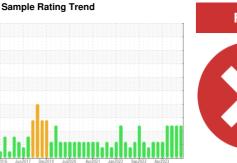


OIL ANALYSIS REPORT







NEW FLYER 0816

Component **Diesel Engine**

SAFETY-KLEEN PERFORMAN

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. 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 high 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 history1 Sample Number Client Info WC0849708 WC0849699 WC083011 Sample Date Client Info 23 Oct 2023 09 Sep 2023 26 Jul 2023 Machine Age kms Client Info 127016 116457 0 0 0 0 0 0 0 0 0	E PLUS XHD-7 15W40) (GAL	, .1.11 ,	Hldum			
Sample Number Client Info WC0849708 WC0849699 WC083011 Sample Date Client Info 23 Oct 2023 09 Sep 2023 26 Jul 2023 Machine Age kms Client Info 0 0 0 0 0 0 0 0 0		` .	t2016 Jun20	limit/base	Apr2021 Jan2022 Sep2022	history1	history2
Oil Age kms Client Info 0 0 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status SEVERE SEVERE SEVERE SEVERE SEVERE CONTAMINATION method limit/base current history1 history1 WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185(m) >75 29 33 29 Chromium ppm ASTM D5185(m) >4 0 0 0 Chromium ppm ASTM D5185(m) >4 0 0 0 Chromium ppm ASTM D5185(m) >4 0 0 0 Chromium ppm ASTM D5185(m) >2 1 1 1 Nickel ppm ASTM D5185(m) >2 <1 0 0 Silver ppm ASTM D5185(m) >20 <1 <1	•					WC0849699	WC0830115
Oil Changed Sample Status Client Info N/A N/A N/A N/A CONTAMINATION method limit/base current history1 history1 Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185(m) >75 29 33 29 Chromium ppm ASTM D5185(m) >5 1 1 1 1 Nickel ppm ASTM D5185(m) >4 0 0 0 0 Glycer ppm ASTM D5185(m) >2 0 0 0 0 Glycer ppm ASTM D5185(m) >2 0 0 0 0 Chromium ppm ASTM D5185(m) >2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 <t< td=""><td>Machine Age</td><td>kms</td><td>Client Info</td><td></td><td>127016</td><td>116457</td><td>0</td></t<>	Machine Age	kms	Client Info		127016	116457	0
Sample Status	Oil Age	kms	Client Info		0	0	0
CONTAMINATION	Oil Changed		Client Info		N/A	N/A	
WEAR METALS method limit/base current history1 history1	Sample Status				SEVERE	SEVERE	SEVERE
WEAR METALS method limit/base current history1 history Irron ppm ASTM D5185(m) >75 29 33 29 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 0 Silver ppm ASTM D5185(m) >2 -1 0 0 Aluminum ppm ASTM D5185(m) >2 -1 0 0 Aluminum ppm ASTM D5185(m) >100 <1	CONTAMINATIO	N	method	limit/base	current	history1	history2
	Glycol		WC Method		NEG	NEG	NEG
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 0 Silver ppm ASTM D5185(m) >2 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185(m)	>75	29	33	29
Titanium	Chromium	ppm	ASTM D5185(m)	>5	1	1	1
Silver ppm ASTM D5185(m) >2 <1 0 0 Aluminum ppm ASTM D5185(m) >15 <1	Nickel	ppm	ASTM D5185(m)	>4	0	0	0
Aluminum ppm ASTM D5185(m) >15 <1 2 1 Lead ppm ASTM D5185(m) >25 0 <1	Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Lead	Silver	ppm	ASTM D5185(m)	>2	<1	0	0
Copper ppm ASTM D5185(m) >100 <1 <1 <1 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 Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 1 1 <1	Aluminum	ppm	ASTM D5185(m)	>15	<1	2	1
Tin ppm ASTM D5185(m) >4 0 0 0 0 Antimony ppm ASTM D5185(m) 0 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185(m) 1 1 1 <1 Barium ppm ASTM D5185(m) <1 0 0 Molybdenum ppm ASTM D5185(m) 55 54 57 Manganese ppm ASTM D5185(m) 0 <1 <1 Magnesium ppm ASTM D5185(m) 876 881 925 Calcium ppm ASTM D5185(m) 952 946 952 Phosphorus ppm ASTM D5185(m) 853 914 951 Zinc ppm ASTM D5185(m) 1063 1068 1106 Sulfur ppm ASTM D5185(m) 1063 1068 1106 Sulfur ppm ASTM D5185(m) 2250 2245 2334 Lithium ppm ASTM D5185(m) <1 <1 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >25 3 5 6 Sodium ppm ASTM D5185(m) >25 3 5 6	Lead	ppm	ASTM D5185(m)	>25	0	<1	<1
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 history Boron ppm ASTM D5185(m) 1 1 <1	Copper	ppm	ASTM D5185(m)	>100	<1	<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 history Boron ppm ASTM D5185(m) 1 1 <1 <1 Barium ppm ASTM D5185(m) <1 0 0 0 Molybdenum ppm ASTM D5185(m) 55 54 57 Manganese ppm ASTM D5185(m) 0 <1 <1 Magnesium ppm ASTM D5185(m) 876 881 925 Calcium ppm ASTM D5185(m) 952 946 952 Phosphorus ppm ASTM D5185(m) 853 914 951 Zinc ppm ASTM D5185(m) 2250 2245 2334 Lithium ppm ASTM D5185(m) <1	Tin	ppm	ASTM D5185(m)	>4	0	0	0
Beryllium	Antimony	ppm	ASTM D5185(m)		0	0	0
Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185(m) 1 1 <1	Vanadium	ppm	ASTM D5185(m)				0
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 1 1 <1	Beryllium	ppm	ASTM D5185(m)		0	0	0
Boron ppm ASTM D5185(m) 1 1 1 1 1 1 1 1 1	Cadmium	ppm	ASTM D5185(m)		0	0	0
Barium	ADDITIVES		method	limit/base	current	history1	history
Molybdenum ppm ASTM D5185(m) 55 54 57 Manganese ppm ASTM D5185(m) 0 <1 <1 Magnesium ppm ASTM D5185(m) 876 881 925 Calcium ppm ASTM D5185(m) 952 946 952 Phosphorus ppm ASTM D5185(m) 853 914 951 Zinc ppm ASTM D5185(m) 1063 1068 1106 Sulfur ppm ASTM D5185(m) 2250 2245 2334 Lithium ppm ASTM D5185(m) <1 <1 <1 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >25 3 5 6 Sodium ppm ASTM D5185(m) 3 4 4	Boron	ppm	ASTM D5185(m)		1	1	<1
Manganese ppm ASTM D5185(m) 0 <1 <1 Magnesium ppm ASTM D5185(m) 876 881 925 Calcium ppm ASTM D5185(m) 952 946 952 Phosphorus ppm ASTM D5185(m) 853 914 951 Zinc ppm ASTM D5185(m) 1063 1068 1106 Sulfur ppm ASTM D5185(m) 2250 2245 2334 Lithium ppm ASTM D5185(m) <1	Barium	ppm	ASTM D5185(m)		<1	0	0
Magnesium ppm ASTM D5185(m) 876 881 925 Calcium ppm ASTM D5185(m) 952 946 952 Phosphorus ppm ASTM D5185(m) 853 914 951 Zinc ppm ASTM D5185(m) 1063 1068 1106 Sulfur ppm ASTM D5185(m) 2250 2245 2334 Lithium ppm ASTM D5185(m) <1 <1 <1 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >25 3 5 6 Sodium ppm ASTM D5185(m) 3 4 4	Molybdenum	ppm	ASTM D5185(m)		55	54	57
Calcium ppm ASTM D5185(m) 952 946 952 Phosphorus ppm ASTM D5185(m) 853 914 951 Zinc ppm ASTM D5185(m) 1063 1068 1106 Sulfur ppm ASTM D5185(m) 2250 2245 2334 Lithium ppm ASTM D5185(m) <1	Manganese	ppm	ASTM D5185(m)		0	<1	<1
Phosphorus ppm ASTM D5185(m) 853 914 951 Zinc ppm ASTM D5185(m) 1063 1068 1106 Sulfur ppm ASTM D5185(m) 2250 2245 2334 Lithium ppm ASTM D5185(m) <1 <1 <1 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185(m) >25 3 5 6 Sodium ppm ASTM D5185(m) 3 4 4	Magnesium	ppm	ASTM D5185(m)		876	881	925
Zinc ppm ASTM D5185(m) 1063 1068 1106 Sulfur ppm ASTM D5185(m) 2250 2245 2334 Lithium ppm ASTM D5185(m) <1 <1 <1 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185(m) >25 3 5 6 Sodium ppm ASTM D5185(m) 3 4 4	Calcium	ppm	ASTM D5185(m)		952	946	952
Sulfur ppm ASTM D5185(m) 2250 2245 2334 Lithium ppm ASTM D5185(m) <1 <1 <1 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >25 3 5 6 Sodium ppm ASTM D5185(m) 3 4 4	Phosphorus	ppm			853	914	
Lithium ppm ASTM D5185(m) <1 <1 <1 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185(m) >25 3 5 6 Sodium ppm ASTM D5185(m) 3 4 4		ppm			1063		
CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >25 3 5 6 Sodium ppm ASTM D5185(m) 3 4 4		ppm	, ,				
Silicon ppm ASTM D5185(m) >25 3 5 6 Sodium ppm ASTM D5185(m) 3 4 4	Lithium	ppm	ASTM D5185(m)		<1	<1	<1
Sodium ppm ASTM D5185(m) 3 4 4	CONTAMINANT	S	method	limit/base	current	history1	history2
	Silicon	ppm	ASTM D5185(m)	>25	3	5	6
Potassium ppm ASTM D5185(m) >20 <1 2 2	Sodium	ppm	ASTM D5185(m)		3	4	4
	Potassium	ppm	ASTM D5185(m)	>20	<1	2	2

Fuel

Soot %

Nitration

Sulfation

Oxidation

INFRA-RED

FLUID DEGRADATION

%

%

Abs/.1mm

ASTM D7593* >3.0

ASTM D7844*

ASTM D7415*

Abs/cm ASTM D7624* >20

>6

>30

0.7

11.6

25.1

26.8

1

12.0

25.4

25.9

7.5

0.7

11.2

25.8

history2



OIL ANALYSIS REPORT





CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number

cSt (100°C)

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 : WC0849708 : 02592318

Received : 5669397

: 27 Oct 2023 Diagnosed : 30 Oct 2023

Diagnostician : Kevin Marson Test Package : MOB 1 (Additional Tests: PercentFuel)

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

10.0 8.0

0.0

Contact: Jeff Parr jeff.parr@hamilton.ca 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. T: (905)546-2424 Validity of results and interpretation are based on the sample and information as supplied. F: (905)679-4502