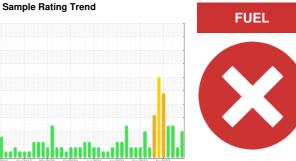


## **OIL ANALYSIS REPORT**

# ORT





# NEW FLYER 1011

**Diesel Engine** 

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

## 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.

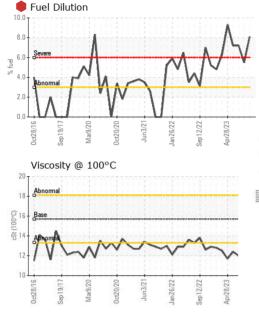
#### **Fluid Condition**

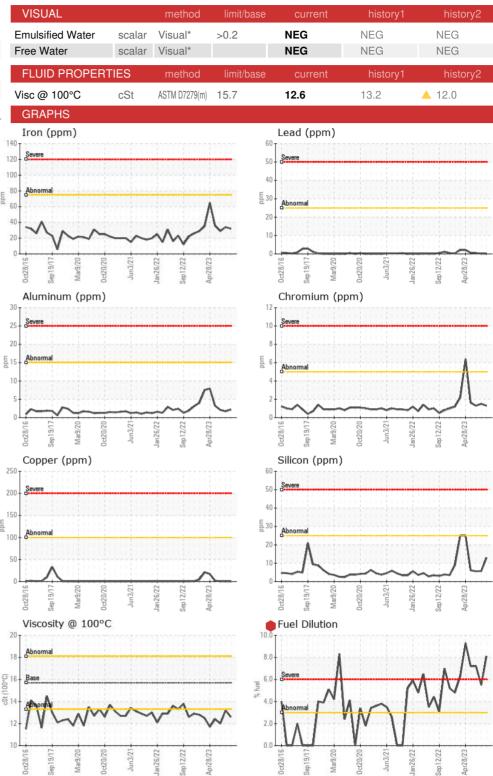
The oil is no longer serviceable due to the presence of contaminants.

E PLUS XHD-7 15W40	) ( GAL)	t2016 Sep20	17 Mar2020 Oct2020	Jun2021 Jan2022 Sep2022	Apr2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0830087	WC0849937	WC0830166
Sample Date		Client Info		22 Oct 2023	12 Sep 2023	22 Jul 2023
Machine Age	kms	Client Info		148099	138113	0
Oil Age	kms	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	ABNORMAL	SEVERE
CONTAMINATIO	N	method	limit/base	current	history1	history2
Glycol		WC Method		NEG	0.0	0.0
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>75	32	34	29
Chromium	ppm	ASTM D5185(m)	>5	1	2	1
Nickel	ppm	ASTM D5185(m)	>4	<1	0	0
Titanium	ppm	ASTM D5185(m)	>2	0	<1	0
Silver	ppm	ASTM D5185(m)	>2	<1	0	0
Aluminum	ppm	ASTM D5185(m)	>15	2	2	2
Lead	ppm	ASTM D5185(m)	>25	<1	<1	<1
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
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)		1	<1	4
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)		1 <1	<1	4
Barium						
Barium Molybdenum	ppm	ASTM D5185(m)		<1	0	0
Barium Molybdenum Manganese	ppm ppm	ASTM D5185(m) ASTM D5185(m)		<1 57	0 57	0 57
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		<1 57 0	0 57 <1	0 57 <1
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		<1 57 0 900	0 57 <1 919 997	0 57 <1 927 1024
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185(m)		<1 57 0 900 991	0 57 <1 919	0 57 <1 927
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m)		<1 57 0 900 991 889 1096	0 57 <1 919 997 969 1118	0 57 <1 927 1024 958 1123
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185(m)		<1 57 0 900 991 889	0 57 <1 919 997 969	0 57 <1 927 1024 958
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base	<1 57 0 900 991 889 1096 2256	0 57 <1 919 997 969 1118 2300	0 57 <1 927 1024 958 1123 2267
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	limit/base	<1 57 0 900 991 889 1096 2256 <1	0 57 <1 919 997 969 1118 2300 <1	0 57 <1 927 1024 958 1123 2267
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)		<1 57 0 900 991 889 1096 2256 <1 current	0 57 <1 919 997 969 1118 2300 <1 history1	0 57 <1 927 1024 958 1123 2267 <1 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)		<1 57 0 900 991 889 1096 2256 <1 current	0 57 <1 919 997 969 1118 2300 <1	0 57 <1 927 1024 958 1123 2267 <1 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	>25	<1 57 0 900 991 889 1096 2256 <1 current 13 8	0 57 <1 919 997 969 1118 2300 <1 history1	0 57 <1 927 1024 958 1123 2267 <1 history2 6
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	>25 >20	<1 57 0 900 991 889 1096 2256 <1 current 13 8 4	0 57 <1 919 997 969 1118 2300 <1 history1 6 9 7	0 57 <1 927 1024 958 1123 2267 <1 history2 6 19 20
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	>25 >20 >3.0	<1 57 0 900 991 889 1096 2256 <1 current 13 8 4	0 57 <1 919 997 969 1118 2300 <1 history1 6 9 7 ▲ 5.5	0 57 <1 927 1024 958 1123 2267 <1 history2 6 19 20 7.2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185(m) ASTM D7593*	>25 >20 >3.0 limit/base	<1 57 0 900 991 889 1096 2256 <1 current 13 8 4 8.1 current 1.4	0 57 <1 919 997 969 1118 2300 <1 history1 6 9 7 ▲ 5.5 history1 1.3	0 57 <1 927 1024 958 1123 2267 <1 history2 6 19 20 7.2 history2 1.1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185(m)	>25 >20 >3.0 limit/base >6	<1 57 0 900 991 889 1096 2256 <1 current 13 8 4  8.1 current	0 57 <1 919 997 969 1118 2300 <1 history1 6 9 7 ▲ 5.5	0 57 <1 927 1024 958 1123 2267 <1 history2 6 19 20 1,22 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANT Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185(m) ASTM D7844* ASTM D7824*	>25 >20 >3.0 limit/base >6 >20	<1 57 0 900 991 889 1096 2256 <1 current 13 8 4  8.1 current 1.4 12.7	0 57 <1 919 997 969 1118 2300 <1 history1 6 9 7 ▲ 5.5 history1 1.3 12.5	0 57 <1 927 1024 958 1123 2267 <1 history2 6 19 20 ◆ 7.2 history2 1.1 12.3



## **OIL ANALYSIS REPORT**









Laboratory Sample No. Lab Number Unique Number

: 5668811

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 : WC0830087 : 02591732

Validity of results and interpretation are based on the sample and information as supplied.

Received Diagnosed

: 25 Oct 2023

: 26 Oct 2023

Diagnostician : Kevin Marson

Test Package : MOB 1 ( Additional Tests: PercentFuel ) 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. 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