CONST

PetroCard™ MORE THAN JUST FUEL.

# OIL ANALYSIS REPORT

| | |
|---|---|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
## WESTERN STAR M152
Component
## Diesel Engine
Fluid
## SHELL Rotella T5 15W-40 (7 GAL)

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

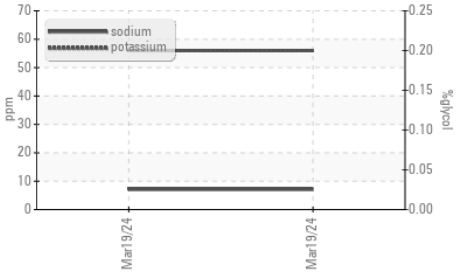
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. No other contaminants were detected in the oil.

## FLUID CONDITION

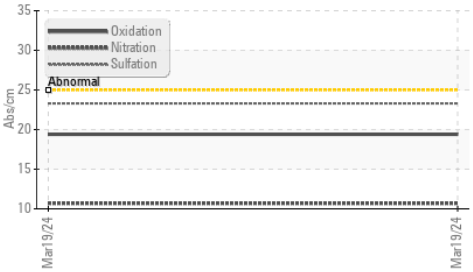
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | PE0003333 | --- | --- |
| Sample Date | | Client Info | | 19 Mar 2024 | --- | --- |
| Machine Age | hrs | Client Info | | 2740 | --- | --- |
| Oil Age | hrs | Client Info | | 545 | --- | --- |
| Filter Age | hrs | Client Info | | 545 | --- | --- |
| Oil Changed | | Client Info | | Changed | --- | --- |
| Filter Changed | | Client Info | | Changed | --- | --- |
| Sample Status | | | | NORMAL | --- | --- |
| Iron | ppm | ASTM D5185m | >100 | 24 | --- | --- |
| Chromium | ppm | ASTM D5185m | >20 | 2 | --- | --- |
| Nickel | ppm | ASTM D5185m | >4 | 1 | --- | --- |
| Titanium | ppm | ASTM D5185m | | <1 | --- | --- |
| Silver | ppm | ASTM D5185m | >3 | <1 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >20 | 21 | --- | --- |
| Lead | ppm | ASTM D5185m | >40 | 1 | --- | --- |
| Copper | ppm | ASTM D5185m | >330 | 2 | --- | --- |
| Tin | ppm | ASTM D5185m | >15 | 2 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | <1 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Silicon | ppm | ASTM D5185m | >25 | 6 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 56 | --- | --- |
| Fuel | | WC Method | >5 | <1.0 | --- | --- |
| Water | | WC Method | >0.2 | NEG | --- | --- |
| Glycol | | WC Method | | NEG | --- | --- |
| Soot % | % | *ASTM D7844 | >3 | 0.5 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 10.7 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 23.3 | --- | --- |
| Silt | scalar | *Visual | NONE | NONE | --- | --- |
| 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 | --- | --- |
| Sodium | ppm | ASTM D5185m | | 7 | --- | --- |
| Boron | ppm | ASTM D5185m | | 32 | --- | --- |
| Barium | ppm | ASTM D5185m | | <1 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | 86 | --- | --- |
| Manganese | ppm | ASTM D5185m | | 2 | --- | --- |
| Magnesium | ppm | ASTM D5185m | | 20 | --- | --- |
| Calcium | ppm | ASTM D5185m | | 2190 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | | 1112 | --- | --- |
| Zinc | ppm | ASTM D5185m | | 1202 | --- | --- |
| Sulfur | ppm | ASTM D5185m | | 4309 | --- | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 19.4 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10 | 4.9 | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | 14.9 | 12.6 | --- | --- |

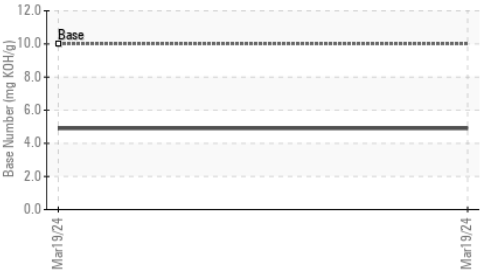
Glycol Contamination



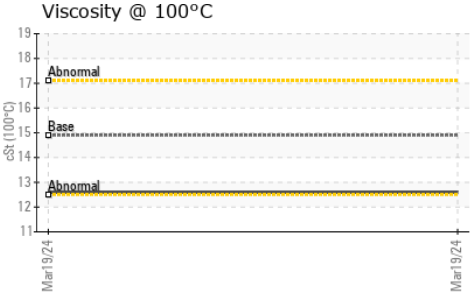

FT-IR (Direct Trend)



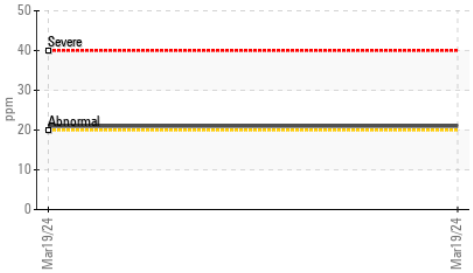

Base Number



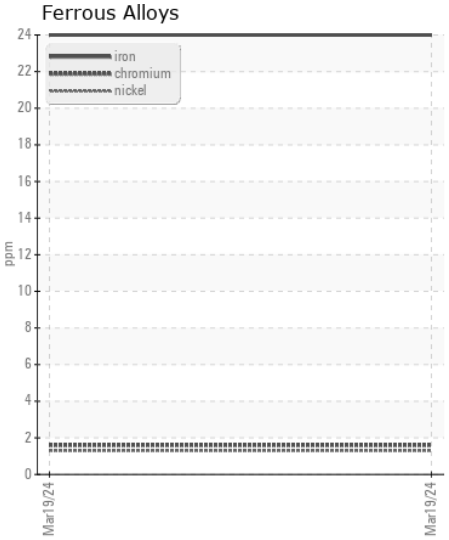

Viscosity @ 100°C



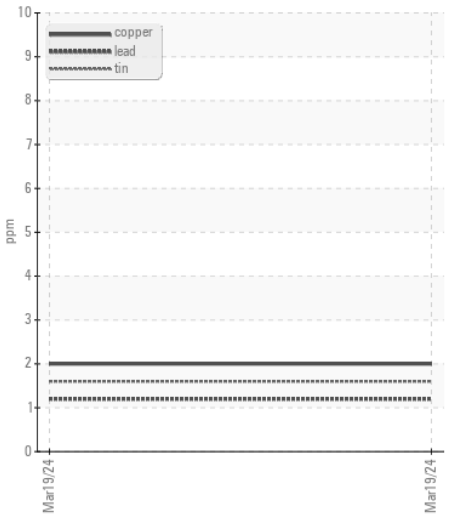

Aluminum (ppm)



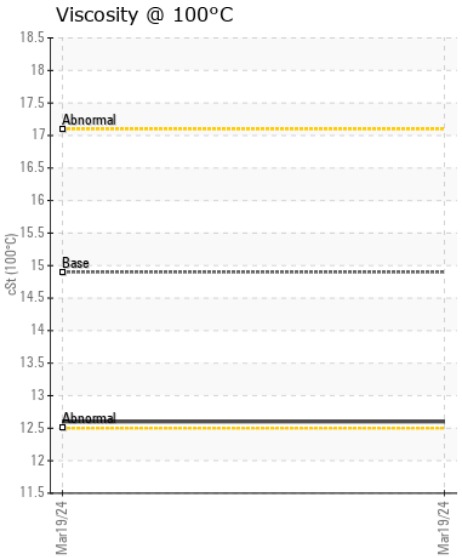

Ferrous Alloys



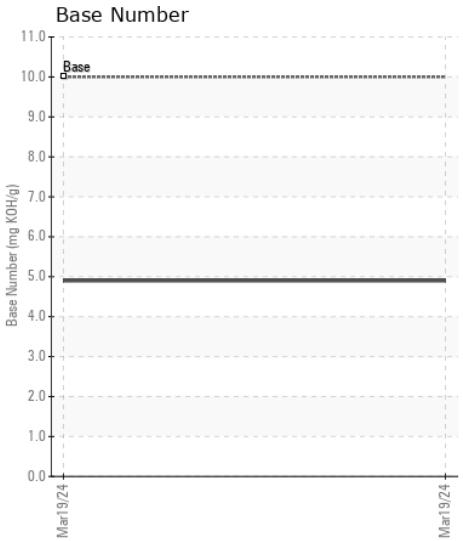

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PE0003333 **Received** : 17 Apr 2024
**Lab Number** : 06152517 **Tested** : 18 Apr 2024
**Unique Number** : 10982595 **Diagnosed** : 22 Apr 2024 - Don Baldridge
**Test Package** : CONST ( Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN )

*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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