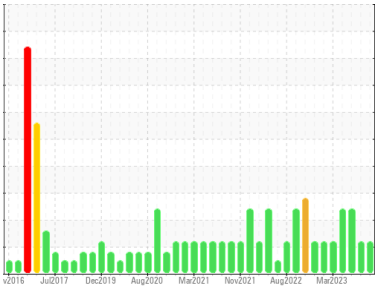
# OIL ANALYSIS REPORT

Sample Rating Trend




**FUEL**

Machine Id
## NEW FLYER 0912
Component
**Diesel Engine**
Fluid
**SAFETY-KLEEN PERFORMANCE PLUS XHD-7 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
The oil change at the time of sampling has been noted. 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. 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.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0849896** | WC0830103 | WC0830316 |
| Sample Date | | Client Info | | **03 Oct 2023** | 14 Aug 2023 | 05 Jul 2023 |
| Machine Age | kms | Client Info | | **305314** | 296420 | 0 |
| Oil Age | kms | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **Changed** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | SEVERE |

| CONTAMINATION | | 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 | **18** | 19 | 35 |
| 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) | >15 | **1** | <1 | 2 |
| Lead | ppm | ASTM D5185(m) | >25 | **<1** | <1 | 2 |
| Copper | ppm | ASTM D5185(m) | >100 | **<1** | <1 | 1 |
| Tin | ppm | ASTM D5185(m) | >4 | **0** | 0 | <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 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | | **1** | 1 | <1 |
| Barium | ppm | ASTM D5185(m) | | **<1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | **56** | 53 | 52 |
| Manganese | ppm | ASTM D5185(m) | | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | | **891** | 882 | 857 |
| Calcium | ppm | ASTM D5185(m) | | **948** | 936 | 954 |
| Phosphorus | ppm | ASTM D5185(m) | | **912** | 959 | 950 |
| Zinc | ppm | ASTM D5185(m) | | **1107** | 1076 | 1070 |
| Sulfur | ppm | ASTM D5185(m) | | **2295** | 2291 | 2226 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

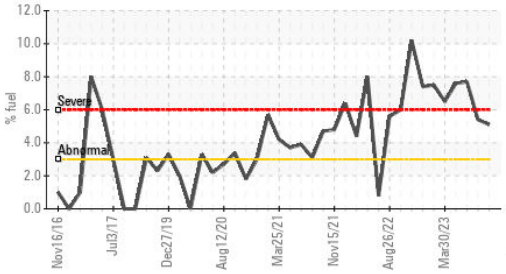
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >25 | **3** | 3 | 4 |
| Sodium | ppm | ASTM D5185(m) | | **2** | 2 | 5 |
| Potassium | ppm | ASTM D5185(m) | >20 | **0** | 0 | <1 |
| Fuel | % | ASTM D7593* | >3.0 | ▲ **5.1** | ▲ 5.4 | ⬢ 7.7 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >6 | **0.3** | 0.3 | 0.4 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **9.4** | 8.1 | 10.1 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **22.7** | 22.4 | 25.0 |

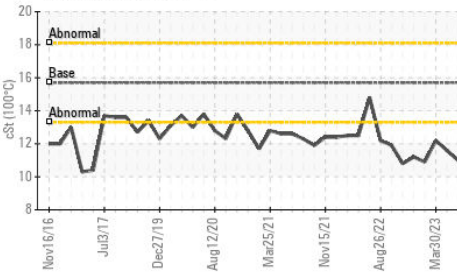
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **22.6** | 20.1 | 26.7 |

# OIL ANALYSIS REPORT

Fuel Dilution




Viscosity @ 100°C

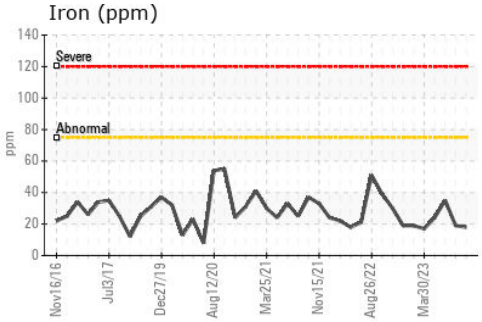



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Emulsified Water | scalar | Visual* | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

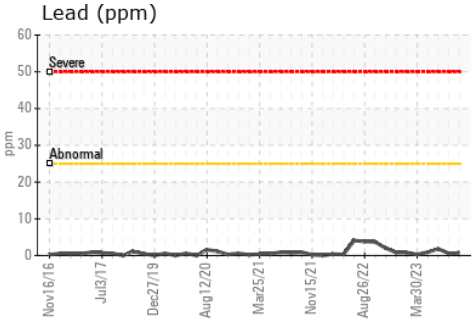
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.7 | ▲ **11.8** | ▲ 12.2 | ▲ 11.0 |

GRAPHS

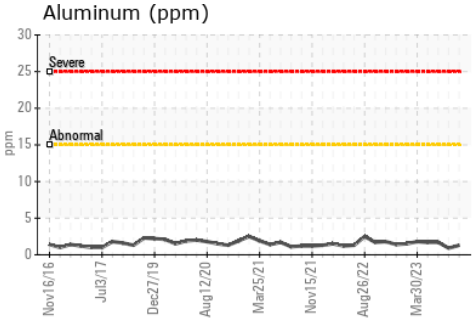
Iron (ppm)



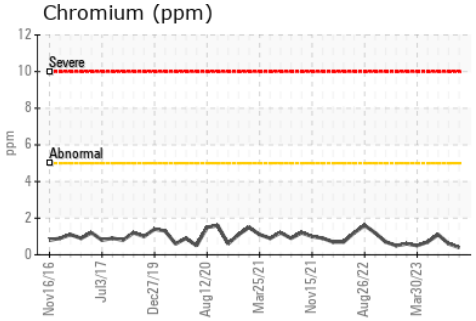

Lead (ppm)



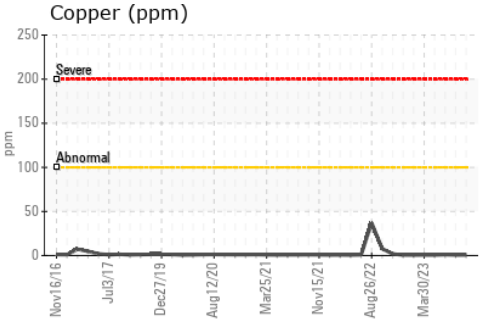

Aluminum (ppm)



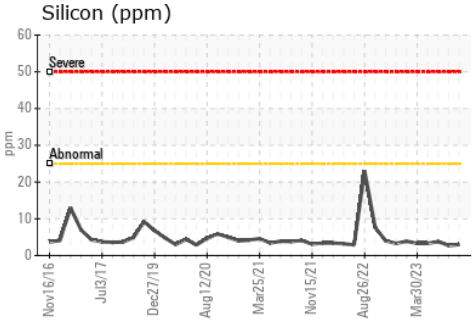

Chromium (ppm)



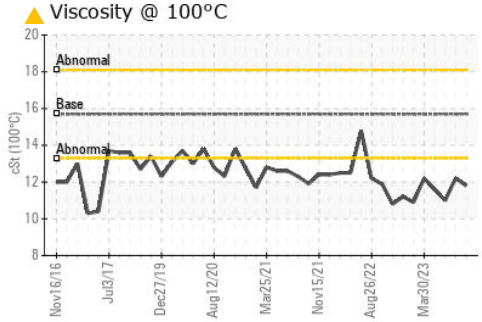

Copper (ppm)



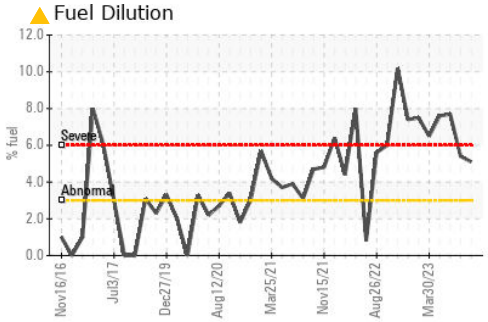

Silicon (ppm)




Viscosity @ 100°C




Fuel Dilution




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0849896 **Received** : 11 Oct 2023
**Lab Number** : 02588216 **Diagnosed** : 12 Oct 2023
**Unique Number** : 5657282 **Diagnostician** : Wes Davis
**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.*
*Validity of results and interpretation are based on the sample and information as supplied.*

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