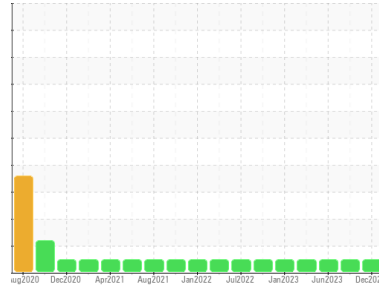




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
INTERNATIONAL 5012901
 Component
Diesel Engine
 Fluid
VALVOLINE 15W40 (--- GAL)

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

Fuel content negligible. There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|--------------------|-------------|-------------|------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | | IL0035106 | IL0033253 | IL05900961 |
| Sample Date | Client Info | | | 27 Dec 2023 | 28 Sep 2023 | 26 Jun 2023 |
| Machine Age | mls | Client Info | | 277228 | 254478 | 231169 |
| Oil Age | mls | Client Info | | 0 | 0 | 0 |
| Oil Changed | Client Info | | | Changed | Changed | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

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

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m | >100 | 26 | 31 | 13 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 5 | 6 | 4 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 1 | 1 |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 39 | 41 | 36 | 171 |
| Barium | ppm | ASTM D5185m | 1 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 49 | 78 | 87 | 85 |
| Manganese | ppm | ASTM D5185m | 1 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 616 | 645 | 782 | 508 |
| Calcium | ppm | ASTM D5185m | 1554 | 1338 | 1596 | 1468 |
| Phosphorus | ppm | ASTM D5185m | 899 | 839 | 1003 | 995 |
| Zinc | ppm | ASTM D5185m | 1069 | 1062 | 1298 | 1230 |
| Sulfur | ppm | ASTM D5185m | 2624 | 2637 | 3081 | 3659 |

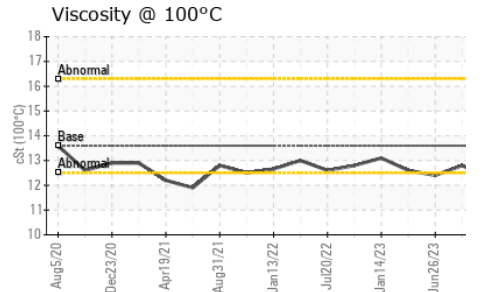
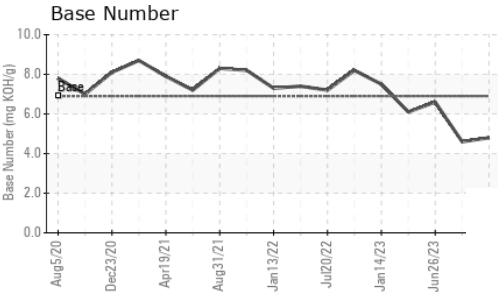
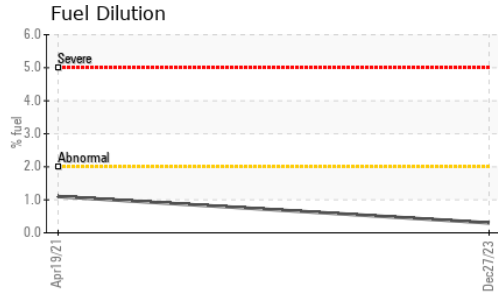
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >25 | 6 | 8 | 5 |
| Sodium | ppm | ASTM D5185m | | 3 | 1 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | 6 | 5 | 3 |
| Fuel | % | ASTM D3524 | >2.0 | 0.3 | <1.0 | <1.0 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|-----------|----------|-------------|------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 | >3 | 0.5 | 0.5 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 11.5 | 11.5 | 9.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 24.7 | 25.2 | 22.1 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 22.5 | 22.4 | 16.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 6.9 | 4.8 | 4.6 | 6.6 |



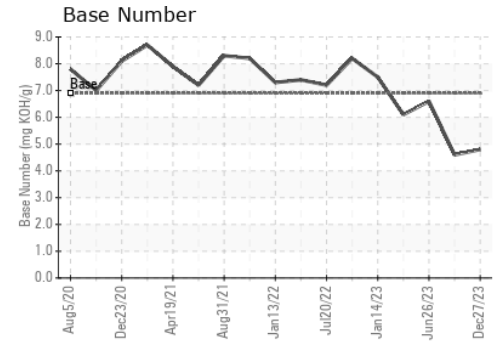
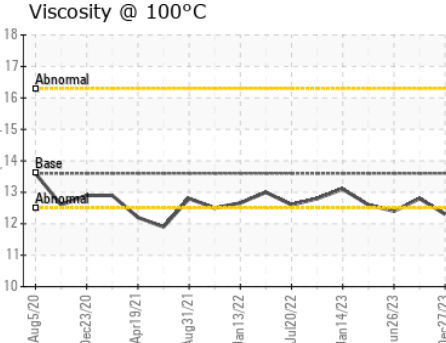
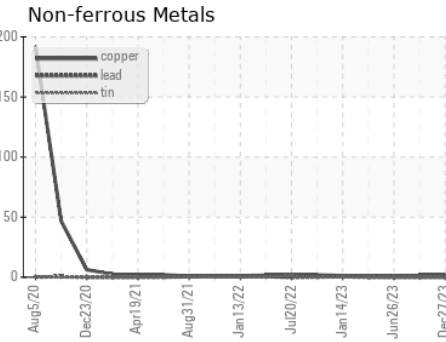
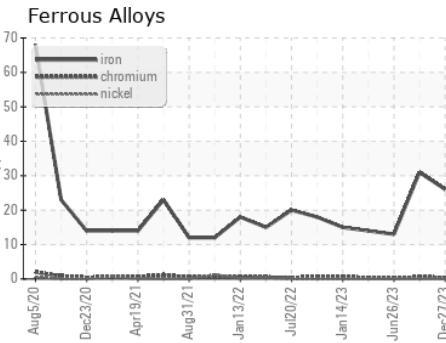
OIL ANALYSIS REPORT



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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 13.6 | 12.3 | 12.8 |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : IL0035106 Recieved : 10 Jan 2024
 Lab Number : 06056419 Diagnosed : 12 Jan 2024
 Unique Number : 10822368 Diagnostician : Wes Davis
 Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

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)

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