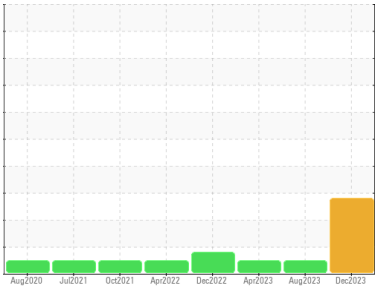
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Area
[42511082]
Machine Id
7379
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated.

Contamination
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition
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		**WC0853232**	WC0796302	WC0796476
Sample Date		Client Info		**09 Dec 2023**	03 Aug 2023	18 Apr 2023
Machine Age	kms	Client Info		**313954**	296017	281200
Oil Age	kms	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Not Changd	Not Changd
Sample Status				**SEVERE**	NORMAL	NORMAL

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
PQ		ASTM D8184*		**0**	---	---
Iron	ppm	ASTM D5185(m)	>100	▲ **154**	38	18
Chromium	ppm	ASTM D5185(m)	>20	**8**	2	1
Nickel	ppm	ASTM D5185(m)	>4	**<1**	0	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	<1
Silver	ppm	ASTM D5185(m)	>3	**<1**	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	**13**	4	3
Lead	ppm	ASTM D5185(m)	>40	**13**	2	1
Copper	ppm	ASTM D5185(m)	>330	**2**	3	1
Tin	ppm	ASTM D5185(m)	>15	**2**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	<1
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	**30**	32	45
Barium	ppm	ASTM D5185(m)	10	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	100	**4**	8	9
Manganese	ppm	ASTM D5185(m)		**1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	450	**667**	648	648
Calcium	ppm	ASTM D5185(m)	3000	**1237**	1311	1402
Phosphorus	ppm	ASTM D5185(m)	1150	**609**	699	743
Zinc	ppm	ASTM D5185(m)	1350	**721**	764	776
Sulfur	ppm	ASTM D5185(m)	4250	**2144**	2338	2513
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**11**	7	4
Sodium	ppm	ASTM D5185(m)		**5**	3	3
Potassium	ppm	ASTM D5185(m)	>20	**21**	7	5
Fuel	%	ASTM D7593*	>2.0	● **7.8**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**1.1**	0.4	0.2
Nitration	Abs/cm	ASTM D7624*	>20	**26.3**	13.7	11.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	**45.4**	29.7	22.6

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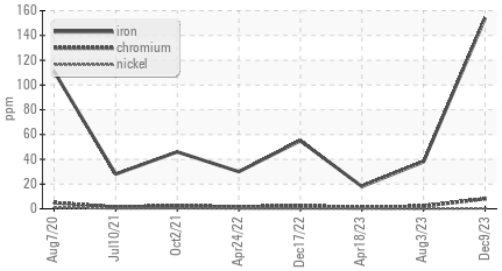
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**75.0**	30.5	20.6

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

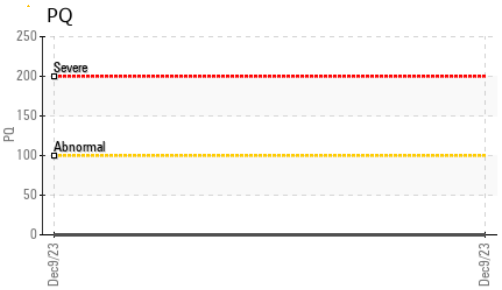
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	**12.0**	10.4	10.3

GRAPHS

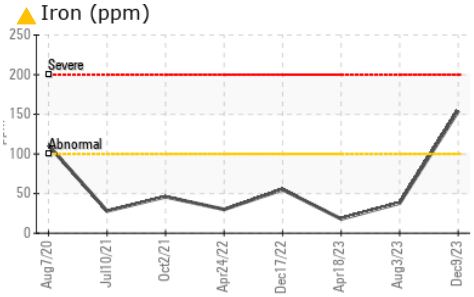
Ferrous Alloys



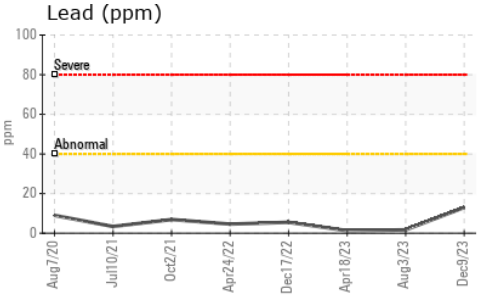
PQ



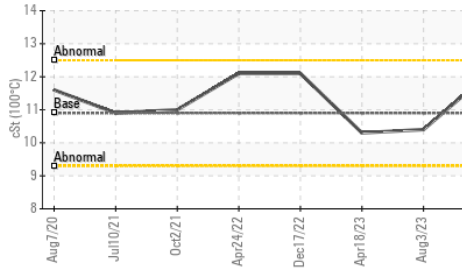
Iron (ppm)



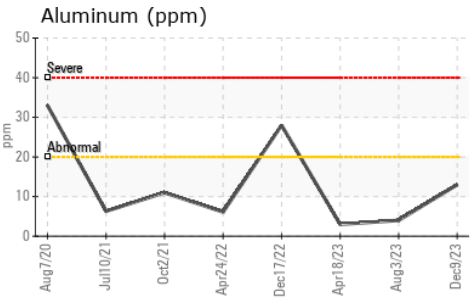
Lead (ppm)



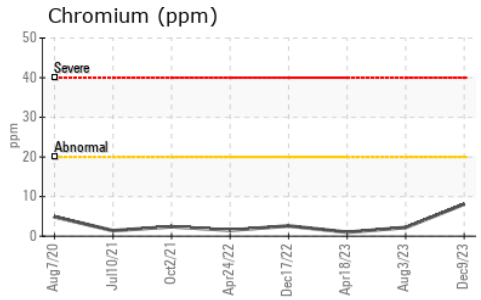
Viscosity @ 100°C



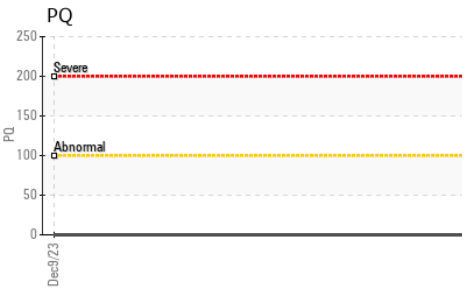
Aluminum (ppm)



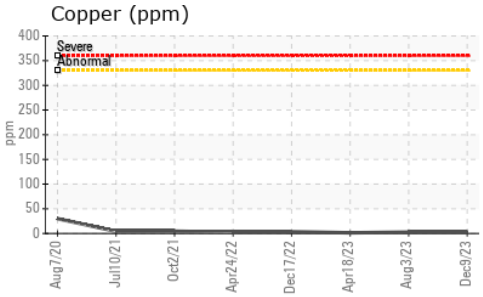
Chromium (ppm)



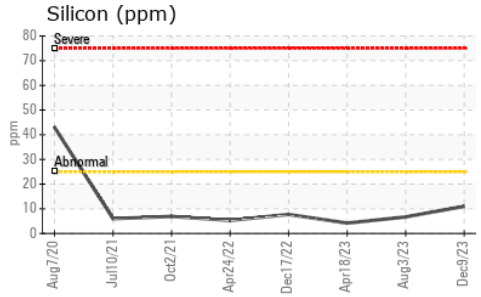
PQ



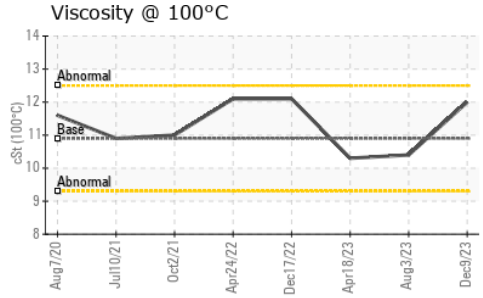
Copper (ppm)



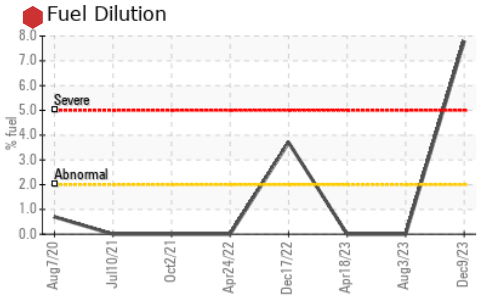
Silicon (ppm)



Viscosity @ 100°C



Fuel Dilution



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0853232 **Received** : 12 Dec 2023
Lab Number : 02602507 **Diagnosed** : 13 Dec 2023
Unique Number : 5695592 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: FUELDILUTION, PercentFuel, PQ)

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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