



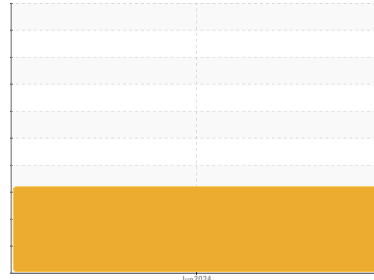
OIL ANALYSIS REPORT

Sample Rating Trend

FUEL



Machine Id
NEWFLYER 1923
Component
Diesel Engine
Fluid
{not provided} (28 QTS)



DIAGNOSIS

▲ Recommendation

We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already 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. There is a moderate amount of visible silt present in the sample.

▲ 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 | | LP0001886 | --- | --- |
| Sample Date | Client Info | | 19 Jun 2024 | --- | --- |
| Machine Age | mls | Client Info | 228727 | --- | --- |
| Oil Age | mls | Client Info | 228727 | --- | --- |
| Oil Changed | Client Info | | N/A | --- | --- |
| Sample Status | | | SEVERE | --- | --- |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.2 | NEG | --- | --- |
| Glycol | WC Method | | NEG | --- | --- |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >75 | 1 | --- | --- |
| Chromium | ppm | ASTM D5185m >5 | 0 | --- | --- |
| Nickel | ppm | ASTM D5185m >4 | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m >2 | <1 | --- | --- |
| Silver | ppm | ASTM D5185m >2 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m >15 | 1 | --- | --- |
| Lead | ppm | ASTM D5185m >25 | <1 | --- | --- |
| Copper | ppm | ASTM D5185m >100 | 0 | --- | --- |
| Tin | ppm | ASTM D5185m >4 | 0 | --- | --- |
| Vanadium | ppm | ASTM D5185m | <1 | --- | --- |
| Cadmium | ppm | ASTM D5185m | <1 | --- | --- |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|-------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 8 | --- | --- |
| Barium | ppm | ASTM D5185m | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | 8 | --- | --- |
| Manganese | ppm | ASTM D5185m | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m | 25 | --- | --- |
| Calcium | ppm | ASTM D5185m | 2054 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 788 | --- | --- |
| Zinc | ppm | ASTM D5185m | 907 | --- | --- |
| Sulfur | ppm | ASTM D5185m | 3698 | --- | --- |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|---------------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 6 | --- | --- |
| Sodium | ppm | ASTM D5185m | <1 | --- | --- |
| Potassium | ppm | ASTM D5185m >20 | 2 | --- | --- |
| Fuel | % | ASTM D3524 >3.0 | ▲ 17.1 | --- | --- |

INFRA-RED

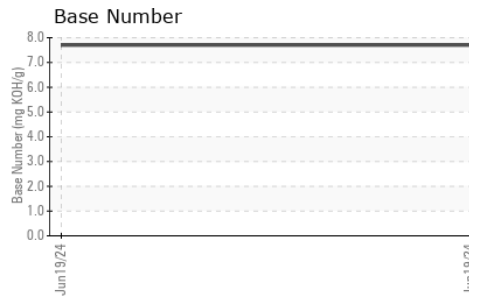
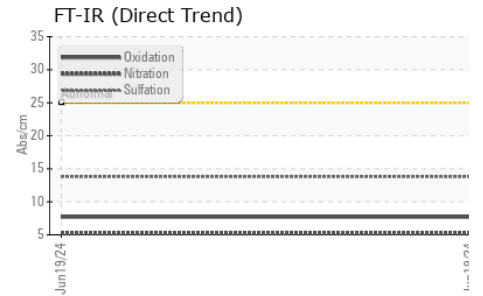
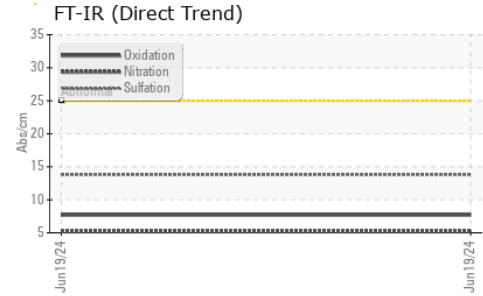
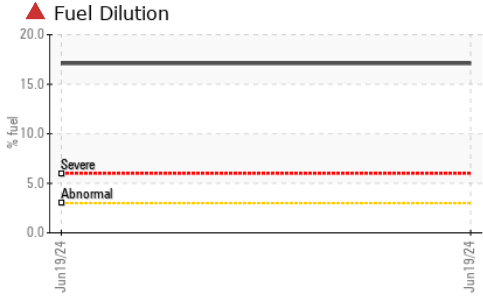
| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >6 | 0.1 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 >20 | 5.2 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 13.8 | --- | --- |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 7.7 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 7.70 | --- | --- |



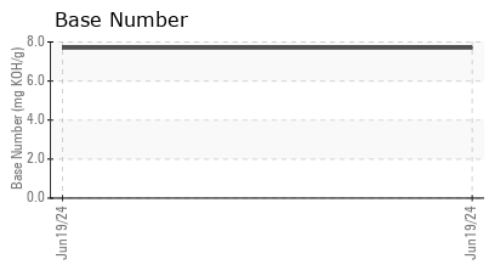
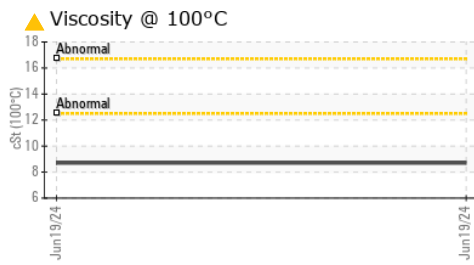
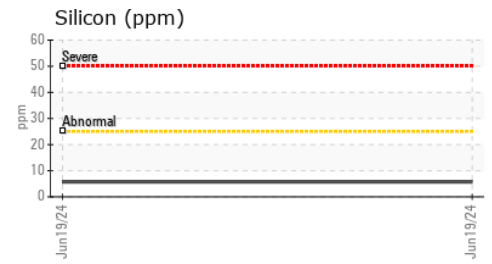
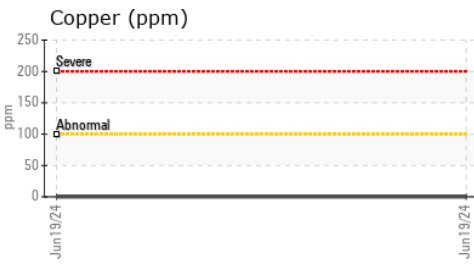
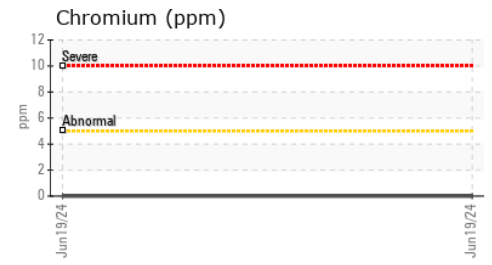
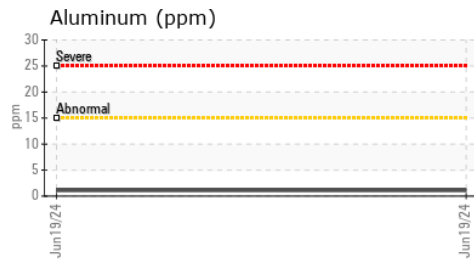
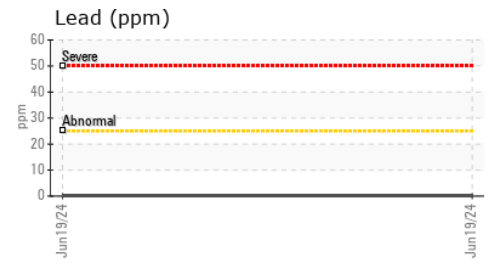
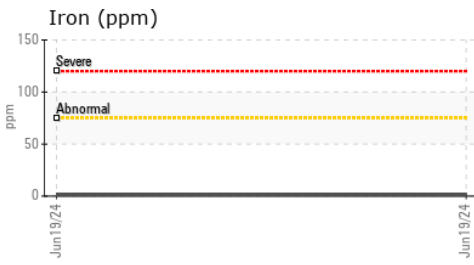
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|---------------|----------------|----------|----------|
| White Metal | scalar | *Visual NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual NONE | NONE | --- | --- |
| Precipitate | scalar | *Visual NONE | NONE | --- | --- |
| Silt | scalar | *Visual NONE | ▲ MODER | --- | --- |
| Debris | scalar | *Visual NONE | NONE | --- | --- |
| Sand/Dirt | scalar | *Visual NONE | NONE | --- | --- |
| Appearance | scalar | *Visual NORML | NORML | --- | --- |
| Odor | scalar | *Visual NORML | NORML | --- | --- |
| Emulsified Water | scalar | *Visual >0.2 | NEG | --- | --- |
| Free Water | scalar | *Visual | NEG | --- | --- |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|--------------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | ▲ 8.7 | --- | --- |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LP0001886 **Received** : 25 Jun 2024
Lab Number : 06220421 **Tested** : 28 Jun 2024
Unique Number : 11098618 **Diagnosed** : 28 Jun 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

GREATER PORTLAND TRANSIT DISTRICT
 114 VALLEY STREET
 PORTLAND, ME
 US 04102-3039
 Contact: JOHN JACQUES
 jjacques@gpmetro.org

To discuss this sample report, contact Customer Service at 1-800-237-1369.
 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)