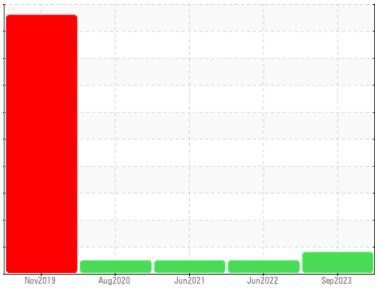
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
[8202]
Machine Id
9589
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

DIAGNOSIS

Recommendation
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.

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

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

Fluid Condition
Viscosity of sample indicates oil is within SAE 40 range, advise investigate. 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		**WC0553731**	WC0702541	WC0580844
Sample Date		Client Info		**21 Sep 2023**	25 Jun 2022	27 Jun 2021
Machine Age	kms	Client Info		**189980**	533441	388238
Oil Age	kms	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	Changed	Not Changd
Sample Status				**ABNORMAL**	NORMAL	NORMAL

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 D5185(m)	>90	**74**	80	27
Chromium	ppm	ASTM D5185(m)	>20	**3**	3	1
Nickel	ppm	ASTM D5185(m)	>2	**<1**	0	<1
Titanium	ppm	ASTM D5185(m)	>2	**0**	<1	<1
Silver	ppm	ASTM D5185(m)	>2	**<1**	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	▲ **37**	13	4
Lead	ppm	ASTM D5185(m)	>40	**<1**	4	3
Copper	ppm	ASTM D5185(m)	>330	**7**	2	3
Tin	ppm	ASTM D5185(m)	>15	**0**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	<1
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	250	**3**	40	32
Barium	ppm	ASTM D5185(m)	10	**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)	100	**67**	54	2
Manganese	ppm	ASTM D5185(m)		**<1**	1	<1
Magnesium	ppm	ASTM D5185(m)	450	**1001**	360	694
Calcium	ppm	ASTM D5185(m)	3000	**1147**	1852	1341
Phosphorus	ppm	ASTM D5185(m)	1150	**946**	1006	680
Zinc	ppm	ASTM D5185(m)	1350	**1249**	1176	804
Sulfur	ppm	ASTM D5185(m)	4250	**2442**	2744	2492
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

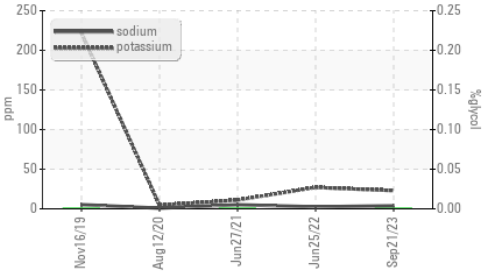
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**7**	4	5
Sodium	ppm	ASTM D5185(m)		**4**	2	5
Potassium	ppm	ASTM D5185(m)	>20	**23**	27	11
Glycol	%	ASTM D7922*		**0.0**	NEG	0.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	**1.3**	0.4	0.2
Nitration	Abs/cm	ASTM D7624*	>20	**13.9**	12.2	10.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	**26.1**	28.0	22.9

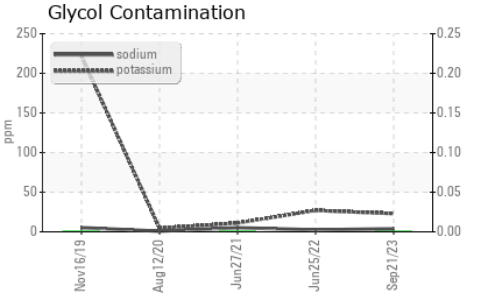
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**22.0**	23.1	20.2

OIL ANALYSIS REPORT

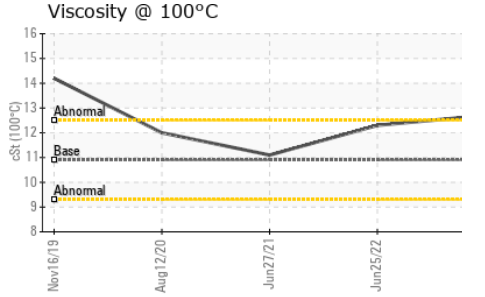
Glycol Contamination



Glycol Contamination



Viscosity @ 100°C

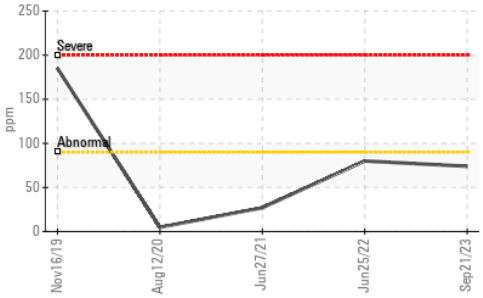


VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

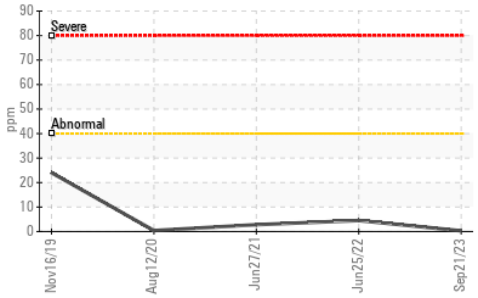
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	**12.7**	12.3	11.1

GRAPHS

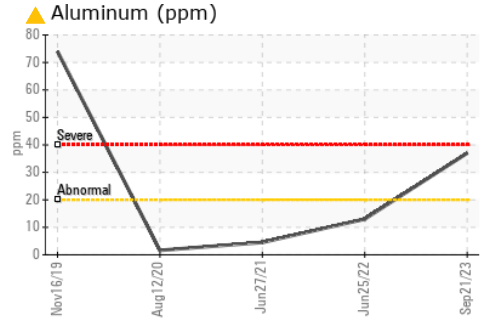
Iron (ppm)



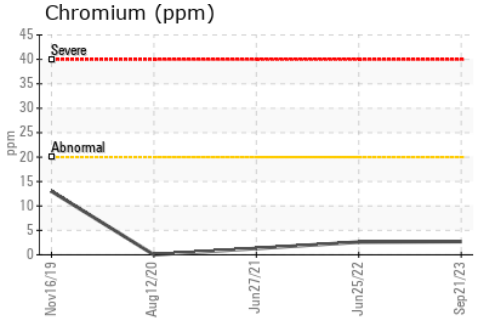
Lead (ppm)



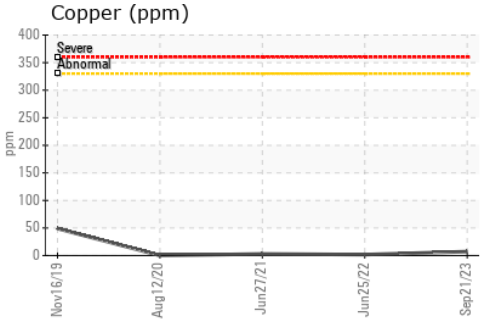
Aluminum (ppm)



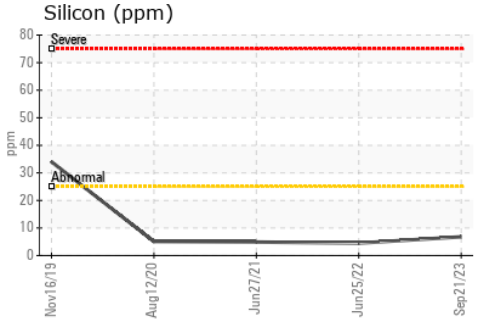
Chromium (ppm)



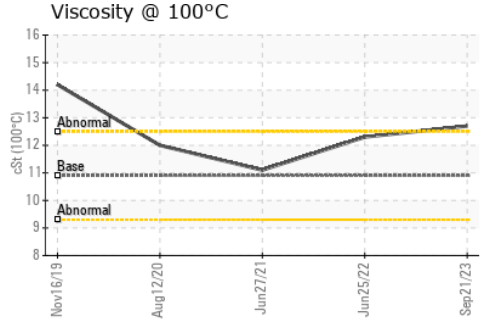
Copper (ppm)



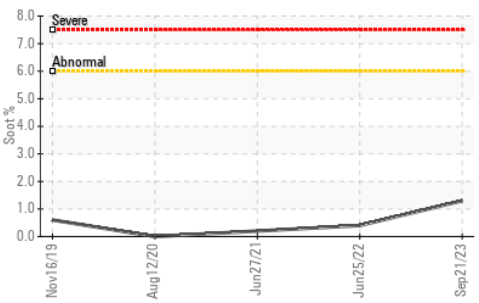
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0553731 **Received** : 23 Oct 2023
Lab Number : 02590908 **Diagnosed** : 23 Oct 2023
Unique Number : 5667987 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: Glycol)

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.

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