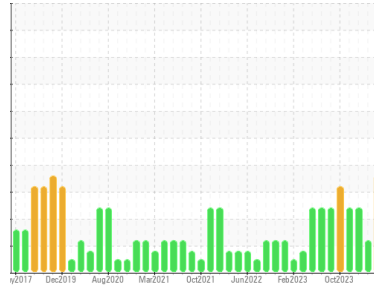




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
NEW FLYER 1212
 Component
Diesel Engine
 Fluid
SAFETY-KLEEN PERFORMANCE PLUS XHD-7 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Check for low coolant level. 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. Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. Tests confirm the presence of fuel in the oil.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants. The condition of the oil is acceptable for the time in service (see recommendation).

SAMPLE INFORMATION

method	limit/base	current	history1	history2	
Sample Number	Client Info	WC0917545	WC0890926	WC0891041	
Sample Date	Client Info	28 Mar 2024	13 Feb 2024	04 Jan 2024	
Machine Age	kms	Client Info	865226	856048	846596
Oil Age	kms	Client Info	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A	
Sample Status		ABNORMAL	ATTENTION	ABNORMAL	

CONTAMINATION

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

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m) >75	16	8	17
Chromium	ppm	ASTM D5185(m) >5	<1	<1	<1
Nickel	ppm	ASTM D5185(m) >4	0	<1	<1
Titanium	ppm	ASTM D5185(m) >2	0	0	0
Silver	ppm	ASTM D5185(m) >2	0	0	0
Aluminum	ppm	ASTM D5185(m) >15	1	2	2
Lead	ppm	ASTM D5185(m) >25	<1	<1	1
Copper	ppm	ASTM D5185(m) >100	2	1	4
Tin	ppm	ASTM D5185(m) >4	0	0	0
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)	4	2	8
Barium	ppm	ASTM D5185(m)	0	0	0
Molybdenum	ppm	ASTM D5185(m)	87	70	139
Manganese	ppm	ASTM D5185(m)	0	0	0
Magnesium	ppm	ASTM D5185(m)	937	906	907
Calcium	ppm	ASTM D5185(m)	976	940	985
Phosphorus	ppm	ASTM D5185(m)	1034	1014	1077
Zinc	ppm	ASTM D5185(m)	1133	1123	1075
Sulfur	ppm	ASTM D5185(m)	2458	2656	2668
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m) >25	8	5	15
Sodium	ppm	ASTM D5185(m)	338	160	804
Potassium	ppm	ASTM D5185(m) >20	209	91	489
Fuel	%	ASTM D7593* >3.0	4.1	<1.0	<1.0
Glycol	%	ASTM D7922*	0.0	0.0	0.0

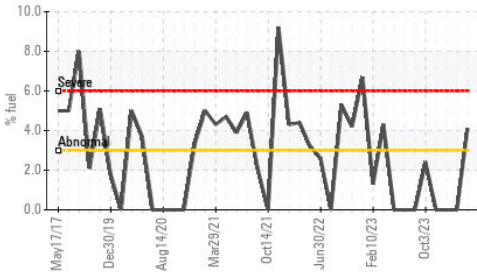
INFRA-RED

method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844* >6	0.7	0.4	0.7
Nitration	Abs/cm	ASTM D7624* >20	9.4	7.3	10.3
Sulfation	Abs./1mm	ASTM D7415* >30	21.4	20.6	22.4



OIL ANALYSIS REPORT

▲ Fuel Dilution



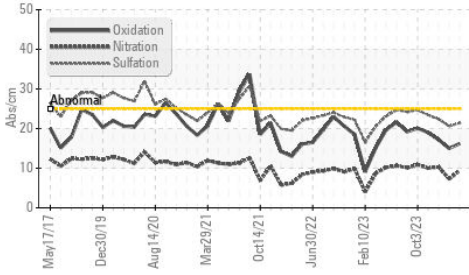
FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	16.2	15.0	17.2

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

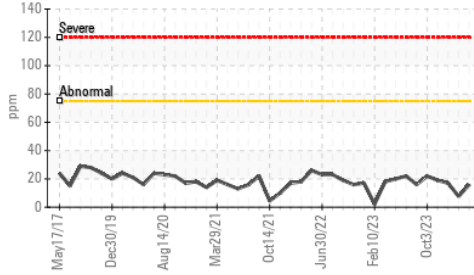
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D7279(m)	15.7	▲ 13.1	13.9	13.1

GRAPHS

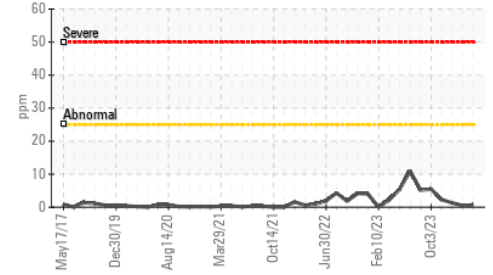
● FT-IR (Direct Trend)



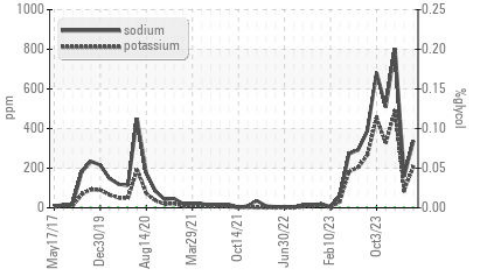
Iron (ppm)



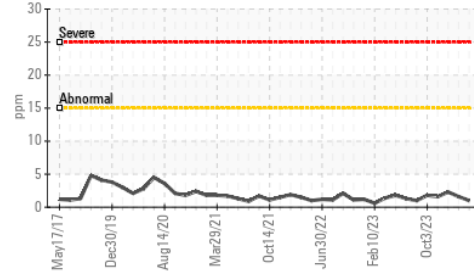
Lead (ppm)



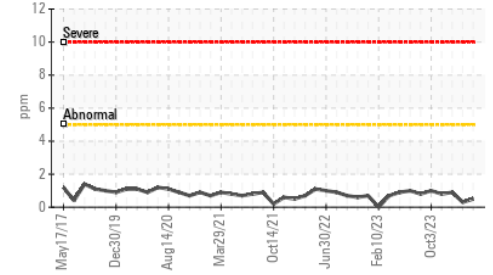
Glycol Contamination



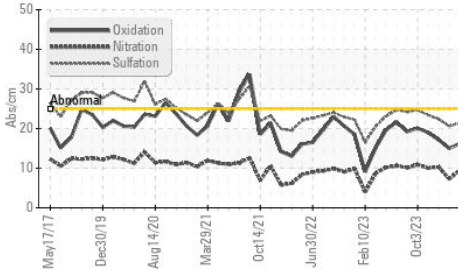
Aluminum (ppm)



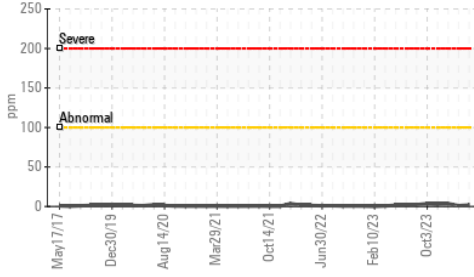
Chromium (ppm)



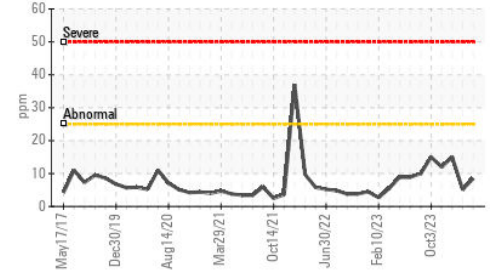
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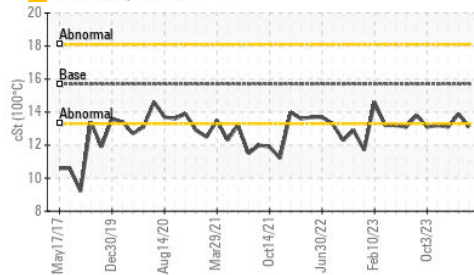
Copper (ppm)



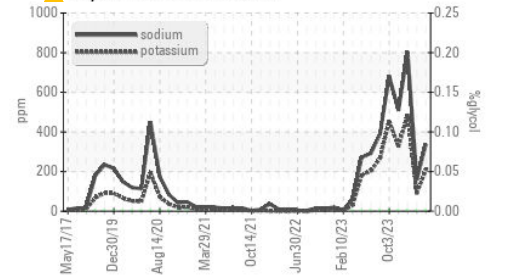
Silicon (ppm)



▲ Viscosity @ 100°C



▲ Glycol Contamination



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0917545 **Received** : 04 Apr 2024
Lab Number : 02626566 **Tested** : 05 Apr 2024
Unique Number : 5759698 **Diagnosed** : 05 Apr 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: FuelDilution, Glycol, PercentFuel)

CITY OF HAMILTON
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 jeff.parr@hamilton.ca
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 F: (905)679-4502

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.