

OIL ANALYSIS REPORT

Sample Rating Trend

method



history2

history1



NEW FLYER 1001

Component **Diesel Engine**

SAFETY-KLEEN PERFORMANCE PLUS XHD-7 15W40 (--- GAL)

SAMPLE INFORMATION

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

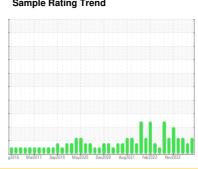
Metal levels are typical for a new component breaking in.

Contamination

There is a moderate amount of fuel present in the oil. 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.



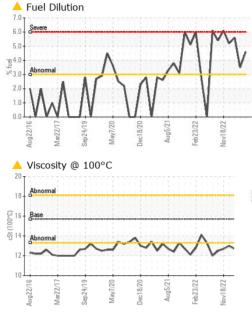
current

limit/base

			IIIIII/Dase	Current	HISTORY	HISTOTYZ
Sample Number		Client Info		WC0830126	WC0767121	WC0811525
Sample Date		Client Info		08 Aug 2023	23 Jun 2023	31 May 2023
Machine Age	kms	Client Info		13740	5985	0
Oil Age	kms	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
				-		
CONTAMINATION	V	method	limit/base	current	history1	history2
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>75	21	13	24
Chromium	ppm	ASTM D5185(m)		<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	0	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)		1	1	4
Lead	ppm	ASTM D5185(m)	>25	0	0	0
		ASTM D5185(m)	>100	<1	<1	<1
Copper Tin	ppm	. ,		0		0
	ppm	ASTM D5185(m)	>4		0	
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
ADDITIVES		memou	IIIIII/Dase	Current	TilStory	1113101 y 2
Boron	ppm	ASTM D5185(m)	IIIII/Dase	1	<1	<1
	ppm ppm		iiiiiivbase			
Boron		ASTM D5185(m)	IIIIII/Dase	1	<1	<1
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	IIIIII/Dase	1 0	<1 0	<1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	iiiiii/Jase	1 0 57	<1 0 57	<1 0 58
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	iiiiii/Jase	1 0 57 <1	<1 0 57 <1	<1 0 58 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	iiiiii/Jase	1 0 57 <1 941	<1 0 57 <1 957	<1 0 58 <1 941
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185(m)	IIIIII VASE	1 0 57 <1 941 1007	<1 0 57 <1 957 1039	<1 0 58 <1 941 1031
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	IIIIII VASE	1 0 57 <1 941 1007 984	<1 0 57 <1 957 1039 1063	<1 0 58 <1 941 1031 1009
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185(m)	IIIIII VASE	1 0 57 <1 941 1007 984 1141	<1 0 57 <1 957 1039 1063 1195	<1 0 58 <1 941 1031 1009
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base	1 0 57 <1 941 1007 984 1141 2375	<1 0 57 <1 957 1039 1063 1195 2559	<1 0 58 <1 941 1031 1009 1137 2348
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base	1 0 57 <1 941 1007 984 1141 2375 <1	<1 0 57 <1 957 1039 1063 1195 2559 <1 history1	<1 0 58 <1 941 1031 1009 1137 2348 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)		1 0 57 <1 941 1007 984 1141 2375 <1 current	<1 0 57 <1 957 1039 1063 1195 2559 <1 history1	<1 0 58 <1 941 1031 1009 1137 2348 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base >25	1 0 57 <1 941 1007 984 1141 2375 <1 current 6	<1 0 57 <1 957 1039 1063 1195 2559 <1 history1 4 1	<1 0 58 <1 941 1031 1009 1137 2348 <1 history2 8 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base >25 >20	1 0 57 <1 941 1007 984 1141 2375 <1 current 6 2 <1	<1 0 57 <1 957 1039 1063 1195 2559 <1 history1 4 1 <1	<1 0 58 <1 941 1031 1009 1137 2348 <1 history2 8 3 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base >25	1 0 57 <1 941 1007 984 1141 2375 <1 current 6	<1 0 57 <1 957 1039 1063 1195 2559 <1 history1 4 1	<1 0 58 <1 941 1031 1009 1137 2348 <1 history2 8 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base >25 >20	1 0 57 <1 941 1007 984 1141 2375 <1 current 6 2 <1	<1 0 57 <1 957 1039 1063 1195 2559 <1 history1 4 1 <1	<1 0 58 <1 941 1031 1009 1137 2348 <1 history2 8 3 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base >25 >20 >3.0	1 0 57 <1 941 1007 984 1141 2375 <1 current 6 2 <1 4.6	<1 0 57 <1 957 1039 1063 1195 2559 <1 history1 4 1 <1 <1 ▲ 3.5	<1 0 58 <1 941 1031 1009 1137 2348 <1 history2 8 3 1 ▲ 5.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base >25 >20 >3.0 limit/base	1 0 57 <1 941 1007 984 1141 2375 <1 current 6 2 <1 ▲ 4.6	<1 0 57 <1 957 1039 1063 1195 2559 <1 history1 4 1 <1 <1 ▲ 3.5 history1	<1 0 58 <1 941 1031 1009 1137 2348 <1 history2 8 3 1 • 5.6 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7593* method ASTM D7844*	limit/base >25 >20 >3.0 limit/base >6	1 0 57 <1 941 1007 984 1141 2375 <1 current 6 2 <1 ▲ 4.6 current 0.7	<1 0 57 <1 957 1039 1063 1195 2559 <1 history1 4 1 <1 <1 △ 3.5 history1 0.3	<1 0 58 <1 941 1031 1009 1137 2348 <1 history2 8 3 1 ▲ 5.6 history2 0.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7593* method ASTM D7593* method ASTM D7844* ASTM D7624* ASTM D7615*	limit/base >25 >20 >3.0 limit/base >6 >20 >30	1 0 57 <1 941 1007 984 1141 2375 <1 current 6 2 <1 ▲ 4.6 current 0.7 11.3 25.5	<1 0 57 <1 957 1039 1063 1195 2559 <1 history1 4 1 <1 <1 △ 3.5 history1 0.3 8.5 21.9	<1 0 58 <1 941 1031 1009 1137 2348 <1 history2 8 3 1 ▲ 5.6 history2 0.6 10.9 22.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7593* method ASTM D7593*	limit/base >25 >20 >3.0 limit/base >6 >20	1 0 57 <1 941 1007 984 1141 2375 <1 current 6 2 <1 ▲ 4.6 current 0.7 11.3	<1 0 57 <1 957 1039 1063 1195 2559 <1 history1 4 1 <1 <1 3.5 history1 0.3 8.5	<1 0 58 <1 941 1031 1009 1137 2348 <1 history2 8 3 1 ▲ 5.6 history2 0.6 10.9



OIL ANALYSIS REPORT



VISUAL		method		limit/l	limit/base		current			history1			history2		
mulsified Water scalar			sual*	>0.2	>0.2		NEG		NEG			NEG			
Free Water	ree Water scalar		r Vis	sual*			NEG			NEG			NEG		
FLUID PF	ROPER	TIES	n	nethod	limit/l	base	(curre	nt	h	nistory	1	hi	story	
/isc @ 100°	°C	cSt ASTM D7279(I		15.7	7 🔺 13.1			13.6			▲ 12.7				
GRAPHS															
Iron (ppm	1)					60		d (pp	m)						
Severe						50	Smion								
1000000000						40									
Abnormal						틆30	Abno	mal							
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Aug22/16 Mar22/17	Sep24/19	Dec18/20	Aug	Feb23/22	Nov18/22		Aug22/16	Mar22/17	Sep24/19	Мау	Dec18/20	Aug	Feb23/22	Nov18/22	
Aluminum	(ppm)					12		omiu	m (pį	pm)					
Severe						10	Savara				-				
						8	-								
Abnormal				***********		mdd 6	Abno	mal	щ			Hill		HH.	
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		Dec	Au	Pep	Nov					Ma	Dec	Au	Feb	Nov	
Copper (p	pm)					60		on (p	ppm)						
Severe						50	Severe								
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Abnormal						g 30	0	mal	11:11					1111	
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Aug22/16 Mar22/17	Sep24/19 Mav7/20	Dec18/20	Aug5/21	Feb23/22	Nov18/22		Aug22/16	Mar22/17	Sep24/19	May7/20	Dec18/20	Aug5/21	Feb23/22	Nov18/22	
Aug Ma	Sep	Dec	A	Feb	Nov		Aug	Ma	Sep	ž	Dec	A	-Be	Nov	



CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number : 5620688

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

: WC0830126 : 02575637

Received Diagnosed

: 14 Aug 2023 : 15 Aug 2023 Diagnostician : Wes Davis

Test Package : MOB 1 (Additional Tests: PercentFuel)

CITY OF HAMILTON 2200 UPPER JAMES,, MOUNTAIN TRANSIT STOREROOM MOUNT HOPE, ON CA LOR 1W0 Contact: Jeff Parr

jeff.parr@hamilton.ca T: (905)546-2424 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.