

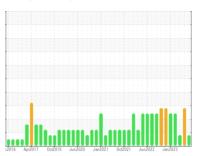
OIL ANALYSIS REPORT



NEW FLYER 0817

Component **Diesel Engine**

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



Sample Rating Trend



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

Fluid Condition

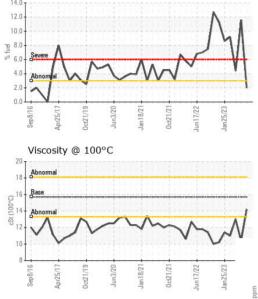
The condition of the oil is acceptable for the time in service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0849821	WC0811372	WC0811451
Sample Date		Client Info		01 Sep 2023	14 Jun 2023	01 May 2023
Machine Age	kms	Client Info		0	0	116141
Oil Age	kms	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				MARGINAL	SEVERE	MARGINAL
CONTAMINATION	١	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	11	20	7
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	0	0	0
Titanium	ppm	ASTM D5185(m)	>2	0	0	<1
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>15	2	3	2
Lead	ppm	ASTM D5185(m)	>25	0	<1	0
Copper	ppm	ASTM D5185(m)	>100	6	2	<1
Tin	ppm	ASTM D5185(m)	>4	0	<1	0
Antimony	ppm	ASTM D5185(m)		0	<1	<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 Boron	ppm	method ASTM D5185(m)	limit/base	current 1	history1 <1	history2 0
	ppm ppm		limit/base			-
Boron		ASTM D5185(m)	limit/base	1 0 55	<1	0
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	limit/base	1 0	<1	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	1 0 55	<1 0 50	0 0 56
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	1 0 55 <1	<1 0 50 <1	0 0 56 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	1 0 55 <1 943	<1 0 50 <1 814	0 0 56 <1 920
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185(m)	limit/base	1 0 55 <1 943 1015	<1 0 50 <1 814 920	0 0 56 <1 920 1021
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base	1 0 55 <1 943 1015 1079	<1 0 50 <1 814 920 914	0 0 56 <1 920 1021 1053
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base	1 0 55 <1 943 1015 1079	<1 0 50 <1 814 920 914 1020	0 0 56 <1 920 1021 1053 1141
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 55 <1 943 1015 1079 1170 2626 <1	<1 0 50 <1 814 920 914 1020 2228	0 0 56 <1 920 1021 1053 1141 2613
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)		1 0 55 <1 943 1015 1079 1170 2626 <1	<1 0 50 <1 814 920 914 1020 2228 <1	0 0 56 <1 920 1021 1053 1141 2613
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 55 <1 943 1015 1079 1170 2626 <1	<1 0 50 <1 814 920 914 1020 2228 <1	0 0 56 <1 920 1021 1053 1141 2613 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base	1 0 55 <1 943 1015 1079 1170 2626 <1 current	<1 0 50 <1 814 920 914 1020 2228 <1 history1	0 0 56 <1 920 1021 1053 1141 2613 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base >25	1 0 55 <1 943 1015 1079 1170 2626 <1 current 3	<1 0 50 <1 814 920 914 1020 2228 <1 history1 3	0 0 56 <1 920 1021 1053 1141 2613 <1 history2 2
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 55 <1 943 1015 1079 1170 2626 <1 current 3	<1 0 50 <1 814 920 914 1020 2228 <1 history1 3 2 <1	0 0 56 <1 920 1021 1053 1141 2613 <1 history2 2 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 55 <1 943 1015 1079 1170 2626 <1 current 3 3 1	<1 0 50 <1 814 920 914 1020 2228 <1 history1 3 2 <1 11.6	0 0 56 <1 920 1021 1053 1141 2613 <1 history2 2 1 <1 4.4
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) ASTM D7593*	limit/base >25 >20 >3.0 limit/base	1 0 55 <1 943 1015 1079 1170 2626 <1 current 3 3 1 2 current 0	<1 0 50 <1 814 920 914 1020 2228 <1 history1 3 2 <1	0 0 56 <1 920 1021 1053 1141 2613 <1 history2 2 1 <1 ▲ 4.4
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)	limit/base >25 >20 >3.0 limit/base >6	1 0 55 <1 943 1015 1079 1170 2626 <1 current 3 3 1	<1 0 50 <1 814 920 914 1020 2228 <1 history1 3 2 <1 11.6 history1	0 0 56 <1 920 1021 1053 1141 2613 <1 history2 2 1 <1 4.4 history2
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 D7844* ASTM D7624*	limit/base >25 >20 >3.0 limit/base >6 >20	1 0 55 <1 943 1015 1079 1170 2626 <1 current 3 3 1 2 current 0 5.6	<1 0 50 <1 814 920 914 1020 2228 <1 history1 3 2 <1 11.6 history1 0.5 10.3	0 0 56 <1 920 1021 1053 1141 2613 <1 history2 2 1 <1 △ 4.4 history2 0.1 5.7



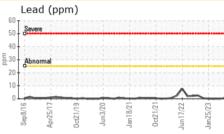
Fuel Dilution

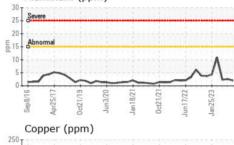
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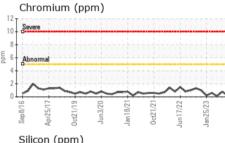


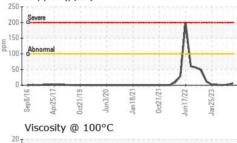
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	VLITE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	NORML		
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPERT	TES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.7	14.2	10.4	13.0

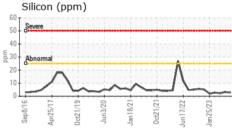
Severe						
Abnormal						
^					Λ	
\	<u>~</u>	<u>~~</u>	~	~		~~
Sep8/16 Apr25/17	Oct21/19	Jun3/20	Jan 18/2	0ct21/21	Jun17/22	Jan25/23
Aluminu	n (pp	m)				
Tanananan	THE PARTY		THE TAX			

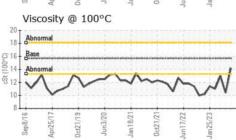


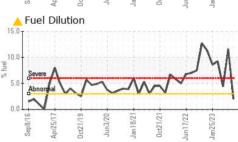














CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number **Unique Number**

: 5633675

: WC0849821 : 02580615

To discuss this sample report, contact Customer Service at 1-800-268-2131.

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

: 06 Sep 2023 Diagnosed : 07 Sep 2023 Diagnostician : Wes Davis

Test Package : MOB 1 (Additional Tests: PercentFuel, Visual)

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

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.

F: (905)679-4502