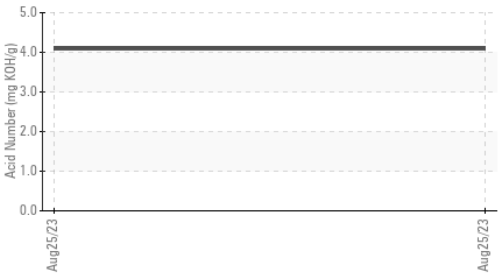


Glycol Contamination



Fuel Dilution

Acid Number



ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**259**	---	---
Barium	ppm	ASTM D5185(m)		**1**	---	---
Molybdenum	ppm	ASTM D5185(m)		**726**	---	---
Manganese	ppm	ASTM D5185(m)		**1**	---	---
Magnesium	ppm	ASTM D5185(m)		**153**	---	---
Calcium	ppm	ASTM D5185(m)		**793**	---	---
Phosphorus	ppm	ASTM D5185(m)		**226**	---	---
Zinc	ppm	ASTM D5185(m)		**245**	---	---
Sulfur	ppm	ASTM D5185(m)		**1496**	---	---
Lithium	ppm	ASTM D5185(m)		**<1**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**33**	---	---
Sodium	ppm	ASTM D5185(m)		**6**	---	---
Potassium	ppm	ASTM D5185(m)	>20	▲ **269**	---	---
Fuel	%	ASTM D7593*	>5	**1.2**	---	---
Glycol	%	ASTM D7922*		**0.0**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0.7**	---	---
Nitration	Abs/cm	ASTM D7624*	>20	**11.5**	---	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	**25.1**	---	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	▲ **26.4**	---	---
Acid Number (AN)	mg KOH/g	ASTM D974*		**4.09**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896*		**3.38**	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**VLITE**	---	---
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	**NONE**	---	---
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 @ 40°C	cSt	ASTM D7279(m)		▲ **66.5**	---	---
Visc @ 100°C	cSt	ASTM D7279(m)		▲ **10.8**	---	---
Viscosity Index (VI)	Scale	ASTM D2270*		**152**	---	---

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC486638 **Received** : 28 Aug 2023
Lab Number : 02578744 **Diagnosed** : 11 Sep 2023
Unique Number : 5631804 **Diagnostician** : Kevin Marson
Test Package : INS (Additional Tests: FT-IR, FuelDilution, Glycol, PercentFuel, TAN Man, VI)

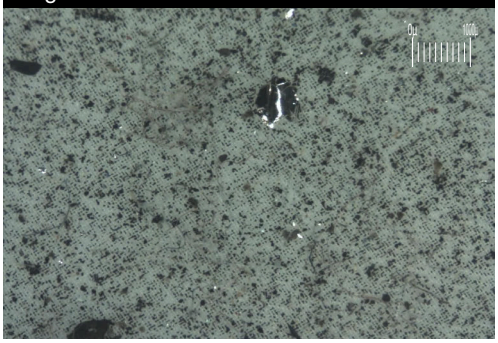
To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

ROY FOSS CHEVROLET
2 AUTO PARK CIRCLE
WOODBRIDGE, ON
CA L4L 8R1
Contact: Rocky Postiglione
rpostiglione@royfoss.com
T: (905)850-1000
F:

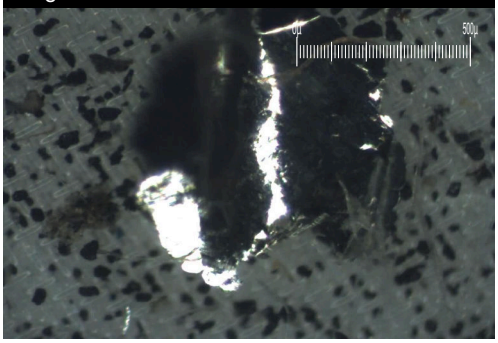
FILTER REPORT

Machine Id
GMC 1GTU9CET3MZ397894
Component
Diesel Engine
Fluid
NOT GIVEN (7 LTR)

Magn: 10x Illum: RW



Magn: 60x Illum: RW



FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		2		
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*				
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*				
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		
Patch Weight	mg	ASTM D7684*		4	---	---

WEAR

Wear particle analysis indicates that the ferrous rolling particles are abnormal. The wear metal levels do not reflect the reported failure.

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