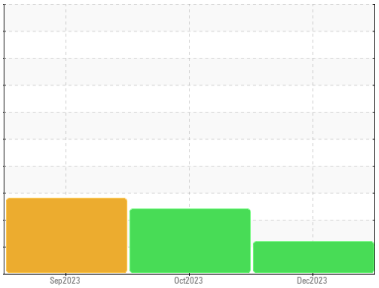
OIL ANALYSIS REPORT

Machine Id
CATERPILLAR R1600 SCP219
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

Sample Rating Trend



FUEL

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
All component wear rates are normal.

Contamination
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition
Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC**	WC0820198	WC0840213
Sample Date		Client Info		**31 Dec 2023**	18 Oct 2023	30 Sep 2023
Machine Age	hrs	Client Info		**2498**	1749	1585
Oil Age	hrs	Client Info		**0**	164	0
Oil Changed		Client Info		**Not Changd**	Not Changd	Changed
Sample Status				**ABNORMAL**	SEVERE	SEVERE

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	**21**	11	19
Chromium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	**<1**	0	0
Titanium	ppm	ASTM D5185(m)	>2	**0**	0	0
Silver	ppm	ASTM D5185(m)	>2	**0**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>25	**2**	2	2
Lead	ppm	ASTM D5185(m)	>40	**8**	4	8
Copper	ppm	ASTM D5185(m)	>330	**37**	26	63
Tin	ppm	ASTM D5185(m)	>15	**5**	3	6
Antimony	ppm	ASTM D5185(m)		**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
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	**29**	37	30
Barium	ppm	ASTM D5185(m)	10	**0**	<1	<1
Molybdenum	ppm	ASTM D5185(m)	100	**40**	36	35
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)	450	**483**	441	428
Calcium	ppm	ASTM D5185(m)	3000	**1709**	1593	1550
Phosphorus	ppm	ASTM D5185(m)	1150	**720**	696	668
Zinc	ppm	ASTM D5185(m)	1350	**865**	900	798
Sulfur	ppm	ASTM D5185(m)	4250	**2055**	1929	1821
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**6**	8	6
Sodium	ppm	ASTM D5185(m)	>158	**4**	3	3
Potassium	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Fuel	%	ASTM D7593*	>5	▲ **5.7**	⬢ 8.9	⬢ 9.9

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**0.3**	0	0.1
Nitration	Abs/cm	ASTM D7624*	>20	**11.1**	7.4	9.8
Sulfation	Abs/.1mm	ASTM D7415*	>30	**25.7**	23.3	26.5

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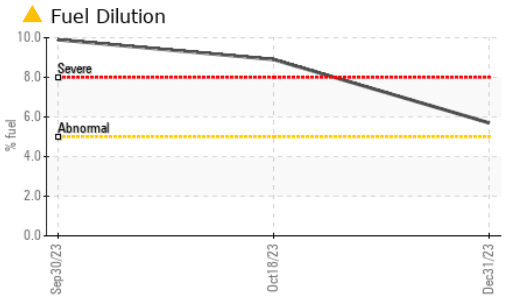
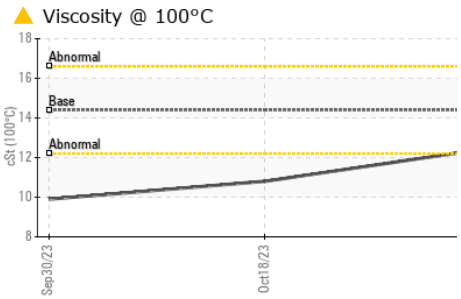


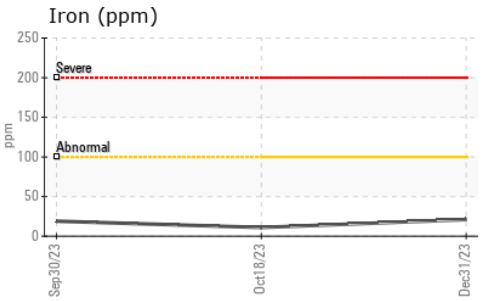


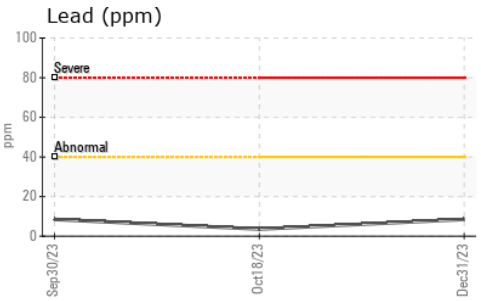
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**27.3**	22.8	29.4

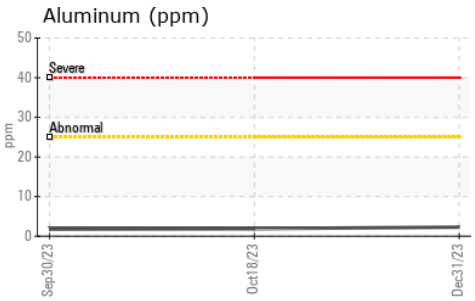
VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

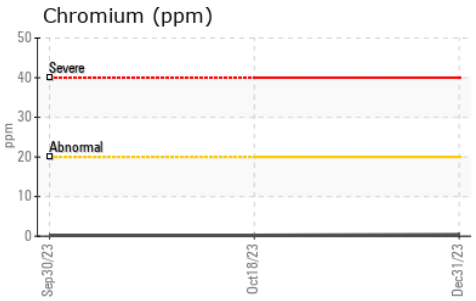
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	14.4	▲ **12.4**	▲ 10.8	⬢ 9.9

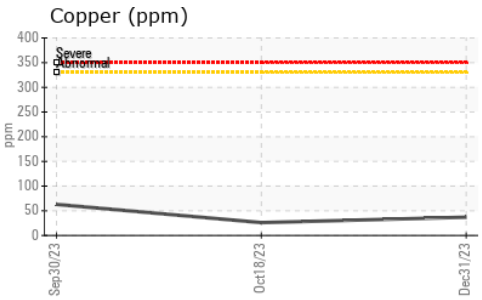
GRAPHS

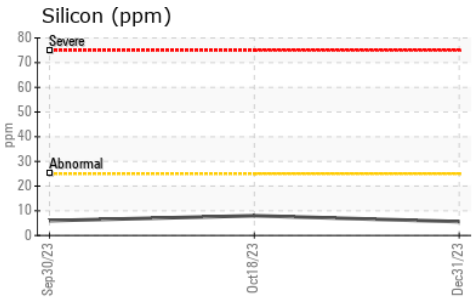


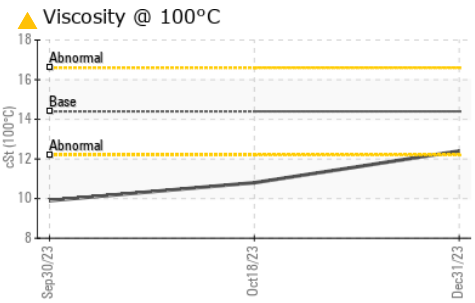


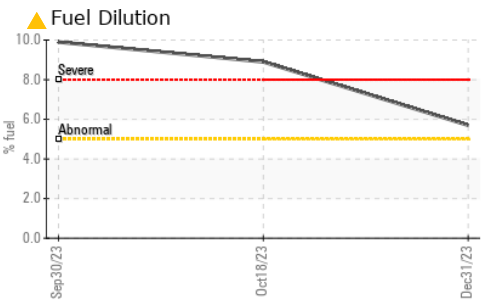












ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC **Recieved** : 04 Jan 2024
Lab Number : 02606505 **Diagnosed** : 05 Jan 2024
Unique Number : 5707591 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: 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.

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